

An Investigation into the Efficacy of Diamond Beneficiation as a Fiscal Resource Mobilisation Strategy: The Case of Zimbabwe

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Abstract

The diamond beneficiation process is a highly contested area in the world. While some developed countries have managed to convert their natural resource riches into profitable financial gains, African countries including Zimbabwe have continued to face numerous challenges in attaining the same benefits. In Zimbabwe, these challenges are especially evident as the country lacks the appropriate skills, technology and infrastructure to embark on the diamond beneficiation process. This is despite the country being richly endowed with all manner of valuable mineral resources. The very high value and worth of diamonds makes them a suitable candidate for enhancing fiscal resource mobilization in Zimbabwe. This study examines the efficacy of diamond beneficiation on resource mobilization for Zimbabwe. The study explores the concept of beneficiation and analyzes how the beneficiation process can be utilized to help expand the country's fiscal space.

Keywords: Diamond beneficiation, fiscal resource mobilisation, Zimbabwe

Introduction

It is estimated that while Zimbabwe can produce up to twenty-five per cent of the world's supply in diamonds (Chininga Report 2013) it has not made much by way of foreign currency earnings. According to Mark von Bonschel (2010), a Belgian diamond industry expert of the Antwerp World Diamond Trade Centre, Zimbabwe has the largest known diamond reserves in the world at present, estimated at US\$800 billion judging from the current diamond foot-print (von Bonschel, Sunday Times, 08/08/2010). A diamond footprint is a pattern deduced from the quality and quantity of diamond production allowing estimations of future production to be made. If Zimbabwe adopts diamond beneficiation, the country stands to earn over US\$8 billion annually and create 200,000 jobs (CNRG 2013; Mbanje 2013). The statistics point to a 20% potential contribution to nominal GDP as of 2010, which is significant for one mineral alone. (<http://www.chamberofmineszimbabwe.com>).

Although there are currently numerous revenue streams from the Zimbabwean diamond mining sector, not much value has been derived to the benefit of government and the local economy. This is principally because the sector's taxation system is inadequate leading to discrepancies in the value of reported remittances to Treasury (Chininga Report 2013: 10). These revenue streams include royalties, resource depletion fees, levies, licencing fees, pay-as-you-earn, corporate taxes, income taxes, and profit taxes, diamond export tariffs, Value Added Tax (VAT), profits and dividends. Furthermore, despite the boom in mineral prices and corporate profits from 2002-2007, very little has been earned by countries with minerals (ECA 2011: 92). Diamonds are exported in their cheap raw form and in some instances re-imported as expensive finished products (Grynberg, 2013).

This has contributed significantly to the Zimbabwe's own trade deficit growing from US\$2.5 billion in 2012, to US\$4.2 billion in November 2013 and to the current projections of US\$3.5 billion for 2014 (2013 National Budget Statement, 2012: 241, The Herald, 10 January 2014). This is an untenable situation given that the Zimbabwean Government currently faces an intense liquidity crisis compounded by a big public debt overhang and a poor social services rollout. Further, manufacturing has also continued lagging behind at 13% of exports in 2014 (Zimbabwe National Budget 2014). The IMF in its Natural Resources Per Capita Index, concedes that Zimbabwe has the world's best minerals per capita indices. Going forward, Zimbabwe is projected to produce an estimated stable supply in excess of a firm assured 12 million *carats* of rough diamonds per year until 2023 (Bain and Company 2013: 57). Conservatively this was 8 per cent of total global rough volumes and just 4 per cent of value in 2013 this being production from the Chiadzwa area alone (DeBeers 2014: 42). However, very little direct fiscal flows to government coffers have been realized thus far (KPCS 2012, Chininga Report 2013).

Statement of the problem

Despite minerals contributing 16% of Zimbabwe's +/- US\$10 billion Gross Domestic Product and 52% of the country's US\$2, 4 billion export earnings, the minerals sector has continued to perform dismally in its contribution to the fiscus. Whereas Zimbabwe is estimated to produce about 25% of the global supply of rough diamonds by volume, diamonds alone contribute just about 1% to the GDP and between 20 - 30% of the total export earnings. Therefore, the country has not managed to derive much benefit from this resource endowment. Meanwhile, the government continues to face apparently insurmountable liquidity challenges and is struggling to meet most of its obligations. Zimbabwe has been exporting its diamond in the rough form. This has meant government has not realized the full value from the export of its diamond production.

However, no comprehensive study has yet been done to assess the potential contribution that the diamond beneficiation process can deliver to governmental fiscal revenues. Unless more studies of this nature are done, the country may continue to lose out on the full value of its minerals until they are depleted. This study presents an attempt to bridge this gap by analyzing the potential of local diamond beneficiation to Zimbabwe's revenue contributions. It draws lessons from countries that have similar resources and have experienced similar beneficiation challenges. All in all, the study seeks to examine the legal and institutional frameworks for diamond beneficiation in Zimbabwe; explore beneficiation practice in other countries; demonstrate the effects of diamond beneficiation to the mining fiscal regime; and recommend an appropriate diamond beneficiation model to enhance the performance of the mining fiscal regime.

Conceptual, Theoretical and Analytical Frameworks

Diamond Beneficiation/Value Addition (BVA)

The South African Department of Mineral Resources (DMR) (<http://www.dmr.gov.za/beneficiation-economics.html>), considers the term beneficiation to be interchangeable with value added processing. The DMR (ibid) defines beneficiation as entailing "the transformation of a mineral or a combination of minerals (produced by mining and extraction processes) to a higher value product, which can either be consumed locally or exported." For DeBeers (2014: 81) beneficiation is the "creation of activities beyond mining the natural resources in producing countries." This means diamond sorting, valuing, selling and manufacturing. For the Zimbabwe Congress of Trade Unions (ZCTU 2011: 84) beneficiation refers to the process of adding value so as to increase the quality and value of a saleable product. According to Bwititi (The Sunday Mail, Extra Analysis, 8 June 2014) "beneficiation entails the value addition of minerals by processing them to attain higher returns."

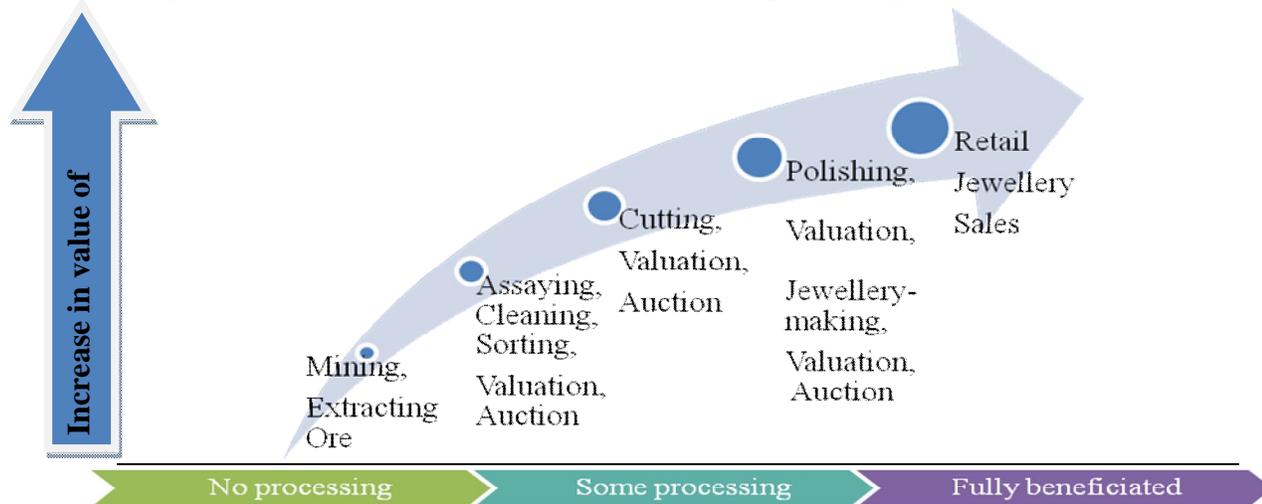
Therefore beneficiation refers to any subsequent processing undertaken on a mineral or primary product post extraction. It is the process of further manipulating the minerals innate properties in new innovative ways into useful finished products that can be commercially sold for a pecuniary consideration. Diamond beneficiation thus refers to the successive cleaning, polishing and cutting of the mineral until it is valuably fashioned in various ways including the manufacture of diamond industrial tools, diamond ornaments and diamond jewellery.

History/Origins of Beneficiation

Early records indicate that mining began in Africa about 20,000 to 40,000 years ago (Kuhn 1987, Jourdan 1995, AMV/ECA 2009). As early as the 6th Century, the indigenous Bantu speaking people occupying the Southern African region, (present day Southern African Development Community, SADC), worked iron ore, gold and copper through smelting (Kuhn 1987, Jourdan 1995, ibid).

In the central parts of Africa, it is evident from archeological data that mining and beneficiation of iron and gold ores was already taking place even before the arrival of Arab and Indian merchants (Kuhn 1987). Hence the notion of minerals beneficiation is as old as the earliest human civilizations in Africa. The figure below depicts the stages of diamond beneficiation from mine extraction all the way to retail, and the value transformations at each stage:

Figure 1: The Diamond Beneficiation Process: Progress along the diamond value chain

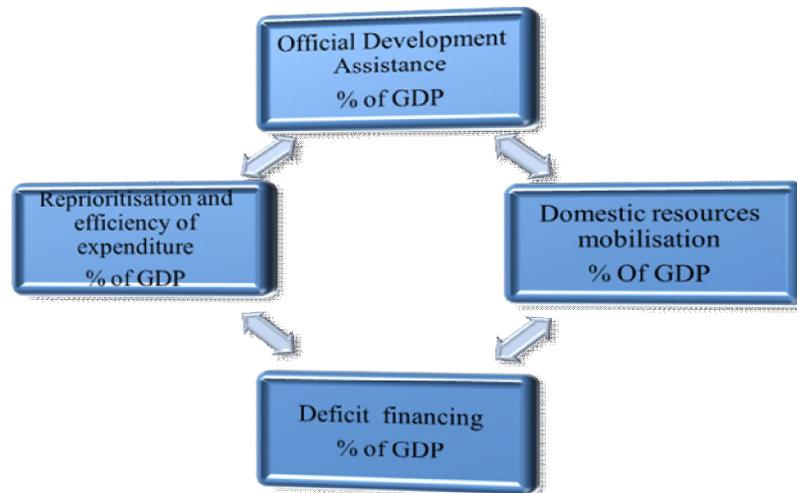


Source: Adapted from Bain and Company 2011, DeBeers 2014

The concept of Fiscal Space

Peter Heller (2005) developed the idea on the creation of fiscal space. For a nation to increase its fiscal space, it has basically four options as depicted in the diagram below:

Figure 2: The Fiscal Space Diamond Conception



Source: Adapted from Aguzzoni (2011), Heller (2005)

There is contestation on the definition of the concept of fiscal space. Aguzzoni (2011: xi) asserts that fiscal space is that ability of government to provide financial resources for its policies with the aim of attaining socio-economic development in a country.

There are basically four options for a government seeking to increase its fiscal space, i.e. its ability to provide resources for its developmental initiatives/ programmes. These are as follows: 1. Increasing Official Development Assistance (ODA), 2. Enhancing the mobilization of domestic revenue, 3. Increases in borrowing and 4. Reprioritizing current expenditure to make it more efficient (Aguzzoni 2011: xi). All these four strands represent an attempt by central government to improve its resource mobilization strategies so as to provide better and more reliable social services sustainably today and in the future.

Theoretical frameworks

This section reviews the following theories which inform the study: Resource Curse Theory, Resource Nationalism, New Institutional Economics (Public Choice Theory and the Principal Agency Theory).

Resource Curse Theory

This research is informed by the Greed vs. Grievance or Resource Curse Hypothesis which states that mineral rich countries tend to grow less rapidly, be poorer in terms of both economic development and accountability to the general public and are more prone to conflict (Soussan 1988: 2, Auty 1993, Ross 1999, 2003). According to Auty (1993) and Ross (2003) having a wide variety of minerals resources is usually not very beneficial to the host country and in fact might even be pushing development indices in the negative direction. The observation is that most of the countries which are rich in natural resources tend to be overly dependent on revenue from the sale of raw materials. These raw materials are locally in abundance and are readily exported at the expense of developing robust local processing and manufacturing industries. In turn this leaves these countries vulnerable to the rapid fluctuations of the prices for raw materials on the international market. Further, this theory asserts that the government tends to be unresponsive to the demands of the general public's because of an entrenched patron-client system that sees public officials controlling the allocation of mineral rights selectively to preferred individuals. This leaves the electorate without a voice and crowds them out from the political system usually leading to conflict and contestation.

However, there have been noteworthy critiques of the Greed vs. Grievance Theory (sometimes variously termed the Resource Curse Theory). While some scholars like Auty (1993) and Ross (2003) hold the view that natural mineral resources are a source of "the resource curse" or "Dutch Disease", we advocate for the more optimistic view of the United Nations Economic Commission for Africa (UNECA, 2011) and scholars who argue that minerals present an extraordinary opportunity for developing countries and have great potential to engender significant developmental deliverables. These include deliverables such as sustainable socio-economic development through improved livelihoods from higher incomes, increased local participation in economic development, employment creation, improved fiscal revenue contributions, infrastructural development, rapid industrialization, technological advancements and faster modernization of the economy amongst others (ibid).

Resource Nationalism Philosophy

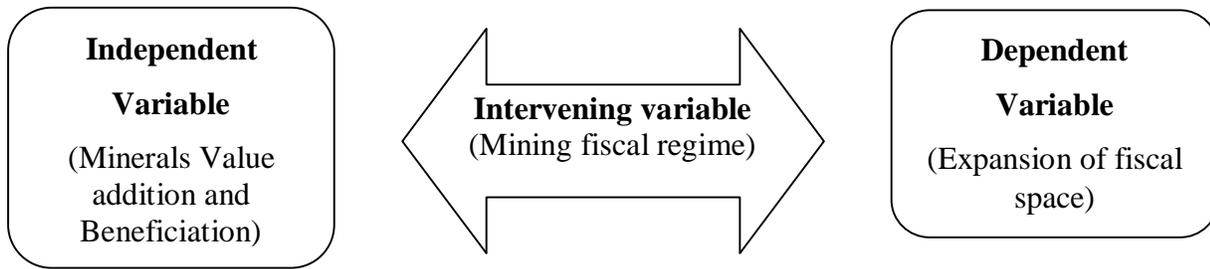
Internationally, it has come to be accepted that a people must have rights over the minerals under their soil and governments have the responsibility to manage these resources for the benefit of their people (Natural Resources Charter 2011: 3). A prominent feature of the resource nationalism discourse in Zimbabwe is the Indigenization & Economic Empowerment (IEE) discourse. For Zimbabwe, resource nationalism has entailed localization of ownership of mineral rights and sharing of minerals revenue between mining companies, the government and the local communities living in the areas containing these mineral resources. The United Nations has previously acknowledged this in its 1962 United Nations General Assembly Resolution where it declared that "violation of the rights of peoples and nations to sovereignty over their natural wealth and resources is contrary to the spirit and principles of the Charter of the United Nations," (Catholic Institute for International Relations 1983: 68). Governments must not only set the direction and purpose of mining in its country (i.e. regulation), it must also play an active role (ibid). This is more so true for developing countries which are vulnerable and at the mercy of large multinational mining corporations.

According to the International Council on Mining and Metals (ICMM) and the Commonwealth Secretariat (2009: 5), "for governments the concept of taxation is directly linked to the issue of permanent sovereignty over natural resources and to perceptions of exploitation, revenue generation and partnering in development." Therefore, it becomes essential and of quintessence for governments to increasingly assert their right to exclusively controls minerals on behalf of their citizens. The main intention in adopting this philosophy being that the State has to extract as much value for the benefit of the local community. Taxation therefore speaks to the very heart of the question: do the costs of conducting mining outweigh the benefits accruing from there forth (ICMM and the Commonwealth Secretariat 2009: 5).

Analytical framework

This section presents the adopted analytical framework explaining the relationship between the three identified variables.

Figure 3: The relationship between minerals beneficiation, mining sector taxes and fiscal space



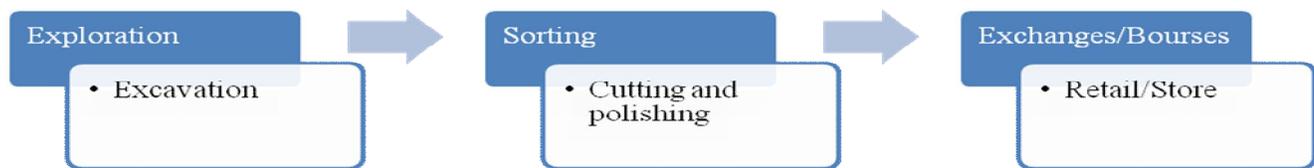
Source: Adapted

The diagram above depicts the analytical framework adopted by the research to explain the relationship between minerals beneficiation and fiscal space.

The Diamond Beneficiation Process: Analyzing the Diamond Value Chain

The key to beneficiation is the utility of the final product. Clearly, beneficiation has two complementary domains: the first is the mining sector and the second is the manufacturing sector. The involvement of each sector increases and decreases correspondingly as the mineral processing proceeds from mine to factory. According to DeBeers (2014), there are four aspects to diamond beneficiation and value addition that encapsulate the upstream (rough diamond production and diamond exploration), downstream (global consumer demand and diamond jewellery retail), mid-stream (cutting, polishing and jewellery manufacturing, rough diamond sales and distribution) and side stream value addition (DeBeers 2014: 4-5). The side stream value addition refers to inputs like capital goods, consumables and services that are needed in the value chain (ibid). However, Manhize Projects (2011) contend that the total net beneficiation of minerals is maximized by a combination of just the downstream and side stream linkages.

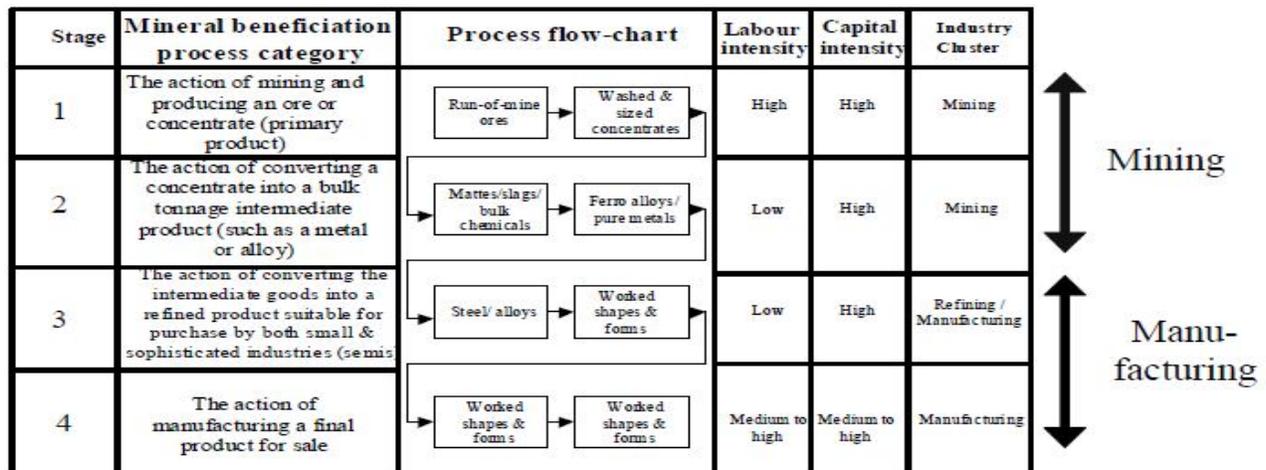
Figure 4: The Diamond Supply and Value Chain/the Diamond pipeline



Source: Bain and Company (2011, 2013)

In Africa, the most influential voice on minerals beneficiation has been the African Union/United Nations/Economic Commission for Africa initiative of the African Mining Vision. This vision articulates the need for mineral producing countries to conduct post extraction processing so as to localize the full benefits and value derived from raw materials that are in abundance in Africa (ECA/AMV 2009).

Figure 5: The Four Stage Beneficiation process



Source: Baxter (2005: 26)

Most developed countries have managed to acquire significant benefits through local beneficiation of minerals, even when they do not possess natural resources. Countries like Belgium, Israel, Japan and the USA have developed sophisticated industries that conduct manufacturing value addition for minerals they import from foreign countries. These encapsulate crude oil, precious metals, and food products, which are locally sourced or imported from producing countries in the developing world.

The biggest challenge for developing countries is the Anglo-Saxon Profit Maximization Model of investment. This entails intense corporate specialization, leading to a dearth in local capacity, skills, competencies and technologies (Baxter 2005: 26). Gaining a competitive edge in this environment becomes “mission impossible” for countries just setting off to conduct local beneficiation. However, Baxter (2005) prematurely and erroneously asserts that “the availability of precious metals and diamonds does not constitute an advantage” when it comes to minerals beneficiation economics. Although he rightly observes and contends that the vast majority of beneficiation currently takes place in “countries which do not mine the product at all or do not mine much of the product, but which have focused their skills set on the manufacturing sector,” he fails to recognize the significance of the impact of the extensive supply and availability of these minerals locally, which in itself constitutes a source of comparative advantage, a point belabored by McKinsey and Company (2014). McKinsey and Company aver that should producing countries all decide to conduct their own beneficiation, this could shift the tide and improve their competitive advantage. Therefore, Baxter’s assumptions primarily rest on an outdated model in which the international market controls supply and demand economics, where producer countries are compelled to sell their minerals even at give away prices.

However, with the emergence/resurgence of the resource nationalism doctrine, this scenario could drastically change/shift in favour of producer countries if they can commit to limiting the supply and outward export of raw unprocessed product. A similar observation was made by McKinsey & Company (2014: 3) who acknowledged and recognized that there is a potential negative impact or disruptive shock that could emerge should producing countries decide to nationalize part or all of their production. This trend is emerging with increasing demands for more local beneficiation in producing countries. McKinsey & Company identify “three low-probability but potentially high impact shocks that could transform the industry if they were to occur: 1. an extreme shock to demand; 2. an economic derailment in India and China (the growth markets); and 3. Resource nationalization in major producing countries (McKinsey & Company 2014: 3). Therefore, while the producing countries do not have free niceties like free/cheap colonial slave labour, they could still build on the comparative advantage of owning and producing the minerals to build an acceptable level of competitive advantage. Further, the world has changed significantly in the 21st Century. There has been the radical sudden shift in global economic power bases from the traditional “West” to the emergent and rising “East” which has prominently featured more “South-South” trade, which is now increasingly perceived to be more beneficial.

Global experiences: Botswana, Indonesia and India

Lessons from the Botswana Case

Botswana has only recently moved its diamond trade facilities from Europe to its home land and has endeavored to undertake beneficiation on its soil (Grynberg 2013). Botswana is the source of some of the world's most high quality and highly valuable diamond gemstones but until recently these have been beneficiated and processed in foreign countries, especially Belgium, UK, USA, Russia, Israel, Dubai and India.

The Botswana journey towards local beneficiation

Prior to moving the Diamond Technology Center (DTC) to Botswana, DeBeers processing was based in London. Trade was biased in favour of European countries without the mineral (Belgium, UK). Moving the Diamond Technology Centre from Europe to Botswana has setup a Diamond Technology Park "which is a hub for the cutting and polishing of diamonds locally." This DTC makes about US\$1 billion a year from beneficiation of diamonds alone.

Challenges for diamond beneficiation in Botswana

In 1967, there was a discovery of diamonds which led to a rapid change in the socio-economic landscape of the country. This immediately saw the economy growing by an average seven percent (7%) per annum between 1970 and 1974) and significantly until the 1990s commodity slump. Despite these strides, there still persisted some key challenges for policy makers: overvaluation of the local currency due to high forex earnings leading to deteriorating standards of living among locals due to the high cost of living, high unemployment levels since diamond mining was largely capital intensive rather than labour intensive, and education and skills shortages amongst the indigenous population. These indices worsened because the revenue was concentrated in the hands of a few industry players leading to calls for the government to re-strategize and rethink its diamond sector policies.

The call for beneficiation: How they overcame these challenges

In the late 1990s and early 2000s, Botswana started pursuing new avenues for getting maximum returns from its minerals. Initially the country adopted a Maximum Extraction Strategy which aimed to take advantage of the prevailing high commodity prices. However, the key weakness of this strategy was that the economy was not diversified and heavily reliant on diamonds revenue which revenue was vulnerable to commodity price fluctuations. The following were found to be the obstacles to the adoption of a robust diamond beneficiation strategy in Botswana: vested interests of middlemen in the value chain, neo-colonialism, poor legal and institutional frameworks, skills and technological shortages, poor internal market structures, the enclave nature of the diamond industry, lack of political will and financing challenges. As part of their economic diversification programme, Botswana bought 15% of DeBeers so that the country can still earn from the global growth of DeBeers in other markets beyond diamond mining. DeBeers is a global MNC trading in many commodities including diamonds.

The minerals price boom of 2006-2008 saw Botswana calling for more beneficiation of its minerals since diamonds are a non-renewable resource and principally because of the highly volatile commodities prices on the world market. This has evolved to the present scenario where Botswana emphasizes local diamond beneficiation and value addition of the mineral before export. From 2013, the county proceeded to prohibit the export of unpolished rough diamonds before they are processed locally. It subsequently moved the Diamond Technology Centre from its London office to Gaborone. This strategy has brought about significant benefits for the country since being introduced. Industry leaders assert that today, in 2013-4, twenty-five percent (25%) of Botswana's Gross Domestic Product (GDP) comes from its diamond mining ventures which translates into and accounts for seventy-five percent (75%) of all its exports (Bain and Company 2013, DeBeers 2014, and McKinsey and Company 2014). The country currently produces the world's most valuable polished gem quality stones (earning the most in dollar terms globally); and this has led to the growth of the economy, skills development, employment creation, trade surpluses and forex reserves being in the positive (ibid).

Diamond Industry Regulation in Botswana

Botswana has over the years developed both international and local networks of technology, manufacturing/beneficiation infrastructure, expertise, personnel, investors and skills by investing heavily in business incubation, training, research and development.

Lessons from the Case of Indonesia

Challenges for nickel beneficiation in Indonesia

In 2009 and 2014 the Indonesian government adopted and implemented a compulsory beneficiation strategy for its minerals to take effect from 2014 -2017 (Soraya and Bellamy 2014). However, the World Bank has noted that the country could lose or forgo up to US\$6 billion in exports and in government revenue on introducing this policy. This revenue was lost from unrealized export sales of the mineral (Wesley 2014). Pessimistic estimates indicate significant job losses, estimates range from 100,000 to 800,000 which will be seen immediately on adopting this policy. Other countries have mooted taking the Indonesian government to the World Trade Organisation (WTO) for unfair trade practices and setting up tariff barriers to international and regional trade (Wesley 2014: Online, Business Day Live 2014). Players in the local market have also resisted these laws and regulations by seeking judicial review (Soraya and Bellamy 2014). Mining is designated the prime mover for regional development in Indonesia targeting economic growth, equitable distribution of income, job creation, through sustainable and environmentally sound mining (Lubis 2013: 9). It is envisioned to exploit energy and mineral resources for the welfare of the local people. Lubis (ibid) cites this strategy as being pro jobs (employment, local content), pro growth (state revenue, investment, added value, balance of trade –production, export, domestic), pro poor (community development, corporate social responsibility), and pro environment (good mining practice, reclamation and mine closure).

The call for beneficiation: How they overcame these challenges

The Indonesian case demonstrates the need for a tempered approach to adopting beneficiation. A radical sudden approach to wholesale compulsory legislation may prove to be counterintuitive. The country is the world's largest producer of nickel and in 2013 enacted legislation that directed all nickel producers to fully beneficiate locally beginning January 2014. However, the results have been a sudden drop/fall in its status as the world's biggest supplier of raw nickel and in the process the country has huge raw nickel piling up locally. This has been compounded by resistance from its traditional export markets of Japan and China who have developed technology not only to recycle but also for combining nickel with iron to make nickel-pig-iron, an alternative improved and convenient stock-feed for stainless steel production (Business Daily Live 2014: Online). The lesson to be learned here is that Advanced Technology and political-will in destination countries will always combine, like in the Chinese case, to counter hostile economic strategies emerging from minerals producing countries. However, on the positive side, the progressive export duty (*bea keluar*) is worth emulating. This legislation advocates for a more gradual move towards higher tax rates for trade in specified un-beneficiated minerals (Soraya and Bellamy 2014: <http://www.whitecase.com/>).

Lessons from the Case of India

India has been among the most successful in diamond beneficiation, having been in the industry for the past 300 years. Diamond cutting and polishing has created over 1 million jobs in Surat and Mumbai alone, and still growing. It has been reported that some of the diamonds produced in the Marange diamond fields are cut and polished in Surat province of India, creating direct jobs for the locals. India has developed a comparative advantage and a robust diamond and cutting and polishing industry that did not exist in the 1970s within thirty years. Diamonds are now responsible for a fair share of India's exports.

Methodology Perspectives

The study was conducted in Zimbabwe's mining sector and specifically the diamond mineral management policy community. The population was deemed to be heterogeneous and included key players in the diamond mining sector within the following institutions: the Ministry of Mines and Mining Development, Zimbabwe Mining Development Corporation (ZMDC), Minerals Marketing Corporation (MMCZ), Institute of Mining Research (IMR), Zimbabwe School of Mines and the Department of Geological Survey); the Ministry of Finance and Economic Development, Zimbabwe Revenue Authority (ZIMRA) and the Reserve Bank of Zimbabwe (RBZ); Parliament of Zimbabwe, Zimbabwe Diamond Center (ZDC), Zimbabwe Chamber of Mines, Diamond Beneficiation Association of Zimbabwe (DBAZ), Scientific and Industrial Research Development Corporation (SIRDC), diamond mining companies, and international bi-lateral or multilateral agencies (UN, AU, SADC, KPCS). Few people have the specialized knowledge required to participate in the study. Therefore, the sample size was intentionally limited to fifty (50) respondents. Of these thirty (30) respondents had a standardized questionnaire administered on them.

While fifteen (15) were designated to be interviewed only eight (8) were actually interviewed in Face-to-Face interviews while five (5) provided responses over the phone. Also included within the sample were observations by the researcher utilizing both past and recent personal encounters with prominent industry players, particularly current and past executives of diamond mining companies. A further two (2) interviews were conducted with academics at the University of Zimbabwe. Although ZIMRA declined to grant permission for the research, two (2) interviews were informally conducted with two (2) executives who however declined to be named for professional reasons. The Statistical Package for Social Sciences (IBM SPSS 20.0) was used to analyse the quantitative data collected using the survey questionnaire. This software is suited to analyzing quantitative data in a social science research using the Descriptive Statistics and Factor Analysis Modules of the software. The IBM-SPSS 20.0 was used to produce and derive tables, charts, graphs by counting, analyzing frequencies, principal component extraction, and factor analysis. For the qualitative data, thematic analysis was used to analyse the data obtained from observations and interviews. This was complimented by a content analysis of data from the documentary search.

Results and Discussion

Response Rate and Reliability of Questionnaire

Table 1: Questionnaire Response Rate

Questionnaires Issued	Number Returned	Response Rate
35	29	83%

Given the secretive and sensitive nature of the diamond sector, the response rate of 83% was overwhelming and thus considered to be more than satisfactory. The diagram below shows the reliability of the questionnaire as tested by IBM-SPSS 20.0:

Table 2: Reliability of the Questionnaire

Variable	No. of items	Cronbach Alpha Value
Diamond Management Frameworks	28	0.948
Anticipated benefits from beneficiation	16	0.914
Quantity of Diamonds in Zimbabwe	2	0.725
Diamond Footprint (types of diamonds)	14	0.821
Fiscal Revenues Mobilization, Beneficiation & the Mining Fiscal Regime	17	0.911
State of the Practice/Industry Best Practice	25	0.899
Challenges in Diamond Revenue Management	6	0.701
Recommendations for improving revenue	39	0.913

Source: IBM-SPSS 20.0, Field Data

Table 2 above shows the test for internal reliability of the questionnaire using SPSS. According to Cronbach (1989), an instrument is considered reliable if it returns a Cronbach Alpha value of greater than **0.70**. The questionnaire was measuring eight (8) constructs, which all returned a Cronbach Alpha value above **0.70**, hence was considered to be reliable.

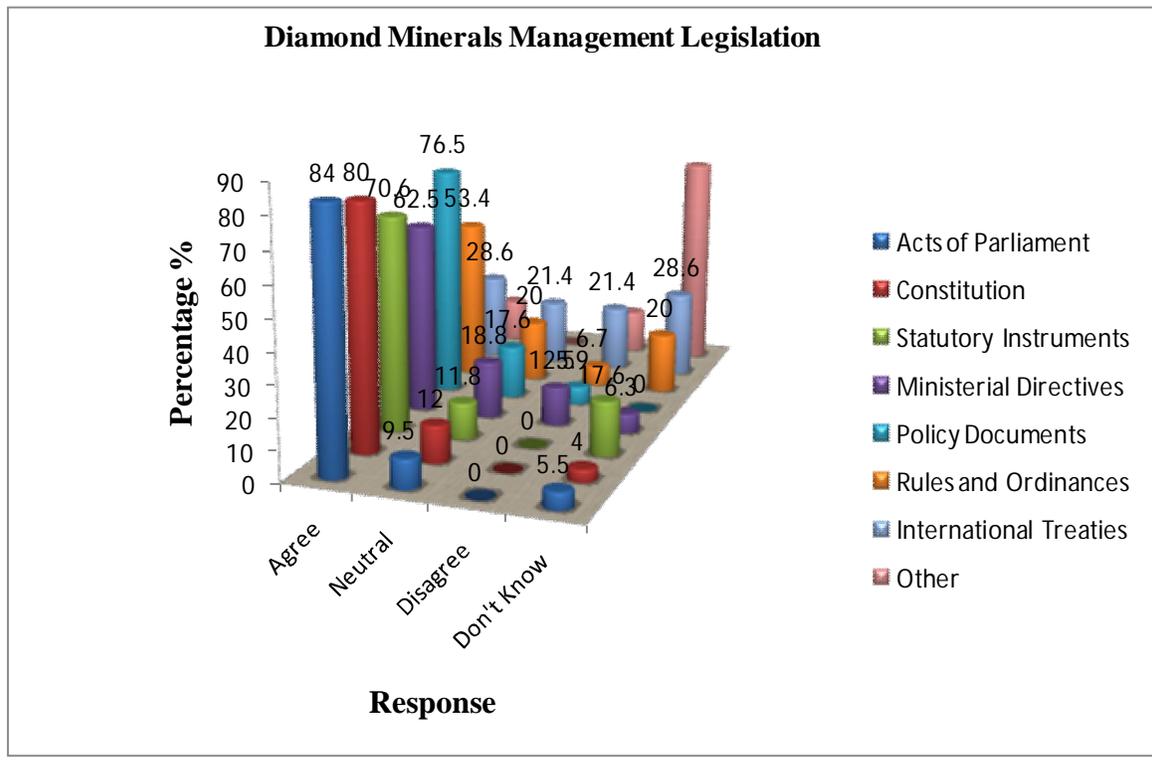
Zimbabwe Diamond Revenue Management Institutions

From the survey questionnaire, 65.4% of the respondents contend that these frameworks are in the form of Permanent Institutions, while 48% reported the presence of Temporary Institutions. Specifically, findings indicate that key institutions in the Zimbabwean diamond revenue management are the Ministry of Mines and Mining Development, Zimbabwe Revenue Authority, Zimbabwe Mining Development Corporation and Marketing Corporation of Zimbabwe. Other institutions are listed in Appendix A.

4.2.4 Zimbabwe Diamond Revenue Management Legislation

The demographic survey indicated that Parliamentary Acts (84%) closely followed by the Constitution (80%) and Policy documents (73.1%) were the dominant legislative frameworks. Figure 2 below shows this distribution in a simpler way:

Figure 6: Diamond Revenue Management Legislative Frameworks



Source: Field Data

The questionnaire elicited responses by asking respondents to tick among a series of several options. The top frameworks are Acts of Parliament, principally the Constitution, Mines and Minerals Act and the Precious Stones Trade Act. This is closely followed by Policy Documents, encompassing the Diamond Policy and Statutory Instruments. Ministerial directives came in fourth, while International Treaties are the least prevalent frameworks.

Frameworks in diamond sector

The documentary search and field data both show a multiplicity of frameworks operational in the Zimbabwean minerals management sector (see Appendix A). Evidently, there are various institutions involved in the diamond sector policy community both at local and global level.

Table 3: Major Frameworks in Diamond Management in Zimbabwe

Frameworks	Components
Constitution	Constitution of Zimbabwe of 2013
Policy Documents	Environmental Management Policy, Diamond Policy, Indigenization & Economic Empowerment Policy, Industrial Development Policy, Privatization Policy
Act(s) of Parliament	Mines and Minerals Act, Zimbabwe Mining Development Corporation Act, Minerals Marketing Corporation of Zimbabwe Act, Precious Stones Trade Act, Indigenization and Economic Empowerment Act, Finance Act, Environmental Management Act
Permanent Institutions	Ministry of Mines and Mining Development (ZMDC, MMCZ, Institute of Mining Research, Zimbabwe School of Mines, Geological Survey and Provincial Mining Commissioners), Ministry of Finance and Economic Development (ZIMRA, RBZ), Environmental Management Agency (EMA)
Temporary Institutions	National Indigenization and Economic Empowerment Board, Community Share Ownership Trusts
Statutory Instruments	Statutory Instruments: 72 of 1989, 109 of 1990, 157 of 2014
Government Directives	Presidential pronouncements (e.g. the directive to pay civil servants salaries from diamond proceeds of 2009-13)
Rules, Memoranda, Ordinances	Special Mining Leases
Other	United Nations, Kimberley Process Certification Scheme, African Mining Vision, Southern African Development Commission, World Diamond Council

Source: Field Data

Although there are numerous pieces of legislation and institutions to do with minerals management in Zimbabwe, there is currently no legislation dealing with the diamond specifically. An interviewee from the Zimbabwe diamond Centre believes the mineral is still generally considered as a “new mineral” in Zimbabwe, hence the lack of attention by government. One weakness in the country is that there have been no comprehensive geological surveys conducted by government to ascertain the occurrence and quantum of Zimbabwean diamonds. Therefore, the Zimbabwean Government has been slow to respond to the calls to set up special legislation and institutions dealing with diamond mining, processing and marketing. Therefore the laws to manage diamond revenues are grossly inadequate in various ways. The legislation in place right now is obsolete, having been put in place since before independence (1961 for Mines and Minerals Act and the Precious Stones Trade Act). There is a need to enact the Diamond Act, finalise the Minerals Development Policy and amendments to the Mines and Minerals Act and a new Mines and Minerals Bill.

International Best Practices in Diamond Revenue Collection: A Summary of Country Experiences

In its bid to achieve the objective of examining the state of the practice in other countries, this section addresses the important question of whether Zimbabwe currently conducts value addition and beneficiation. An in-depth review of documentary evidence indicated that cases reviewed show that there was a general association in the amount of beneficiation a country conducted and the taxes collected. Although this might not come directly through benefits from beneficiation, there were numerous spinoffs that were encountered by countries that conducted minerals beneficiation. These findings from the documentary search were consistent with results from the field survey and interviews with interviewees who indicated that there are various benefits to be accrued from adopting minerals beneficiation. The Government of Zimbabwe has imposed a blanket ban on the export of all raw minerals (15% starting with platinum). While about half of the survey respondents (48%) indicated that government must ban mineral exports, the experiences elsewhere show this is ill advised. However, as indicated in Chapter 2, the Indonesian case demonstrates the folly of a wholesale ban on the export of diamonds/minerals. The Minister of Finance has however made announcements of a deferment of this tax (until 2017) to encourage a build up of capacity for local beneficiation, this is laudable intervention.

The Botswana case provides a lesson that Zimbabwe must build its own local beneficiation industry. This would entail engaging in skills development, partnering foreigners in win-win relationships (for example Russian, Chinese ICBC, BRICS etc. investments). South-South cooperation presents big challenges and opportunities for the future in the commodities trade domain. Zimbabwe can learn from India which has a centuries old low cost diamond processing industry. Interview respondents indicated that while other countries have experienced similar or worse challenges to those Zimbabwe currently faces, they had to adopt innovative strategies so as to overcome them. Zimbabwe has recently constituted a Sovereign Wealth Fund Act and the body awaits constitution and resourcing. However, there are challenges in operationalising the Fund given that international best practice dictates that it be resourced from surpluses (Nadia Piffaretti, former World Bank Country Director for Zimbabwe). Zimbabwe has consistently run a budget deficit since independence (with the exception of the GNU era) and is under a heavy debt burden. Despite these challenges, there are abundant prospects in Zimbabwe’s diamond sector, discussed in the recommendations section. The tables below show these findings:

Table 4: Benefits from Diamond Beneficiation according to importance/rank

Rank	Benefits	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	Don't know
1	Technology Modernization	14 (53.8%)	9 (34.6%)	3 (11.5)	0	0	0
2	Improved Incomes	14 (53.8%)	9(34.6%)	3 (11.5%)	0	0	0
3	Infrastructure Development	14 (58.3%)	7(29.2%)	1(4.2%)	1(4.2%)	0	1(4.2%)
4	Improved Livelihoods	14 (56.0%)	6(24.0%)	5(20.0%)	0	0	0
5	Skills Development	13 (56.5%)	5(21.7%)	4(17.4%)	1(4.3%)	0	0
6	Better Revenues	12 (46.2%)	8(30.8%)	4(15.4%)	2(7.7%)	0	0

Source: Field Data

The table above is a summary that illustrates the benefits accrued from the diamond beneficiation in accordance with the most reported benefit by survey respondents, ranked in ascending order from 1 (most important rank) to 6 (least important rank). However, survey respondents also reported challenges faced by these countries. The table below shows challenges encountered by other countries in diamond beneficiation:

Table 5: Challenges encountered by other countries in diamond beneficiation

Rank	Challenges	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	Don't know
1	Skills Shortages	8(32.0%)	10(40.0%)	5(20.0%)	1(4.0%)	0	1(4.0%)
2	Financial Problems	9(36.0%)	9 (36.0%)	2(8.0%)	2 (8.0%)	0	3(12.0%)
3	Revenue Management Challenges	9(34.6%)	9 (34.6%)	3(11.5%)	4(15.4%)	1 (3.8%)	0
4	Technology Shortages	8(33.3%)	8(33.3%)	3(12.5%)	5(20.8%)	0	0
5	Supply of Rough Diamonds	3(12.5%)	7(29.2%)	6(25.0%)	5(20.8%)	1(4.2%)	2(8.3%)
6	Marketing Problems	4(16.7%)	5(20.8%)	5(20.8%)	9(37.5%)	0	1(4.2%)

Source: Field Data

The table above highlights the most critical challenges faced by countries which have adopted minerals beneficiation.

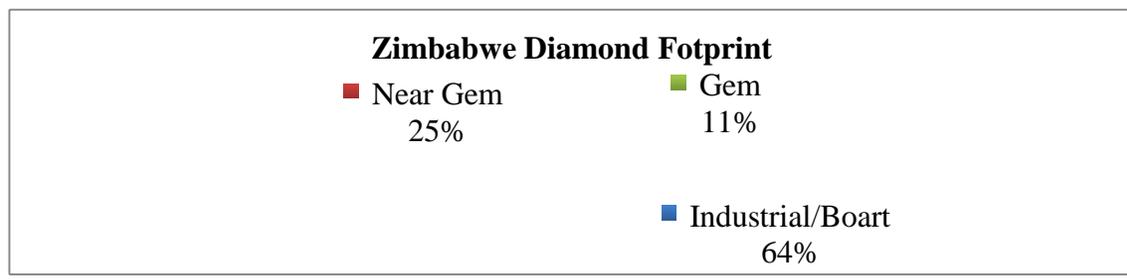
Beneficiation as Industrialization: Conceptualizing BVA in Zimbabwe

There has been a lack of significant progress towards adoption of diamond beneficiation. This can be due to discord between the various policy community members. A former executive of a State mining company indicated that there is loss of progress or direction in adopting diamond beneficiation due to policy inconsistency and numerous problems at policy implementation due to this discord and vested interests. The episodic fashion of formulating and implementing strategies in diamond mining sector is characteristic of Anthony Downs’ Issue Attention Cycle. Although there are current efforts aimed at conducting beneficiation in the minerals sector, this is still at a very small scale in the diamond sector. This might be because diamond cutting and polishing technology is not readily available in Zimbabwe.

Characteristics of the Zimbabwean Diamond Footprint

Zimbabwe currently mines alluvial and conglomerate diamond deposits. The diagram below shows the profile of the quality of diamonds (the diamond footprint) mined in Zimbabwe.

Figure 7: Proportion and Quality of Zimbabwean Diamonds



Source: Field data

Diamond cutting and polishing companies in Zimbabwe

While some of the diamond mining companies conduct elementary processing of diamonds through cleaning in their sorting and valuation centres, there are not many companies involved in diamond cutting and polishing in Zimbabwe. This was corroborated by a senior official at the Ministry of Mines and Mining Development who indicated that at one point there were about twenty-six (26) diamond cutting and polishing companies in Zimbabwe, this number has since reduced to just sixteen (16), as most were driven out of business for various reasons. The Minerals Marketing Corporation of Zimbabwe (MMCZ) in its 2013 Annual Report recognises Akin Investments, Gemgrade, Supertrend Enterprise and Vivid Facets as the companies which conducted polished diamond sales in 2013. Table below shows that diamond polishing improves the value of the mineral significantly.

Table 6: Polished Diamond Sales for 2013

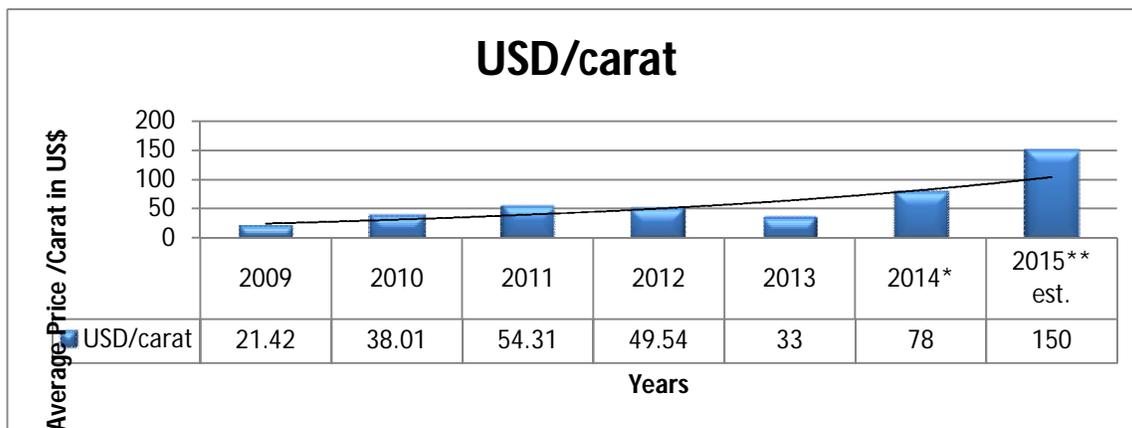
Producer	Volume (carats)	Value (USD)
Akin Investments	639.95	\$ 870,882.36
Supertrend	355.69	\$ 773,534.00
Vivid Facets	150.48	\$ 357,895.80
Gemgrade	3.23	\$ 6,542.56
GRAND TOTAL	1,149.35	\$ 2,008,854.72

Source: MMCZ Annual Report (2013: 22)

This means polished diamonds averaged one thousand seven hundred and forty seven dollars and eighty two cents per carat (US\$1,747.82/carat). This was made from part of the eight thousand seven and ninety seven carats (8,797 carats) valued at two million nine hundred thousand dollars sold to local manufacturers by the MMCZ.

It is self evident that basic cleaning of the diamond locally may increase the value gained from rough diamonds. Statistics in the MMCZ Annual Report for 2013 highlights that for the year 2012 and 2013, the per-carat price of Zimbabwe’s rough diamonds doubled because of cleaning that was conducted before the Belgium auction. This cleaning is a first stage of the beneficiation process. If the experience of Botswana is employed, much more value can be gained from cutting and polishing the diamonds. The table below shows the average prices of diamonds per carat from 2009-2014:

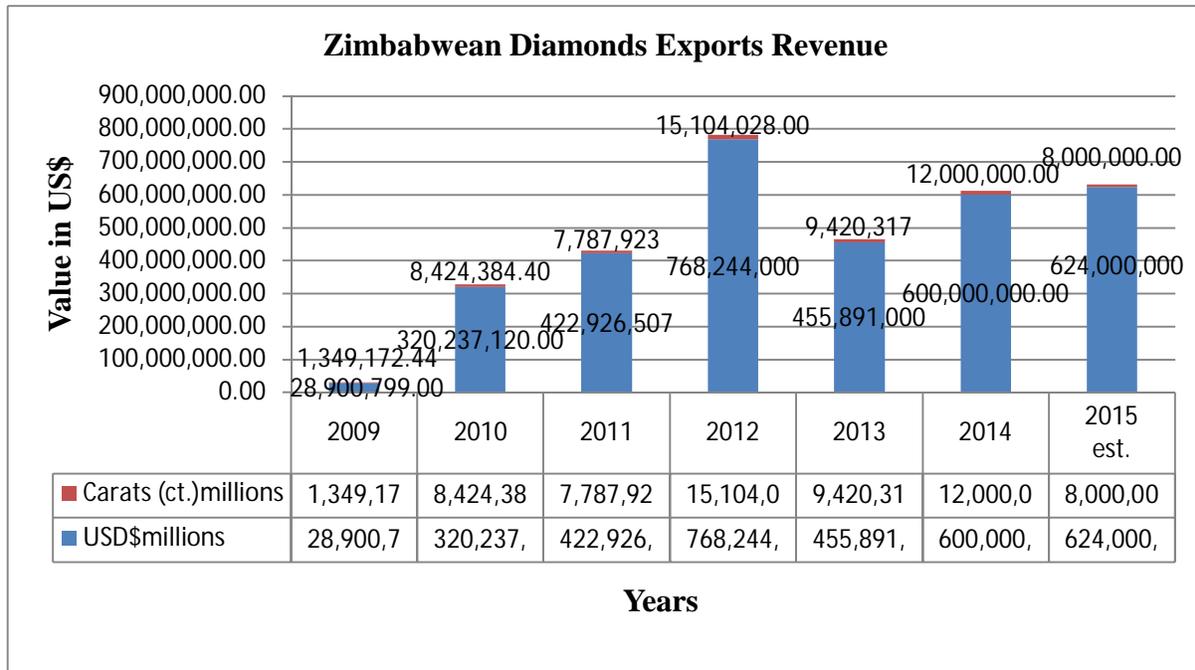
Figure 8: Average prices of diamonds per carat



Source: Adapted from MMCZ 2013 Annual Report, ZMDC Website, Zimbabwe Chamber of Mines 2014, Diamond Gazette 2014, KPCS, MMMD, MMCZ, DeBeers

The trend line shows that the value of Zimbabwean diamonds was generally increasing between the years 2009 – 2014. In 2014, the prices for rough diamonds fluctuated between US\$70 and US\$143, closing at US\$78 at the last diamond auction for 2014. The figure for 2015 is an estimate based on the highest value attained in 2014 and on the average price of similar diamonds sold in neighbouring countries of Botswana and South Africa. The change in value of diamond earnings per carat was partly as a result of the country conducting preliminary cleaning before selling the diamonds, principally at the Belgian Antwerp diamond tender auctions. The trend indicated in the diagram above is consistent with an increase in value further processing of diamonds.

Figure 9: Diamond Production and Export Revenues



Source: MMMD, MoFED, KPCS, MMCZ, ZMDC, Diamond Gazette 2014, National Budgets, Field data with Microsoft Office Excel 2007

The figure above demonstrates that diamond exports are significant sources of foreign exchange earnings in Zimbabwe. These earnings can concurrently translate into tax revenues for the government in various ways.

Zimbabwean Diamonds

Geological surveys in Zimbabwe highlight that the primary sources of diamonds are kimberlitic pipes extruded from the centre of the earth through geological processes over billions of years. Zimbabwean diamonds have differing occurrences amongst them being alluvial, conglomerate and kimberlitic. The most common Zimbabwean diamonds like the Marange deposits occur in alluvial deposits.

Mineral Marketing Dynamics in Zimbabwe

A former senior executive with the ZMDC disclosed that African countries still face immense challenges in the diamond trade. They are currently selling their minerals at very cheap prices for various reasons: African producer countries are all intensely competing for the same market and due to fragmented marketing strategies amongst leading producers, the buyers of rough diamonds have an advantage, typically using “divide and rule” tactics. This was supported by an interviewee from the Zimbabwe Diamond Centre who also indicated that buyers tend to prefer buying in countries with fewer restrictions. The African Capacity Building Foundation (ACBF, 2013: iv) identifies factors that have caused African countries to continue receive limited revenues from their minerals as contractual arrangements, (skewed against producers but in favour of buyer countries), transfer pricing and tax avoidance, leading to African countries collecting just 40% of potential revenues from their mineral wealth. This has led most African governments nationalizing all mineral resources and actually getting into business alone or in partnership with private sector companies. However, DeBeers (2014) caution that the government could possibly get nothing from a company in which it owns all the shares due to the inefficiencies associated with “bureaucrats in business.”

Problems with over regulation

It is generally assumed that a few publicly owned companies have consistently failed to declare either profit or dividend. However, the reasons for this failure to declare dividend are complex, many and varied. It has also been noted that the multiplicity of compulsory statutory payments, charges and levies on operators by the regulatory institutions depletes their finances and are viewed as hindrance to profit maximization. (ZMDC Annual Reports for 2011, 2012).

The Problem of Diamond Revenue Leakages

It is common knowledge that that most large diamond mining companies in Zimbabwe are managed by expatriates earning fairly good expatriate salaries and managements fees. DeBeers (2014) assert that the greatest threat to government revenue generation is in exorbitant management fees charged by some of these expatriates. This leaves the government sharing with the joint venture (JV) partner company a highly depleted profit pool (ibid). Further, overpricing imports, equipment and services may eat away at revenues effectively externalizing profits. Organized international syndicates specializing in tax evasion/avoidance, under invoicing, transfer pricing or blatant smuggling prejudice the State of significant revenues. Concerted attention to the mining fiscal regime will help to alleviate these challenges and minimize losses in the process. These Illicit Financial Flows pose a very serious threat to government revenue. However, while these present significant hurdles, the greatest threat lies in the export of un-beneficiated minerals to foreign countries which in turn get the full benefit from the mineral by simply conducting beneficiation and value addition.

Challenges to be expected when introducing Beneficiation in Zimbabwe

Survey respondents, although cautious, anticipated challenges in beneficiation to include: skills shortages (62.5%), corruption (48%), technology (45.8%), multi-national company (MNC) domination (40%), poor management of revenues (37.5%), poor workmanship (31.8%) and anti-competitive behaviour (30.4%). These low indices for challenges indicate that respondents were optimistic that beneficiation will lead to more benefits than costs accruing to the country. Consistent with the above, experience from personal encounters indicates that the big challenges faced by the diamond sector in Zimbabwe are: lack of appropriate technology, poor investment levels, uncertainty in policy on indigenization, low Foreign Direct Inflows (FDI), lack of skills for diamond cutting, polishing, marketing and jewellery and poor accountability and transparency indicators. The negative effect of the restrictions facing certain State owned companies like ZMDC and specification of certain key individuals were a significant hindrance to the sale of Zimbabwean diamonds before the country acquired Kimberley Process Certification (KPC) in late 2009.

Other challenges faced by the industry include the punitive and high cost of diamond cutting & polishing licenses (US\$100,000.00 per year as set by Statutory Instrument 157 of 2014, US\$500.00 export fee regardless of quantity exported), lack of proper skills and knowledge about the true value of the diamond, its processing and subsequent marketing, and the unjustifiable favouritism of foreigners who may not be subjected to the same requirements as locals. Although the US\$100,000.00 permit for diamond cutting and polishing has since been replaced with a US\$20,000/10 year permit (Source) it still quite high for local processors.

Creating Fiscal Space for the Zimbabwean Government

It is now generally accepted that the huge public sector salary bill poses a huge drain on the fiscus. This obesity extends to the civil service which is currently estimated to constitute a complement of just above half a million members. There is a need to urgently rationalize the civil service so as to create fiscal space for government. This rationalization exercise should also extend to inefficient or non-performing State enterprises. This is consistent with Heller's fiscal space diamond conception where reprioritization of expenditures should be married with increased mobilization of domestic resources, minimizing consumptive borrowing and reduction in the over reliance on development assistance to fund government programmes.

Global Diamond Industry Value Sharing Ratios

Documentary evidence shows that while diamond producing companies globally shared only US\$18 billion from the sale of rough diamonds in 2013, those countries which engaged in both diamond jewellery manufacturing and retail sales shared a windfall of over US\$50 billion. This same trend was observed for 2014 and is expected to persist in the industry. While possession of the diamond mineral and producing the actual rough diamonds counts for a lot, it does not come close in terms of earnings potential compared to manufacturing value added jewellery. According to the Baines and Company Reports (2011 & 2013), DeBeers (2014) and McKinsey & Company (2014) the two most valuable stages which produce the greatest value along the diamond value chain are the jewellery manufacturing and retail sales segments. However, they are also very capital intensive (Bain & Company 2013: 6; DeBeers 2014). The challenge for Zimbabwe is that the value of its jewellery industry is currently unknown, leaving room for under declaration of production, worsening uncertainty for policy level planning.

Diamond classification

There are many factors to consider when evaluating the value of a diamond. While some diamonds are extracted from the mine are clearly gem quality, others require basic cleaning (by boiling in acid under pressure) to remove the tough outer coating of brown dirt. Most of Zimbabwe's Diamonds are considered industrial and thus sold at very low prices. The Country may have been prejudiced greatly in the past by selling its diamonds without cleaning and polishing and this can be done cheaply by local middle men. That way, the country can get most of the true value of its diamonds.

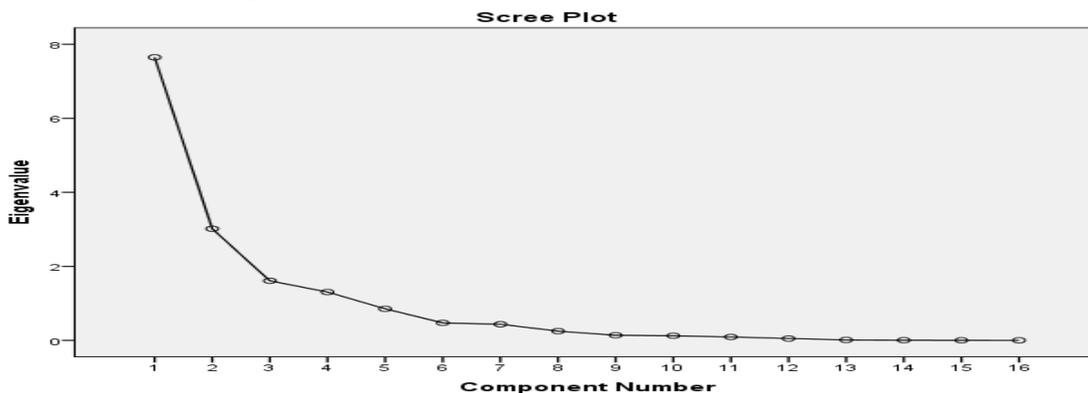
Anticipated benefits from beneficiation in Zimbabwe

Respondents reported anticipated benefits from diamond beneficiation that includes: employment creation (88%); higher retained local value (84%); improved livelihoods (84%); infrastructural development (82.6%); increased government revenue (78.5%); and industrialization (72%). Respondents were not very optimistic about improvements in transparency (65.2%), accountability (52.1%) or economic diversification (66.7%).

Proposed ways of Increasing the Contribution of Diamonds to the Fiscus through Beneficiation

This section seeks to recommend an appropriate model for Zimbabwe to obtain optimal revenues from its diamonds. It highlights the challenges anticipated and the opportunities available for exploitation to improve diamond mining fiscal regime. The recommended model is a modification of the Belgian, Botswana and South African experiences. The majority of respondents indicated that government must neither reduce nor remove the current tax levels (64% and 62% respectively), and 52% actually advocated for an increase in taxes. Alternatively, the government can introduce new tax measures (60%). However, almost half believe the country should ban export of rough diamonds (48%). Interviews and documentary search however indicate this might be counterintuitive. To achieve the objective of recommendations to enhance the fiscal contributions of diamond, the SPSS Factor Analysis was used and it extracted the most important variables and issues to focus on in the beneficiation discourse. To recommend appropriate strategies for beneficiation, factor analysis determined that the principal determinants for beneficiation include only four components out of the total 16 accounting for a total variance of 84%. Only components with an Eigen Value of one (1) or greater were extracted. The Scree Plot below illustrates these results, showing the distribution of the extracted components indicating the cut-off level for all components with an **Eigen Value** of greater than one (1).

Figure 10: Five components had an Eigen Value of more than 1 and were thus extracted



Source: Principal Component Factor Analysis of Field data with IBM-SPSS 20.0

The key is such that component one is the most important, while component four is the least important.

Explaining the Principal Factors for Beneficiation

The Extracted Principal Component Matrix illustrates the variables which constitute each component basing on a loading factor of 0.80. The matrix indicates the composition of each component extracted based on how each variable is correlated with other variables. Basing on a Loading Factor (cut-off point) of 0.80, the principal factors extracted in component one (1) were Technology (0.959), impact on livelihoods (0.908), skills (0.956), workmanship (0.925), anti-competitive behaviour of companies (0.895) and improved transparency (0.824). Component two (2) was composed of only two variables: government revenue (0.924) and industrialization (0.945).

The greater the loading factor, the greater the impact of the variable in terms of the impact on value addition and beneficiation. Those variables in component one (1) are considered to have the greatest impact. Elements in component two (2) are of lesser impact than those in one (1), while subsequent components (3, 4 & 5) are of even lesser importance and were ignored. Technology was found to have the greatest impact followed by skills. These findings were consistent with evidence emerging from interviews carried out in the study.

Conclusions

Realities of the Zimbabwean diamond/mining industry

The Zimbabwean minerals management sector is excessively fragmented with numerous institutions and pieces of legislation all having an effect/impact on the diamond mining sector. There is a need to enact a comprehensive Diamond Act which combines all relevant legislation to do with the diamond mineral in one piece of legislation. This creates certainty for policy level planning and implementation. At the same time, government must also finalize the Minerals Development Policy and the Mines and Minerals Act.

Mining Sector Policy Communities and Paradigms

For Zimbabwe, mining is still an enclave industry that is largely capital intensive, foreign owned, and mostly extractive and dependent on trading in raw mineral resources. This is notwithstanding that Zimbabwe has made concerted efforts to rectify this anomaly through various pieces of legislation, imposing tariffs and adopting Joint Venture models through the concept of Public-Private-Partnership (PPPs). It is important to note that all governments seek to maximize fiscal revenue hence they impose resource rents on minerals exploitation. They are usually less concerned about when this revenue is earned. Conversely, political pressures compel governments to collect this revenue sooner rather than later (ICMM and the Commonwealth Secretariat 2009: 8). This has been observed in Zimbabwe where the government is financially hamstrung and is always eagerly awaiting for revenue that comes from diamond sales. All this revenue is immediately may be used to finance recurrent expenditures at the expense of reinvesting it into beneficiation processes. The key observation here is that for developing countries that are overly reliant on mineral revenues, the objective of maximizing revenue over the long run is not practical due to the need to meet immediate expenditure demands and this then denies the government opportunity to have accrual of benefits from minerals.

Beneficiation as Industrialization

For Zimbabwe, minerals beneficiation and value addition is of paramount importance as it resonates directly with the re-industrialization discourse. To the extent that beneficiation is defined as the setting up of new factories, side stream and downstream activities it is well in line with the Zimbabwe's strategy of re-industrialization in ZIMASSET. In this light, it can thus be seen that the beneficiation discourse is not exclusive to the mining and extractive industries sector alone but extends to other sectors where commodities need further processing beyond the raw state.

Recommendations

The following specific recommendations are made for diamond beneficiation to succeed in Zimbabwe: government must develop incentives for FDI which assure win-win investments; invest in infrastructure that can then act as an enabler for industrialization; conduct skills development programmes; adopt and adapt appropriate technologies; strengthen indigenization and empowerment frameworks to provide real tangible deliverables for the common man on the street; and the need to embark on more research into minerals beneficiation that can be done locally to both explore its feasibility and build a credible knowledge base.

Private Sector Initiatives

The private sector cannot simply wait for the government to do everything; there must be initiative from entrepreneurs forging partnerships with both local and foreign financiers and investing time and money to make diamond beneficiation a success. Government is recognized as an enabler, creating the conditions necessary for proper functioning of economic activity. Government cannot and indeed must not be seen as the only aggressive player in the minerals beneficiation discourse, private sector organisations (banks, companies, academia, civil society organisations, schools, researchers, politicians and individuals) must all take their place.

Legislative Improvements

To resolve the problem of multiplicity of legislation and institutions involved in managing diamond revenues, government must formulate an integrated legislative framework by finalizing the Minerals Development Policy; enacting a new Mines and Minerals Act; revamping indigenization and economic empowerment legislation so as to create certainty in the policy and simplify and unify all the legal frameworks for diamond management under a single Diamond Act responsible for all diamond issues.

Institutional Improvements

Institutional interventions must include the setting up the Minerals Prospecting Company to conduct minerals surveying and mapping; set up model beneficiation centers countrywide to bring minerals beneficiation to the local communities across the country. For intergenerational equity the Sovereign Wealth Fund must also be made operational, to promptly build savings. The Special Economic Zones/Export Processing Zones (SEZ/EPZ) must include special factories for diamond processing.

Sector Specific Interventions

The Government of Zimbabwe also needs to strengthen tax frameworks in Zimbabwe's diamond sector. This can be done by compelling companies to use local facilities in their mining and processing activities. This includes doing diamond cleaning, cutting, polishing and jewellery manufacturing locally, use of local auction floors to sell diamonds, open more diamond processing centers locally, train more local people in diamond processing, open banks specifically designated to do banking for the diamond trade between Zimbabwe and other foreign countries, increase the number of diamond beneficiation training schools, set up a diamond beneficiation/minerals beneficiation centre after the Non-Aligned Movement (NAM) model. The ZDC already has the status as a designated NAM Centre for Beneficiation in Zimbabwe.

Mainstreaming Gender Issues, Indigenization and Economic Empowerment

Economic empowerment is not complete until there is a mainstreaming component. Government must ensure consistency and certainty in policy pronouncements. To ensure that there are lasting benefits from engaging in diamond beneficiation there is need to provide incentives for local beneficiation and value addition. This can be done by issuing concessions to and encouraging partnerships between locals and foreign funders in the set up of diamond processing facilities within Zimbabwe. This will increase the number of locals involved and helps retain more of the diamond revenues in the local economy. It is also an imperative for the government of Zimbabwe to also structure arrangements for the inclusion of not only a gender component (by sector specific empowerment initiatives) but by also encouraging and allowing inclusion and transition of the informal sector into the formal economy. This must be incorporated into the diamond mining and beneficiation sector as part of the empowerment module. The purpose of gender mainstreaming is not only to achieve equality between the sexes but also to get their full contributions.

Incidental Interventions: Oversight

There is a need to improve and strengthen supervisory and oversight functions of the various bodies, for example, by capacitating Parliamentary Committees. Government must also curb corruption by prosecuting perpetrators of fraudulent practices. Public officials must be forthcoming with information or data, especially by making it accessible to researchers and engender trust between government and business; this is the bedrock for successful nations.

Governance, Transparency and Accountability in Extractive Industries

Zimbabwe is a signatory and fully fledged member of the Kimberley Process (KP) a United Nations (UN) mandated multilateral organization.

The Kimberley Process Certification Scheme (KPCS) under Section V of its Core Document, titled "Cooperation and Transparency" and in Annex III titled "Statistics" sets out prerequisites for cooperation among KP member organisations and for managing statistics relating to diamond production figures and revenues and availing it to "interested parties for analysis." The Government of Zimbabwe needs to do more to ensure diamond revenue statistics are readily available to the general public, in the interest of transparency and for purposes of accountability. The World Bank sets out responsiveness of governmental authorities as part of the good governance frameworks; this must be adopted in Zimbabwe.

There is a strong need to eliminate corrupt practices, by fully investigating and resolving criminal cases. Initiatives that may be adopted by the diamond sector industry players to increase transparency in diamond revenue management include the Zimbabwe Environment Lawyers Association's (ZELA) Publish-What-You-Pay campaign a part of a bigger Extractive Industries Transparency Initiative (EITI). This campaign encourages diamond producers to publicly disclose its production figures, earnings and related statistics; thereby enhancing transparency and accountability in natural resources management.

Plugging Diamond Leakages

There is a need to plug leakages of minerals from smuggling and illicit financial outflows. This can be done by increasing the physical surveillance of mines, mining areas and international borders using advanced technological tools like X-Ray scanners, Closed Circuit Television (CCTV) systems and Geographic Positioning Satellites (GPS). This would enhance revenue tracking by curbing leakages. The digital CADASTRE System recently adopted by the Ministry of Mines for registration of mining claims is thus very valuable. Revenue management means little if there is no control of ownership structures. Technology can also be used to reduce inefficiencies i.e. set mineral size capture thresholds for mine extraction of diamonds and full exploitation of mine dumps. Regularizing the mining operations of artisanal miners will minimize leakages in diamond mining. This removes the incentive to externalize their produce through informal channels.

Bibliography

Books

- Anderson, J. 2005. *Public Policy-Making*, Fifth Edition, Houghton Mifflin Harcourt: New York.
- Auty, R. M. 1993. *Sustaining Development in Mineral Economies: The Resource Curse Thesis*. London: Routledge
- Babbie, E. 2007. *The Practice of Social Research*, Eleventh Edition. Thompson Wadsworth: Belmont.
- Babbie, E. 2010. *The Practice of Social Research*, Twelfth Edition. Thompson Wadsworth: Belmont.
- Berg, B. L. 2001. *Qualitative Research Methods for the Social Sciences*, Fourth Edition. Allyn and Bacon: Boston.
- Blanche, T. B., Durrheim, K. and Painter, D. 2006. *Research in Practice: Applied Methods for the Social Sciences*, Second Edition. University of Cape Town Press: Cape Town.
- Clough, P. and Nutbrown, C. 2002. *A Student's Guide to Methodology*. Sage Publications: London.
- Corry, D. ed. 1997. *Public Expenditure: Effective Management and Control*. The Dryden Press: London.
- Creswell, J. W. 2009. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Third Edition. Sage: Los Angeles.
- Easterby-Smith, M., Thorpe, R., & Lowe, A. 2004. *Management Research*, Second Edition. Sage Publications: London.
- Fuerstenau, M. C. and Han K. N, (eds.). 2003. *Principles of Mineral Processing*, Chapter 14 titled "Economics of the Minerals Industry by Hrebar, M. J. and Gentry, D. W. 2003, Society for Mining Metallurgy and Exploration: Colorado.
- Herbst, J. 1990. *State Politics in Zimbabwe*. University of Zimbabwe Publications: Harare.
- Leedy, P. D. 1985. *Practical Research: Planning and Design*, Third Edition. Mcmillan: New York
- Neuman, L. W. 2007. *Basics of Social Research, Qualitative and Quantitative*, Second Edition. Pearson: Boston.
- Perrin, R. 2005. *Handbook for College Research*, Third Edition. Houghton Mifflin Company: Boston.
- Punch, K. F. 2004. *Introduction to Social Research: Quantitative and Qualitative Approaches*. Sage: London.
- Quigley, J. M. and Smolensky, E. eds. 1994. *Modern Public Finance*. Harvard University Press: Massachusetts
- Soussan, J. 1988. *Primary Resources and Energy in the Third World*. Routledge: London
- Southern African Political Economy Series. 1995. "The mining sector in Southern Africa." *Southern Africa Regional Institute for Policy Studies: Regional Cooperation Series*. Edited by Philip Paul Jourdan. SAPES Books: Harare.

Journals

- Catholic Institute for International Relations. 1983. "Mining, Mines and Independence" *A future for Namibia Vol. 3*. Catholic Institute for International Relations: London.

- Chimonyo, G. R., Mungure, S. and Scott, P. D. n.d. "The Social, Economic and Environmental Implications of Diamond Mining in Chiadzwa." *Southern African Resource Watch and Center for Research and Development*. OSISA.
- Downs, A. 1957. "An economic theory of political action in a democracy" *The Journal of Political Economy*, Volume 65, Issue Paper 2 (April 1957), 135-150.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). "Toward a conceptual framework for mixed-method evaluation designs." *Educational Evaluation and Policy Analysis*, 11(3), 255–274.
- Summers, R. 1969. *Ancient Mining in Rhodesia and Adjacent Areas*. Museum Memoir Number 3. The Trustees of the National Museums of Rhodesia: Salisbury.

Conference Papers/Reports

- African Union. 2009. "African Mining Vision." African Union: Addis Ababa.
- Aguzzoni, L. 2011. "The concept of fiscal space and its applicability to the development of social policy in Zambia." *Extension of Social Security Paper No. 28, Global Campaign on Social Security Coverage for all*. International Labour Organization (ILO): Geneva.
- Bain & Company Incorporated and Antwerp World Diamond Trade Centre. 2011. "The global diamond industry: Lifting the veil of mystery," *The Diamond Industry Report 2011*. Bain and Company Inc.: Boston
- Bain & Company Incorporated and Antwerp World Diamond Centre. 2013. "Journey through the Value Chain," *The Global Diamond Report*. Bain and Company Inc.: Boston.
- Baxter, R. 2005. "Mineral beneficiation: the mining industry viewpoint." Presentation made at *The LBMA Precious Metals Conference in Johannesburg* by the Chief Economist, South African Chamber of Mines.
- Chininga, C. 2013. "First Report on the Portfolio Committee on Mines and Energy on Diamond Mining (with special reference to Marange Diamond Fields) 2009-2013." *Parliament of Zimbabwe Portfolio Committee on Mines and Energy*. Presented to the Fifth Session of the Seventh Parliament of Zimbabwe on June 2013. S.C.4, 2012. Parliamentary Monitoring Trust of Zimbabwe: Harare.
- Economic Commission for Africa and African Union. 2011. "Minerals and Africa's Development" *The International Study Group Report of African Mineral Regimes*, UNECA: Addis Ababa.
- Grynberg, R. 2013. "Some like it Rough: The future of diamond beneficiation in Botswana," *Discussion Paper*. Botswana Institute for Development Policy Analysis: Gaborone.
- International Council on Mining and Metals and the Commonwealth Secretariat. 2009. "The challenges of mineral wealth: Using resource endowments to foster sustainable development" *Minerals taxation regimes: Analysis and Observations*. February 2009. International Council on Mining and Metals: London.
- Kramarenko, V., Engstrom, L., Verdier, G., Fernandez, G., Erik-Oppers, S., Hughes, R., McHugh, J., and Coats, W. 2010. "Zimbabwe: Challenges and Policy Options after Hyperinflation," *African Department*, International Monetary Fund Publication Services: Washington DC.
- Lubis, S. "Indonesian Mining Policy Update: Bauma Forum," 30th International Trade Fair for Construction Machinery, Building Material Machines, Mining Machines, Construction Vehicles and Construction Equipment held in Munich on 17 April 2013. Indonesian Ministry of Energy and Minerals: Bauma
- Ludnicka, E., Mamros, L., De Riggi, B., and Munshaner, B. 2010. "The diamond value chain."
- Mungoshi, J. 2011. "Beneficiation in the mining industry" *SAIMM Zimbabwe Branch Conference*. Manhize Projects.
- McKinsey & Company. 2013. "Reverse the curse: Maximizing the potential of resource-driven economics," McKinsey Global Institute Report December 2013
- Minister of Government Services and Public Works Canada. 1998.
- Ross, M. 2003. "The Natural Resource Curse: How Wealth Can Make You Poor." in *Natural Resources and Violent Conflict: Options and Actions*. Ian Bannon and Paul Collier (eds.). World Bank: Washington.
- United Nations Economic Commission for Africa. 2011. "Minerals and Africa's Development" *The International Study Group Report on Africa's Mineral Regimes*. United Nations Economic Commission for Africa (UN/AU): Addis Ababa.
- United Nations Economic Commission for Africa. 2012. "Unleashing Africa's Potential as a Pole of Global Growth" *Economic Report on Africa 2012*. United Nations Economic Commission for Africa: Addis Ababa

Zimbabwe National Chamber of Commerce. 2014. *Public Policy Advocacy for Business Viability Research Papers*. Chapter 4 by Ernst and Young Zimbabwe titled “The analysis of the Zimbabwean Tax Regime,” pp 82-98. ZNCC: Harare.

Chapter 5 by Mutuso Dhliwayo and Veronica Zano titled “Future legal framework for mining in relation to transparency for growth,” pp 99-126. ZNCC: Harare.

Newspapers

Bwititi, K. The Sunday Mail. 8 June 2014. “Diamond beneficiation long overdue.” Zimpapers: Harare.

The Herald Friday 22 August 2014. “Zimbabwe loses US\$ Billions in illicit financial flows”. Zimpapers: Harare.

The Sunday Mail. “Sovereign Wealth Fund: Zimbabwe’s brave new world.” Zimpapers: Harare

Sunday Times (SA). “Fabulous wealth in Marange Diamonds” 8 August 2010. The Chronicle, Friday 5 September 2014 – “Zimbabwe losing out in raw tobacco sales.” Zimpapers: Bulawayo.

Websites

Centre for Natural Resource Governance. November 2013. “A tale of two countries: A comparison of Botswana and Zimbabwe’s diamond industries.” Viewed 16 September 2014 from <http://www.ddiglobal.org/login/resources/a-comparison-of-botswana-and-zimbabwe-diamond-sectors.pdf>.

Central Intelligence Agency of the United States of America. n.d. *The World Factbook: Zimbabwe*. Viewed 16 September from https://www.cia.gov/library/publications/the-worldfactbook/geos/print/country/countrypdf_zi.pdf.

DeBeers Group. 2014. “The Diamond Insight Report 2014,” Accessed at <http://www.debeersgroup.com/en/news/company-news/company-news/global-diamond-demand-reaches-record-levels.html>.

Downs, A. 1972. “Up and Down with Ecology: The Issue-Attention Cycle.” *Public Interest*, nr 28 (summer): 38-50, Available from <http://www.anthonydowns.com/upanddown.html>.

Government of the Republic of South Africa. 2011. “A beneficiation strategy for the minerals industry of South Africa.” June 2011, Department of Mineral Resources: Pretoria, Available at <http://www.dmr.gov.za/beneficiation-economics.html>.

Hunt, P. (no date) “Zimbabwe’s ‘Conflict Diamonds’ Controversy and the Flawed Kimberley Process in Marange.” Accessed at <http://www.iloapp.waalm diplomacy.org/.../journal?...>

Kimberley Process Certification Scheme. 19 June 2013. “Kimberly Process Statistics 2012,” Viewed 16 September from https://kimberleyprocessstatistics.org/static/pdfs/public_statistics/2012/2012GlobalSummary.pdf.

Mafoti, R. n.d. “Opportunities for value addition in Zimbabwe” *Scientific and Industrial Research and Development Centre*, accessed at <http://zimtrade.co.zw/pdf/presentations/Mafoti%20.pdf> on 14 October 2014.

Mbanje, P. 27 October 2013. “Value addition through polishing diamonds will increase revenue” Accessed from http://www.zimbabwesituation.com/news/zimsit_value-addition-through-polishing-diamonds-will-increase-revenue/.

McKinsey & Company. 2014. “Perspectives on the diamond industry.” September 2014. Accessed at <http://www.mckinsey.com/> on 31 October 2014.

Natural Resources Charter. 2011. Accessed at <http://www.naturalresourcescharter.org>.

Soraya, N. and Bellamy, V. 2014. “Domestic Minerals Processing and Beneficiation in Indonesian Mining Sector,” Client Alert released February 2014 by MD & Partners accessed on <http://www.whitecase.com> on 2 December 2014.

The Free Dictionary. N.d. “Hypothecation.” Accessed at <http://financial-dictionary.com/ /dict.aspx?rd=1&word=Hypothecation> on 04 November 4, 2014.

Wesley, T., W. 2014. “Lessons on mineral beneficiation: the stick or the carrot?” *Webber Wentzel in Alliance with Linklaters*, 2 June 2014. Accessed from <http://www.webberwentzel.com/wwb/content/en/ww-in-the-news?oid=50623&sn=Detail-2011&pid=32635> on 1 December 2014.

Vechiatto, P. “Compulsory beneficiation knocks Indonesia nickel exports” article in the Business Day Live of 4 February 2014, accessed at <http://www.bdlive.co.za/business/mining/compulsory-beneficiation-knocks-indonesia-exports> on 2 December 2014.

Statutes /Acts of Parliament

Appropriation Act Chapter 23: 05.

Audit Office Act Chapter 22: 18.

Constitution of Zimbabwe Amendment Number 20 of 2013.

Finance Act Chapter 23: 04.

Minerals Marketing Corporation of Zimbabwe Act Chapter 21: 04.

Mines and Minerals Act Chapter 21: 05.

National Budget Statements, Zimbabwe.

Public Finance Management Act Chapter 22: 19.

Precious Stones Trade Act Chapter 21: 06.

Sovereign Wealth Fund Act Chapter 22: 20.

Zimbabwe Mining Development Corporation Act Chapter 21: 08.

Policy Documents

Zimbabwe Diamond Policy

Zimbabwe Industrial Development Policy

Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET) 2013-2018