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LEVERAGING ZIMBABWE'S MINERAL ENDOWMENT FOR ECONOMIC TRANSFORMATION AND HUMAN DEVELOPMENT

Bright Mutandwa

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, 2018

DECLARATION

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

.....

(Signature of candidate)

..... Day of.....

(Year).....at.....

ABSTRACT

Zimbabwe has experienced a pervasive economic collapse over the past twenty years. Most of the challenges were caused by policy inconsistencies, bad policy choices, economic mismanagement and political instability. This led to deindustrialisation with a sharp decline in both manufacturing and agricultural productivity, which consequently caused a sharp increase in unemployment, hence, the poverty. During the difficult times, mining industry was the only sector that has survived but faced with its unique challenges. Though mining industry presents an opportunity for economic stimulation which may lead to economic recovery, nonetheless this requires broad economic reforms.

This study focuses on the minerals development and the policies that affect the mining industry and the socio-economic development of Zimbabwe. The mineral policy of Zimbabwe, which is drawn from several policies, and the economic empowerment policies, were used to benchmark the resource governance using the Natural Resources Governance Benchmarking Framework (NRGBF) against similar policies of selected countries within the Southern Africa Development Community (SADC). Both qualitative and quantitative data was used for answering question from precepts for benchmarking. Benchmarking data was obtained from websites and annual reports of organisations such as Mo Ibrahim Foundation, World Bank and African Development Bank. The methodology also included the case study on the feasibility of chrome beneficiation in Zimbabwe since value addition provides more opportunities for economic growth, transformation and human development.

It was confirmed that the political instability, policy inconsistency, lack of transparency, lack of accountability by public officials, corruption, poor revenue management, government equity requirements and lack of a mineral development strategy are the major deterrents to mining investment. This caused poor mining industry performance and hence its contribution to the economy decreased. The Indigenization and Economic Empowerment Act of 2007 was meant to transform the economic skewness and bring prosperity to the citizens but it is also the major policy that deters foreign direct investment (FDI). The absence of a single mineral policy document makes it difficult for investors to comprehend the government

position on certain issues. Furthermore, having multiple agencies other than Zimbabwe Revenue Authority collecting different kinds of levies makes it difficult and a mammoth task to comply. These are the factors which renders the country poorly ranked on the ease of doing business.

The research proposed policy options that focus on improving the business climate to the one that is transparent, fight corruption, hold public official accountable and removing bottlenecks to production through infrastructure development. It was also recommended that the mineral policy should follow the African Union's (AU) Africa Mining Vision, which provides a framework that is in line with the policy harmonization initiative by SADC. Furthermore it was proposed that mineral policy should be designed to attract FDI. However, while trying to attract FDI, this should not only protect the investors' rights but also tie the investment towards any socio-economic obligations. Lastly, this study recommends commitment to educating and training of young people and be able to retain skilled citizens for the creation of linkages between the mining industry and the rest of the economy.

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Lastly, I thank my family who had been supportive during the course of the studies.

DEDICATION

This research report is dedicated to my late grandmother, Mrs Martha Pinky Mukucha whose presence is missed on the celebration of this achievement.

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LIST OF ABBREVIATIONS

AMV…….…….Africa Mining Vision

CSR……..….Corporate Social Responsibility

DMR……..……Department of Mineral Resources

DRC……..…..……. Democratic Republic of Congo

EI……..……..…Extractive Industry

EIA……..…Environment Impact Assessment

EMA ……..…….……... Environment Management Act

FDI…….……Foreign Direct Investment

GDP……..…….…….……..…… Gross Domestic Product

GNU ……...…….……. Government of National Unity

HDSA…….…….……Historically Disadvantaged South Africa

ICT…….……Information and Communications Technology

NRGI…….……Natural Resources Governance Institution

PDP…….……Productive Development Policies

R&D…….……Research and Development

RGI…….……Resource Governance Index

SADC…….…….……Southern Africa Development Community

SV …….…….……Shared Value

ZACC ……..…..…… Zimbabwe Anti-Corruption Commission

ZIMASSET…..Zimbabwe Agenda for Sustainable Socio-Economic Transformation

ZIMRA……Zimbabwe Revenue Authority

1 INTRODUCTION

1.1 Background

Zimbabwe is well endowed with over 40 mineral resources, which include gold, copper, nickel, coal, PGMs, diamond among others. Currently, mining accounts for more than 60 % of exports and contributes around 15 % to the Gross Domestic Product (GDP) making Zimbabwe a resource-driven economy (Segula, 2016). Mining has played a pivotal role in Zimbabwean economic history. It provided direct and indirect jobs and helped in advancing towards human development. Towns such as Zvishavane, Hwange, and Bindura were built because of mining (Mhembere, 2013). Furthermore, companies were formed to service the needs of the mining industry, providing the much-needed linkages for economic growth and development.

Zimbabwe's minerals present the potential for economic stimulation to growth, which can lead to economic transformation and human development (Manyonde & Mandishara, 2015). Growth economists regard mining as an engine to fight poverty by creating jobs and generating revenues as well as through linkages to the other sectors of the economy. Despite the potential for growth and development presented by the mineral resources, Zimbabwe failed to use its comparative advantage to achieve positive development outcomes. One of the reasons for the poor performance of Zimbabwe’s mining industry is a failure to attract foreign direct investment (FDI) needed for the Greenfields and Brownfields operations which increase the competitiveness of the industry (Saungweme, 2005). The failure to attract FDI is mainly due to the prevailing political instability and policy inconsistencies.

The success or failure in minerals resources management depends mostly on the stakeholders, which include but not limited to the host government, the communities, the non-governmental organisations (NGOs), employees and the private investor (Greener & Dodd, 2015). Different stakeholders have different expectations from the mining industry as shown in Figure 1.1. If the community in which the mine is going to operate is not consulted or if the consultations were flawed prior to the decision to mine had been made, they sometimes block the

mining to commence in various ways. Furthermore, if the communities do not enjoy the benefit from the mining activities in their area, usually results in communities resisting the mining projects to commence or to continue (Armstrong, et al., 2014). The disruptions to operations can take several years, for example, what is happening in Northern Peru. The protests and strikes may turn into violence as what happened in Marikana in South Africa and Yanacocha, in Peru. Also recently in Zimbabwe, citizens nationwide went to streets demanding government' accountability on the $15 billion unaccounted from diamond revenues. This problem diminishes the country' attractiveness as an investment destination and which lead to reduced foreign direct investment coming to the country.

This study aims to identify approaches that would attract investment in the mining value chain and create linkages of the minerals sectors with other economic sectors. These linkages increase the contribution of minerals mining to economic transformation and human development in Zimbabwe.

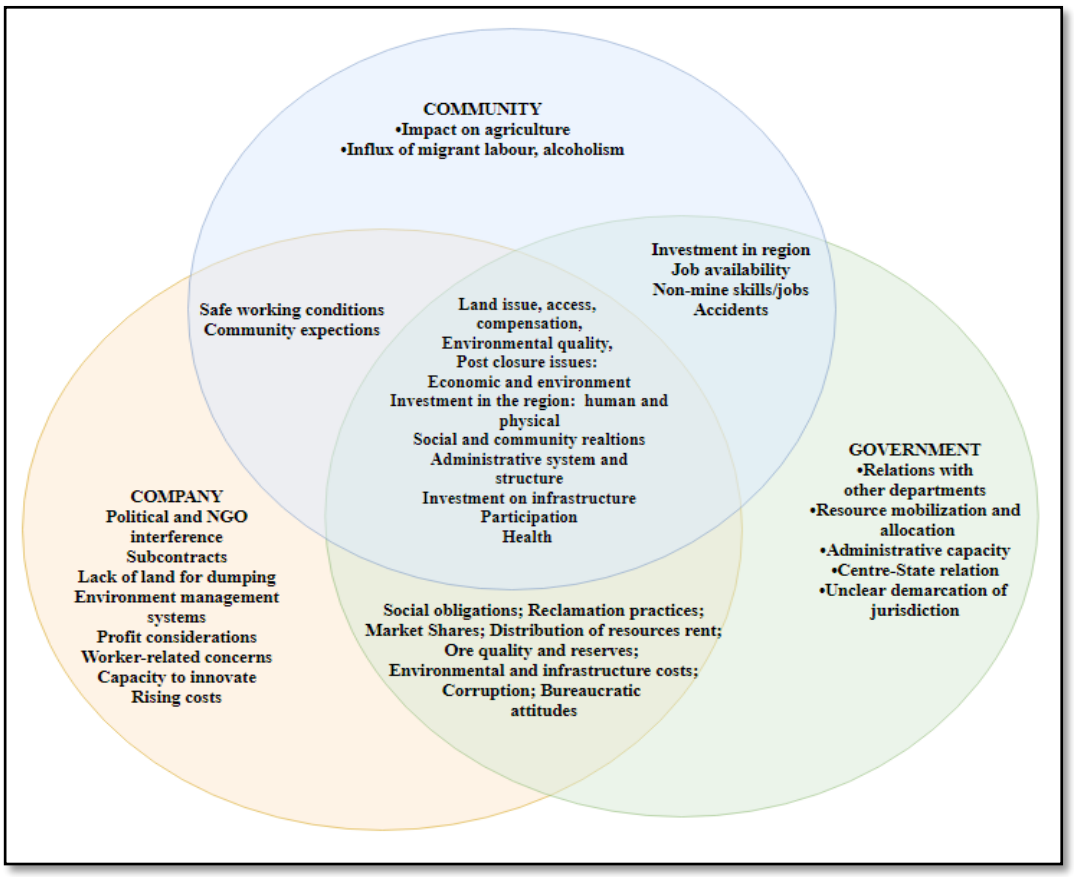


Figure 1.1 The mining industry stakeholders (Noronha, 2001)

1.2 Problem statement

Conventional economics suggests that abundance of mineral resources provides the comparative advantage of a nation for economic growth, economic development, and human development. This was found to not always be the case by various researchers such as Bulte, et al. (2005); Gyfason (2001); Sachs & Warner (2001). According to United Nations (2011), more than 50 economies in the world are mineral resources based and a huge number have not achieved growth. Researchers came up with theories to explain why many resource-rich countries perform poorly economically and suggested the existence of "resource curse". Zimbabwe is among the nations that have not yet fully leveraged their mineral resources for economic and human development due to a plethora of reasons. Recent discussion and policies formulated and implemented by resources rich countries are towards value addition of raw material. These policies usually fail due to lack of experience in policy formulation, lack of planning, investment, skills shortages and lack of marketing.

On the contrary, literature also shows that it is possible for the resource-based economies to grow at the same rate as their non-resource dependent economies (Ville & Wicken, 2012). The documented work comments on the exploitation and use of mineral resources for economic and human development by the developed nations and few developing nations such as Botswana. However, there is little work done to give suggestions on how Zimbabwe should leverage its mineral resources' comparative advantage to stimulate economic transformation and human development.

1.3 Significance of Research

The research identifies how Zimbabwe can use its vast mineral endowment for economic transformation and human development. The research proposed strategies and policies recommendations for a successful mineral resources management which are specific to Zimbabwean conditions. It is hoped that if the government of Zimbabwe adopts these strategies, they may help in reducing the current soaring levels of unemployment and poverty.

1.4 Research Aim and Objectives

The aim of this research is to benchmark the minerals policy of Zimbabwe. Then identify approaches that are useful for transforming the economic structure and performance of Zimbabwe's economy using mineral resources.

The objectives of this research are to:

- Investigate the role played by Zimbabwe`s mining industry in economic transformation and human development since colonial, post-independence era and present-day Zimbabwe.
- Extract the mineral policy from various policy documents that affect mining and benchmark and compare with selected SADC countries to give suggestions for improvement.
- Explore options for building linkages between Zimbabwe`s minerals sector and the rest of economic sectors to underpin long-term economic growth, transformation, and human development. These linkages are the fiscal linkages, the forward (downstream) linkages, the backward (upstream) linkages, the knowledge (side-stream) linkages, and the spatial (side-stream minerals infrastructure) linkages.
- Perform a case study on the feasibility of beneficiation of chrome in Zimbabwe and give recommendations on key beneficiation policy issues. The banning of exporting chrome ore by the Zimbabwean government between 2011 and 2016, which was meant to force mining companies to do downstream beneficiation influenced the researcher to conductor a case study on chrome beneficiation in Zimbabwe.

1.5 Research question

The researcher sought to answer the following question: How can Zimbabwe use its vast and diverse mineral endowment for the betterment of the ordinary citizens in the spheres of health, education and standard of living?

1.6 Definition of terms

1.6.1 Economic transformation

In this research, economic transformation refers to a complete turnaround of the economy by continually reallocating the resources from less productive to more productive sectors and activities. The transformation can be achieved by moving from economic activities such as subsistence farming to high-income crops and from artisanal mining to small-scale mining. The transformation is from the labour activities that pay low wages to the skills-based economic activities that pay high salaries. Thus changing the percentages of the contribution of companies and individuals to the country's GDP from a small group of multinationals to a broad-based economy.

1.6.2 Human development

Human development is defined as the social advancement through socioeconomic development, democratization and cultural change of the society. The three components of human development have a common goal, which is enlarging people's choices (Inglehart, et al., 2003). The most fundamental component of human development is socioeconomic development and it is the change, which includes technological advancement, increase in productivity, improvement in health and life expectancy, improved access to education and access to information. Measurements of human development have been constantly been developed by United Nation and other writers such as Alkire (2016).

1.6.3 Resource Curse

The discovery of minerals presents great financial opportunities for socioeconomic development and may translate to human development of citizens in a nation. However, the prerequisites to prosperity using the revenues from natural resources are proper policies, frameworks, and exceptional management; these same investments in mineral exploitation are capable of negatively affecting the financial management systems, undesirable environmental and social impact and escalates the levels of corruption. When a country fails to reap the benefits of natural resources exploitation due to the aforementioned reasons, it is referred to as resource cursed. Slower economic growth and less economic stability compared to

non-resources neighbours are signs of resource curse. Lack of government accountability also contributes to the resource curse phenomenon. Resource revenues provide the money for government spending which results in less tax being charged from citizens (Natural Resource Governance Institute, 2005). This makes the citizens scrutinize the way how the revenues are spent as shown in Figure 1.2.

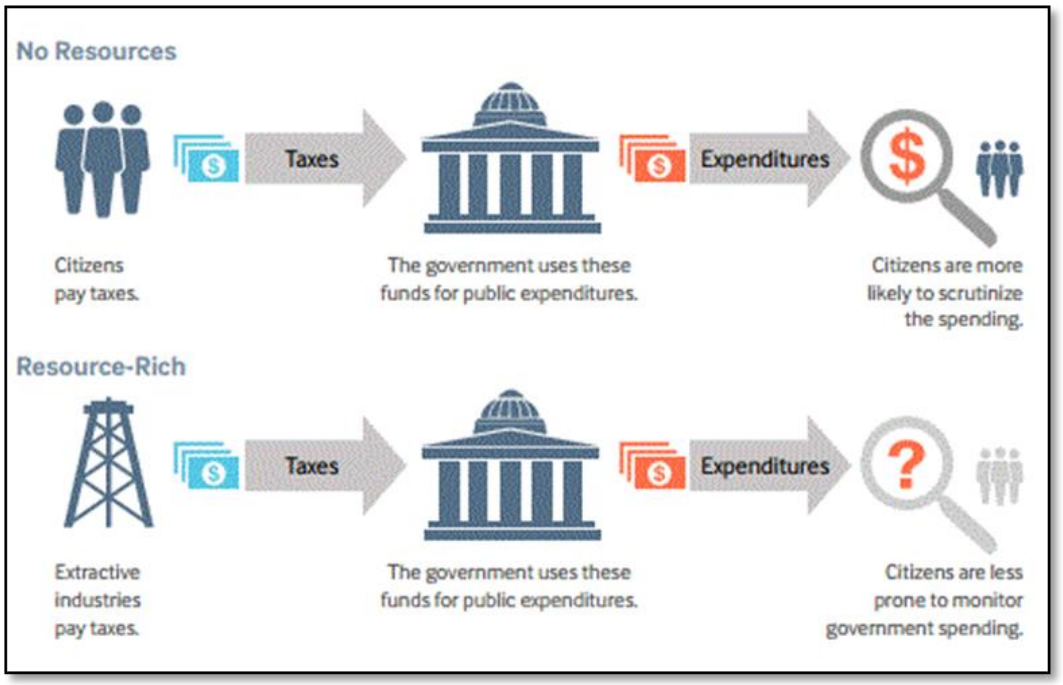


Figure 1.2: Oversight incentives for resource-rich and resource-poor country (Natural Resource Governance Institute, 2005)

1.7 Methodology

The approach to this research was both qualitative and quantitative to achieve the research fundamentals, which are to describe, explain and validate. The methodology enabled theories to be described and facts organised objectively. This was done by a critical analysis of open source data from organisations such a World Bank, Africa Development Bank, Mo Ibrahim Index of Governance, International Monitory Fund (IMF) and Natural Resource Governance Institute, a review of mineral and economic empowerment policies of Botswana, Namibia, South Africa and Zimbabwe and relevant literature survey. The Zimbabwean mineral policy and the fiscal regime was benchmarked using the Natural Resources Governance

Institute's benchmarking framework. Historic trends in the Zimbabwean economy, the previous economic transformation policies and the mineral policies where analysed in the vision of learning from past to advise on policy interventions that will leverage mineral exploitation to stimulate economic transformation and human development. This was done by utilising vast literature from credible journals, article, books and open source data.

1.8 Structure of the report

Chapter 1 presented a brief background of the Zimbabwean economic position and the overall contribution of mining to the economy over the years. The chapter further presented the problem that the research endeavours to solve, why it was important to undertake the research. Lastly, the objectives of the research were stated in this chapter.

Chapter 2 opened the investigation into how the economy may be transformed using mineral resources to achieve inclusive and sustained growth as well as sustained human development. The macroeconomic history Zimbabwe was analysed taking a close look at how the sectors of the economy contributed to the economy in different policy environments. The chapter further looked at the comparative advantage theory relating it to Zimbabwe's mineral endowment comparative advantage. Furthermore, the paradigm of resource curse was briefly discussed and it was concluded that the government has to put institutions that are not captured by bureaucrats and politicians for successful mineral resource management and avoid resource curse. The chapter concluded by taking a closer look at the economics of exhaustible resources as proposed by Hoteling, which lead to the discussion of mineral rents and its distribution.

Chapter 3 looked into the mineral endowment of Zimbabwe and their production profiles. The crucial players in Zimbabwe's mining industry were looked at and their contribution towards mining and minerals development. The chapter concluded by looking at the production of a selected few strategic minerals.

Chapter 4 began by investigating the role of the mineral policies in a country before looking into the process of making a good mineral policy. Mineral policies,

empowerment policies and fiscal regimes for minerals of Botswana, Namibia, South Africa and Zimbabwe were analysed to assist in policy recommendations.

Chapter 5 benchmarked Zimbabwe's mineral policy using the using frameworks developed by the Natural Resources Governance Institute (NRGI). The tools used are the Natural Resource Charter Analysis Framework (NRCAF) and the Resource Governance Index (RGI).

Chapter 6 identified the ways of leveraging Zimbabwe's minerals resources for economic transformation and human development using findings of the previous chapters. A case study on the feasibility of value addition of chrome to fully capture the benefits of chrome mining was done.

Chapter 7 concludes the research and gives policy recommendations that may be adopted by Zimbabwe's government to improve the impact of mining on the economic and human development.

The schematic diagram of the report is as shown in Figure 1.3.

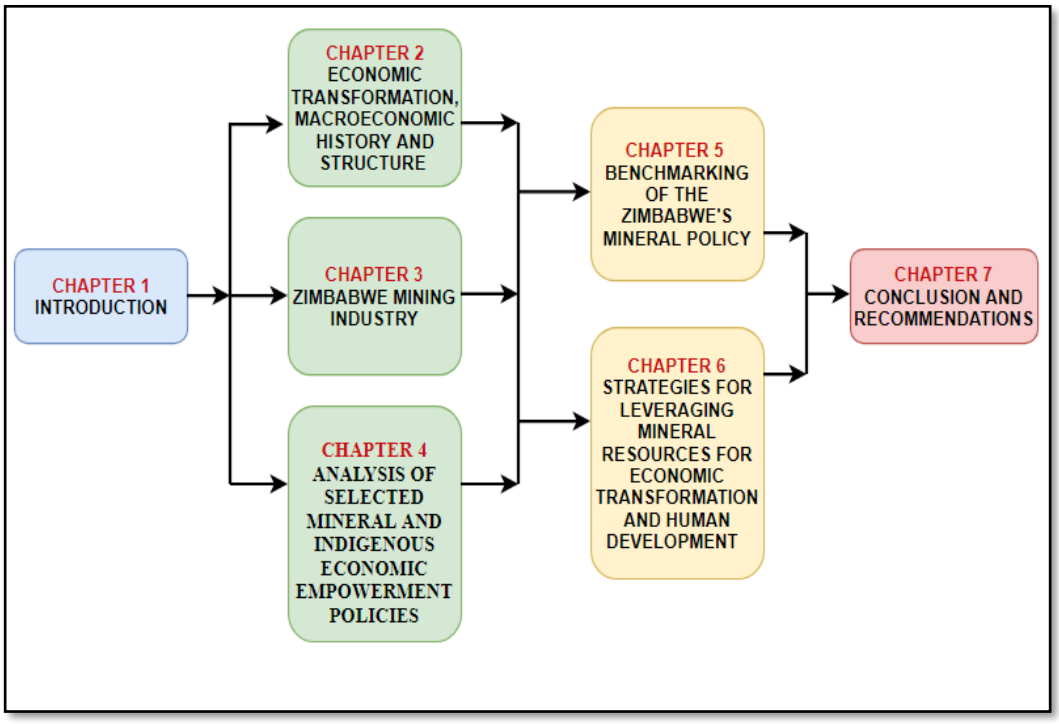


Figure 1.3: Report structure

2 ECONOMIC TRANSFORMATION, HUMAN DEVELOPMENT AND MACROECONOMIC HISTORY OF ZIMBABWE

2.1 Introduction

This chapter opens an investigation on economic transformation and human development. It then further links how the Extractive Industry (EI) contribute to both economic and human development. According to Jenkins (1997), extensive research was done looking at the interactions between politics and economics. The studies tried to explain why some independent developing countries liberalize, some do not at all and yet others liberalize only some sectors of their economies. This section looks at the policies adopted by both the minority and the majority regimes and sheads light on policy changes and how they affected the economy. It is through historical evidence that policymakers understand the pros and cons of the policies choices that they may choose to follow. Thus playing a key role in coming up with feasible policies for the current needed economic transformation by the elimination of options, ideologies, and institutional structures.

The economic history of Zimbabwe from pre-independence to the present day was reviewed. Furthermore, the possible future performances were projected. The economic timeline was divided into four eras. The research begins by investigating the economic performances and its drivers between 1960 and 1980s which was the colonial era. The next era was between the independence in 1980 and 2000 with a major highlight of land expropriation, which started towards the end of the 1990s. The economic performance was also further looked at between 2000 and 2008 with the major event being the global financial crisis and hyperinflation in Zimbabwe. The last era is from 2009 when there was a government of national unity (GNU) which ended in 2013 to present day were Zimbabwe has adopted the use of multi-currency, which are mainly the South Africa Rand, United States dollar, Chinese Yen, British Pound and Botswana Pula.

2.2 Economic transformation

Economic reforms have great potential to transform the economy significantly. Zimbabwe had several economic reforms such as;

- The Unilateral Declaration of Independence UDI era (1965 - 1979) with policies focusing on transforming the country into self-reliance.
- The era of the majority rule government trying to form inclusive policies, (1980-1990).
- The Economic and Structural Adjustment Program (ESAP) era (1990-1995) characterized by policy reversal of 1980, free markets and trade liberalization.
- The Zimbabwe Programme for Economic and Structural Transformation (ZIMPREST) era (1997-2004) aimed to restore macroeconomic stability.
- The Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET) (2012- 2019) aimed at addressing socio-economic challenges (Nziramasanga & Lee, 2002) (Mumvura, et al., 2005). These policy reforms are discussed in detail later in this chapter.

Policy reforms are usually meant to create stability in the macroeconomic environment that is favourable to the entrepreneurs and investors. This works well for market-determined prices and promotes large amounts of investments and efficiency of the private sector, which enhances global competitiveness, enhanced production efficiency and increased exports (Mumvura, et al., 2005). Policy reforms in developing nations are implemented long after they are due, which makes them less effective. Zambia is an example where cases of reforms in mineral policy and taxation affected production. In the 1970s, Zambia and the Democratic Republic of Congo (DRC) policies reforms saw the decrease in production of copper from 600 000t per annum to less than 100 000t per annum in both countries. At the same time, Chile policy reforms increased production from 600 000t per annum to 6 million tonnes per annum of copper (Omarjee, 2017).

According to Africa Development Bank Group (2017), natural resources based economies have to do a structural transformation to improve economic growth and human development. The restructuring exercise requires innovation to reduce the infrastructure bottlenecks. The governments should invest in quality education, skills training and technological improvement that gives a deep understanding of industrial value chains in order to foster economic transformation (African Development Bank Group, 2014). Technological improvement help in ensuring the

capabilities in building technologically sophisticated value-added goods. Adejumobi (2017) advised policymakers to adopt policies that take advantage of the increase in Africa's population and urbanization to boost industrialization which gives better prosperity. He further explained the increase in demand for manufactured goods due to urbanization which he said was a powerful tool for industrialization.

There are two major economic transformations required for an economic turnaround of Zimbabwe. Firstly, the contribution of primary sectors such as mining and agriculture to the GDP must be reduced by diversifying into skills-based sectors such as manufacturing. Diversification can be done by building linkages between these primary sectors and other sectors. Secondly, the ownership of the production sectors must also be changed from a few politically connected individual to a broad-based economy that benefits everyone and rewards the skills and entrepreneurship. The economy had been performing poorly with figures of unemployment skyrocketing to 95 % and evidence of extreme poverty is seen everywhere in the streets of once a bloomy city of Harare and everywhere across the country (Worstall, 2017).

The Zimbabwean economy heavily depends on the export of raw materials mainly mining and agricultural production as a major source of foreign currency and GDP contributor. Economists have warned against solely relying on raw materials export because mineral resources are exhaustible and the prices are highly volatile. Studies found that diversifying from a natural resource-based economy to skills-based economy that relies on manufacturing is important. Skills-based economies have high employment rate, stable revenue due to the labour intensiveness of manufacturing and workers have a high degree of job satisfaction.

Dietsche (2014) discussed diversifying mineral economies and realised that three questions on improving the minerals resource-based economies have been asked since the beginning of the 1970s. The most recent of the questions are concerned with the building of linkages between the mineral resources and other sectors of the economy. According to Economic Commission for Africa (2011), the mining sector must integrate into both national and regional economy to produce linkages. The

emphases were on building capacity on human capital especially on the knowledge-intensive areas and the addressing of infrastructure bottlenecks to building strong linkages between sectors.

The transformation of the Zimbabwean economy requires a highly skilled and educated labour force. The country suffered one of the worse cases of brain drain. Professionals and industrial experts have fled the economic hardships and among other reason looking for "greener pastures" mainly in South Africa, Botswana, United Kingdom and the USA. Causes of human capital flight in Zimbabwe are related to the political environment with many suffering political persecutions (Chetsanga & Muchenje, 2003). There is a need for government to come up with strategies to train and manage to retain the skilled human capital because the country is losing its investment in education.

According to the study by (McKinsey Global Institute, 2013), 540 million people can be lifted out of poverty by 2030 if the resource-driven countries in the world match best performers in poverty alleviation. Figure 2.1 shows expected resources investment in developing countries and potential for poverty reduction if minerals resources are managed properly.

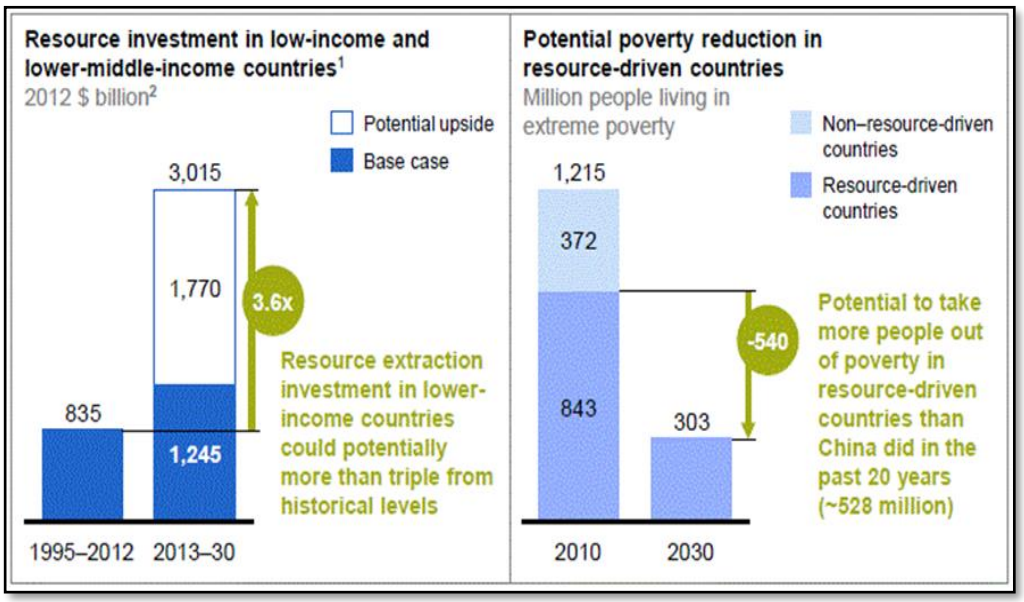


Figure 2.1: Investment in resource extraction could trigger economic and social transformation in lower-income countries over the next two decades (McKinsey Global Institute, 2013)

2.3 Principles of human development

2.3.1 Development concept

Human development (HD) is known to be a very broad concept with many areas of focus (Mihaela & Georgiana, 2015). In literature, a number of researchers such as Greener & Dodd (2015) and Ranis et al. (2000) defined human development as, "enlarging people's choices in a way which enables them to live longer, healthier and fuller lives". Furthermore, Gustavo & Blanco (2010) and Greener & Dodd (2015) described human development as the change in the standard of living across time in a nation compared to the other nations. The definition of human development may slightly differ from person to person and organisation to organisation, which leads to the different measurements of human development. Different organisations such as The World Bank, International Monetary Fund (IMF) and United Nations came up with indexes that measure human development. Income per capita, life expectancy, and income distribution are some of the suggested measurements of human development. The most fundamental measure suggested by Greener & Dodd (2015); Gyfason (2001) and Gustavo & Blanco (2010) are access to quality education, health in form of life expectancy and the standard of living.

2.3.2 Mining and human development

Different sectors contribute differently to a country's economy and human development. Primary sectors such as mining and agriculture are known for providing economic growth and if well managed it leads to economic and human development. Greener & Dodd (2015) explained how the revenues from the extractive industries could be channelled to human development. The government receives royalties and taxes from the mining companies. The government funds either are invested in social sectors or spent for diversification that both lead to human development. The industry also contributes directly to human development through infrastructure, employment, and procurement from local companies. Another channel for direct contribution to human development by extractive industries is by social investment such as building schools and providing clean water to the community.

2.3.3 Links of economic development to human development

The term economic development and human development does not necessarily mean the same thing. Economic development policies deal with how best a government improve for example its revenues or increase exports. For instance, during the commodities price boom in the early 2000s, the resource-rich economies boosted their national income, which is economic growth/ development. Although research shows that there is a strong correlation between economic growth and human development, economic development did not guarantee an automatic human development especially in developing countries (Mihaela & Georgiana, 2015). On the other hand, human development refers to the improvement of the standard of living of people in a particular society or a nation at large (Greener & Dodd, 2015). The policy and statutory instruments used for these two types of development maybe be very different.

On the contrary, economic growth and human development are linked as suggested by (Ranis, et al., 2000). The researchers showed that economic growth could indeed translate to human development and vice-versa if they follow certain chains. Greener & Dodd (2015) suggested that economic growth gives higher chances of people getting a higher income, which will improve their choices. The government increase its spending in investing in productive and social (health, education and social protection) sectors due to economic growth as shown in Figure 2.2. A healthy and well-educated society is more productive which result again in economic growth (Ranis, et al., 2000).

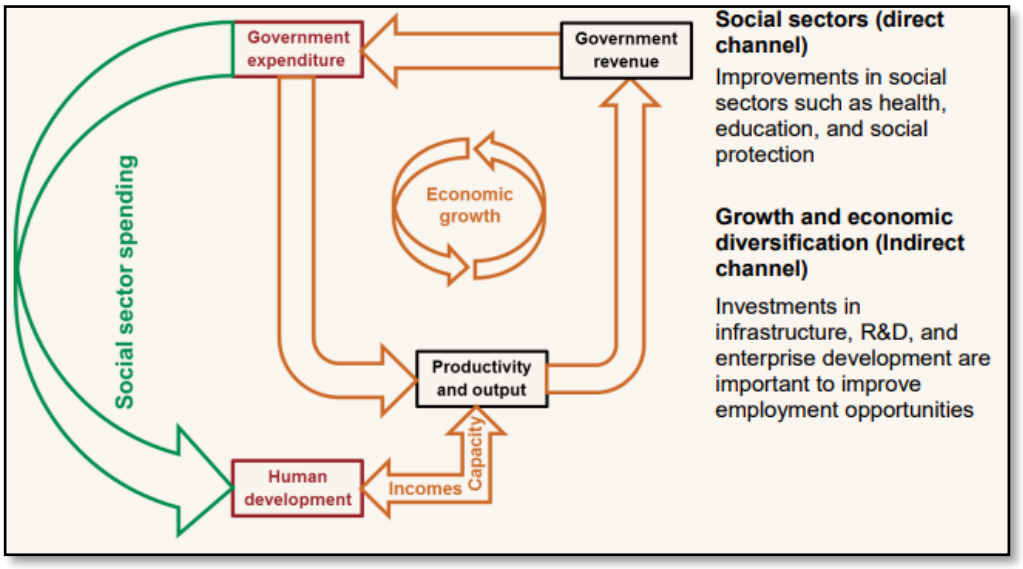


Figure 2.2: Direct and indirect spending on human development (Greener & Dodd, 2015)

2.4 Level of development in Zimbabwe

Considering the human development indexes, which are: good health measured by life expectancy, education that is measured by the average number of years spent at schools and adult literacy and lastly the standard of living measured by the income and the dependency ratios (Greener & Dodd, 2015, Mihaela & Georgiana, 2015, United Nations Development Program, 2016). Zimbabwe has been performing poorly according to United Nations Development Program (2016). When compared to Botswana, Zimbabwe had a stagnant growth over the years whilst Botswana enjoys constant growth in all areas of human development, which is much accredited to its mineral resources management.

Although there is a high chance of human development that comes with urbanisation, the relationship between the two is not automatic according to Mahbub ul Haq Human Development Centre (2014). Zimbabwe's population grew steadily with growth rates ranging from 1.5% to as high as 3.5% but most of the population is in the rural areas as shown in Figure 2.3.

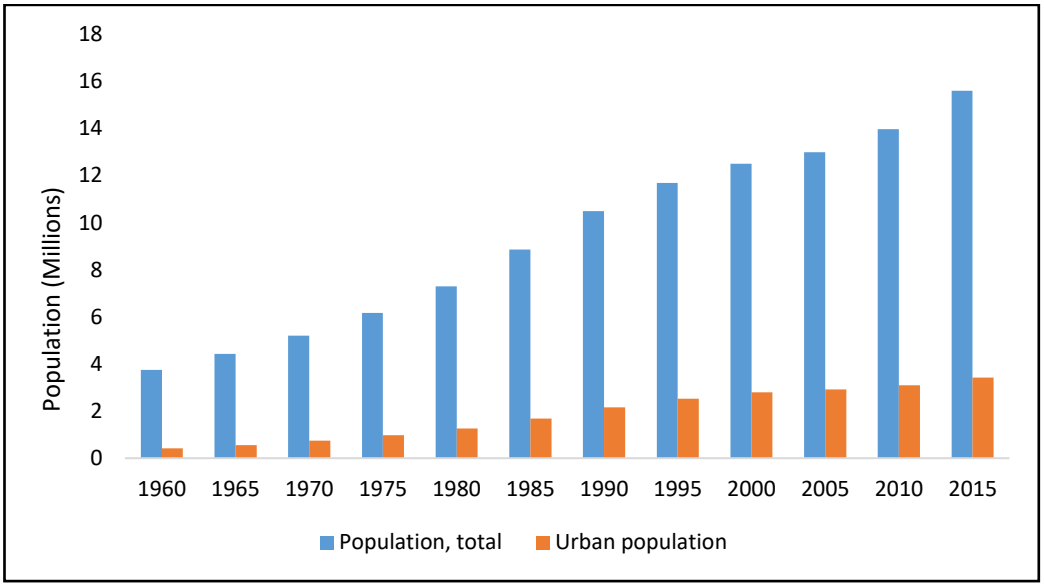


Figure 2.3: Total population and urban population of Zimbabwe. Adopted from (The World Bank, 2017)

The health system of Zimbabwe had been deteriorating due to understaffing, lack of medication, and ageing equipment. The health sector is the worst affected by human capital flight, with nurses and doctors going to South Africa, United Kingdom and Australia among other countries. The life expectancy was improving from the early 1960s until the late 1990s, the period of the outbreak of HIV/ AIDS, which affects most of the southern parts of Africa. Figure 2.4 shows that Zimbabwe had the largest drop in life expectancy during the early 2000s.

The composite human development from 2000 to 2016, made up of three indexes, which are health, welfare and education were compared using the Mo Ibrahim Index. Zimbabwe performed above both SADC and Africa's average in education over the years as shown in Figure 2.5. Welfare, which measures the quality of life and the health indexes, shows that Zimbabwe is underperforming in comparison to regional and continental countries.

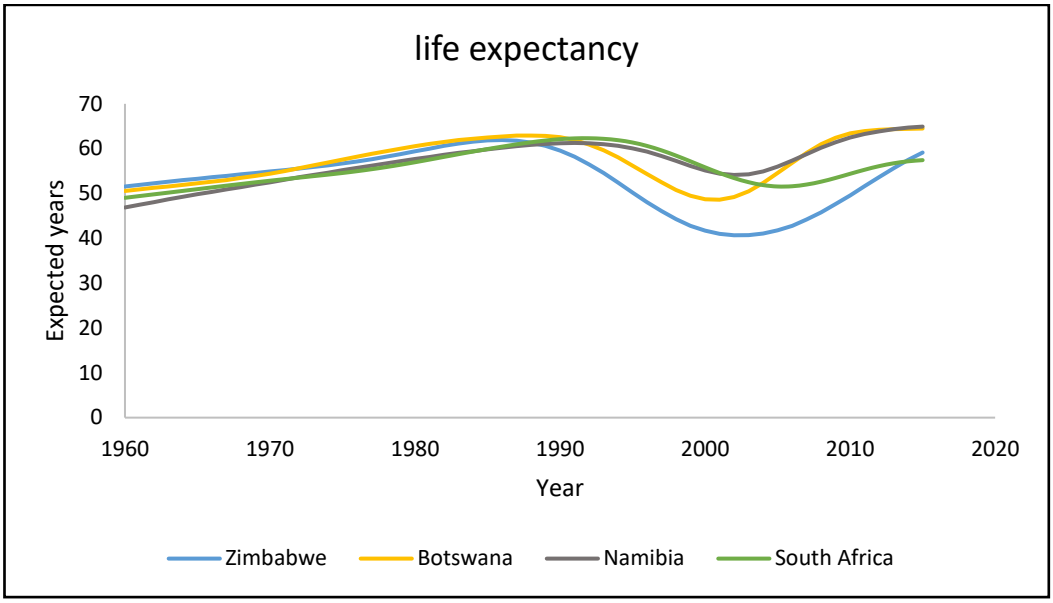


Figure 2.4: Life expectancy of Zimbabwe, South Africa, Botswana and Namibia. Adopted from (The World Bank, 2017)

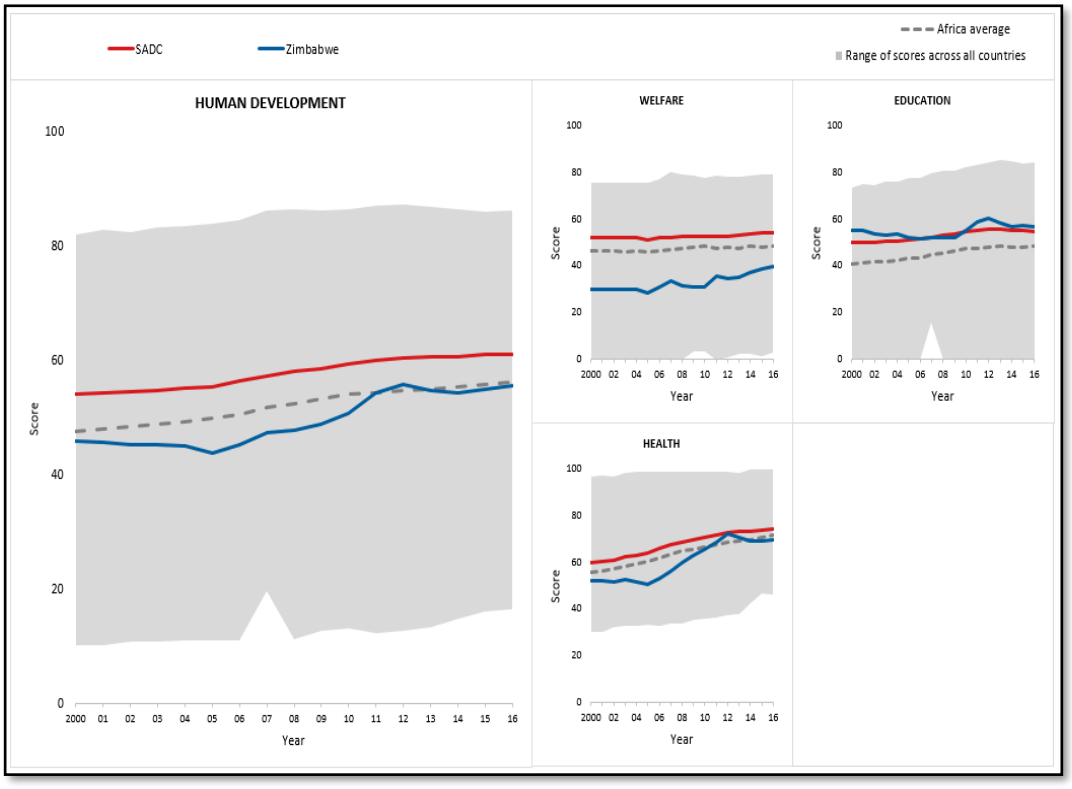


Figure 2.5: Human Development Index (Mo Ibrahim Foundation, 2017b)

2.5 Economic history of Zimbabwe

2.5.1 Pre-independence

Zimbabwe was colonised by Britain from 1897 until its independence in 1980 and it was known as Southern Rhodesia. The British settlers were initially attracted to the minerals with the hope of discovery of gold deposit comparable to the Witwatersrand deposits. Cecil Rhodes formed British South African Company (BSAC) in 1887 after seeking a concession in the land between Zambezi and Limpopo rivers (Kamarck, 1952). The BSAC was responsible for the administration of Southern Rhodesia until 1923 when a government was formed. At the beginning of the government, mining was the only source of revenue with gold mining contributing almost all of it (Kamarck, 1952). The population rapidly grew, with the white population doubling by the end of the 1930s. Secondary industries such as agriculture and manufacturing began to be formed. In the early 1940s, manufacturing overtook mining in the contribution to the economic activities (Kamarck, 1952).

Between 1951 and 1958, the Southern Rhodesia (Zimbabwe)'s population grew by 24%. The high population growth rate was due to the migrant labour from Nyasaland (Malawi), Mozambique and Northern Rhodesia (Zambia). The population was estimated at 2 771 500 people of which 2 550 000 were black and 207 00 were white in 1958 (Tow, 1960). The population of Zimbabwe grew at an average annual rate of 3.5 % in 1964. The population was estimated to be 4 070 000 with a GDP per capita of $199.00 (International Bank for Reconstruction and Development, 1964).

Manufacturing was employing a significant number of people with 682 838 people were employed of which 87 743 (12.6%) were in manufacturing. The industry also depended on migrant labour as shown in Table 2.1.

Table 2.1 Employment in Zimbabwe's manufacturing sector in 1964 by Nationality (International Bank for Reconstruction and Development, 1964)

Country	Males	Female	Total
Zimbabwe	36 816	1 573	38 896
Zambia	5 763	154	5 917
Malawi	14 694	201	14 895
Mozambique	15 030	523	15 553

One of the most diverse and balanced economies in Africa was Zimbabwe. The country had a dual economy, with about 250 000 white minority who owned and controlled large-scale farming using irrigation and new technologies (International Bank for Reconstruction and Development, 1964). The minority was also in charge of manufacturing and mining companies, which were owned by many investors. The majority of the citizens were about 4 000 000 blacks who were mostly into peasant farming and unskilled labour for the white-owned companies. The country depended heavily on the skills possessed by the educated whites, who then held the backbone of the economy, and the black majority were excluded from the system. The infrastructure such as road, water supply, schools, railway, and the hospital was well developed by the beginning of the 1960s but again, the Africans' share in these infrastructures such as education and health was not proportionate to their large numbers.

2.5.1.1 Agriculture

International Bank for Reconstruction and Development (1964) reported that agriculture contributed significantly above 50% of the value of the exports, and around 20% to the GDP. During the same period, mining contributed a quarter of the exports and only 5% of GDP whilst manufacturing contributed 25% to both exports and GDP in 1963. The report further estimated the number of people employed in each sector. Agriculture employed the most people with 420 000 peasant farmers and 230 000 black workers working for large-scale farms owned by around 5 000 white farmers. Peasant farmers contributed about 20 million pounds to the GDP of 1963 and large-scale farming contributes about 45 million pounds to the economy.

The large-scale farmers produced most of the export crops with the major export crops being Virginia tobacco, bulk sugar, cotton, maize, and beef. Zimbabwe had also a good forestry industry, which contributed significantly to the construction of railways by providing railway sleepers. Large-scale farmers benefited from quality production and cheap, mostly migrant labour from Zambia, Malawi, and Mozambique, which gave them a competitive advantage for international markets (Tow, 1960).

2.5.1.2 Mining

The contribution of mining to the GDP dropped from 8.5% in 1954 to just below 5% in 1964 although it accounted for a quarter of foreign currency earnings. Ferro-chrome and the pig iron were the major minerals that contributed to the revenue. Southern Rhodesia had proven high-grade reserves of coal, iron ore, chrome, asbestos, and lithium (International Bank for Reconstruction and Development, 1964).

The mines and minerals legislation, fiscal regimes and technical assistance from government encouraged investment in the prospecting and starting new mining. The main challenges faced by the mining sector in the 1960s was transporting the mainly unprocessed minerals to the international markets, the demand for minerals and the project financing. During that period, their discussions of downstream beneficiation, according to the International Bank for Reconstruction and Development (1964), the export markets were important if the country has to beneficiate the minerals. The investors were considering the political risk caused by the political deterioration due to Africans demanding inclusion in the political and economic decisions.

2.5.1.3 Manufacturing

The manufacturing sector grew three folds between 1947 and 1962 and doubling the number of people employed during the same period. The growth was accredited to the products processed from local raw material like ferrochrome, pig iron, wattle bark extract for leather tanning and canned meat production (Kamarck, 1952). The market of the Zimbabwean manufacturing industry was the former Federation members, which are Zambia and Malawi. Most goods produced were consumer

goods and construction materials. Zimbabwe had moved rapidly into industrialization with much rural populace migrating to urban centres looking for employment in manufacturing. This also created a demand for locally manufactured goods, which grew the manufacturing industry. The industry's domestic market was protected from international competition by the tariffs imposed by the government on imports. Chemical and heavy engineering industries did not develop at the same rate as the light industries due to lack of investments and sanctions imposed on the government when it declared independence from Britain in 1965 (National Archives, 2015). The manufacturing industry faced a number of challenges such as skills shortages, transport and power shortages, which slowed the country's economic development.

2.5.1.4 Education

Zimbabwe had a highly recommended education system, which comprised of primary and secondary schools, vocational and technical training centres and a university. The education was divided along racial lines, with the best schools not allowed to enrol black students (Shizha & Kariwo, 2011). The primary schools for the Africans were mainly missionary schools. Most African learners attend primary school with a 610 000 enrolled in primary schools in 1963 and only 9 000 of the 28 000 learners in secondary schools. A few black people would attend the university with a number of 180 students of the 600 students at the University of Rhodesia in 1964 (International Bank for Reconstruction and Development, 1964).

2.5.2 Zimbabwe's economy from 1980 to 1999

In the first decade of independence, Zimbabwe adopted a corporatist policy regime that allowed state interventions and high level of political authoritarians, which was the same policy strategy of the previous white minority regime (Brett, 2005). Brett (2005) explained how astonishing for the democratic government not to change the macroeconomic policy strategies of their predecessor that they had fought against but just adding a redistributive element in that same policy. This was mainly due to the government recognising the need for policy continuity with the former colonial government and pursuing the new government socialist ideology (Mumbengegwi, 2002). This policy regime was created to benefit settlers, therefore, it had high

levels of economic inequality and the black majority were excluded which was supposed to be changed upon independence (Brett, 2005).

The former colonial government had a regulated economic environment because it wanted to succeed under the sanctions imposed by Britain when Southern Rhodesia declared independence from Britain in 1965. The then government brought about policies that foster rapid growth and encourage diversification into manufacturing and food processing by strictly controlling the prices, resource allocation, markets and investment flows. The incoming government in 1980's school of thought for supporting corporatist policies was that the free markets would hinder industrialization and lead to the uneven economic development of the society (Brett, 2005). Herbst (1990), Jenkins & Knight (2002) and Skalnes (1995) concurred that during the early 1980s the macroeconomic policies of Zimbabwe were debated by external donors and organisations but the transition to a free market economy came as a result of pressures from indigenous economic groups. These economists believed that the corporatist policy strategy was not effective with an open government. The IMF and World Bank also believed that the controlled policy regime was not good for Zimbabwe's economy and advised for macroeconomic policy restructure through a program termed Economic Structural Adjustment Program (ESAP) (Mumbengegwi & Mabugu, 2002). The Corporatism macroeconomic policy regime was replaced by a more liberal regime that supports free markets in 1991. The ESAP program did not perform as expected. Economic growth decline from annual growth of 4% in 1991 to a mere 0.8 % in 1992 (Mumbengegwi, 2002). Furthermore, the other economic performance indicators showed an increase in unemployment rate and poverty level when compared during the corporatist policy era.

2.5.2.1 Socioeconomic development between 1980 and 1999

The ZANU PF led government had various interventions for the transformation of the economy. It increased the public sector employment by 60 %, education and health spending was increased by 10 % and the spending by the government increased significantly (Brett, 2005). The government bought a number of private firms and manage to run them more efficiently as compared to other African countries. It had adopted a socialist policy approach and the state intervened on

most aspects that affect development. Against all the odds, the corporatist system which is expected to lead to rent-seeking, predation of smaller companies by big companies and stagnant growth, performed fairly well. The new government continued with the inward-looking policy that controlled the imports for domestic manufacturing industry growth. The growth rate of Zimbabwe's economy from 1980 to 1984 was averaged at 4.7 % and 4.% from 1985 to 1990 (Robinson, 2002).

The structural macroeconomic reforms of 1991 under the ESAP program was succeeded by the Zimbabwe Program for Economic and Social Transformation (ZIMPREST) in 1996 (Mumbengegwi & Mabugu, 2002). The ZIMPREST brought about positive change, with an annual growth rate of 7.3 % in 1996 and a significant increase in export's share of GDP from 23.9 in 1991 to 36.1 % in 1996. Economist had hoped that the Zimbabwean economy would continue to grow at a rate of 6 % per annum but blamed the government for a decision that it took. Decisions such as paying large sum of the money to the liberation war fighters, send Zimbabwean Army to war in DRC, the land redistribution and tax policy changes are seen to be the ones that brought Zimbabwean economy to its knees (Mumbengegwi & Mabugu, 2002).

2.5.2.2 Mining and manufacturing (1980- 1999)

The multinational companies such as Ashanti Goldfields, Falcon, Rio Tinto and Delta dominated Zimbabwe mining industry during this period. The production costs went up towards the end of the 1990s. Economic and political instability, which was threatening the nationalization of mines, resulted in ten gold mines and one copper mine closing between 1999 and 2000, which reduced export earnings by 37%. Mining contributed around 30% of export earnings and 5% of employment that meant employment was lost and had negative effects on the balance of trade. The major mining commodities export were gold, asbestos, nickel, Ferro-alloys, copper, coal and coke and other metals (Economic Commission of Africa, 2002).

Manufacturing had continued contributing around 25% to the GDP in 1980s and early 1990s as it was during the 1970s but it dropped to around 14% of GDP in late 1990s. In response to the poor performance of the manufacturing sector, the government implemented ESAP and ZIMPREST structural reforms which mainly

were to lower production and capital cost and to attract local and foreign investment into the sector (Economic Commission of Africa, 2002).

2.5.3 Zimbabwe's economy (2000-2008)

Zimbabwe experienced it's worse ever economic turmoil since around 1999 to 2008 which left unemployment at above 90 % and inflation at 231 000 000 % by the end of 2008 (Munangagwa, 2009). The living condition of most citizens deteriorated and the masses migrated to neighbouring countries and overseas. It is estimated that 37.8 % of Zimbabwe's population fled the socio-economic hardships in seek of greener pastures (International Organization for Migration, 2008). Table 2.2 shows how selected macroeconomic indicators deteriorated for 2000 to 2006. It can be seen that the GDP of Zimbabwe shrunk between 2006 and 2008 with a trend of negative growth over the same period of time.

Table 2.2 Selected Macroeconomic Indicators at the beginning of economic turmoil (Munangagwa, 2009)

Indicator	2000	2001	2002	2003	2004	2005	2006
GDP(current US$ mil)	8 135.8	12 882.6	17 875.6	7 913.1	4 712.1	3 372.5	7 033.7
GNP	7 150.0	12 800.0	30 800.0	7 850.0	4 640.0	3 180.0	n.a.
Population (Mil)	12.59	12.69	12.78	12.86	12.93	13.01	13.08
Current account balances (%GDP)	-0.4	-1.0	-2.6	-4.6	-5.6	-7.5	-4.0
Fiscal deficit, including grants (% of GDP)	-18.6	-7.0	-2.7	-0.2	-7.6	-6.1	-3.1
GNS per GDP (%)	11.1	7.0	4.9	-1.4	-3.2	-6.7	4.0
GDP growth rates	-7.3	-2.7	-4.4	-10.4	-3.8	-6.5	-5.1

Education and health deteriorated with most professionals leaving their jobs to neighbouring countries. The worst happened in August 2008 when all the 10 provinces were hit by an outbreak of cholera. At the end of the outbreak, 98 592 cases including 4 288 deaths had been reported (World Health Organization, 2009). The clinics and hospitals were understaffed, which made it difficult to treat patients. Agriculture, tourism and manufacturing were the key contributors to the GDP in 2001 as shown in Figure 2.6. Mining's contribution was very low as it contributed 4% of the GDP. The contribution of other sector declined due to the land

distribution that took place since the year 2000. Tourism also declined due to the deterioration of political stability in the country.

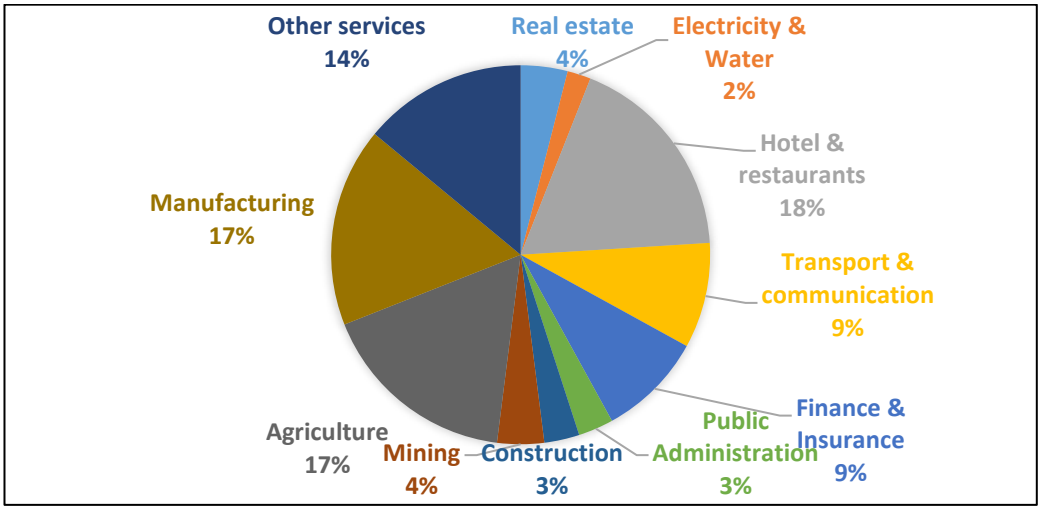


Figure 2.6: Zimbabwe GDP structure in 2001 (African Development Bank, 2003)

2.5.4 Zimbabwe's economy (2009 – 2017)

After the 2008 elections, the ZANU-PF formed a Unity Government better known as the government of national unity (GNU) with the two factions of MDC, the MDC-T led by Morgan Tsvangirai and MDC-M led by Arthur Mutambara. The unity government left the country's currency and introduced a multi-currency system with the US dollar being the popular currency. The economy was on the recovery path with the first economic growth registered in as many years. The recovery was made possible by macroeconomic policies which were a target on recovery and stability. The GNU adopted Short Term Emergency Recovery Programme (STERP I and II) which brought macroeconomic stability (Government of Zimbabwe, 2011).

In 2013, ZANU-PF won the elections and dissolved the unity government. The Zimbabwe' ruling party came up with a development plan termed Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET) (Government of Zimbabwe, 2013a). Under this plan, the government identified mining as one of the economic growth drivers and the need to improve in revenue collection in the mining sector. Mining is still the largest export earner as shown in

Table 2.3. Table 2.3 also shows that Zimbabwe has a balance of payments deficit. This comes as the export drops by 6 % in 2014, which was attributed to the falling commodity prices. The trend in merchandise import and export from 1990 to 2014 is shown in Figure 2.7. Prior to 2000, the exports and imports were almost balanced but due to macroeconomic instability and other challenges such as low commodity prices have caused a huge trade deficit. The government was pursuing Indigenization and Empowerment Policy, which requires foreign companies to collaborate with indigenous people and Mineral Beneficiation Policy that encourage value addition to the raw materials produced in Zimbabwe. The Country Policy and Institutional Assessment (CPIA) rating of the World Bank rated Zimbabwe a fragile country due to the perceived policy instability in 2015 (World Bank: Africa's Pulse, 2015).

Table 2.3: Zimbabwe balance of payments in (USD Mil) (Mangudya, 2017)

	2013	**2014**	**2015**	**2016**	**2017**
	Actual	**Actual**	**Actual**	**Est**	**Proj.**
Current Account Balance	-2 539.2	-2 247.5	-1 519.4	-1 283.9	-826.5
Trade Balance (Goods)	-2 947.1	-2 589.1	-2 448.1	-1 985.1	-1 537.3
Merchandise Exports F.O.B	3 861.8	3 717.2	3 614.2	3 365.8	3 669.5
Of which, Agriculture	1 047.5	981.2	1 015.9	1 036.3	1 113.5
Mining	2 223.3	2 113.4	2 089.2	1 910.1	2 098.6
Manufacturing	487	532.8	417.1	325.1	360.7
Merchandise Imports F.O.B	6 808.9	6 306.3	6 062.3	5 350.9	5 206.8
Of which, Food	658.1	352.3	586.3	629.1	375.2
Fuel	1 364.7	1 393.6	1 460.9	1 455.9	1 539.5
Capital & Financial Account	1 687.6	2 095.8	1 632.3	891.2	711.2
Error and Omissions	656.2	111.5	-138.6	206.3	0
Overall Balance	-195.4	-40.3	-25.8	-186.4	-115.2

Mining was still employing a significant number of people as shown in Table 2.4. The average salaries have been improving over the years, which is a positive development since on average one worker takes care of 10 people (Segula, 2016). Increased salaries give higher chances to reduce the levels of poverty. The small-scale mining industry is labour intensive and therefore provides an opportunity for employment. Formalising, small-scale, and artisanal mining will give rise to

employment thereby reducing poverty. The multiplier effect of mining further means that there are a lot of indirect jobs that are created when mining is taking place.

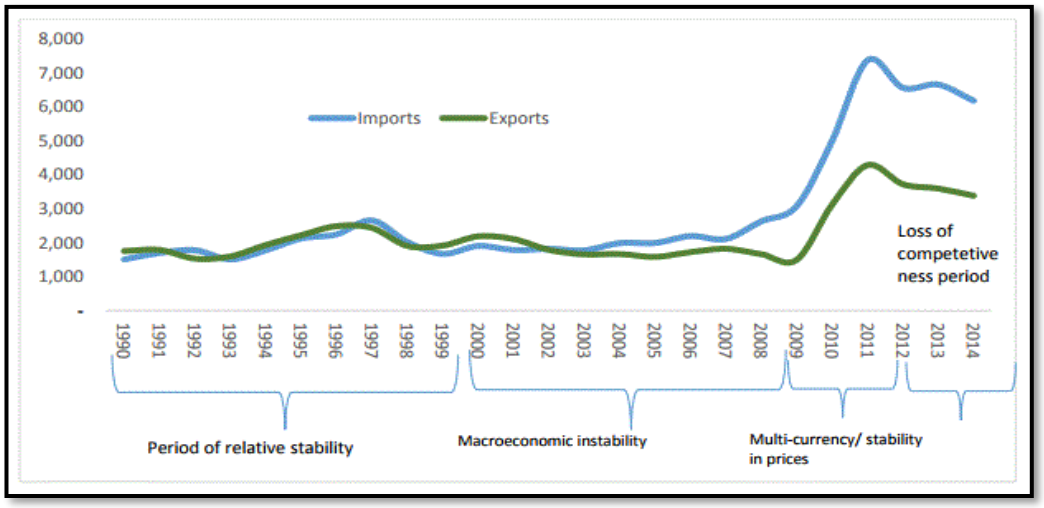


Figure 2.7: Merchandise Import and Export: 1990 to 2014 (US$m) (World Bank: Africa's Pulse, 2015)

Table 2.4: Employment in Zimbabwe mining industry 2009-2015 (Dube, 2016)

Year	Number of Employees	Total Earning (Mil. USD)	Av. Earnings /worker/month (USD)
2009	37 000	87.9	197.9
2010	39 500	231.2	487.6
2011	42 975	302.8	587.2
2012	42 975	355.3	688.9
2013	39 800	354.6	742.5
2014	39 200	381.5	811.1
2015	37 500	371.3	825.1

2.6 Zimbabwe's mineral resources' comparative advantage

Africa is known to have a comparative advantage due to its vast natural resources. Growth economics expects believes that the African countries can turn their economic future for the better if its natural resources are managed with high efficiency. The resource-rich countries should focus on building capacity by

investing in infrastructure, research and development (R&D), science and technology for them to able to transform the economic structure from natural resources based economy to the skills-based economy (Economic Commission for Africa, 2011) .

The comparative advantage law is attributed to David Ricardo, an economist who was a pioneer in contribution in the idea of freedom of trade due to the advantage of having resources. The law explains the potential of an economy to produce goods and services cheaper compared to other economies due to the abundance or scarcity of resources. This law is known to be the key principle of international trade theory (Rothbard, 2012). The Ricardian model of comparative advantage assumes that the only factor of production is labour, suggesting that there will be a constant cost, which usually results in specialisation (Rothbard, 2012). This assumption is not always true due to the law of diminishing returns, which suggests that there is always a shortage of some goods and services to the industry, which makes it difficult to completely specialise. These differences, especially in technology will therefore, provide the potential difference between nations, which drives the movement of commodities from country to country (Gupta, 2013).

Economists investigated and attempted to explain reasons why some countries have an advantage in producing and exporting certain goods. Generally, the reasons are classified as technology superiority, resource abundance (endowment), demand patterns and the commercial policies of the country (Gupta, 2013). Resources endowments provide comparative advantage to countries with less technological expertise. The cost of producing products may be cheaper in countries with resources especially when producing bulky commodities as the transportation and logistics costs are reduced. Shaik (2004) stated that skills-based economies that are highly industrialised have high wages, which is not the same in developing countries. Therefore, the developing countries are forced to compete in sectors with low labour costs like agriculture when it comes to international trade. However, Dani & McMillan (2011) did not support the countries to stick to comparative advantage. An example of China that has a comparative advantage of cheap labour for agriculture was given. If China had focused only on its comparative agricultural labour, it would not attain its position as an economic giant. South Korea

strategically built skills that filled in their value chains rather than basing its growth on its capacity to produce rice.

Although Hausmann, et al (2008) disagreed with the proposition that comparative advantage can be a reason for downstream beneficiation, and further acknowledges that downstream beneficiation is the key to economic transformation. Zimbabwe has a comparative advantage in terms of the availability of over 40 minerals. It is up to the government to turn the comparative advantage into a competitive advantage through sound policies that encourage foreign direct investment and R&D. Competitive advantage is required if the products manufactured in Zimbabwe are to stand a chance in regional and international markets.

2.7 Brain drain and impact on economic development

Zimbabwe has a higher literacy rate as compared to its regional counterparts due to its strong investment in education after independence from Britain in 1980. The education and skills training had been a priority of the government as it was realized that economic growth is tied to education and skills of its populace. Ndulu (2002) concured with the notion that economic development of a country is dependent on the level of skills of its labour force. Highly skilled labour force can transform the economy of a nation in several ways. The skilled labour force gives a country a competitive advantage especially in the manufacturing industry by producing high-quality products that can compete on the international markets. Over the years, African countries have suffered from the effects of brain drain. Brain drain has been described by Ndulu (2002) as the movement of highly skilled professionals from their home country to another country seeking a high standard of living. There are several reasons for a human capital flight, which were explained by Wagle (2009). These reasons are broadly classified as pull or push factors, which are further classified, into four different areas, which are Socio-political, Cultural, Economic and Environmental. Ndulu (2002) further insisted that developing countries could not manage to stop the problem of brain drain. This can also be drawn from lessons learnt on the financial capital flight, which cannot be stopped from moving to a better investment environment.

African countries cannot arrest the capital flights by putting hurdles to contain it but to create a conducive environment for investment. One of the ways of reducing human capital flight is to address the push factors and increasing demand for local skilled talent. There are millions of Zimbabweans in many different countries in the world but mostly in South Africa, United Kingdom, North America, Botswana and Namibia (Mugwagwa, 2014). The Zimbabwean diaspora community has increasingly become important to the economy of the country. Any reasonable policy for economic transformation should address the ability of the country to attract the best talent and be able to keep them (Mugwagwa, 2014). The Zimbabwe mining industry is not an exception; many of its professionals are working abroad and there are the people who can drive research and development for increased productivity of the mining industry.

2.8 Resources curse

Fewer resource-rich countries have managed to transform their poor conditions due to several reasons. It is now known that not all mineral resources exploitations lead to economic and human development. In the 1980s, mineral resources based economies were found to be facing macroeconomics and fiscal challenges. This was attributed to mainly the uniqueness of the minerals industry (Dietsche, 2014). Mining is capital intensive therefore; it takes a longer period for the investor to fully recover the initial invested capital as compared to other industries. The timing of revenue is also unique because of long lead-time when an investment is made and when the revenues start flowing in. Revenues are not stable, as commodities, prices are volatile which makes it difficult for governments to plan well. Governments of resource-based economies are usually caught in the trap of forecasting revenues with high commodity prices, which makes them, commit to high spending. When prices drop, the government have challenges in adjusting, which is usually politically and economically costly (Dietsche, 2014).

Dutch suffered a macroeconomic challenge after the discovery of natural gas. It harmed the non-natural resources tradeable goods due to the overvalued exchange rates, which then reduce the international competitiveness of those industries (Dietsche, 2014). This effect is now known as the Dutch disease, which some researchers believe to cause resource curse. Kolstad & Soreide (2009) suggested

that resource curse in developing countries cannot be linked to the Dutch disease phenomenon but rather on the weak institutional framework and corruption. This can be true and easily related to the situation in Zimbabwe's alluvial diamond discovery in 2007. Weak governmental institutions failed to capture revenue; as a result, an estimated US$15 billion was unaccounted for (African News Agency, 2016). This strengthens the point that was raised by Dietsche (2014) that policies in resource-rich developing countries should address dysfunctional behaviour (corruption) and institutional failure. The challenge is in the implementation of policies because politicians and the politically connected individuals are usually involved in corruption in form of rent-seeking and patronage. By summing up the suggestions by Kolstad & Soreide (2009), the government has to put institutions that are not captured by bureaucrats and politicians for a successful mineral resource management.

2.9 Economics of exhaustible resources

Hotelling (1931) was the first to publish the economics of exhaustible resources journal paper. He raised questions that are still relevant today. His work has made significant contributions towards mineral economics (Devarajan & Fisher, 1981). Hotelling wanted to evaluate the discussion on policies and to develop a theory of natural resources. Hotelling's developed a rule now known as Hotelling's rule, which states; "*price of exhaustible resources must grow at the same rate of interest, both along an efficient extraction path and in competitive resource industry equilibrium*" (Devarajan & Fisher, 1981, p66). This is expressed in an equation as follows:

$$p_t = p_o e^{rt} \tag{1}$$

where, p_t is the price in time *t;* p_o is the price at the beginning of the period and *r* is the interest rate (Hotelling, 1931). He inferred that the resources would deplete at an optimum rate. Hotelling (1931) believed that monopoly depletes the resources slowly as compared to competitive markets as shown in Figure 2.8. Some economists found problems with the Hoteling's rule. It did not address certain issues such as uncertainty. The rule only apply on production along an efficient

extraction path for a resource and in a competitive resource industry equilibrium, which is not the case.

The issue of scarcity is crucial in the discussions on the economics of minerals. There are two types of scarcity in mineral resources, namely geological scarcity and economic scarcity (Henckens, et al., 2016). Economic scarcity is caused not only by geological scarcity but also by several factors such as politics. The demand and supply of the minerals determine the prices assuming a perfect market. Supply is usually affected by monopoly or oligopoly and interruptions in production due to factors such as strikes, accidents and bad weather.

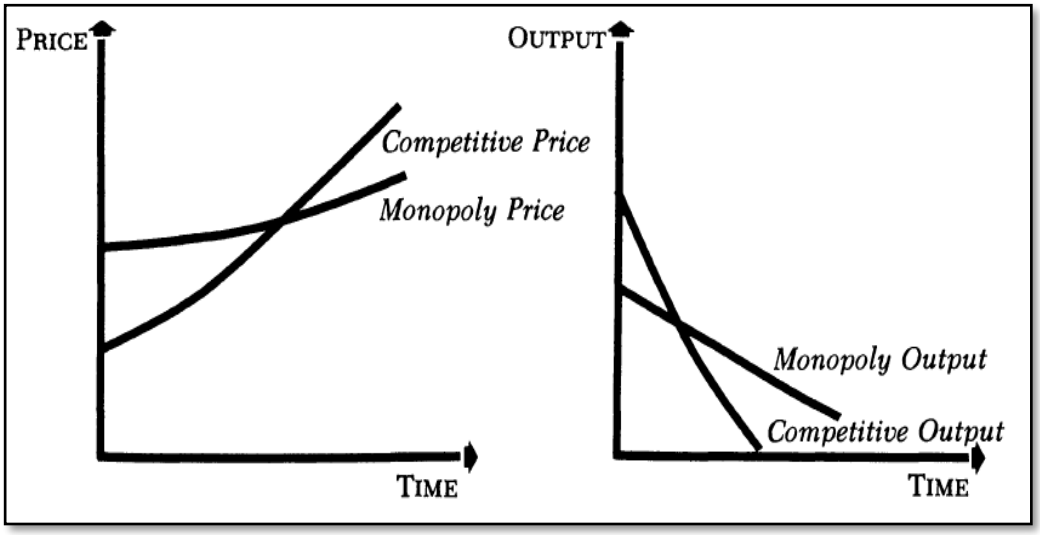


Figure 2.8: Competitive and Monopoly Price and Output Paths (Devarajan & Fisher, 1981)

Questions raised by Hotelling (1931) about the economics of exhaustible resources occupied the economist since then and are still relevant to date. Some of the questions posed are as follows (Hotelling, 1931):

- What percentage of the mineral revenues can be regarded as income and what percentage can be return on capital?
- If the tonnages and grades of the deposit are fully known, what would be the value of the mine and what effect does estimates have on uncertainty?
- How does the extraction rate, which gives the most returns, change as the resource depletes?

- What is the best way for conducting exploitation, which is meant for the goodness of all stakeholders, and how does it differ from the one of profit seeking entrepreneur?
- How the government can prompt by means of regulations and or taxation the mine owner to produce in synchronization with public interest?
- What predicament will the people who depend on the mine operation face when the resources are depleted?

After analysing various mineral policies in modern-day countries, it can be noted that the policymakers are aware of these challenging questions and efforts are in place to address them.

2.9.1 Mineral rent

The concept of mineral rent evolved long back. Smith, 1776 attempted to define rent in his book "*An inquiry into the nature and causes of the wealth of nations*". Although Smith (1776) focused on Britain's industrial revolution and its competitiveness, he also touched on rents. The concept of mineral rent came as result of concerns on how to share the agricultural returns came up with the concept of rent and the concept was extended to minerals (Robison, 1989). Ricardo had a different understanding of rent in relation to agriculture. He defined rent as a portion of the produce given to the owner of the land for using what is originally in the soil (Robison, 1989). Under this definition and analysis, mineral resources were not differentiated from agricultural goods. This understanding led to what is now known as mineral royalties in mining. Smith (1952) thought there is no difference in the treatment of land and mines when assessing their rents, which do not take into account that minerals are exhaustible commodities different from agriculture which can be reproduced again. Although Smith, 1952 did not adequately consider the difference between agricultural good rent and mineral rents, the definition was crucial in the proper definition of mineral rents by other scholars.

2.9.2 Rent distribution

Cawood & Minnit (2002) explained that high cost mines i.e mines that have high operating cost which matches the revenues generated would not get rent. On the other hand, a mine with high grade and low production cost or closer to the market

pays rent. The proposed concept had a view that the highest cost mines will determine the rents that are to be paid by other mines as shown in Figure 2.9. The high-cost mine is the Marginal mine, which do not generate rent. Both the high grade and low-grade mines generates rents but differs in the amounts.

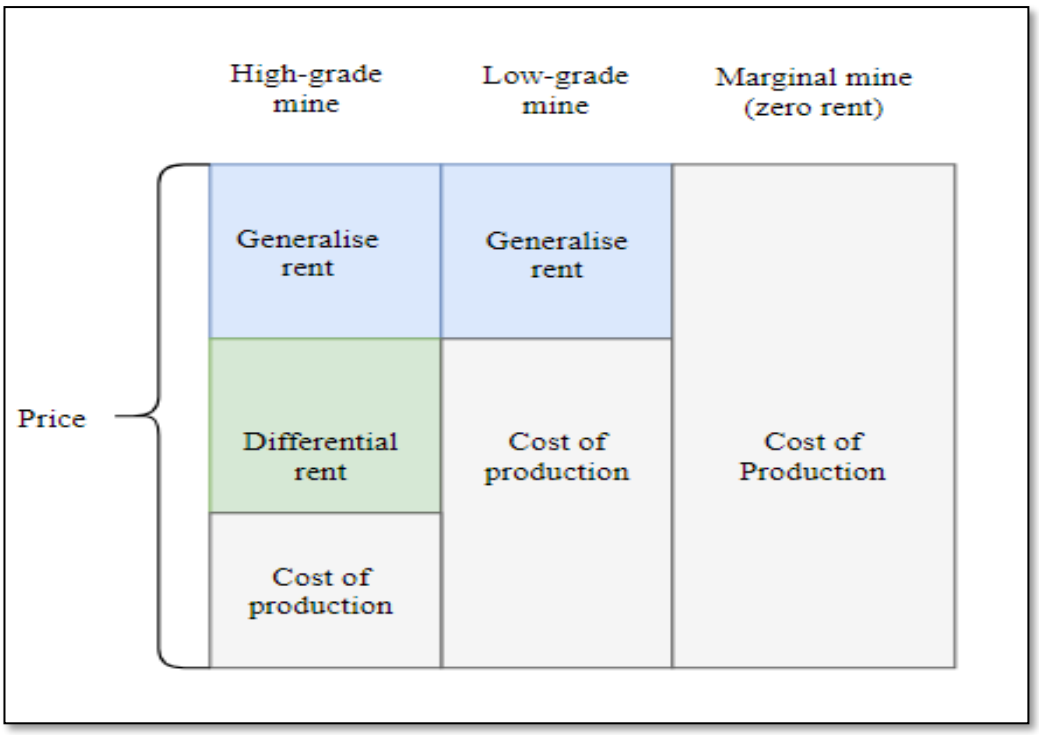


Figure 2.9: Generalised rents, differential rents and zero rents for different mines (Harman & Gul, 2006)

Mining is taxed differently from other business because of the depletion of the natural resources and the need to compensate the owners of the resources. Mineral rent is defined in general as the difference between the market price and the cost of production. The rents are identified, captured and shared among the stakeholders which are the host government, the mining companies, citizens and the landowner (Cawood & Minnit, 2002). The government should be able to come up with models that capture the fair share of rents and distribute to the stakeholders at the same time leaving the industry competitive. The sharing of the rents is mainly influenced by the legal system, the fiscal policies and the national objectives (Cawood & Minnit, 2002). The revenues and rents derived from mining are usually large sums of money that can be used by government to invest in social sector and improve the lives of the populace.

Slow growth or negative growth of mineral-rich developing economies had been a cause of concern for many mineral economists. This had attracted many authors to research on the distribution and utilization of mineral rents (Moribame, 2011). Moribame (2011) further explained what he described as pillars of sustainable development which are; extract contract, transparency in revenues sharing and spending, the creation of a Sovereign Wealth fund and investments in public sectors such as infrastructure.

2.10 Chapter conclusions

This chapter focused on the economic transformation and human development principles. It was established through literature that the economic transformation of the Zimbabwe requires a shift from labour-intensive resource-based economy to a knowledge and skills based economy. The shift can be done by providing linkages of the primary industries such as mining and agriculture with other sectors of the economy. Literature has shown evidence that links mineral resource extraction to human development but many developing countries fail to follow proper channels that leads to both economic growth and human development. The economic history of Zimbabwe was reviewed and it has been shown that there are three major sectors, which had been contributing to employment, and GDP, which are mining, manufacturing and agriculture. Mining had been the major foreign currency earner, which is crucial for the balance of trade. The skills that are required in Zimbabwe are continually livelihood the country, looking for a better leaving in regional and international destinations. The chapter concluded with a discussion of the work done by Hotelling (1931), which emphasized that the resources are exhaustible and the rents generated should be shared in a manner that recognizes that the resources are depleting. An understanding of the industry is therefore of paramount importance before the discussion of how it should be managed and the policies that should be followed and hence the next chapter. Chapter 3 analyzes the mining industry of Zimbabwe focusing on the key regulatory player and the minerals production.

3 ZIMBABWE EXTRACTIVE INDUSTRY

3.1 Introduction

According to the recent report by BMI Research (2017a), Zimbabwe is becoming a key mining country in southern Africa. The Industry is showing signs of growth in minerals production and an improvement in attracting foreign investment although the investors may be sceptical to investor and rather be watching the political developments closely. With the right policies and sound knowledge of running the sector, Zimbabwe has a huge potential of turning around the country's economic performance. On that note, this chapter discusses the mining industry of Zimbabwe focusing on minerals production and the key players in the industry.

3.2 Minerals and mining in Zimbabwe

Zimbabwe has over 40 different minerals, which makes it a very diverse minerals sector and are generally classified as shown in Table 3.1. Zimbabwe has a wide range of mineral resources, which includes metallic, coal, industrial, and gemstones (Veasey, 1997). The Great Dyke in Zimbabwe is a remarkable rock intrusion. The formation stretches for more than 550km and ranges from 2 - 12 km in width (Live Science, 2010). The largest high-grade chromite resources in the world are found in the Great Dyke and the second largest resources of platinum group metals alongside copper and nickel (Veasey, 1997). Other minerals mined in Zimbabwe are, gold, tin, granite, tungsten and much more. Zimbabwe has a potential of a discovery of new deposits with only 50 % of the country having been surveyed and mapped.

Table 3.1: Classification of Main Minerals in Zimbabwe (Chigumira, et al., 2016)

Precious Metals	Precious Stones	Base Metals	Industrial Minerals	Hydro-carbons	Dimensional Stones
Gold	Diamonds	Copper	Asbestos	Coal	Black Granite
Silver	Emeralds	Nickel	Graphite		
Platinum		Tantalite	Phosphate		
Palladium		Lithium	Limestone		
Rhodium		Iron Ore	Feldspar		
		Chromium	Magnesite		

There are more than eight hundred mining operations comprising of large, medium and small-scale operations (Segula, 2016), which has a contribution that goes far beyond revenue. Several towns, hospitals, dams, and schools were built by mining companies (Segula, 2016). Towns like Hwange, Bindura, Zvishavane and many others have been established because of mining. There are several benefits that are then derived from the mining operations such as providing health to the community. Hwange Colliery has its own hospital where it also trains medical personnel and treats any member of the public. This goes a long way in helping the surrounding communities with healthcare. Mining provides linkages to the economy for example coal mining in Hwange. Coal mining in Hwange established an energy generating industry. The power station was built in Hwange due to its close proximity to coal, which provides not only employment, but also the power to the nation and other industries built around it. Coal transportation relies heavily on the railroads and it creates an opportunity for employment and infrastructure development. Zimplats has also contributed significantly to infrastructure development. It built 10 000 houses for its workforce and provide services such as water, electricity and roads (Implats, 2009). Furthermore, the company helped in upgrading local clinics and schools. In addition, Mimosa has helped the Zvishavane community by building a mortuary and equipping it with the refrigeration facilities (Implats, 2009).

The past decade had been characterised by political instability, which makes Zimbabwe ranked as a high-risk country for investment. Zimbabwe has failed to sufficiently attract foreign direct investment (FDI) which is much needed to revitalize the mining industry and the economy at large (KPMG Zimbabwe, 2016).

Since the early 2000s, Zimbabwe had been failing to attract FDI in the mining sector and the rest of the sectors are suffering due to the reduced multiplier effects. Due to the uniqueness of the mining industry, investors in mining consider many factors before deciding to invest. The highly ranked factor is the geological potential of the country. Zimbabwe has a high geological potential of many different minerals with only 52% of the country having mapped (Segula, 2016). In addition, political stability, economic environment and contractual terms of mining rights greatly influence the decisions of the investors (Otto & Cordes, 2002). Some investors are

interested in a fast payback of invested capital or a minimum threshold rate of return yet others in maximizing the life of mine, which makes them to be more focused on the security of tenure than the internal rate of return (Kumar, 1989). For a successful investment in the mineral resources industry, policies should be stable and predictable and have a sound fiscal policy that guarantees investors of getting their investment in reasonable time. The Zimbabwe's policies are unstable and unpredictable, which is why it is ranked very low on global political stability perception index, which deems the country not investor friendly. The government and the companies' perspectives on the mining industry is summed up in Table 3.2. The government's aim in the mining industry is to maximize the benefits that may be obtained from the mining operation for the improvement of the lives of the citizens. The mining companies venture into mining for a profit and they seek favourable jurisdictions which has less risk to the investments.

Table 3.2: The Government and Company's perspective on mining (Otto & Cordes, 2002)

Company' viewpoint	Government's viewpoint
1. Clear Security of Tenure	1. Maximising the benefits derived from mining operation
2. Transparency, predictable, stable policy backed by law	2. Protect the environment and make sure the companies conduct rehabilitation
3. Policies that reflect the financial risks involved, provide a reasonable rate of return and rewards managerial efficiency.	3. Creating linkages between mining with the rest of the economy including employing locals, beneficiation, local contest, and technology transfer.
4. Control of over the operation and selling of product	4. Culture preservation, and providing for post-mining social and economic sustainability
5. No restrictions on paying debt and reparation of profits	

3.3 Crucial Players in Zimbabwe Mining Industry

3.3.1 Chamber of Mines of Zimbabwe

The Chamber of Mines of Zimbabwe is an organisation made up of members drawn from the mining industry private sector. The members are mining companies,

mining goods suppliers. The objectives of the Chamber of Mines are to promote and protect the mining industry by encouraging and advocating for a policy environment that is stable, favourable and investor friendly. Chamber of Mines of Zimbabwe was formed in 1939 (Chamber of Mines Zimbabwe, 2017).

3.3.2 Zimbabwe Investment Authority

To promote the investment in all sectors of Zimbabwe's economy, the government established the Zimbabwe Investment Authority (ZIA) in 2006. ZIA is a one-stop shop for both foreign direct investment and local investment. The idea for creating ZIA was to reduce the long bureaucratic process of starting a company that used to shun away potential investors and leads to corruption. The functions of the ZIA are to deal with the process of application of investment licences, promote investment by planning and implementing strategies that attract domestic and foreign investment among several other functions (Government of Zimbabwe, 2006)

3.3.3 Zimbabwe Geological Survey

The Zimbabwe geological services is a department under the Ministry of Mines and Mining Development which is responsible for collecting and storing data pertaining mineral resources in Zimbabwe (Ministry of Mines and Mining Development, 2016). Different state departments, industry and consultancies use the information stored by the Zimbabwe Geological Survey for planning purposes. The information is crucial for sustainable development of the country's minerals, energy and water resources.

3.3.4 Ministry of Mines and Mining Development

Ministry of Mines and Mining Development is the regulator responsible for formulating mineral policy and administer minerals laws. One of the key objectives of the ministry is to be able to generate revenue for the country through mineral exploitation. The ministry also supports and encourages the local processing of raw material to increase the revenue collected by the government and increase employment creation (Ministry of Mines and Mining Development, 2016). Zimbabwe's mineral policy can be found primarily in the Mines and Minerals Acts [Chapter 21:5] of 1961 and in several government policies and strategy documents. Mining Regulation in Zimbabwe scored the least on the mining risk according to

BMI Research (2017b) as shown in Figure 3.1 which means that is percieved to be not a safe investment destination due to mining regulations. The mineral policy and associated regulations is discussed in detail in Chapter 4.

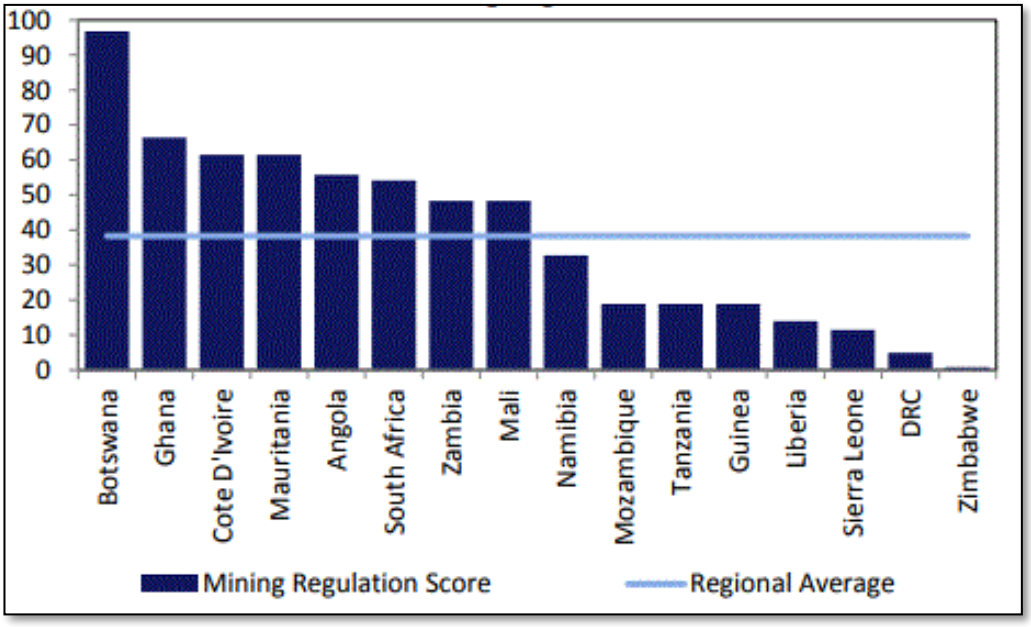


Figure 3.1: Mining regulation scores for Sub Saharan Africa (BMI Research, 2017b)

3.3.5 Minerals Marketing Corporation of Zimbabwe

Minerals Marketing Corporation of Zimbabwe (MMCZ) was established in 1983 through the act of parliament to oversee the marketing and sales of minerals produced in Zimbabwe. The MMCZ wholly owned by the State and falls under the Ministry of Mines and Mining Development, which it advises on issues concerning minerals marketing and royalties' collection on behalf the revenue authority. MMC is responsible for the selling of all minerals mined in Zimbabwe with the exception of silver and gold, which are Reserve Bank of Zimbabwe's responsibility (Minerals Marketing Corporation of Zimbabwe, 2014).

3.4 Productions of selected minerals

Zimbabwe is believed to have a high potential of discovering minerals since about 60 % of the country's land surface is made of the Archaean age basement. This basement, known as Zimbabwe Craton has greenstone belts, which are well known for their richness in minerals such as gold and base metals (Mugumbate, 2008). Mupaya (2008) stated that the country is under-explored and further cited that the

early exploration was based on targeting old working after obtaining information from the villagers. This kind of exploration has not changed up today which is why it is believed that Zimbabwe still has a great potential of mineral discovery if the latest technology is used in exploration. A highlight of some exploration, development and production mining projects in Zimbabwe are shown in Figure 3.2.

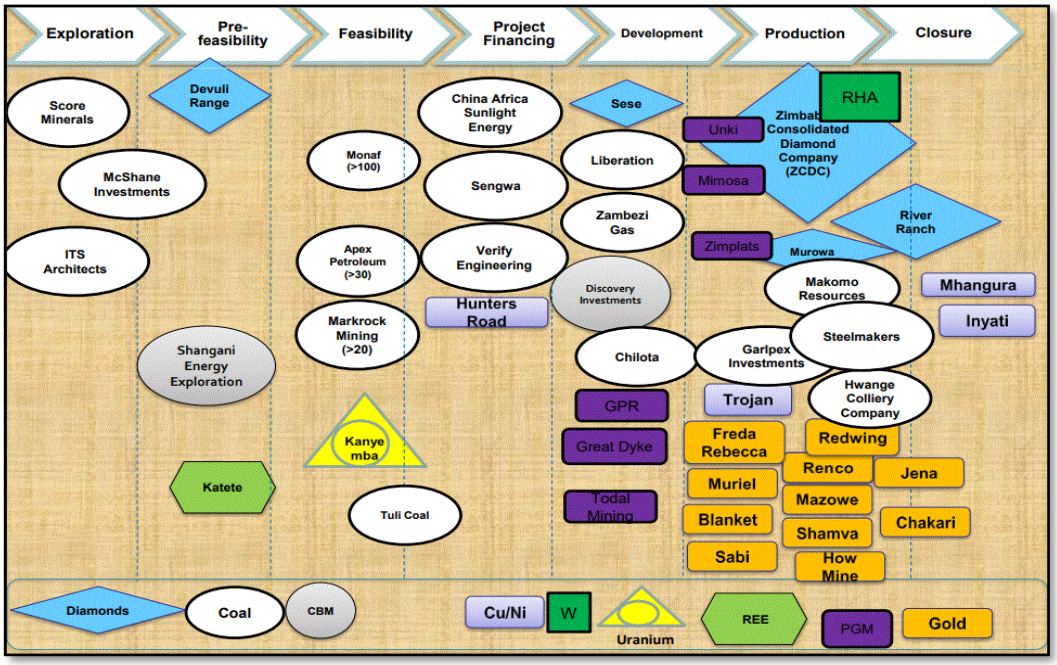


Figure 3.2: Mining projects at different level of the value chain in Zimbabwe as of July 2017 (Mugandani, 2017)

3.4.1 Coal production

Coal is mainly found in Hwange and Sengwa Coal deposits North Western Zimbabwe with resource estimate of 1.3bn tonnes (Barber, 2016). Hwange Colliery had been the only major coal miner for more than a century in Zimbabwe. Recently, other companies such as Mokomo, Glyder, and South Mining were given prospecting and mining rights (Ministry of Mines and Mining Development, 2016). Coal is mainly for the generation of electricity at the Zimbabwe Electricity Supply Authority (ZESA) thermal power station, agricultural heating and industrial uses such as coke in the blast furnace.

Hwange Colliery Company had been facing serious financial challenges that affected its operations and decreased the supply of coal to ZESA. The effort is underway to bring to life the giant coal mining company with the recent

commissioning of new mining equipment and change in management. The ageing National Railways of Zimbabwe (NRZ)'s infrastructure and decreased demand for coking coal due to the closure of Zisco Steel adds to the causes of the decrease in financial performances of Hwange Colliery.

3.4.2 Platinum production

Platinum is mined as the main product in the PGMs mining in the Great Dyke. The PGMs are found in the Main Sulphide Zone of the Great Dyke, which is usually 3m thick. Platinum constitutes around 55 % of the PGMs mined in the Great Dyke. Nickel, gold, and copper are mined as by-products (Johnson Matthey, 2016). Zimbabwe has the second largest platinum reserves in the world and these resources are less than 1000m compared to South Africa deposits, which are up to 3000m below the surface. The shallow depth of the PGMs in Great Dyke makes Zimbabwe platinum mining low-cost producers that can be observed on the cost curve in Figure 3.3. There are three major platinum mines in Zimbabwe, which are Mimosa, Zimplats and Unki. Mimosa is a low-cost underground mine in Zvishavane owned by Impala Platinum and Sibanye Stillwater. The deposit was discovered in the 1920s and currently, the annual production is 100 000 oz. (Ministry of Mines and Mining Development, 2016).

Another platinum mine was developed in the early 1990s by BHP, which later sold the mine to Impala Platinum and named it Zimplats. In 2011, Zimplats produced 185 000 oz. of platinum and it is currently expanding to an estimated annual production of 270 000 oz. of platinum per year. Unki is a new player in Zimbabwe platinum mining. The mine is owned by Anglo America, and it started production in 2011 and manage to achieve an output of 50 000 oz. of platinum (Johnson Matthey, 2016).

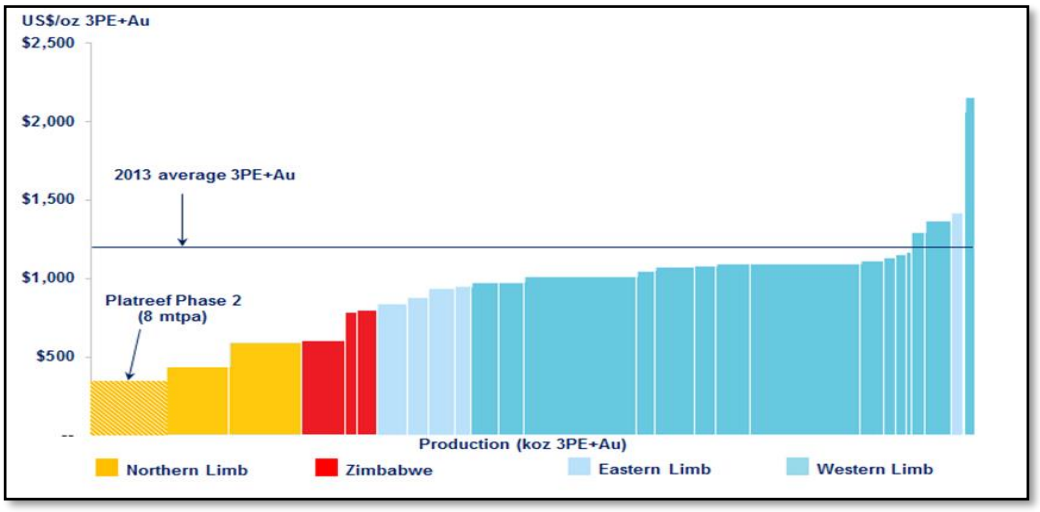


Figure 3.3: PGMs+ Au cost curves for mines in production and selected projects in SA and Zimbabwe, US$/3PE+Au oz. (Humphreys, 2014).

3.4.3 Chrome production

Chromium is mainly used in steel production due to its hardness, high melting point and high resistance to corrosion (Barrera, 2017). In Zimbabwe, chromite deposits are found in the Great Dyke in both podiform and stratiform mineralisation. The podiform deposits are running out and more focus is now on the more friable stratiform chromite deposits. Chrome reserves are estimated at 1billion tonnes, which means that Zimbabwe has the second world largest high-grade ore after South Africa. Although Zimbabwe is second when it comes to reserves of chromite ore, it is not in the top five-chromite ore producing ranks as shown in Table 3.3.

Chrome is value added to ferrochrome by four major players and several small players. ZimAlloys and ZIMASCO are the largest, had been in the industry for a long time, and owns the largest chrome claims in the Great Dyke. The other major smelters are Maranatha in Kadoma and Oliken in Kwekwe and there are also some new small-scale smelters such as Jin An Corp & Xinyu, MonaChrome, Wel Mining, and CINA (Chitambira, et al., 2012).

Table 3.3: World Chromite Ore Reserves and World Chromite Production 2007 and 2012 figures (Index Mundi, 2012)

World Chromite ore reserves				World Chromite ore output					
Country	Mt	%	Rank	2012 production (mt)	%	Rank	2007 Production (mt)	%	Rank
South Africa	5 500	72.4	1	11	42.7	1	8.7	39.9	1
Zimbabwe	930	12.2	2	0.5	2.1	7	0.9	4.1	6
Kazakhstan	320	4.2	3	4	15.5	2	3.8	17.4	2
Finland	120	1.6	4	0.6	2.3	6	0.6	2.8	7
India	67	0.9	5	3.9	15.1	3	3.3	15.1	3
Turkey	20	0.3	6	2.5	9.7	5	1.3	6.0	5
Brazil	12	0.2	7	0.5	1.9	8	0.6	2.8	7
Others	626	8.2	8	2.7	10.5	4	2.6	11.9	4
Total	7 595			25.75			21.8		

3.4.4 Gold production

Zimbabwe has a long-standing history in gold mining. The history dates back to the 13th century with indigenous Zimbabweans mining it for jewellery and trade with the Portuguese traders (Huffman, 1974). Due to the high geological potential of a discovery of gold, a number of multinational mining houses operated in Zimbabwe until recently when the political and economic climate deteriorated (United States Geological Survey, 2013). Figure 3.4 shows the trend in gold production in Zimbabwe between 2000 and 2013, with the lowest gold produced in 2008.

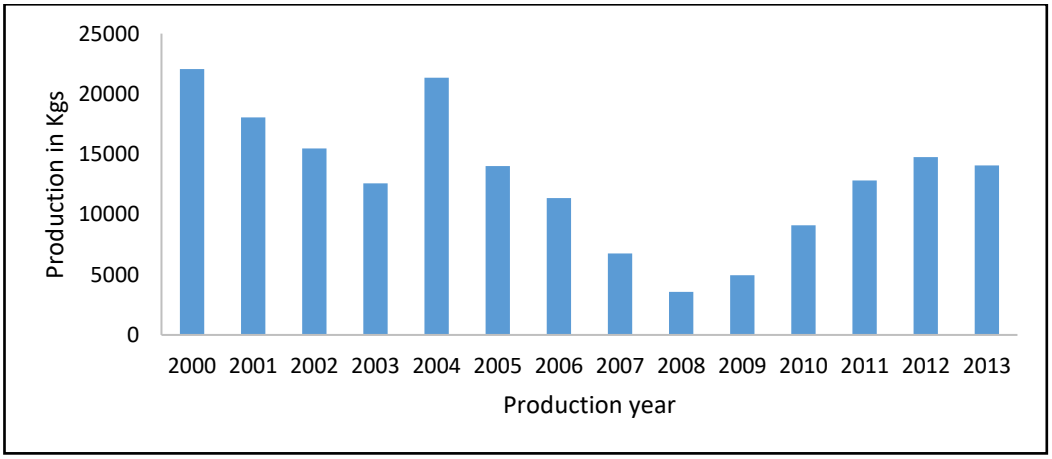


Figure 3.4: Gold production in Zimbabwe (United States Geological Survey, 2013)

3.4.5 Diamond mining

Diamonds in Zimbabwe were first discovered by De Beers in 1974 near Beitbridge which is now River Ranch Diamond Mine, which started production in 1992 (Mining Atlas, 2017). River Ranch has since been liquidated in 2012 by the high court due to debt and it has failed to attract buyers (The Source, 2014). Diamonds are also mined at Murowa Diamond Mine near Zvishavane, which started production in 2004. Diamond rush occurred in late 2006 when diamonds were discovered in Marange diamond fields. Within six months of diamonds discovery in Marange, it was estimated that there were about 15 000 illegal diamond miners, traders, and dealers (Mtisi, 2015). The government deployed the army and police to stop the illegal activities. The manner in which the armed forces handled the illegal miners, dealers and traders were later reported as human rights violation. Zimbabwe is among the top ten diamond producing countries by carats although the average value per carat is relatively low as shown in Table 3.4.

Table 3.4: Top 10 Diamond Producing Countries in 2015 (McPhillips, 2017)

Ranking	Country	Diamond Production in 2015 (in Mil Carats)	Average Value Per Carat in $
1	Russia	41.9	101
2	Botswana	20.8	144
3	DRC	16	8
4	Australia	13.6	23
5	Canada	11.7	144
6	Angola	9	131
7	South Africa	7.2	193
8	Zimbabwe	3.5	50
9	Namibia	2.1	591
10	Sierra Leone	0.5	309

3.4.6 Nickel production

Bindura Nickel Corporation (BNC) mines nickel at Trojan Nickel Mine in Bindura. Trojan Mine had been on care and maintenance for some years until 2013. This was mainly due to political and economic problems in Zimbabwe. BNC also owns Shangani Nickel mine, which is still on care and maintenance since 2008 and undeveloped Hunter's Road Nickel deposit (SRK Consulting, 2013). Nickel had

been mined at Empress Nickel mine by Rio Tinto Zimbabwe (RioZim), which has since been closed due to various technical issues. Empress Nickel Refinery, which is owned, by RioZim and Bindura Smelter and Refinery owned by BNC beneficiate nickel to produce the high-grade cathodes. Nickel output in Zimbabwe between 2009 and 2015 is shown in Figure 3.5. Nickel is increasingly becoming an important commodity as it contributed 10 % of total exports in 2015 (United States Geological Survey, 2016).

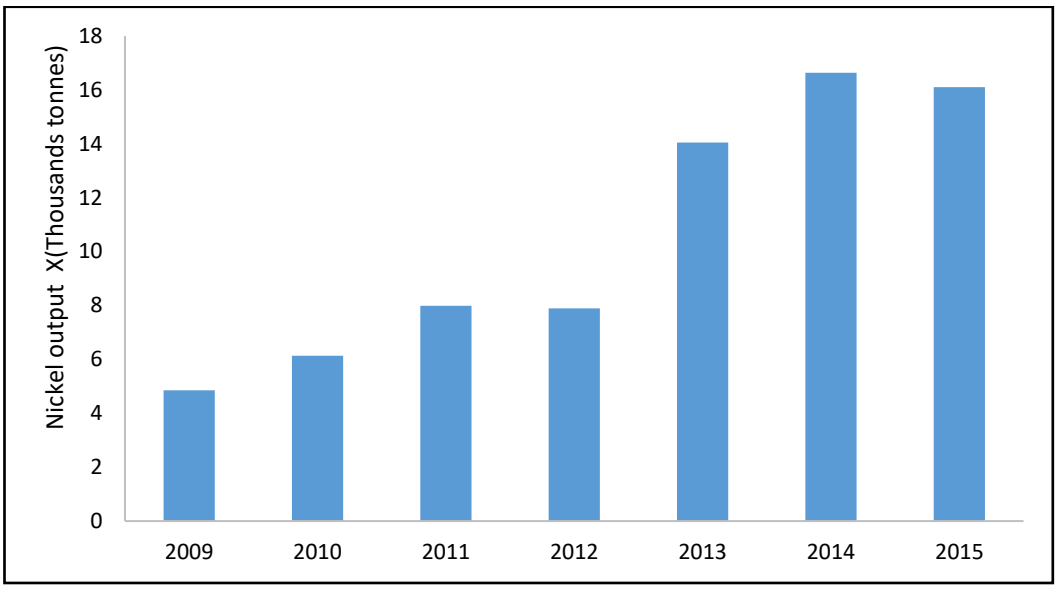


Figure 3.5: Nickel production output in Zimbabwe (United States Geological Survey, 2016)

3.4.7 Iron mining

Zimbabwe Iron and Steel (Zisco) has mined iron in Kwekwe since 1948 at their Buchwa and Ripple Creek mines (Jourdan, 2014). Ripple deposit has a lower grade of 51.4% compared to the now exhausted Buchwa grade of 61.6%. Zisco also owns a massive deposit of estimated 30Gt at 40% grade in Mwenezi (Worst, 1962). Steel mining in Zimbabwe has been facing challenges especially low demand and low prices. The oversupply of steel is caused by oversupply by China (American Iron and Steel Institute, 2007).

3.5 Chapter conclusions

The Chapter has shown that Zimbabwe has diverse mining industry with more than forty different minerals with the main geological feature being the Great Dyke. The vast minerals present a good opportunity for economic transformation and human

development in Zimbabwe. There is a need of reforming in policies that govern the mineral sector and the macroeconomic environment in general. This opens a discussion of the next chapter. The next chapter discusses the formulation of modern-day effective mineral policy and fiscal policy. It further benchmarks the Zimbabwe's policies that govern the mineral resources comparing it with selected SADC countries and other mining countries. The benchmarking exercise is to highlight where the policies are leading and lagging which will help Zimbabwe in policy reforms.

4 ANALYSIS OF SELECTED MINERAL AND EMPOWERMENT POLICIES

4.1 Introduction

The mineral policies development process and the factors that shape them are reviewed in this chapter before an investigation into the policies that govern the minerals resources sector in selected SADC countries. This chapter further analyses the mineral policies of Namibia, Botswana and South Africa paying attention to the mineral policy objectives and proposals on how to achieve them. Due to the importance of the fiscal policies to the government and investors, the research further looked at the fiscal policies noting the best practices. Lastly, the report analysed the economic empowerment policies of previously selected SADC countries. All these analyses of different policies were done to understand how other regional countries are managing the mining industry and how the mineral wealth is distributed among the citizens through the economic empowerment policies.

4.2 The role of mineral policies

Mineral policies are developed because of the availability or the unavailability of mineral resources. Several factors such as economics, politics, history and technology advancements shape the structure of the mineral policy. The mineral policies are country-specific due to the differences in the previously mentioned factors although some regional trends are noticed (Otto, 1999). Mineral policies are useful in providing guidance on government's stance on addressing key issues, it also provides the different government departments, administrators and the law drafters with guidance on the general expectations of the country on the resources governance. Furthermore, a standalone mineral policy document can be used as a tool for starting a discussion of important issues (Otto, 1997).

After independencies of most developing countries, mining was controlled and run by the State, which led to the creation of State mining companies and nationalization of mineral rights (Otto, 2000). The policy shifted again towards private investments in mining as the governments were accepting foreign direct investments (FDI). The governments accepted FDI due to several reasons cited by

Otto (1999) some of which are; the need to discover new deposits which required new technology as the existing ones were depleting, lack of access to international funding and pressure from the international community to service their debt among other reasons.

In SADC, most countries were under colonial rule, this history influence the shaping of the mineral policies. The mineral policies reflect on key objectives as identified by Otto (1999) given in Table 4.1. The mineral policy objectives are almost similar in developing countries and hence effort by Mtegha (2005) to harmonize the SADC mineral policies. Harmonisation of policies is seen as a collective bargain by nations, which can be an advantage to the region for attracting FDI as the policies would be homogenous and can prevent mining deals that do not benefit the host country.

Table 4.1: Objectives of mineral policy. Adopted from (Otto, 1999)

Objectives	Description
1. Policy Scope	-Type of activities -Types of minerals -Relationship with other national policies
2. Sovereignty	-Role of government in the investment decision -Role of State enterprises -Mineral ownership -Foreign participation -State equity requirements -Local joint venture
3. Economics	-Taxation type, levels and distribution -Export restriction -Import restriction, cost -Role in economic development -Employment requirements -Conservation and efficiency -Land use
4. Quality of life	-Social impact -Environment
5. Legislative framework	-Applicable laws -Exploration/ mining rights regulatory approach -Exploration and mining application priority -Security of tenure

In some nations such as Zimbabwe, the mineral policy is embedded in various sources and the investors have to interpret it on their own. It is important and

advantageous for a nation to have a stand-alone policy document that it clearly provides the investors with the Government's anticipation and commitment to the mining sector (Otto, 1999). In addition, the mineral policy document serves as a starting point in process of making the regulations pertaining the sector.

4.3 Mineral policy formulation strategies

Policy defined by Anderson (2003) as an idea, ambition and statement of intent or tactical plan, which endorses certainty in the choices and actions. Policies help in the drafting of regulations, but not all aspects of the policies are integrated into law although they continue to guide the Government through action (Otto, 1997). Policy formulation requires different sets of skills at different levels. This is because of the diversity of the issues that it covers. The mineral policy covers issues such as political, societal, environmental, economic, science and technology. This therefore requires all stakeholders involved in mining or affected by mining to participate in the policy formulation process by giving their views on issues such as the economic efficiency, social benefits, environmental protection and transparency (Mtegha, et al., 2006).

Resources based economies had previously based their structural reforms for economic transformation on the mineral export-led mineral development and policies environment that attracts FDI. This strategy was based on collecting tax from private entities and use it for social investment and economic development (Buck & Elver, 1976). Zimbabwe had been receiving the least FDI compared to its neighbours as shown in Figure 4.1. The new strategies of mineral policies are shifting to value addition of raw materials before export. This has led countries with minerals to include mineral beneficiation / value addition in the mineral policies.

In previously colonized countries, mineral policies should address the political history. For example, in South Africa, managerial positions in mining were reserved for white males, which were then addressed in the mineral policy of 1998. During the development of the current minerals policy for South Africa, the minerals right, which was privately owned, were changed to publicly owned with the state being the custodian of the minerals. Not only African countries had to drastically change the policies, Brazil for instance, the investment the mining operation was initially

designed to serve the colonial masters, the Portuguese. The current policy now seeks the country and its indigenous citizens to benefit fully from its mineral resources endowment (Machado & Figueiroa, 2001).

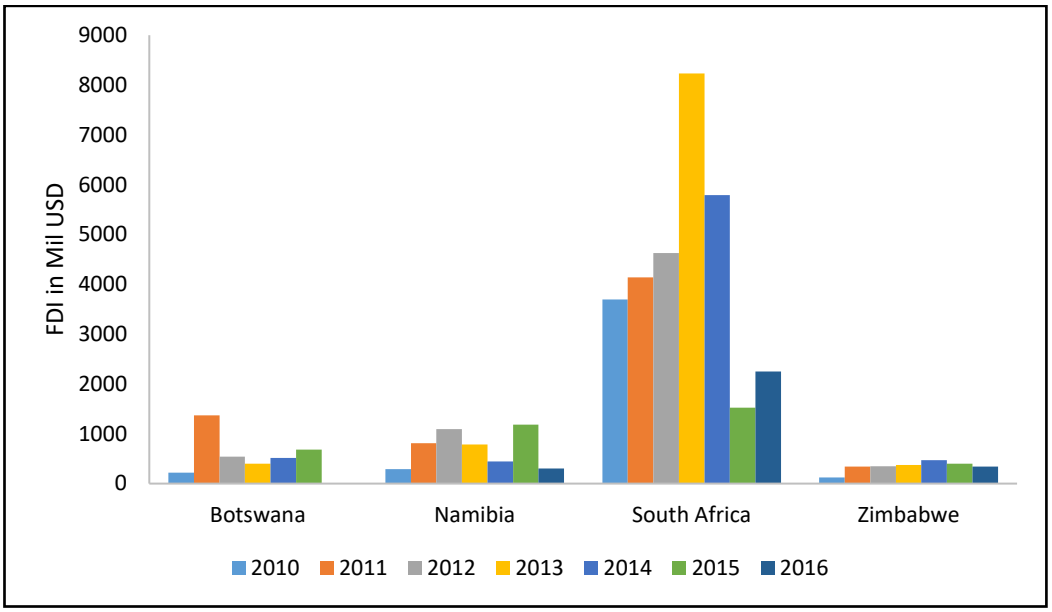


Figure 4.1: Foreign direct investment into Zimbabwe and its neighbours (Adopted from (The World Bank, 2017))

4.4 Policy process

There are various policy process models that a nation may choose to follow in developing public policies. Government effort should spark public debates at all levels and make sure that issues are clarified. Public policy model to be adopted is that which identifies influential stakeholders in policy development and encourage their full participation. It is important to involve the stakeholder when developing and implementing a policy for it to be accepted and consequently successful. The South African mineral policy was developed following a Generic Policy Process Model adapted from De Conning (Mtegha, et al., 2006) which is shown in Figure 4.2. The model pays attention to the specific details of different phases and it further proposes the necessities and key issues to be dealt with at each stage. Mtegha (2005) proposed a policy process, which is largely consultative that was used for developing the mineral policy of Namibia and Malawi.

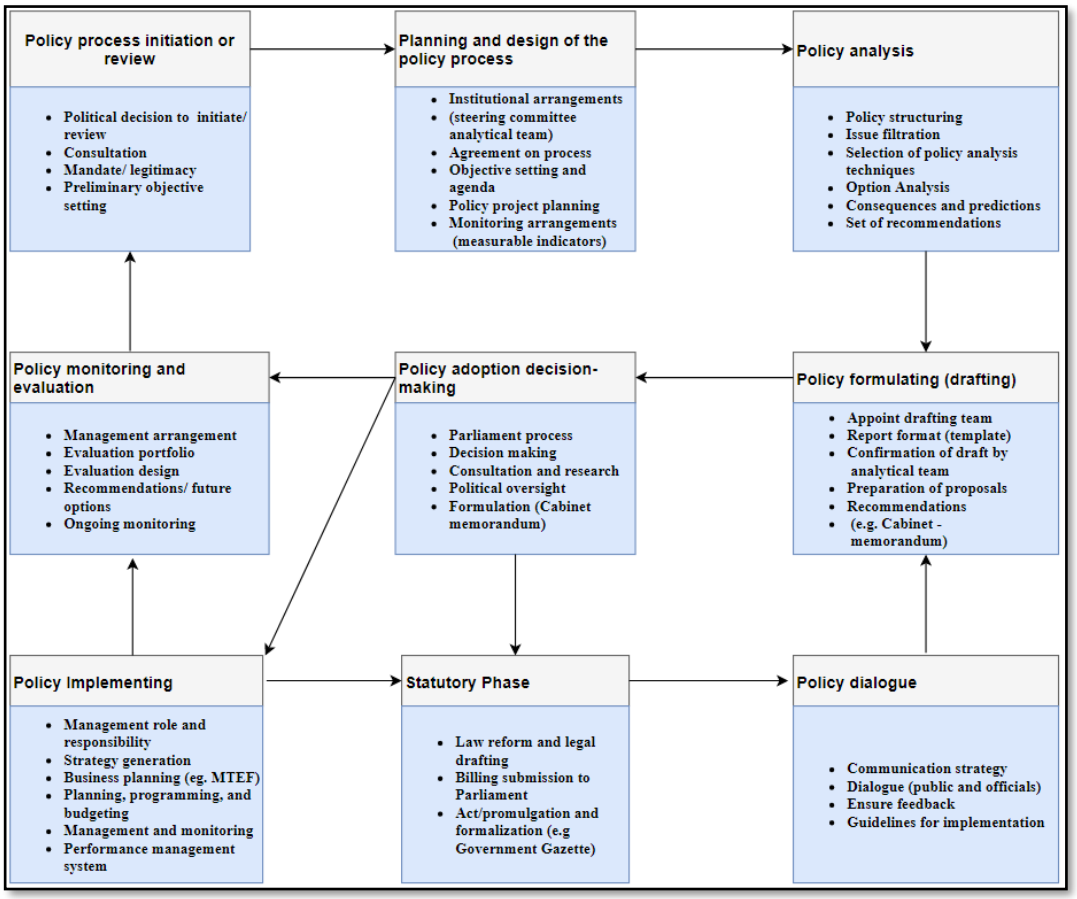


Figure 4.2: Policy Process Model (De Conning, 1995)

4.5 Analysis of selected SADC countries mineral policies

4.5.1 Mineral policy of Botswana

Mining forms the backbone of the economy of Botswana as it significantly contributes to both exports and GDP as shown in Table 4.2. The Government of Botswana has been praised for efficient and transparent use of mineral resources revenues for socioeconomic development. Botswana's first President's remarked that the country would not compromise on efficiency and competitiveness because of empowering locals (Leith, 2005). This remark shaped the Botswana strategy on mineral policy and development. Since the early days of its independence in the 1960s, the mineral policy of Botswana had been based on attracting FDI and technical experts into the mining industry. This was first accomplished by establishing competitive real exchange rate then by creating an investor-friendly environment (Dougherty, 2012).

Table 4.2: Economic importance of mining in Botswana (African Natural Resources Center, 2016)

Macroeconomic indicator	1985-1994	1995-2004	2004-2014
Mining % of GDP	42.2	30.9	22.0
Minerals % of government revenues	50.9	52.0	39.9
Minerals % of merchandise export revenues	77.4	76.9	71.6
Mining % of overall GDP growth	22.1	29.9	-12.8

The objectives of the mineral policy of Botswana are to;

The mineral policy of Botswana has mainly the following objectives:

- Attract foreign and local investors to efficiently develop the mining sector for the country to reap maximum benefits and at the same time yielding attractive returns to the investors (Matshediso, 2005);
- Creating a competitive environment to stimulate private sector investment in exploration ;
- Creating linkages between the extractive industry and other sectors of the economy to expand value addition and
- Safeguarding private property rights, guaranteed tenure after exploration, protect the environment (Matshediso, 2005).

Pillars of the Mineral Policy of Botswana as enshrined in the mines and mineral legislation

The mineral policy of Botswana is rooted in the following pillars of strength:

- Botswana strongly protects private property rights, which include that of foreign investors. The foreign investors are allowed to repatriate their profits with no exchange controls (Government of Botswana, 1999);
- The Government of Botswana directly participates in mining by forming joint ventures with multinationals with technical expertise, knowledge of the markets and access to finance;

- Guarantees on the security of tenure. The legislation gives mining rights to exploration companies or persons to progress from prospecting, exploration, pre-feasibility, feasibility and development of production;
- The legislation also gives private companies the right to market the mined products, stability in the tax regime, free repatriation of profits and International Arbitration of domestic disputes and
- Environment Management legislation which is internationally competitive.

4.5.2 Mineral policy of Namibia

The Minerals Policy of Namibia was developed to fit the mining sector into the broader economy and nation development agenda. The mining industry is expected to play a crucial role in addressing development goal for the medium term Namibia Vision 2030 and the second National Development Plan (NDP2). The Namibia development goals are to:

• reduce poverty and create employment;

• promote economic empowerment;

• stimulate and sustain economic growth;

• reduce inequalities in income distribution;

• reduce regional development inequalities;

• promote gender equality and equity; and

• increase environmental and ecological sustainability.

The industry contributes towards these goals in various ways. Chamber of Mines Namibia (2017) and Index Mundi (2017) acknowledges the importance of the mining sector in Namibia, which contributed 11.1 % to GDP and more than 50 % contribution to export earnings. The industry also provides employment although it is less than 2% of the total workforce and provides between 30 to 50 % of the government revenue.

The Ministry of Mines and Energy (MME), is responsible for the development and running of the mining activities and it is the same ministry that has the custodianship of all the minerals and energy resources. All the Namibian minerals rights are vested in the State. The mineral policy was developed in 2003, it is based on the principle of attracting investment and private entities participation, and encourage the private companies in playing a leading role in exploration, mining, value addition and marketing of the commodities.

Key Aspects of the Mineral Policy of Namibia

The Minerals policy of Namibia was divided into eight themes as shown in Table 4.3. The themes conform to the African Mining Vision that touches modern day issues that need to be addressed. The intention of the government on each theme is given so that it is clear to the stakeholders.

4.5.3 Mineral policy of South Africa

South Africa's mineral policy was developed through a consultative process that involved the Government, organised business and organised labour (Department of Minerals and Energy, 1998). The policy was also designed with the idea of redressing the previous racial imbalances in the country and specifically the mining industry. The policy process took into consideration of the challenges and opportunities faced by the mining sector which resulted in a White Paper in 1998. The Minerals and Petroleum Development Act (MPRDA) of 2002 (Government of the Republic of South Africa, 2002) was formed to legally enforce the mineral policy. The White paper is arranged in six themes as shown in Table 4.4. Each theme's objective and government's intent is given in the same table.

Table 4.3: Themes and the government proposed action plan in the mineral policy of Namibia (Ministry of Mines and Energy of Namibia, 2003)

Theme	Government will;
The Mining Industry	• Promote exploration and mining in the remote areas by incentives • Maintain the industry's competitiveness and ensure benefits for all • Ensure security of tenure and clear and transparent guidelines on the process of land access and compensation process
Value Addition	• Explore opportunities for value addition especially in manufacturing • Identify and address skills shortages • Unlock finances for value addition by identifying constraints • Implement international environmental standards for value addition projects
Marketing and Investment promotion	• Encourage and promote investment in the mining sector on the global platforms • Create and equip a team that promotes the sector
Mining and the Environment	• Put legislation that is benchmarked with the international standards to protect the environment • raise funds through stakeholders for rehabilitation • develop a waste management system • ensure compliance with health and safety regulations
Human Resources	• encourage support for career development through grants, in-house training and apprenticeship • support implementation of National AIDS policy • facilitate short-term employment of special skills • ensure compliance in creating equal opportunity for Namibians and gender equity
Research, Development and Technology	• Collaborate efforts between public and private sectors to generate knowledge to tackle mining challenges. • Support Research and Development and the application of new technology in mining
Governance	• Develop a framework to coordinate land use and development • Updated legal framework to meet global standards • Government and Companies to comply with Namibian anti-corruption • Maintain stable political environment
Regional Integration	• Committed to SADC treaties and SADC Mining Sector Protocol • Support approach to uniform policies • Encourage joint sharing of infrastructure

Table 4.4: Summary of the Mineral Policy of South Africa (Department of Minerals and Energy, 1998)

Theme	Objectives and Intent
Business Climate and Mineral Development	• The State is committed to stable macroeconomic, legal and fiscal environment to enable mining to fully contribute to the economy • The Government promotes investment in mining for increase mining output and high employment opportunities for citizens (ensure security of tenure) • The government recognises the importance of small-scale mining thereby encouraging sustainable development of the small-scale mining by making information and finance accessible to the benefit of the small-scale miners. • The government encourages beneficiation of minerals through coordination of DMR and DTI. Government lowers royalty rates, stability in costs of electricity and transport to encourage value addition. • The State has minimum intervention in the marketing of minerals and it studies the barriers and economics that affects mineral export in order to apply appropriate strategies for their removal. Also, government enforces laws against transfer pricing • The Government promotes research, technology, development, and technology transfer. The research is encouraged through state and privately funded research institutions and bursaries in Universities focusing on all the stages of mining in the value chain
Participation in Ownership and Management	• Government encourages meaning participation of previously disadvantaged community • Government commits to deracialise the equity participation (enforcing measures such Employ Share Ownership Participation Schemes) and racial representation in top management
People Issues	• Government promotes health and safe working conditions through the implementation of the Mine Health and Safety Act. • Encourage sound policy towards HIV/AIDS • The support of human development in mining through Adult Basic Education and Training (ABET) and promotion of representivity to correct past inequities. • Improve housing and living conditions of workers by encouraging companies to provide stable housing with facilities and services such as education. • Productive and non-adversarial approach to industrial relations • Protect the jobs at all cost from downscaling
Environmental Management;	• Government will ensure that mining follow the sustainable development framework and environmental obligations that are enforced by the Department of Environmental Affairs and the Department of Water Affairs and Forestry • The Environmental Impact and rehabilitation are considered during the process of granting prospecting and mining licenses.
Regional co-operation;	• Government support regional integration of the mining industry and encourage the sustainable development agenda • Derive equitable and mutual benefits from the southern Africa region mining industry.
Governance	• Creation of a regulatory environment that promotes transparency in Governance to maximise the contribution of mining to the national benefits. • Views of the stakeholders should be taken into consideration when a decision that affects the industry is to be made.

4.5.4 Mineral policy of Zimbabwe

Unlike South Africa and Namibia, Zimbabwe and Botswana do not have standalone National Mineral Policy (NMP) documents. The minerals mined in Zimbabwe can be grouped as precious metals, base metals, energy (coal and coal bed methane), precious stones and industrial minerals. The mineral policy applies to the entire minerals with the exception of diamonds mining that has its specific policy. The mineral policy can be obtained from the list of Zimbabwe's laws and regulations given listed by Webber Wentzel, (2014) as follows;

- Mines and Minerals Act [CAP 21:05]
- Gold Trade Act [CAP 21:01]
- Base Minerals Export Control Act [CAP 21:01]
- Chamber of Mines of Zimbabwe Incorporation (Private) Act [CAP 21:02]
- Environmental Manangement Act [CAP 20: 27]
- Indigenisation and Economic Empowerment Act [CAP 14:33]
- Indigenization and Economic Empowerment (General) Regulations, (Statutory Instrument 21 of 2010).
- Indigenization and Economic Empowerment (General) Regulations, (General Notice 14 of 2011)- Minimum Requirements for Indigenisation in the Mining Sector.
- Mineral Marketing Corporation of ZimbabweAct [CAP 21:04]
- Precious Stones Trade Act [CAP 21:07]
- Roasting Plant Corporation of Zimbabwe [CAP 14:30]
- Zimbabwe Mining Development Corporation Act [CAP 21:08]
- Explosives Regulations
- Mining (Management and Safety) Regulations SI 109 of 1990
- Mining (Health and Sanitation) Regulations SI 109 of 1990
- Mining (General) Regulations Government Notice 247 of 1977
- Mines and Minerals (Custom Milling Plants) Regulations Regulations SI 239 of 2002
- Mines and Minerals (Contracted Inspectors) Regulations SI 249 of 2006.
- Mines and Minerals (Minerals Unit) Regulation SI 82 of 2008.
- Mines and Minerals (Declaration of Minerals) Notice SI 91 of 1990 Regualtions
- Copper Act [CAP 14:06]
- Explosive Act [CAP 10:08]
- Environmental Act [CAP 20:27]
- Atmosphere Pollution Prevention Act [CAP 20:03]
- Hazardous Subastances and Articles Act [CAP 15:03]
- Pneumoconiosis Act [CAP 15:08]

Zimbabwe seeks to attract FDI into the industry but the policies and laws that govern the businesses and mining need to be overhauled before significant FDI can be realized. The current President of Zimbabwe, His Excellence Emmerson Mnangagwa has vowed to change the policies and laws that render the Zimbabwe business environment less attractive. The ownership of the mines, as any other foreign-owned business is required under the Indigenization and Empowerment Act to dispose of at least 51 % of share to indigenous Zimbabweans. The president recently removed the 51% indigenous ownership except in the platinum and diamond mining. The indigenous Zimbabweans to get the 51 % can be either individuals, companies, partnerships, the Zimbabwe Mining Development Company (ZMDC) and many other forms of local business. The 51 % required by the Indigenization and Empowerment Act is the main deterrent to FDI.

The SADC countries as many other developing nations are pursuing indigenization and empowerment policies and the local content policies. The local content policy requires companies to purchase locally available consumer goods and services required by mining. Zimbabwe's mining laws fail to address the issue of local content, the laws do not prescribe the requirements of complying with local content that must be met to maximise the economic benefits. Both the Labour Act [Chapter 28:01] and Mines and Minerals Act does not restrict employment of foreign nationals. Addressing the local content requirement issues requires the amendment of the mining legislation or by formulating a standalone local content policy that provides a clear government requirement. The policy should adequately harness the local benefit without compromising the supply of goods and services. Table 4.5 summarize the Zimbabwe mineral policy that is interpreted from various laws, regulations and government policies.

Table 4.5: Summary of the Mineral Policy of Zimbabwe

Mining Rights	The right to search and mine all mineral, oils and gases is vest in the President of Zimbabwe
Foreign Investments	• All new investor should seek approval from the Minister of Industry and Trade and obtain an investment licence • There are incentives for attracting FDI such as tax exemptions for 5 years the tax 15% the next 5 years for construction and operating infrastructure. Capital expenditure used from exploration stages is redeemable in full. • Zimbabwe Investment Authority governs and market Zimbabwe as a preferred investment destination
Ownership	The Indigenisation and Economic Empowerment Act require 51% of the ownership of foreign-owned mining business to be ceded to indigenous Zimbabweans who are historically disadvantaged, companies, association, syndicate or partnership.
Security of Tenure	The security of tenure is guaranteed through the exclusive right from exploration to mining.
Environment Regulations	Environment protection is enshrined in the Mines, Minerals Act, and The Environment Management Act.
Employment	There is no labour law that forces the employment of local people. Other SADC countries address the issue of employment in mineral policies

The Environmental Management Act (2002) was put in place to provide for a sustainable minerals exploitation and protecting the environment. Mining projects require environmental impact assessment to be conducted, which is a requirement under the mines and mineral act for licensing. The Environment Management Act (2002) enabled the establishment of Environmental Fund. The fund is used for cleaning up the areas affected by pollution and for mine rehabilitation.

There are various policy lessons learnt from mineral-rich developing countries that Zimbabwe policy makers should consider when developing mineral policies as presented in Table 4.6.

Table 4.6: Lessons for mineral-rich developing countries and policymakers (United Nations, 2011)

Policy Areas	Lessons
Supply factors	• Enhance public and private efforts in exploration and the accumulation of geological data • Proactively address the water, energy and transportation needs for major projects • Encourage the training of specialised engineers and mine technicians
Policy stability	• Use policy instruments that assure foreign investors of regime stability (e.g. constitutional guarantee of property rights, tax and regulatory stability contracts, etc.) • Use of multi-stakeholders consultation to create social and political consensus and sustainable mining policies. • Adjust tax and regulatory policy when necessary, but it should be done gradually taking into account investment under the previous regimes
Taxation	• Consider geological endowment when setting up tax regime • Prioritise profit based taxation, yet combine with proactive tax enforcement and management of financial risk • Grant tax incentives that allows capital cost to be recuperated quickly and recognise the cyclical nature of mining
Industry and local enterprise development	• Rely on capabilities of senior mining Transnational Corporations (TNCs) for efficient mineral extraction. • Ensure that mineral titles and concession laws facilitate competitive mine development. • Assist the effort TNCs to develop the local workforce and supplier capabilities, and facilitate the development of mining clusters
Environmental and social impact	• Require comprehensive EIAS for project approval and ensure government follow-ups on commitments by project developers • Implement a legal framework that protects the rights of local communities and ensure their participation in mineral development. • Incorporate TNCs with leading environmental and social practices into domestic private sector associations and government policy

4.6 Fiscal regimes for minerals

The fiscal regime, which is a set of instruments (royalties, taxes, dividends, etc.) that is used to share mining revenue between governments and mining companies is one of the determining factor used by investors to decide whether to invest in a country or not (Natural Resources Governance Institute, 2015a). If too much, taxation can kill the best project and if it is too little, the government does not get enough revenue for socioeconomic development. The mining company might lose the social license to operate since the community would not see the benefit of mining. The objective of taxation is mainly for government to raise revenues for public spending and investment. Taxation is also used as an economic policy to control the behaviour of the taxpayer such as spending, investment location and income distribution (Otto 2000, Muley 2016). The ability of the government to tax

mining companies gives them a sense of permanent sovereignty over the natural resources. On the other hand, the mining companies also have their concerns that need to be addressed within the tax regime. This then calls for a careful design of the tax regime that benefit the host country and at the same time providing a reasonable return on investment. Otto & Cordes (2002) were concerned with the policies that promoted attraction of foreign investment, which overlooks the local economic development. Certain fiscal incentives are not good for the country in the end as some transnational corporation takes advantage of the incentives given to them, which makes the country lose at the expense of attracting investors.

4.6.1 Design principles for the taxation of mineral rents

The investor's decision to invest and how much to invest in a nation's mineral resources is greatly influenced by the taxation and socio-environmental policies (Otto & Cordes, 2002). The mineral taxation regime must be designed to collect sufficient amount of the economic rent but at the same time leaving the investors with profit enough to further exploration and production (Otto, 2000). The design of a tax regime should be done in such a way that does not affect the behaviour of the investor or influence the decision of a mining company since it is a cost of doing business.

There are several instruments that can be used in charging tax, some of which are general, some are industry-specific, and in mining some instruments are commodity specific. The designing of mining taxation should also be cognizant of the availability of resource rents and the unique risks. It is important to realise that the government has different needs compared to the company's needs. This difference has to be recognised before developing a tax regime (Otto & Cordes, 2002). For example, during the exploration stage, the tax regime should recognise the high risk involved and usually this is addressed by putting in place an incentive of deducting exploration expenses on profit. Thereby sharing the risk between the government and the investor.

Mine development stage is another costly stage where the capital goods are purchased and yet no revenues would be coming to the investor at that moment. The capital goods are usually imported. The preferred tax regime is the ones that

offer accelerated depreciation and also low import duties and Value Added Tax (VAT) (Otto, 2000). The production stage is usually the longest and profit-making stage that goes through many government administrations and commodity price cycles. The mining companies prefer a tax regime that is flexible to accommodate the times when the commodities prices are low and also a stability on tax recognising the length of the project. Both the government and the company's objective and preferences are given in Table 4.7. Another way government reduces the amount of tax paid by the mining companies is by rewarding them for participating in public infrastructure funding and local value addition of raw materials. For example, the South African royalty tax formula is based on profitability and further rewards refiners by charging less amount of royalties compared to non-refiners.

The Zimbabwe government had been heard on various platforms saying it is not getting a fair share of revenues from mining. The dilemma faced is then is trying to get adequate rents but at the same time not killing the goose that lays the golden egg (Bastable, 1903). On the other hand the government may fail to finance its programmes as expected if the tax levels are too low. If the government decides to raise taxes, the benefits are short-lived since it will directly have an effect on re-investment in exploration and development of a new project of the mining company.

Table 4.7: The Government and company's objectives on a tax regime. Adopted from (Otto & Cordes, 2002)

Government's needs	Company's needs
Maximum economic and social benefits	Tax should be charged on profitability bases
Support stability in macroeconomics and revenue that flows consistently	An early payback of the invested amount should be allowed for allowing the servicing of debt and reducing the risks
Be able to capture large windfall profits and also capture reasonable taxes from low-cost operations, high-grade mines	Taxation should take into account of the volatility and should be flexible to reduce financial burdens during low commodities prices
Tax regime that is easily implemented at low cost and prevents tax avoidance	"The regime has to be stable, predictable and transparent to reduce risk"
Rewards the economic efficiency by incentivizing and encourage exploration and new investments	Minimization of taxation that does not reward managerial efficiency and should not distort cost and extraction profile
	Taxes should reward the risk takers in exploration by incentivizing it and further encourage investment in marginal mines.

4.6.2 Regime types and taxation instruments

Several taxation frameworks have been developed on how countries can capture, share and spend the resources rents. There are a number of ways of charging taxes in the mining sector. Direct taxes are charged to the company based on net revenues and profit. Indirect taxes are levied on the mineral asset or the inputs needed to mine. Examples of indirect tax are the special royalties, export duties, *ad valorem royalties* among others. Another way taxes are charged in mining is what is known as quasi-taxes. The quasi-taxes come due to government policies that have a substantial cost impact. The environmental obligations, social, economic and cultural needs give rise to the quasi-taxes (Otto & Cordes, 2002). The mining revenues are shared as shown in Figure 4.3.

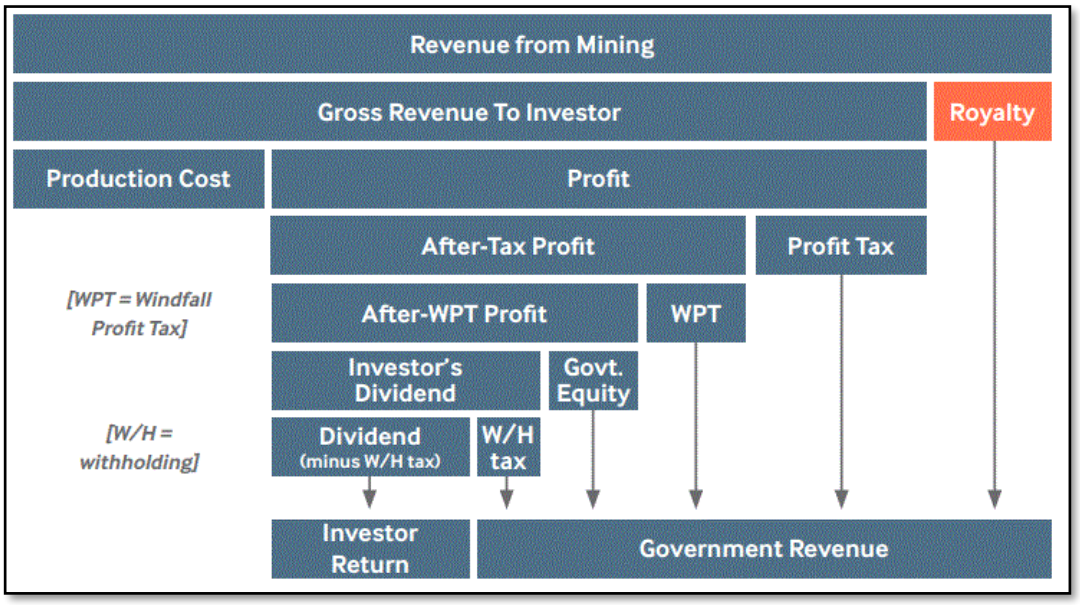


Figure 4.3: Distribution of profits through the royalty system (Natural Resources Governance Institute, 2015a)

4.6.3 Evaluating a fiscal regime

Minerals taxation is an important and sensitive public policy that has to be dealt with diligently so that all key stakeholders reap fair benefits. The system has to be evaluated from time to time and the main questions to be asked can be as follows:

- *Is payment to the community enough?*
- *Are the investors receiving a fair return on capital employed?*
- *How is the fiscal regime as compared to the other regional and global mining jurisdiction?*

The evaluation should at least answer two of the above questions for it be a good evaluation. The evaluations should include all taxes and other payments an example is the Effective tax rate (Mitchell, 2009). The tax regime of Botswana, Namibia, and South Africa is reviewed to check for similarities and differences and comment on the best practice and the results are presented in Chapter 5 for benchmarking purposes.

4.6.4 Loopholes and pitfalls

Natural Resources Governance Institute (2015a) warns about the common pitfalls that come with only discussing royalty rate, tax rate or the equity participation by

the state. It is not only about the percentages of the tax rates, but also the application of the tools in determining the correct tax liability. Otherwise issues of transfer pricing will reduce the amount of tax to be levied on the company. Zimbabwe is currently using an ad valorem based tax system which may be easily subjected to transfer pricing especially with the high fluctuating commodities prices (Mhlanga, 2017). This requires a formulation of a royalty charge which is a hybrid of price based and also unit production based (Mhlanga, 2017). Furthermore, the legislation should be able to address the issue of thin capitalization, which is a situation where a company is financed by a high amount of debt as compared to equity. Usually, interest paid on loan is tax deductible there by significantly reducing the amount of tax liability to the government.

4.6.5 Double taxation

Companies face a predicament of being levied taxes on two jurisdictions if they overlap, which is known as double taxation. For instance, if the capital of financing a mining project is from outside the mining country, the company or the financiers would be taxed its profit in the mining country and further get tax when they repatriate their profits (Chikumbu, 2017).

Zimbabwe has signed Double Taxation Agreements (DTA) with several countries to avoid double taxing the investors as a way of complying with the international tax instruments. The countries and the dates on which the DTAs were signed with Zimbabwe are shown in Table 4.8. These agreements apply to both the capital expenditure and income from the mining projects. The narrative of complying with the international tax instrument for avoiding double taxation is that the country was going to attract more FDI although it is now debatable whether or not DTAs influence the decision of an investor.

Chikumbu (2017) explained that Zimbabwe, like many developing countries, is losing a significant amount of revenue due to the taxing rights surrendered to the resident country of the investor. Zimbabwe loses revenues on all the DTAs that were signed, which reduces the withholding tax rate on royalties, dividends and others fees. The multinationals are further given incentives such as tax break and

consequently transfer the burden to the local companies and citizens by taxing more.

Table 4.8: Countries with Double Taxation Agreements with Zimbabwe (Chikumbu, 2017)

	Partner Country	Type of Agreement	Date of Signature
1	China	Income and Capital	01 Dec 2015
2	Botswana	Income and Capital	16 June 2004
3	Malaysia	Income and Capital	28 April 1994
4	Serbia	Income and Capital	19 Oct 1996
5	France	Income and Capital	15 Dec 1993
6	Poland	Income and Capital	09 Jul 1993
7	Canada	Income and Capital	16 April 1992
8	Netherlands	Income and Capital	18 May 1989
9	Sweden	Income and Capital	10 Mar 1989
10	Norway	Income and Capital	09 Mar 1989
11	Bulgaria	Income and Capital	12 Oct 1988
12	Germany	Income and Capital	22 April 1988
13	United Kingdom	Income and Capital	19 Oct 1982
14	South Africa	Income and Capital	10 Jun 1965, reviewed 4 Aug 2015
15	Switzerland	Income and Capital	30 May 1961

4.7 Empowerment policies

Economic empowerment policies are government policies that are meant to provide the citizens with a chance to meaningfully participate in productive sectors of the economy. Empowerment involves the transformation of the economies into self-reliant and endogenously developed communities. Some policies are put in place to address the historic imbalances that were brought by policies that racially exclude the indigenous people and other minority groups whilst others are to empower local people and businesses as they compete with the seasoned foreigners and foreign-owned businesses. All the four countries with the minerals policies that were previously reviewed earlier in this chapter have corrective policies to redress these past racially induced imbalances and to empower citizens to be able to compete with foreign companies.

4.7.1 Broad-Based Black Economic Empowerment Policy of South Africa

South Africa has the Broad-Based Black Economic Empowerment (BBBEE) policies, which are clearly defined in different transformation charters of different industries. The BBBEE Act of 2003, Codes of Good Practice (DTI Codes) and the

Employment Equity Act, 1998 among others, support the transformation charters. The Mining Charter is the mining industry-specific, which was designed to ensure meaningful participation of historically disadvantaged South Africans (HDSA) (Government of the Republic of South Africa, 2004). The Mining Charter had been reviewed for the second time; the current Mining Charter 3 came to force in June 2017 and had been largely criticized by the mining industry, represented by the Chamber of Mines. The companies believe in the multi-stakeholder consultative policy formulation process, which was followed in 2004 and 2010 Mining Charters (AngloAmerican, 2017). The 2017 mining charter has the compliance requirements of the BBBEE shown in Table 4.9.

Table 4.9: South African Mining Charter scorecard of 2017 (Department of Mineral Resources of South Africa, 2017)

<table>
<tr><td colspan="4">Ownership</td></tr>
<tr><td>Element Description</td><td>Measure</td><td>Compliance target %</td><td>Weighting %</td></tr>
<tr><td rowspan="3">Minimum target for representation of Black people ownership</td><td>ESOP's</td><td rowspan="3">30% BBBEE</td><td rowspan="3">Y/N (Ring-fenced elements)</td></tr>
<tr><td>BEE Entrepreneurs</td></tr>
<tr><td>Mine Community</td></tr>
<tr><td colspan="4">Human Resource</td></tr>
<tr><td rowspan="3">Development of requisite core and critical skills, literacy and numeracy and South African Historically Black Academic Institutions in respect of human resources development initiatives intended to develop solutions in exploration, mining, processing, technology efficiency, beneficiation as well as environmental conservation. HRD Expenditure percentage of total annual Leviable amount (excl. mandatory skills development levey)</td><td>Percentage of the total Leviable amount contributed to essential skills development activities</td><td>2%</td><td rowspan="3">Y/N (Ring-fenced elements)</td></tr>
<tr><td>Percentage of the total Leviable amount contributed to Mining, Transformation and Development Agency</td><td>2%</td></tr>
<tr><td>Percentage of the total annual Leviable amount contributed to South African Historically Black Academic Institutions</td><td>1%</td></tr>
<tr><td>Procurement supplier and Enterprise</td><td colspan="3">30%</td></tr>
<tr><td>Employment Equity</td><td colspan="3">35%</td></tr>
<tr><td>Sustainable Development and growth</td><td colspan="3">35%</td></tr>
</table>

4.7.2 Citizen Economic Empowerment of Botswana

The Citizen Economic Empowerment (CEE) was designed as the government was rethinking of a framework of strategies that can reduce poverty, especially of the populace of the rural area. The government realised that the economic growth with empowerment will make the country less hostile to the foreign investors (Government of the Republic of Botswana, 2012). There is a perception that the Batswana people are at a disadvantage when competing with accomplished foreign nationals and businesses in business and in jobs (Gergis, 1999). The empowerment policy requires the Batswana people to participate in technical jobs and higher-level management in mining. The Citizen Economic Empowerment (2012) is not the first policy that tries to economically empower the Batswana people by creation of domestic business elite that competes with the more seasoned international business in Botswana.

The first economic empowerment policy was introduced in 1966 as the Transitional Plan for Social and Economic Development (TPSED) (The Republic of Botswana, 1966). The TPSED was originally designed to guide socioeconomic development but ironically, the implementation had a notion of CEE. The TPSED manages in a small way to ensure the development of small-scale industries but its main function was to create a functional economy after independence. The National Development Plan (1968-1973) known NDP1, sparked the idea of citizen economic empowerment and fostered indigenization in commerce (Lekgowe, 2016). Lekgowe (2016) believes the CEE legislation of 2012 faces challenges to a number of factors such as a number of policies that have elements of CEE but they do not coordinate with each other and they require consolidation. Furthermore, different institutions implement the CEE policy, which makes unorganized different commitment levels. The last problem with the implementation of the CEE policy is lack of monitoring. There is insufficient monitoring and evaluation of whether the benefits of the policy are reaching the intended people.

4.7.3 New Equitable Economic Empowerment Framework of Namibia

Namibia parliament approved the New Equitable Economic Empowerment Framework (NEEEF) in 2017 that was formulated as government's commitment to bring policies that advance human development. The NEEEF is based on the Constitution of Namibia and has the following five economic pillars:

- Ownership;
- Management Control and Employment Equity;
- Human Resources and Skills Development;
- Entrepreneurship Development; and
- Community Investment.

This framework was designed to be the main framework that all other economic policies such as fiscal and tax, monetary, employment among others to slot in for the economic transformation (Government of the Republic of Namibia, 2016). The draft law proposes 25% stake in foreign and white-owned companies be ceded to the black Namibians which was described by Fraser Institute (2017), to have a potential to scare investors. Namibian president Hage Geingob was quoted by Masawi (2017) expressing how demoralizing is for Namibians that after 27 years of independence, that the country has not achieved genuine economic transformation and he is eager to address colonial economic imbalances. Table 4.10 shows the NEEEF scorecard which stipulates the minimum and maximum requirements of the policy.

Table 4.10: Summarised NEEEF Scorecard

Pillar	Minimum	Maximum
Ownership- mandatory	25% ownership	100% ownership
Management Control and Employment Equity- mandatory	50% board and management	100% board and management
Human Resources and Skills Development- mandatory	1% of gross wages	2% of wages
Entrepreneurship Development	0% of procurement	50% of procurement
Community Investment	1% of after-tax profits	2% of after-tax profit

4.7.4 Indigenization and Economic Empowerment Policy of Zimbabwe

The Government of Zimbabwe developed the Indigenous and Economic Empowerment Act of 2008 (IEE) which requires a foreign-owned business to have a local partner(s) who owns 51 or more % stake. The Act had been blamed for the decreased FDI in Zimbabwe (Fraser Institute, 2017) and the incumbent president Emmerson Mnangagwa has plans to soften the law in favor of investors. Usually multinationals or generally investors prefer to have the controlling shares of the company to be able to fully implement their business plan with less resistance.

The Indigenization and Economic Empowerment Act gave a provision to establish a National Indigenisation and Economic Empowerment Fund that has the following functions;

.."(a) to provide financial assistance to indigenous Zimbabweans for any of the following purposes—

(i) the financing of share acquisitions; and

(ii) the warehousing of shares under employee share ownership schemes or trusts;

(iii) management buy-ins and buy-outs;

(b) to provide finance for business start-ups, rehabilitation and expansion;

(c) to finance market research in connection with the objectives of the Act;

(d) to finance capacity-building projects on behalf of indigenous Zimbabweans; and

(e) any other purpose which the Minister considers will promote the economic empowerment of indigenous Zimbabweans". (Government of Zimbabwe, 2007, p7)

Another requirement of the IEE Act is restricting on the procurement of goods and services from outside Zimbabwe. The IEE Act requires the government and private companies to procure at least 51 % locally (Government of Zimbabwe, 2007). The only problem is that the Zimbabwean manufacturing industry has declined thereby reduced capacity of supply goods in time. Mining capital goods and some consumable are not manufactured locally, thereby rendering the law less effective

in harnessing revenues from procurement. The IEE Act may confuse investor because different institutions may interpret it differently, therefore there is a need of developing a policy framework which clearly stipulates what is required from the investors. There are many legislation documents that one has to go through to fully understand the IEE policy.

4.8 Chapter conclusions

Namibia and South Africa have stand-alone mineral policy documents which clearly stipulates the object and the intent of the government when it comes to issues related to the extractive sector. This makes it easier for all stakeholders to know what is expected from mining in that country. It was noted that Botswana, Namibia, South Africa and Zimbabwe all have similar goals of using mineral resources to catapult the economies forward. These countries all prioritise attracting FDI, which is shown by efforts to provide conditions that assure the security of tenure, competitive fiscal regime and investment promotion through incentives. Recent years have shown these countries not only seeking investments in mining but also in value addition of the minerals. Furthermore, the governments are demanding meaningful participation of the previously disadvantaged citizens. Namibia and South Africa have well-articulated policies that further deals with specific issues such as housing, gender equity and promotion of regional cooperation.

Namibia and South Africa have clearly stated economic empowerment for the historically disadvantaged people. South Africa went a step further to develop sector-specific redistributive policies like the Mining Charter for example. In contrast, Botswana and Zimbabwe policies are not clearly stated and they overlap which can cause confusion due to different interpretations but somehow, the mineral policy of Botswana works very well and is used as a success story.

This chapter forms the foundation of the next chapter by giving a starting point in policy benchmarking. Chapter 5 benchmarks the mineral policy of Zimbabwe using a framework developed by Natural Resource Governance Institute to assess critical issues of the mineral policy.

5 BENCHMARKING OF THE MINERAL POLICY OF ZIMBABWE

5.1 Introduction

The previous chapter looked at the formulation of mineral policies and further analysed specific mineral and economic empowerment policies with the main objective of learning the general policies followed by neighbouring countries. This chapter identifies the strength and weaknesses of the mineral policy of Zimbabwe using frameworks developed by the Natural Resources Governance Institute (NRGI). The tools used are the Natural Resource Charter Analysis Framework (NRCAF) and the Resource Governance Index (RGI). The frameworks were developed through consultations with various organisations such as the World Bank, Mo Ibrahim, among others. Data from these organisations were used to answer the questions paused in the frameworks.

5.2 Background

Legislators in developing nations and emerging economies face a huge challenge in formulating and implementing policies that are relative to a sustained economic growth and human development (Sercovich, 1998). The policies have a mandate to promote competitiveness regionally and internationally in both trade and attracting FDI. Regional socioeconomic intergovernmental organisations like Southern African Development Community (SADC) recognise the need to harmonise, coordinate or joint assessment or benchmark policies in order to have policies that speak with one voice and of almost similar standard. Mtegha (2005) emphasised the importance of mining in the SADC community as it is expected to be the backbone of the economy and the proposed mineral policy harmonization of the region. Harmonisation of policy often helps in policies moving towards international standards and voluntary adherence to a multilateral agreement (Sercovich, 1998). On the other hand, policy benchmarking is a relatively new tool used for assessing continuous improvement through monitoring progress and competitiveness. Individual nations have realised that globalization has made it possible for capital and technology to move freely across borders. Competitive policies are currently advised to attract both capital and technology in order to fully develop the natural resources industries (Sercovich, 1998).

Several policy-benchmarking exercises were done by different countries for different policies. For example, in 1995 the Ministry of Economic Affairs of the Netherlands conducted a benchmarking exercise to assess the policy competitiveness in a number of key areas. They compared their policies with the ones of Japan, Germany, Denmark, United States of America and Belgium (Malaysia Productivity Corporation, 2014). Malaysia conducted a productive benchmarking exercise where they found out that the Malaysian workers were less productive compared to their regional counterparts and predicted that it was going to harm their economy in terms of trade (Malaysia Productivity Corporation, 2014).

A policy benchmarking on Zimbabwe's policies that have direct or indirect effects on the mining industry is crucial if one is to come up with sound strategies on how best to improve the policies that direct mineral resource industry. The benchmarking of policies governing the natural resources may be done using the framework developed by NRGI. Natural Resources Charter (NRC), which is a tool developed to assess how best a country is managing its natural resources. The benchmarking exercise assists with policy options that are practical which can be used by governments to effectively manage the natural resources wealth (African Development Bank Group, 2009; Oxford Policy Management, 2015; Manley & Pitman, 2016). The Natural Resources Charter Benchmarking Framework (NRCBF) consists of twelve precepts that fall under six categories in the decision chain as shown in Figure 5.1. The charter's 12 precepts form a decision chain that begins with the support and oversight of the citizens and the international community. The success of the natural resources industry that can be measured by how the country is benefiting from the resource exploitation is dependent on the strength of the links in the decision chain (Cust & Manley, 2014).

RGI evaluates four components, which are given a score, which is used to calculate an average score. These components are:

- Institutional and legal setting
- Reporting practices
- Safeguard and Quality Controls
- Enabling environment

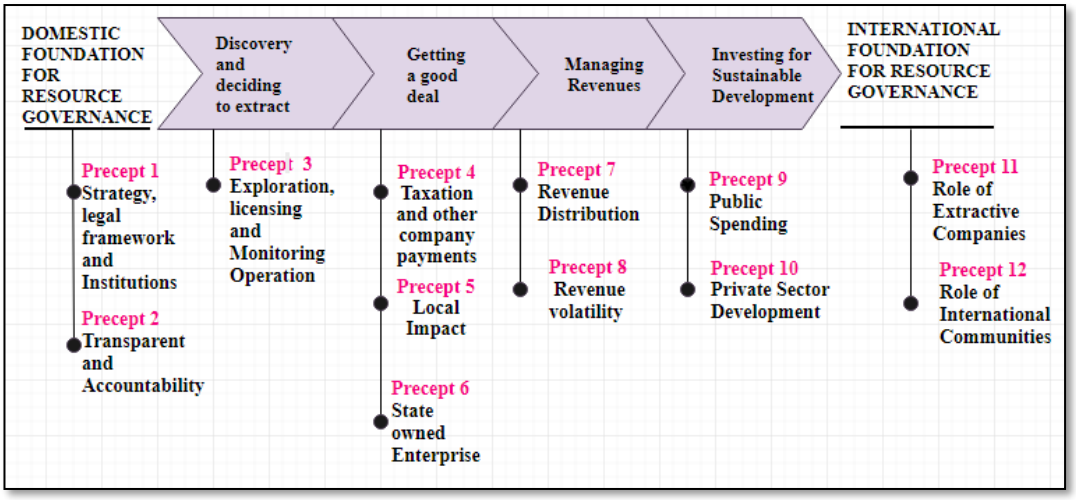


Figure 5.1: The Natural Resource Charter Benchmarking Framework (Manley & Pitman, 2016)

NRCAF seeks to look at how effective are the policies managing the mineral resource wealth and whether the policies are appropriate for assessing their implementation and impact. While RGI assesses policy standards as compared to the international expectations. Unlike the NRC, which focuses on the options of the people answering a questionnaire, RGI makes use of real data to assess the transparency and accountability of the country (Natural Resources Governance Institute, 2015b).

Natural Resources Governance Institute (2015b) further elaborate the use of the NRCAF as it can be used for;

- *National Benchmarking Exercise;*
- ***Country strategy notes (Used in this research);***
- *Workshops;*
- *Specific research projects; and*
- *Basic gap analysis*

5.3 Domestic foundations of Resource Governance

5.3.1 Precept 1: Strategy, Consultations and Institutions

i) Has the government clearly identified the country's resource endowment, who owns it, and the positive and negative impacts of extraction?

Zimbabwe has more than 40 different minerals of which 19 has been identified as strategic minerals in the amended Mines and Minerals Act [Chapter 21:05] that can be economically exploited but as stated earlier on in Chapter 3, the country is currently underexplored. According to the Mines and Mineral Act [Chapter 21:05], the mineral rights are vested in the President and may be transferred through the issuing of the mining rights. The Diamond policy states that diamonds are wholly owned by the State and the state might choose to collaborate with an investor but return the controlling stake. The State's right to own its mineral resources is based on the international law and was declared at the United Nations General Assembly Resolution 1830 (XVIII) of 1962 which says the nations have sovereignty and dominium over its natural resources and the right to govern itself. The controlling stake is implemented according to the Indigenisation and Empowerment Act of 2007 that requires 51 % of the local ownership of companies. This clause then opens an opportunity through a partnership that will help the state in gaining knowledge and access to new technology used in the diamond sector. The strategy of partnership has worked well for Botswana diamond mining through Debswana.

The Diamond policy was developed a little late, about six years after the discovery of Marange diamonds. Donovan (2017) explained that the Marange diamonds were used for political patronage and consequently, billions of dollars of revenue went unaccounted for, which could have helped in the country's development. Donovan (2017) also believes that revenues loss happened because of a lack of good strategies, political will and policies to govern the mining sector.

ii) Does the government have an inclusive and comprehensive national strategy for the management of resources?

Zimbabwe's government recognizes that mining is one of the strong pillars of the economy since it is the major foreign currency earner and it provides chances of reducing poverty through both large and small-scale mining (Government of

Zimbabwe, 2013a). The government supports small-scale miners to a certain extent by providing basic mining education and recently the royalties' charges for small-scale miners have been reducing to 1% which might be reduced to 0% in the near future.

The lack of a stand-alone mineral policy document makes it difficult for interested stakeholders to picture the strategy and expectation of the government from the mineral exploitation. A stand-alone document reduces the ambiguity which comes as a result of trying to understand the government's position in an aspect of the policy. This is due to the policy inconsistencies which usually happens when policies from different departments of government contradict.

The beneficiation strategy is one way which shows that the government recognizes the possibility of harnessing maximum benefits from mining (Government of Zimbabwe, 2013a). However, the government has not developed a comprehensive stand-alone beneficiation policy and framework. The lack of a good beneficiation strategy among other reason is deemed responsible for the banning of raw chrome export in 2011, without a proper framework on how beneficiation would take place. This lead to a decrease in production and later the ban was uplifted in 2016 as the government realized that they were losing out on revenues and experiencing loss of employment. The country lacks efficient modern technology in processing chrome, low commodity prices and high electricity charges in Zimbabwe (Mataranyika, 2015) which are crucial for beneficiation to take place. In the following Chapter, a case study on the feasibility of chrome beneficiation in Zimbabwe is discussed.

5.3.2 Precept 2: Accountability and Transparency

i) Does the government ensure that resource management is sufficiently transparent for all actors to effectively understand and scrutinize decision-making and its implications?

Good governance is imposed on the State of Zimbabwe by the constitution. The constitution states "… *the State must adopt and implement policies and legislation to develop efficiency, competence, accountability, transparency, personal integrity and financial probity in all institutions and agencies of government at every level and in every public institution*…" (Government of Zimbabwe, 2013b, p.18) The

constitution further states that the public officials should be appointed based on merit and corruption should be exposed and dealt with decisively. Although transparency, accountability and appointment of public officials are enshrined in the constitution, the implementation of is still lacking as compared to its neighbouring countries as shown in Figure 5.2. The anti-press acts, such as Access to Information and Protection of Privacy Act (2002) have been used successfully in the past to deny media and the public access to crucial information.

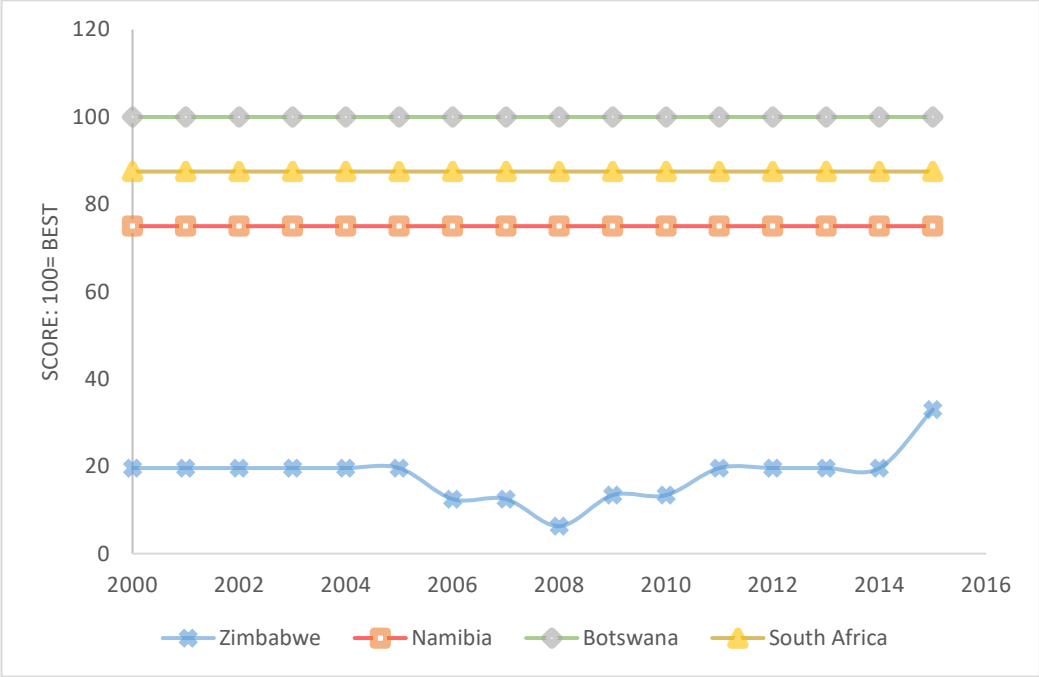


Figure 5.2: Public Sector Accountability and Transparency in Botswana, Namibia, South Africa and Zimbabwe from 2000 to 2015 (Mo Ibrahim Foundation, 2017a)

ii) Do government oversight bodies hold officials to account?

In an effort to become transparent in the mining revenues, the Government of National Unity (GNU), (2009-2013) formed a Zimbabwe Mining Revenue Transparency Initiative (ZMRTI) with a vision of the adoption of the Extractive Industries Transparency Initiative. Everett, et al. (2014) believed that the change of government negated the gains that were made towards a more transparent mining industry. Figure 5.3 shows Public official accountability, Zimbabwe has the lowest accountability of public officials compared to regional counterpart and Botswana

has the highest accountability. The Public Finance Management Act was signed into law in 2016, which is meant to deal with misuse of public funds.

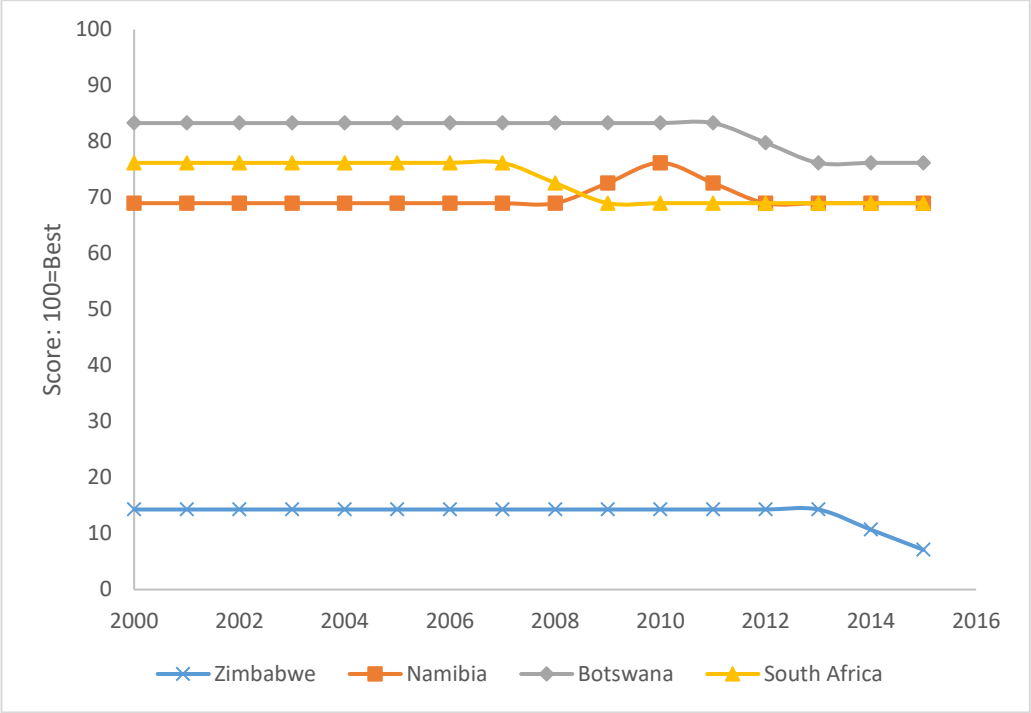


Figure 5.3: Accountability of Public Officials in Botswana, Namibia, South Africa and Zimbabwe from 2000 to 2015 (Mo Ibrahim Foundation, 2017a)

iii) Is there a critical mass of informed citizens that hold the government to account?

Recently, young activists have emerged protesting about the corruption done by the public officials. They comment on the diamond dealings and the lack of transparency in the industry. The deteriorating standard of living of the general populace have led to the formulation of various civic organisations to educate the populace on how to hold the government accountable. The citizens were involved in a wave of protests against the way the government is handling the natural resources revenues, asking the whereabouts of the 15 billion dollars deemed missing. The protest did not work as still there is no answer to what happened to the missing funds.

5.3.3 Precept 4: Taxation and other company payments

i) Does the fiscal regime secure a reasonable return for the government while still attracting sufficient investment?

Zimbabwe's mineral fiscal regime is competitive when compared to neighbours in the SADC region. Table 5.1 shows the comparison of Zimbabwe's fiscal regime to that of its neighbours. Looking on the fiscal regime alone, it is capable of attracting investment into the mining sector. However, the collection of the tax is neither effective nor efficient as the Zimbabwean former president His Excellence Mugabe acknowledged that Zimbabwe had failed to learn from Botswana and Namibia on how to manage the diamond industry (Africa News Agency, 2016). The diamond revenue amounting to 15 billion is said to be "missing". It is believed that the fiscal policy could not adequately capture revenue, some of which was lost due to illicit money flows and corruption activities. Speaking on Zimbabwe Coalition on Debt and Development (Zimcodd) workshop, Believe Mhlanga who is an independent consultant said ZIMRA is collecting less tax from companies as compared to individual tax. In the first half of 2016, ZIMRA collected $356 million in individual tax, $145 million company tax and $33 million from mining royalties. The reason is that the companies are given holiday and incentives and together with tax evasion and avoidance, the tax burden is left to individuals (Nyoni, 2016).

ii) Does the legal framework of fiscal terms provide sufficient accountability to citizens, stability for investors and flexibility to respond to changing circumstances

The constitution provides the guidelines for the collection and spending of public funds. In Chapter 255 article 1(c) of the Constitution, states one of the functions of the Zimbabwe Anti-Corruption Commission as "…*to promote honesty, financial discipline and transparency in the public and private sector*" (Government of Zimbabwe, 2013, p.100) among others. The fiscal regime is generally stable since it has not changed a lot in a long time. Both the royalties and the tax used in the mining industry of Zimbabwe are not based on profitability as is for South Africa and Botswana. This renders the tax regime rigid and times longer periods of time to respond to changing circumstances.

iii) Do government authorities collect the full value of taxes and other payments owed to the state?

Artisanal mining is now recognised due to its potential contribution mostly to gold production and it is no longer as criminalised. This allows the artisanal miners to sale their product to the state and hence pay tax (Zvarivadza, 2018). The State is also losing through the loss carried over indefinitely, which should be limited for tax cushion purposes. The depreciation of equipment should not be allowed to use accelerated depreciation method and should be done over time. This shifts the timing of the revenues collected by the government to earlier in the project life (Anderson, 2011). Furthermore, the issues of transfer pricing and tax avoidance which is believed to have led to the "missing 15 billion dollars" are challenges that require sophisticated technology and skilled revenue collecting personnel. Looking again on Table 5.1, the Zimbabwe's corporate tax of 25% is low as compared to other SADC countries

.

Table 5.1: Comparison of Zimbabwe's mining taxation with the regional countries (Shimutwikeni, 2013), (Zimbabwe Environmental Law Association, 2012), (PricewaterhouseCoopers International Limited, 2016), (KPMG Services Propriety Limited, 2015)

Tax Payable	Botswana	Namibia	South Africa	Zimbabwe
Mineral Royalties	-Precious stones: 10% -Precious metals: 5 % Other Metals: 3% of gate value	-Diamonds: 10% -Precious metals, base metals and rare earths: 3% -Nuclear fuel minerals: 3% -Semiprecious stone and industrial minerals: 2%	-0.5-5 % for refined minerals -0.5-7% for unrefined minerals	-Diamond: 15% -Gold: 7% -Chrome: 5% -Platinum: 10% -Base metals: 2% -Coal: 1%, -Base metals and Industrial metals: 2%
Capital Allowances	-100% of mine capital expenditure and exploration cost. -Unlimited loss carry over	-100% deductible in 3 equal amounts	-100% deductible on prospecting, shaft sinking and equipment	-100% of all expenses, but 15% VAT is charged with equipment for domestic production. -Unlimited loss carry over
Corporate income tax	-70%-(1500%/X%) where x is the profitability ratio -Variable Income Tax Rate -Corporate income tax will not fall between 22% and 55%	-Diamond mining: 55% -Other Minerals: 37.5% -Non-mining activities: 40%	- To rate of CIT: 28% -Secondary Tax on Companies: 10% is levied on mining companies	-25% for general mining and 15% for Special Mining Leases
Withholding Tax	-7.5% of dividends -Interest paid to no-residents has a final withholding tax of 15% and interest paid to residents is subject to 10% -15% of management and consultancy fees. 5% of withholding tax is tax deductible	-Dividends: 20% paid to non-residents and certain foreign residents -Royalties: 10.5% on distribution to non-residents	- 15% Of non-citizens subject to DTA relief	-15% non-resident shareholders tax for non-listed companies -10% non-resident shareholders tax for listed companies
Value Added Tax	-12% and 0%- Applies to all but zero-rated items which include exports of minerals -Vat refunds are available within 6 months of being brought into country	-15%	-14% % of domestic sales and 0% for exports	-0% of all minerals -15% for capital goods. If mining is for export, the VAT can be refunded
Export tax				-15% if unrefined

5.3.4 Precept 5: Local Impact

i) TRUST: Does the government ensure that there are good working relationships between all stakeholders within affected communities?

Marange District residents who had their community within the alluvial diamond fields were moved in an unfriendly manner with cases of excessive use of force by the Zimbabwe National Army reported. The Government has a duty of making sure that the communities are fairly compensated and resettled according to the Vancouver Declaration of Settlement (United Nations, 1976). In the Diamond Policy, it is stated that the investor will compensate the affected communities meeting the government standards. The Government standard to be met by the investors was not prescribed in the policy which may cause conflicts between the investor and communities (Centre for Natural Resource Governance, 2013a). The policy requires the investors to build and maintain infrastructure in the areas of relocation over time agreed with the government but usually over the project lifetime. By this the company can also obtain the social license to operate.

ii) IMPACT ASSESSMENT: Does the government maintain an effective system for assessing the potential impacts of resource projects?

The Environmental Management Act (Chapter 20:27) which is enforced by Environment Management Agency (EMA) mandates large-scale mining to conduct an Environment Impact Assessment (EIA) but Marange Resources did not conduct the assessment. This was a direct violation of the law, which resulted in negatively affecting the community and the environment. The system is in place to assess the impacts but history has shown that the rules are sometimes not followed.

iii) COST MITIGATION: Does the government mitigate the environmental, social and health costs of resource projects?

The priority of the Government and extractive companies should be of prevention of environmental damages. If damage to the environment cannot be avoided, adequate steps should be put in place to minimize the damage. This can be achieved by conducting an EIA and suggest ways to minimize damage during the design and construction of the project. The government of Zimbabwe through the Ministry of

Mines and mineral development approves the mine design along with extraction patterns that make them to be in control of the mitigation of the environmental, social and health costs of the project.

5.3.5 Precept 7: Revenue management (Spending, diversification and investment for the future)

i) Long-term fiscal Sustainability: Is the government's spending and borrowing fiscally sustainable given that non-renewable natural resources are finite?

Fiscal sustainability, defined by the Natural Resource Governance Institute (2005) as the ability of the government to continue serving its debt without affecting the future revenue management. Zimbabwe has high external debt burden, which is at 76 % of GDP as shown in Table 5.2, of which most of the debt is in arrears according to International Monetary Fund (2016). The debt to GDP ratio had been increasing fast, from 66 % in 2012 to 76 % in 2015 and 84.2 in 2016 (Trade Economics, 2017). Comparing Zimbabwe with Botswana, Namibia and South Africa on how they are diversifying the sources of revenue, which shows if the nation will be fiscally sustainable after resources exhaustion. Botswana is the least diversified economy followed by Zimbabwe as shown in Figure 5.4, yet Zimbabwe once had a well-diversified economy before. Zimbabwe needs to focus on diversification of the income hence the current focus on downstream beneficiation.

Table 5.2: Zimbabwe: 2015 External Debt Stock by Servicing Status in (Million USD) (International Monetary Fund, 2016)

	Remaining Principal Due	Total Arrears	Principal Arrears	Total Debt	% of GDP
Total	**4 593**	**5 466**	**3 181**	**10 770**	**76**
Public and Public Guaranteed Debt	1 463	5 510	3 074	**6 973**	**49.2**
Bilateral Creditors	1 104	2 932	1 327	**4 036**	**28.5**
Paris Club	220	2 854	1 266	**3 074**	**21.7**
Non-Paris Club	883	78	61	**961**	**6.8**
Multilateral institutions	359	1 991	1 161	**2 350**	**16.8**
IMF	0	109	87	**109**	**0.8**
AfDB	36	550	291	**586**	**4.1**
WB	293	1 062	603	**1 355**	**9.6**
EIB	26	198	132	**224**	**1.6**
Others	5	72	47	**77**	**0.5**
Short-term debt RBZ	0	587	587	**587**	**4.1**
Private Creditors	3 797	0	0	**3 797**	**26.8**

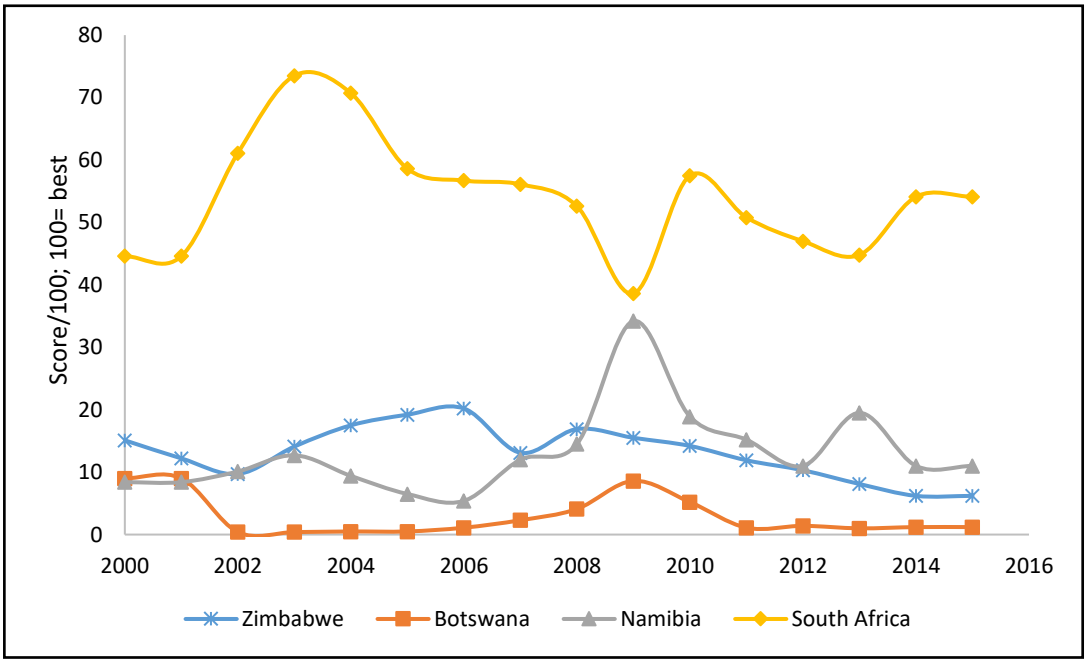


Figure 5.4: Economic Diversification of Zimbabwe, Botswana, Namibia and South Africa (Mo Ibrahim Foundation, 2017b, 2017c, 2017d , 2017e)

5.3.6 Precept 8: Revenue management (smooth domestic spending of revenues to account for revenue volatility)

i) Expenditure Volatility: Is government spending independent of short-term changes in revenues?

The government's ability to manage large revenues from resources may be related to the period of the discovery of Marange Diamond field where the state collected revenues and most of which is believed to have been spent for political patronage. It is reported that of the $2.5billion made from diamond sales, only $300 million was accounted for and the rest is believed to have been syphoned by the central intelligence organisation and the Zimbabwe Defence Industries (Ebrahim, 2017). This was a short-term gain to the ones in power and no saving for future was done. Furthermore, looking at the effectiveness and the efficiency of managing the budget, Zimbabwe perform very poorly as compared to its neighbours as shown in Figure 5.5.

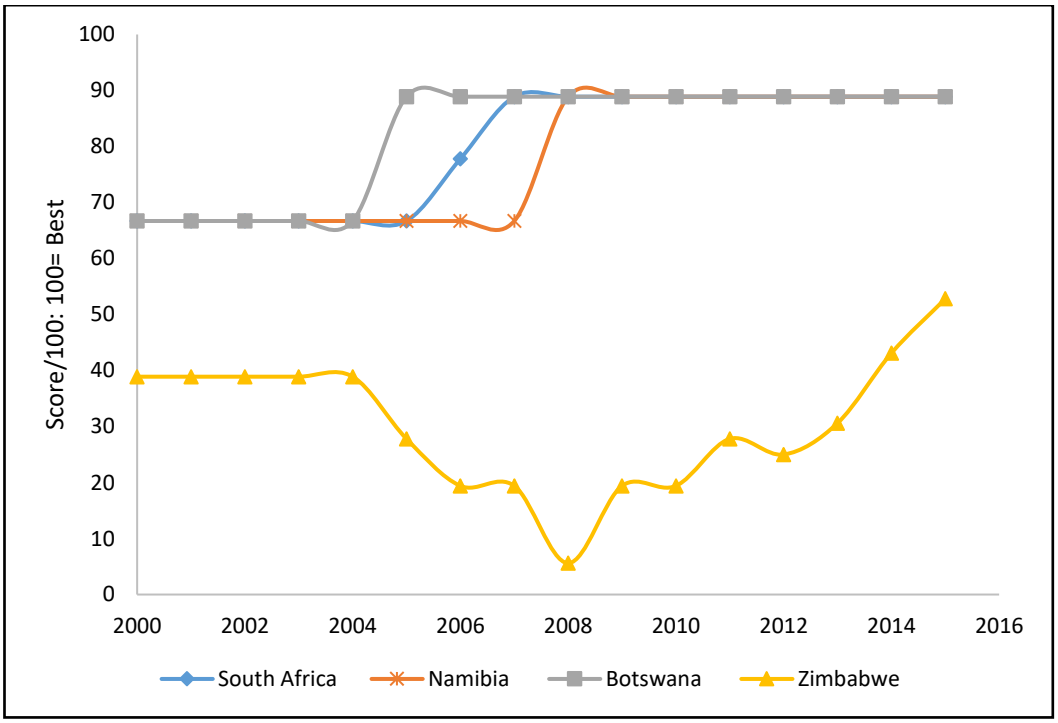


Figure 5.5: Budget Management trend from 2000 to 2015 for Zimbabwe, Botswana, Namibia and South Africa (Mo Ibrahim Foundation, 2017b, 2017c, 2017d , 2017e)

5.3.7 Precept 9: Government spending

i) Does public spending align with national plans?

The current national plans and development goals are found in the economic blueprint of the ruling party, the ZIMASSET. The blueprint is said to be designed to peruse accelerated growth and wealth creation (Government of Zimbabwe, 2013a). Wealth creation requires saving and invest the funds in the non-resources sectors such as banking, IT and manufacturing. Zimbabwe has negative saving which is not in line with national plans. Figure 5.6 shows the savings rate of other countries compared to other African countries.

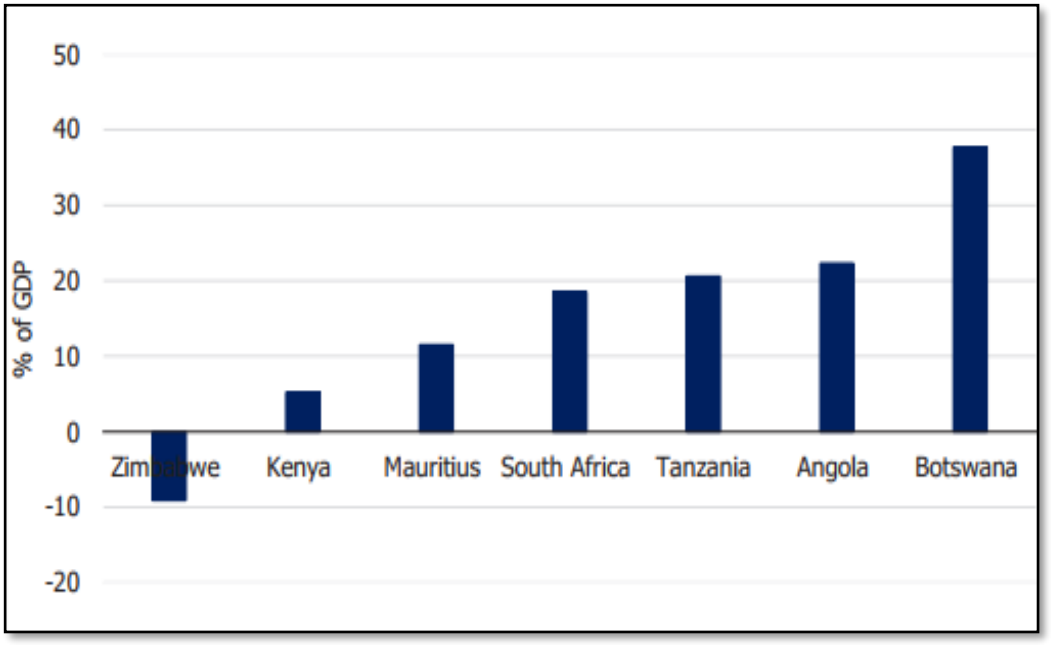


Figure 5.6: 2015 Saving Rates (Chinamasa, 2016)

ii) Does the government distribute revenues in an accountable and transparent manner, and avoid off-budget transfers and spending?

The government had been blamed for not being accountable and transparent, especially on mining revenues. The then Civil Society Coalition coordinator for Kimberley Process, Mr Shamiso Mtisi told Voice of America (VOA) News that; "Marange had limited transparency and accountability in terms of production data. The minister of finance does not have all the production figures" (Voice Of America, 2012).

iii) Does the government spend public revenues as intended?

Ministers usually spend public funds on projects they are not intended to fund. An example is in 2016, the then Minister of Higher and Tertiary Education Professor Jonathan Moyo diverted $400 000 that was for manpower development to buy bicycles for the people in his constituency (Share, 2016). This is a typical example of un-accountability, which is happening in Zimbabwe and the ministers, and the officials do not face any consequences for their actions.

5.3.8 Precept 10: Private sector development

In this precept, the research takes a look at how the government is diversifying the economy from resource based on the other industries.

i) Does the government make general-purpose investments and remove bottlenecks to non-resource sector growth?

Zimbabwe Investment Authority Act [Chapter 14:30] (Government of Zimbabwe, 2006) facilitated the creation of the Zimbabwe Investment Authority (ZIA) responsible for licensing, protection of investors under Zimbabwean laws and facilitate access to incentives as a promotion to investment. The Zimbabwe Investment Authority houses under its umbrella the One Stop Shop where all state agencies responsible for company registration and investment are under one roof. This reduces the period of registering a company to about five days, which is competitive globally (Ministry of Macro-Economic Planning and Investment Promotion, 2017). The government of Zimbabwe has identified manufacturing and services as key sectors thereby creating Special Economic Zones under the Special Economic Zones Act [Chapter 14:34] (Government of Zimbabwe, 2016) to increases their competitiveness of the industry. This is in line with ZIMASSET, which encourages value addition of the natural resources before export.

ii) Does the government ensure that domestic businesses and workers have the opportunity and capacity to operate in the extractive sector?

The Indigenisation and Economic Empowerment Act (chapter 14:33) of 2007) was designed to increase the meaningful participation of indigenous people of Zimbabwe. Some of its objectives are to;

- "*To economically empower the previously disadvantaged Zimbabweans by increasing, mainly through economic expansion, their participation in the economy so as to create wealth and eradicate poverty"* and
- *"To create conditions that will enhance the economic status of the hitherto disadvantaged Zimbabweans by facilitating their contribution to and benefit from the economic development of the country' as its objectives"* (Government of Zimbabwe, 2007, p.3).

The government has a commitment to helping domestic business and small-scale mining. The IEE Act of 2007 facilitates an enabling environment but the financial resources to support these businesses are limited and the corrupt official have looted some of these funds. Under the IEE Act of 2007, the government and all companies are require to procure from locally owned companies which enhances the local businesses. The Diamond policy mentions the commitment to beneficiation through cutting and polishing Zimbabwean diamond but it did not lay strategy and mention the people who may invest (Centre for Natural Resource Governance, 2013a). This only leaves room for smuggling, illicit dealings and corruption in the form of patronage and rent-seeking.

iii) Does the government take the opportunity to use oil, gas and mineral resources domestically, when the opportunity costs of doing so are less than the benefits?

The government through the ZIMASSET supports the idea of beneficiation of raw material into finished products (Government of Zimbabwe, 2013a). The challenge is the collapsing of the manufacturing industry and a deteriorating infrastructure, which makes it less profitable for companies using the raw materials as compared to export. The diamond policy sets aside 10 % of the diamonds mined in Zimbabwe to be cut and polished in locally (Centre for Natural Resource Governance , 2013a).

5.4 Benchmarking results

A summary of the ranking of the benchmarking exercise is given in Table 5.3. A summary comment of each precept is given and a suggestion for the improvement is provided.

Table 5.3: Natural Resource Benchmark Summary for Zimbabwe

Precept	Summary	Remarks
Precept 1: Securing benefit for all	Indigenous ownership is a good initiative for ensuring for all but the government lacks a clear strategy that is inclusive of the poor people. 51% stake, required from foreign-owned companies, was a poor strategy for economic transformation as it deterred investment. It is "killing the goose that lays the golden egg ". President Mnangagwa has suspended the 51% requirement clause as it only remains in the platinum and diamond mining	A standalone Mineral Policy document developed through a consultative process, which clearly shows inclusiveness in its strategy for mineral industry development. Indigenization policy should reduce the ownership, which should be ceded to citizens so that investor has control of their businesses even in platinum and diamond mining.
Precept 2: Transparency and Accountability	The constitution requires transparency and accountability by public officials but the levels of transparency and accountability are very low. Example, Government lost $15 billion through illicit money flows but no one is being held responsible. Access to information on production and sales is very limited which leaves room for corruption without anyone hold accountable	The Presidency should be tough and not protect corrupt political leaders which some political commentators believe that the President Mnangagwa and former President Mugabe had been doing. The State should willingly and fully participate in the Extractive Industry Transparency Initiative. The government through its executive should emulate neighbouring countries like Botswana and Namibia who are transparent and accountable for all the revenues. This has seen these countries prospering as compared to Zimbabwe.
Precept 4: Taxation and other company payments	The fiscal regime is competitive compared to Botswana, SA, and Namibia but some agreement such as the Double Taxation Agreement put the country at a disadvantage. In addition, some tax incentives for the extractive companies benefit them at the expense of citizens who pay more tax.	The royalty and tax regime should be based on profitability for it to be flexible. The government should reduce the number of tax collectors to reduce the complexity of complying with tax returns filing. There is need to research and remove tax incentives that are not beneficial to the mining and minerals development and the country.

Table 5.3: Continues: Natural Resource Benchmark Summary for Zimbabwe

Precept 5: Managing Local Impact	There is little trust between the government and communities especially in Marange diamond fields. The relocated people feel that they were not compensated enough. The laws of protecting the environment are implemented and the costs are mitigated by dealing the environmental issues during the licensing of the mine project.	The government must engage the community intensively to address social and environmental challenges, which come because of mining. The mining companies should fully compensate communities that are relocated and help in providing infrastructure under the company's CSR. In addition, the small-scale and artisanal miners should be taught about how to minimize environmental damage through government programmes or as the CSR of the large-scale mining companies.
Precept 7: Revenue management (Investing for growth)	The Country has been failing to service its debt. The debt to GDP ratio has been increasing fast, from 66 % in 2012 to 76 % in 2015 and 84.2 in 2016. The government subscribes to diversification but challenges such as funding and infrastructure affect the vision. The country does not have any savings for future spending when the natural resources run out.	The government should reduce the spending and should leave within its means to reduce the accumulation of debt. There is a need for creation for Sovereign Wealth Fund saved in the international assets. However, there should be a balance of investment in SWF and investment in infrastructure development to reduce production bottlenecks at home. Infrastructure such as railway, power generation and road needs urgent attention if the country is to be able to attract investors.
Precept 8: Revenue Management (Stabilizing expenditure)	Mineral revenue has not been managed well for example, only $300 million had been reported to the treasury but it is projected that $2.5 billion was made during the same period. These funds are believed to have been used for short-term gain in political patronage.	Developing a spending policy similar to Botswana that seeks to invest a portion of revenues from a non-renewable resource for future spending when the resource depletes. Therefore, every effort should be put in place to stop unnecessary spending for political gains but rather invest in creating linkages between the EI industry and the rest of the economy.
Precept 9: Public spending (efficiency and equity of public spending)	Public fund spending is not transparent and poor investment in empowerment programs and development projects such as road construct and maintenance. The contractor escalates prices and share the huge "profits" with government insiders.	The government should make sure that the accountability and transparency are the key principles in all the state institutions. The Procurement of government goods and services should be done according to the Procurement Act [Ch 14:22] and ZACC should be independent and be able to investigate suspected corruption without fear of favour.
Precept 10: Private sector investment	The government promotes investment by the private sector through ZIA. It also promotes sharing of infrastructure such as smelters for local beneficiation of minerals, which is good for start-ups.	The government should also allow for private railway operations on seeking for a joint venture with private companies and even with the South Africa's railway company. This can be done in most infrastructure reconstruction projects such as in power generation.

5.5 Resource governance comparison using RGI and Fraser Institute Annual Survey

Continuing with the benchmarking with the mineral governance of Zimbabwe. Another method for assessing the policies and actions that govern the use of the RGI developed by NRGI as mentioned earlier. The RGI calculates composites of the three index components, which are, Value Realization, Revenue Management and Enabling Environment. The components and their subcomponents are shown in Figure 5.7.

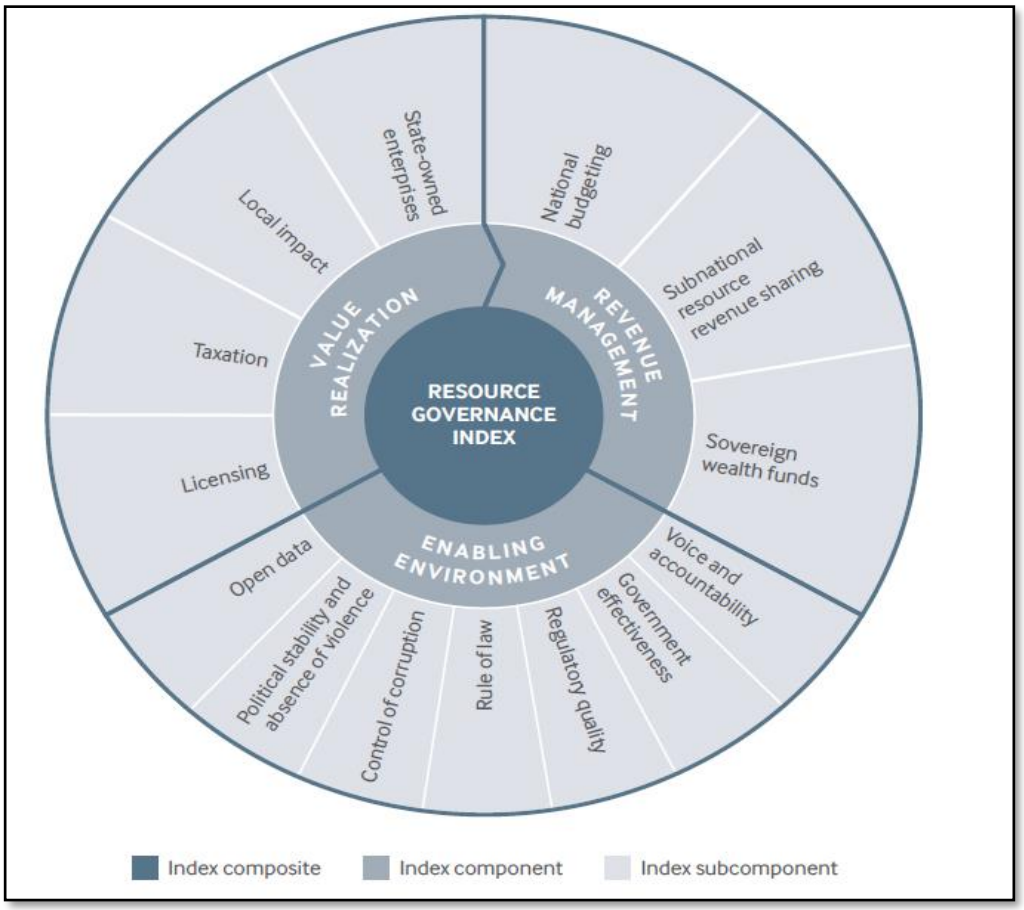


Figure 5.7: Resource Governance Index, components and (Natural Resources Governance Institute, 2017b)

RGI Results for Zimbabwe in 2017

Zimbabwe performed very poorly on the value realisation component, which covers licensing, taxation, local impact and the state-owned enterprises. Only taxation has

a score that is a bit satisfactory of 50 % and the rest all perform poorly way below the best scores as indicated in Figure 5.8. The results confirm the problems with the mining industry of Zimbabwe as it came out in the benchmarking process.

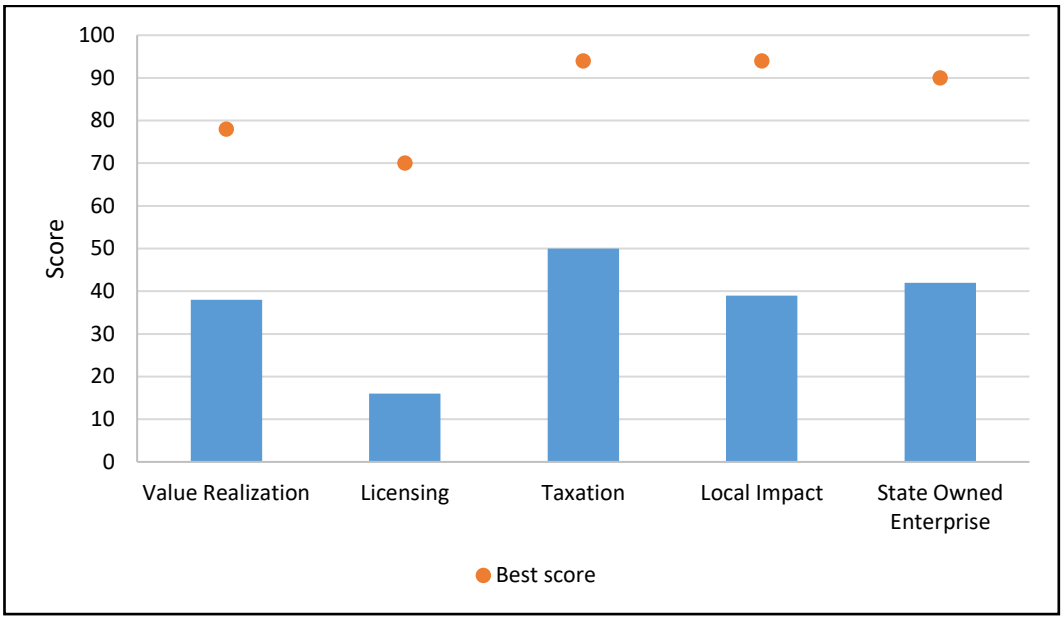


Figure 5.8: RGI: Value realisation in Zimbabwe mineral policy in 2017 (Natural Resource Governance Institute, 2017a)

Revenue management scored very low and that is consistent with what was found in the benchmarking exercise precept seven and eight. The country does not have a sovereign wealth fund for savings that will be used in the future when resources run out or when the prices are a record low. The rest of the scoring on revenue management is shown in Figure 5.9. The country does not have sovereign wealth fund, which is usually established by resource-rich countries

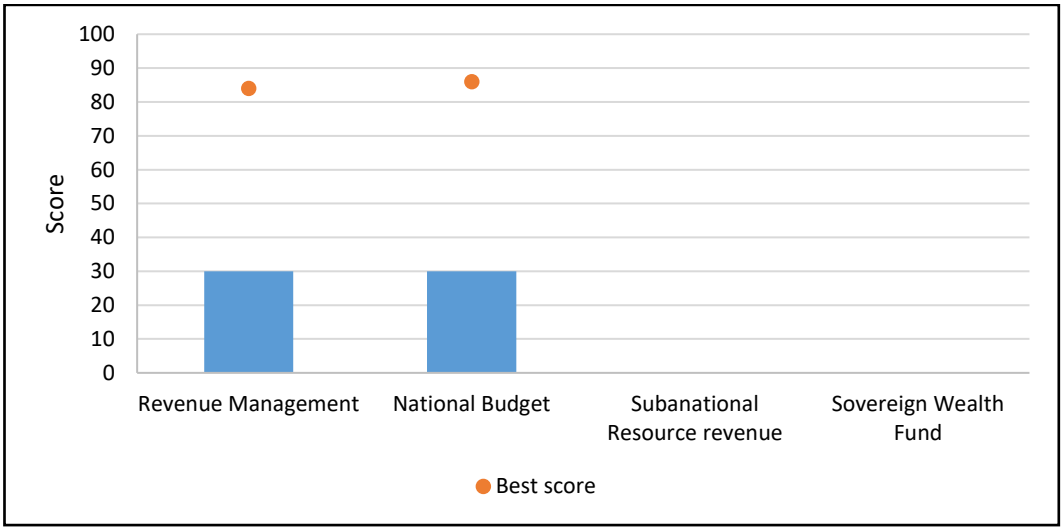


Figure 5.9: RGI Revenue management for Zimbabwe in 2017 (Natural Resource Governance Institute, 2017a)

One of the components of the RGI that is very crucial for deciding whether to invest in a country or not is the business climate/environment. It can be noted that Zimbabwe is struggling with control of corruption and political stability among other subcomponents as shown in Figure 5.10

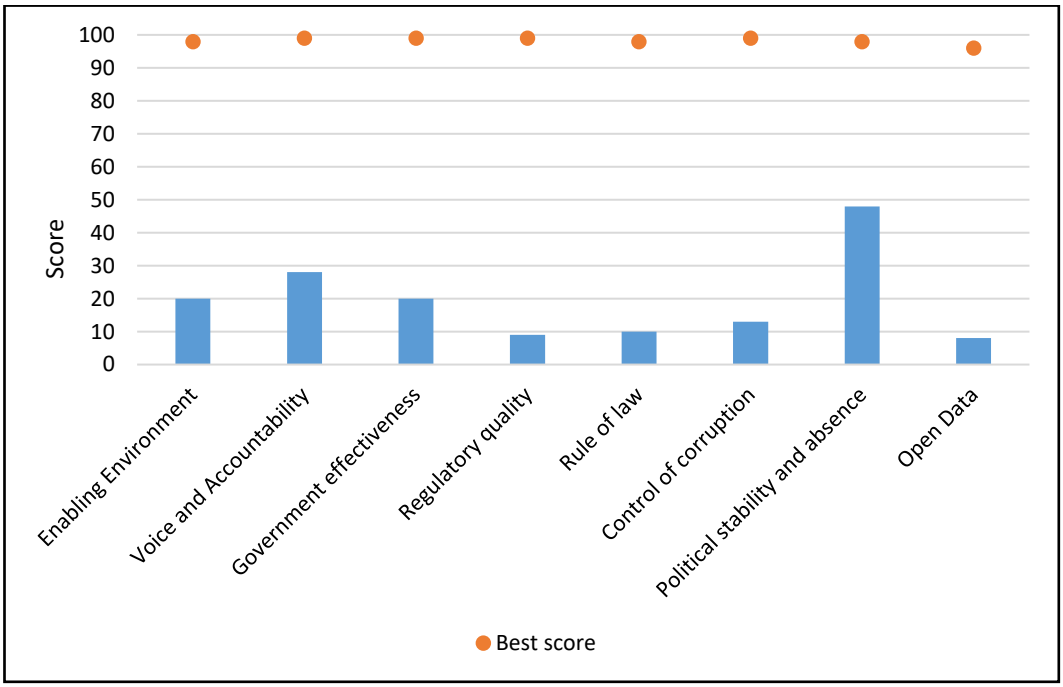


Figure 5.10: RGI Enabling Environment for Zimbabwe in 2017 (Natural Resource Governance Institute, 2017a)

Zimbabwe was outperformed by Botswana and South Africa when compared using the RGI components and the composite as shown in Figure 5.11. There is no RGI

data for Namibia available hence not appearing in Figure 5.11. This puts Zimbabwe at a disadvantage when competing for FDI. According to Natural Resource Governance Institute (2017a), Zimbabwe performs dismally with a score of 29 of 100 points compared to the Sub- Saharan Africa average of 43 points.

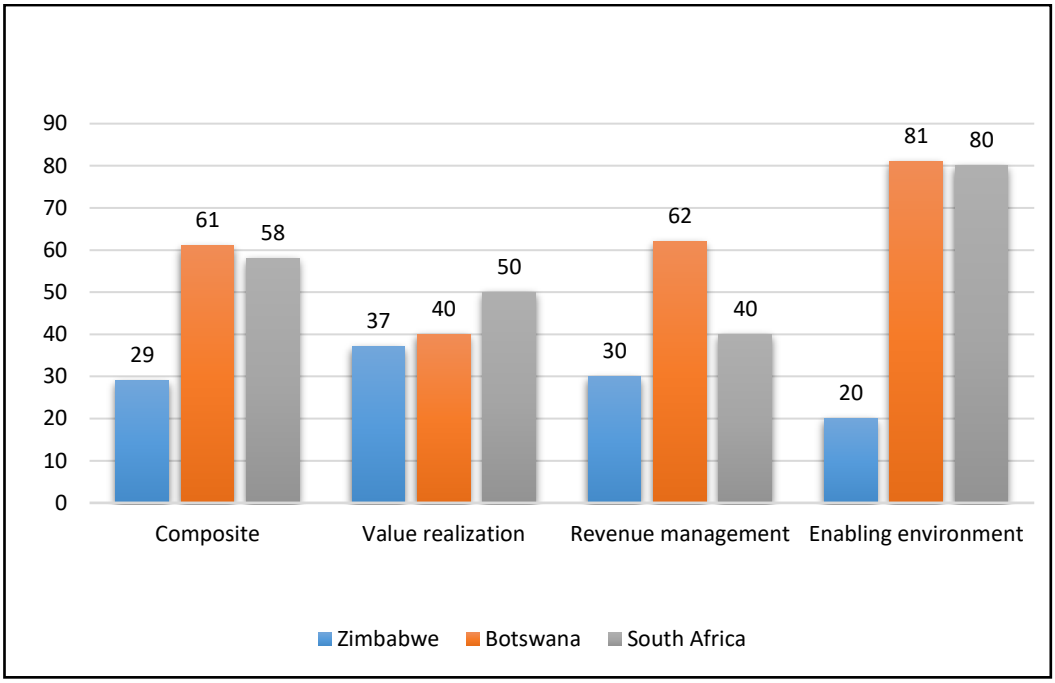


Figure 5.11: Comparisons of the Resource Governance Index components of Zimbabwe with Botswana and South Africa (Natural Resources Governance Institute, 2017c).

5.6 Fraser Institute Survey

Fraser Institute ranking confirmed the poor performance of the Zimbabwe policy, which have negative investment attractiveness even though on average, the potential of discovering a deposit is generally good. Fraser Institute (2017) report cited the Indigenisation and Economic Empowerment Act of 2007 that requires the foreign companies to cede 51% of shares to indigenous Zimbabweans as the one that shuns away investors. The 2017 policy perception, mineral potential and Investor Attractiveness indices are shown in Figure 5.12. Zimbabwe performed the least in every aspect compared to its neighbours.

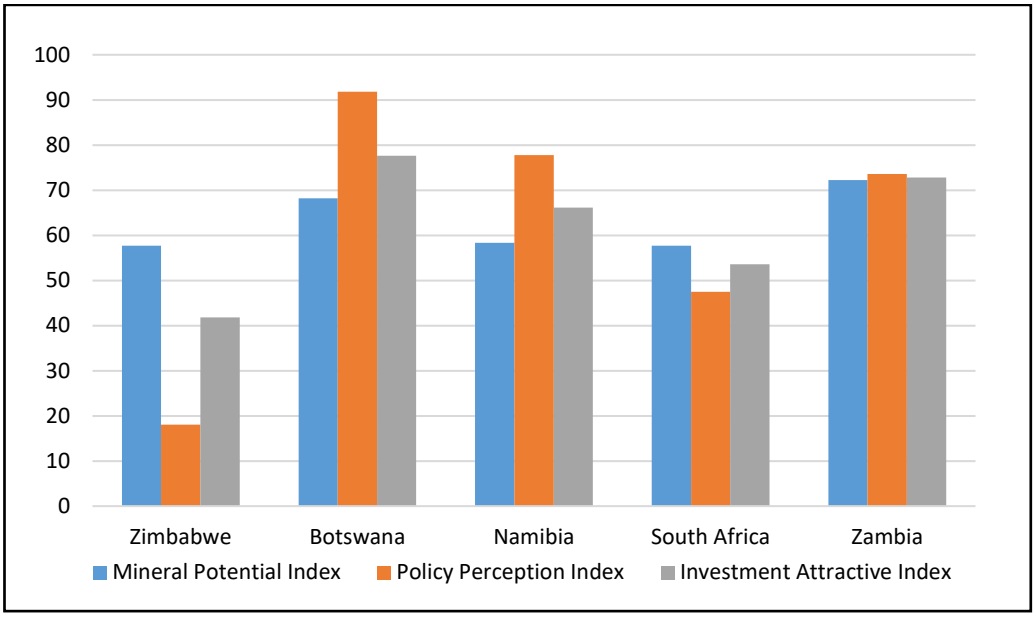


Figure 5.12: Fraser Institute Annual Survey Indices for 2016. Adopted from (Fraser Institute, 2017)

The Zimbabwe's mining industry has a great potential to attract the foreign investors if the policies are changed. Figure 5.13 shows that Zimbabwe has the greatest room for improvement index compared to Botswana, Namibia and South Africa.

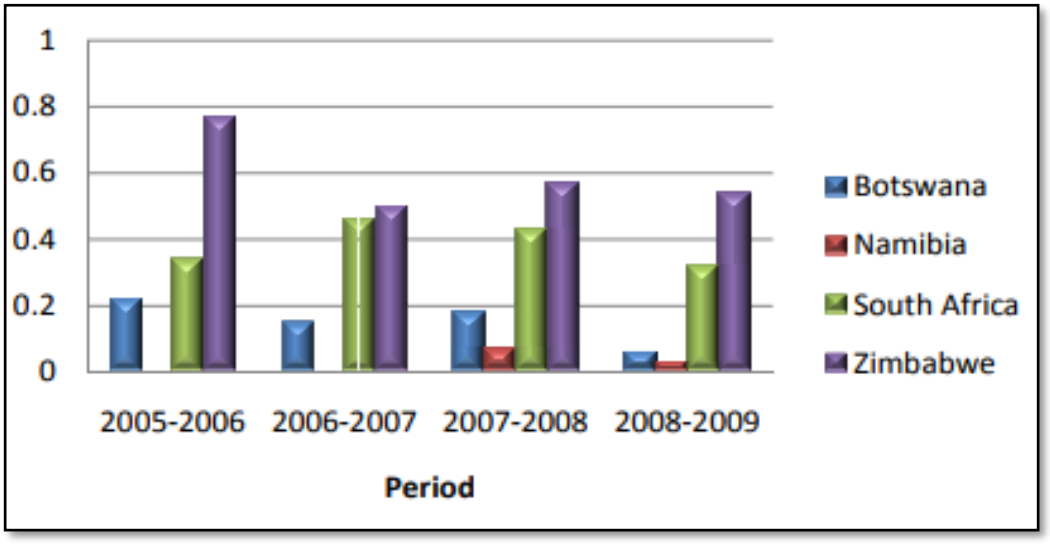


Figure 5.13: Room for Improvement Index (Frasier Institute, 2009)

5.7 SWOT Analysis for Zimbabwe mining industry

The mining industry of Zimbabwe's strengths, weaknesses, opportunity and threats (SWOT) were analysed as shown in Table 5.4. The SWOT analysis in Table 5.4

provides the Zimbabwe mining industries 'challenges which make it less competitive. On the other hand, the country has a number of opportunity that can be leveraged to grow the industry and hence the country's economy.

Table 5.4: SWOT Analysis of Zimbabwe mining industry

Strengths	**Weaknesses**
• Diverse minerals reserves • World 2nd largest reserves of PGEs and chromite deposits at relatively shallow depths • Skilled labour • Cheap labour	• Lack of geological database • Corruption and lack of transparency and accountability by public officials • Poor mining regulation capacity and unclear mineral policy • Lagging behind in mineral explorations and development
Opportunities	**Threats**
• Investment friendly policies • New explorations • New lines of credit for infrastructure development (removing bottlenecks) • Value addition of minerals • Opportunity for diversification to other sectors of the economy • Returning back of skilled and experience workers from diaspora • Credible new government through elections that re-engage with the international community	• Far from ports • Dilapidated infrastructure such as rail, road, water supply and electricity • Poor rankings in ease of doing business, policy perception, political stability and security of tenure • Highly volatile commodity prices caused by low commodity demand

5.8 Chapter conclusions

The benchmarking exercise has shown how Zimbabwe's policies lack consistency and are poorly implemented. The poor policies is what hinders the excellent and efficient use of mineral resources for sustained economic growth and human development. Accountability, transparency, good governance and access to information held by the government are all infringed by the Official Secrets Act (1970), which has fuelled corruption in the form of patronage and rent-seeking because of lack of access to information by the public. Comparing Zimbabwe with the neighbours for benchmarking purpose showed that a lot has to be done if the country has to turn around its economy.

Strategies on how to turn around the Zimbabwean extractive sector that may result in the turnaround of the economic prospects of most citizens are proposed in Chapter 6. The idea of value addition as a way of harnessing maximum benefit from the resources were evaluated in the case study of the feasibility of diamond and chrome beneficiation.

6 STRATEGIES FOR LEVERAGING MINERAL RESOURCES FOR ECONOMIC TRANSFORMATION AND HUMAN DEVELOPMENT

6.1 Introduction

In the previous chapters, it was established that mineral led economies have a potential to transform the lives of their citizens through collaborative efforts of the government and the mining companies. The potential windfall from natural resources exploitation presents an opportunity for sustainable economic growth and human development but only certain channels have to be followed for this to happen. Common pitfalls that are experienced by the resources led governments that lead to poverty exacerbation can be categorically put for three broad reasons which are:

1. Countries fail to develop a competitive mining industry which is shielded from the shocks from the fluctuation nature of commodity revenues. In some cases the countries fail to develop infrastructure, does not have sound policies especially fiscal regimes and political instability which turn away investors. Nationalisation of mines have contributed to the low performance of the mining sector and the poor economic prosperity of the country.
2. Failure in revenue management. Often, governments increase their spending, sometimes even borrow the money to spend on civil servant salaries and some other unnecessary spending in anticipation of the windfall to gain political support which is not good for the long-term prosperity of the country.
3. The governments of the resource-driven country usually fail to diversify their revenue base by investing in other non-resource sectors which are not affected by commodity price volatility.

It was also established in the previous chapters that Zimbabwe has a great potential in using its resources for broad-based economic growth and transforming the lives of the ordinary citizens. In this chapter, possible policy options to develop a competitive industry that attracts sustained investment in exploration and mining are suggested. This chapter gives further suggestion on revenue management and investing for sustainable economic and human development, through diversification and value addition of domestic minerals.

6.2 Governance of the Mining Industry

It is of great importance to understand the governance of the mining industry for it to provide inclusive benefits to the government, citizens and the companies. Figure 6.1 shows the conceptual model for mining industry governance showing how it determines the level of human development. The policies in other domains and the mineral policy overall determine the success of the mining industry. External factors such as demography, the economy, social-cultural factors and technology together with the mineral resource governance determine the mining climate in a country. When the socioeconomic and political climate is good and stable, the mining industry prospers, providing a high probability of experiencing economic growth and human development.

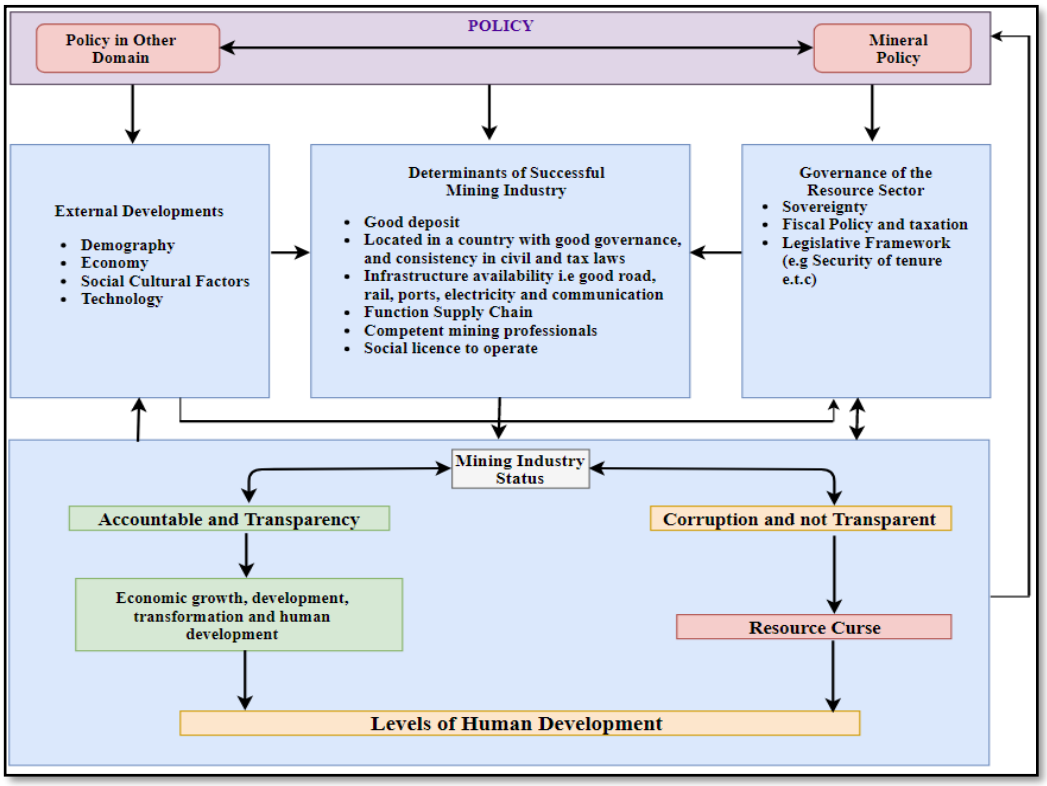


Figure 6.1: Conceptual Model for Mining Governance and Human Development

6.3 Economic linkages and multipliers of the mining industry

The extractive industry (EI) presents an opportunity for worthwhile development opportunity for Zimbabwe as it is in all other developing nations. Frequently high levels of FDI inflows and constant although fluctuating revenues, employment, contribution to growth and country's development, e.g. infrastructure construction

and beyond direct contribution through inter-sectorial linkages (White, 2016). Economic linkages can be seen through the multipliers, which are identified by Jones & Baxter (2002) as given in Table 6.1. The scale of the mining operations in a country will determine the sizes of the multipliers, whilst the scale of mining depends on the technology available and the effect of the multipliers to the rest of the economy depends on the amount of money invested.

Table 6.1: Typical Mining Multipliers (Jones & Baxter, 2002)

Multiplier	Description
Social	Construction of infrastructure by mining companies such as housing, roads, schools and clinics, and provision of utilities such as electricity and recreational facilities.
Primary Income	Household demand for goods as the consequence of primary income derived from the mining industry.
Employment	Jobs created in other industries because of demand or supply of goods by the mining industry.
Income terms of trade	Net positive effect on balance of payments, foreign reserves, monetary policy and general business confidence induced by mining exports.
Capital formation	Positive effect on the mining industry in attracting an inflow of foreign capital and generating domestic capital as well.

According to African Union (2009), the African extractive sectors should strive to move swiftly from its traditional extraction for export to a knowledge-driven industry that is key to inclusive growth and development of an integrated African market. The African vision encompasses the leveraging of the downstream, up-stream, and sidestream linkages. The African vision also wants a mining sector that optimizes the diversification of other industries. Zimbabwe has a diverse resource base sector with minerals that are in demand in modern day industrialization, which only requires a good strategy to not only supply the raw material, but also to underpin the potential benefits of value addition. Jourdan (2014) explained the need to construct reliable infrastructures such as railway, roads and electricity generation linked to the regional country for access to the ports and markets. The interaction of the resources sector through linkages, which has a multiplier effect, can be a game changer for the Zimbabwe industrialization process.

6.3.1 Linkages

Hirschman (1981) has discussed his linkage approach that focused on the relationship between stakeholders within and across industries and recognised it as one of the pillars of development (Hirschman, 1981). In the explanation of linkages, Hirschman (1981) came up with an explanation of the forward and backward linkages. Linkages can be best explained with the aid of Figure 6.2, which shows the backward and forward linkages together with the consumption and the fiscal linkages.

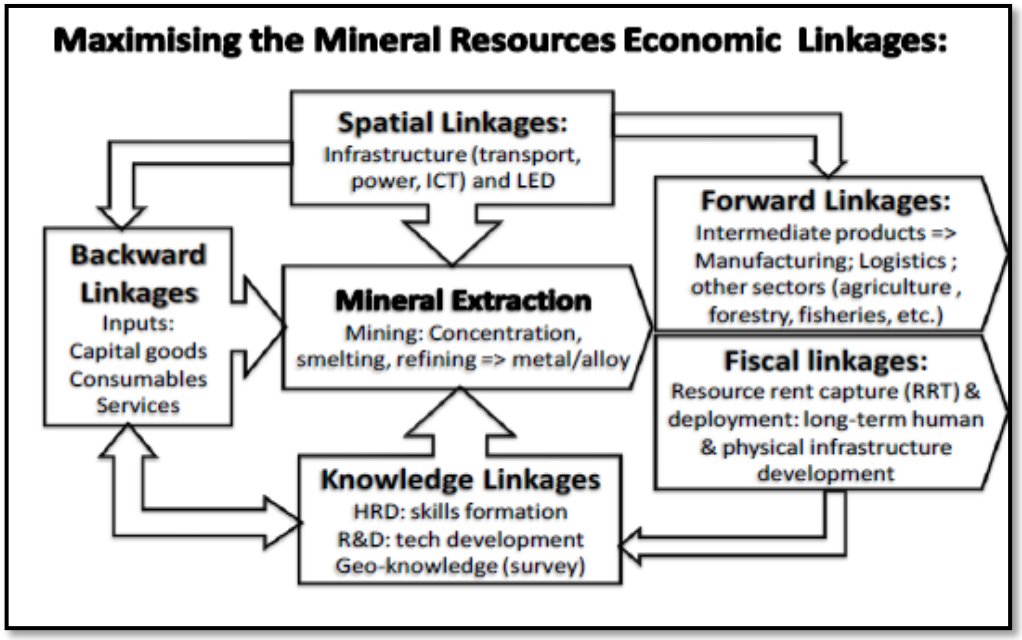


Figure 6.2: The linkages of mining with other industry (Jourdan, 2014)

- *Upstream/ backward linkages* are as a result of the use of the inputs from other industries required by mining operations to function. The inputs are can be services such as consultancy in geology and mining, mining equipment and consumables and processing equipment such as crushers (Baartjies, 2016).
- *The forward (downstream) linkages* are due to the value addition of the raw materials through refining, smelting and further downstream processing such as manufacturing and marketing of the finished consumer product (Hausmann, et al., 2008).

- *Knowledge (technological) linkages* are defined as the knowledge transfer from the transnational corporation to the state-owned enterprises, the employees and the people in business along the value chain (Jourdan, 2013).
- *Fiscal linkages* are derived from the revenue (royalties and taxes) from the mining operations. Fiscal linkages provide a direct benefit as it brings foreign currencies that contribute to balance of payments and community support through CSR (Hirschman, 1981).

6.4 Channels of converting mineral resource to human development

McMahon & Moreira (2014) opened the discussing on increasing the benefits from mining operation by suggesting that mining is an enclaved industry and only benefited a few who has access to it. Basnett & Sen (2013) emphasised that mining can be viewed as special kind of manufacturing sector which uses special technology that does not allow employing of many people due to its high capital and skill intensiveness. The total impact of the mining sector on human development is determined by three factors; the scale and minerals mined, the amount of fiscal revenues generated and contributing to the industrialization of the country (McMahon & Moreira, 2014). According to Greener & Dodd (2015), there are four channels that country can use to foster human development through mining industry. The government receives revenues through royalties, equity and taxes from the mining industry, which can either be spent on social sectors or invested for growth and diversification. The companies spend the resource revenues on payment of employees, procurement and developing the infrastructure required for production. Companies further spend on social investment through corporate social responsibility. The channels are shown in Figure 6.3. Both the government and companies spending may lead to human development when the right policies are consistently followed.

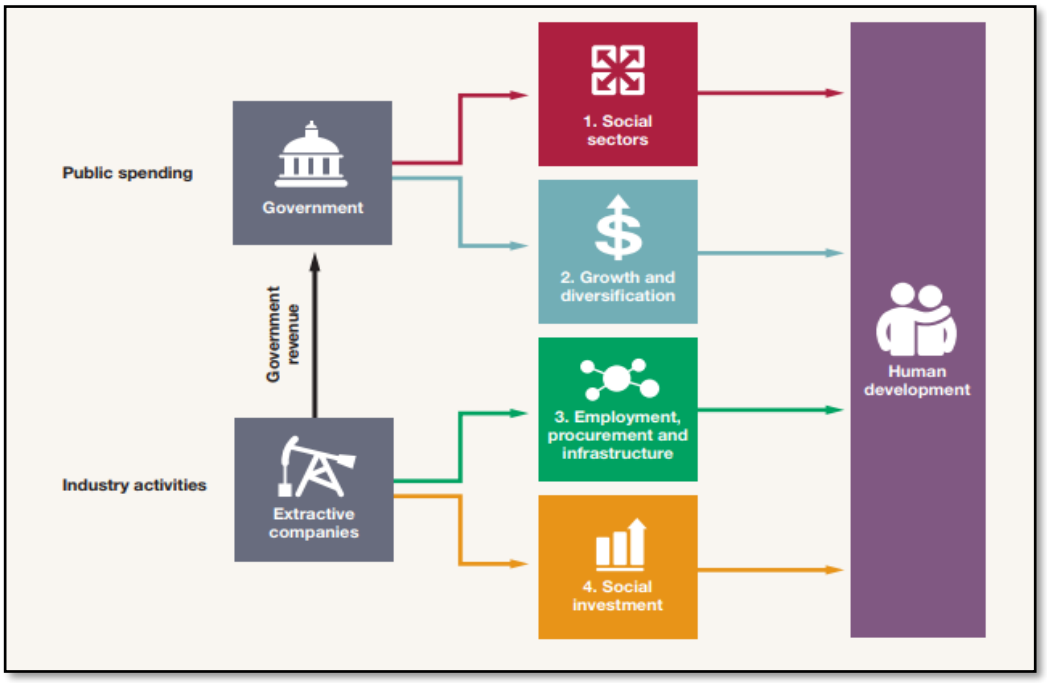


Figure 6.3: Extractive activities and human development: The main channels (Greener & Dodd, 2015)

The government must put in place policies that are sustainable development oriented for the benefit of the citizen in the end. World Bank Group (2017) pointed out that policies are not spot transaction and require consistency over time for the investors and citizen to gain confidence in the policies and government. This is usually difficulty especially in the developing country where the economic and political conditions often make the policymakers change policies for short-term economic gain to deceive voters and stay in power. The government of Zimbabwe should emulate the government of Botswana that is consistent with policy over a long time.

6.4.1 Government investment in Human Development

6.4.1.1 Social Sectors

The resource revenues can be used for social protection programs mostly in education and health funding for the poor. The social spending can be through cash transfers and through a program that directly funds education and health. For the poor for example, Basic Education Assistance Module (BEAM) in Zimbabwe meant for indigent pupils and orphans. There are many positive effects of cash transfers, which are for personal, regional and national interest; these effects are

shown in Figure 6.4. Some of the desirable effects of cash transfers are that it provides a safe and predictable environment that encourages both local and foreign investment. The social pension of Botswana for example, is quoted by Mutambara (2011) to be the most effective strategy of fighting poverty, which brings social stability that created an attractive environment for high investments rates that made Botswana Africa's fastest growing economy for many years. The report also looked at cash transfers in South Africa and Brazil, and found out that the transfers are given to women and have increased the school attendance of girls.

Direct funding of these social sectors presents a challenge to the budgets since it becomes a recurring cost and yet the natural resources are exhaustible. Therefore, the government should fund the education and health sectors from natural resources revenues to a small extent whilst putting in place other funding mechanisms that shift from over-relying on mineral revenues.

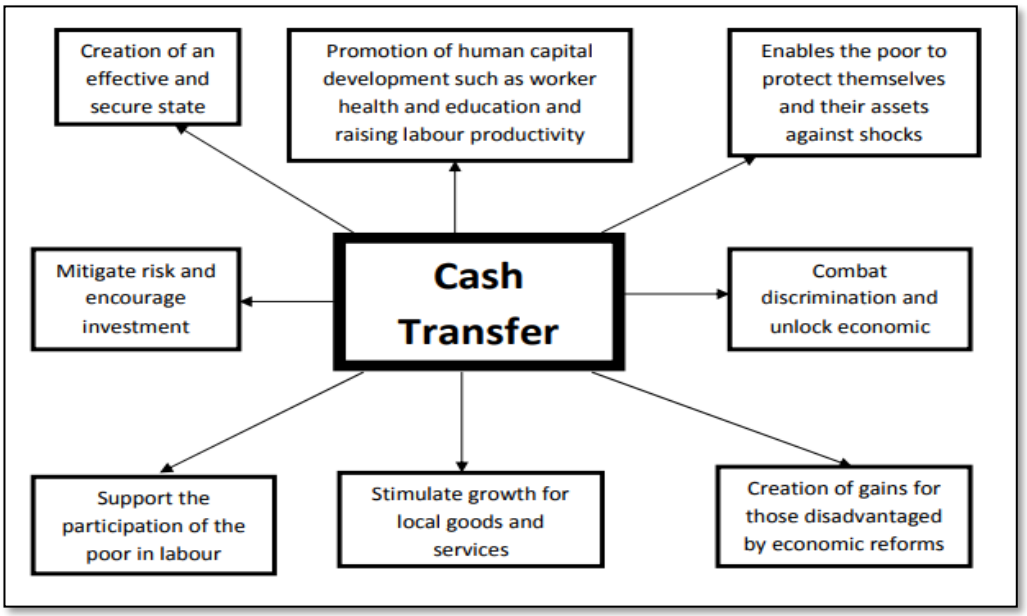


Figure 6.4: Intended effects of cash transfers (Mutambara, 2011)

6.4.1.2 Sovereign Wealth Fund

Setting aside some proceeds from the mineral resources for future spending has become common even in Sub Saharan Africa and oil rich Middle East countries. Sovereign Wealth Fund (SWF) serves a fiscal buffer that protects the government's

fluctuation revenues because of commodity price volatility and depletion. In addition, control over strengthening exchange rates, which threaten the non-resource industry, especially local manufacturing industry. There are two options for investing the money from the fund. It can be invested either in whole or in part in domestic infrastructure development or investing in overseas financial assets (Tuffour, 2016). Currently, Zimbabwe needs to invest in the former to improve the current infrastructure which is a bottleneck to development. Most roads in Zimbabwe need to be resurfaced with some having to be reconstructed due to the severity of potholes, new schools are needed as the population has increased and the health facilities need modern day equipment.

The government should also invest the resource revenues in power generation. Power availability and cost are determining factors for investment and competitiveness therefore it is crucial for Zimbabwean government to invest excess mineral revenues in power generation. Most thermal power generation stations are either not working at all or they are not working at full capacity due to dilapidated infrastructure. After the infrastructure have been overhauled, the government can then focus on having a SWF invested in overseas financial assets. The common pitfall for governments is to use natural resource revenues for increasing wage bill for civil servants rather than to invest for wealth creation, which has long-term gain.

6.4.2 Mining companies contribution to human development

The mining operations have two channels of contributing to human development. The first one is through employment; domestic procurement and infrastructure construction, usually addressed by the "local content policy" and the second channel is the direct spending in social projects (African Development Bank & Bill & Melinda Gates Foundation, 2015).

6.4.2.1 Local content

Local content policies are governmental policies that seek to increase the long-term contribution of local employment and the inputs procurement to the sector at each stage of the value chain. These policy interventions are called productive development policies (PDP). PDPs in China are considered a successful case of economic diversification. (Tordo, et al., 2013). The policy required the foreign

investors, particularly in the technology sector, to form joint ventures with local companies so that there is technology transfer and the policy further encouraged the purchase of inputs from local suppliers. Policies that attract FDI combined with the ones that foster technology transfer increase the productivity of local companies, which turn increases their international competitiveness (Tordo, et al., 2013).

Domestic procurement is a one way of capturing increased benefits from the mining operation but the policy should not cripple mining due to delays. The mineral sector purchases inputs from local suppliers or import. The imported inputs constitute a leakage and local procurement benefits the economy (Tordo, et al., 2013). Local procurement leads to the formation of concentrated supply manufacturing companies around the mining operations. This leads to the capture of more benefits from the mining operation since 50-60 % of the revenue generated in mining is spent on employment, infrastructure and procurement.

The notion that concentration of production in a particular location produces external returns for companies in that area through knowledge spillovers, labour pooling and close distance to suppliers should be utilised. The good example is Silicon Valley software industry and the recent Qiatou, Wenzhou and Yanbu in China which account for 60 % button production and 95 % of world cigarette lighters. The local externalities that result and are limited by the industry and its location that increases with the size the industry which they are based on are known as Marshallian or agglomeration externalities (Lyn & Rodriguez-Clare, 2013). The industries that result due to the Marshallian externalities require an educated and skilled society to fully leverage the opportunities presented to build a competitive business. Education generates knowledge, which is crucial for socioeconomic and human development. Skills of the people in a nation play an important role in increasing meaningful participation of local people in the business.

Table 6.2 identifies and arranges PDPs along the horizontal and vertical span of policy. The horizontal- public is a preferred quadrant motivated by the Washington Consensus. The PDPs are found in the horizontal-market (HM) quadrant. The sector specifics, which are in vertical transversality, are neither public input nor market intervention. The policies that enable the environment for private invest preferred

to the ones that mandate local content. Mandatory local content is observed to create rent-seeking behaviour which is economically inefficient (African Development Bank & Bill & Melinda Gates Foundation, 2015).

Table 6.2: A Classification of Productive Development Policies (Tordo, et al., 2013)

		Transversality	
		Horizontal (H)	*Vertical (V)*
Channels of intervention	**Public input (P)**	• Business climate • Education • Basic infrastructure	• Roads for certain areas • Full, fair, and reasonable access to procurement opportunities for domestic supply
	Market Intervention (M)	• R&D subsidies • Higher tariffs • Requirement to purchase local goods • Minimum training obligation for nationals • Minimum participation domestic subcontractors/ suppliers	• Import quotas • Sector-specific subsidies • Disaggregated minimum local contents targets

6.4.2.2 Direct spending on social activities (Corporate Social Responsibility and Shared Value)

Raufflet, et al. (2014) identified three types of corporate social responsibility (CSR) practice in the mining and oil and gas industries. The first one is when the government put in place policy which specifies minimum requirements for a CSR program. The problem with putting in place a policy for CSR is that the companies then treat CSR as just a government requirement and it becomes similar in different companies which should not be the case. The second form of CSR comes as a result of various influential people or groups such as industry associations for example mine manager's association, would have advocated for a CSR framework especially for infrastructure development. These associations may adopt the frameworks that are readily available from the development banks and financial institutions such as World Bank, International Finance Corporation and Africa Development Bank. The last form of CSR comes from the company's own initiative without any government policies mandating them to have a CSR. The company decides the best way to

community and the framework is applied according to the company's best interest (Porter & Kramer, 2011).

The Shared Value (SV) concept is new in the mining industry but quite a common concept in the other industries. This concept is slowly replacing the CSR which is currently a requirement for granting of mining licencing in most developing countries. CSR mainly focus on the community without much focus on the profitability of the mining company. SV on the other hand considers both the company and the community interest as equal partners (Porter & Kramer, 2011). The advocates for SV theory encourages the management to create value with long-term benefits in mind as compared to short-term financial performance. This theory encourages the maximization of both the shareholders and the society in which the company is operating (Porter & Kramer, 2011).

The community should leverage the power demand by the mining companies to power their communities. Since mining is usually in the remote areas, the connection of the mines to the main power grid or generating its own power presents the chance for the community to benefit from the mining operation. Some mining companies are taking the SV initiative and experimenting a wide spectrum of SV initiative along three levels of the shared value shown in Table 6.3. This shows that the companies are now focusing beyond community investment and philanthropy approaches, and believes that they can bring shared benefit for the host communities, regions and nations in their different ways.

Table 6.3: Levels of Shared Value Creation for Extractive Companies (Porter & Kramer, 2011)

1. **Reconceiving Product and Markets**	2. **Redefining Productivity in value Chains**	3. **Creating an enabling local environment**
• Builing local markets for intermediate products (e.g drinking water or irrigation water, electricity)	• Improve local workforce capabilities • Strengthen suppliers in the value chain • Increase loca; disaster and emergency preparedness, response and rehabilitation capabilities • Improve utilization of water and energy and other resources used in operations	• Develop the local cluster supporting the extractive sector • Invest in shared infrastructure and logistics network • Partner with other local clusters and government in building community infrastructure • Play a role in broad based economic community development • Improve local and national governance

6.4.3 Small-scale miners' contribution to economic transformation and human development

Most rural communities in Zimbabwe have been surviving on small-scale farming for a long time. During the early 1990's droughts and the continued effects of El Nino since early 2000's, the rural community has turned into artisanal or small-scale mining in search of income for survival (Afrikonomics, 2006). Most of the small-scale miners are into gold panning, digging, and chrome mining. These miners had been mining illegally due to high regulation fees and royalties that makes them sell their products to illegal dealers. The government had an exercise of stopping the illegal artisanal and small-scale mining by arresting more than 25 000 people in 2006 (Afrikonomics, 2006) before they could appreciate their importance in the mining sector.

The potential contribution to the economy through revenue and poverty reduction through the employment of artisanal and small-scale mining should not be underestimated. The small-scale miners have increasingly become important due to the creation of employment and revenues they are generating. According to Mhaka (2016), it is of paramount importance to formalize the informal gold miners which are estimated to have 600 000 small-scale miners in operations with only 25 000

registered with the Ministry of Mines and Mining Development. In addition, Zimbabwe has about 700 000 of both registered and unregistered artisanal miners, which when registered can potentially increase the gold output of Zimbabwe (Mhaka, 2016). This can boost exports since gold as a major foreign currency earner, contributing about 30 % of export. The support can be in form of education on how to conduct the mining whilst safeguarding the environment and provide means for financial support to purchase small equipment.

6.5 Beneficiation of minerals in Zimbabwe: Chrome beneficiation case study

6.5.1 Background

According to White (2016) most of the raw materials and crude oil comes from the developing nations. These nations are net exporters of the unprocessed raw materials because the lack of capacities of value adding. Oftenly, developing nations seek for the knowledge, capital and skills and access to markets of the multinational when there is ambitions of value addition. As an example, Botswana's government had to partner with De Beers for the successful beneficiation of diamonds in Botswana. SADC had been producing more than 50 % of the world diamonds for instance, in 2012 SADC produced 56.1 % of the world diamonds and of those 56.1 %, 45.4 % were produced in Botswana and Zimbabwe respectively (Centre For Natural Resource Governance, 2013b). Botswana mines, cuts and polish its diamonds before export and has one of the fastest economic growth rate of 9 % in the past 37 years. On contrary, Zimbabwe does not add value to the diamonds (although there are efforts underway for domestic cutting and polishing) before export and the economy of Zimbabwe is in a battle to recover after more than a decade of economic decline. Zimbabwe has chrome as one of its strategic minerals and the government wants the mining companies to add value before exporting, which led to a total ban on exporting chromium ore in 2011 but was later lifted in 2016 after government realised that it has lost on revenues.

Developed countries and emerging economies need these resources. Hawkins (2009) recommended that the resource-driven countries need to leverage these resources for diversifying their revenue base. Diversifying can be done through investment in others sectors such as moving from raw material producing to

manufacturing, a process called beneficiation. The continual process of adding value to the natural resources down the value chain from raw material to finished product is called beneficiation. The process ranges from small-scale to capital-intensive and technologically advanced large-scale operations (Department of Minerals and Energy, 1998). In Table 6.4, the first three stages of beneficiation are capital and energy intensive which follow series of metallurgical steps that changes the chemical composition, whereas step four is labour intensive which results in the creation of jobs.

Table 6.4: Stages of Mineral Beneficiation in South African Jargon (Baartjies, 2016)

Stage	Mineral Beneficiation Process Category	Process Flow-Chart	Labour Intensity	Capital Intensity
1	The action of mining and producing an ore or concentrate (primary Product)	Run-of Mine Ores → Washed and Sized Concentrates	High	High
2	The action of converting a concentrate into a bulk tonnage intermediate product (example a metal alloy)	Mattes/Slags/ Bulk Chemicals → Ferro Alloys/ Pure Metals	Low	High
3	The action of converting the intermediate goods into a refined product suitable for purchase by both small and sophisticated industries.	Steel/Alloys → Worked Shapes and Forms	Low	High
4	The action of manufacturing a final product for sale	Worked Shapes and Forms → Worked Shapes and Forms	Medium to High	Medium to High

Zimbabwe's ambition of becoming a beneficiation hub is noted in its policies like the ZIMASSET economic blueprint document and the Indigenization and Economic Empowerment Act of 2007. According to Baissac, et al. (2015), there are three main drivers of beneficiation policy in Zimbabwe:

i) the deterioration of other sectors of the economy such as agriculture and manufacturing has increased the dependency on mineral resources to obtain foreign currency;

ii) the lack of trust between the government and the foreign-based mining companies left the government believing in using the stick approach which

led to the legislative intervention trying to force mining companies add value to the minerals before exporting; and

iii) Many resources rich countries and regional bodies such as SADC and African Union's Africa Mining Vision (AMV) promote beneficiation. Since Zimbabwe subscribes to these regional and continental bodies, the government also follows similar policies.

6.5.2 Beneficiation strategy

Zimbabwe ought to come up with a stand-alone beneficiation strategy policy that clearly stipulates the government's expectations and how it intends to promote value addition. Currently, beneficiation policy can be interpreted from the ZIMASSET, the Indigenization and Economic Empowerment Act and from several speeches by the president and other politicians. In all the cases, they acknowledge the importance of downstream beneficiation and its potential of creating linkages that makes it possible to reap the maximum benefits from the natural resources (Government of Zimbabwe 2007, 2013).

Zimbabwe's beneficiation strategy is not clear as compared to other countries like South Africa and Namibia which clearly stipulates how the government plans to achieve the value addition goals. As an example, the government should decide what percentage of diamonds in terms of value should be retained for cutting and polishing locally. This requires a serious commitment by the government especially from the executive. Tanzania is an example that shows the importance of the executive's commitment to fighting corruption. President Magufuli is vigilant in fighting corruption and he has been exposing untrustworthy mining companies, which were not declaring the value of the diamonds. On contrary, the Zimbabwean's diamonds are believed to have been looted by the politicians, senior army officer and even by mining companies and they were sold to dealers from Malaysia and India who benefited far lot more than Zimbabweans.

6.5.3 Chromium mineral value chain

Beneficiation of chrome follows the chromium value, which comprises of metallurgical, chemical and refractory industries as illustrated in Figure 6.5. Chrome is the most valuable input in the metallurgical process of making stainless steel and alloy steel, which are used for a wide range of products due to its corrosive resistance and shine coating. The process of value addition presents an economic opportunity for moving from an enclaved mining operation to a value cluster of miners, smelters, Human Resources Development (HRD), R&D institution. The R&D institutions are expected to develop strategies that remove constraints and bottlenecks that affect beneficiation and consequently yield sustainable employment (Jourdan, 2014).

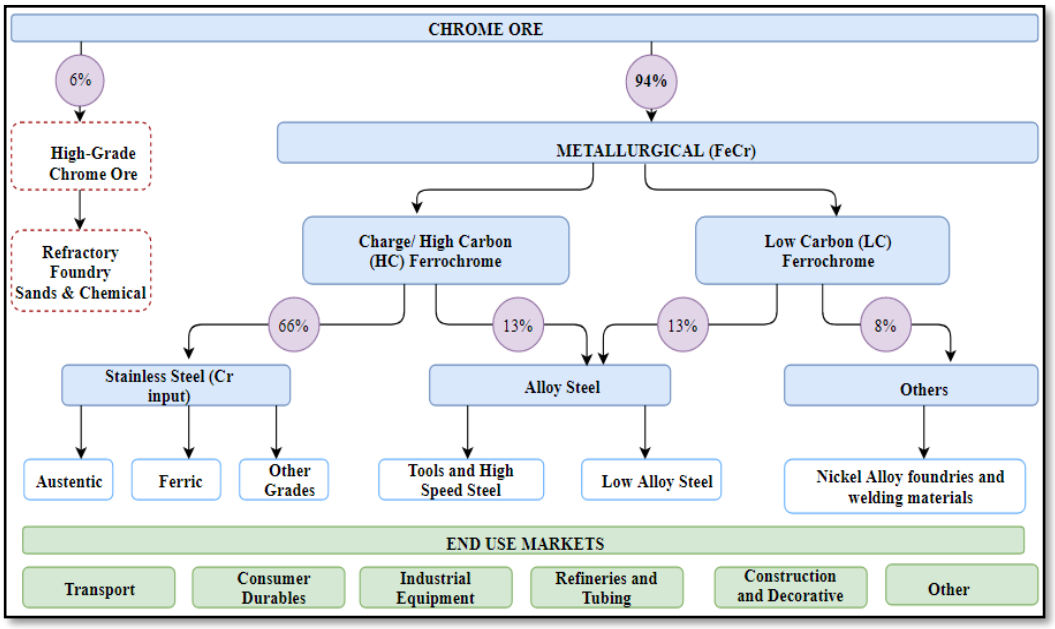


Figure 6.5: Chrome value addition (Cliffs Natural Resources, 2012)

According to Jourdan (2013), chrome is one of the most important inputs into manufacturing that help in industrialisation and therefore it makes more sense for downstream beneficiation be a priority. Zimbabwe companies has not been fully utilizing the country's smelting capacity and has been exporting unprocessed chromite ore to China due to power shortages and prices. Figure 6.6 shows the chromium output from the mines and the smelting capacity utilization. The government tried the stick approach to force the miner to smelt the chrome before

export by banning the export of raw chromium ore. The government later reversed the ban after realising that they were missing out in terms of revenue. Ferrochrome in Zimbabwe is produced by four main smelters, which are ZIMASCO, ZimAlloys, Oliken and Maranatha. Smelting is energy and labour intensive (Chitambira, et al., 2012) which requires efficient energy supply.

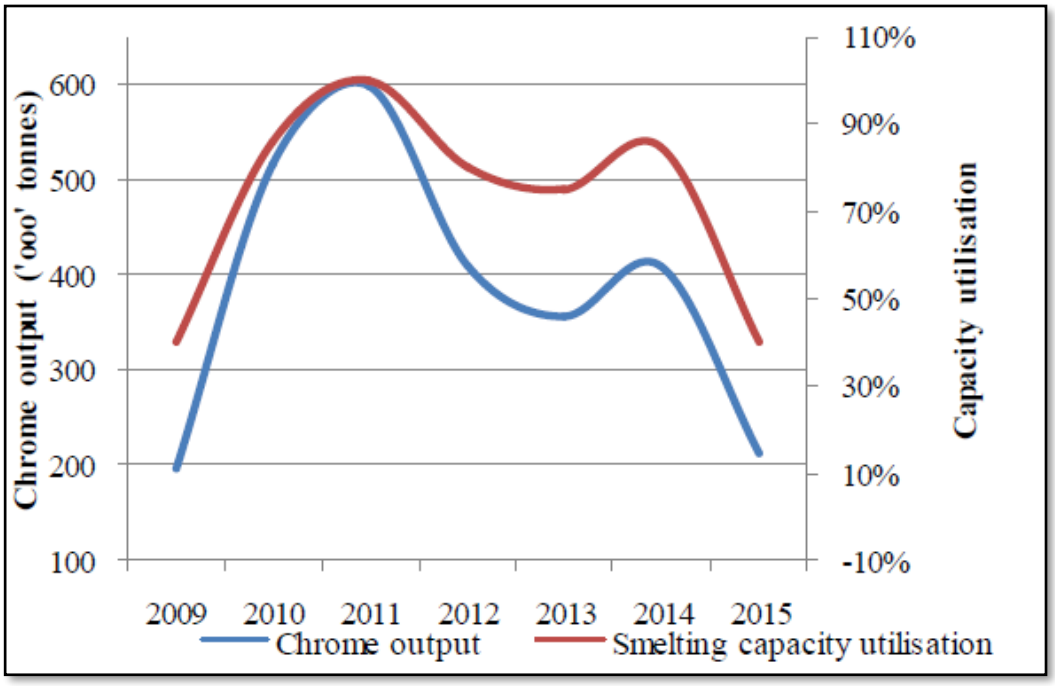


Figure 6.6: Chrome output and capacity utilization for smelters (2009-2015) (Nu Times Innovations, 2015)

6.5.3.1 The Iron and Steel Industry in Zimbabwe

Most of the ferrochrome produced is consumed in the iron and steel industry. The iron and steel industry is known to support economic growth and development due to the uses of its output in infrastructural development among other uses. Furthermore, the industry is important for both upstream and downstream linkages with ferrochrome as an important and major input in the production of steel. Table 6.5 shows the companies that are involved in the production of iron and steel together with their annual capacity and location. Zimbabwe's steel industry, like most of the steel producing countries, is suffering from overcapacity and low commodity price. The global overcapacity was due to China's rapid increase in production of iron and steel.

Table 6.5: Iron and Steel production in Zimbabwe (USGS, 2013)

Type of Iron /Steel	Company	Location	Annual Capacity (t)
Iron ore, gross weight	NewZim Minerals Private Ltd. (Essar Africa Holdings Ltd., 80%, and Government, 20%)	Ripple Creek Mine, near Redcliff	600 000
Sponge iron	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Masvingo	54 000
Crude steel	NewZim Steel Private Ltd. (Essar Africa Holdings Ltd., 53.4%, and Government, 35.6%)	Blast furnace at Redcliff, near Gweru	72 000
Crude steel	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Electric arc furnace at Redcliff	15 000
Rolled steel	Lancashire Steel (Private) Ltd. [Zimbabwe Iron and Steel Company (Private) Ltd. (Zisco)]	Wire rod mill at Kwekwe	120 000
Rolled Steel	Steelmakers Zimbabwe (Private) Ltd. (Steelmakers Ltd.)	Rolling mill at Redcliff	36 000

6.5.4 Challenges to chrome beneficiation in Zimbabwe

It is worth noting that the term beneficiation in Zimbabwe is usually used for describing stages 1 and 2 in the South African Jargon as in Table 6.4. With that terminology, the main aim of the government policy on beneficiating chrome is up to producing ferrochrome although they also strongly support value addition to manufacturing. There are more benefits for further adding value to the ferrochrome to produce different types and grades of steel and further manufacture market goods, and last getting to sell these goods in the retail industry.

Several requirements are supposed to be met for a downstream beneficiation to be successful. The issue of operating cost has a large impact on the decision by the mining companies to beneficiate or not. The South African royalty system rewards the mining companies who beneficiate by lowering their royalty rates thereby reducing their operating costs.

Smelting and other metallurgical processing for value addition are energy intensive, which requires a steady supply of electricity at internationally competitive rates.

The power generation infrastructure of Zimbabwe has dilapidated and there is lack of investment in rebuilding the infrastructure. The thermal power generation is at times affected by the disruption in the supply of the quantity and quality of coal.

Baissac, et al. (2015) noted that the other challenge faced by developing countries in trying to become beneficiators of minerals is that which is caused by the latecomer effect. Their competitors are well experienced and have the human capital with the technological know-how and good infrastructure such as cheap and reliable electricity supply. The supply of electricity is said to be limiting the expansion of smelting capacity (Chitambira, et al., 2012). The chrome smelting arc furnaces in Zimbabwe uses between 3.8 to 4.0MW/MT FeCr which is a way too much comparing with the new technology used elsewhere (Chitambira, et al., 2012). The smelting companies have plans to increase capacity by adding new modern smelters but they do not have the capital yet. This can reduce the operating cost significantly.

Another important factor affecting value addition from taking place is the issue of the availability of domestic market. Robinson & Von Below (1990) presented an analysis that showed the importance of domestic markets for countries manufacturing industry to be competitive on a global scale. Their findings were that the domestic market is an effective vehicle of beneficiation as compared to the availability of natural resources. The domestic market of Zimbabwe in steel consumption per capita is very low as compared to countries like India and China. They further explained that the domestic market is good for testing a product and present an opportunity for refining technology and marketing know-how on top of providing the sales to the market. Most of the Zimbabwean populace stay in the village and have a very low steel consumption per capita as compared to the developed world.

Lack of investment in the key sectors that encourage beneficiation is also another challenge. The country is deemed very high risk for investments due to policy instability and inconsistency. The government might put fiscal incentives to attract investment, usually FDI, as shown in Chapter 5 of this report, were government

allow accelerated depreciation of equipment, income averaging (where the loss is carried over for tax calculations) and lower tax for reinvestment.

Lastly, the issue of demand of minerals which had been very low after the commodities supercycles have affected the ability of Zimbabwe supply of minerals at a better price or even effectively enforcing value addition of chrome ore. China has flooded the market with steel, and it is a low-cost producer of steel due to the use of cheaper electricity and labour. The flooding of markets added to the steel industry crises in Zimbabwe which face erratic power supplies, lack of investment, higher input costs, outdated machinery and dilapidated infrastructure (The Financial Gazette, 2015).

6.5.5 Key drivers for manufacturing beneficiation industry

The following point are the key drivers important for manufacturing beneficiation to take place:

- Access to market (the importance of domestic markets to perfect the craftsmanship);
- Competitive production which is as a result of high productivity at a lower cost compared to other producers (infrastructure such as electricity and water plays a crucial role);
- Access to materials (security of supply);
- Low funding cost for material supply;
- Low cost of doing business;
- Establishment of Special Economic Zones; and
- Research and development and technological innovation.

6.5.6 Proposed solution

It is proposed that the government of Zimbabwe and all key players consider the following:

- Invite private investment in National Railways of Zimbabwe for an efficient bulky commodity transportation, which will drastically reduce the transport cost and increased delivery of the commodity in time. Currently, only Bulawayo to Beitbridge route has been privatized and is operating well;
- Efforts should be put in resuscitating ZISCO steel which has many linkages with the rest of the economy. The processing of iron will require inputs such as coking coal, electricity and transportation, thereby stimulating the investment in the railways and in the energy sector to meet demand. Thus, creating demand of coal which fix challenges at Hwange Colliery and the demand for railway transport will increase. Explosive made by Dyno Noble depend on harnessing hydrogen from steel production which means if ZISCO steel is operational, mining explosives can be manufactured in Zimbabwe. Also, Sable Chemicals, a company that manufactures agricultural fertiliser benefits from selling oxygen as a by-product to ZISCO steel. The chain of activities creates employment and other indirect benefits due to the multiplier effect mentioned in the beginning of this chapter;
- Policies that restrict the importation of steel to promote domestic sourcing of most iron and steel, this policy should be put in place once the industry has been refurbished. The policy should be evaluated; and
- The government should facilitate the direct import of electricity by smelters from neighbouring countries. Not only is a risk of supply adequately managed, but also the country will benefit from lower tariffs through underwriting “take or pay” contracts (Jourdan, 2014, p. 48).

6.6 Chapter conclusions

This chapter has explored the channels that can be used by the Government of Zimbabwe to fully benefit from the minerals industry. The management of the mining industry through various policies determines the level of investment in the industry and the skills it attracts which in turn ultimately determines its profitability.

Mining can go a long way in improving human life if the government commits to social sector funding in education and in health. In addition, the government should invest in the infrastructure reconstruction and possibly create a SWF when the time is right. The extractive industry's linkages to the rest of the economy and its multiplier effect are crucial to the Zimbabwean economy and it has to be leveraged for diversification in other non-resource industry.

The chrome industry holds a potential for Zimbabwe in improving human development due to its large reserves which, when developed efficiently, unlocks many opportunities for the country. The industry seriously needs investment in building modern day smelters that reduce power consumption thereby reducing operating costs rendering the industry competitive among other ferrochrome producing countries. The government should work on ways to improve the competitiveness of the value addition and put in place policies that encourages beneficiation through incentives.

7 CONCLUSION AND POLICY RECOMMENDATIONS

7.1 Conclusions

The study acknowledges that the contribution of mining to the economy is through job creation, revenues and export earnings, which are crucial for trade balance. Although the mining industry has been declining over the years, yet its contribution to reviving ailing Zimbabwe's economy cannot be underestimated. Several reasons contributed to the decline of the mining industry with the decline of the economy due to political instability, uncertainty, policy inconsistency, corruption and unaccountability, which consequently shunned away investment from the mining industry and the country at large. Zimbabwe's investment climate is substandard when compared to its neighbouring countries. Lack of investment into the country led to the slowing down of many economic activities such as infrastructure development, with the key infrastructure for development affected the most. Electricity shortages and the dilapidated railway infrastructure coupled with low commodities prices reduced the output and cost competitiveness of many commodities. These infrastructure shortages make it difficult for the creation of linkages, which creates jobs and economic diversification, which further presents an opportunity for economic transformation. The combination of the underperformance of mining and the declining in agricultural output due to land reform and several years of El Nino has exacerbated the poverty levels and decreased the human development levels gained over the years.

The research showed that Zimbabwe has good potential for increasing the mining production to economic recovery, which may lead to human development through artisanal, small-scale and large-scale mining operations due to the richness and diverseness of its minerals endowment. There is a need for a policy overhaul to change the investment environment but at the same time be able to capture as many benefits through fiscal and other economic linkages.

It was noted that, a clear policy towards beneficiation of some minerals is needed to address some of the unclear and inconsistent policies. The beneficiation should be followed by a carrot approach where it is incentivised rather the stick approach that forces the companies to add value even if it is not within the company's

business model. The industrial policies that mandate local value addition of raw materials are good if there is a presence of Marshall Externalities but they should be tested and proved beyond reasonable doubts that the policies will improve the benefits derived from the resources exploitation. The policies should be tested and should pass both Mill and Bastable tests. The Mill test assess if the protected industries will be able to survive the future and be able to compete against international players without any protection. Bastable test requires the present value of the future benefits to be greater than that of the cost of protection. These tests can be used on the viability of beneficiation of chrome or any other minerals in Zimbabwe before imposing a ban on export of raw chrome, which was the case of 2011.

The government should invest in social sectors to reduce poverty for the short term but at saving or investing resource revenue for the long term. Poverty reduction projects such as cash transfers should be done in combination with a project that has long-term gains such as diversifying resource revenues to a community project in irrigation and food processing such as sunflower processing to produce cooking oil. Some revenues should be channelled into the infrastructure development to remove bottlenecks that affect investment. Mining companies should be encouraged to procure and employ the nationals. The local content policies, which are currently prescriptive, should be changed so that they become flexible to avoid negative effects on the profitability of the mining company. The local content policy has led to an increase in imports and sold by locals, which becomes expensive for the mining company as compared to the increase in manufacturing which is the policy's intent. The government should spend more effort in building capacity for local manufacturing companies to manufacture the input. This requires combined efforts by the government and companies to invest in research and development.

The government should strive to legalise the artisanal and small-scale miners, as they have become major players' especially in gold production and further provide basic mining education. The training of artisanal miners should be done with the help of the large-scale miners through the corporate social responsibility. A productive small-scale mining industry directly reduces poverty due to the large number of people who it supports. The flourish of artisanal and small-scale mining

directly contribute to economic transformation and human development. It leads to a situation where a lot of citizens have money to spend which in turn stimulates the manufacturing industries due to the increase in demand for goods. The economic transformation of Zimbabwe is likely to occur if the government focus on mining and agriculture value chains, especially concentration on downstream beneficiation. This will require the shift from labour intensive primary industries to technology and skills based manufacturing jobs that pay better wages. The skilled labour is in short supply due to the human capital flight in search of a better standard of living. The government should seek to employ the best brain based on merit rather than nepotism to make government institutions to run smoothly and efficiently. The professionals should be rewarded with competitive packages for them to stay and strengthen the government institutions.

The resignation of Zimbabwe longtime president, Robert Mugabe on 22 November 2017 after the military took control of the government has brought a new political dispensation. Emmerson Mnangagwa who had been fired from the vice presidency before becoming the president has presented a chance for changing some of the policies that make Zimbabwe less investor friendly. Investors are watching the unfolding political developments, and some are sceptical if the long-time strong ally of the former president, Robert Mugabe would bring many changes in policy approach. However, in his inauguration speech, Emmerson Mnangagwa vowed to protect the interest of the investors, which is positive change. What is left is for credible free and fair elections, and the policy overhaul.

7.2 Policy recommendations

The following recommendations are proposed in order to leverage the mineral resources of Zimbabwe for economic transformation and human development.

7.2.1 Recommendation on improving investment climate

The following recommendations are suggested for improving the investment climate in Zimbabwe:

- The prerequisite for economic transformation is the government that observes and respects property rights in form of investors' assets and profits.

- Fighting corruption, accountability by public office bearers and transparency should be high on the government priority lists. Also, the government should repeal and replace the Indigenisation and Economic Empowerment Act with a policy that does not compromise on the investment climate.
- There is a need for free and credible elections for the government to gain confidence of the international community.

7.2.2 Recommendation on mineral resource development policies

The following recommendations are suggested for improving the mineral policy of Zimbabwe:

- The government, through the Ministry of Mines and Minerals Development should come up with a stand-alone policy document which is developed through a consultative process that addresses most of the uncertainties.
- The mineral policy should follow the Africa Mining Vision, which provides a framework that is in line with the policy harmonization initiative by SADC.
- The mineral policy should be designed to attract FDI and not only protect the investors' rights but also tie the investment towards socio-economic obligations

7.2.3 Recommendation on economic transformation

The following recommendations are offered for economically transforming Zimbabwe:

- The policies should not only aim at poverty reduction but wealth creation. The indigenous policies should also focus on empowering the citizens to be able to compete with sophisticated and experienced foreign-owned companies rather than focusing on acquiring shares in the business or seizing the company that already exist.
- The government should focus on removing the constraint to economic structural change, which are power infrastructure, lack of financing especially startup project, weak institutions and poor business environment.

7.2.4 Recommendation on industrial policies

The following recommendations are suggested for improving the industrial development in Zimbabwe:

- There should be a continued effort to build strong skills-based human capital and build capacity to retain the talent. The policies should address the problem of human capital flight especially caused by the push factors.
- The industrial policies that mandate local value addition of raw materials are good if there is a presence of Marshall Externalities. The externalities should be tested and proved beyond reasonable doubts that the policies will improve the benefits derived from the resources exploitation. The policies should be tested and should pass both Mill and Bastable tests.
- Government should commit funds to research and development institutions and other services supporting investment in the mining sector

7.2.5 Recommendations on human development

The following recommendations are suggested for human development in Zimbabwe:

- The government should commit to provide basic education, health and improving the standard of living using proceeds from mining. The government should be strong in holding officials accountable in service delivery.
- Policy options for supporting mining companies in the training of local skills and involvement in mining research and development to promote high productivity and high wages. The promotion of the development and use of technology in the mining industry offers long-term prosperity compared to conventional methods.
- Continued support for the small-scale and artisanal mining should be incorporated in the shared value or corporate social responsibility of the companies. Policies should focus on training women, empowering them to mine safely and profitably. It is generally known that if you empower woman you feed the family, which is a strategy for poverty and hunger alleviation.

7.2.6 Recommendation for future work.

A study of similar work can be done using a different methodology of review policies and benchmarking the Zimbabwean policy. This research benchmarked the mineral policy and other policies using open source data. Another research may use structured questions to interview key mining industry, governance and policy experts to compare Zimbabwe's policies with best practices. The benchmarking highlights can be compared and new strategies for economic transformation and human development using mining as an economic stimuli may be developed, which will shape the formulation of a new mineral policy of Zimbabwe.

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