STATE OF THE MINING INDUSTRY SURVEY

REPORT ON THE FINDINGS

2015

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President's foreword,

A shared mining vision is not feasible whenever information asymmetries exist among stakeholders, and dissonance among key stakeholders always manifests itself as policy discord, which undermines the performance and long-run development of the sector.

Conceived primarily as a decision support instrument, the State of the Mining Industry Survey was launched in 2015 to promote the use of evidence in policy making and foster a shared mining vision among key stakeholders—Government, the mining industry, labour and communities.

The provision of adequate and accurate empirical and factual data is fundamental to the crafting of stable and competitive fiscal and regulatory policies that support the growth and development of the industry. It is a precondition for the maximum of the socio-economic development agenda of the country enshrined in the ZIMASSET vision.

Given the growing prominence of the sector, Zimbabwe is almost becoming a "mining country" according to the UN definition. The recovery of the economy from a decade-long downturn since 2009 was largely driven by the mining sector. Between 2009 and 2012, the sector grew at stellar rates of above 10%.

In spite of a slowdown in mining sector growth between 2014 and 2015, the industry remains key to the long-term, sustainable growth of the economy.

In the long term, the mining sector is envisaged to play an even greater role through mineral beneficiation/value addition, procurement and other broad-based inter-sectorial linkages.

It is my conviction that once the sector gets necessary information support, it can drive the mining industry towards sustainable growth.

I would like to thank the Chamber of Mines of Zimbabwe secretariat for commissioning the State of the Mining Industry Survey and every stakeholder who supported the study in various ways.

My best regards,

Sponsor's Memo

The Chamber of Mines is proud to have commissioned and sponsored the State of the Mining Industry Survey, which is Zimbabwe's first data-driven empirical inquiry into the performance of the mining industry.

To ensure independence and objectivity, a consultant firm, Nu Times Innovations, was engaged to conduct the Survey, covering the whole spectrum of research from research design to the presentation of findings.

Our role in the Survey as the Chamber of Mines was restricted to sponsoring and facilitating the researchers' privileged access to our members who formed a greater part of the respondents.

As you all know, credibility, objectivity and reliability are the hallmark of professional research.

It is our hope that the Survey will address the information asymmetries that exist among the key stakeholders.

We are pleased to announce to our stakeholders that the State of the Mining Industry Survey is going to be an annual event.

As part of our mandate the Chamber remains committed to the establishment of a large knowledge base that meets the information needs of all stakeholders involved in the mining industry

The 80% response rate achieved shows that the mining industry is committed to our goal of promoting evidence-based decision-making.

Their participation and cooperation is commendable. Special mention goes to the Geological Survey of Zimbabwe for providing data on exploration and project development.

.We would like to thank the researchers, Nu Times Innovations, for working hard to produce this report under very tight timelines.

Background and context

Introduction and background

The mining sector has recently emerged to become the key driver of the country's economic turnaround, hence generating a lot of interest from many stakeholders, who on many occasions have questioned on a number of issues relating the performance of the sector, contribution of the sector, prospects and sustainability.

It is against this background that a Study was commissioned to provide a detailed account of the state of affairs in the mining industry vis-a-vis key performance opportunities, prospects and challenges in the mining sector.

Rationale and justification

The survey attempts to bridge the information gap, and provide leverage for government policy as well as strategic planning for other key stakeholders that include mining houses, investors, financiers, suppliers, labour and communities.

Key objectives and outcomes

The State of the Mining Industry Survey seeks to**:**

- Assess the performance of the sector, including recent trends and developments, challenges, risks and opportunities;
- Provide government and other stakeholders basis upon which to craft appropriate policies and strategies to foster growth and development of the mining sector;
- Gauge the level of business confidence in the mining industry; and
- Generating statistical and descriptive mining data.

Methodology

The survey is based on both primary and secondary data. The cluster sampling method was used to draw a sample from the population of mining operators and related institutions. These clusters include Precious Stones, Precious Minerals (excluding PGMs), Base Metals, Platinum Group Metals (PGMs) and Industrial Minerals Energy Minerals.

Both qualitative and quantitative data were collected using administered questionnaires, interviews, secondary data reviews and field trips.

The general response rate was around 80%., with the sample results representing to a large extent the general behaviour of the whole mining industry.

Key survey outcomes and deliverable

The Zimbabwe Mining Survey has four main deliverables.

- *Survey Report* which contains a comprehensive analysis of statistical and accompanying qualitative information which will be disseminated to stakeholders.
- *Mining Business Confidence Index* which gauges the level of investor confidence in the mining industry.
- *Policy Brief- to shape and inform optimal policy for growth and development of the mining industry.*

1 The Mining Sector and the Economy

This section presents findings on macro-wide issue regarding the structure, contribution and significance of mining industry to the economy.

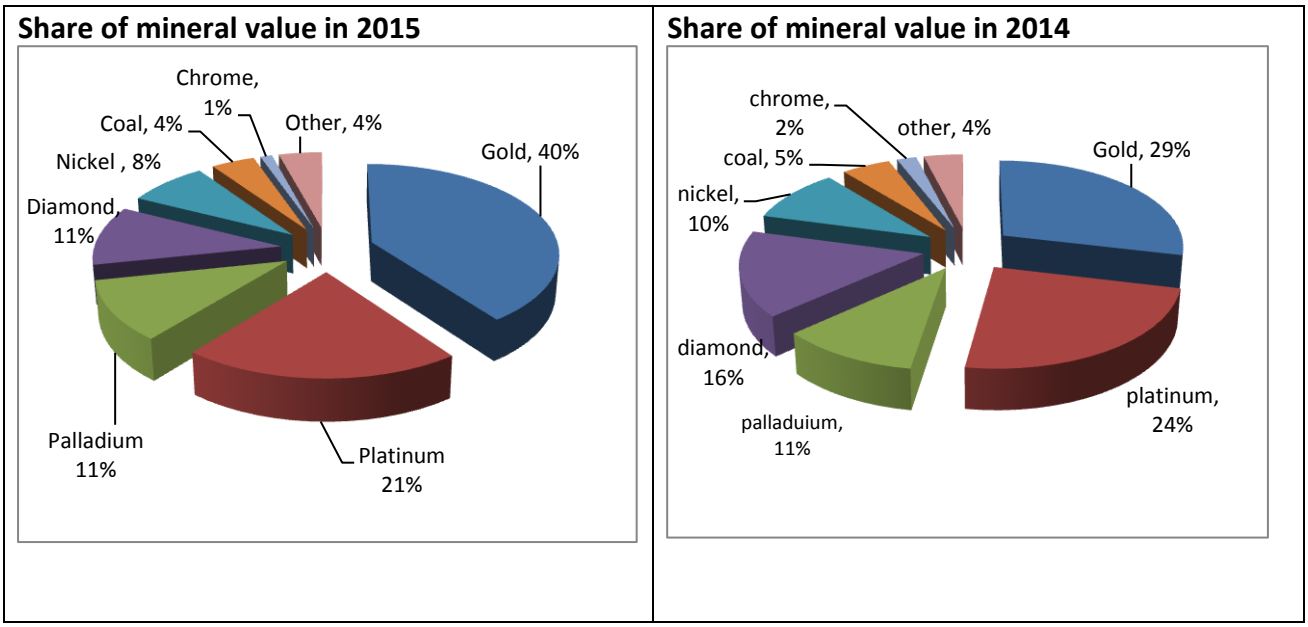
1.1 Structure of the Mining Sector

The mining industry in Zimbabwe remained relatively diversified in 2015 in terms of minerals produced, the number of operating mines and dispersal of control over the mine production.

Key minerals currently being extracted include gold, platinum and associated minerals, diamonds, nickel, coal and chromite. These minerals constitute more than 96% of the total value of minerals that was generated in 2015.

Minerals that used to be significant in the 1980s that are no longer being produced include asbestos, iron ore, tin and beryl. Small minerals which contributed to a diversified mineral production base whose production is now insignificant or not being produced include antimony, barytes, bauxite, iron pyrite, kyanite, talc, agate, amethyst, tourmaline among others.

Figure 1: Distribution of Value by mineral category



Source: RBZ, Chamber of Mines (2015)

Notwithstanding the 40- plus mineral endowments in Zimbabwe, more than 90% of the value of mineral output is accounted for by 5 key minerals in 2015.

Gold, with a share of 40% of the total mineral value maintains pole position in terms of contribution to total mining income. In 2014 the gold constituted 29% of the mineral value.

1.2 Concentration ratio of the top minerals

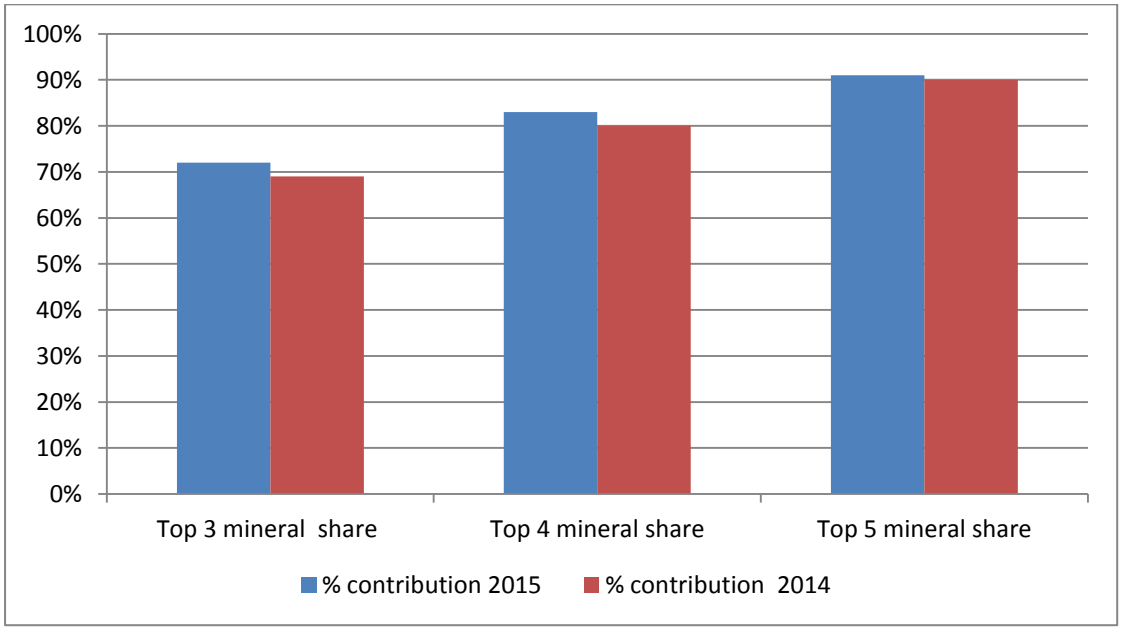
Table 1: Concentration ratio

	% contribution 2015	% contribution 2014
Top 3 mineral concentration ratio	72%	69%
Top 4 mineral concentration ratio	83%	80%
Top 5 mineral concentration ratio	91%	90%

Source: RBZ: Chamber of Mines

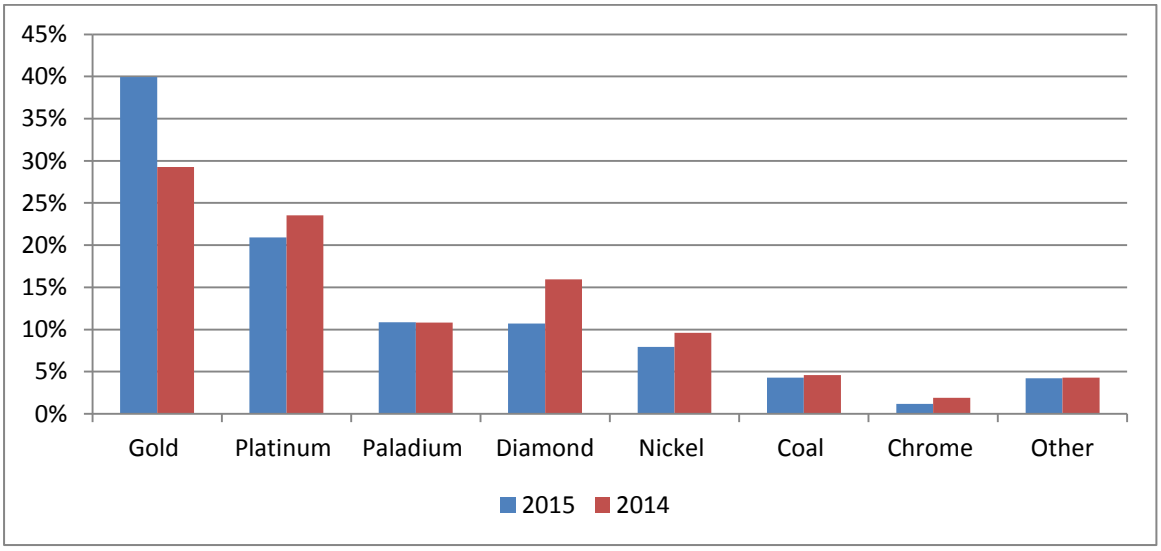
The country appears to continue losing diversity in terms of mineral revenue with the top 3 minerals constituting 72% of mineral value in 2015 (up from 69% in 2014) while top 4 mineral constitute 83% (up from 80%) in 2014. The top 5 constitute 91%, (up from 90% in 2014).

Figure 2: Mineral Concentration Ratio



Source: survey

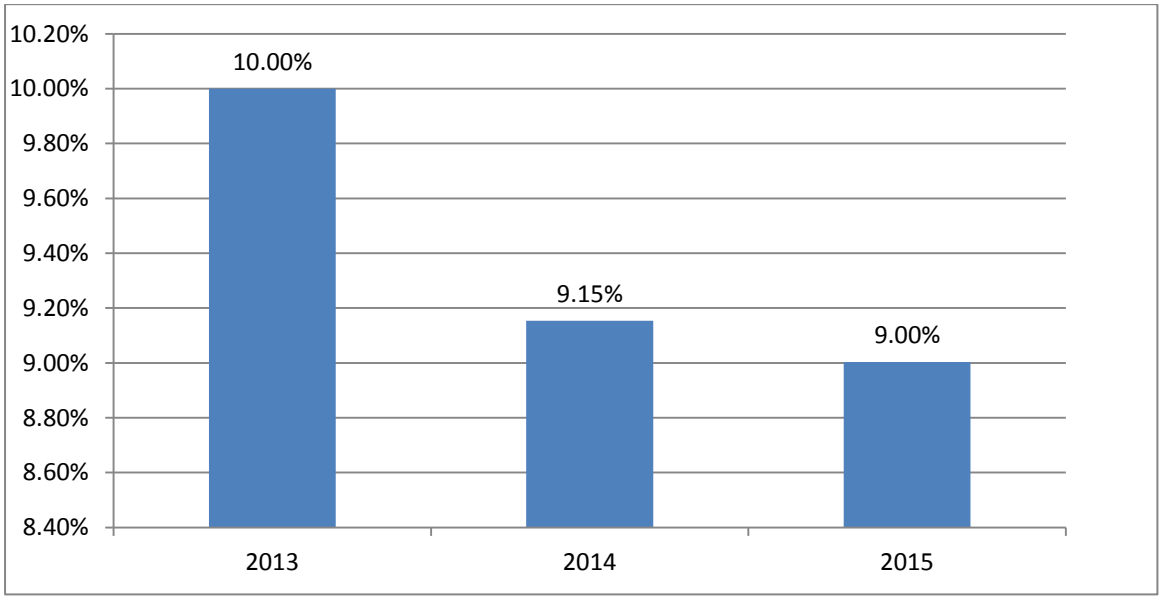
Figure 3: Share of total value by mineral category (2015 and 2014)



Source: Chamber of Mines, RBZ

1.3 Contribution of Mining Output to National Income

Figure 4: Mining Contribution to GDP



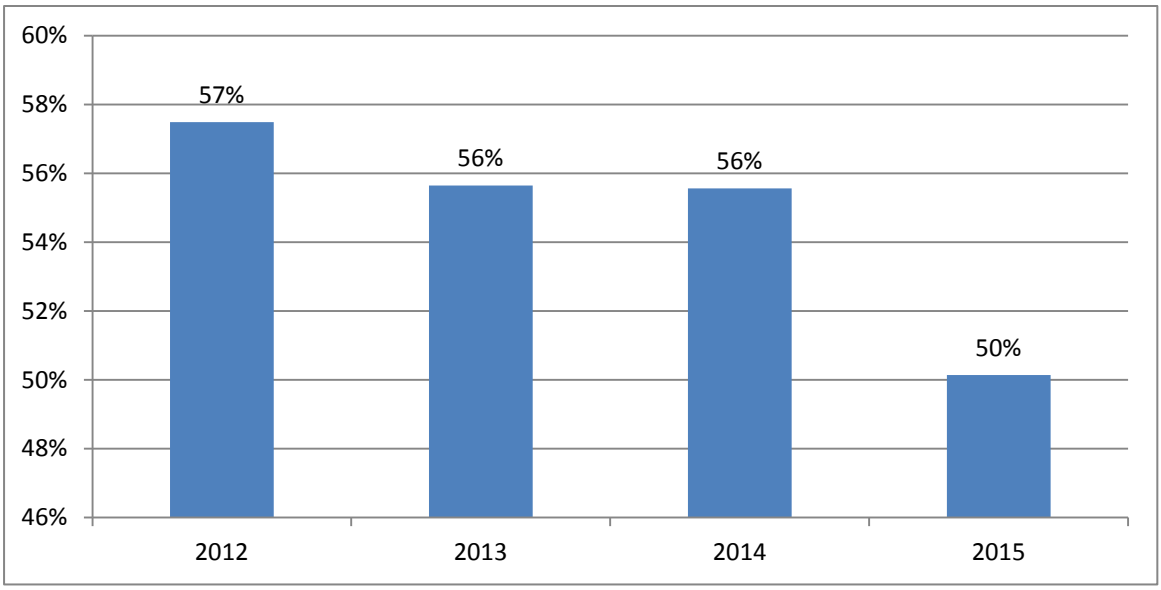
Source: Ministry of finance/ Zimstats

The sector's contribution to GDP is estimated to have fallen to 9.0% in 2015, down from 9.2% in 2014, and 10% in 2013. During the same period the mining sector output recorded negative growth of around -3.4% and-2.5% in 2014 and 2015 respectively.

1.4 Contribution to National Exports

Whilst the sector continues to account for over half of total national exports, its contribution is estimated to have fallen to 50% in 2015, from 56% in 2014 as shown below.

Figure 5: Percentage Contribution to National Exports

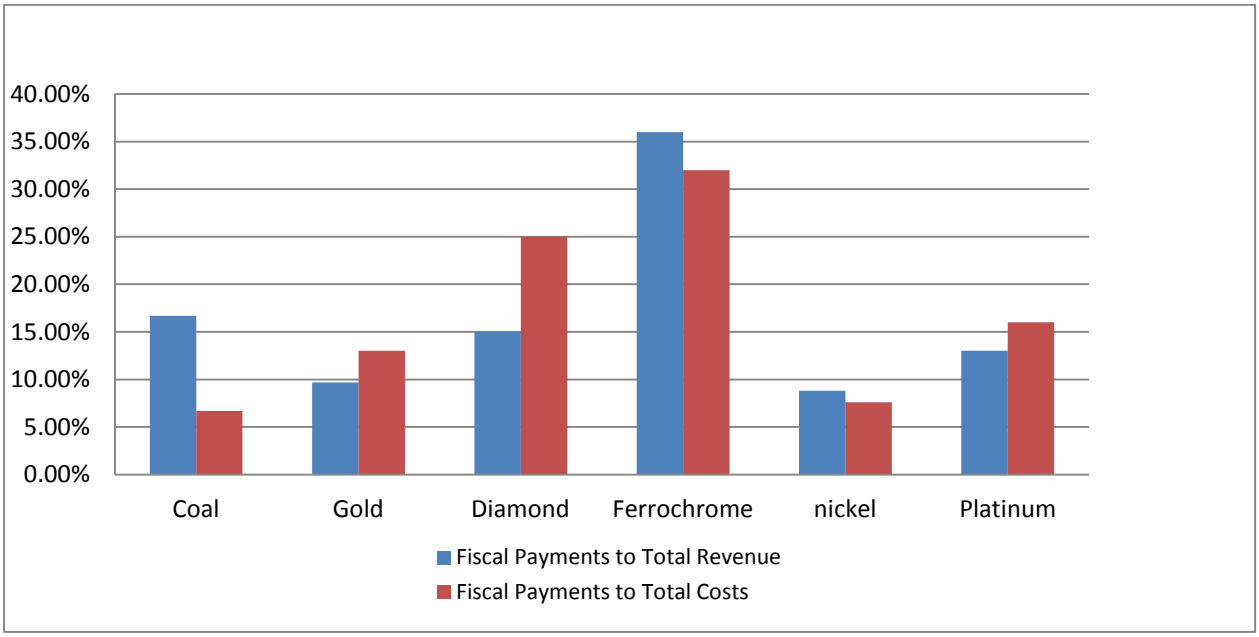


Source: RBZ, MOF, Chamber of Mines

1.5 Contribution to Fiscal Revenue

In 2015 the total payments to government and related departments (based on survey respondents) constitute an average of 14.8% of total mining revenue and 16.7% of the total costs. Highest proportions are found in ferrochrome sub-sector where, on average, payments made by the sector to government represent 32% of total revenues, while lowest proportion is nickel (8%).

Figure 6: Percentage Share of Tax Payments to Mining Revenue



Source: Survey

Table 2: Fiscal payments to total revenue and total costs

	Coal	Gold	Diamond	Ferrochrome	nickel	Platinum
Fiscal Payments to Total Revenue	16.7%	9.7%	15%	36%	8.8%	13%
Fiscal Payments to Total Costs	6.7%	13.0%	25%	32%	7,6%	16%

Source: Survey

2 Findings on Industry Specific Issues

This section presents findings on the industry wide specific issues relating to the mining sector performance, challenges and prospects.

1.1 Production performance

Most minerals recorded declines in output in 2015, compared to 2014. Chrome recorded the highest decline of -48%, followed by coal (-34%), diamond (-30%), nickel (-3%). Gold output recorded an increase of 30%, whilst platinum remained flat.

Table 3: Mineral production performance

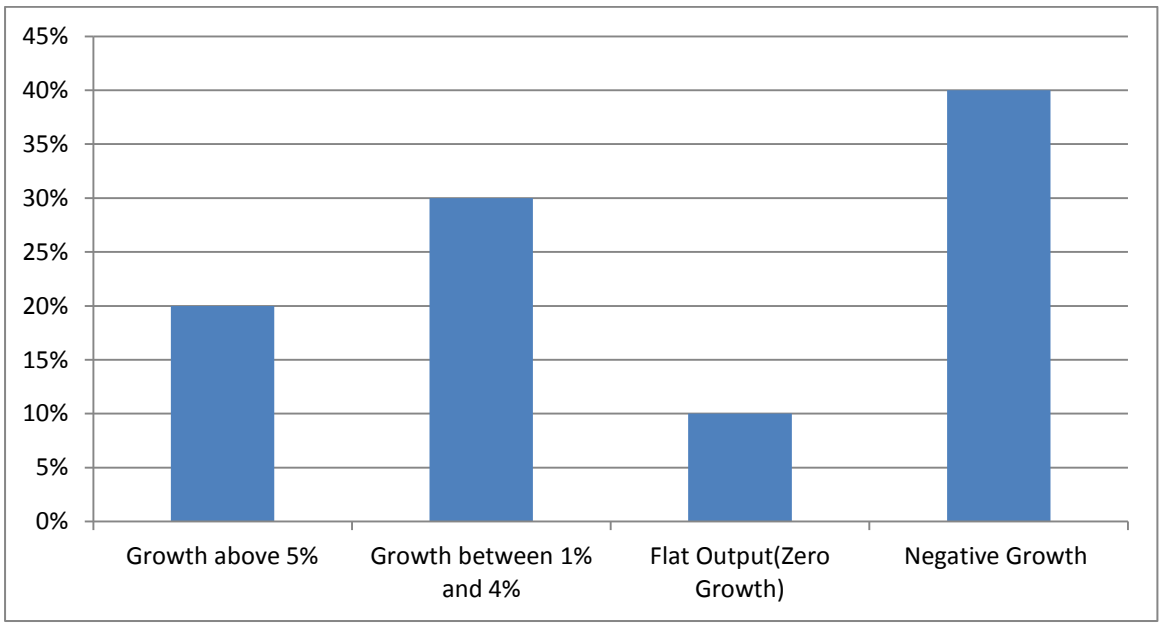
	2014	2015	% Change
Chrome \'000 t *	408	211	-48%
Coal \'000 t *	6 353	4 200	-34%
Gold \kg	15 386	20 000	30%
Nickel \t	16 633	16 108	-3%
Platinum \kg	12 483	12 564	1%
Diamonds\(000) carats	4 773	3 360	-30%
Palladium	10 138	10 055	-0.8%
Copper	8 275	8 262	0%

Source: Chamber of Mines*forecast*

1.2 Projected mineral output growth for 2016

20% of the respondents were bullish that the sector will grow by at least 5% in 2016, while 30% plan to grow output by between 1% and 4%, 10% of the respondents are planning to maintain their output, and 40% are projecting another decline in mineral performance in 2016.

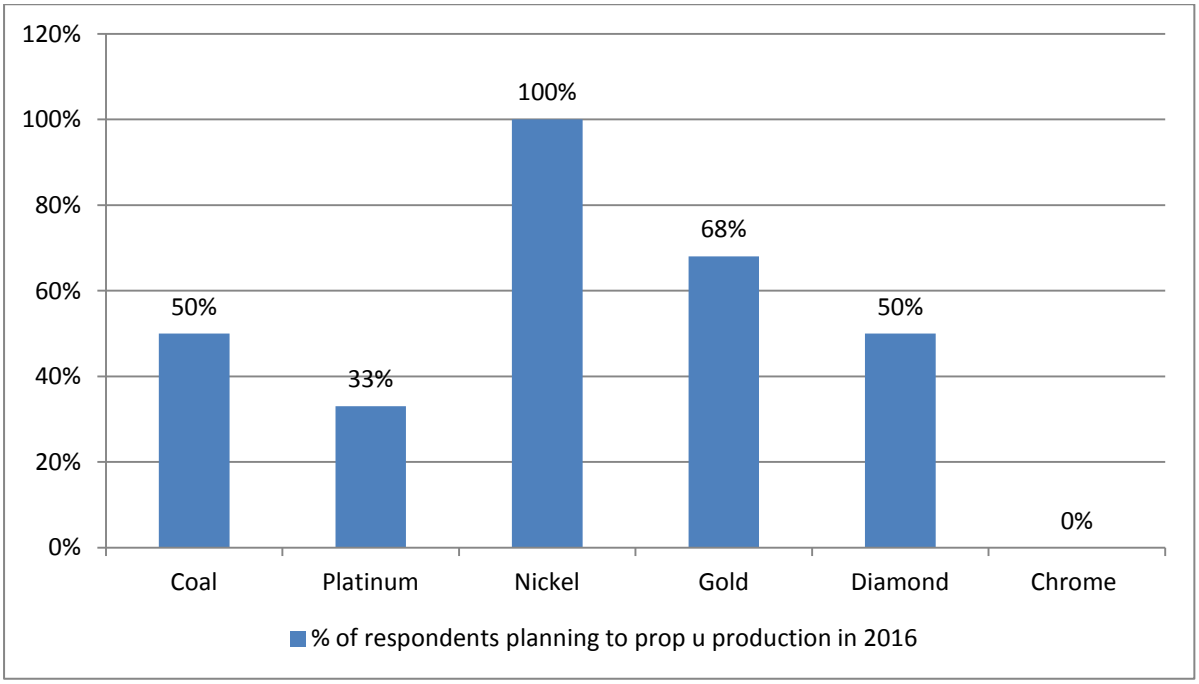
Figure 7: 2016 Output Projections



Source: Survey

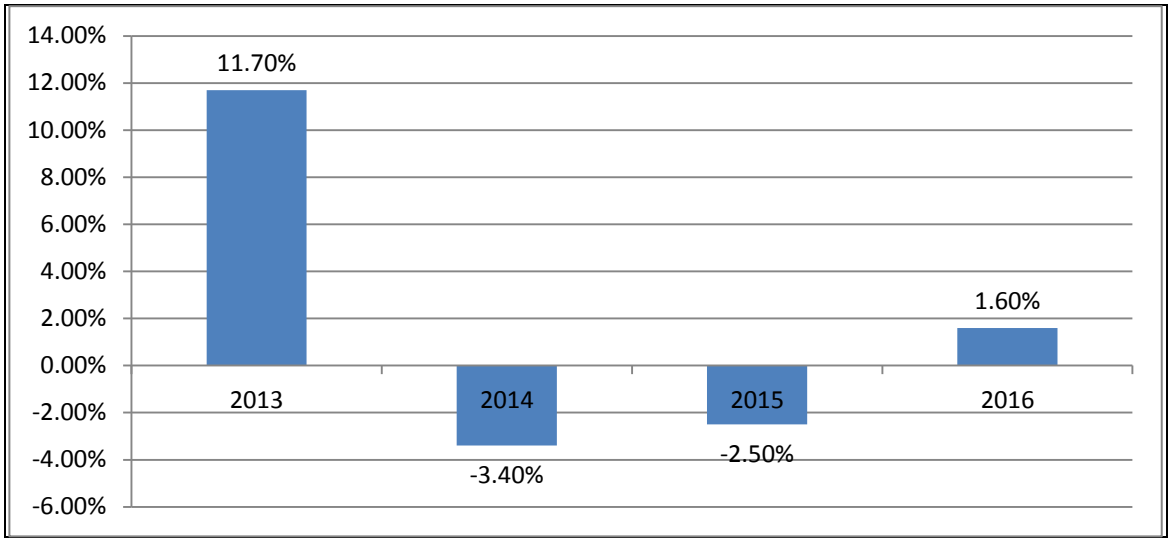
Nickel and Gold producers plan to increase output in 2016 compared to other sectors with 100% nickel and 68% gold respondents saying they will increase output in 2016. The distribution of the other minerals is outlined as below;

Figure 8: % of respondents planning to prop up production in 2016 by mineral category



Source: Survey

Figure 9: Mineral Output Growth

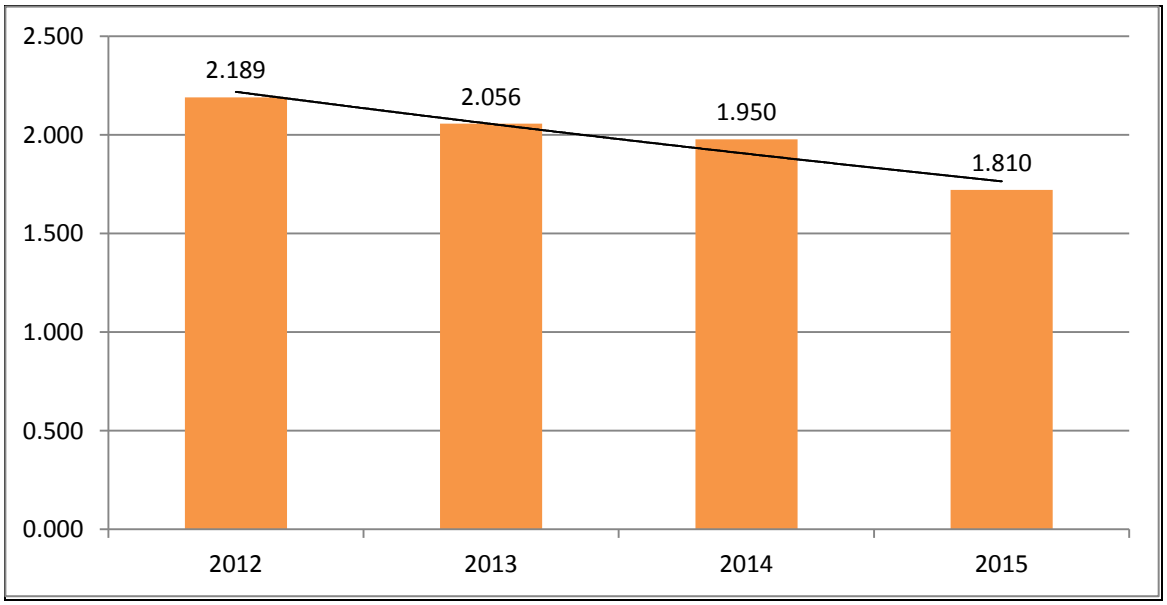


Source: Zimstats, Ministry of Finance

1.3 Value of mineral output

The value of mineral output also mirrored the decline in output, falling by 13.1% in 2015.Two major reasons were cited for the decline in mineral earnings: low output and subdued prices.

Figure 10: Mineral Revenue (USD billions)



Source: RBZ, Chamber of Mines

Total value of minerals generated in 2015 declined by 7% from % 1.95 billion in 2014 to around $1.8 billion in 2015.

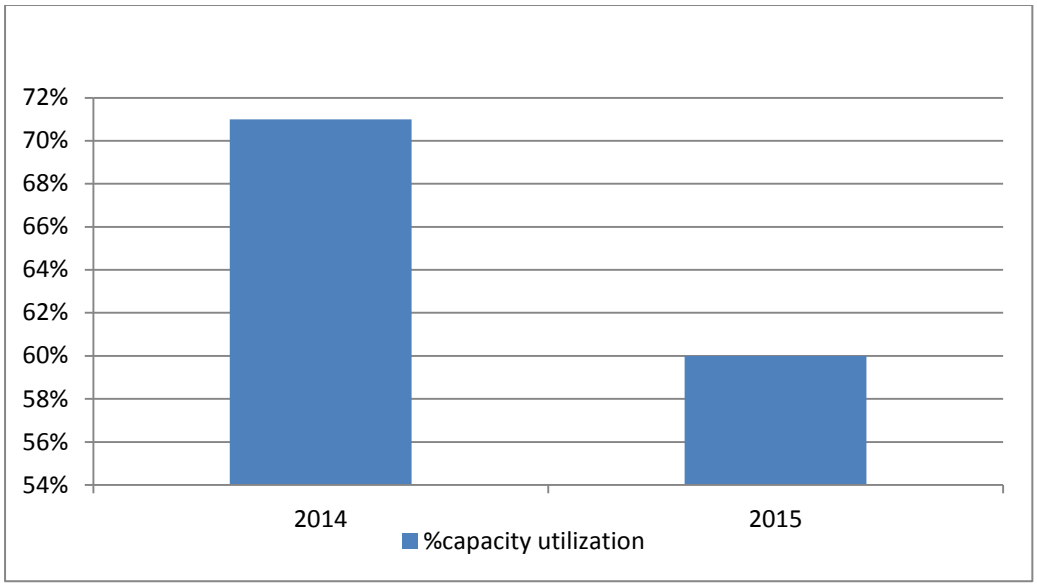
Table 4: Value of minerals (2014-15)

	2014 (US$ million)	2015 (US$ million)	% Change
Chrome	40	21	-47%
Coal	97	78	-19%
Gold	616	737	20%
Nickel	202	142	-30%
Palladium	228	197	-13%
Platinum	495	381	-23%
Diamond	336	180	-46%
Other	90	77	-14%
Total	**1,949**	**1,814**	**-7%**

Source: RBZ, Chamber of Mines

1.4 Capacity Utilisation

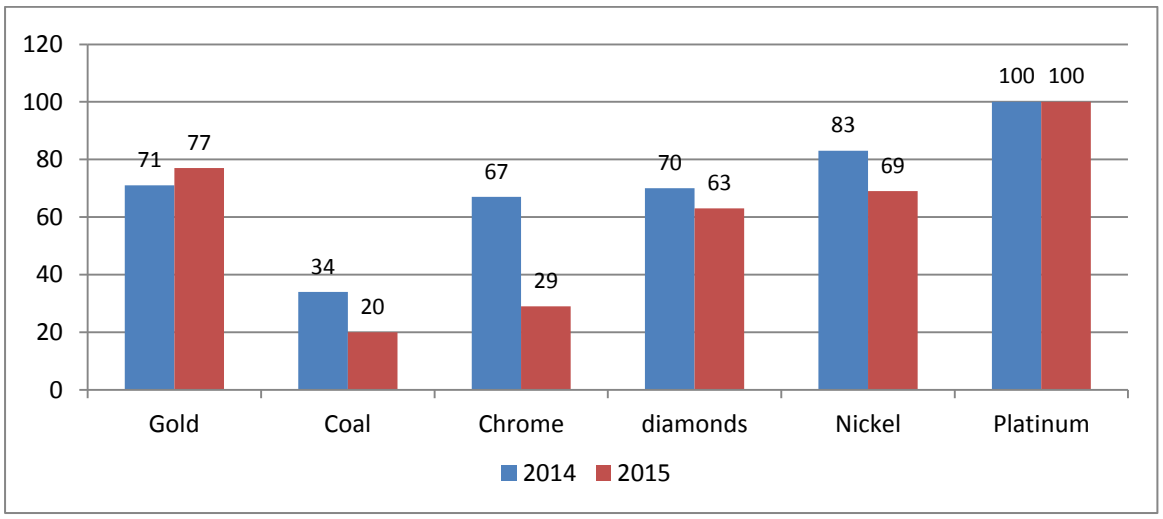
Figure 11: % capacity utilisation for the mining sector



Source: Survey

Average capacity utilisation for the mining sector declined from 71% in 2014, to 60% in 2015. Platinum sector continues to operate at full capacity while significant declines in capacity utilization where registered in coal (down to 20% from 34%) and chrome (down to 29% from 76%).

Figure 12: Average Capacity Utilisation for Selected Minerals (%)

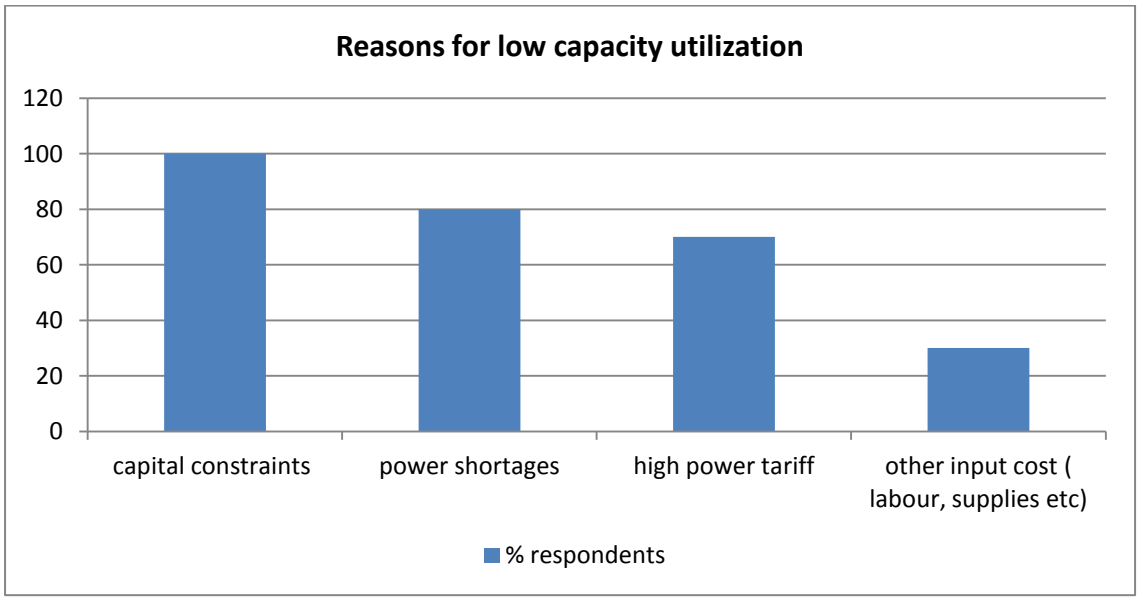


Source: Survey

1.5 Reasons for low capacity utilization

All respondents operating below full capacity mentioned capital shortages as the major constrain undermining capacity utilisation, along with shortage and high cost of power as well as high input costs.

Figure 13: Reasons for low capacity utilization

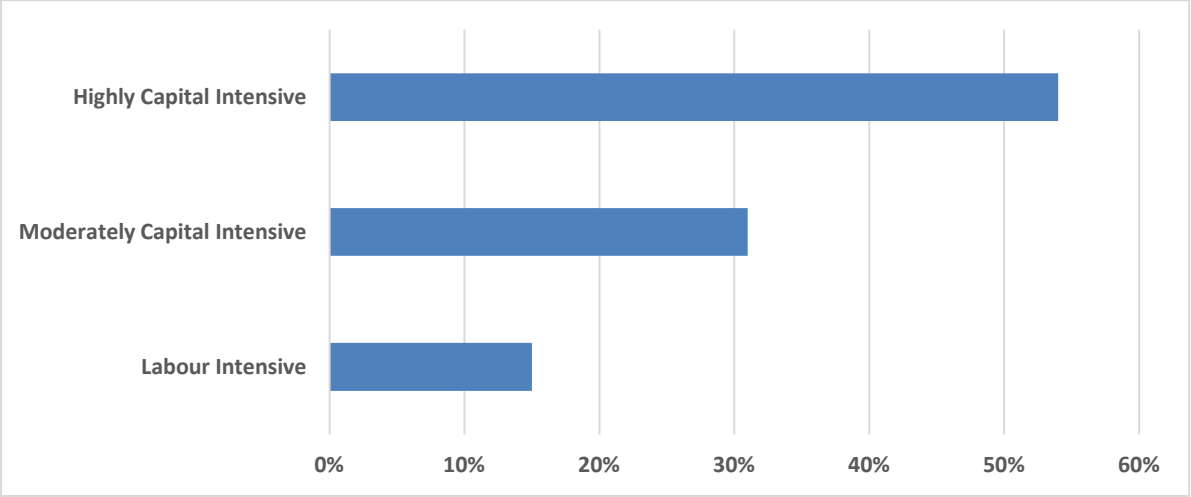


Source: ***survey***

1.6 Mechanization and Capital Intensity in the Mining Industry

The mining industry is relatively capital intensive, with 54% of the respondents indicating high capital intensity, 31% moderately capital intensive and 15% described their operations as labour-intensive. About 31% indicated that they are moderately capital intensive.

Figure 14: Level of capital intensity



Source: survey

1.7 Average grade for selected minerals

Table 5: Average ore grades

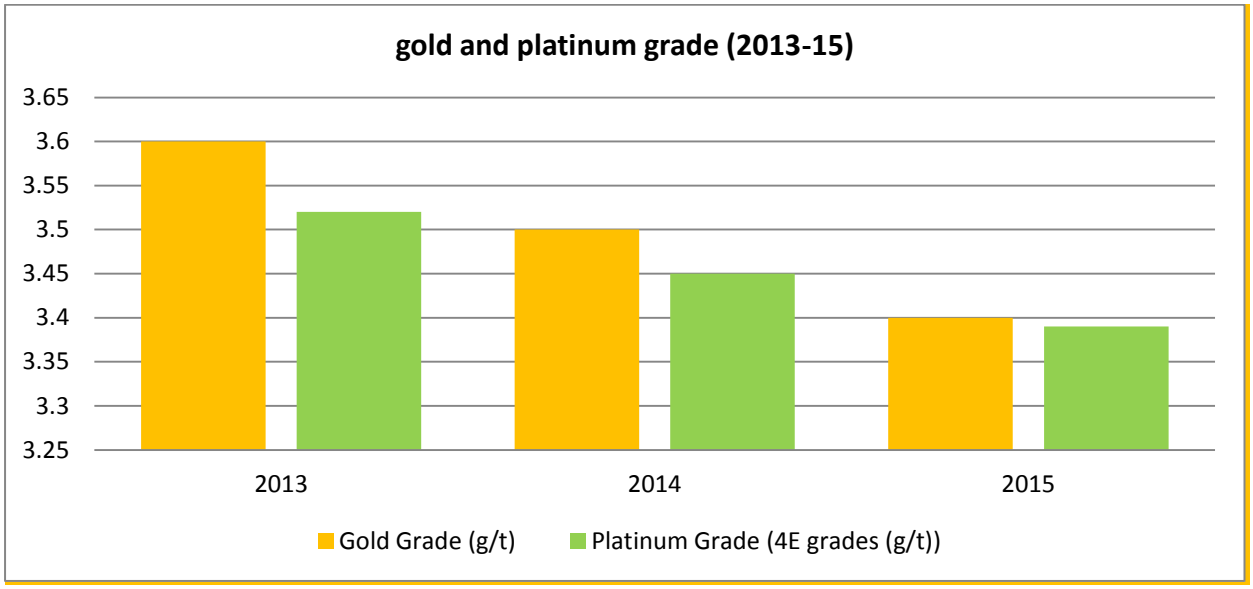
	Gold	Diamond	Chrome	Nickel	Platinum
	Grade (g/t)	Grade (CPT)	Grade (Cr203)	Grade	Grade (4E grades (g/t))
2013	3.6	0.75	40.22	1.382	3.52
2014	3.5	0.75	39.48	1.458	3.45
2015	3.4	0.75	40.48	1.407	3.39

Source: Survey

The average grade for the mining industry fell across most minerals from in 2014 to in 2015. Gold's average grade fell from average of 3.5g/t in 2014 to 3.4g/t in 2015 while platinum fell from average of 3,45g/t to 3.**39g**/t. The declining mineral grade (at a time mineral prices are depressed) may be a reflection of the lack of investment in development (and exploration)

over the years. Under normal circumstances mines are expected to go for higher grades to increase production to cover the potential revenue loss from low prices.

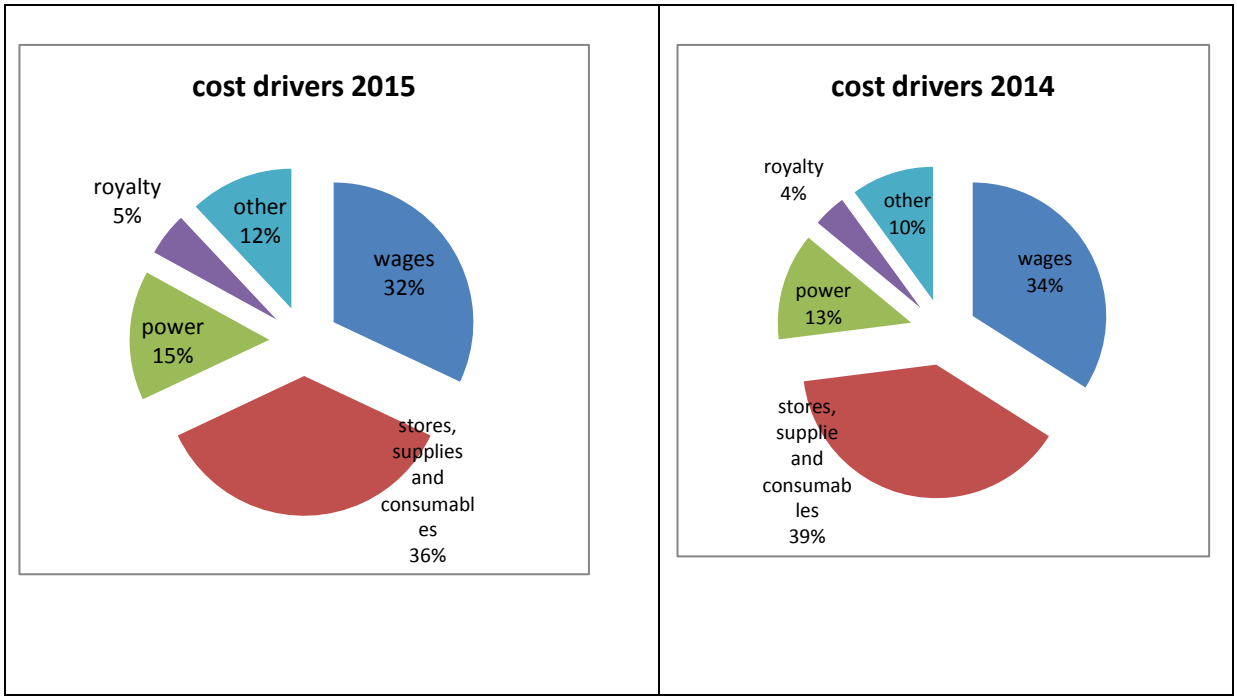
Figure 15: Gold and platinum grades



Source: Survey

1.1 Cost Drivers

Figure 16: Cost Drivers in Mining Industry



Source: survey

The Survey identified four major cost drivers as wages, stores and supplies, power and royalty. Stores and consumables at 36 % of the total costs constitute the biggest chunk of the total costs, followed by wages (32%), power (15%) and royalty (5%).

1.2 Cost structure

Table 6: Average Cost by mineral category

Mineral	2014	2015
Gold $/Ounce	1 245	1 190
Coal $/tonne	59	69
Nickel $/tonne	14 428	9 993
Chrome $/lb	1.27	1.25
Platinum $/ ounce	1 517	1 582

Source: Survey

1.3 Minerals prices

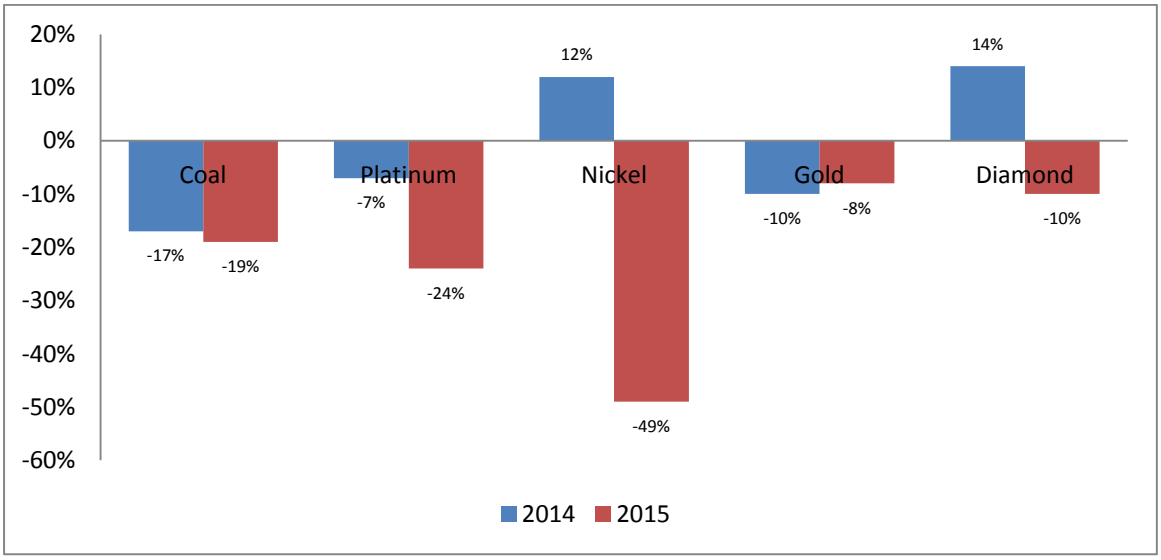
All key minerals recorded significant price declines in 2015 with nickel falling by 49%, platinum 24%, coal 19%, diamond 10% and gold 8%.

Table 7: Mineral Prices

	2013	2014	2015
Coal/ ton	84.6	70.1	58.9
Platinum/ ounce	1 487	1 385	1 053
Nickel/ ton	15 032	16 893	8 600
Gold/ ounce	1 411	1 266	1 160
Diamond/ carat	51	58	52

Source: KITCO, MMCZ

Figure 17: Percentage Change in Mineral Prices



Source: KITCO, MMCZ

1.4 Profitability

Profitability for the mining industry has declined across most minerals, with most respondents recording losses during the period under review. Nickel recorded the largest loss of $1,393.00/ ton in 2015 compared to a profit of $2465 per ton in 2014. Platinum registered average loss of $529/oz in 2015 compared to a profit of around $868/oz in 2014, while gold recorded average loss of $30/oz compared to a profit around $21 in 2014.

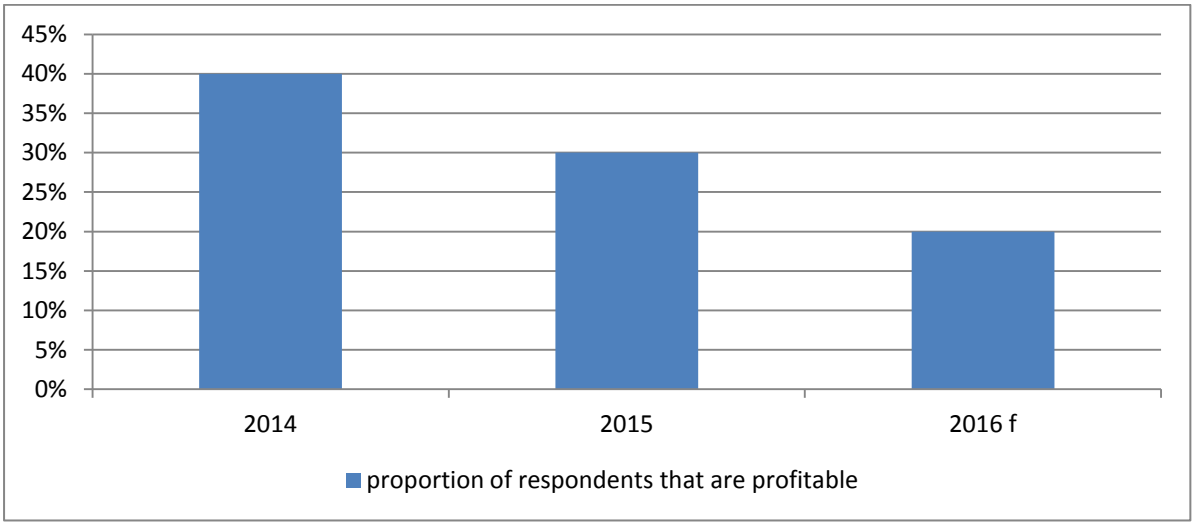
Table 8: Profitability for selected minerals

	2014			2015		
Mineral	**price ($)**	**unit cost ($)**	**profit/(loss) $**	**price ($)**	**unit cost ($)**	**profit/(loss) $**
Coal/ ton	70.1	59	11.1	58.90	69.00	(10.10)
Platinum/ oz	1,385.00	517	868	1,053.00	1,582.00	(529.00)
Nickel/ ton	16,893.00	14,428.00	2,465.00	8,600.00	9,993.00	(1,393.00)
Gold/ 0z	1,266.00	1,245.00	21	1,160.00	1 ,190.00	(30.00)

Source: survey

The above figures are only indicative of general position. It is important to note that some efficient mines contained their costs below the average and hence squeezed some profits in 2015. In fact 30% of respondents indicated that they made profits in 2015, while 70% said they made losses.

Figure 18: Proportion of respondents that are profitable (2014 – 2016)



Source: Survey

Survey findings show that the 2016 outlook is bleak for most mining houses with only 20% of respondents indicating that they may make profits.

1.5 Factors undermining Viability of the sector

The following factors, ranked in order of severity, were cited as undermining viability in the sector.

Table 9: Factors undermining viability

Challenge	Rank
Shortage and high cost capital	1
Low commodity prices	2
Shortage and high cost of power	3
High wage costs	4
High procurement costs (including erratic supply)	5
High and static royalty	6

Source: Survey

Table 10: Mineral specific challenges facing the mining industry

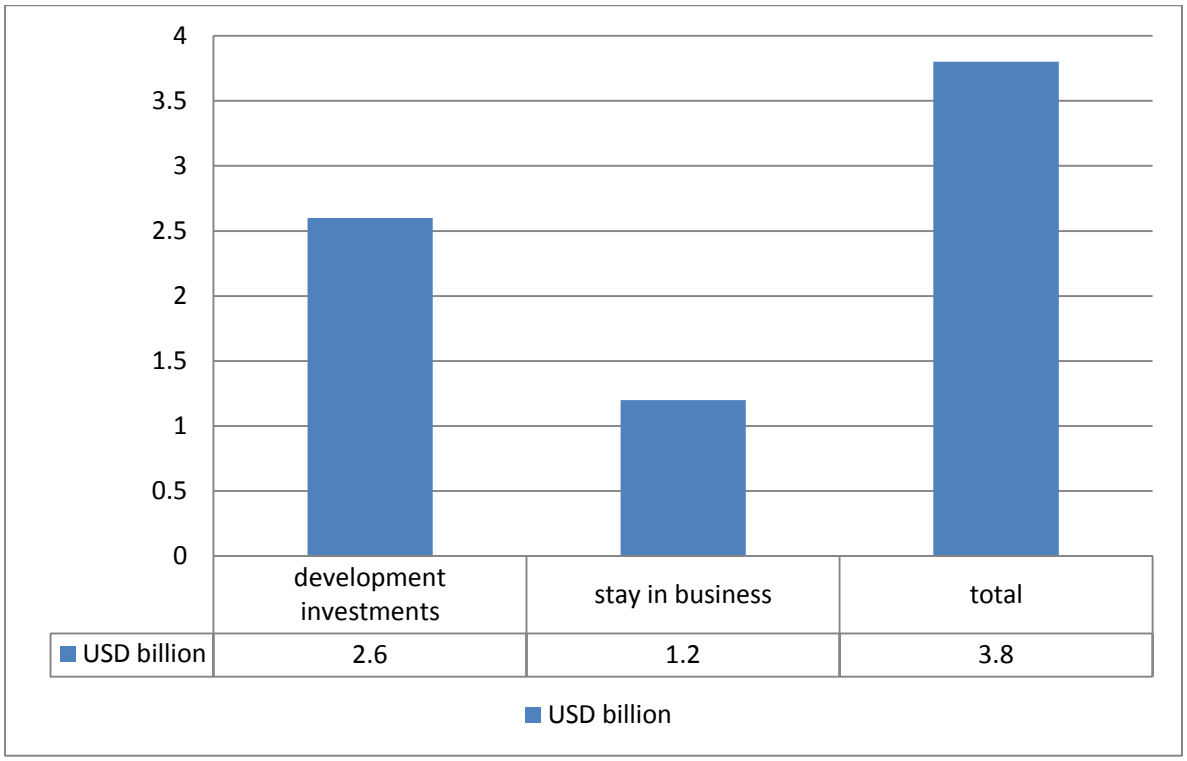
Coal	Gold	Diamond	Ferrochrome	Nickel	Platinum
Challenges currently affecting mining performance					
i. limited working Capital; ii. depressed market, iii. low commodity prices; iv. legacy debts and v. costly loans	i. unreliable power supply ii. high cost of power, iii. high cost funding, iv. fluctuating prices and v. high cost of capital vi. high input costs, vii. high royalty fees viii. obsolete equipment ix. forced to purchase "locally" meanwhile it is being imported and local supplier is including a huge markup	i. depressing international prices	i. Lower international prices, ii. under utilization leading to high costs, iii. high cost of mining chrome, iv. high finance charges, v. high distribution charges as landlocked	i. Low commodity prices	i. Depressed metal prices, ii. increasing operating costs, and iii. Changing regulatory environment
Factors which have contributed to the drop or rise in profitability since 2012					
i. Low production due to old machinery	i. Favaourable prices between 2012-2014 b4 dropping off ii. Gold price and royalties being disallowed, iii. lower grades in the mine iv. high input costs v. costs of generating power, and vi. Zinwa, EMA, Unit taxes	i. depressing international prices	i. Declining international prices, ii. high costs due to operating below capacity, iii. Costly finance charges, iv. costly logistics, v. high electricity costs, vi. cashflow constraints	i. Favourable 2013/2014 prices caused us to start producing again	i. Negative movement in metal prices, ii. iii. upward trend in the operating cost case

Source: Survey

1.6 Capital Requirements

About 90% of the respondents reported that they encountered difficulties in raising the requisite capital for staying in business or ramp up production in 2015. 62% of these respondents said that they were using antiquated and inefficient equipment. The mining industry (excluding diamonds) requires about US$3.8 billion over the next 5 years. Of this figure $1.2billion is required for stay in business while $2.6 billion is for developmental investments.

Figure 19: Capital required by the mining sector (2016 – 2020, USD billion)



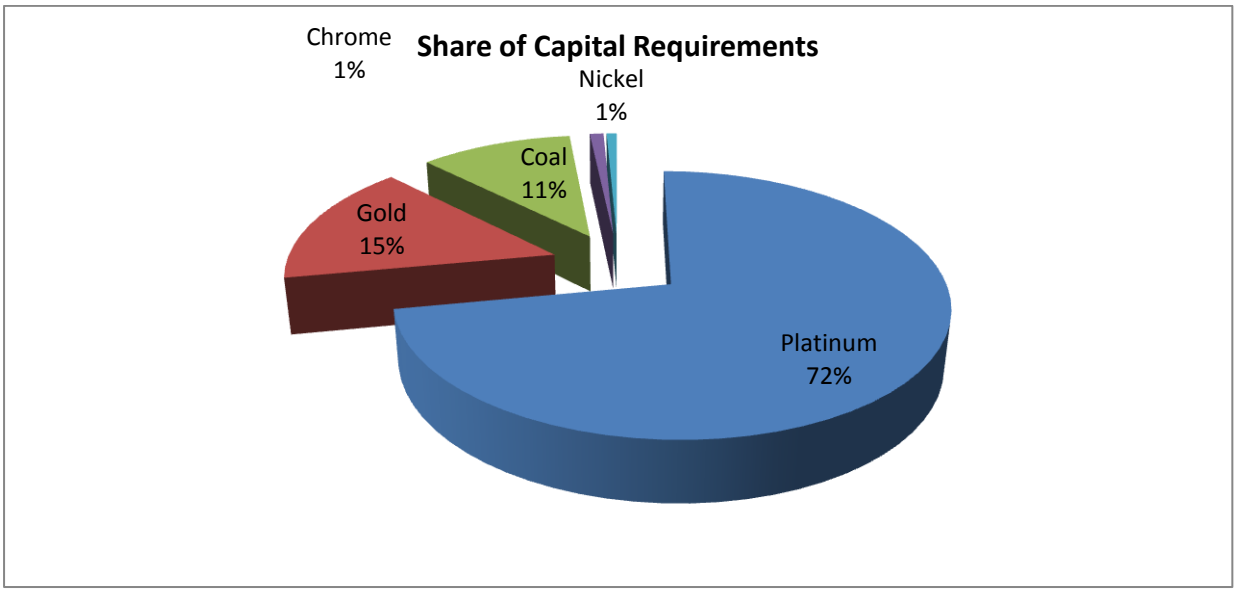
Source: Survey

Table 11: Capital Requirements (2016-20) by mineral category

Mineral	Developmental (ramp) investments (USD)	Stay in business Requirements (USD)	Total Capital Requirements 2016-2020 (USD)	Expected Output by 2020 (USD)
Platinum	1,600,000,000.00	1,200,000,000.00	2,800,00,000.00	24 000 kg
Gold	191,000,000.00	410,000,000.00	601,000,000.00	35 000 kg
Coal	37,000,000.00	383,000,000.00	420,000,000.00	18 000 000 tons
Chrome	27,000,000.00	11,000,000.00	38,000,000.00	1 000 000 tons
Nickel	25,000,000.00	3,000,000.00	28,000,000.00	27 000 tons
Total	**2,600,000,000.00**	**1,200,000,000.00**	**3,800,000,000.00**	

Source: Survey

Figure 20: Share of the capital requirements by mineral category



Source: Survey

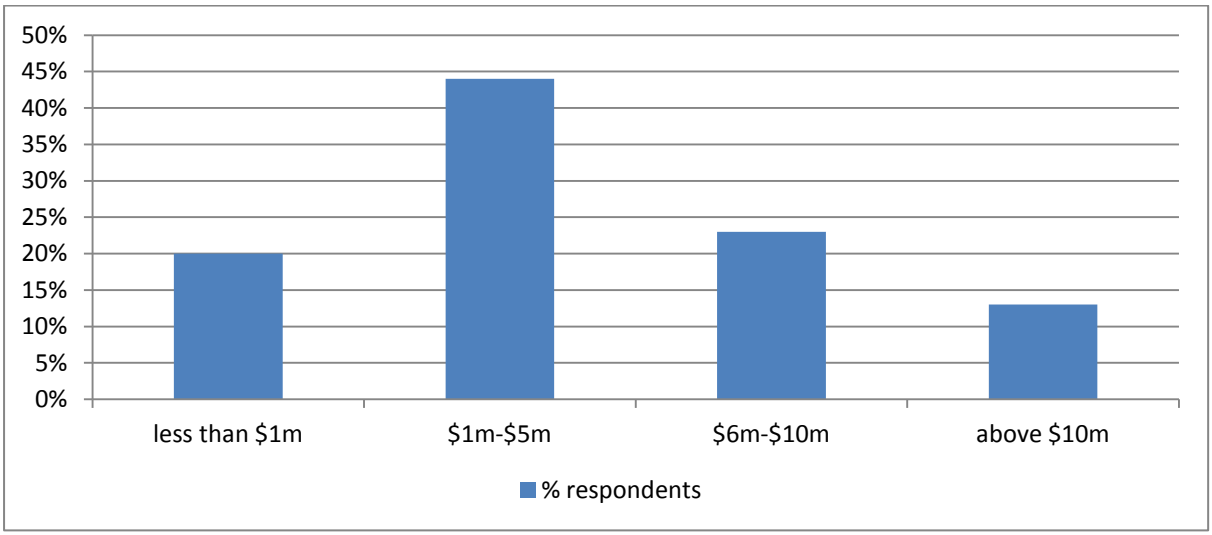
The platinum sector constitutes more than 70% of the capital requirements, followed by gold, coal, chrome sector and nickel.

1.7 Shortage and high cost of power

Most respondents cited power outages and tariff as weighing down the production and viability of the mining industry.

With mining being a 24 hour operation for most mines, most mines (92%) said they are currently bridging the gap between supply and demand during times of peak demand partially by self-generation. In cases where outages extend beyond the normal peak periods, 86% of the respondents said that they do not cope and outages and suffer output losses as much as US$10 million per annum.

Figure 21: Output losses per annum due to power outages



Source: Survey

Most of the respondents, 44% have lost revenue between $1m and $5m per annum.

1.8 Demand for electricity (2015-2020)

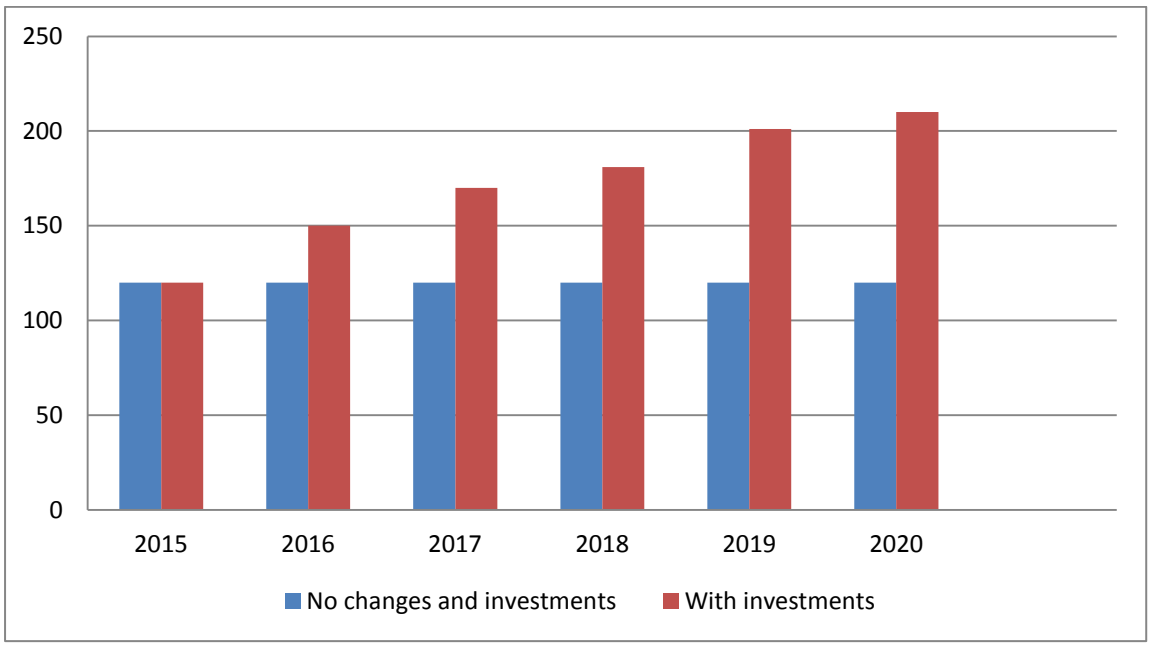
The sector currently require about 120MW to remain in business, while the demand is anticipate to rise steadily if the industry secure additional investment capital. The table below indicate demand rising to as 150 MW in 2016 and as high as 210 MW in 2012 if requisite capital is secured.

Table 12: Demand for electricity

Scenario	Demand \MW					
	2015	2016	2017	2018	2019	2020
No changes and investments	120	120	120	120	120	120
With investments	120	150	170	181	201	210

Source: Survey

Figure 22: Projected demand for electricity



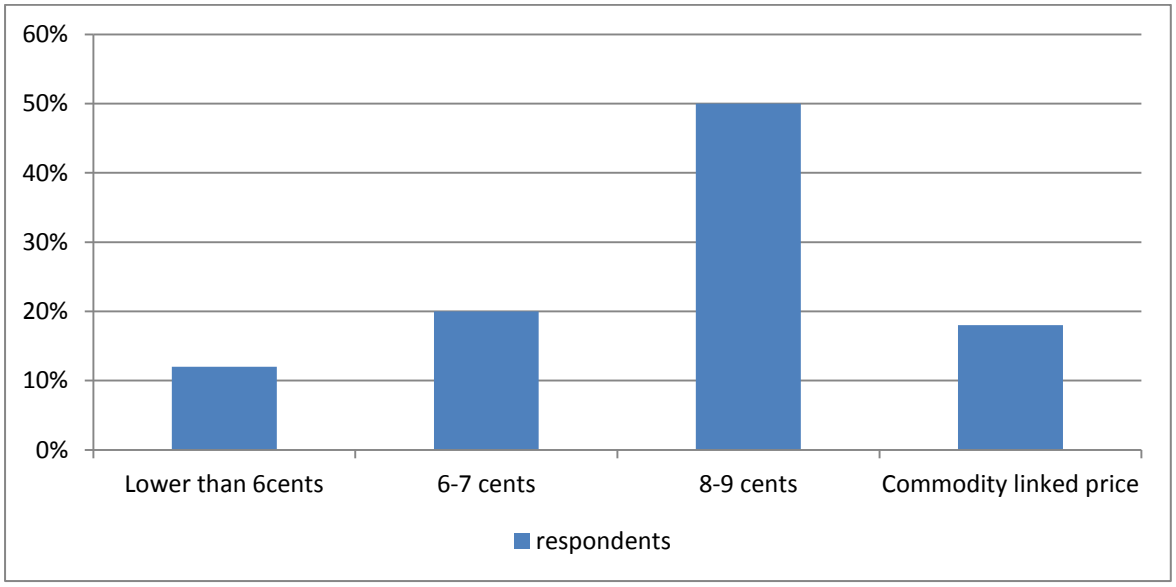
Source: Survey

Optimal Electricity Tariff

Also central to the electricity question by respondents is the tariff regime that applies which most producers feel is too high and not sustainable for the quality of deposits being exploited. The average tariff for the mining industry is currently around 10cents/KWh, though most gold producers are paying around 13cents/ kWh compared to the national average or general tariff around 9 cents.

Most mines interviewed would like to see a tariff that is competitive to regional standards, and reflective of their cost structure. 50% said they would prefer tariff between 8 and 9 cents to remain in business or to improve their production. 20% of the respondents feel a tariff between 6 and 7 cents is fair, 12% would prefer a tariff lower than 6 cents while another 18 % feel a tariff linked to commodity price must be applied.

Figure 23: Optimal tariff



Source: Survey

1.9 High Royalty and other fiscal charges

80% of respondents indicated that the current royalty regime, which is characterised by relatively high rates and non-tax deductibility, is not affordable and uncompetitive compared to other mining jurisdictions. The respondents also bemoan the many tax heads and levies currently charged to mining houses.

Table 13: Country Comparison of Royalty Regimes

Zimbabwe	**1%-15%**	Diamonds, 15%; Platinum and Precious Stones, 10%; Gold, (large scale – 3% on incremental output, Cap of 5%, Small Scale1%); Other Precious Metals, 4%; Base Metals and Industrial Minerals, 2%; and Coal, 1%
Angola	2%-5%	Stones and Precious Metals, 5% (semi-precious stones – 4%); Metallic Minerals, 3%; and Other Minerals, 2%
Botswana	3% - 10%	Precious Stones, 10%; Semi Precious, 5%, and Other, 3%
Mozambique	3% - 10%	Diamonds, Precious Stones and Precious Metals, 10%; Semi Precious Stones, 6%, Basic Minerals, 5%, Coal and Other Mining Products, 3%.
Namibia	4% - 5%	Precious Metals, 5%; Base and Rare Metals, 5%; Semi-Precious Stones, 4%; Industrial Minerals, 4%
Tanzania	3%-5%	Gold and All Other Minerals, 3%; Diamond, 5%; and
Zambia	3%-5%	Precious Metals and Stones, 5%; and Base Metals, 3%

South Africa	2%-6%	Gold, 3% unrefined Gold 1.5% refined Unrefined PGM 6%

Source: Survey

1.10 High Cost of Consumables

About 80% of the respondents bemoan the high cost of inputs, consumables and supplies charged by suppliers and feel the prices are not justified. 65% said their limited scope for economies of scale in procurement of consumables and inability to procure in bulky results in their high procurement cost, as they rarely benefit from trade discounts because of smaller orders they make to suppliers. Consumables constitute between 25 and 40% of the total cost of production.

1.11 Wages and Labour issues

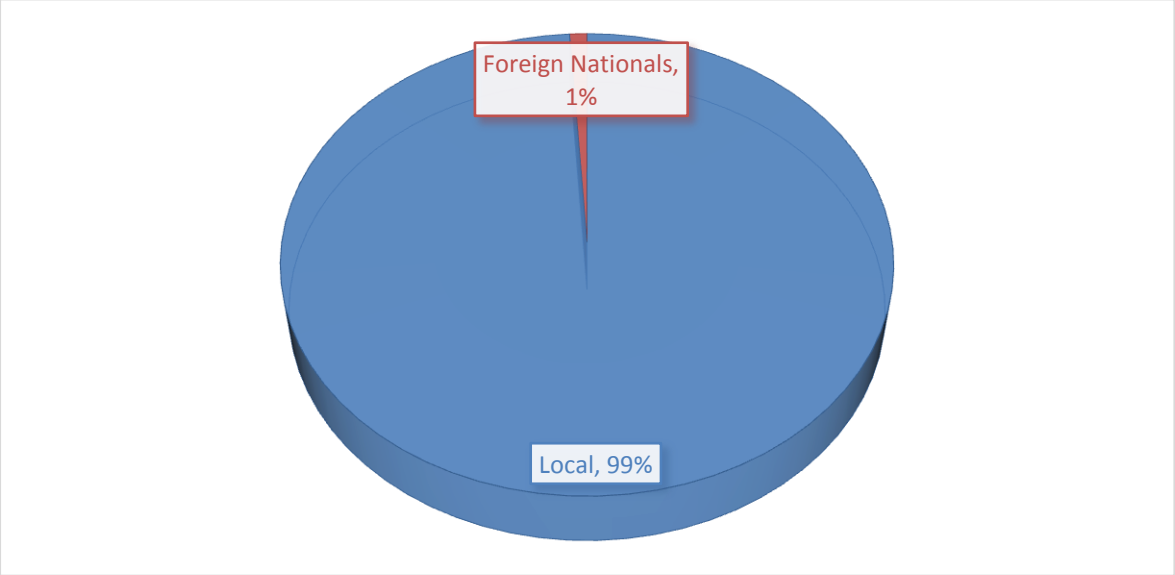
Employment patterns

The mining industry has 35,000 formally registered employees. The figure excludes small and artisanal miners and other unregistered employees.

Distribution of Employment by nationality

Survey findings reveal that 99% of the respondents' mining workers are indigenous Zimbabweans as shown below.

Figure 24: Ratio of foreign national's employment

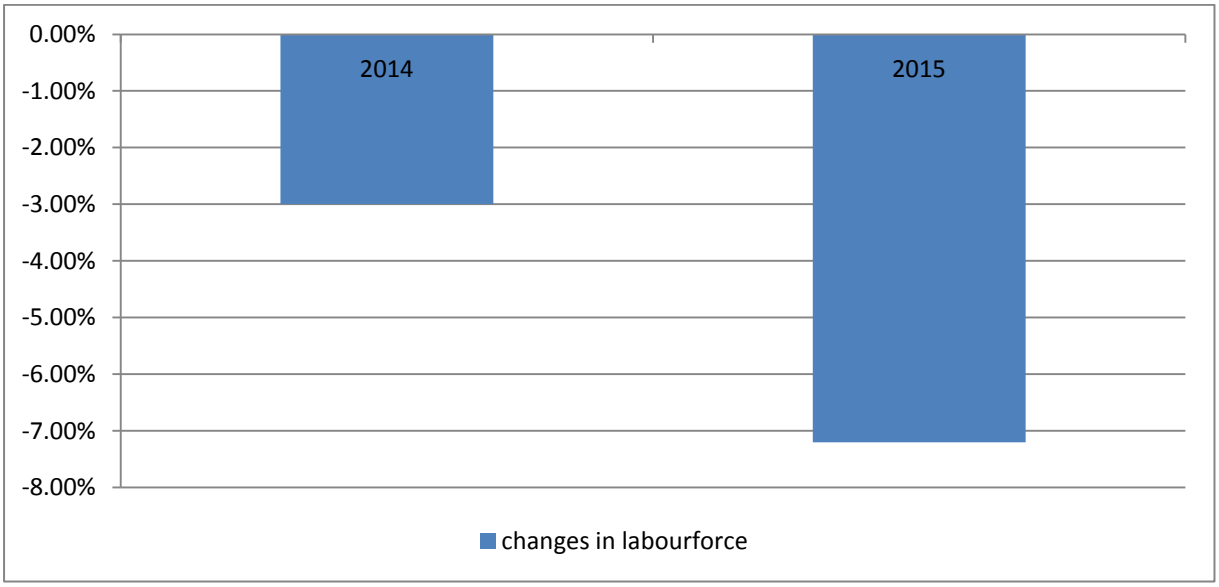


Source: Survey

Changes in mining labour force

The findings show headcount of the mining houses declining by an average 7% in 2015 compared to 3% in 2014. To note is that some of the respondents reduced their workforce by as high as 20%. The majority of companies indicated that the decline was on account of retrenchments.

Figure 25: Changes in mining labour force

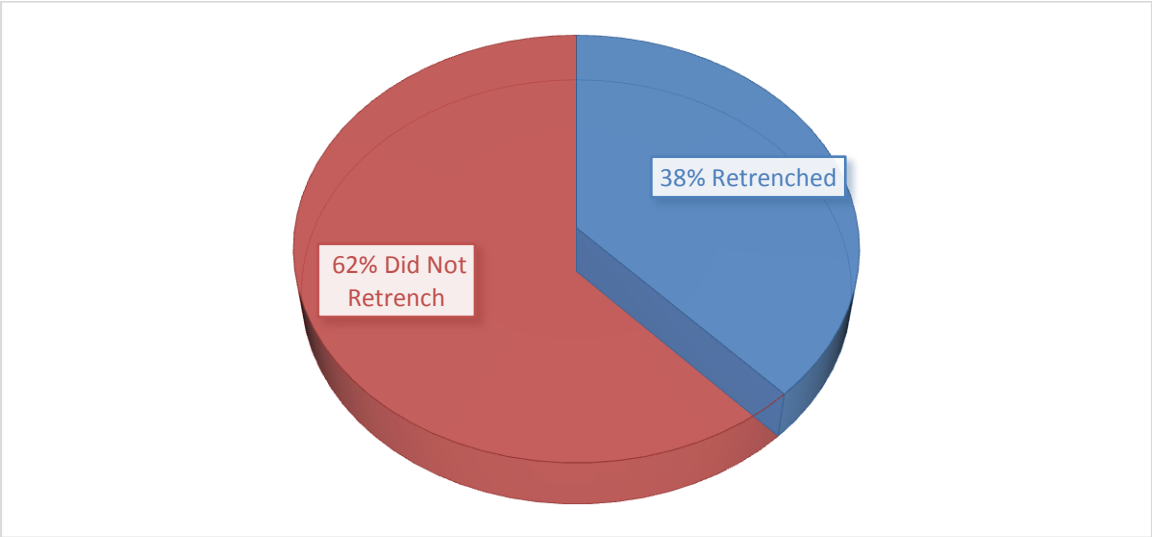


Source: Survey

Retrenchments in the Mining sector (2009 - 2015)

About 38% of the respondents highlighted that they retrenched workers at some point over the period 2009 to 2015. Base metals accounted for the biggest share of retrenchments in 2014 (48%) and 2015 (90%).

Figure 26: Retrenchments in the mining sector



Source: Survey

Respondents cited two major reasons for the retrenchments: viability challenges (60%), mechanisation or transition to capital-intensive system of production (40%).

Human Resource Development Programmes

All the respondents in the Survey carried out human resource development programmes. 54% of the respondents indicated that they always carry out human development programmes for their employees every year, while 46% indicated that they carry out training programmes occasionally or as and when need arises.

Labour Productivity

An overall 12%decline in labour productivity per head was reported in 2015. The findings show a positive correlation between mined output and productivity per capita. Operators which reported a decline in mined output also reported a decline in productivity per capita.

Availability of Skills

Except for the diamonds sector, all other commodity sectors reported that they managed to fill in all technical positions required to run their operations from 2009 to 2015. The outliers indicated that they failed to fill in some of their technical positions citing lack of the necessary technical skills.

Trend in Wage Rates and Wage Bill

- About 83% of the sample mining houses (respondents) in the sample implemented the NEC minimum wage increase in 2015 compared to 95% in 2014.
- More than 80% of the respondents said that they awarded NEC minimum salary increments 11 times since 2009.
- The average rate increased by 3% in 2015, 5% in 2014 and 7% in 2013. Due to viability challenges facing the industry most mines (84% of respondents) appear struggling to pay the wages with 12% of the respondents having applied for exemptions in 2015.
- All mining houses (100%) interviewed said that they will not afford any salary increments in 2016, while 22% reported that they have negotiated and agreed salary reductions with their employees in 2015.

Employee perspectives

- 95% of the employees interviewed, majority of which fall under NEC minimum wage are looking forward to improvements in their wage and conditions of service. However 100% of the worker respondents were cognisant of the current viability challenges facing their employers.
- 45% of the respondents would want their jobs being spared from the current wave of depressed commodity prices, with a quarter (25%) ready for a wage cut to if the worst happened (to guarantee their jobs).
- However 10% of the respondents would look forward a wage increase irrespective of the current performance of their companies.

1.12 Measures to Curtail Costs

All the surveyed mining houses adopted varying measures to curtail costs and improve viability:

- Engaging suppliers for them to reduce their selling prices;
- Labour rationalization which includes: (a) negotiating with employees for salary/wage reductions, (b) retrenchments, (c) reduced working time for employees;
- Value chain optimization to reduce excessive use of consumables;
- Mine to mill optimization to reduce milling plant power consumption;
- Outsourcing of raw materials; and
- Negotiating for reduced fees with (a) security providers, (b) contractors and (c) consultants.

42% percent of the cost management initiatives mentioned by the respondents were targeted at rationalizing procurement costs, while 25% sought to restructure the wage bill. 25% of the companies indicated that they reviewed both procurement and wage structures.

33% of the sampled mining companies retrenched part of their workforce over the last five years, with 10% having retrenched in 2014 and 2015.

1.13 Exploration and mine development

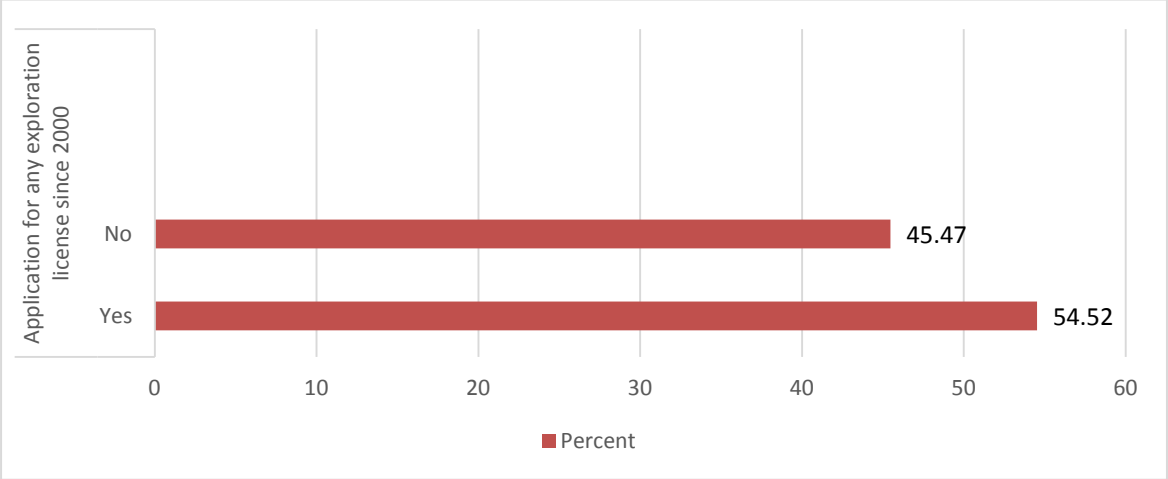
The study traced past, current and projected exploration and mine development projects through primary data from respondents and a review of EPOs held at the Geological Survey

library. Major findings indicate that over the last ten years most respondents maintained and in some instances expanded exploration projects around their mines. Greenfields mineral exploration is in decline and the discovery rate for new minerals is currently at 0%. Findings of the study, however, also show that despite the low discovery rate for new resources, this rate is likely to increase given the intention to undertake mineral exploration in the next five years. Gold, nickel and coal will be the most sought after commodities in the next five years. The amount of spend in exploration will also increase in the next five years. Respondents envision an increase in new mine development projects and a higher amount of spend in those projects.

Application for exploration licenses

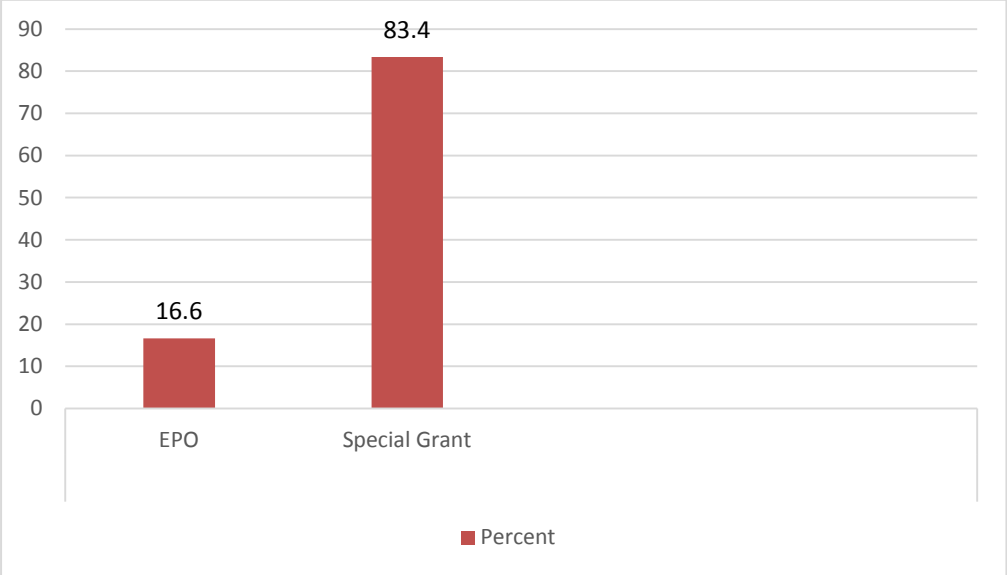
Since the year 2000, 54.52% of mining companies from the sample applied for exploration licenses. 45.47% of the respondents did not apply for exploration licenses.

Figure 27: Application for exploration license since 2000



Source: Survey

Figure 28: Type of exploration license

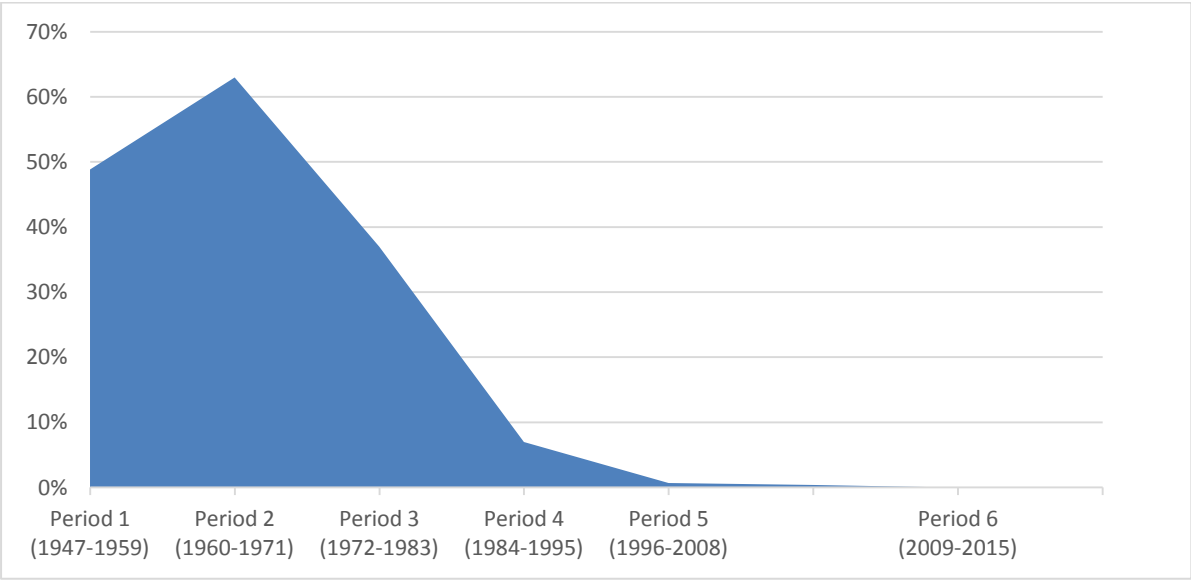


Source: Survey

The data on mineral exploration expenditure was very limited and not representative of the state in the entire industry. However, it is the general understanding of the industry expenditure low as evidenced by lack of activities on the ground.

Over the last ten years from the total license applications, 16.6% were for EPOs while 83.4% were for Special Grant licenses. 66% of the applicants were granted exploration licenses while 34% were not granted exploration licenses. The low issuance of licenses by government accounts for the decline in the discovery rate for new resources and is currently at 0% as illustrated in the graph below.

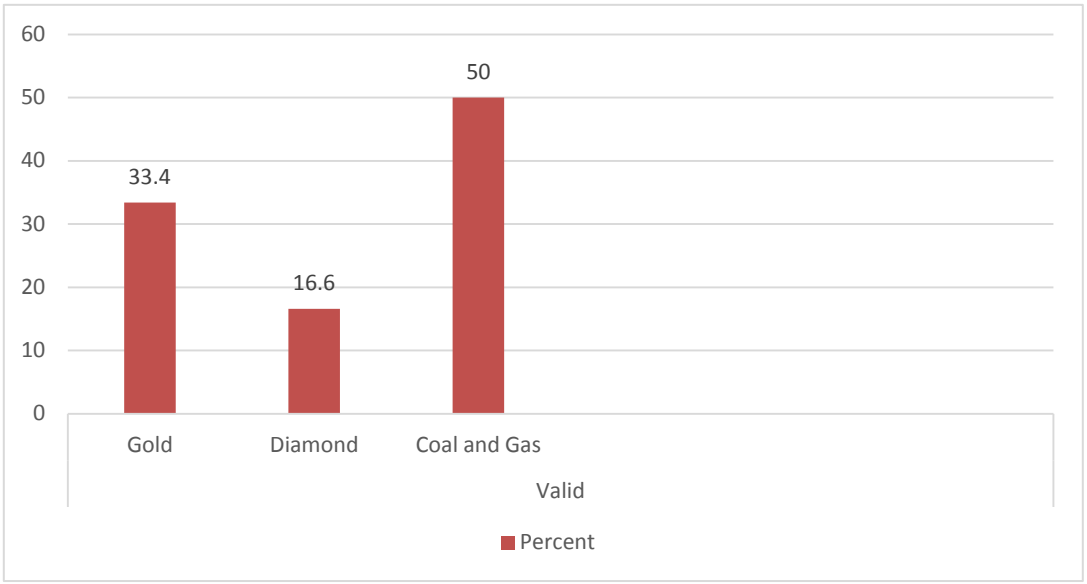
Figure 29: Discovery rate



Source: Survey

From the total number of applicants for exploration licenses over the last ten years, 33.4% were interested in exploration projects for gold, 16.6% sought diamonds, and another 50% were interested in coal and gas exploration.

Figure 30: Mineral sought in exploration



Source: Survey

Exploration around mines

90.03% of the respondents indicated that over the last ten years they have been doing exploration around their mines. 77.73% of the respondents indicated that they made discoveries in those explorations they undertook around their mines. The remaining 22.27% of the respondents did not discover anything in their exploration projects their mines.

On the other hand, findings on exploration indicated that a low 30% of respondents applied for exploration licenses in search of new resources while a high 70% of respondents indicated that they did not make any applications for mineral exploration. Compared to brownfield exploration around existing mines findings show that respondents were engaged more in the exploration around the mine than for new resources.

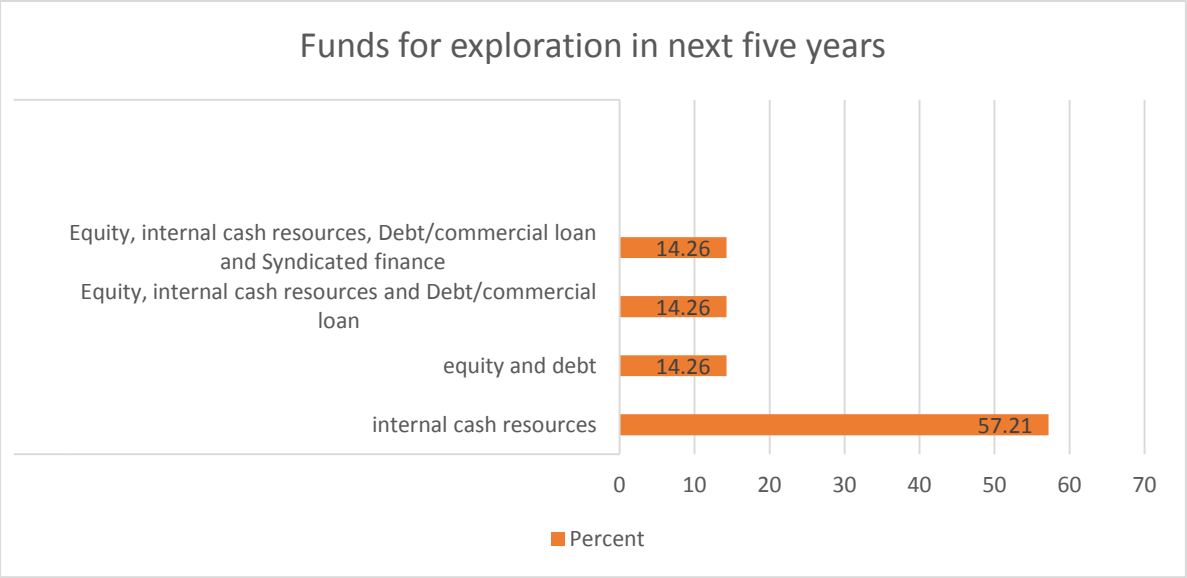
Greenfield mineral exploration

The outlook on exploration indicates that the number of respondents who expect to venture into greenfield-exploration projects will increase to 55.6% from previous 30% over the last ten years. 44.4% of respondents indicated that they will not embark on any exploration projects on greenfield-exploration in the next five years.

Over the last ten years 50% of the respondents will spend between US$1 million to US$2 million on greenfield-exploration projects. The other 50% of the respondents indicated that they look forward to spending between US$6 million and US$7 million on greenfield-exploration projects.

In the next five years more than 57.21% of the respondents plan to use internal cash resources to fund greenfield-exploration projects. 14.26% of the respondents stated that they will fund their exploration projects from equity and debt. Another 14.26% indicated that they will raise exploration funds from equity, internal cash resources, debt/commercial loan and syndicated finance. Finally, 14.26% of respondents indicated that funds for exploration will come from equity, internal cash resources and debit/commercial loans.

Figure 31: Funds for exploration in the next five years



Source: Survey

Project development

Survey findings reveal that 55% embarked on new mine developments during the past 5 years and the mining firms were in gold, coal, nickel and platinum. 90% of respondents indicated that they would carry out mine development projects in the next 5 years.

Expansion projects

86% of respondents indicated that they have lined-up expansion projects in their future plans, however, the majority of respondents cited funding constraints as undermining implementation of planned expansion projects

Mining Title Administration

80% of the respondents pointed out the need to simplify the mining titles systems. The remainder of the respondents 20% suggested the system is good as it is, but there is need to improve the administration of mining titles. The simplification suggested is along the suggested below:

Prospecting\Exploration titles

- Exclusive Prospecting Licence – for small scale operations
- Exclusive Exploration Licence – for large scale operations

Mining title

- Mining claims – for small scale operations
- Mining leases – for large scale operations

Simplification of the mining titles system will be beneficial for ease of administration of the titles and for application by the investors and operators.

1.14 Linkages and Beneficiation in the Mining Sector

85% of the respondents were of the view that there are some linkages between mining sector and other sectors the economy, with prominent linkages being cited in the upstream and procurement sector, as well as downstream beneficiation/manufacturing sector. Of these respondents 45% feel there is huge scope to strengthen these linkages if supportive policies are put in place.

Procurement of Mining Services

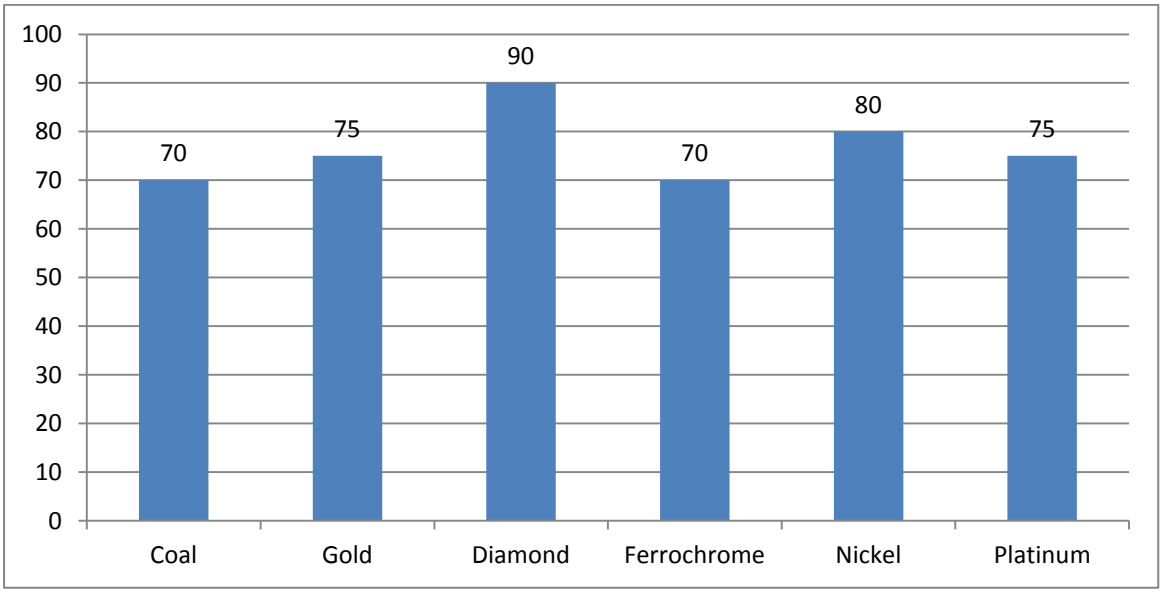
All mining operators in the sampled sectors reported that they are procuring mining services. The top 5 mining services procured by the mining industry by expenditure are given as follows:

- Mine development, production and mine maintenance;
- Drilling and blasting;
- Loading and hauling;
- Plant and specialized equipment hire; and
- Slimes dam construction and maintenance.

Procurement of Capital Goods

With regards to procurement of capital goods, survey findings revealed that the bulk of capital goods are sourced offshore, however, the proportion of imports varies with each mineral as shown below.

Figure 32: Percentage of Offshore Procurement of Capital Goods by Mineral

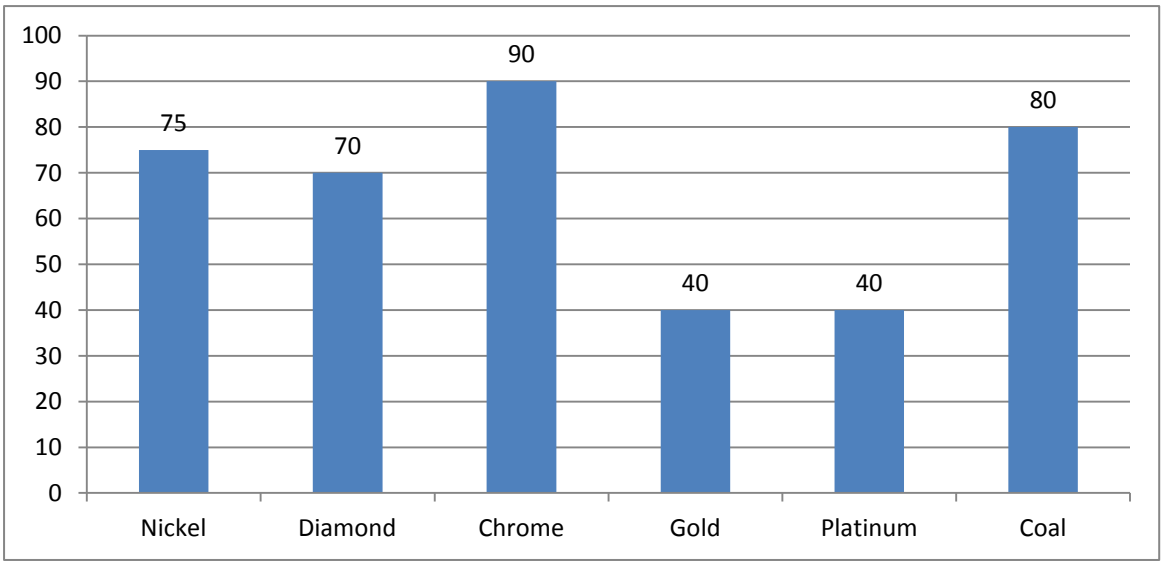


Source: Survey

Local Procurement of Mining Inputs excluding Capital Goods

Survey findings also show that the bulk of mining inputs in nickel, diamond, chrome and coal are procured locally, while those for gold and platinum are procured offshore as shown below.

Figure 33: Percentage Local Mining Inputs Procurement

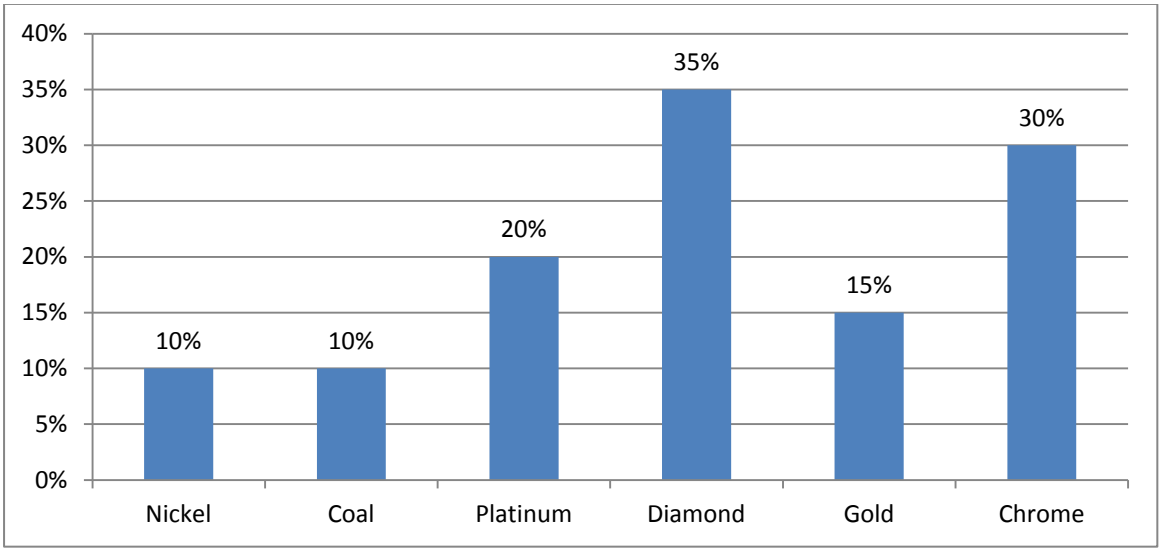


Source: Survey

Local Content of Local Procurement

With regards to local content of local procurement, all players indicated low levels of local content in their local procurement. The weighted average local content for the mining industry was at 13% as at end of 2015

Figure 34: Percentage local content in local procurement



Source: Survey

Reasons for Low Local Procurement

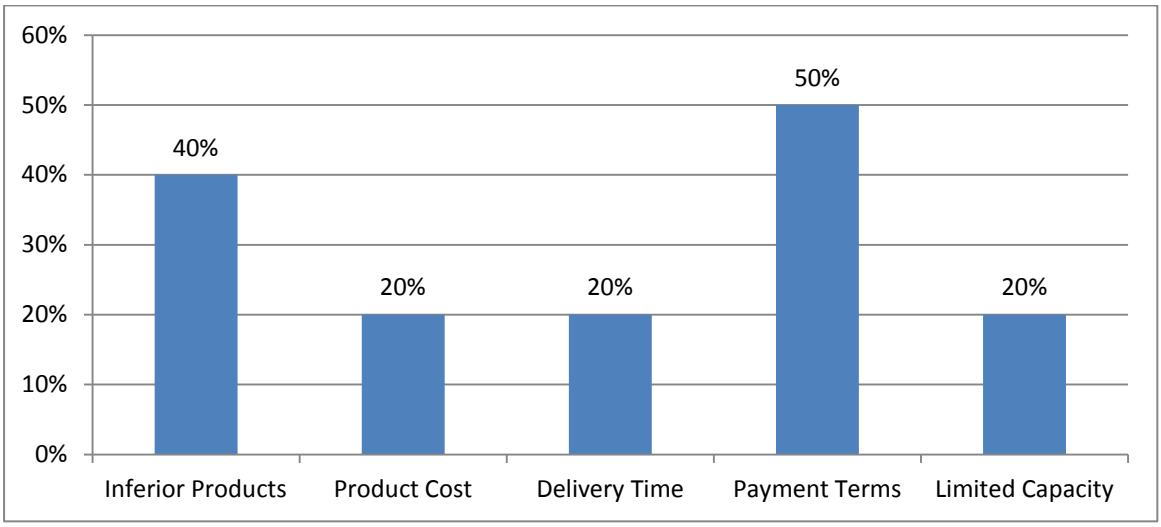
Almost all respondents indicated that, in making procurement decisions, they give equal weight to quality of goods and services supplied; cost of goods and services supplied and delivery lead time.

Based on their procurement experience, purchasers raised five main concerns with local suppliers:

- The goods and services supplied are mostly of inferior quality. The sentiment was expressed by all the purchasers surveyed. The average rating of the quality was 40% (2 out of 5).
- The cost of the goods and services supplied is higher than similar goods from offshore suppliers. The sentiment was expressed by all the purchasers surveyed. The average rating of the cost competitiveness of local suppliers was or 20% (1 out of 5)
- The delivery lead time by local suppliers is too long and sometimes erratic. The sentiment was expressed by all the purchasers surveyed. A fairly sizeable number of purchasers said local suppliers at times failed to process orders placed completely. The average lead time competitiveness of local suppliers was rated at 20% (1 out of 5).
- Local suppliers' payment terms are generally inflexible in comparison with offshore suppliers. The view came from about half of the purchasers who responded. They recommended 60-90-day credit facilities as opposed to cash terms.

- Limited financial capacity to supply big orders. Local suppliers have limited capacity to absorb big orders and therefore would lead to stock disruptions. The sentiment was at 20%

Figure 35: Sentiments on Local Procurement



Source: Survey

Reasons for low Local Content

Suppliers agreed to some of the concerns and highlighted that they are currently facing competitiveness challenges arising from the following:

- Capital constraints which limit their ability to ramp up production to meet the desired demand;
- Obsolete equipment which raises inefficiencies;
- Power shortages which have adverse implications on output;
- High average costs because of high overheads against a background of low output; and
- Low effective demand.

Suppliers, however, raised 3 major concerns:

- Purchasers delayed invoice settlements creating cash-flow problems for suppliers who are already in a weak financial position;
- Purchasers are generally reluctant to enter into off-taker arrangements that would help to attract commercial funding from banks for order financing and plant and equipment upgrade;
- Some purchasers have rigid procurement procedures which either frustrate or discriminate against local substitutes even where there are of superior quality and competitive price.

Suppliers recommended the following to improve local linkages.

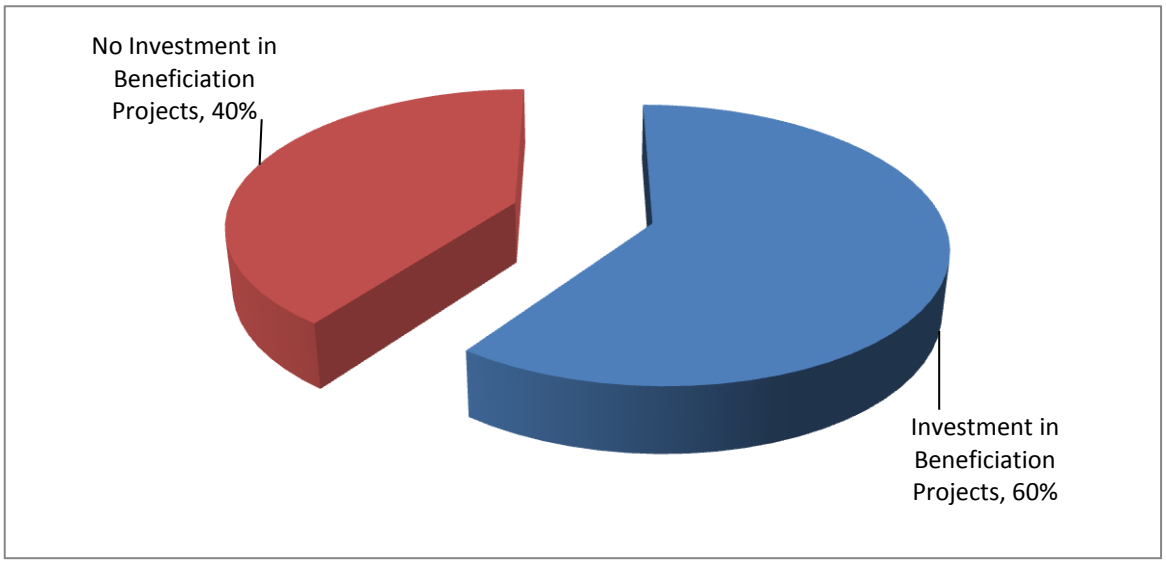
- Establishment of a database of suppliers and purchasers detailing sectoral requirements and the range of products and services available from local suppliers;
- Increased supplier-purchaser interface outside the Joint Suppliers and Producers Initiative; and
- Local supplier capacity building initiatives such as off-taker agreements.

1.15 Mineral Value Addition and Beneficiation

All respondents (100%) subscribe to the beneficiation and value addition agenda in mineral resource, with over 60% of respondents having invested in value addition and mineral beneficiation projects at their operations over the past 10 years, some of which are already operational. The list of projects reviewed include new plant installations (33.2%), plant refurbishments (42.2%) and plant upgrades (24.6%).

The firms which invested in beneficiation and value addition indicated that the projects were largely plant refurbishments, with fewer respondents having invested in new plants and while the least number of respondents invested were plant upgrade.

Figure 36: Investment in Beneficiation Projects (2005 to 2015)



Source: Survey

The majority of those which have undertaken beneficiation and value addition projects were in the gold sector, where all respondents indicated that they invested in onsite ore treatment plants with 80% operating crushing plant, milling plant and smelters, while 20% have crushing plants and smelters only.

Current Beneficiation Facilities

In the platinum sector, all producers own concentrators and one of the producers owns a smelter. The chromium industry has 12 smelters and other treatment plants for the production of High Carbon Ferrochrome, Low Carbon Ferrochrome and Ferrosilicon Chrome, however, only one of the smelter was operational in 2015.

In the nickel sector there are two smelting and refining facilities both were not operating at the end of 2015. One facility is technically ready for production and will operate once feedstock is secured. The other facility is being assessed with plans to invest in refurbishment and upgrading.

The iron and steel facility has been idle since 2008. Efforts to revive operations were initiated in 2011. The revival of operation will unlock production up stream in iron ore and limestone.

Coal beneficiation involving production of coke is active with production for 2014 at above 200 000 tons.

Project Pipeline

All the pipeline beneficiation projects are in gold, PGMs, base metals, and energy minerals, and these projects are at various stages of implementation (pre-feasibility, fund-raising and development), range from new plant installation, plant refurbishment to plant upgrade.

The most significant projects entail the refurbishment of two base metal refineries to produce value added products.

In the PGMs sector, there are two major pipeline projects; a Base Metal Refinery which is expected to be commissioned in July 2016 and a smelter whose commissioning is set for July 2018.

The combine cost of beneficiation projects as indicated by respondents is US$362 million and these projects are expected to be commissioned in the next 5 years as shown below.

Table 14: Current and Planned Beneficiation Projects

Mineral	Nature of Project	Installed Capacity	Estimated Cost (US$ million)	Expected Date of Commissioning
Coal	Coke Oven Rebuild and By-Products Plant	32 Ovens / 18 000tpm	$49	Q4, 2016
Gold	Refractory Plant	110,000mt/annum	$40	2020
	Milling and Carbon in Leach Plant	0.54Mt/Yr	$11	June 2016
Ferrochrome	30MVA Electric Arc Furnace (Furnace 2)	53000 MT Ferrochrome alloy	$50	2021
Nickel	Smelter		$26	2016
Platinum	Smelter	15MW, 120 000t of concentrate per annum processed	$55	July 2018
	Base Metal Refinery		$131	July 2016

Source: Survey

Source of Funds

Only a small proportion of respondents (14%) have opted for debt financing. The rest (57%) have opted for either equity (14%) or debt and internal cash resources (43%) to fund the beneficiation projects. Some of the publicly quoted operators have combined debt and equity financing (29%).

Challenges to Mineral Beneficiation

Capital constraints, constraints in electricity supply, high cost of electricity, low feedstock and low commodity price, were cited as the major challenges in initiating beneficiation facilities.

1.16 Corporate social investments

The Survey assessed the role being played by the mining industry in supporting the livelihoods of the communities within which they operate. It also assessed their performance in taking care of the environment and the health and safety of their employees.

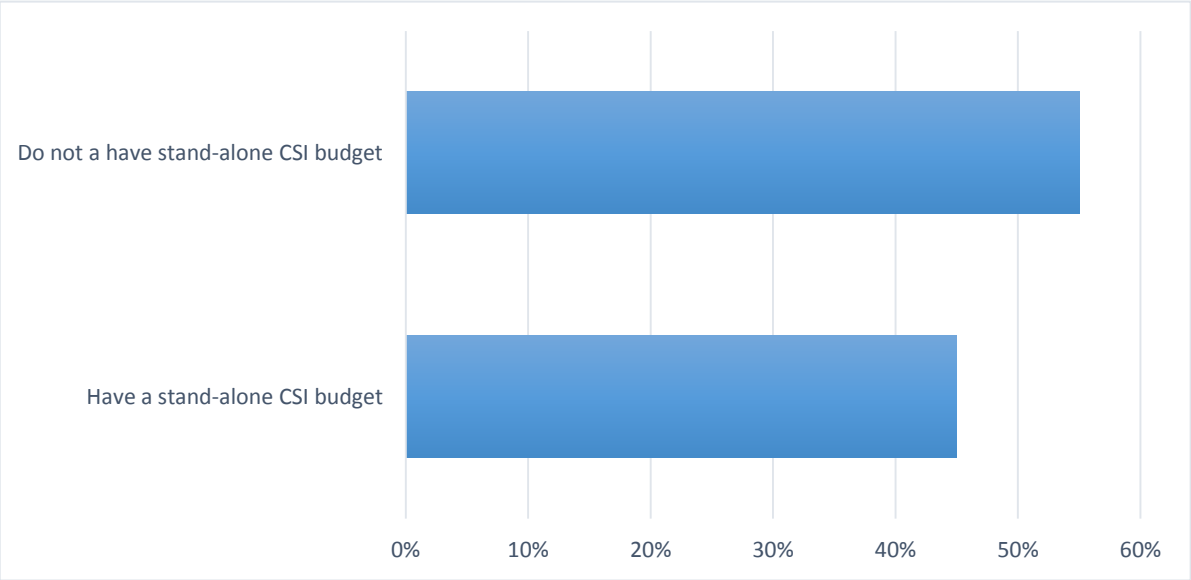
Community Development
The mining industry's contribution to community development was examined under four broad measures: voluntary Corporate Social Investments (CSIs); CSI Budgets; CSI Expenditure and mandatory indigenisation-related empowerment programmes.

Voluntary Community Social Investments (CSI)
Sample data shows that a majority of the respondents (78%) were involved in CSI projects/programmes. The projects/programmes were diverse in nature. Of the respondents surveyed 38% were involved in funding of sporting development programmes; income generating projects for the local community (41%); donations to individuals and institutions around community (25%); scholarships (25%); and infrastructure development projects for the local community (74%).

Regarding infrastructure development projects, 27% of respondents reported involvement in road projects; while 38% indicated school facilities and health facilities.

CSI Budgets
About 45% of the sampled respondents reported that they had established a stand-alone budget for CSI projects/programmes, while 55% indicated that they did not have a stand-alone budget.

Figure 37: Stand-Alone CSI budget



Source: Survey

A majority of respondents indicated that CSI budgetary commitments had been affected by poor financial performance. One of the comments posited that empowerment obligations had displaced "targeted" community development programmes.

Total CSI Spend

A majority of respondents (83%) spent between US$14 000 and US$2 800 000 in one year. All respondents indicated that they spent more in 2014 than in 2015. The survey could not determine the exact amount spent by the mining industry. Respondents indicated that the decline in CSI spend reflected in large part, the deterioration in profitability conditions in the mining industry in 2015 compared to 2014.

CSI Budgets as a proportion of Total Costs

The Study probed from respondents with stand-alone CSI budgets to indicate the ratio of CSI expenses to total operating costs. About 50% of the respondents reported a CSI-to-cost ratio of 1-10%. Another 50% had a higher CSI-to-cost ratio of between 11-20%.

All respondents with higher CSI-to-cost ratio were large-scale producers. The sample data shows that contributions to Community Share Ownership Trusts accounted for nearly all (about 68%) of the CSI expenses.

Expenditure on Community Share Ownership Trusts

About 46% of the respondents indicated that they contribute to Community Share Ownership Trusts. The least amount of money paid out to Community Share Ownership Trusts was $25 000 in 2014 and $60 000 in 2015. The respondents that contributed to CSR in 2015 was 33% compared to 50% in 2015. The amount committed decrease from US$12.80

million in 2014 to US$7.67 million in 2015. Of those that made payments in 2015 50% increased their expenditure in 2015 compared to 2014.

Planned CSI Projects

About half of the respondents revealed that they had scheduled CSI projects and programmes outside of Community Share Ownership Trusts. About 13% of the scheduled CSI projects and programmes involve student scholarships, 11% irrigation schemes and 7% SME development projects. Another 20% stated that they plan to invest in projects that employ unskilled and semi-skilled locals.

Safety, Health and Environment

The mining industry has a varied application of Occupational Health, Safety and Environment systems across the entire industry. There are those that apply internationally recognises systems on one end of the scale and those that have no systems at all on the other. The challenge that faces the mining industry is how to ensure that those with no systems at all run basic systems in compliance with Mining (Management and Safety) Regulations, Mining (Health and Sanitation) Regulations, the NSSA Act and the Environmental Management Act.

Two indicators were used to measure and compare health and safety performance of the mining industry among firms and between sectors: the fatality frequency rate and the lost time injury frequency rate[1]. Incidences were not included in the Survey.

Lost Time Injuries

The number of lost time injuries recorded by the mining industry in 2015 was XXX compared to YYY recorded in 2014, an increase\decrease of X%.

The distribution of the LTI across the industry is as given below:

Table 15: Number of LTI for 2014 and 2015

Mineral	2015 LTI	2015 LTI
Gold	347	192
Platinum	5	4
Nickel	18	7
Chrome	12	2
Diamonds	0	1
Coal	13	4
Others	28	17
Total	423	227

Source: COMZ based on frequency severity competition returns

[1]Fatality in this Survey refers to loss of life while lost-time injury refers to occurrences of injuries that resulted in work stoppage in one shift or more or in one day or more.

Fatal Accidents

The number of fatal accidents reported din 2015 was 34 compared to 32 in 2014. The major causes of fatal accidents in the mining industry continue to be falls of ground accounting. Below is a tale that shows the distribution of fatal accidents by cause of the accidents.

Table 16: Fatal Accidents

Cause of Accident	2014	2015 *
Fall of ground	12	7
Collapsing Pits and Trenches	6	3
Shaft accidents	3	5
Falling Down Excavations	2	3
Machinery	2	4
Gassing	4	1
Explosives	0	2
Electrocution	0	2
Trucks and Tramming	1	1
Drowning	1	1
Others	1	4
Total	32	34

Source: Chamber of Mines, *Data is for the period up to October 2015

Of these fatal accidents large scale mining contribute ted 28% in 2014 and 29% in 2015. Enhanced supervision and support to the small scale mining is required to ensure that some systems are applied to manage safety

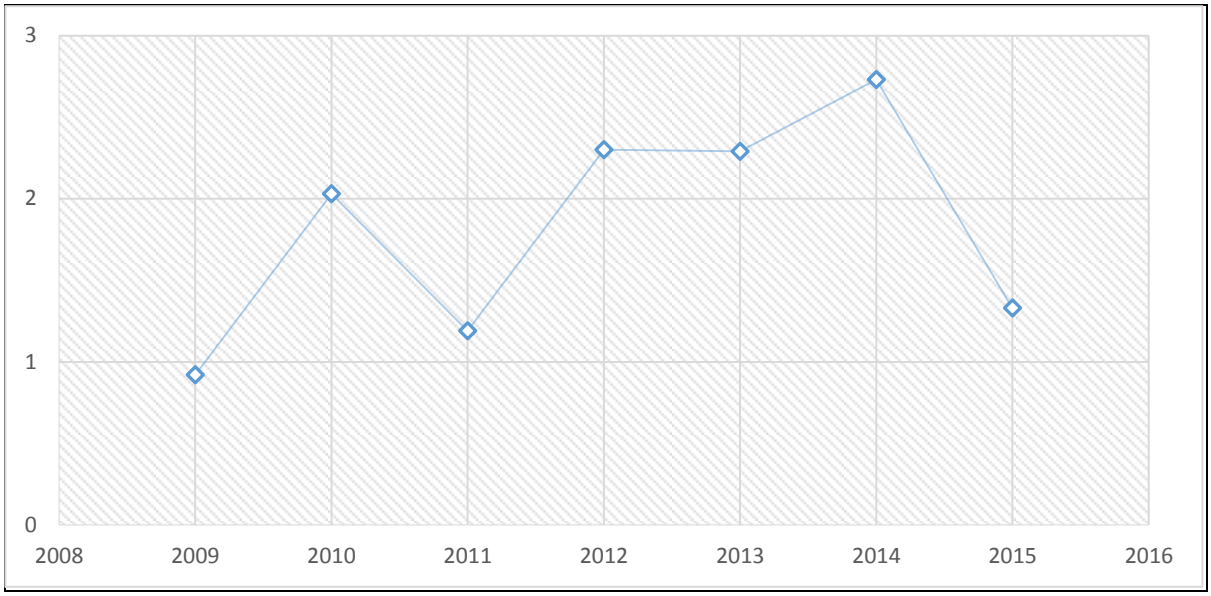
The largest cause of fatal accidents is fall of ground which accounted for 56% of total in 2014 and 29% of total for 2015 to October. Shaft accidents and machinery related accident are major causes of accidents in the industry.

Sample findings show that the mining industry is making significant progress towards safer working environments, notably in eradicating fatalities from their operations. Fatality frequency rates and lost time injury frequency rates generally declined from 2009 to 2015. About 25% of the respondents did not record any lost time injury over the whole period.

Factoring out the outlier, the average Lost Time Injury Rate reported by the mining industry between 2014 and 2015 was 2.03 per 10 000 workers.

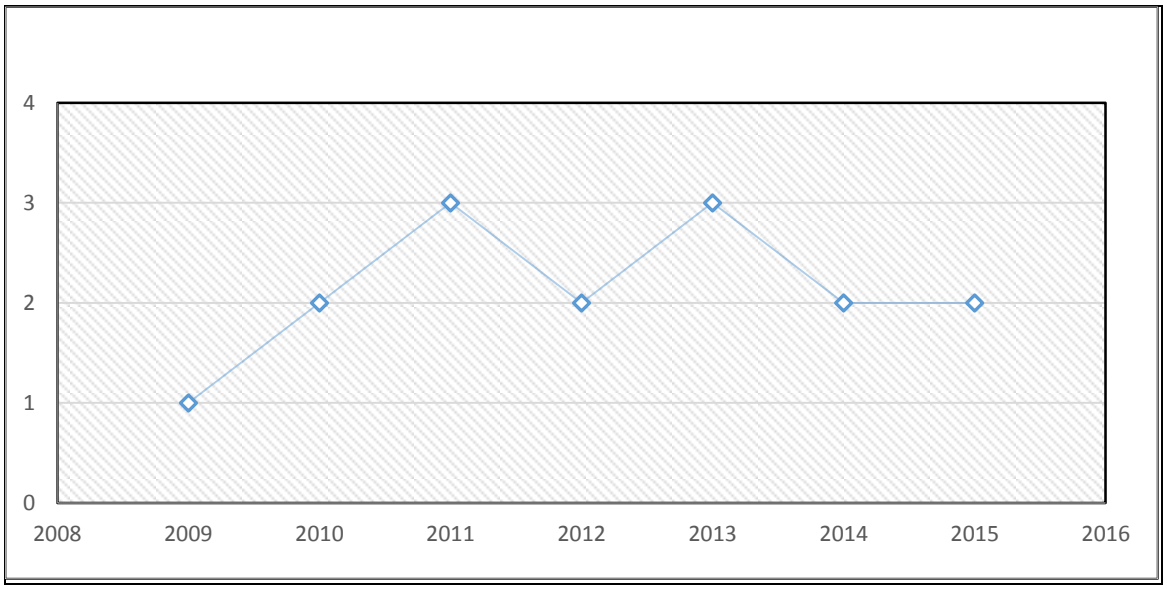
The sector with the safest working environment is the diamond sector. The diamond sector reported the least frequency rates for both fatalities and lost time injuries over the period.

Figure 38: Lost-Time-Injury Frequency Rate



Source: Survey

Figure 39: Fatality Frequency Rate



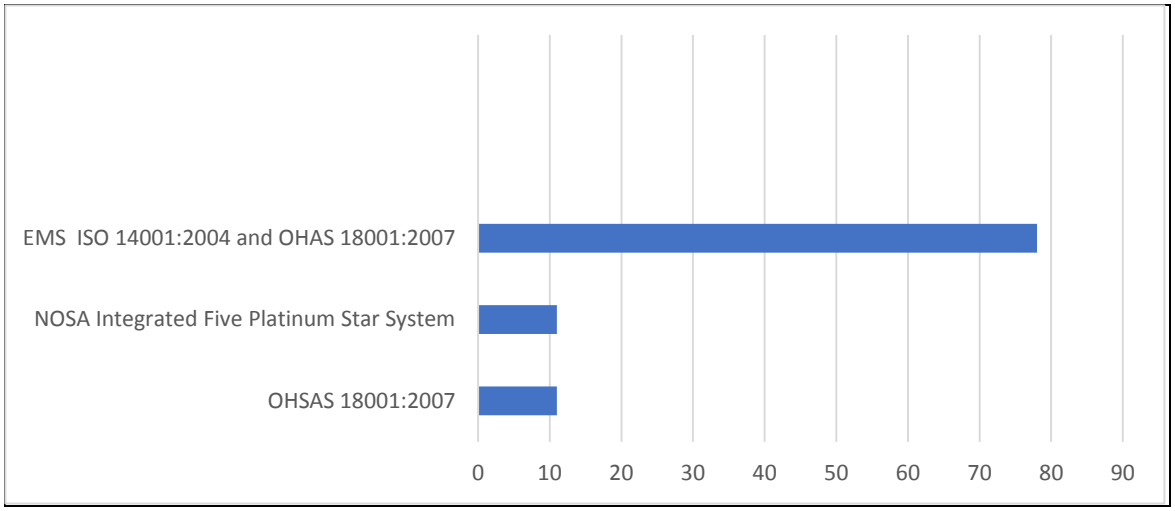
Source: Survey

Respondents who reported good safety records also highlighted that they had initiated SHE innovative programmes within their operations. The innovations cited were targeted at treatment of acid mine drainage; dust and noise monitoring; anti-litter campaigns and behaviour based safety.

The findings also show that all respondents were either implementing or moving towards the adoption of international SHE instruments. About 78% of the respondents said they had acceded to EMS ISO 14001:2004 and OHAS 18001:2007 instruments and adapted the standards at their operations. About 11% of the respondents stated that they used NOSA

integrated Five Star System to guide their SHE policies and practices. Another 11% indicated that they only used the OHSAS 18001:2007 instrument to guide their SHE policies and practices.

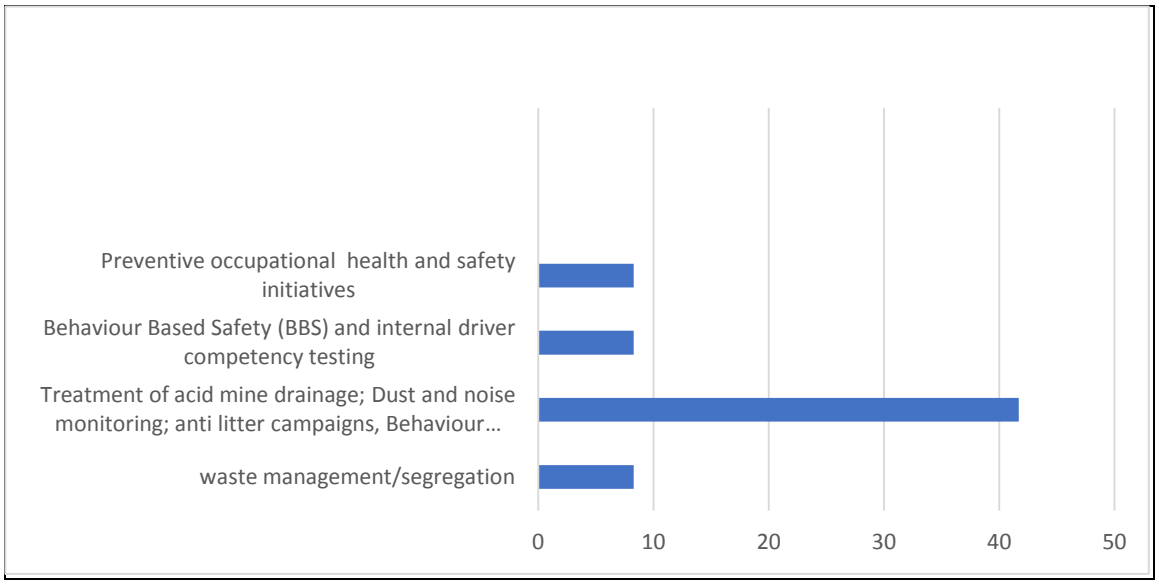
Figure 40: SHE standards or instruments



Source: Survey

The study established that the mining industry had generally embraced preventive occupational health and safety and Behaviour Based Safety (BBS). 8.3% of respondents stated that their focus was on waste management.

Figure 41: SHE Innovative Initiatives



Source: Survey

3 Presentation of Mineral Specific Findings

3.1 Gold industry

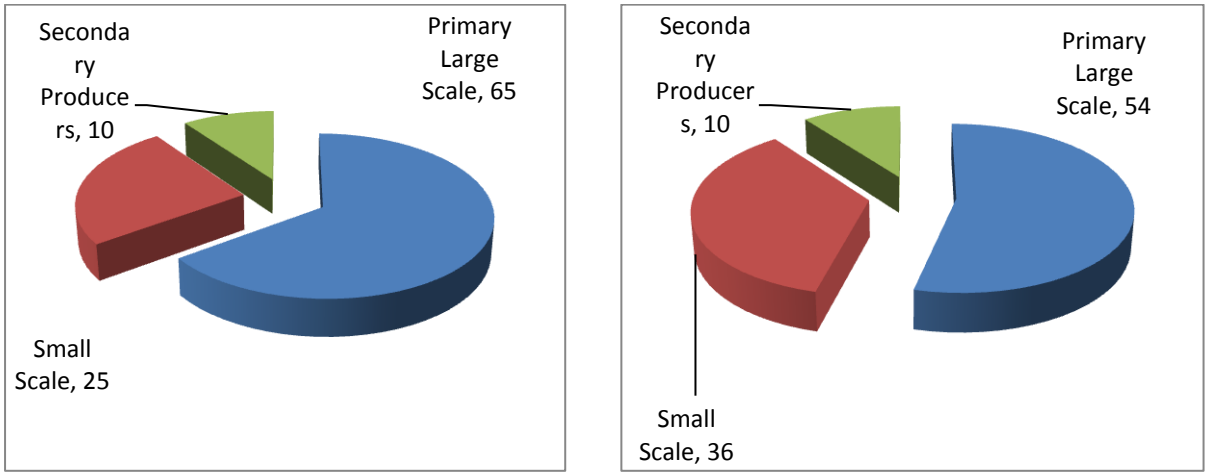
Gold is one of the key minerals in Zimbabwe and currently constitutes the largest share of mining output in terms of exports (40%), employment (25%) and GDP (3.6%)

3.1.1 Structure of the Gold Industry

The country's primary large scale gold producers accounted for 54% of gold output in 2015, compared to 65% in 2014. Small scale producers[2] contributed 36% of gold output in 2015, up from 26% in 2014, while the contribution of secondary producers (PGMs producers) increased from 9.6% in 2014, to 10.3% in 2015.

Figure 42: Structure of the Gold Industry (%)

2014 ***2015***



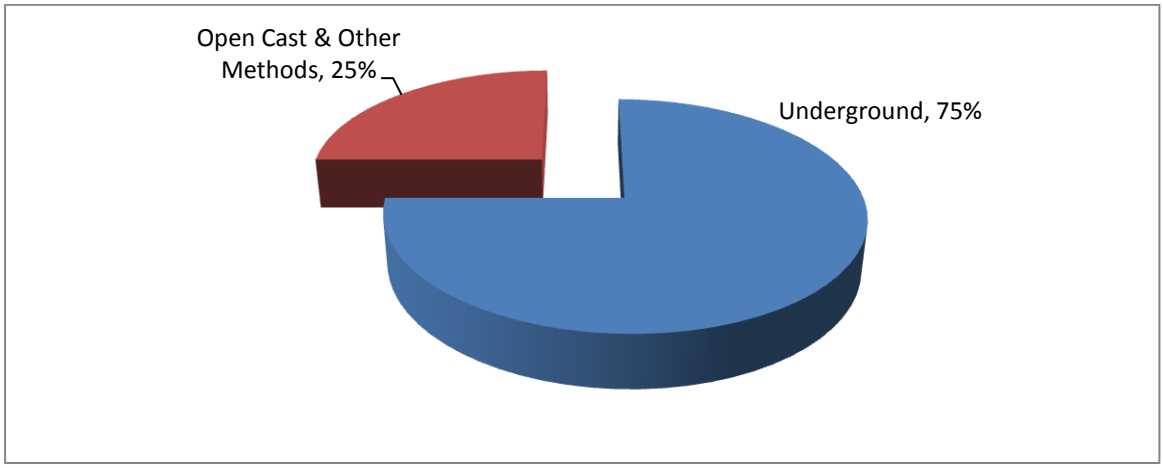
Source: Fidelity Printers and Refineries, Chamber of Mines

3.1.2 Mining Methods

Survey findings reveal that 75% of the gold producers operate underground mines as shown on the chart below.

[2]Fidelity Printers and Refiners defines a large scale produce as a producer whose output, on average, exceeds 1 kg per month, while any producer with monthly output below 1 kg is considered small.

Figure 43: Mining Methods



Source: Survey

3.1.3 Exploration Activities *in the Gold Industry*

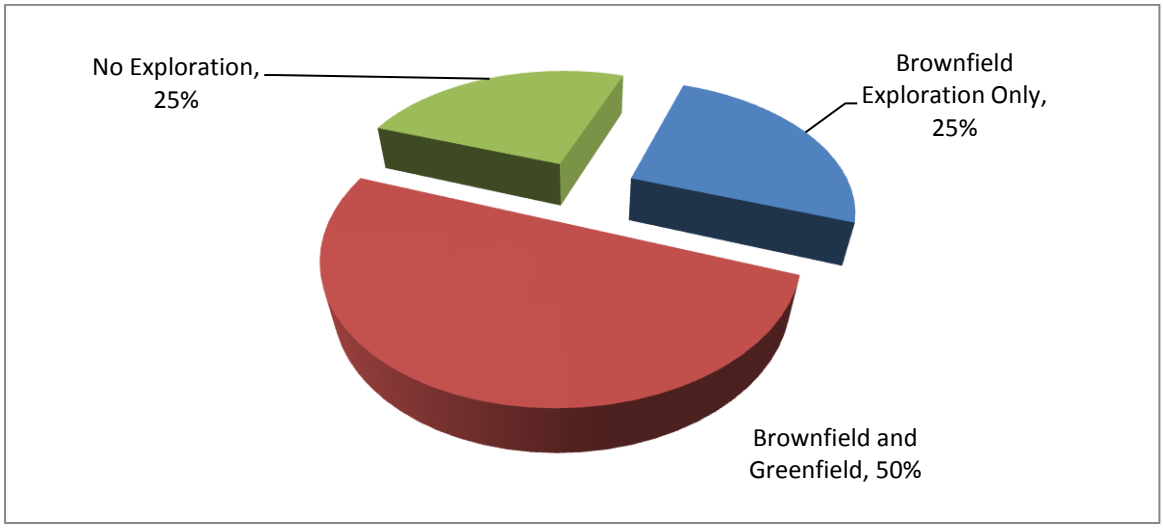
No new EPOs were issued in 2015 and out of the 4 EPOs issued in 2014, 3 were current as at end of 2015.

All respondents in the gold industry indicated that they have not done any Greenfield exploration since 2005; implying that the 4 EPOs issued in 2014 are confined to Brown-fields projects to redefine resources so as to extend life of mine.

75% of the respondents have ongoing exploration activities ***around their mines*** which are funded through internal resources. Of these, 65% are at drilling stage, while 35% are at commissioning stage.

A quarter (25%) of the sampled mines have plans to undertake exploration around their mines in the next 5 years, while 50% reported that they had plans to do both late stage and Greenfields exploration programmes. About 25% indicated that they had no plans to do any exploration activity over the next five years.

Figure 44: Exploration Activities for the next Five Years



Source: Survey

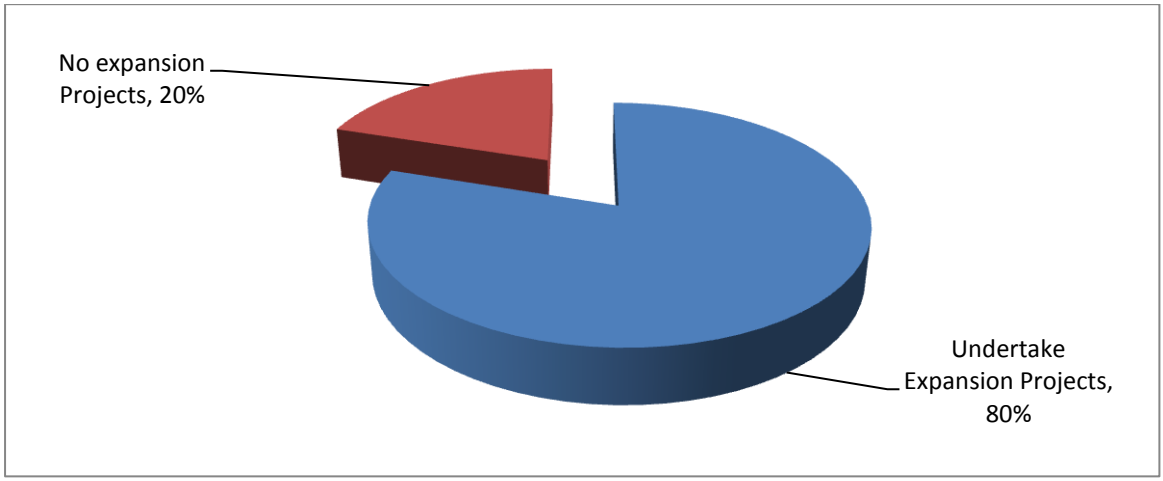
3.1.4 Mine Development

Survey findings revealed that 6 gold mines commenced production during 2015, while 3 mines were placed under care and maintenance.

Every producer in the sample indicated that they intended to develop a new mine over the next five years. Some of the planned new mines are scheduled for commissioning over the next two years.

About 80% of the producers in the gold industry said they would undertake expansion projects in the next five years to increase output.

Figure 45: Expansion Projects in the Next 5 Years

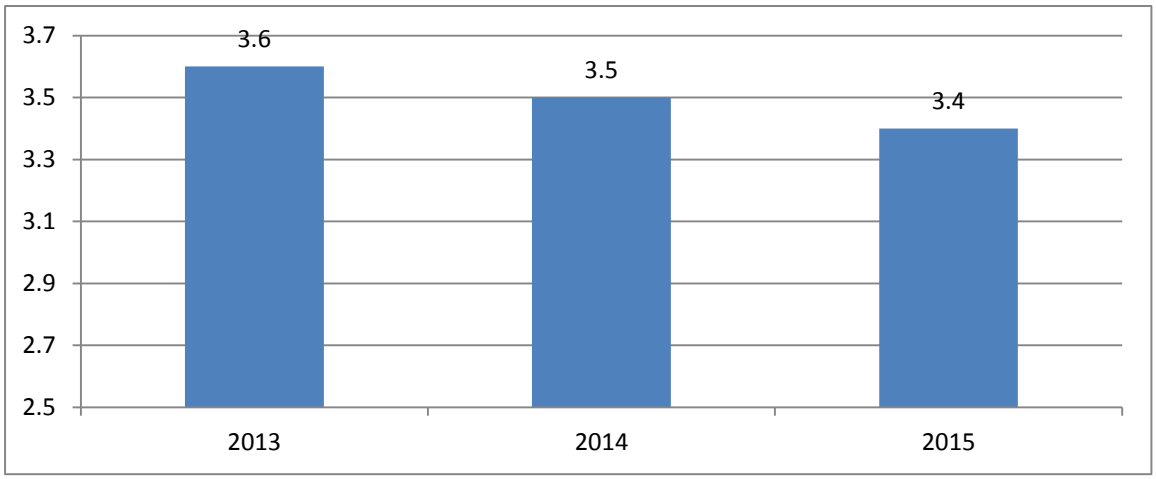


Source: Survey

3.1.5 Average *Gold Ore Grades*

The industry's average ore grades fell from 3.2g/ ton, to 2.7g/ ton, however, the minimum ore grade was at 0.8g/ ton and the highest was at 7.8g/ ton.

Figure 46: Average Ore Grades

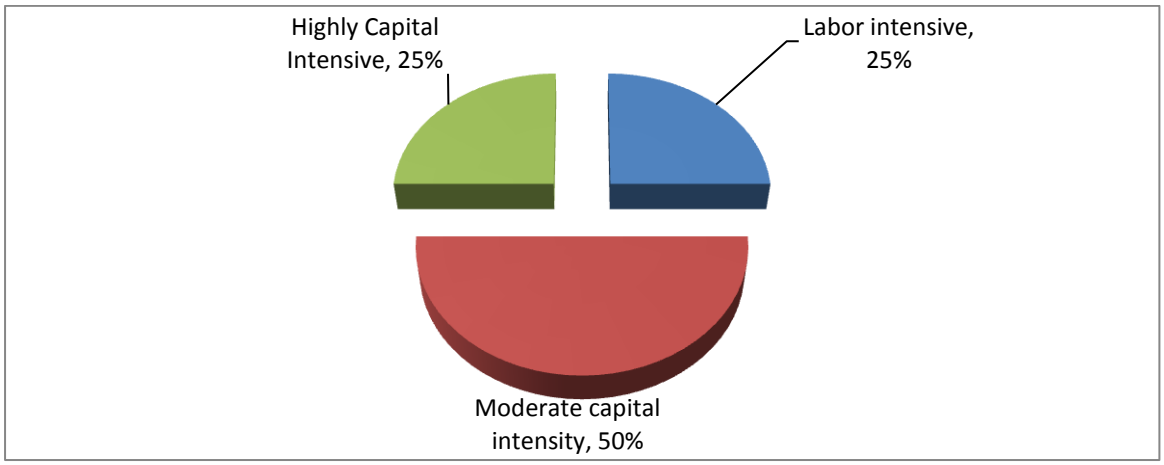


Source: Survey

3.1.6 Level of Capital Intensity in the Gold Sector

Survey results revealed that 50% of the respondents are moderately capital intensive, while 25% are labour intensive and the remaining 25% are highly capital intensive.

Figure 47: Level of Capital Intensity



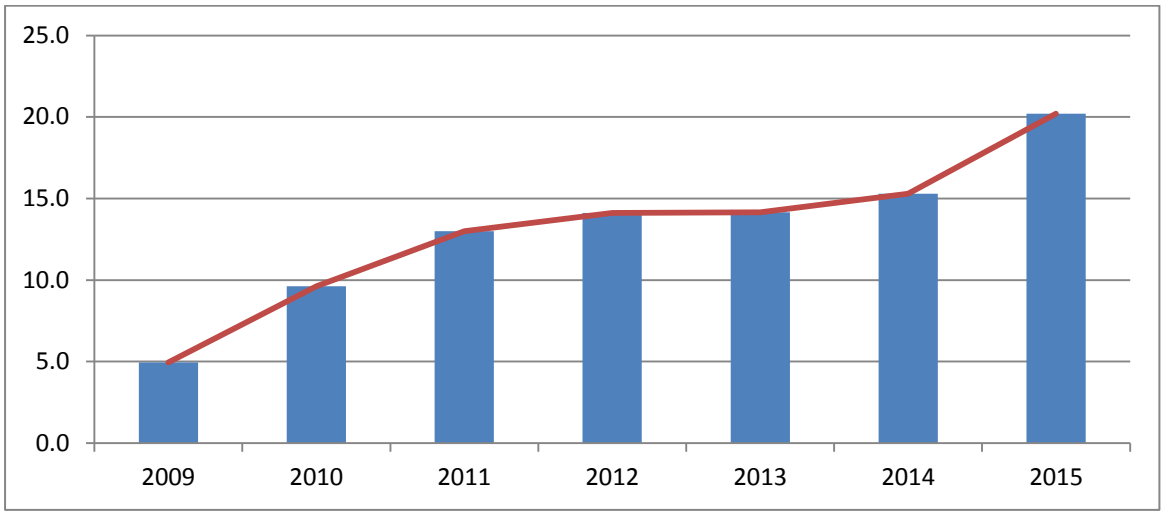
Source: Survey

3.1.7 Performance of the Gold Industry

Gold Output

Gold output increased by 31.2% in 2015 to 20.2 tons, compared to 15.4 tons in 2014.

Figure 48: Total gold output



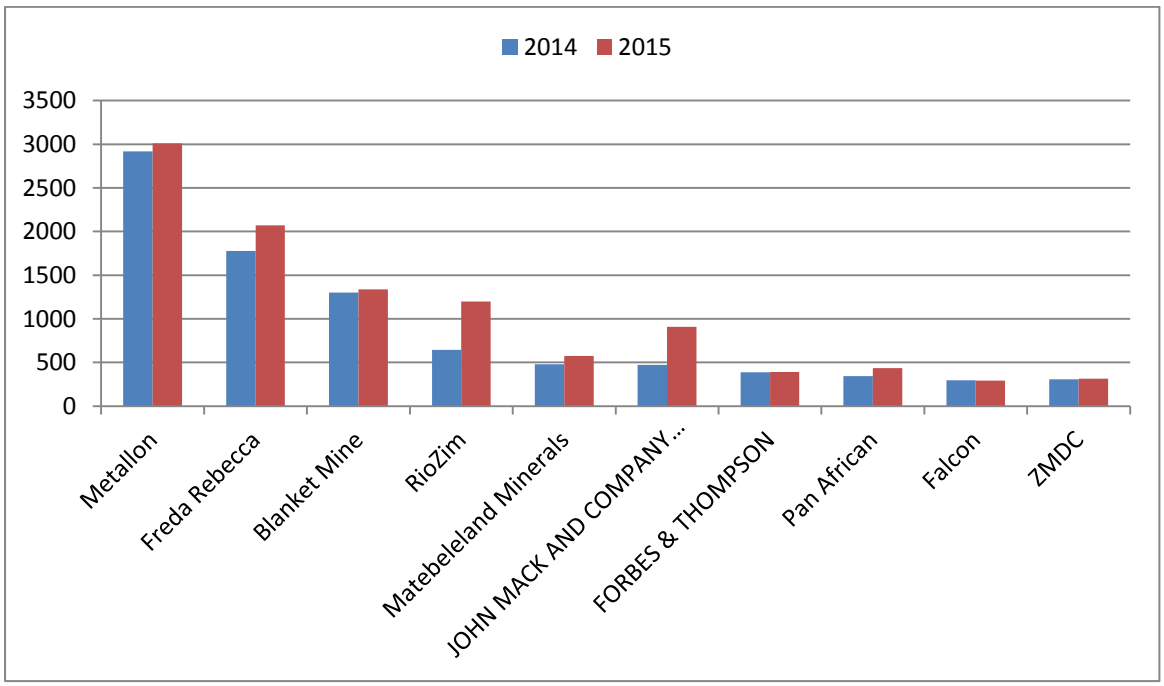
Source: Chamber of Mines

Production Concentration Ratio

The country's top 10 large scale producers accounted for 95% of gold output in 2015, compared to around 90% in 2014.

All top ten producers, except one, registered increases in output in 2015, compared to 2014 as shown below.

Figure 49: Top ten gold producers

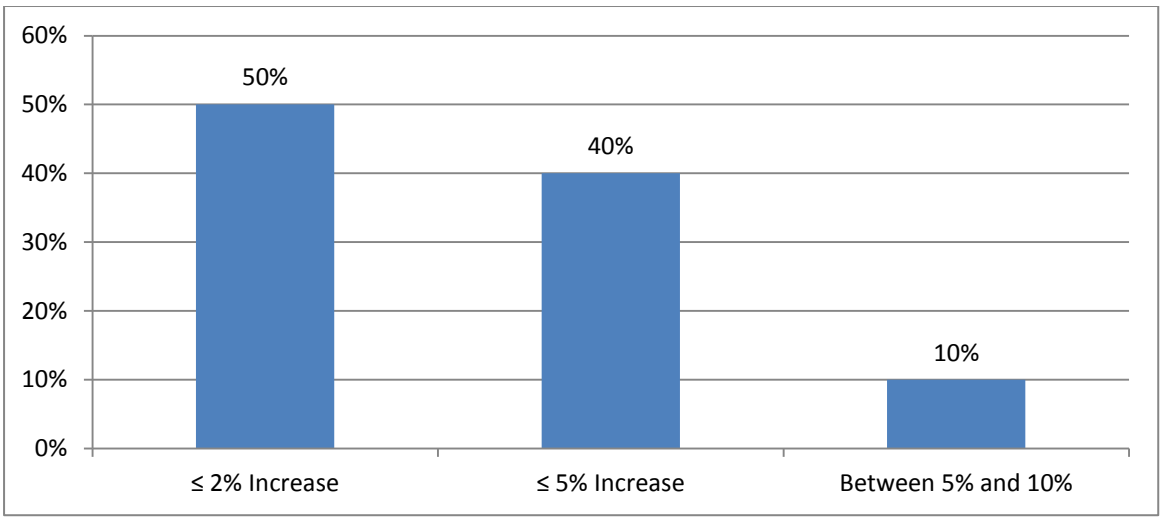


Source: Survey, Chamber of Mines

In 2016, gold output is expected to increase, as 90% of respondents in the gold sector reported that they would increase output in 2016 in varying proportions while the remainder indicated that output would decline.

Of these, 50% indicated that they would increase output by not more than 2%, 40%, indicated that they would increase output by not more than 5% and 10% indicated that output would increase by between 5 to 10%.

Figure 50: Anticipated gold output increases



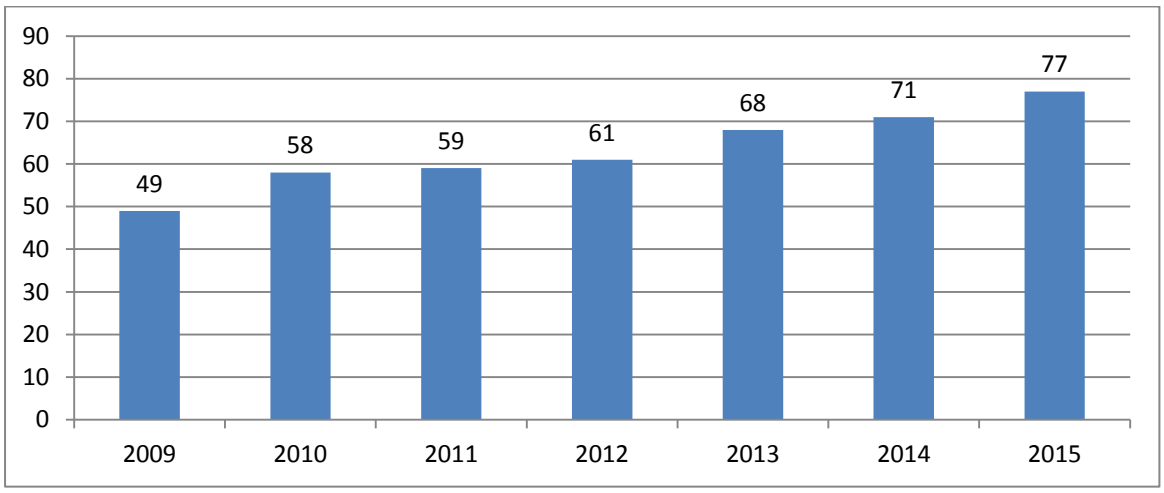
Source: Survey

Capacity Utilization

Survey findings revealed that weighted average capacity utilization in the gold industry is estimated at 77% in 2015, up from 71% in 2014. Capacity utilization, however, varied across mining houses, ranging from as low as 30%, to 100%.

Both average installed capacity and actual plant capacity utilization increased in 2015, compared to 2014. 80% of the producers indicated that they are increasing their utilization levels to boost output and compensate for the decline in gold price.

Figure 51: Average Capacity Utilization (%)



Source: Survey

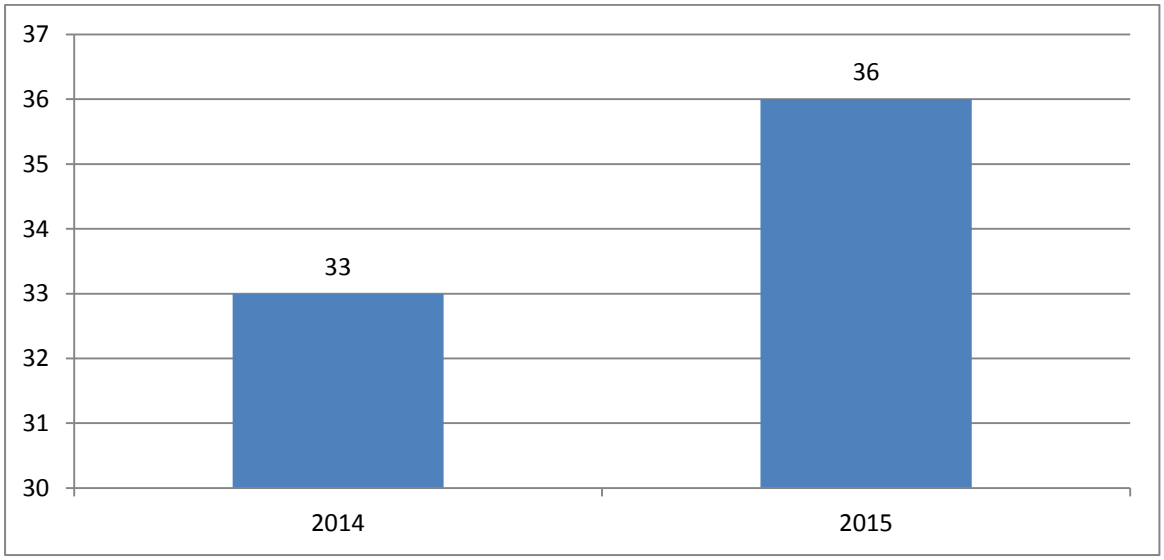
Employment in the Gold Industry

The formal gold sector employs around 10 500 people, representing about 25% of the mining industry total formal employment.

Productivity of the Gold Sector

Survey findings show that average productivity in the industry was 36 ounces per employee per year, compared to 33 ounces in 2014. 90% of the respondents cited labour rationalisation, against improved output, as driving increased productivity.

Figure 52: Productivity per ounce per employee

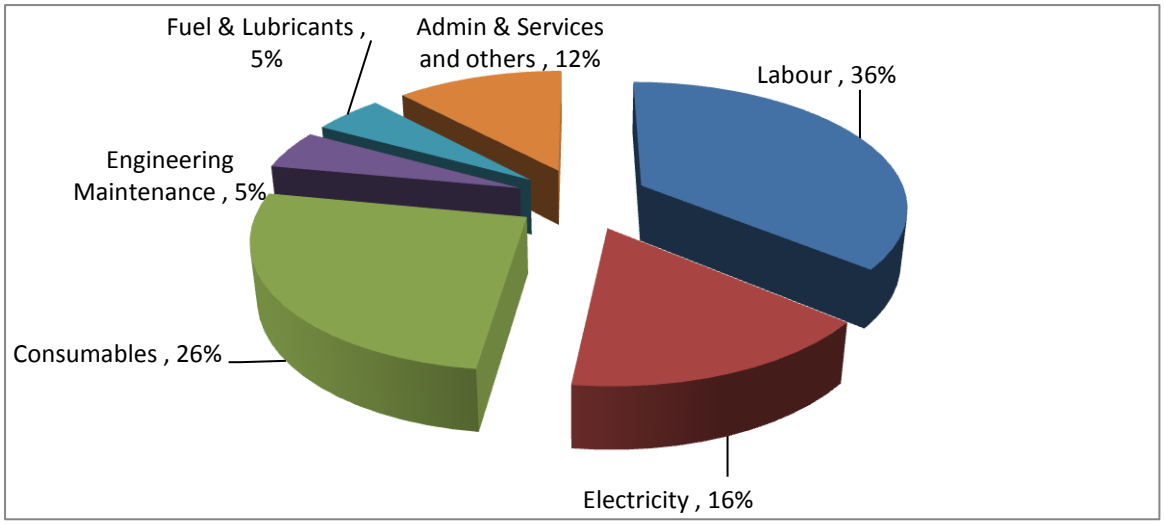


Source: Survey

Cost Drivers

Survey findings show that on average labour (36%), power (16%) and consumables (26%) account for 78% of total cost per ounce of gold produced.

Figure 53: Cost drivers

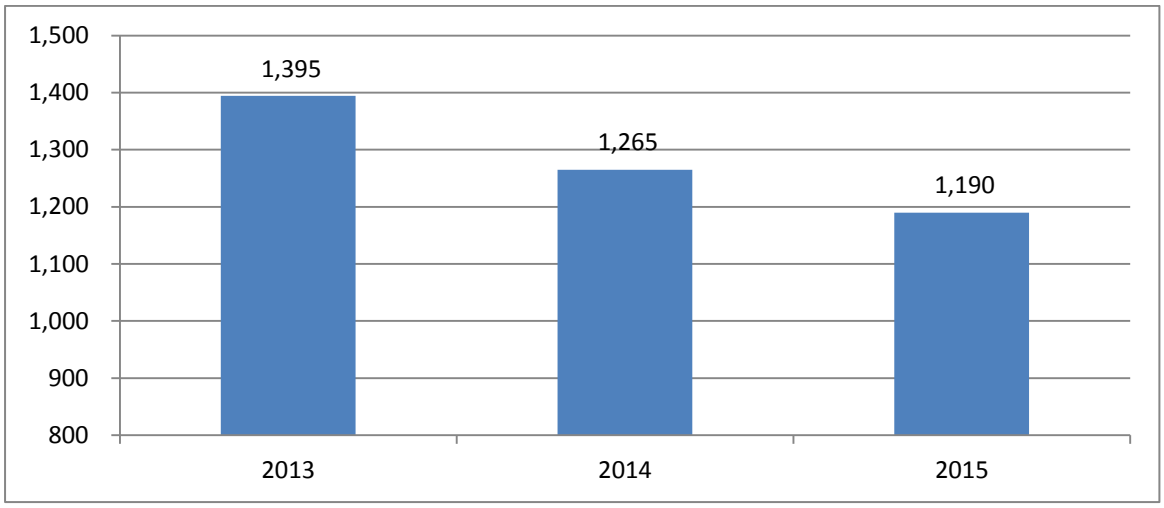


Source: Survey

Production Costs

Survey findings indicate that average production costs in the gold industry in 2015 were at US$1 190/ ounce, compared to US$1 265/ ounce in 2014. 75% of respondents in the gold industry revealed that their all-in costs declined in 2015 on the back of various cost-cutting measures. A quarter of the respondents, however, indicated that their costs increased.

Figure 54: Average all-in Production Costs



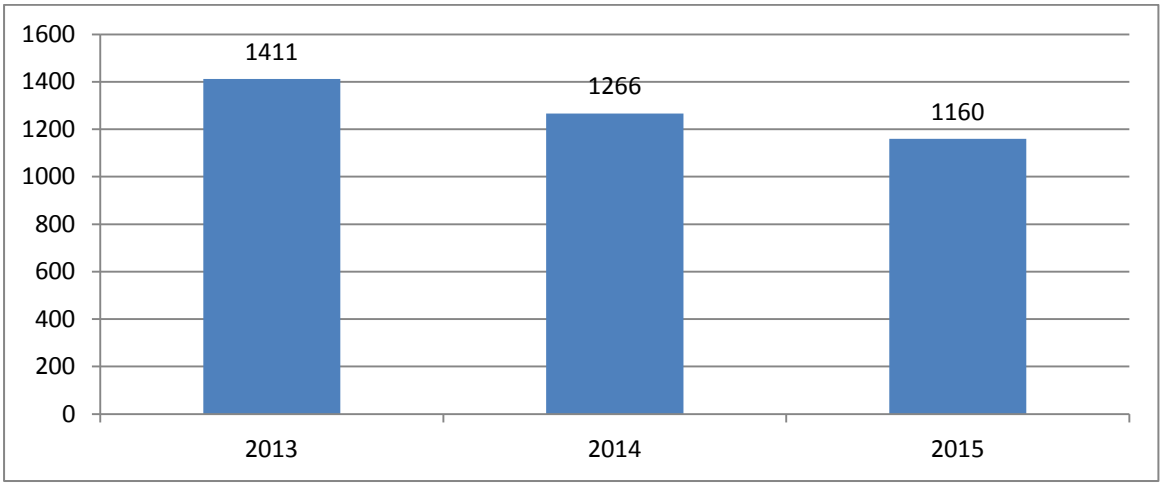
Source: Survey

Survey findings, however, show that 70% of producers are producing above the average cost of US$1 190/ ounce, while 30% are producing below the average. The highest cost producer was at US$1 563/ ounce, while the lowest cost producer was at US$760/ ounce.

Gold Price

Gold price declined by around 9% from US$1 266/ ounce in 2014, to US$1 160 in 2015, and is projected to remain subdued in 2016.

Figure 55: Gold Price (US$/ ounce)

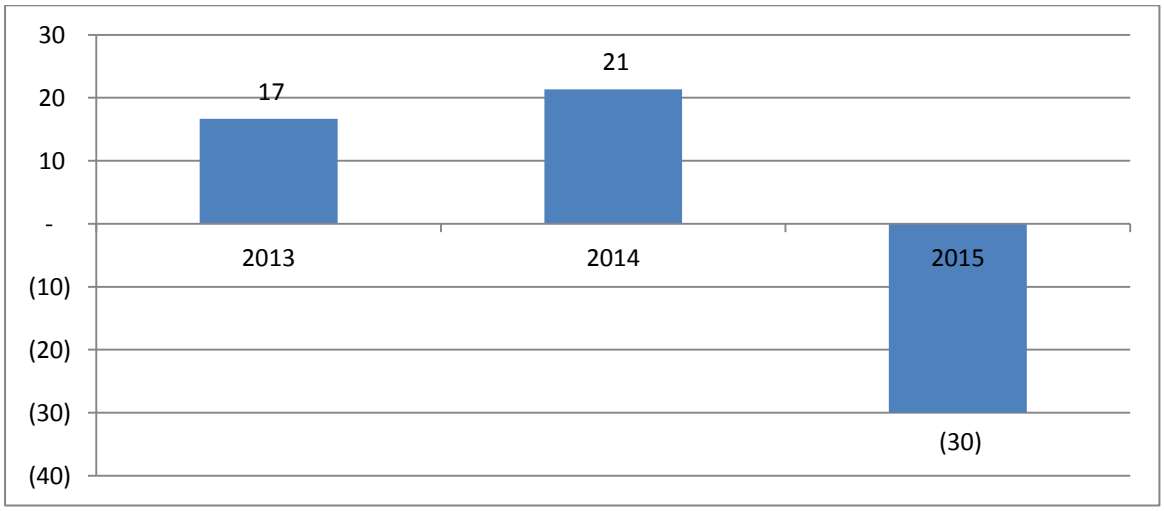


Source: Kitco

Profitability of the Gold Sector

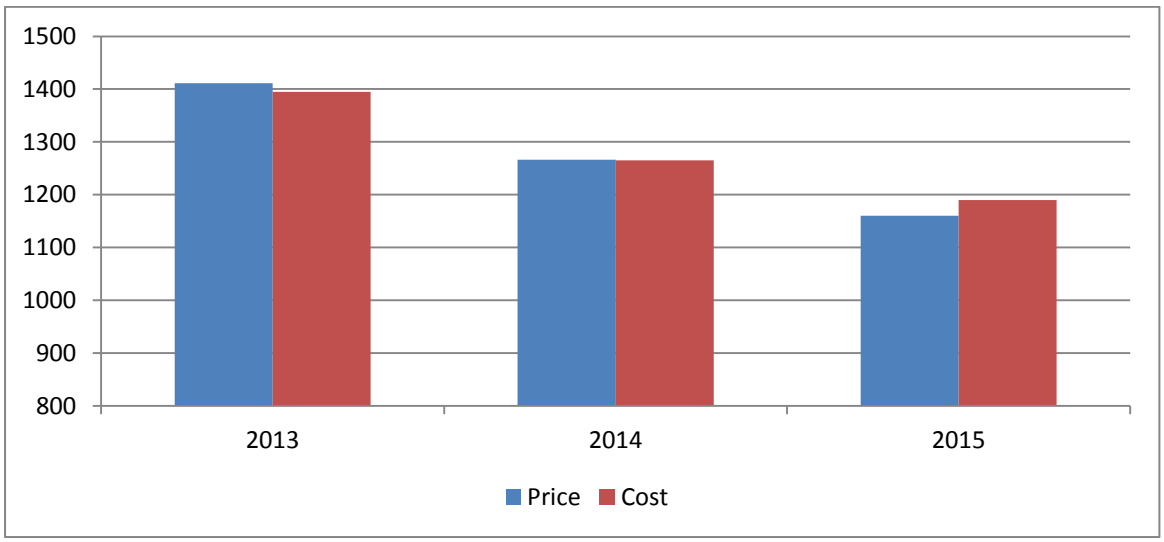
The gold industry was on average on a loss making position in 2015, with 90% of the respondents indicating that they failed to break even. The outlook for 2016 remains bleak with only 20% of respondents indicating optimism on price recovery, while 80% were of the view that gold price will fall further in 2016.

Figure 56: Profit/ (loss)/ounce (US$)



Source: Survey

Figure 57: Gold Price and Average Production Cost

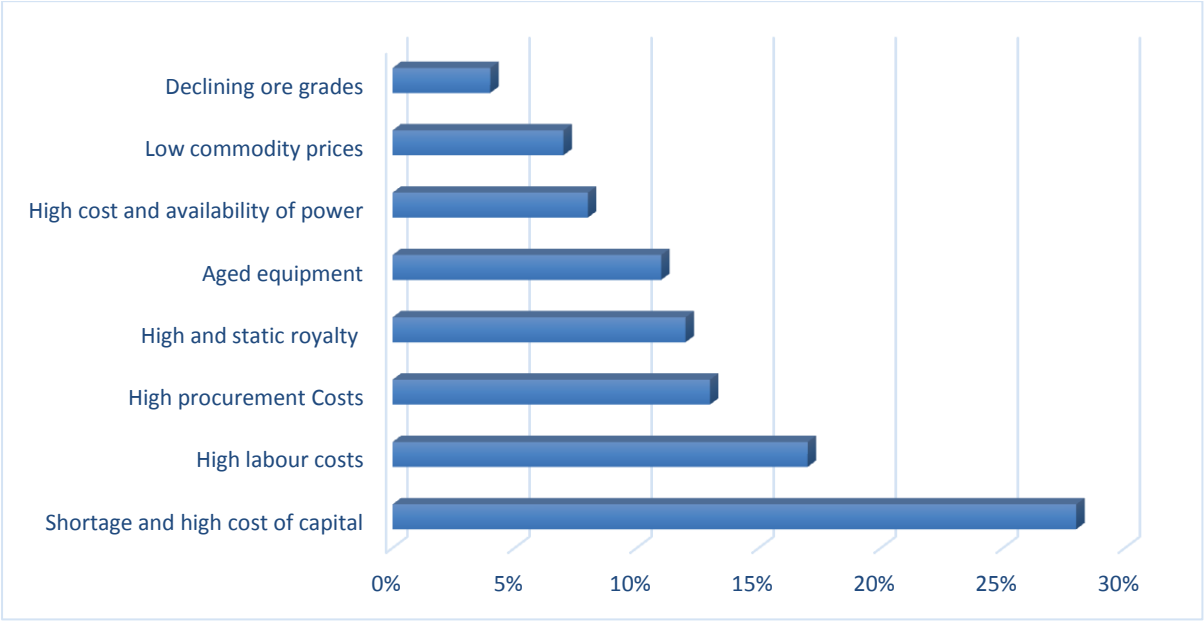


Source: Kitco, Survey

3.1.8 Challenges in the Gold *Industry*

Seven challenges common to all producers were identified and their weighting measured.

Figure 58: Challenges in the gold sector



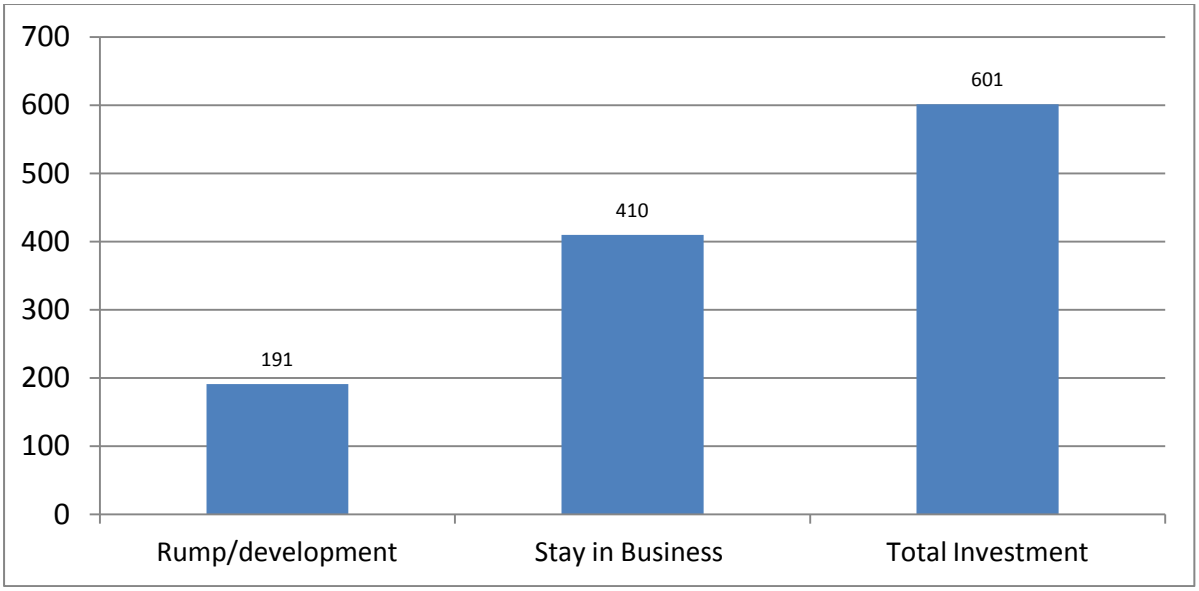
Source: Survey

When asked to describe and explain how the challenges they cited affected their operations, sampled producers responded as follows:

i. ***Shortage and High Cost of Capital***- In aggregate, the industry required around US$600 million for both sustenance and ramp up, for the period 2015 to 2010, with approximately $286 million required in 2015 and 2016.

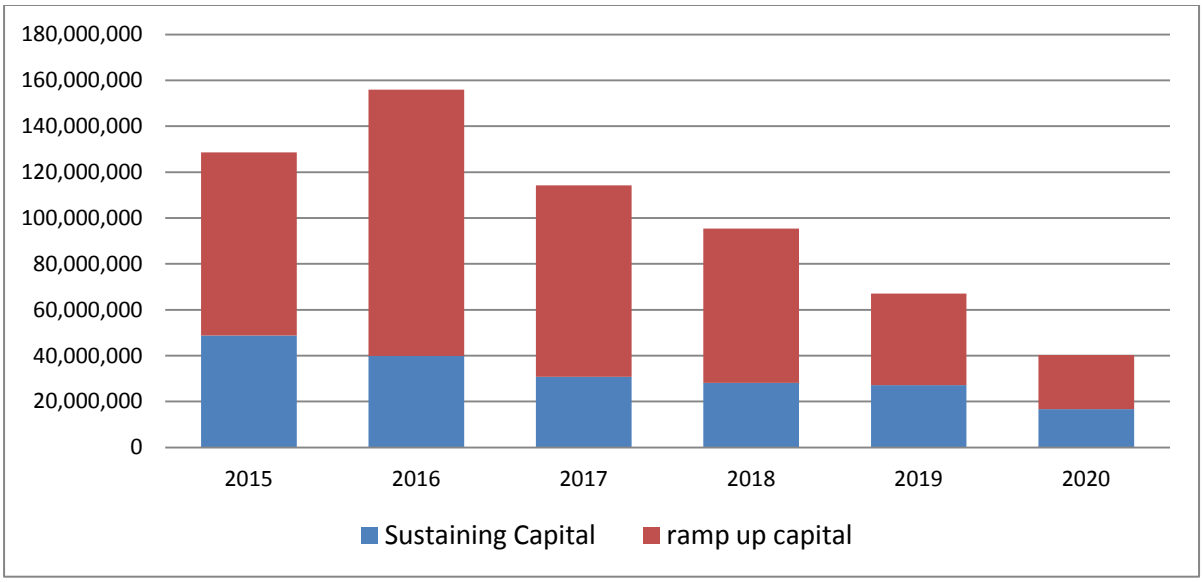
30% of the total capital requirements will be sustaining capital while the remainder is ramp up capital. At these capital levels, output for large scale producers is expected to grow annually by over 15% to reach 29 tons by 2020.

Figure 59: Gold capital requirements (2016-2020) USD' million



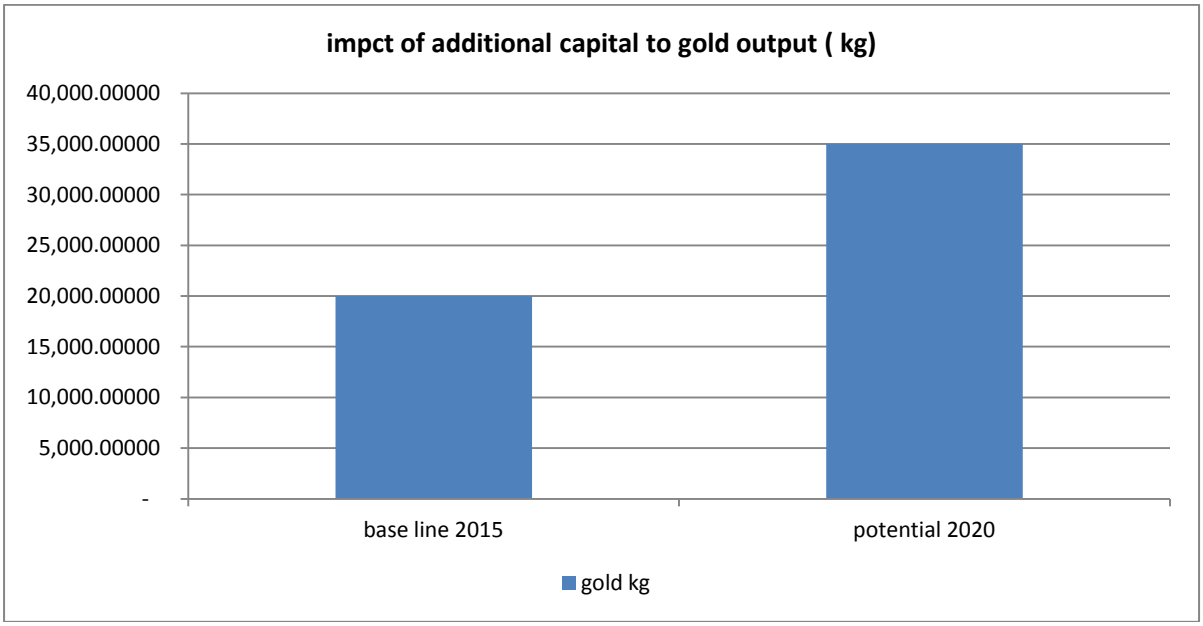
Source: Survey

Figure 60: Capital requirements (USD)



Source: Survey

Figure 61: Impact of additional capital on gold output (kg)



Source: Survey

All the producers indicated that local financial facilities are expensive and short term, while offshore credit is problematic due to high country risk.

ii. ***High Labour Costs*** – Labour costs at 36% of total remain the major cost driver. The industry had a cumulative wage increase of around 720% between 2009 and 2015, and in 2015, a 3% cost of living adjustment was awarded to workers. Producers cited inflexible labour laws as making it difficult for them to realign the cost of labour in line with prevailing price developments.

iii. ***High procurement costs*** – procurement costs were also cited as a major performance risk in the gold sector. Material costs and outsourced professional mining services were the leading procurement cost items.

iv. ***High Royalty*** – Government has reviewed the royalty on gold as shown below.

Table 17: Royalty on Gold

	2012	2013	2014	2016
Large Scale	7%	5%	5%	3% on Incremental Output and a Cap of 5%,
Small Scale	7%	3%	1%	1%

Source: Ministry of Finance

Whilst Government has progressively reviewed the royalty for gold, producers were of the view that it remained on the higher side compared to those obtaining in other mining jurisdictions. Concerns were raised pertaining to the non deductibility of the royalty as a tax expense and respondents indicated that it becomes a direct cost to business.

v. ***Antiquated Equipment*** - Downtimes due to aged equipment were considered too frequent, resulting in lost shifts and high repair and maintenance costs.

vi. ***High Power Costs*** – The USc12.8 cents/ KWh tariff applicable to the gold industry was considered unaffordable and compromising viability.

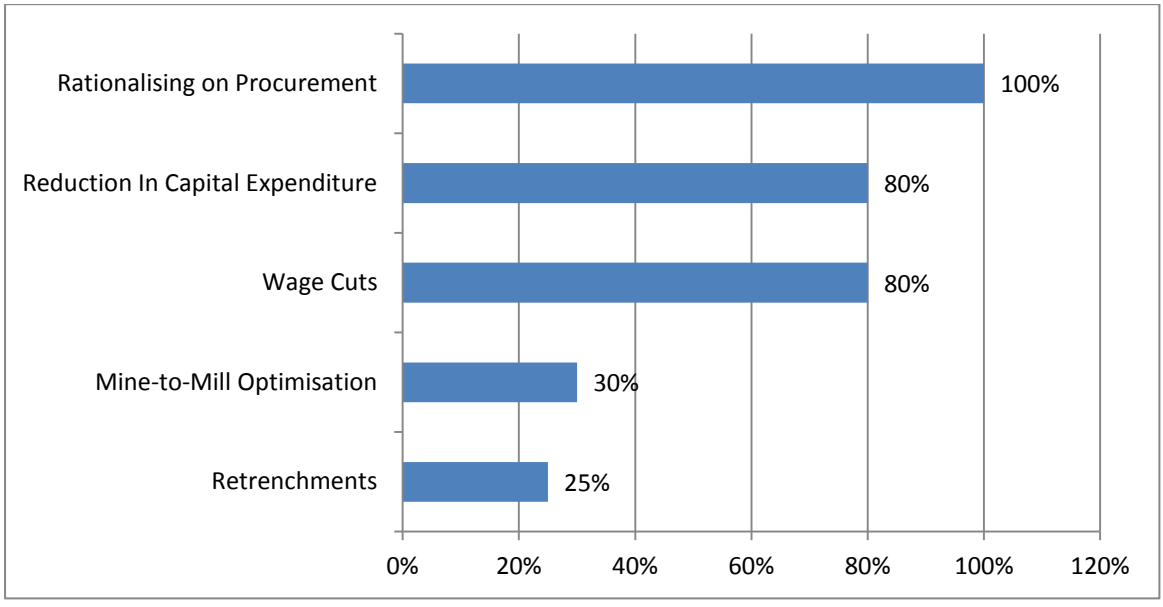
vii. ***Low Gold Price*** – low gold price was also cited as undermining company earnings, and have elevated the cut-off grade in the gold industry.

viii. ***Falling Ore Grades*** - The country's average gold ore grades at around 2.7grams/ ton were considered too low in light of the prevailing price.

3.1.9 Cost Cutting initiatives and Viability Strategies

All the respondents in the gold sector revealed that they had initiated cost-cutting measures in 2015.

Figure 62: Percentage of producers undertaking viability measures



Source: Survey

3.1.10 Value Addition and Beneficiation in the Gold Industry

All respondents in the gold sector reported that they owned and operated onsite ore treatment plants with 80% operating crushing plant, milling plant and smelter, while 20% have crushing plants and smelters only.

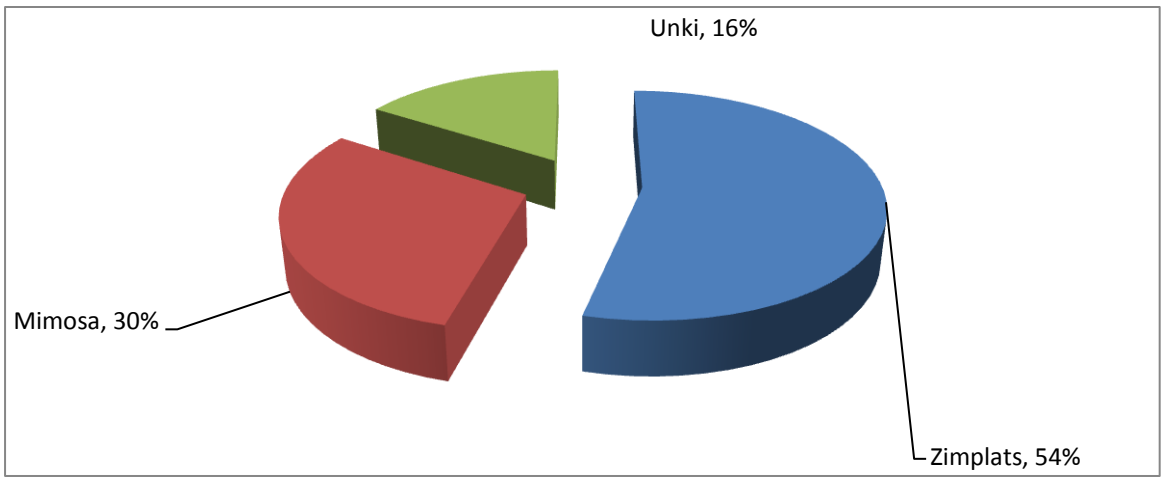
Three quarters of the respondents indicated that they invested in beneficiation projects in the past 10 years and these included installation of new plants, refurbishment of existing plants and the upgrade of installed plants.

In terms of gold beneficiation, all respondents viewed gold as being beneficiated at Fidelity Printers and Refiners.

3.2 Platinum Group Metals (PGMs)

There were three active producers in the PGMs sector as of 31 December 2015 and the distribution of their contribution to Platinum output as of 2015 was as follows.

Figure 63: Share of Platinum Output



Source: Survey

3.2.1 Exploration for PGMs

Only one Greenfield exploration project was current at the end of 2015. The rest took place within mining leases. All respondents in the PGMs sector indicated that they had carried out exploration within their mining leases over the last 10 years. All the respondents also revealed that they have ongoing exploration activities around their mines.

3.2.2 Mine Development and Expansion Projects

One producer commenced an open-pit resuscitation project valued at US$10 million and is expected to be commissioned in the first quarter of 2016.

Another producer indicated that it intends to inject US$82.4 million for an expansion project which is expected to be completed by July 2018, with expected national incremental output of 9% from the existing national capacity.

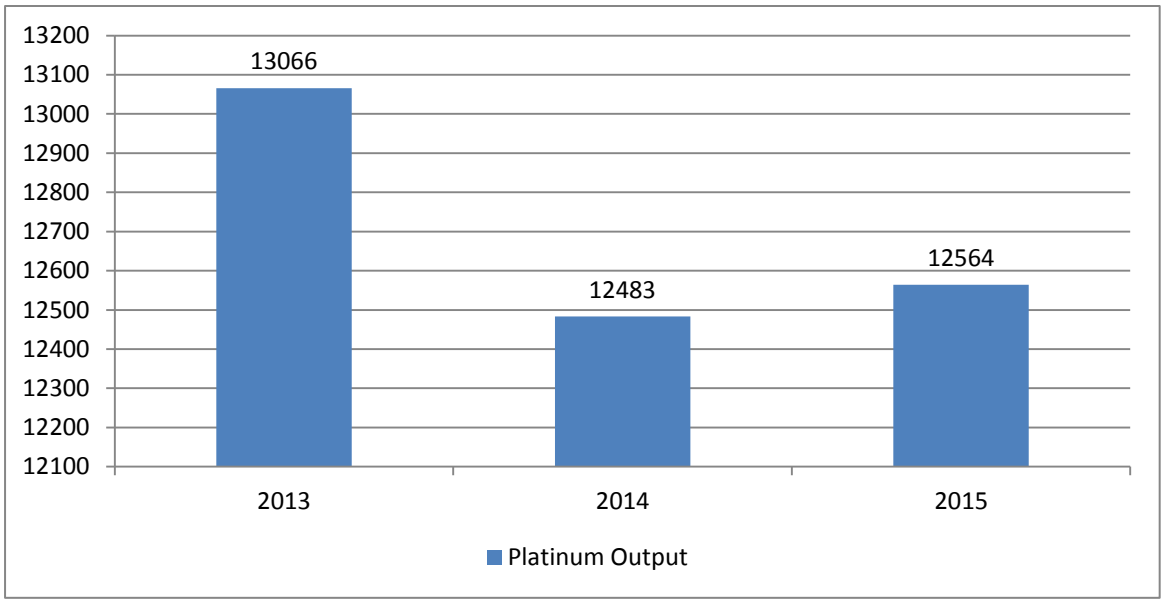
The third producer is also planning to expand its capacity for both mining and concentrating by 50%, which is estimated to cost around US$100 million and feasibility studies are being in progress.

There are three new investments in the PGMs sector, estimated at a cost of over US$600 million. All the three projects are expected to be commissioned from 2017, and have projected capacities of around 665 000 PGMs output.

3.2.3 Platinum Output

Platinum output increased from 12 483 in 2014, to 12 564 in 2015, and is projected to increase in 2016 as one of the players expects to ramp up production in 2016.

Figure 64: Platinum output

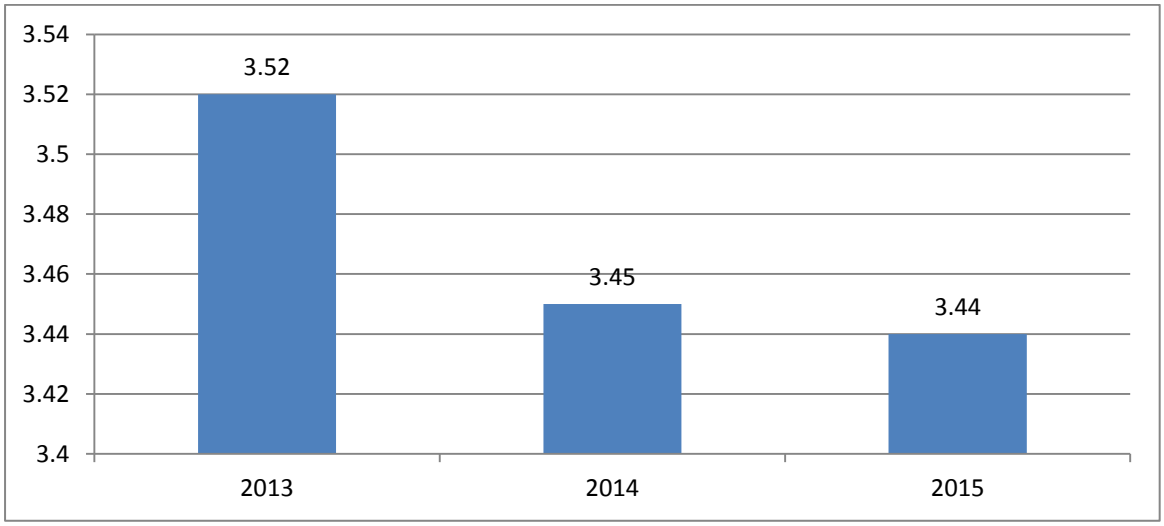


Source: Chamber of Mines

3.2.4 Ore Grades

Survey findings reveal that the sector's average 4E (platinum, palladium, rhodium and gold) head grade for 2015 was at 3.38g/ ton, compared to 3.39g/ ton in 2014. However, the grades ranged from 3.24g/ ton, to 3.64g/ ton.

Figure 65: Average 4E head grades



Source: Survey

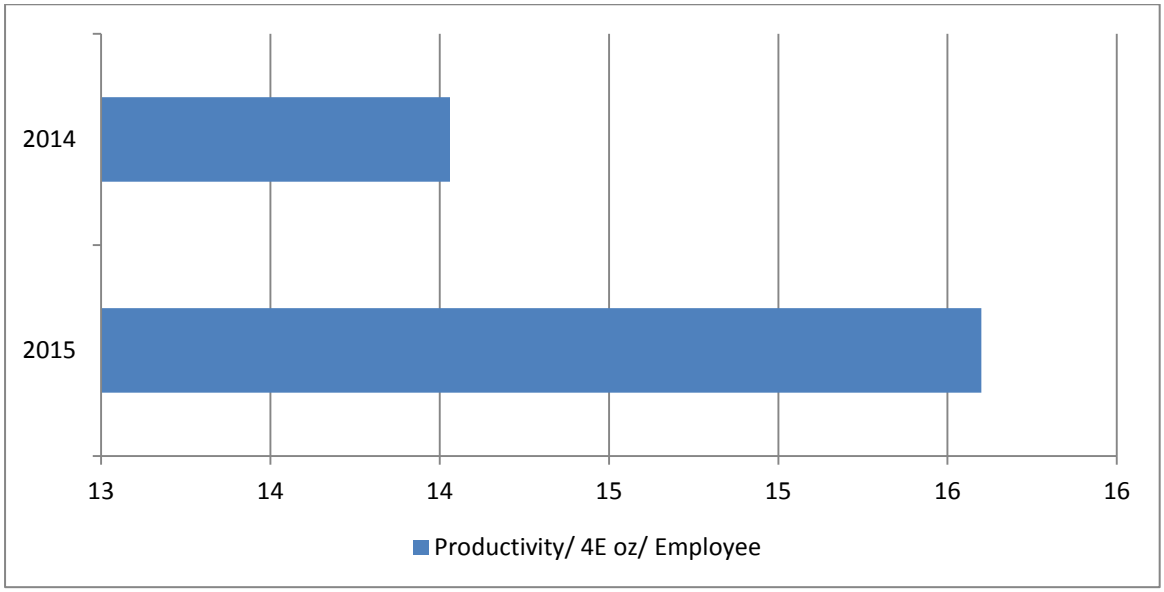
3.2.5 Capacity Utilisation in the PGMs Sector

Survey results show that the PGMs sector operated at full capacity in 2015. One of the players, however, had closed one of its mines for redevelopment after ground instability.

3.2.6 Productivity in the PGMs Sector

Survey findings show that productivity in the PGMs, as measured for 4Es, is estimated to have increased from 14.03 oz/employee, to 15.6 oz/ employee.

Figure 66: Productivity/4E oz/ Employee

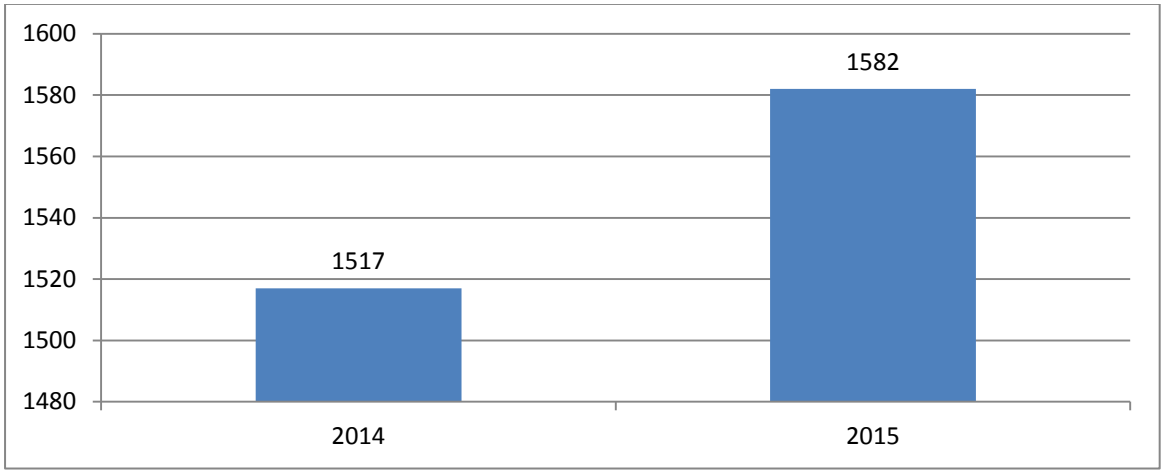


Source: Survey

3.2.7 Production Costs

Survey results showed that the weighted average cost/ ounce of platinum increased in 2015, compared to 2014, however, one producer reported a decline in the cost of production in 2015 compared to 2014.

Figure 67: Average Cost/ Ounce (US$)

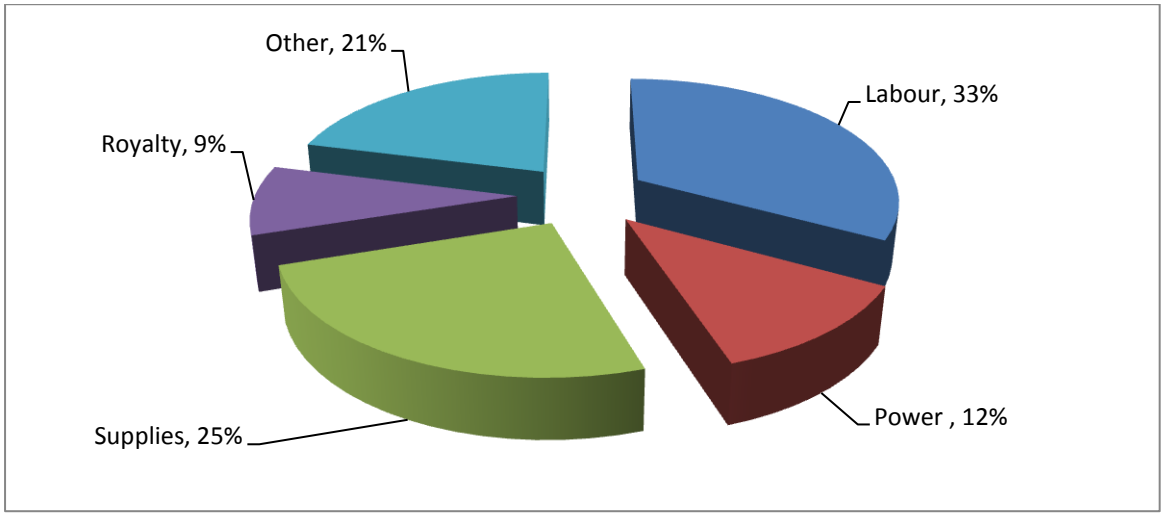


Source: Survey

3.2.8 Cost Drivers in the PGMs Sector

Survey findings revealed that labour, royalty, supplies and power contributed more than 79% of production cost per ounce in 2015.

Figure 68: Cost Drivers in the PGMs Sector

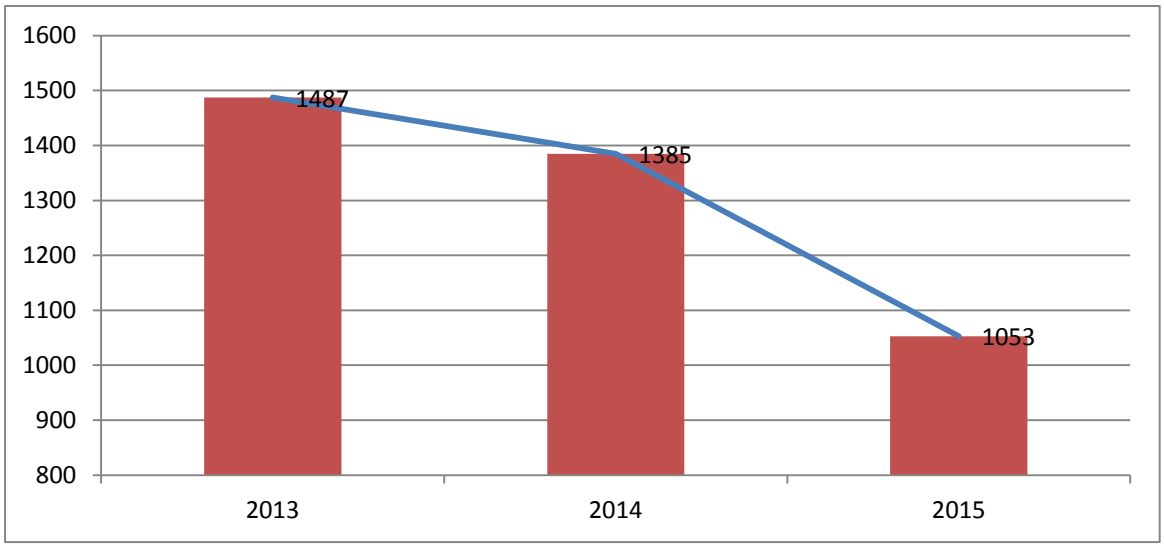


Source: Survey

3.2.9 Platinum Price

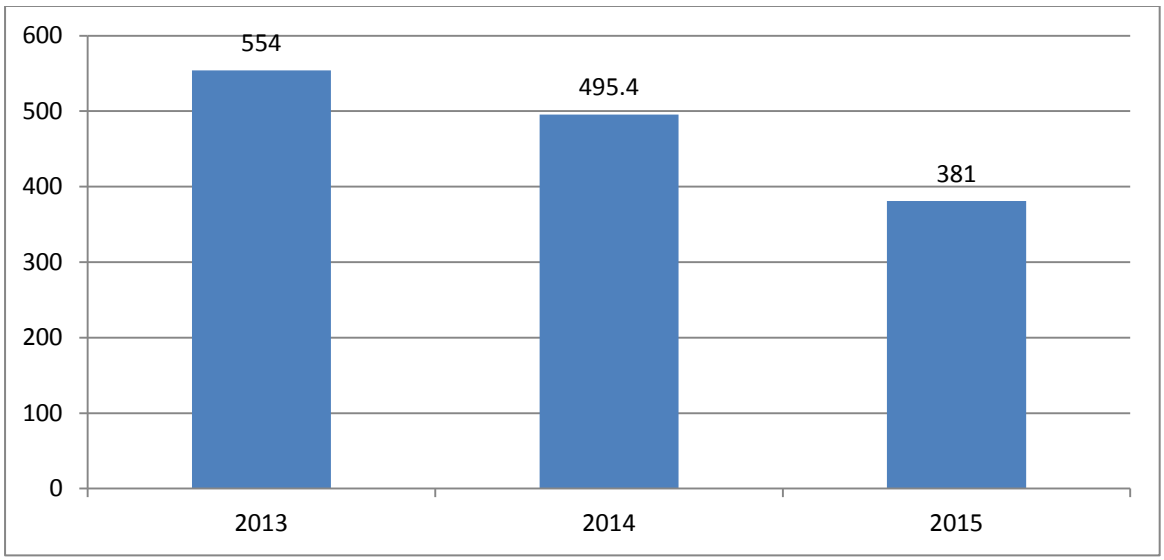
Platinum price declined by around 24%, from US$1 385/ ounce in 2014, compared to US$1 053/ ounce 2015.

Figure 69: Average Platinum Price (US$/ ounce)



Source: Kitco

Value of Platinum Output (US$ million)

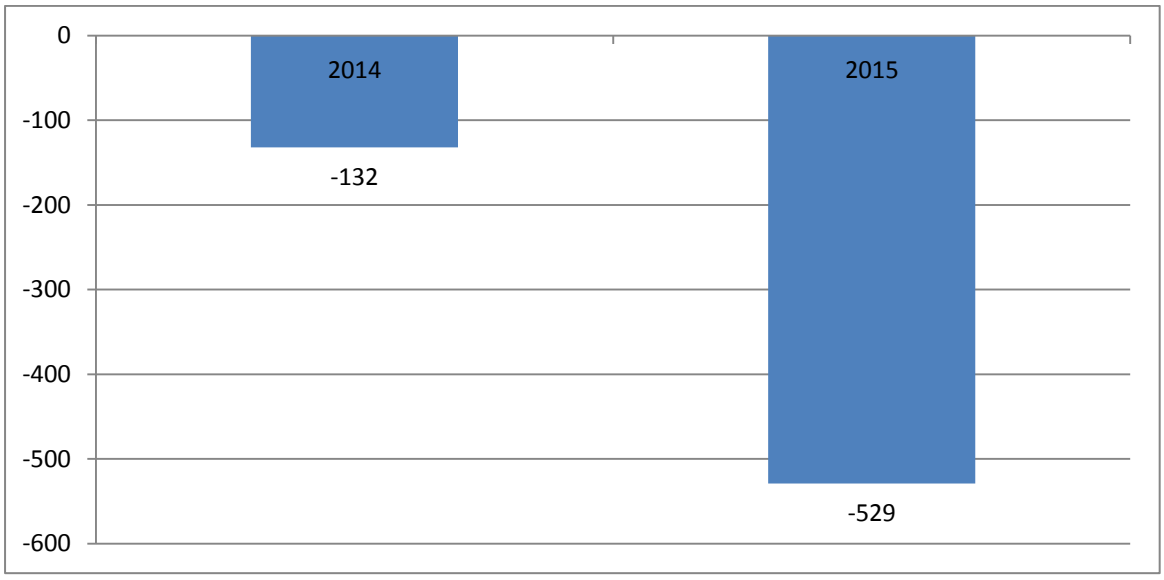


Source: Chamber of Mines

3.2.10 Profitability in the PGMs Sector

All producers in the PGMs sector indicated that their viability has been compromised by softening commodity prices against a background of a high cost structure. The producers reported that their earnings have fallen in 2015, compared to 2014, thus earnings from platinum, for instance, declined by 23% in 2015, compared to 2014.

Figure 70: Profitability in the Platinum Sector (2014 to 2015)



Source: Survey

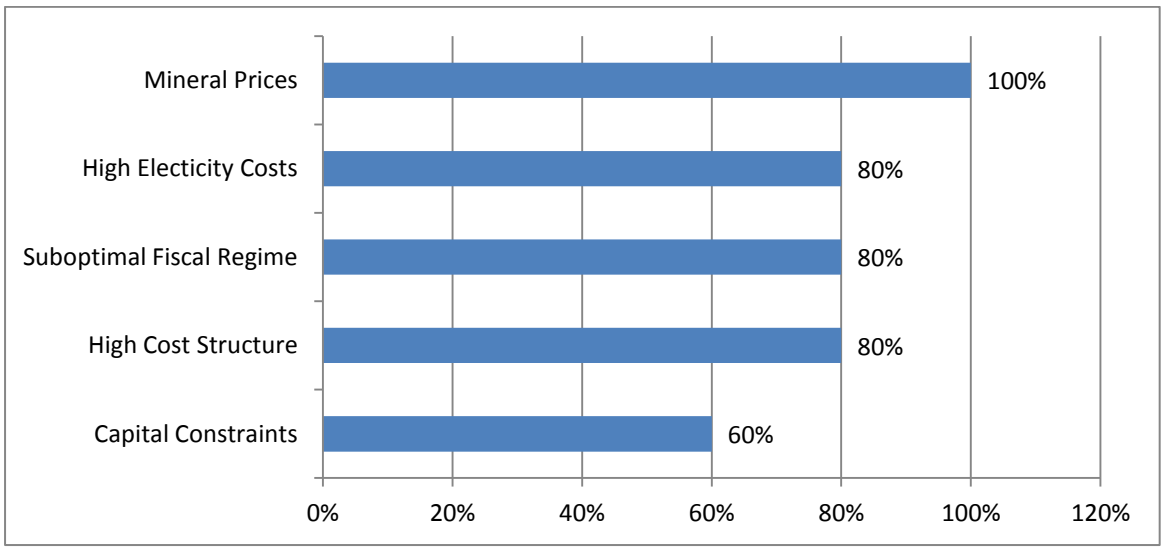
All players, however, indicated that they adopted cost curtailing measures in 2015. The measures cited were as follows:

- Labour rationalisation;
- Negotiating with Key Suppliers for price reductions;
- Introduction of competition amongst suppliers with all product supplies having two or more registered suppliers;
- Sourcing products from the original equipment manufacturers;
- Capacitating local producers to reduce import costs; and
- Reviewing major consumables and contract costs.

3.2.11 Viability issues in the PGMs Sector

All the PGM producers cited the following challenges and ranked their severity as follows:

Figure 71: Challenges in PGMs Sector



Source: Survey

High Operation Costs

Labour costs, along with the cost of supplies, were cited as the major cost driver, and producers were of the view that with employment numbers as high as 8 750 people, any upward review in the wage will lead to serious viability challenges.

Power Shortages

Survey results also reflected that frequent power outages have led to output losses in the industry.

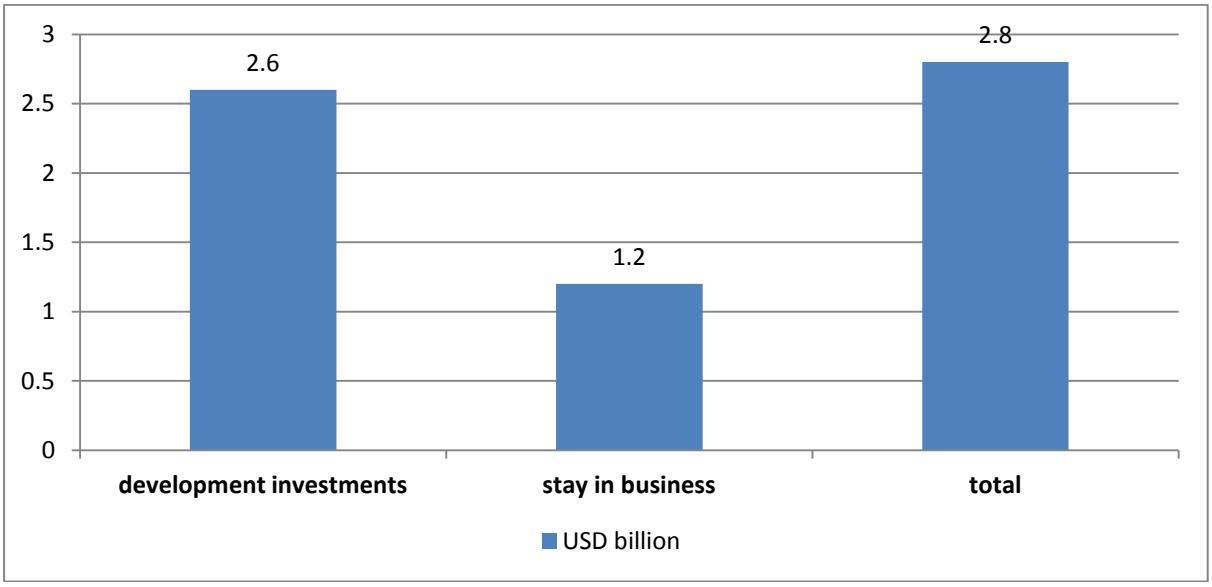
High electricity costs

Some of the players indicated that the prevailing tariff in the industry is suboptimal and would need to be reviewed given the high cost structure and low platinum prices.

Capital Constraints

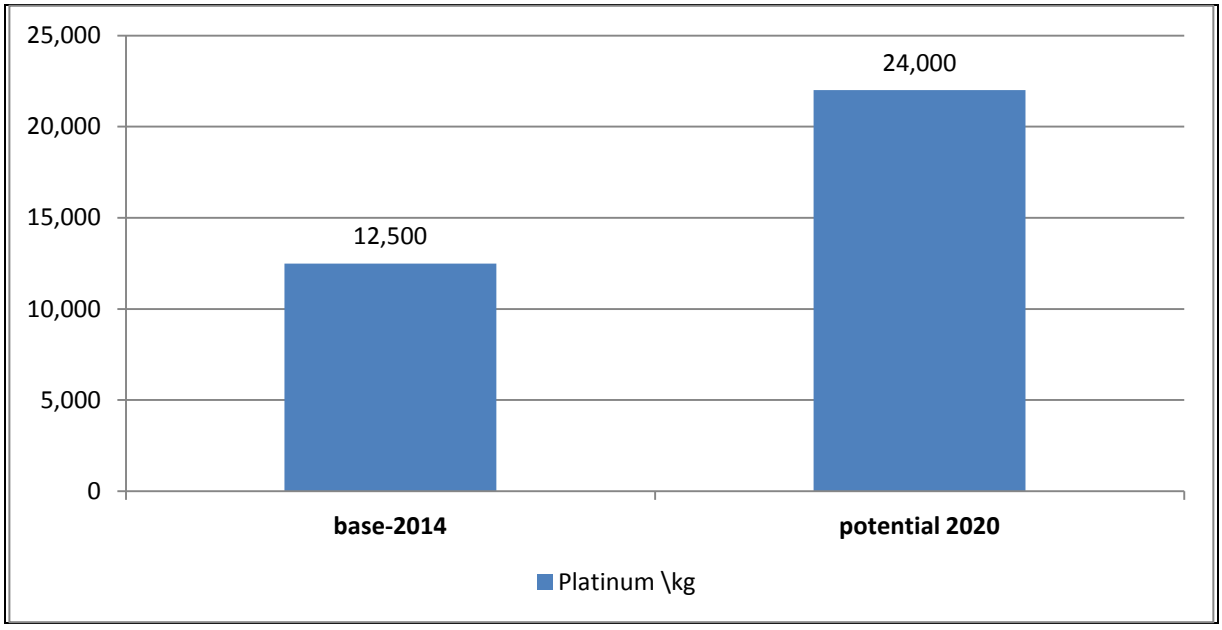
The survey also revealed that the PGMs industry requires US$3.8 billion in the 5 years to 2020 to optimise output. Existing players required around US$450 million for 2015 and 2016

Figure 72: Platinum capital requirements (USD billion)



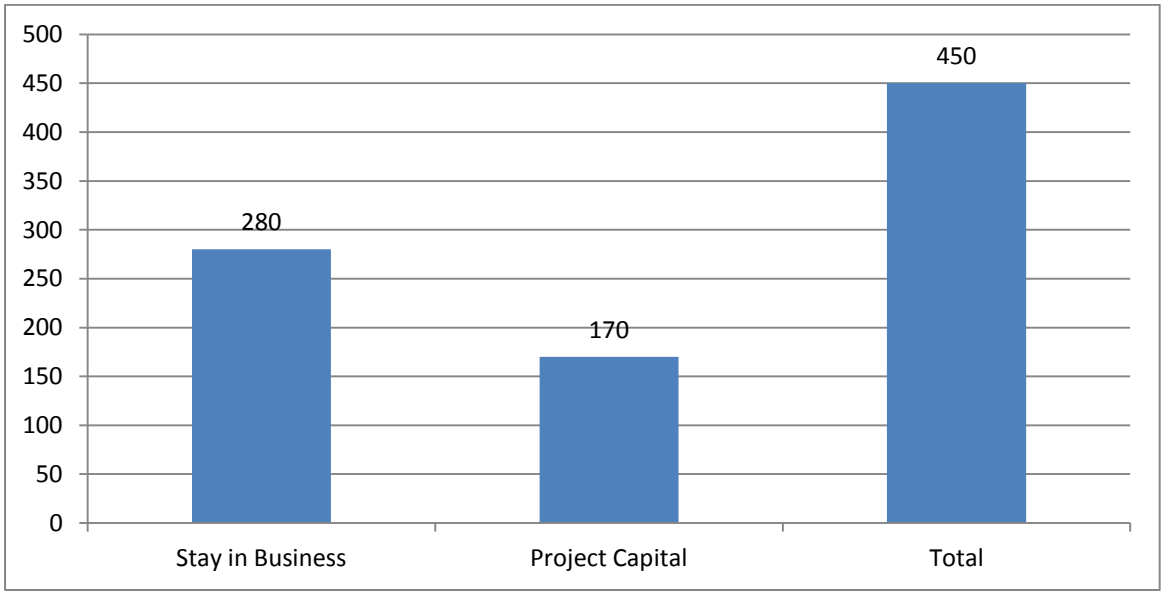
Source: Survey

Figure 73: Impact of additional capital on platinum output



Source: Survey

Figure 74: Capital Requirements for Existing PGMs producers



Source: Chamber of Mines, Survey

Table 18: Total Capital Expenditure Projections

Years	2015	2016
Stay In Business Capital, US$'000	132,097	148,101
Project Capital, US$'000	75,261	92,628
Total Ongoing Capital Expenditure	**207,358**	**240,729**

Source: Survey

Suboptimal Fiscal Regime

Platinum producers raised the following fiscal issues:

- The royalty of 10% as high compared to other mining jurisdictions;
- The non-deductibility of the royalty as a tax expense is undermining viability of the sector; and
- The existing Additional Profit Tax framework eroding the intended benefits.

The following recommendations were made by the producers.

- That the royalty be reduced and benchmarked to international best practice;
- That the royalty be deductible as a tax expense; and
- All producers with Special Mining Leases would want the APT framework reviewed.

3.2.12 Beneficiation and Value Addition

All the platinum producers have installed onsite concentrators for treating ore into concentrates. One of the producers also owns a smelter which treats concentrates into mate.

One producer is also expecting to commission its Base Metal Refinery in July 2016. The BMR will further beneficiate the convertor mate by producing a platinum group metals (PGM) cake, copper cathode and nickel sulphate.

The Survey revealed that another player has a US$55 million Smelter project which is at pre-feasibility study. The project is expected to be completed by July 2018.

Table 19: Beneficiation Projects in the PGMs Sector

Project Type	Estimated Cost	Planned Commissioning
Smelter	US$55 Million	July 2018
Base Metal Refinery	US$100 million	July 2016

Source: Survey

3.3 Nickel

3.3.1 Structure of the Nickel Industry

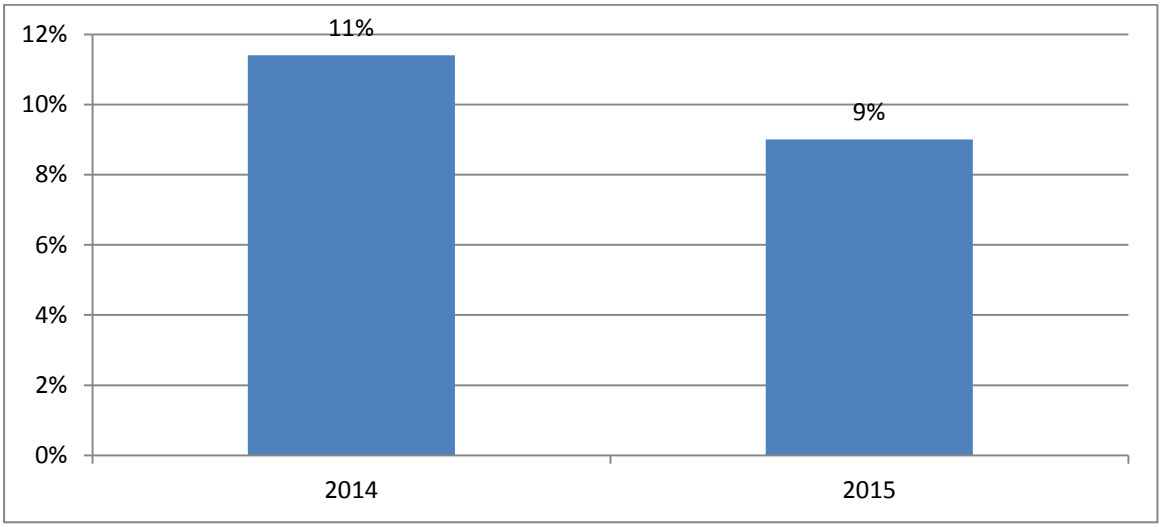
The nickel industry comprises one integrated primary producer and three secondary producers all of which are PGM operators.

The primary producer operates two mines, a smelter and a base metal refinery. One of the mines has been on care and maintenance since December 2008.

3.3.2 Contribution of Nickel to Mining Output

The contribution of Nickel in the value of mineral output declined from 11.4%, to 9% as shown below.

Figure 75: Contribution of Nickel to Total Mineral Revenue



Source: Chamber of Mines

3.3.3 Nickel Exploration

The survey reveals that the Primary producer is undertaking underground drilling to extend the life of the mine. However, all of Zimbabwe's known nickel deposits and prospects were discovered before independence in 1980. Apart from prospects still to be investigated, the country hosts more than 30 known economically significant nickel deposits in mafic and ultra-mafic rocks. Major discoveries include Trojan, Shangani, Perseverance, Hunter's Road, Madziwa, Shamva and Empress.

3.3.4 Mine Development Projects

Zimbabwe's nickel industry has two new mine development projects in the pipeline. One of the projects is expected to be commissioned for development within by 2017 while the other one has been on the cards for more than 10 years.

There were indications that the nickel mine decommissioned in 1982 may be redeveloped over the next few years.

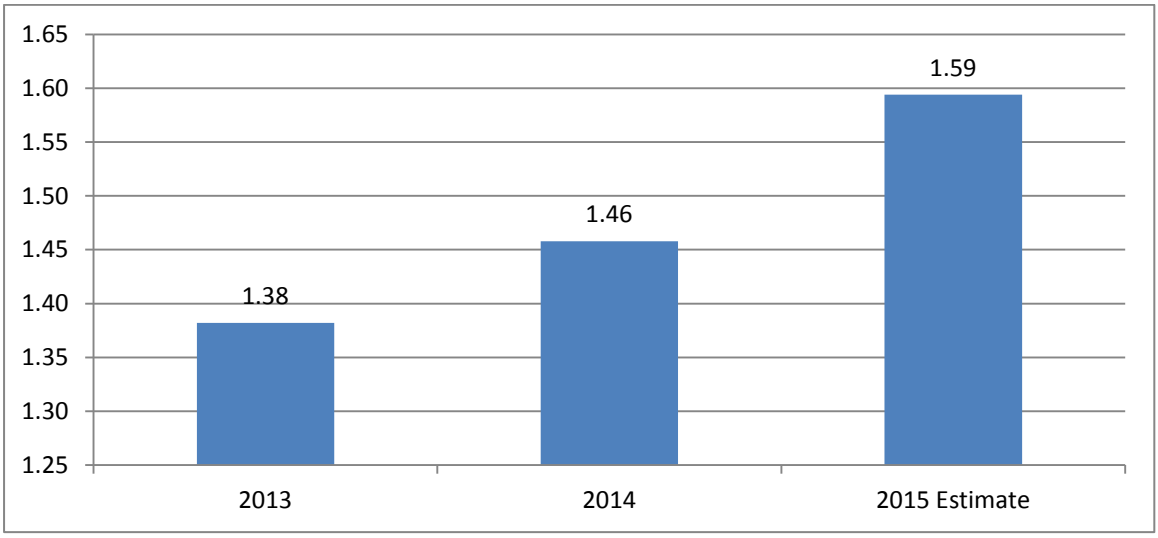
3.3.5 Expansion Projects

The country's sole primary nickel producer reported that the company has plans to refurbish its smelter at an estimated cost of US$26 million.

3.3.6 Average Ore Grades

Average ore grades in the nickel industry have increased from 1.46kg/ ton in 2014, to 1.59kg/ ton in 2015.

Figure 76: Average Ore Grades

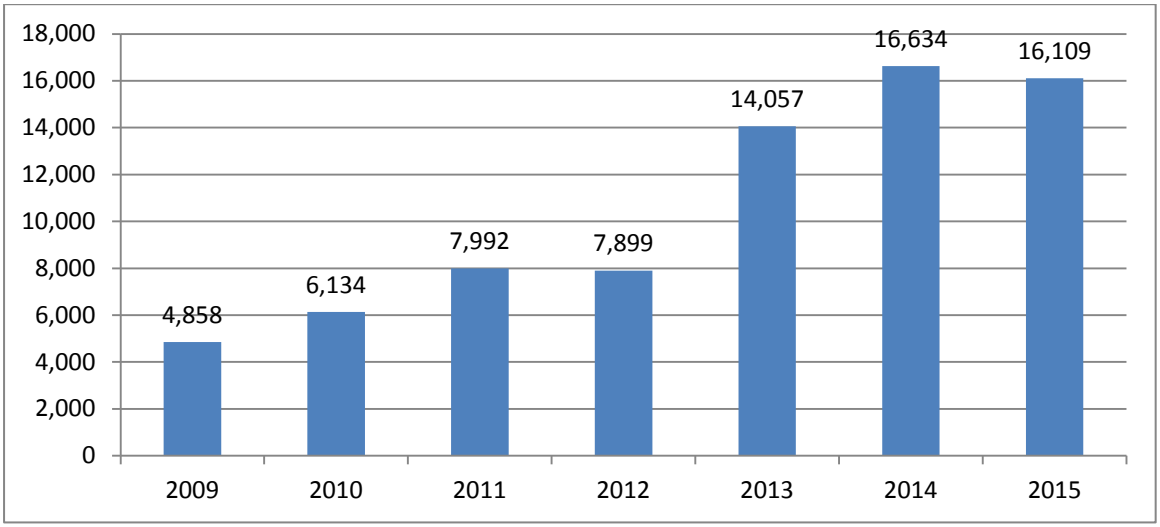


Source: Survey

3.3.7 Nickel Output

Nickel output for 2015 was at 16 109 tons, down from 16 634 tons in 2014 as shown below.

Figure 77: Nickel Output

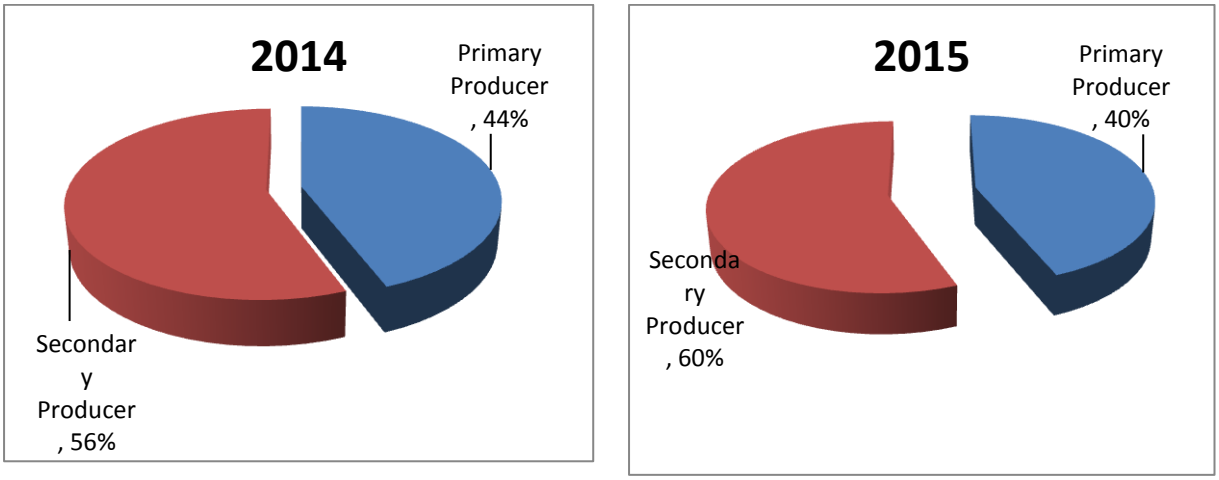


Source: Survey

3.3.8 Distribution of Nickel Production

The contribution of the primary producer to total nickel output fell from 44% in 2014, to 40% in 2015.

Figure 78: Distribution of nickel output

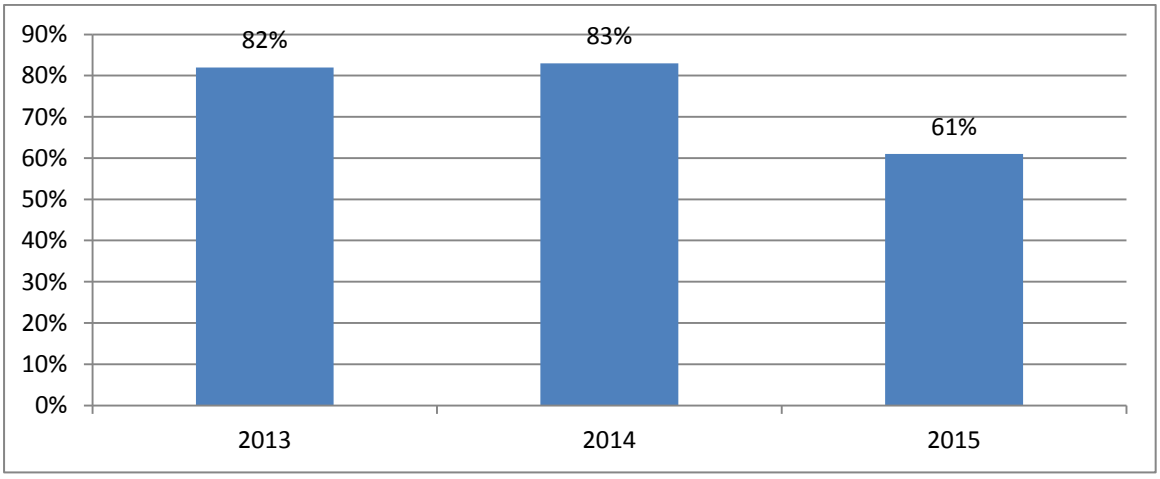


Source: Chamber of Mines

3.3.9 Capacity Utilisation in the Nickel Sector

Average capacity utilisation in the nickel sector decreased from 83% in 2014, to 61% in 2015 as shown below.

Figure 79: Average Capacity Utilisation

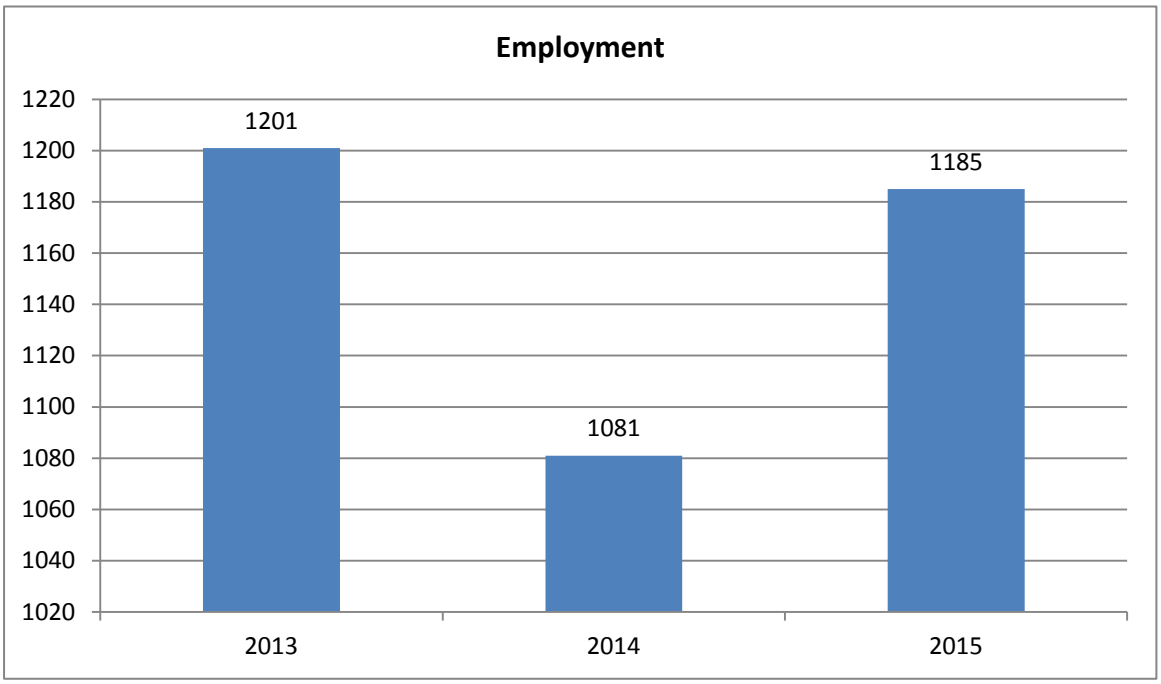


Source: Survey

3.3.10 Employment in the Nickel Sector

The number of people employed in the nickel industry increased from 1 081 in 2014, to 1 185 in 2015.

Figure 80: Employment in the nickel sector

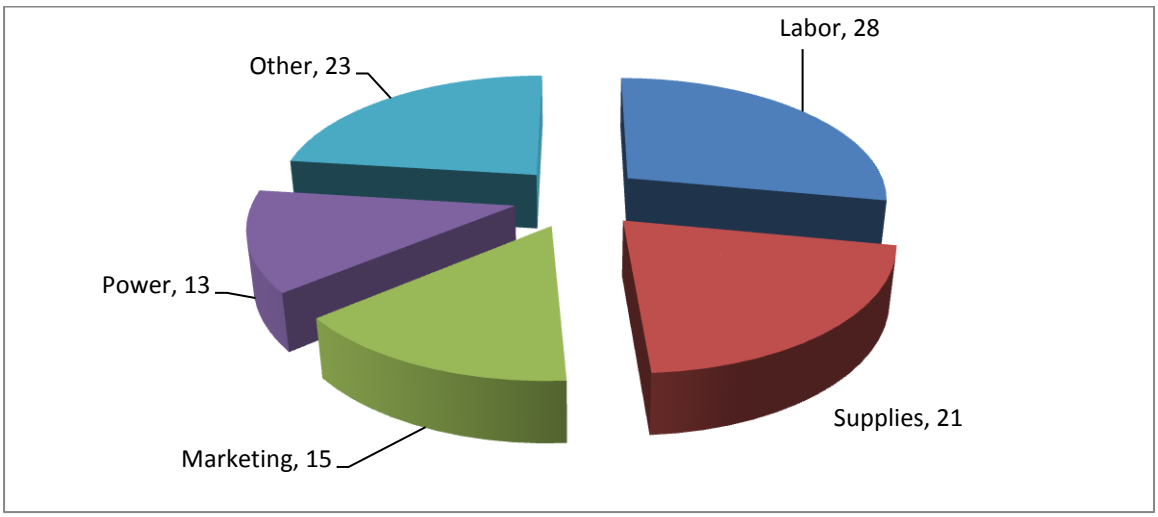


Source: Survey

3.3.11 Cost Drivers in the Primary Nickel Sector

Labour (28%), supplies (21%), marketing (15%) and power (13%) account for more than three quarters of the total production costs as shown below.

Figure 81: Cost Drivers by Category

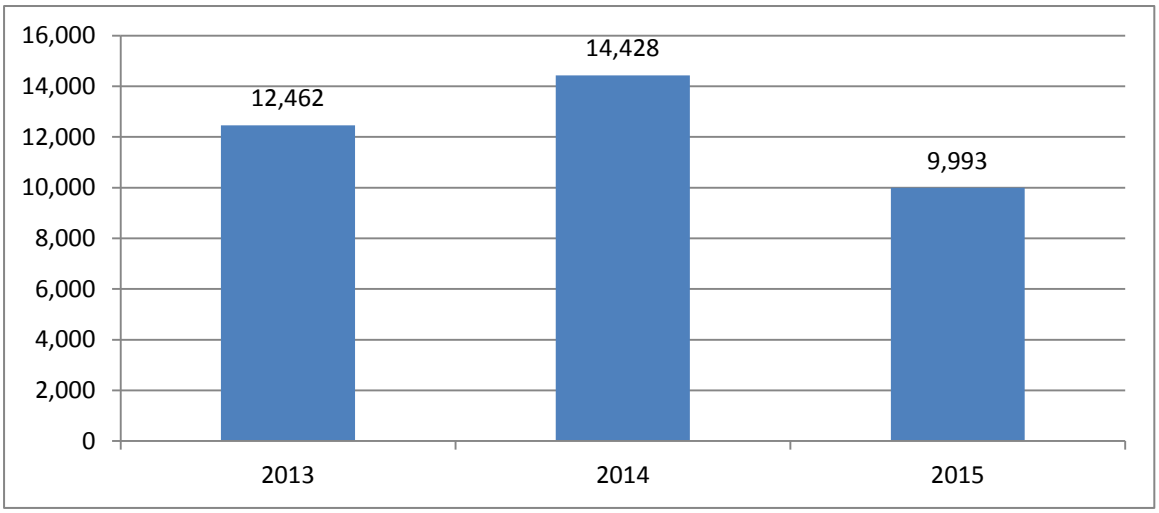


Source: Survey

3.3.12 Production Costs

The average all-in cost per ton of nickel declined in 2015, compared to 2014 as shown below.

Figure 82: Total Cost (US$) / ton



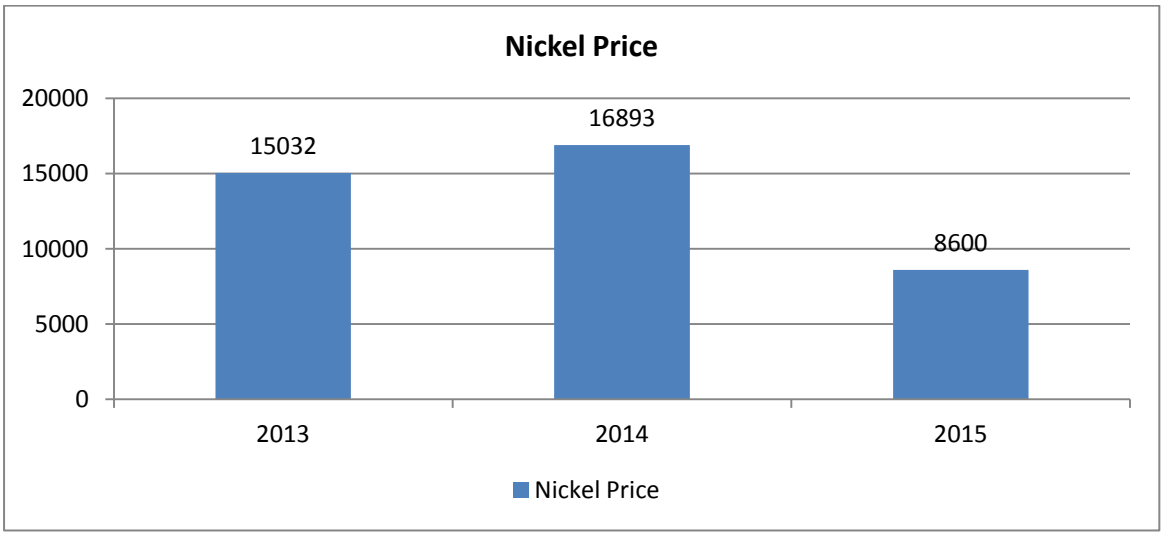
Source: Survey

The decline in costs was attributed to labour rationalisation (planned retrenchments) as well as competitive procurement

3.3.13 Nickel Price

Nickel price fell by 51% from US$16 893/ ton in 2015, to US$8 600/ ton in 2015.

Figure 83: Nickel Price

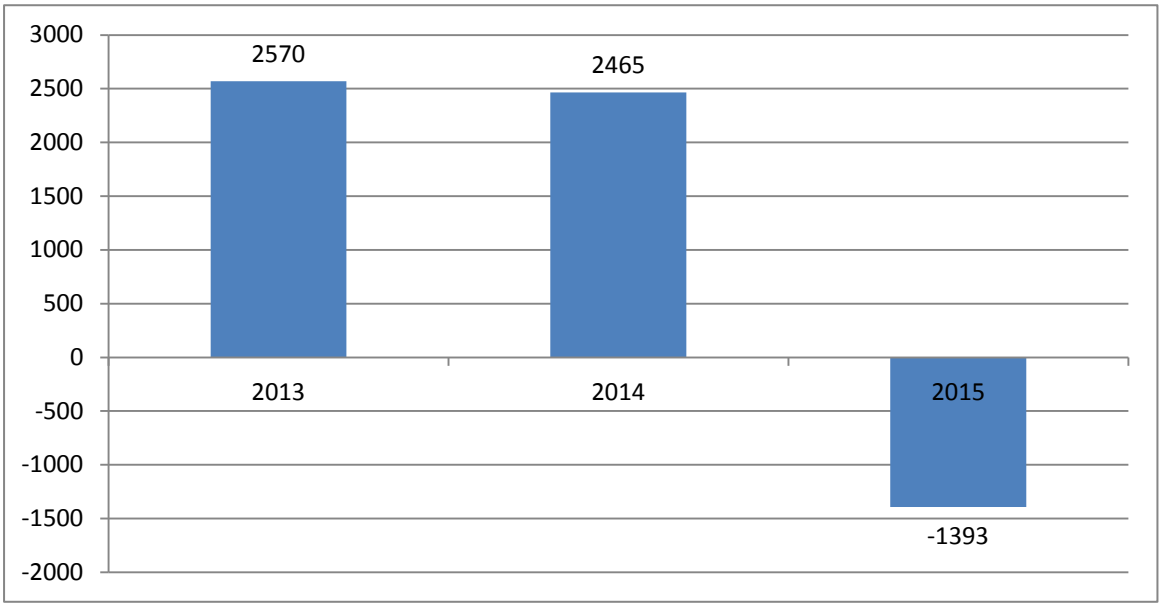


Source: Kitco

3.3.14 Profitability in Nickel

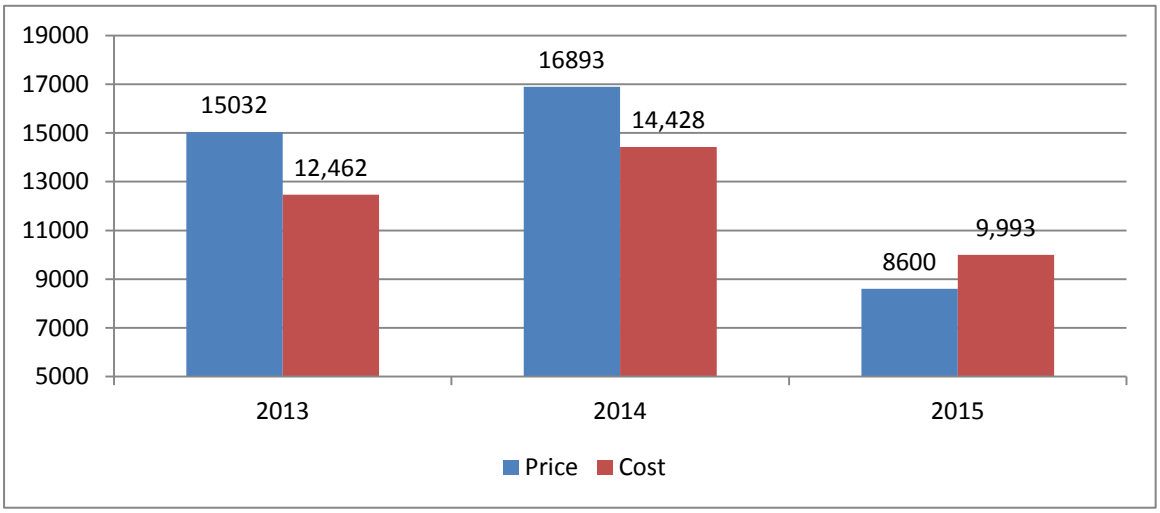
The nickel sector is estimated to have drifted into loss territory in 2015 as shown below.

Figure 84: Profit (loss) / ton (US$)



Source: Survey

Figure 85: Nickel Price and Production Costs

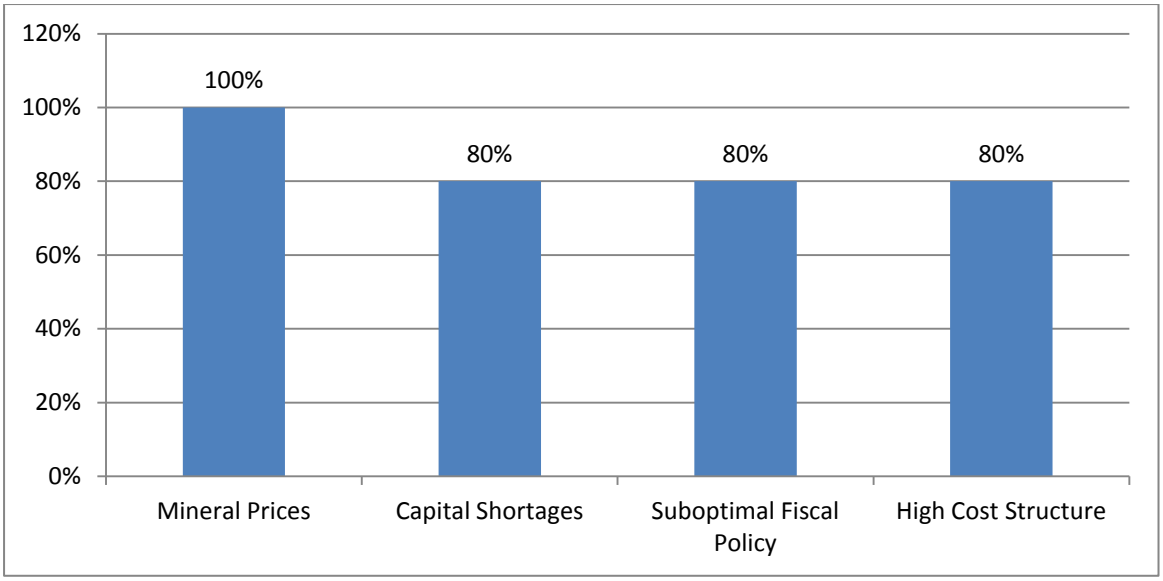


Source: Kitco, Survey

3.3.15 Challenges in the Nickel Sector

The following challenges were identified and weighted in terms of their impact on viability.

Figure 86: Challenges in the Nickel Sector



Source Survey

3.3.16 Value Addition and Beneficiation in the Nickel Industry

There are three base metal refineries for treating nickel, copper and cobalt. However, only one of the refineries, which specialises in toll processing, was in production during 2015.

The other two are expected to be commissioned during 2016 after undergoing refurbishment and upgrade. One of the base metal refineries under refurbishment and upgrade is owned and operated by Zimbabwe's largest PGM producer. There were also plans to upgrade base metals refineries outside the PGM sector to treat PGMs.

The current primary producer is in the process of refurbishing and upgrading its smelter, a project which is expected to be commissioned in 2016.

Table 20: Value addition and Beneficiation projects in nickel industry

	Description	Dates of Commissioning
Base Metal Refineries	3 BMR, 1 was functional in 2015, the other 2 being refurbished	The 2 to be commissioned in 2016
Smelter	Refurbishment and upgrading of smelter at BNC	2016

Source: Survey

3.4 Coal

3.4.1 Structure of the coal industry

The Zimbabwe coal industry is to a larger extend, made up of 2 large producers, of which only one is public-listed and the other one commenced production in 2010. There are also other small scale producers in the coal industry. One player remains under care and maintenance due to licensing challenges.

Generally two mining methods are applied in coal mining and these are: open cast; and underground mining.

3.4.2 Share of coal in mining output

As of end of 2014, coal accounted for around 5% of the value of mineral output, however, it plays a key role in the energy sector. Thus its contribution to economic activities becomes significant.

3.4.3 Coal exploration

Between 2010 and 2015, Government issued 22 Special Grants for coal and coal-bed methane (CBM) exploration. At the end of 2015, only one Special Grants was current.

Mineral exploration has only taken place in the coal sector through Special Grants since 2005 when Government stopped granting EPOs.

Vast prospects of coal-bed methane gas have also been discovered in the Hwange/Lupanebasins.The Survey also established that new exploration projects are on the cards in the coal sector.

3.4.4 Mine development projects

There is only one mine development project in the pipeline and is expected to be commissioned during the next five years.

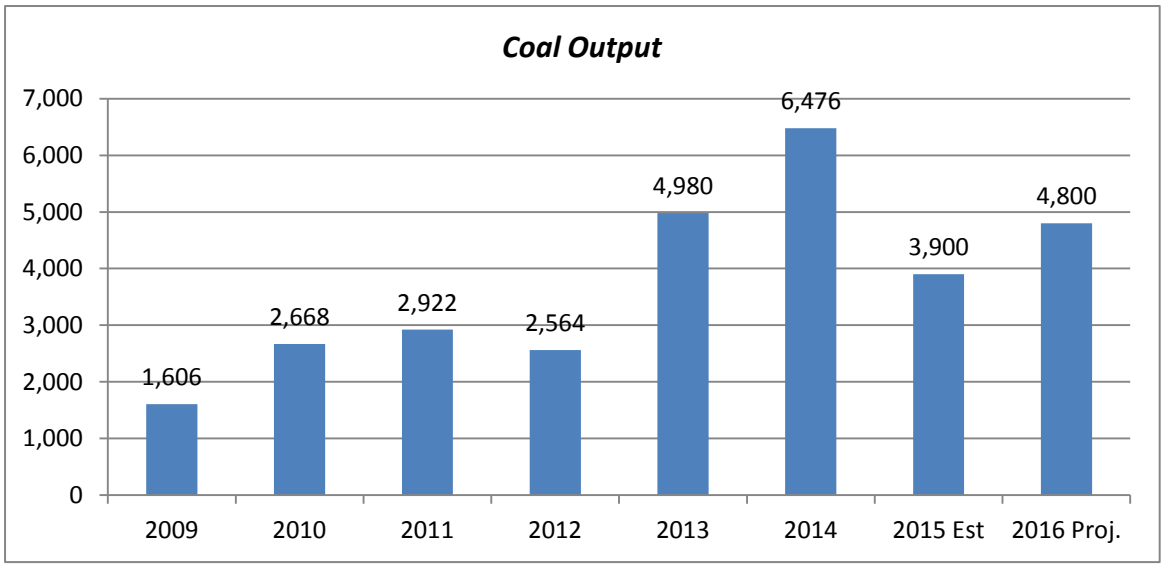
3.4.5 Expansion projects

In 2015, new equipment were commissioned at one of the largest producers with anticipated incremental output exceeding 460 000 tons per annum. Survey findings also revealed that the industry requires in excess of US$400 million to optimise production as it is still operating below desired capacity utilisation levels.

3.4.6 Coal output

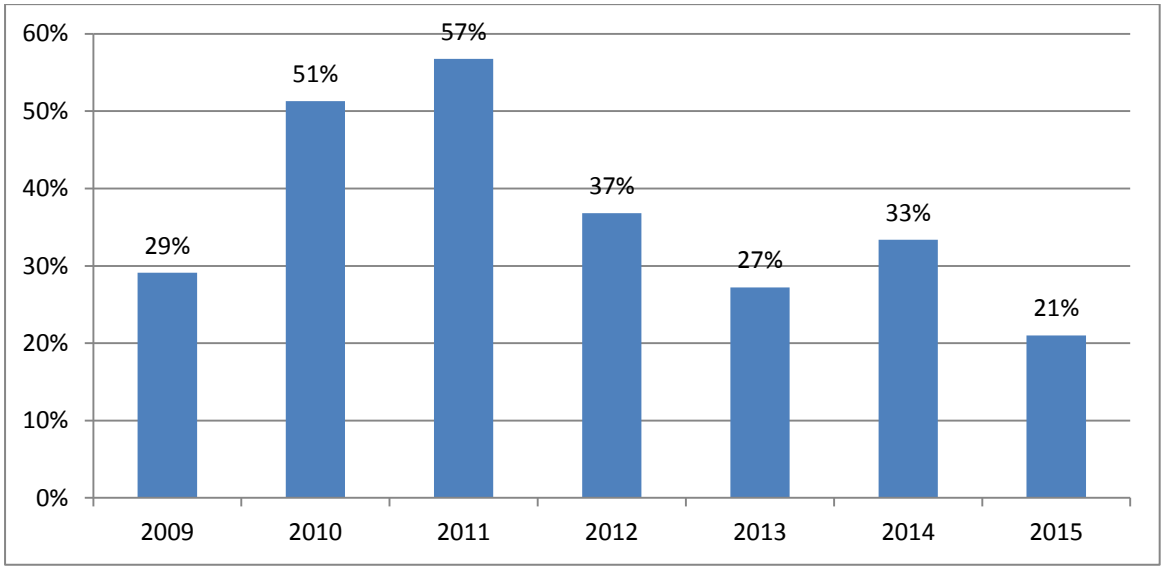
Coal output is estimated to have fallen by 39% from 6.5 million tons in 2014, to 3.9 million tons in 2015.

Figure 87: Coal Output (000 tons)



Source: Chamber of Mines, Ministry of Finance

Figure 88: Average Capacity Utilisation



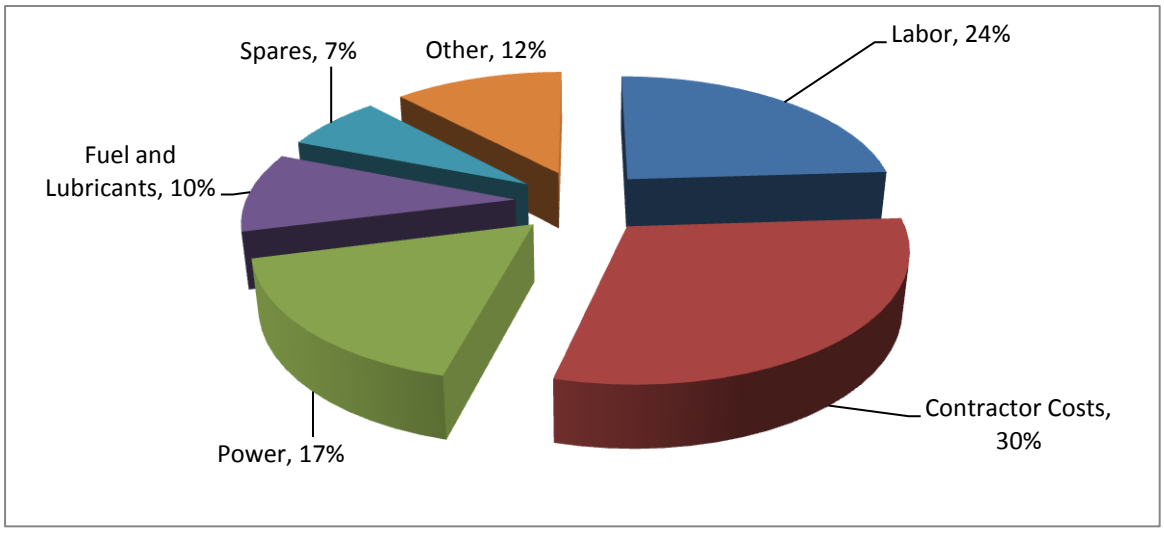
Source: Survey

Average capacity utilisation in the coal industry declined from 33% in 2014, to 21% in 2015.

3.4.7 Cost Drivers in the coal sector

Labour (24%), Contractor costs (30%) and power costs (17%) account for over 70% of production costs in the coal sector as shown below.

Figure 89: Distribution of Cost Drivers in the Coal Sector

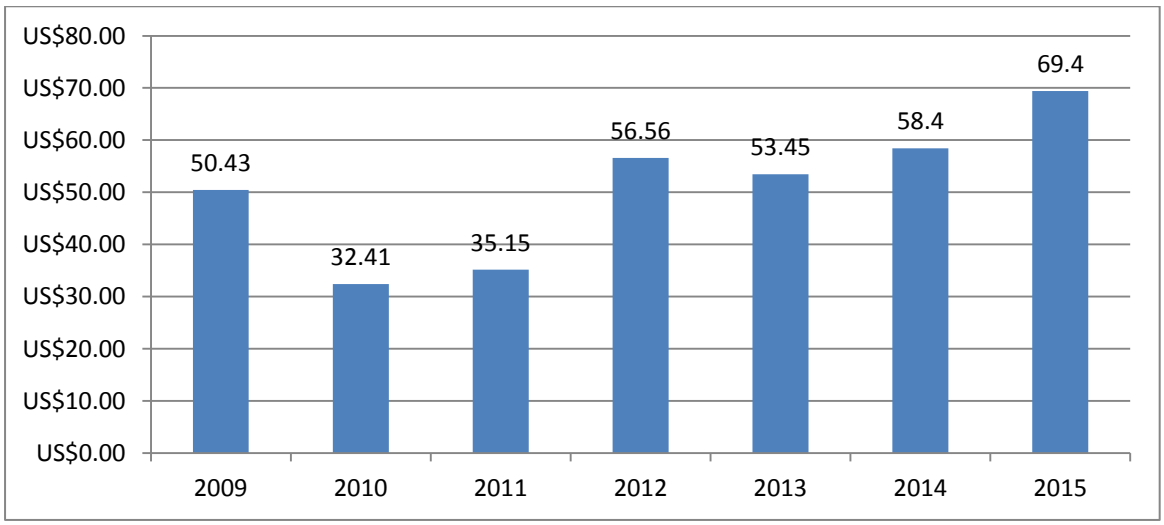


Source: Survey

3.4.8 Production costs in the coal sector

Survey findings show that production costs trended upwards since 2010, and are estimated at US$69.4/ ton by 2015, up from US$32/ ton in 2010 as shown below.

Figure 90: Average Cost/ ton

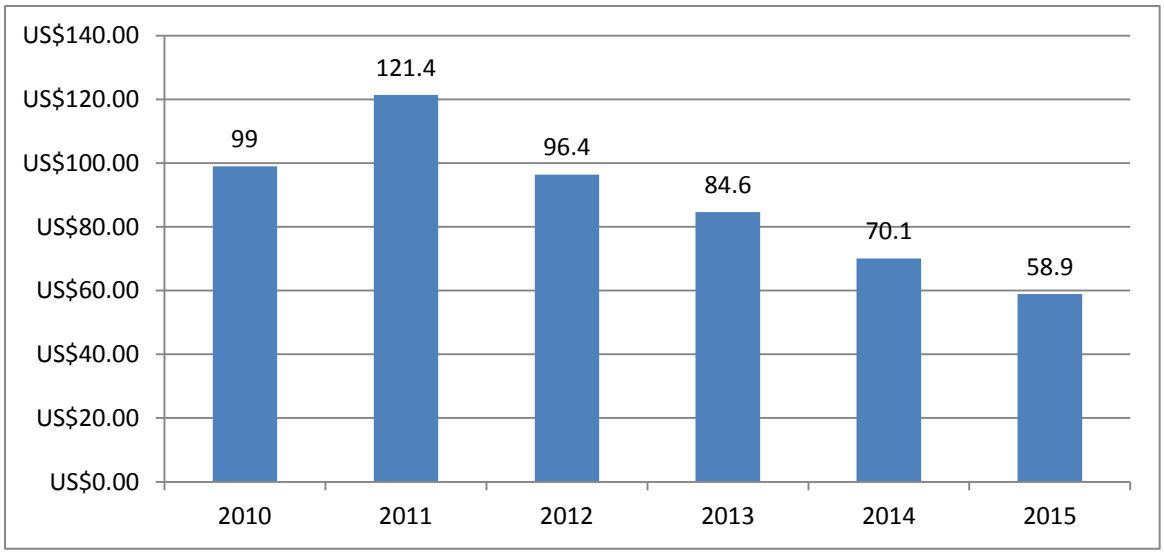


Source: Survey

3.4.9 Coal price

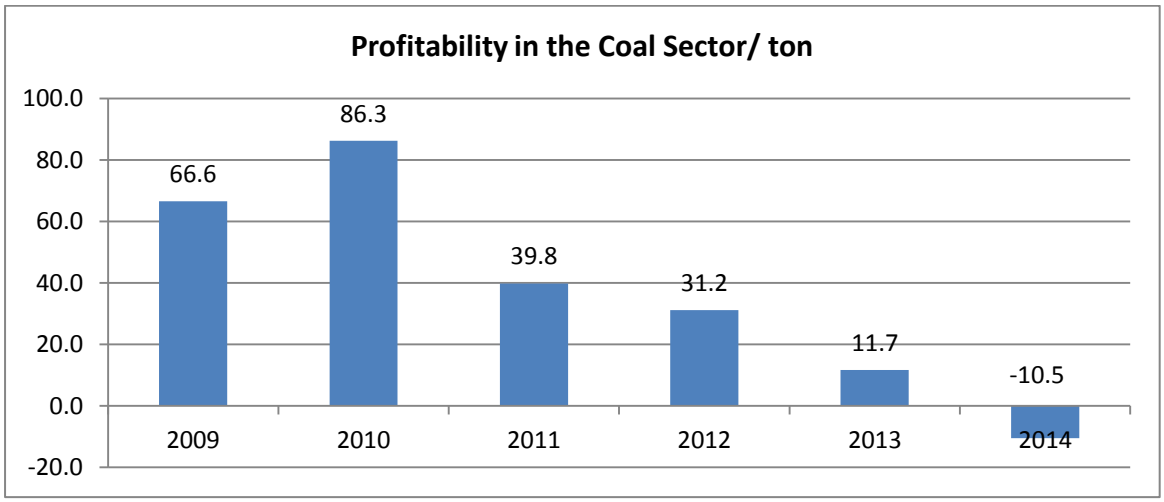
Coal prices have trended downwards since 2011 to reach a low of around US$59/ ton, from a high of US$121.4/ ton in 2011.

Figure 91: Coal price/ ton



Source: Economist Intelligence Unit

Figure 92: Profitability in the Coal Sector



Source: Survey

Profitability in the coal sector has progressively declined and in 2015, the coal sector is estimated to have incurred losses.

3.4.10 Challenges affecting the coal sector

Respondents cited the following bottlenecks and their severity in terms of impact on viability:

Figure 93: Challenges affecting the coal sector

Source: Survey

Shortage and high cost of capital

Survey findings indicate that the industry requires in excess of US$400 million for both sustenance and ramp-up in the next 5 years to optimise production. The local market has limited capacity to fund such requirements, and if the funds are available, they are overpriced with a low tenor.

Obsolete machinery and equipment

Survey results also show that some of the equipment in the coal sector has outlived its useful economic life and has led to output losses due to downtime arising from machine breakdowns and repairs. The equipment is also inefficient leading to high production costs.

High Debt burden

The coal sector is also riddled with unsustainable debt levels which have undermined the capacity of the sector to attract adequate capital inflows.

Falling capacity utilisation levels leading to high average costs

Findings from the survey point to a sustained declining trend in utilisation of installed capacity since 2011, albeit at the same level of the installed capacity.

3.4.11 Value Addition and Beneficiation in the coal sector

All the active primary producers of coal own and operate various value addition and beneficiation plants which produce a wide range of products. The coal beneficiation plants include crushing facilities; coal washing machines and coke batteries to process coal into coke.

Zimbabwe's coal industry produces thermal coal (24.5% ash) for power generation and coking coal (15% ash) used in blast furnaces as a reluctant.

Thermal coal feeds into the Hwange Power Station which has an installed generation capacity of 920 MW and three smaller coal-fired power generation plants located in Harare, Bulawayo and Munyati.

A fifth coal-fired power plant expected to generate 1 400MW on commissioning is being developed in Gokwe by one of the licensed coal producers.

3.5 Chrome sector

3.5.1 Structure of the Chrome Industry

Zimbabwe's chromium industry is made up of primary and ferrochrome producers, both large-scale and small-scale.

Primary producers

Chrome production is dominated by two large-scale producers which hold around 70% of chrome claims. The large-scale producers have integrated operations, which cut across all key segments of the chrome value chain from production, smelting to metal castings.

The second largest producer has been under judicial management since 2013. At the end of 2015, the largest operator had also applied for judicial management to fight mounting debts.

There are also a number of small-scale primary producers, both tributary producers and independent producers. Tributary producers are contracted by the top two ferrochrome operators to work their claims on their behalf and supply chrome or to their furnaces.

Independent producers flourished soon after Government opened an 18-month chrome export window in 2009.

Smelters

At the end of 2015, Zimbabwe's chromium industry comprised 12 smelters all of which were cleared to export chrome ore during 2015. Almost all smelters had suspended operations by end of 2015.

3.5.2 Exploration Activities

No Greenfield exploration projects were current in the chrome sector at the end of 2015. A special grant application by one of the producers has not been granted.

Limited exploration in Greenfields has taken place over the last 10 years although investigations continued within claims. None of the Greenfield exploration projects resulted in a discovery.

The largest chrome producer indicated that it had plans to carry out both Greenfield and on-mine exploration projects over the next five years.

3.5.3 Mine Development Activities

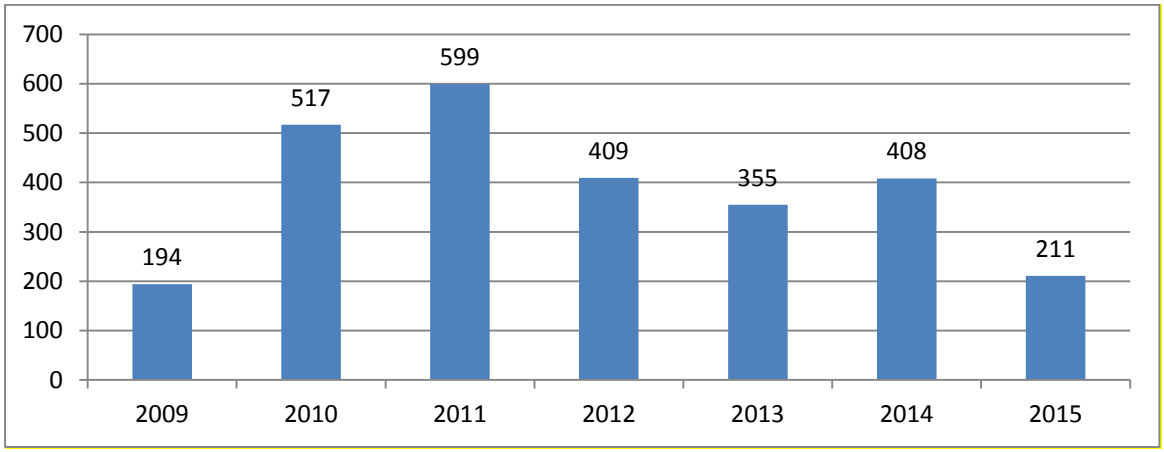
The largest primary producer reported that it developed and commissioned a new mine over the last 10 years and had plans to develop another mine. The project has been outstanding for more than five years due to capital constraints.

The Survey established that the chromium sector also developed and commissioned 10 smelters over the last 10 years.

3.5.4 Chrome Ore Output

Chrome ore output is estimated to have declined to 211 000 tons in 2015, down from 408 000 tons in 2014.

Figure 94: Chrome Ore Output (000 tons)



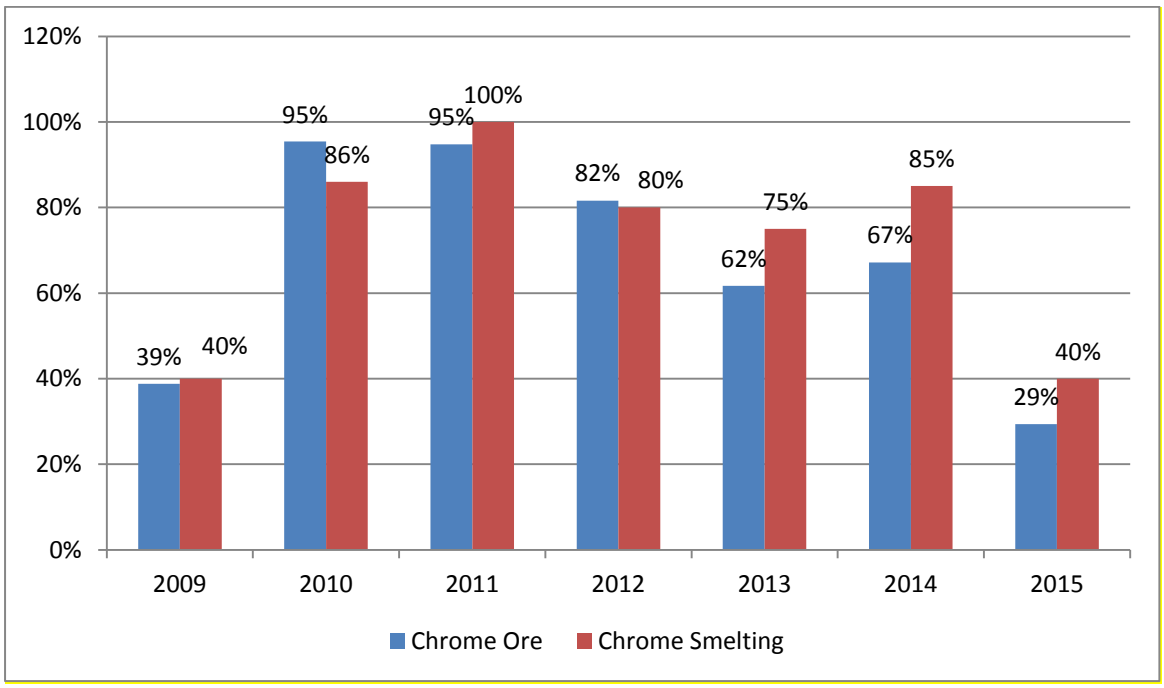
Source: Chamber of Mines

The 2016 outlook is buoyed by the lifting of the ban on chrome ore exports in mid 2015. However, respondents raised concerns pertaining to the delays in the issuance of export permits as constraining the potential of the industry.

3.5.5 Capacity Utilization

Survey findings reveal that average capacity utilisation in both chrome ore extraction and chrome smelting trended downwards since 2011 when Government imposed a ban on exportation of chrome ore. The situation was exacerbated by softening ferrochrome prices on the back of a weak demand from Global markets, particularly China, high maintenance costs and unscheduled and prolonged power outages, lack of funding for recapitalisation and financing of new projects due to cash flow challenges and inadequate exploration as a result of financial challenges caused by suppressed alloy prices.

Figure 95: Average Capacity Utilisation in the Chromium Sector



Source: Survey

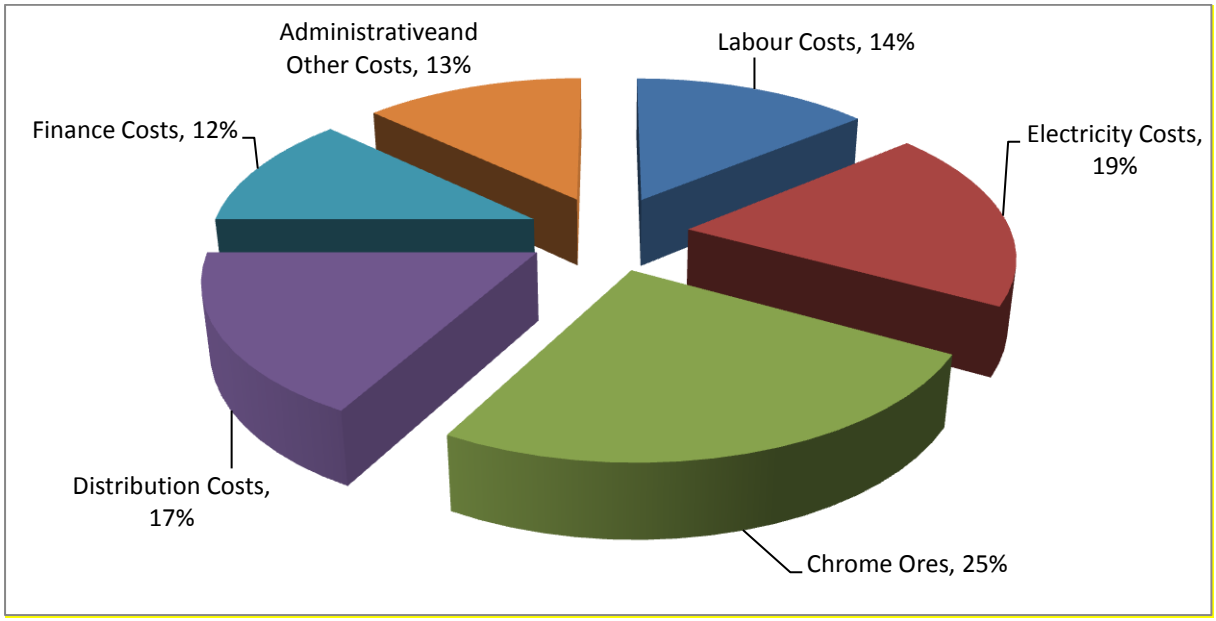
The above challenges reduced the smelting capacity of all key smelters, with others suspending operations completely. Consequently, a number of chrome mines have been placed under care and maintenance.

Respondents, however, indicated that the lifting of the ban on exportation of chrome ore may improve the cash flow situation in the industry, with positive implications on output and viability. Twelve export permits were issued in 2015 since the lifting of the ban.

3.5.6 Cost Drivers

The sectors major cost drivers were highlighted as follows:

Figure 96: Major Cost Divers in the Chrome Sector



Source: Survey

Ore mining services outsourced from contractors topped the list of major cost drivers for large-scale ferrochrome producers, followed by electricity; distribution costs and wages.

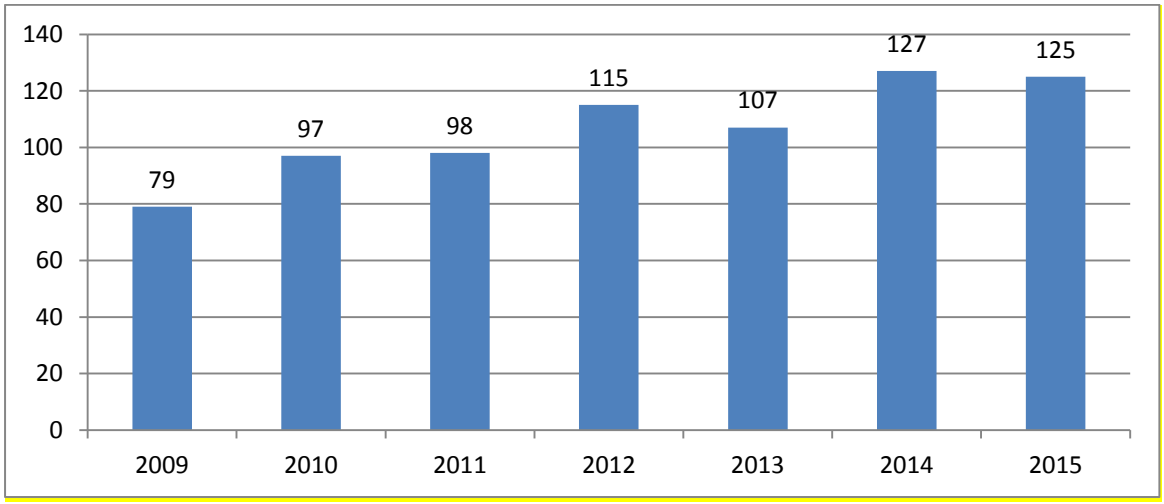
Ferrochrome producers indicated that high distribution costs were a result of three factors:

- Zimbabwe's landlocked status
- Poor and inefficient railway infrastructure
- Distance from market, particularly China.

3.5.7 Production costs

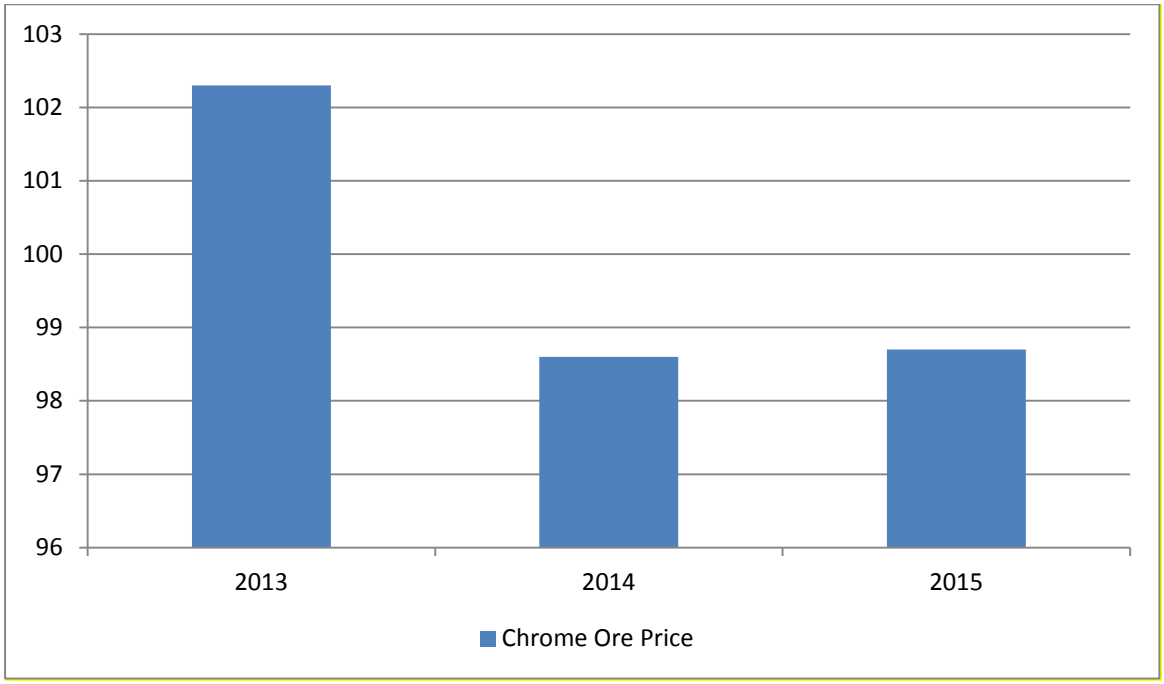
Production costs have trended upwards as shown below, compromising the viability of the industry.

Figure 97: Chrome production cost (USc/lb)



Source: Survey

Figure 98: Chrome Ore Prices

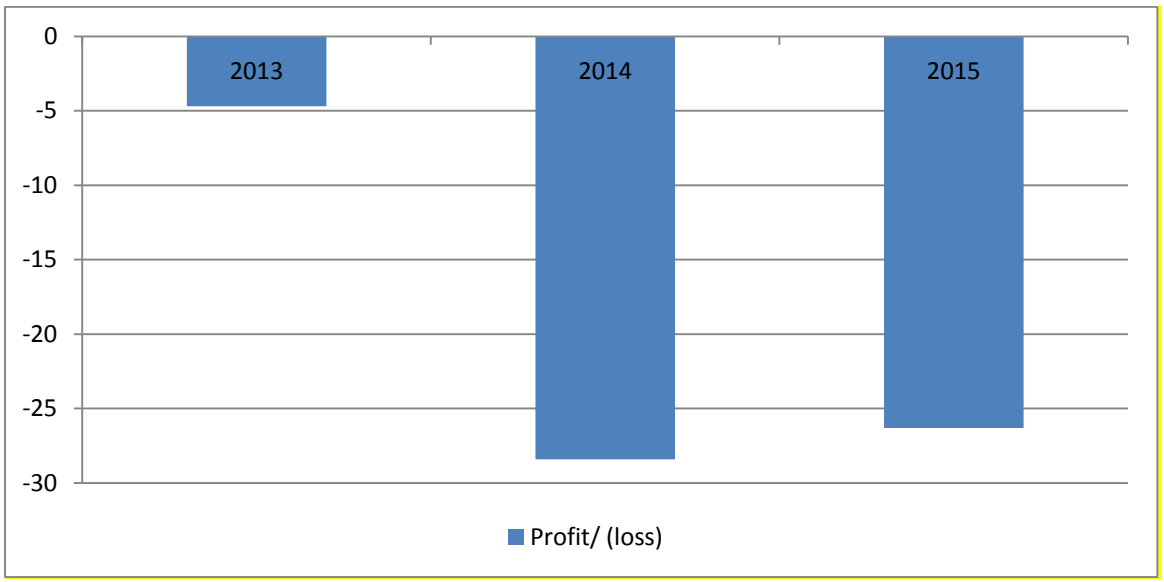


Source: Survey

3.5.8 Profitability in the Chrome Sector

Survey findings showed that the chrome sector has been making losses as shown below.

Figure 99: Profit/ (loss)/ ton



Source: Survey

The margin of losses in the sector increased in 2015 compared to 2014. The chromium industry's profit outlook for 2016 was projected as negative, in spite of plans to increase output.

3.5.9 Challenges

Respondents highlighted the following challenges as undermining their potential.

Unscheduled and prolonged power outages

Chrome smelting requires huge and uninterrupted amounts of power. Acute power shortages have resulted in significant output losses.

Obsolete equipment leading to high inefficiencies

Some of the equipment in chrome smelting is outdated and inefficient, leading to high production costs.

Capital shortages

The industry requires over US$60 million to optimize production, however, respondents indicated that they are facing difficulties in accessing capital, both from the local market and offshore.

3.5.10 Cost Containment Measures

Survey findings show that the chromium sector responded to the high cost structure by adopting the following measures:

- Negotiated salary reductions;
- Short time working for employees
- Negotiations with suppliers to reduce prices;
- Review and reduction of benefits;
- Agglomeration of fines;
- Retrenchments;
- Producing low cost ferrochrome through recovering from a slag dump; and
- Negotiation for electricity tariff reduction.

High labor costs

Labor costs have remained largely high, accounting for 14% of the total cost. The chrome industry has responded by negotiating for salary reductions, shortening working time and retrenchments. Over 1400 have been retrenched in the chromium sector since 2014.

3.5.11 Beneficiation and Value Addition

Zimbabwe's chromium industry has 12 smelters and other treatment plants for the production of High Carbon Ferrochrome, Low Carbon Ferrochrome and Ferrosilicon Chrome. The industry produces metallurgical raw materials and products as well as a wide range of equipment.

The first smelter was commissioned in 1962, 58 years after formal production commenced. One of the big smelters is currently on care and maintenance. The industry developed and commissioned 10 small smelters over the last 10 years. New beneficiation projects are also

in the pipeline, some of which are already under development. Capital bottlenecks have held up some of the outstanding new beneficiation projects.

4 The Policy Brief

The policy brief responds to the key findings of the State of the Mining Industry Survey and accordingly must be read in conjunction with the main report.

4.1 Introduction

This policy brief responds to the key findings of the State of the Mining Industry Survey and accordingly must be read in conjunction with the main report. The main objective of this brief is to inform policy on strategic issues emanating from the Survey. The Brief is also meant to stimulate debate among key stakeholders on relevant matters that promote growth, development and sustainability of the mining industry.

4.2 Mining Sector Perception on Policy Environment

Responses from key stakeholders reveal the mining industry policy as predominantly uncompetitive, unpredictable, uncertain and inconsistent. All respondents indicated that the mining policy environment is uncompetitive and unpredictable, while 83% of respondents viewed the policy environment as inconsistent and uncertain, respectively.

Table 21: Mining Sector's Perceptions on Policy Environment

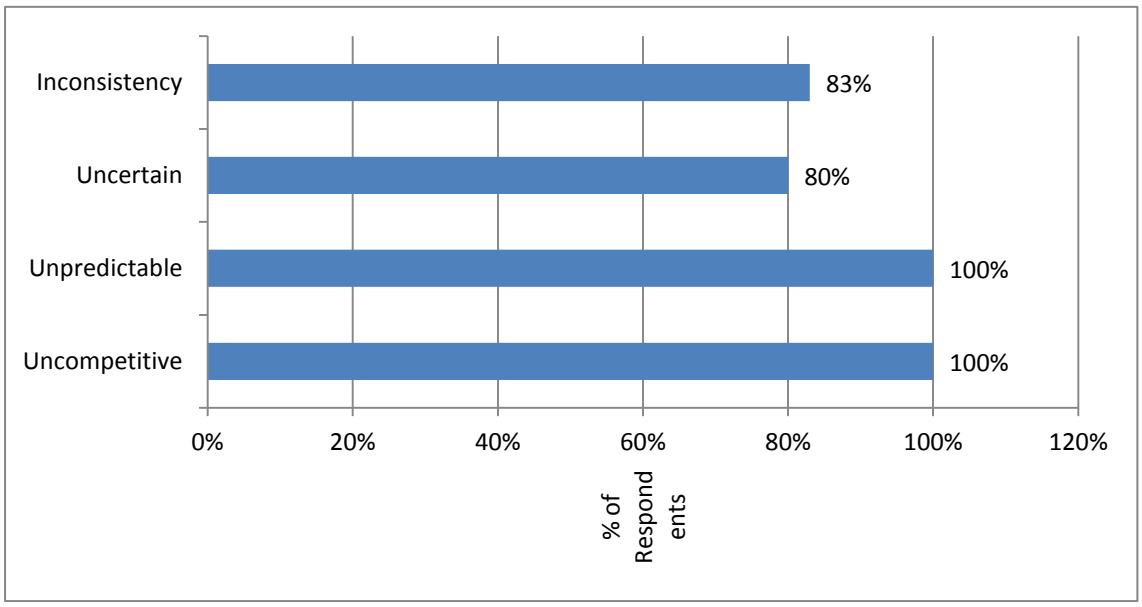
Policy environment		**% of Respondents**
competitiveness	Competitive	0%
	Uncompetitive	100%
predictability	Predictable	10%
	Unpredictable	90%
certainty	Certain	20%
	Uncertain	80%
consistency	Consistent	17 %
	Inconsistent	83%

Source: Survey

Notwithstanding the above concerns, all respondents acknowledged Government effort towards reviving the mining sector and the economy at large, notably the Doing Business Reforms that Government initiated in 2015.

The Survey findings also show that the mining industry is agreeable to the principle that guides key policies such as the beneficiation and indigenisation policies. Concerns, however, were raised pertaining to the timing as well as implementation modalities of the policies.

Figure 100: Perception on policy environment

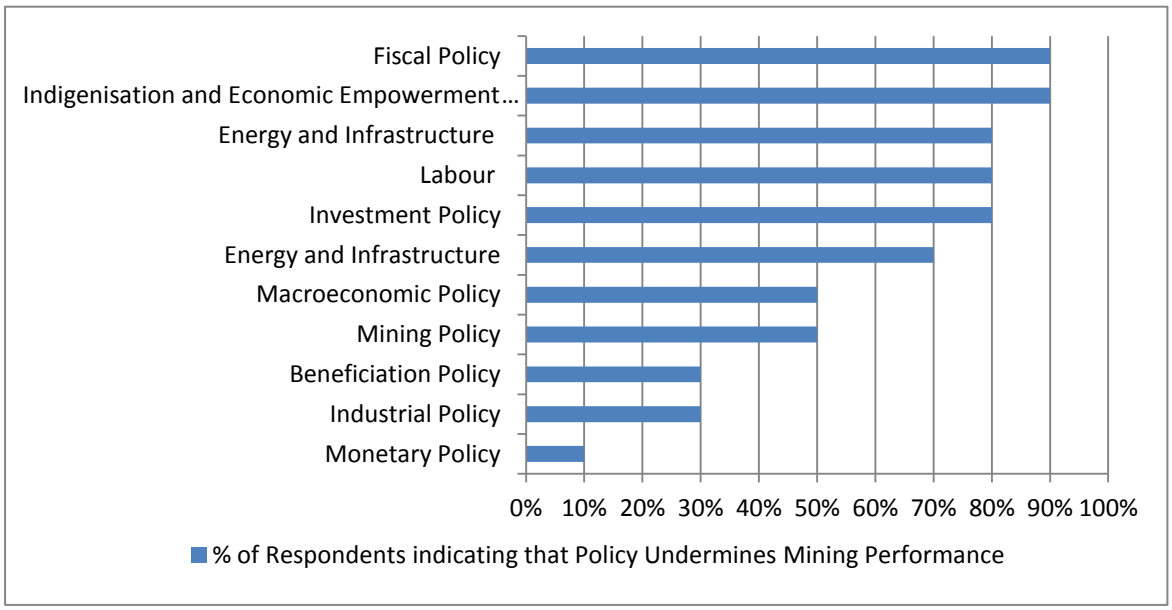


Source: Survey

Issues by Policy Category

Respondents identified the following major policies that influence mining sector performance.

Figure 101: Policy issues in the mining sector



Source: Survey

The majority of respondents indicated that policies relating to Fiscal issues (90%), Indigenization (90%), Energy and Infrastructure (80%), Labor (80%) and Investment (80%) are undermining the performance of the mining sector.

4.3 Fiscal Policy

Notwithstanding lots of concern of fiscal issues, most respondents acknowledged some few favourable components relating to mining and these include the following:

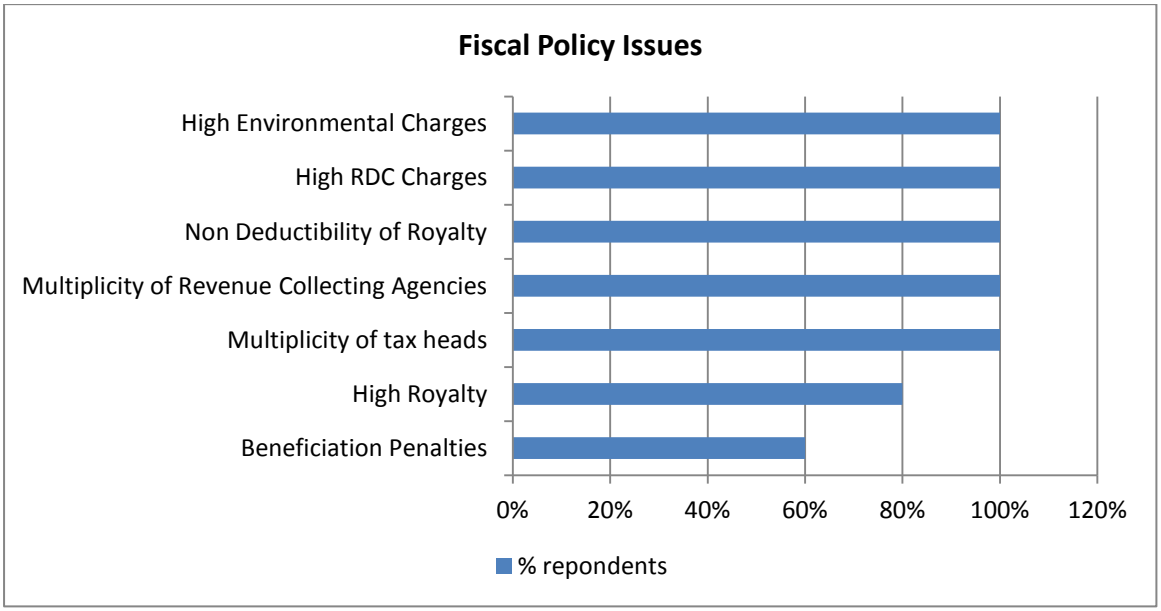
- All capital expenditure incurred exclusively for mining operations is deductible at a rate of 100%;
- Mining companies enjoy indefinite carry forward of their tax losses;
- Investments of more than US$100 Million qualify for Special Mining Lease, which allows investors to negotiate for favourable concessions; and

Current Fiscal Policy Issues Challenges

Notwithstanding the above, 90% of respondents indicated that the current fiscal regime for the mining sector is not supportive of investment, growth in output and sustainability of the industry.

The following issues were identified as key risks to the industry.

Figure 102: Fiscal policy issues



Source: Survey

Overall Fiscal Policy Recommendations

- All respondents indicated that the fiscal landscape for the mining sector must be made competitive enough to attract investment into mining. They look forward to a competitive optimal policy that balances the return on investment and tax payments to government.
- They underscored the need for review of fiscal regime that would be premised on the principle of equity and ability to pay.
- The majority of respondents (90%) were of the view that the mining fiscal policy must be aligned to other policies including the Minerals Development Policy for greater coordination of efforts across government departments. 80% underscored the need for incentives to encourage investment that maximise linkages and beneficiation of minerals are being advocated for.

All respondents concurred that resource levies should be structured to optimise revenues during times of high prices, while minimising production curtailment or stoppages during times of low prices.

Multiplicity of Tax Heads

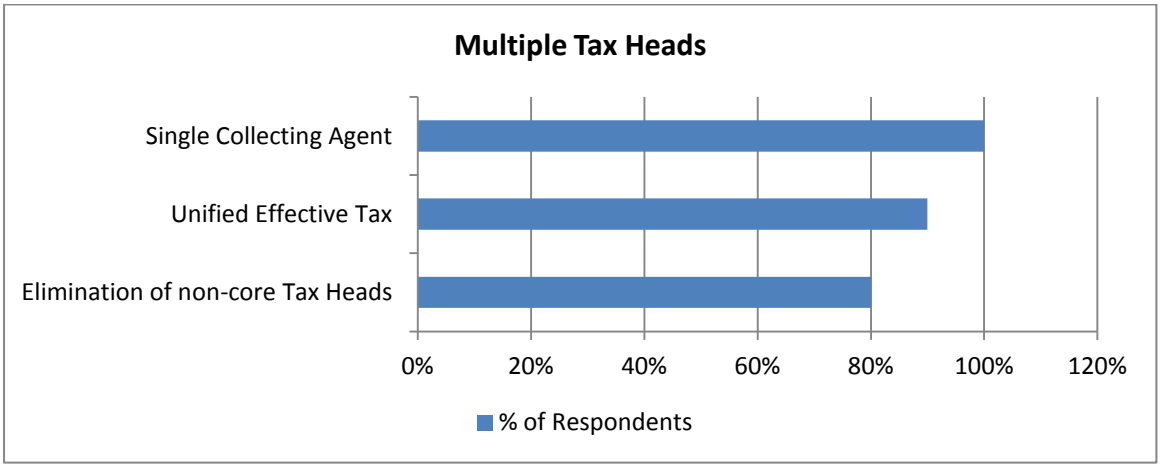
All respondents indicated that the current fiscal regime is characterised by multiple tax heads and revenue collecting agencies, with the cumulative effective tax perceived to be high. The mining sector is currently faced with more than 15 taxes as outlined below.

Table 22: Tax Heads

- Royalties;
- Corporate income tax;
- VAT;
- Customs duty;
- PAYE;
- Marketing Commissions (MMCZ);
- Capital gains tax;
- Local authority charges;
- EMA and environmental charges;
- Licence fees/registration fees among other charges;
- Presumptive tax on small scale miners;
- Additional profit tax;
- Standards Development levy;
- Radiation Protection Levy; and
- Engineering Council Levy.

Recommendations

Figure 103: Multiple tax heads



Source: Survey

All the respondents noted that these multiple tax heads complicate administration of tax compliance. Accordingly, 90% of the respondents recommended the streamlining of these tax heads into a unified effective tax. 90% of respondents recommended that there should be a centralised and single revenue collecting agent in order to simply administration of tax payments and compliance.

High Royalty Rates

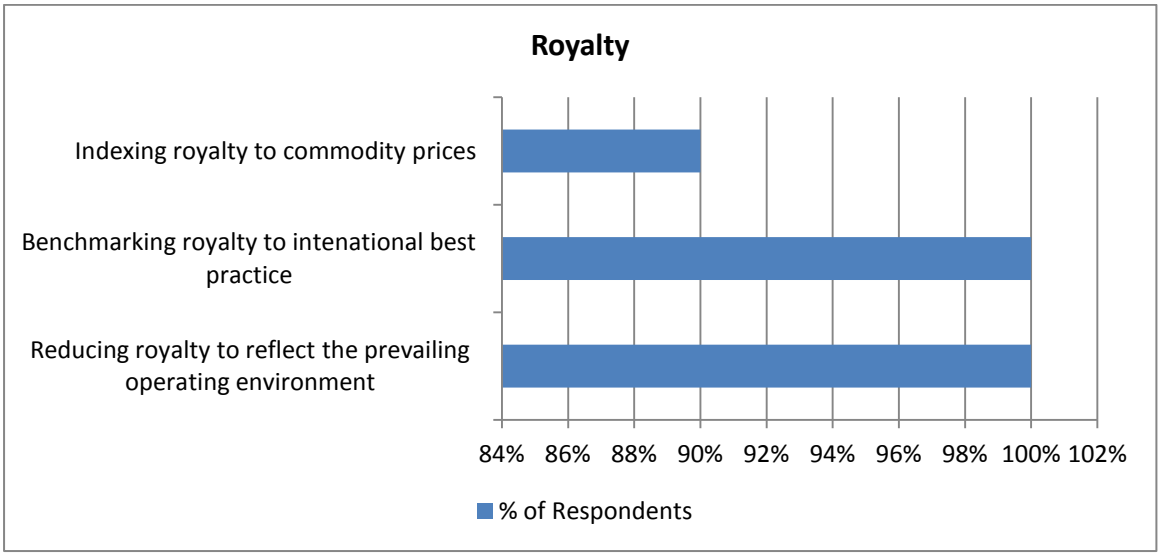
80% of respondents indicated that the current royalty regime is relatively high and uncompetitive, leading to sterilisation of resources.

Recommendations

80% of respondents recommended that the country's royalties should be reduced to reflect the industry's peculiar circumstances (grades, cost structure, ability to pay and overall fiscal landscape)

All respondents suggested that royalty should be benchmarked and aligned tothose prevailing in competing mining jurisdictions, while 70% of respondents advocated for the royalty to be indexed to commodity prices to promote viability.

Figure 104: Royalty



Source: Survey

Non-deductibility of royalties

All respondents raised concerns on the non-deductibility of royalty as a tax expense and argued that royalty has become a direct expense and is compromising viability.

Recommendation

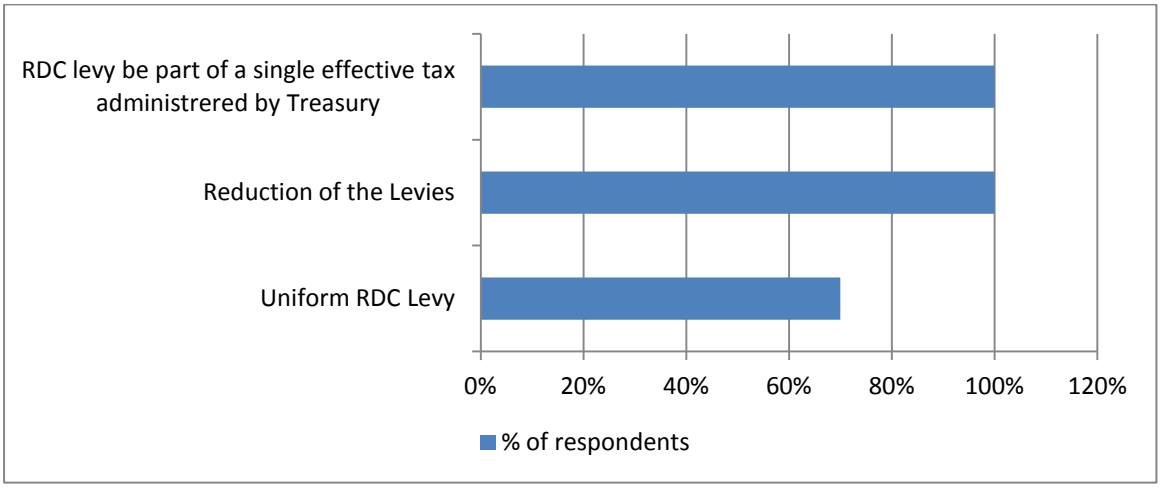
All respondents recommended that the royalty should be deductible as a tax expense as is the best practice and in other countries.

High Rural District Councils charges

All respondents indicated that Rural District Councils (RDCs) charges are set at unaffordable levels increasing the fiscal burden to the mining industry. All respondents raised concerns on the decentralization of powers, to set these charges, to RDCs and their determination based on individual RDC budgetary requirements.

Recommendations

Figure 105: RDC levy



Source: Survey

All respondents recommended that RDC levy be part of a broader mining sector effective tax administered through Treasury which would distribute the collections to RDCs. In addition, all respondents were of the view that the levies should be reduced and be based on the ability to pay and must be determined in the context of all the other taxes, fees and charges that are applied to the mining industry.

70% of respondents recommended that uniform RDC levies should be applied across the entire mining industry.

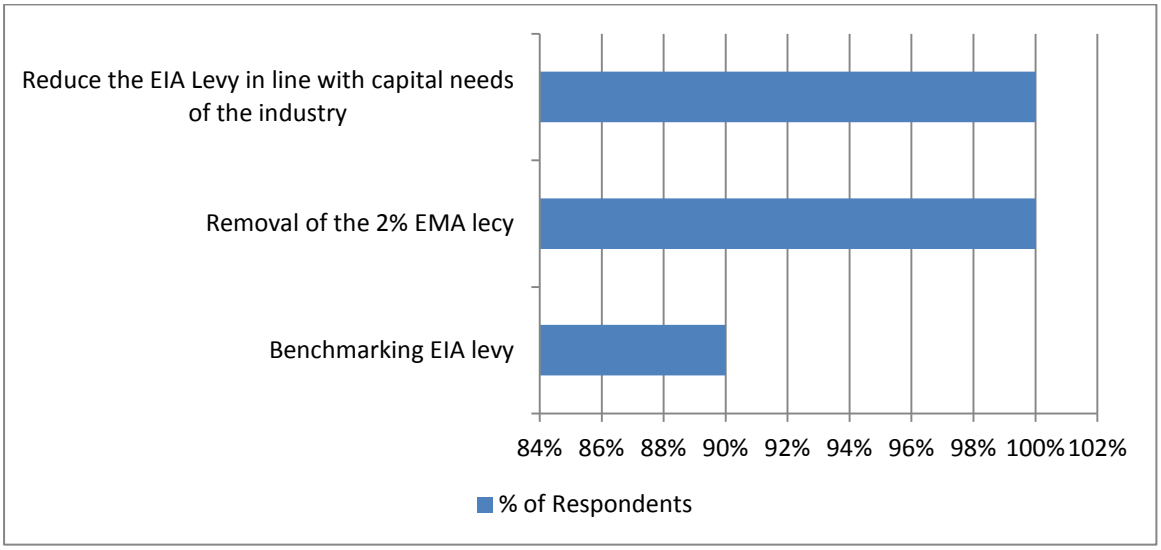
Environmental Management Levies

All respondents indicated that the fee for exploiting the environment at 2% of the gross revenue is extremely high and undermining the balance between sustainability and viability of mining projects.

In addition, all respondents concurred that the Environmental Impact Assessment fees at US$210 or 1.2% of the cost of the project whichever is higher is a huge barrier to investment. The cap of US$2 million set out in the 2016 National Budget statement is considered high compared to other countries with South Africa having an upper cap of ZAR10 000.

Recommendations

Figure 106: Environmental Management Levies



Source: Survey

All respondents recommended the reduction in EIA levy as it has become a hindrance to FDI inflows in the sector in view of the capital requirements of the industry, while 70% of respondents advocated for the benchmarking of the EIA levy to international best practices.

Beneficiation Tax

60% of respondents indicated that mineral beneficiation levies are largely mistimed and have had adverse impact on viability of their mining projects as they result in cash flow challenges.

Recommendations

Respondents recommended that the application of beneficiation levies should be appropriately timed to avoid cash flow challenges arising from its application.

Other respondents advocated for beneficiation incentives, instead of beneficiation penalties, as incentives would promote rapid mineral beneficiation in the country.

4.4 Monetary policy

90% of respondents viewed the monetary policy landscape for the mining sector as relatively accommodative. The policy landscape includes the following:

- There is no restriction on the amount of foreign currency brought into Zimbabwe;
- The foreign investment equity can be in the form of cash or capital equipment;
- Investors can remit 100% of their dividends;

- On disinvestment, 100% repatriation of invested capital is allowed;
- Investors are allowed to borrow locally for working capital purposes; and
- Offshore borrowings require Reserve Bank approval and interest paid on borrowings of a debt to equity ratio of up to a maximum of 3 to 1 are tax deductible.

However, all respondents raised concerns with regards to high interest, shortages of domestic facilities and stability of the banking sector as key risks to the funding of the mining sector.

Recommendation

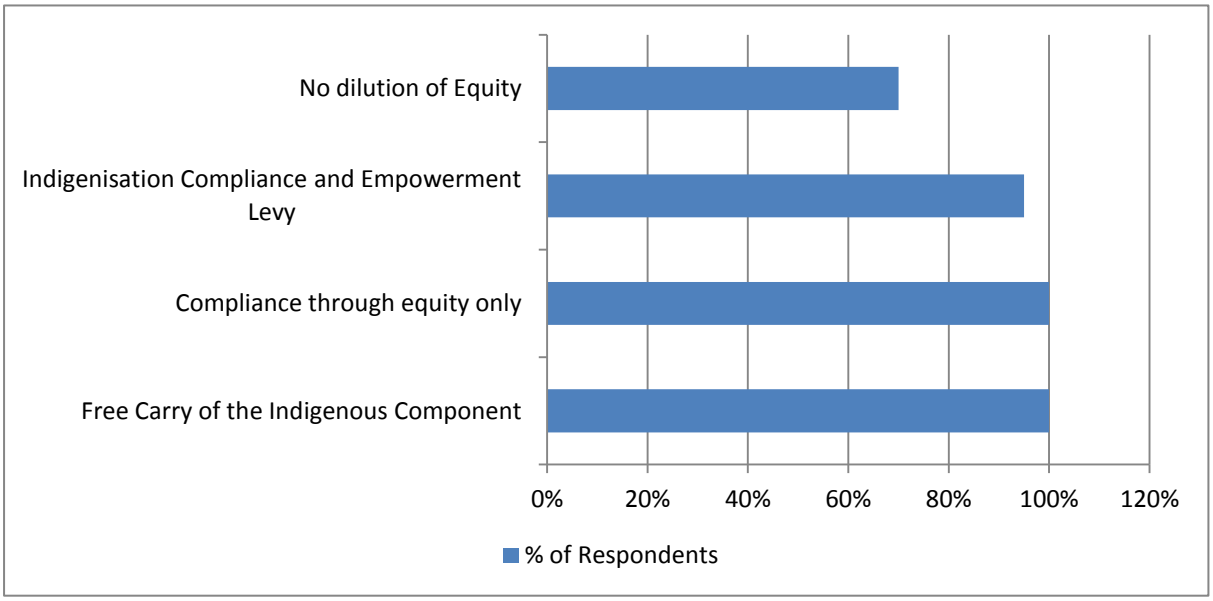
All the respondents were of the view that the mining sector should be able to access long term financing facilities from the domestic market at affordable interest rates. 90% underscored the need for a stable banking system and affordable interest rates as critical success factors in improving potential financing of the sector.

4.5 Indigenisation and Economic Empowerment

All respondents indicated that they appreciate that indigenous Zimbabweans must be allowed to participate and benefit from the country's natural resources. However, 90% of the respondents raised concerns on the timing and prescribed compliance criteria as required by the Law.

Some of the main issues raised are indicated in the diagram below:

Figure 107: Indigenisation and Economic Empowerment



Source: Survey

Free Carry of the Indigenous Component

All respondents raised displeasure on the 51% contribution of designated Government entities through resources in-situ at no monetary costs.70% indicated that they are concerned by the limitation in indigenous partners to designated entities.

Recommendations

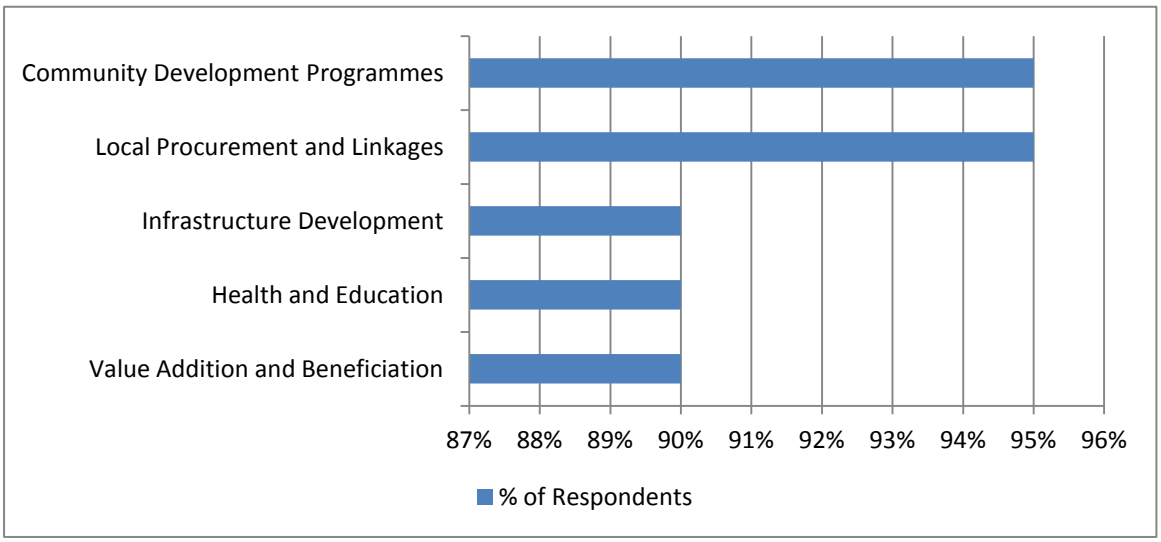
All respondents recommended that the 51% indigenous component should be paid forbased on the true value of business. Indigenous investors should not be limited to designated entities as it discriminates other potential indigenous investors from participating in mining projects.

Only compliance through equity to apply for the Resource Sector

80% of respondents queried the exclusion of the resources sector from benefitting from empowerment quotas as is the case with other sectors. They argued that mining should qualify for empowerment credits through participation in the broader socio-economic development, including beneficiation and value addition, procurement and linkages, health, educational and infrastructural development.

The survey shows that the mining industry is undertaking significant CSI initiatives which include community development projects, enhancement of capacity of local suppliers, infrastructure development, health and education projects. The table below shows the areas of focus of respondents in CSI.

Figure 108: Empowerment programmes in the mining industry



Source: Survey

No Provision for Dilution of Equity in Mining

80% of respondents raised concerns on the capacity of the local indigenous investors to exercise their rights when securing additional capital, especially given the current liquidity challenges.

Recommendation

The majority of respondents (80%) underscored the need for flexibility in the dilution of the shareholding structure in view of the capital needs of the sector and the capacity of indigenous investors to contribute towards capital injections in the sector.

Indigenisation Compliance and Empowerment Levy

All respondents view the levy as ill-timed and that the mining industry has no capacity to absorb any additional fiscal charges given that it is already overburdened by a plethora of taxes and charges.

Recommendation

All respondents recommended that the levy should be deferred, or scraped completely in view of the viability challenges currently faced by the industry as well as the capital needs of the sector.

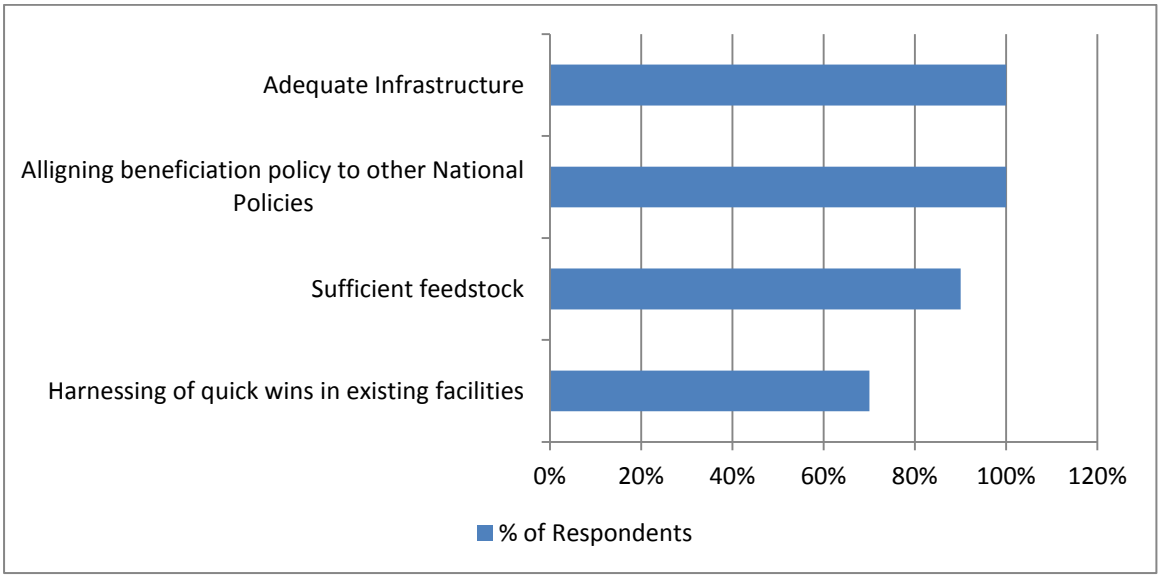
4.6 Mineral Beneficiation Policy

All respondents indicated that beneficiation and value addition is the lasting solution to inclusivity in the mainstream mining sector through downstream and upstream linkages. In this regard, all respondents recognised that there are many beneficiation opportunities across sectors the mining industry.

70% of respondents, however, expressed concerns on the proliferation of beneficiation compliance levies and export bans being applied in the sector.

Recommendations

Figure 109: Success factors in beneficiation



Source: Survey

All respondents recommended that the beneficiation policy must not be treated in isolation, thus it should be developed in the context of broader national policies such as Minerals Development Policy, Investment Policy, Industrial Policy and Infrastructure Development Policy.

60% of respondents advocated for the harnessing and maximisation of quick wins in existing beneficiation facilities such as coal, nickel, ferrochrome and iron ore, whilst planning and implementing beneficiation facilities in relatively new minerals like diamond and platinum.

90% of respondents underscored the need to invest in projects that generate sufficient feedstock that justify beneficiation facilities for the economics of the projects to be justified. The industry is also cognisant of the huge capital outlays needed to establish processing and refinery facilities. In this regard, emphasis should be put on resuscitation of closed mines as well as development of new mines as a pre-requisite for guaranteeing adequate feedstock for beneficiation.

All respondents recommended the provision of adequate infrastructure (particularly power and transport) as a key enabler to beneficiation.

4.7 Mining Policy and Legislation

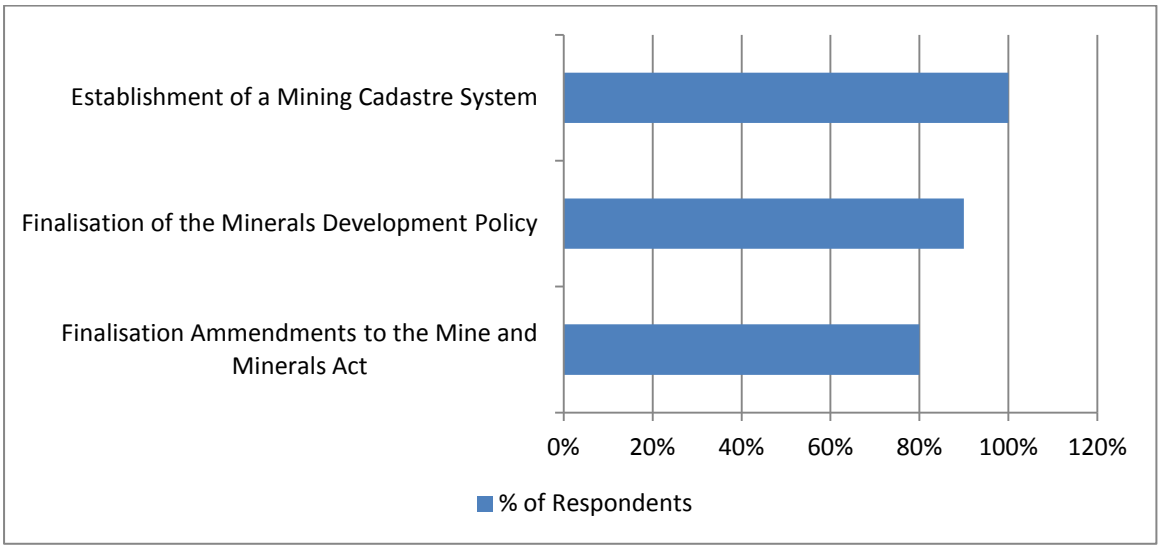
90% of respondents indicated that the current Mining Policy environment is not supportive of sustained growth and development of the sector, given the absence of a Mining Development Policy and an amended Mines and Minerals Act.

The current mining title management system is also old and characterised by overlapping claims.

Recommendations

All respondents recommended that the overall mining policy should seek to integrate the mining sector with other sectors of the economy, through maximising linkages.

Figure 110: Mining policy issues



Source: Survey

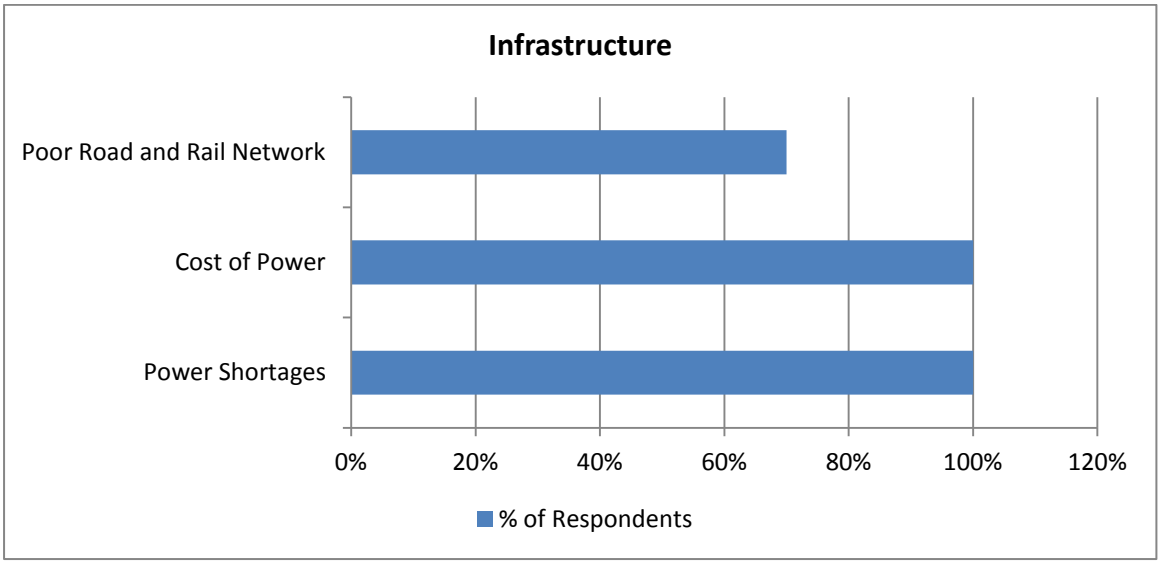
All respondents indicated that there is need for a Mining Cadastre System to manage mining titles. In addition, 90% of all respondents view the completion of Minerals Development Policy as a key outstanding issue pertaining to the development of the mining sector.

The finalisation of Amendments to the Mines and Minerals Act was also cited as key to the development of the mining industry, with 80% indicating that it is important in their overall decision making. In addition, respondents advocated for the establishment of the Mining Cadastre System to efficiently manage mining title.

4.8 Energy and Infrastructure

All respondents raised concerns over poor power, rail and road infrastructure services which continue to undermine mineral production and beneficiation efforts.

Figure 111: Infrastructure issues



Source: Survey

A majority of the respondents (100%) raised concerns on both availability and cost of power as major impediments to the growth and development of the mining sector, with 90% of the respondents listed power costs among their top five cost drivers.

All respondents rated the quality, availability and efficiency of infrastructure services as poor and undermining mining operations.

4.9 Labour

All respondents raised concerns over Zimbabwe's labour market rigidities. 90% of respondents argued that current labour laws made it too expensive to retrench even when retrenchment was the only way to save the business.

80% of respondents pointed out that NEC wage rates did not take into account economic fundamentals.

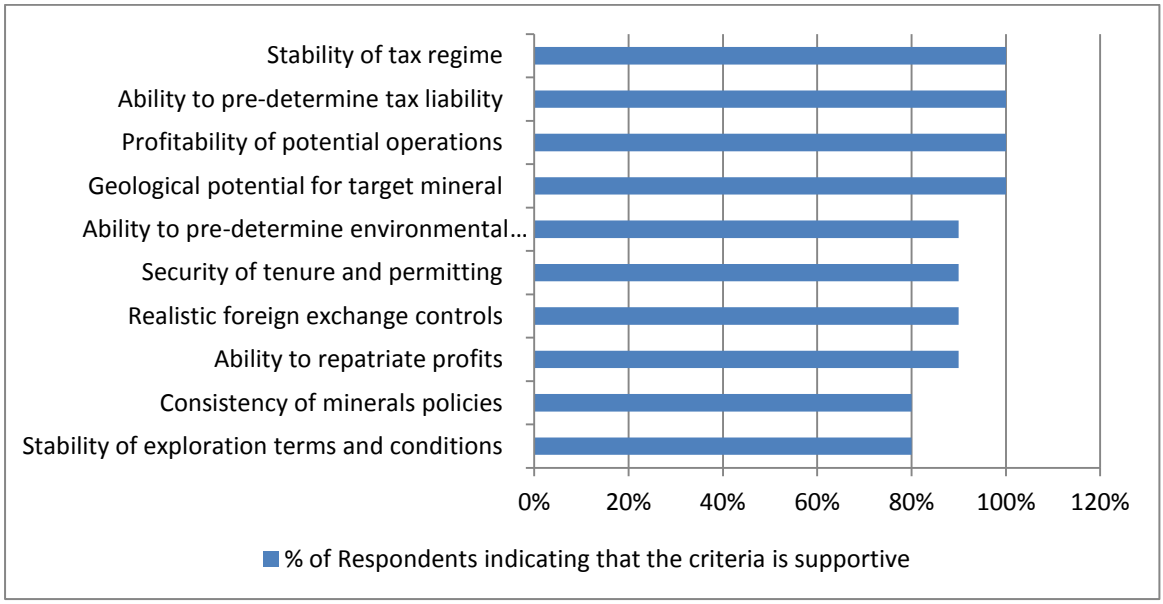
Recommendation

All respondents recommended for flexible labour laws that respond to the prevailing operating environment on the mining sector. In addition, respondents advocated for alignment of wages to the performance of the industry.

4.10 Investment Policy

Potential investors interviewed indicated the following as key attributes that affect their decisions when planning to invest in a particular mining jurisdiction.

Figure 112: Decision criteria for potential investors



Source: Survey

Major concerns were raised in fiscal, profitability and environmental management issues as key risks to investment inflows.

Recommendations

All respondents recommended the adoption of an optimal fiscal regime for the mining sector with a view to guaranteeing investment inflows in the country. 50% of respondents advocated for further clarity on the implementation of indigenisation and economic empowerment regulations.

5 Mining Business Confidence Index

The Mining Business Confidence Index gauges the level of investor confidence in the mining industry.

5.1 Introduction

The Mining Business Confidence Index measures mining business sentiments (optimism or pessimism) about the prospects of the mining industry or the economy in general.

5.2 Significance of the Index

The Mining Business Confidence Index, as *a* survey-based *qualitative measure of* economic movement, enriches and broadens the country's short-term economic indicator system which currently depends entirely on lagged economic indicators.

5.3 Measured Variables

The Survey constructed and measured a set of 12 proxy variables of business confidence given as follows:

Table 23: Measured variables

1. Economic prospects
2. Profitability prospects
3. Growth prospects
4. Market outlook
5. Access to and cost of capital
6. Employment (new hirings and layoffs)
7. Investment plans and commitments (including project development plans)
8. Mining title security
9. Investment competitiveness
10. Stability of and optimality of mining fiscal regime
11. Consistence and predictability of mining policies
12. Perception of political risk

Source: Survey

The first six variables relate to business risk. Business risk measures the probability that either performance will decline or the business will fail as a result of typical business uncertainties. The last six variables relate to political, policy and regulatory risk.

5.4 Interpretation of the index

Each response carried a score from -100 to +100 on the Likert scale, with the lowest score representing the least level of confidence and the biggest score representing the highest level of confidence.

Table 24: The Business Confidence Index Scale

Score	Significance
+100	Much more confident
+50	Slightly more confident

0	As confident
-50	Slightly less confident
-100	Much less confident

Key

+100 = percentage of much more confident responses

+50 = percentage of slightly more confident responses

0 = percentage of indifferent responses

-50 = percentage of slightly less confident responses

-100=percentage of much less confident responses

The Business Confidence Index is a value between -100 and +100. It is calculated by finding a balance between percentage of positive responses and percentage of negative responses. A positive index score shows that optimism about business performance outweighs pessimism.

5.5 Findings: Mining Business Confidence Index

The 2015 Mining Business Confidence Index (MBCI) scored **-37.86** in 2015. The index falls within the slightly less confident band, which stretches from -1 to -50. The index shows that business sentiment in the mining industry is pessimistic and the level of confidence is low.

Table 25: Mining Business Confidence Index

Confidence Indicator	Index
Economic prospects	5.1
Profitability prospects	36.4
Growth Prospects	9.1
Access to and cost of capital	(18.2)
Market Outlook	(63.6)
Employment	(9.1)
Investment plans and commitments	(23.1)
Investment competitiveness	(100)
Mining title security	9.1
Stability of mining fiscal regime	(100)
Consistence and predictability of mining policies	(100)
Perception of political risk	(100)
Business Confidence Index	**(37.86)**

Source: Survey

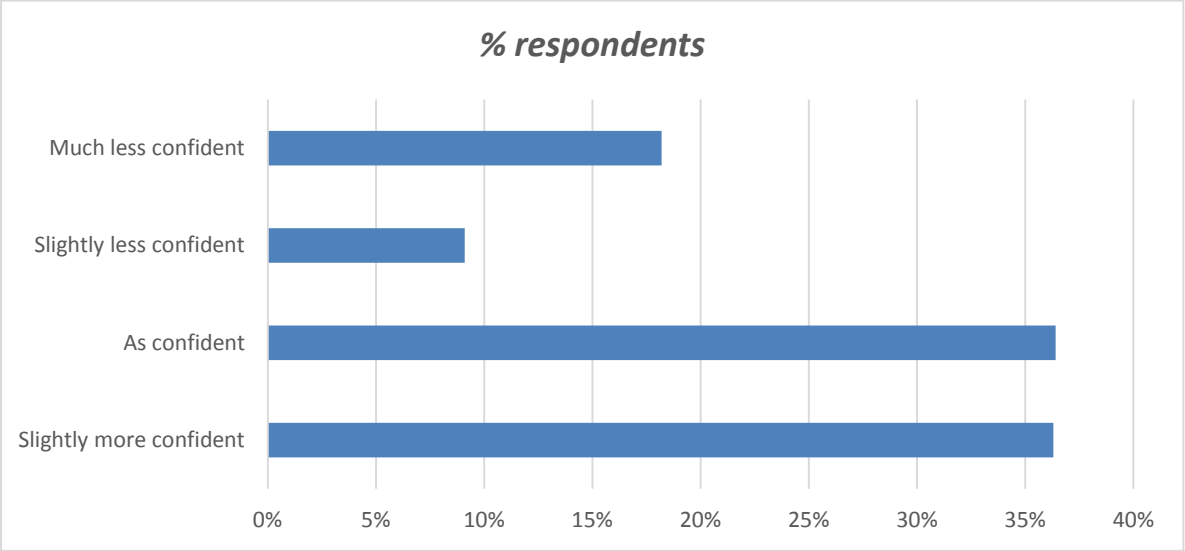
Note: 1. () denotes negatives

The average index score (-69) of political, policy and regulatory risk shows that the mining industry is more concerned with political, policy and regulatory risk than conventional business risk (-6.7).

Except for access to and cost of capital and market outlook, all the scores for business risk were positive. In contrast, all the scores for political, policy and regulatory risk were negative except mining title security. Thus, political, policy and regulatory risk contributed the biggest negative weight to the confidence index.

5.6 Analysis by Confidence Variable

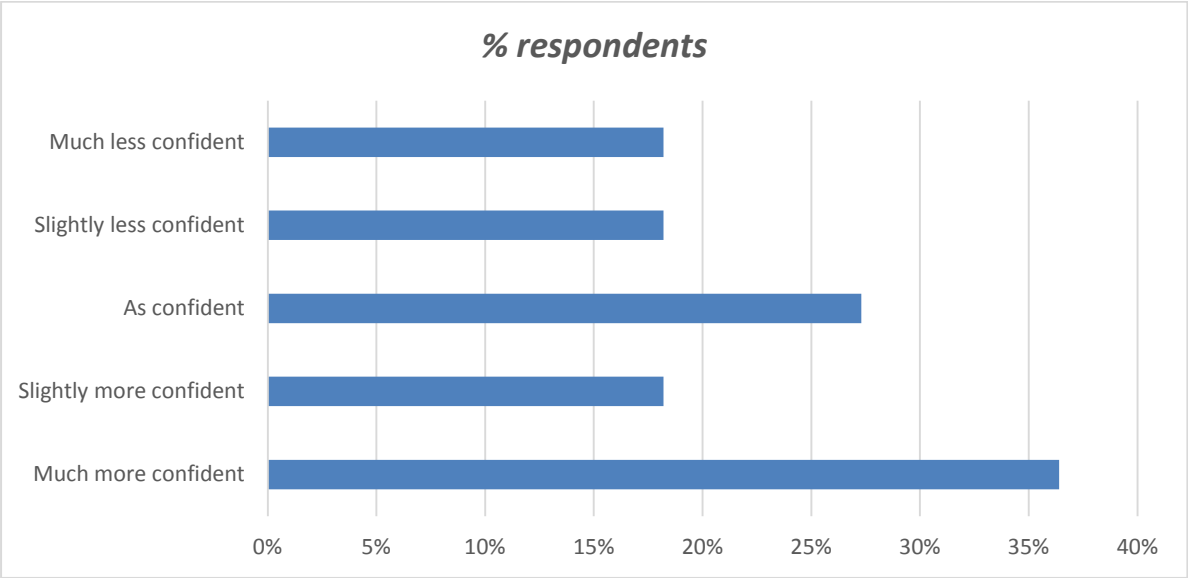
Figure 113: Economic prospects



Source: Survey

The economic prospects confidence indicator stood at +5.1, indicating an overall optimism about the economic prospects in 2016. The breakdowns of responses were as follows: 36.4% of the mining businesses are more confident of better economic prospects in 2016. 36.4% expect the economic prospects to remain about the same, while 9.1% and 18.2% of the mining businesses are less confident and not confident respectively about the economic prospects in Zimbabwe in 2016.

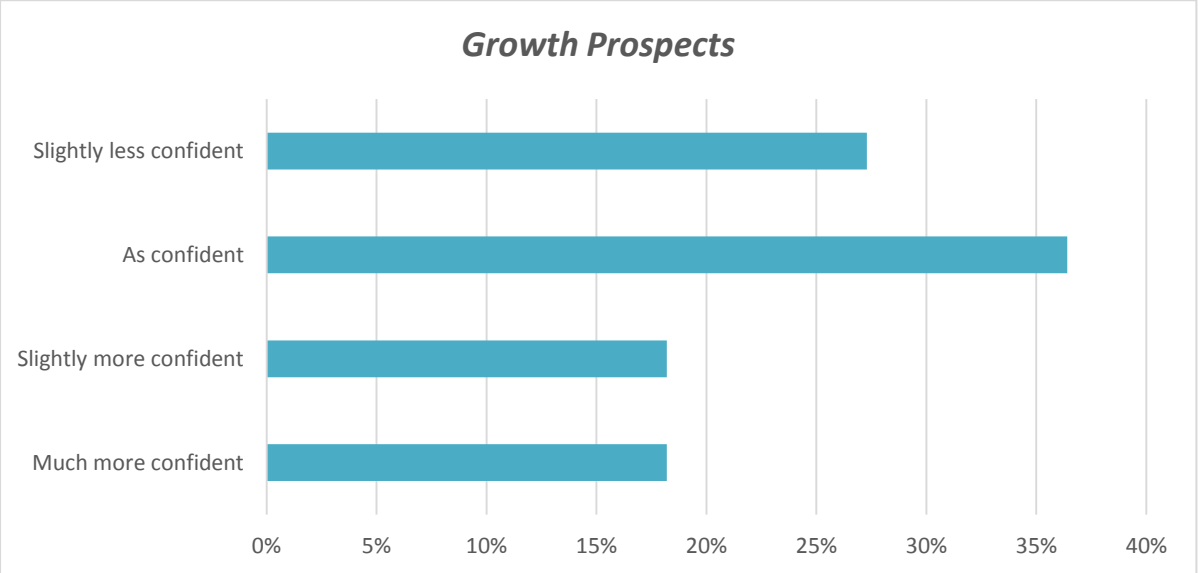
Figure 114: Profitability Prospects



Source: Survey

The profitability prospects confidence indicator stood at +36.4% indicating optimism of the mining businesses in 2016. The mining businesses are optimistic about the profitability of their businesses. Of the Survey respondents 36.4% and 18.2% are much more confident and slightly less confidence respectively that their businesses will post profits in the next 12 months. 27.3% expects the profitability prospects to be about the same. About 36.4% of the businesses were not confident about the profitability prospects of their businesses in the next 12 months.

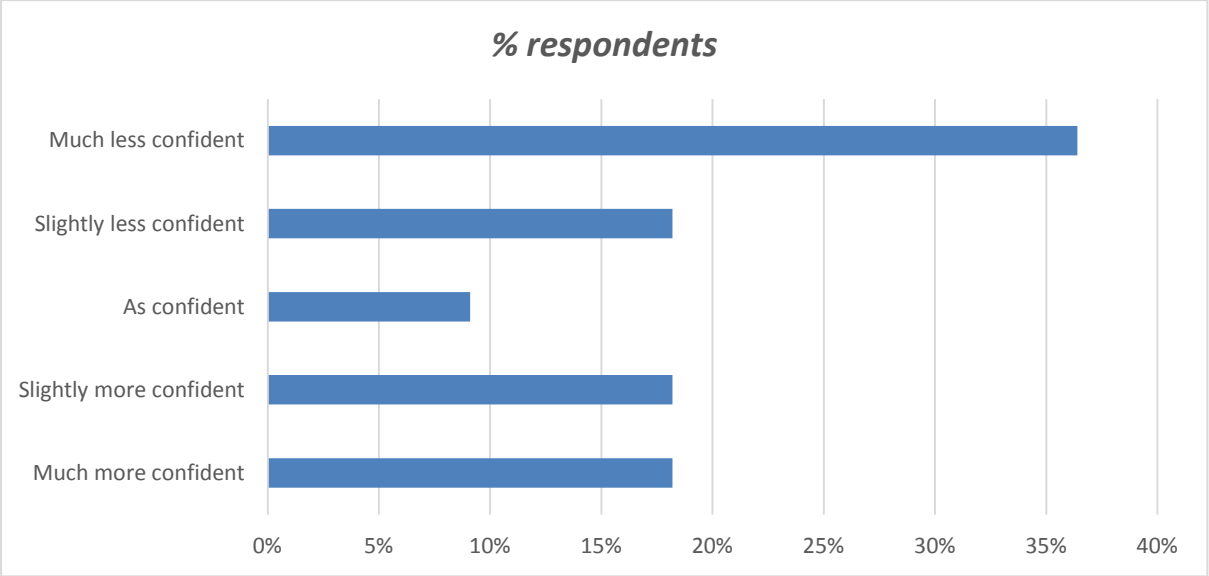
Figure 115: Growth Prospects



Source: Survey

The growth prospects in the mining industry remains positive as indicated by the confidence index score of +9.1. The results of the State of the Mining Industry Survey show that 27.3% of the mining businesses are less confident about their growth prospects in the next 12 months. 36.4% expect the growth prospects to remain about the same, while 18.2% and 18.2% of the mining businesses are more confident and absolute confident respectively about their growth prospects in the next 12 months.

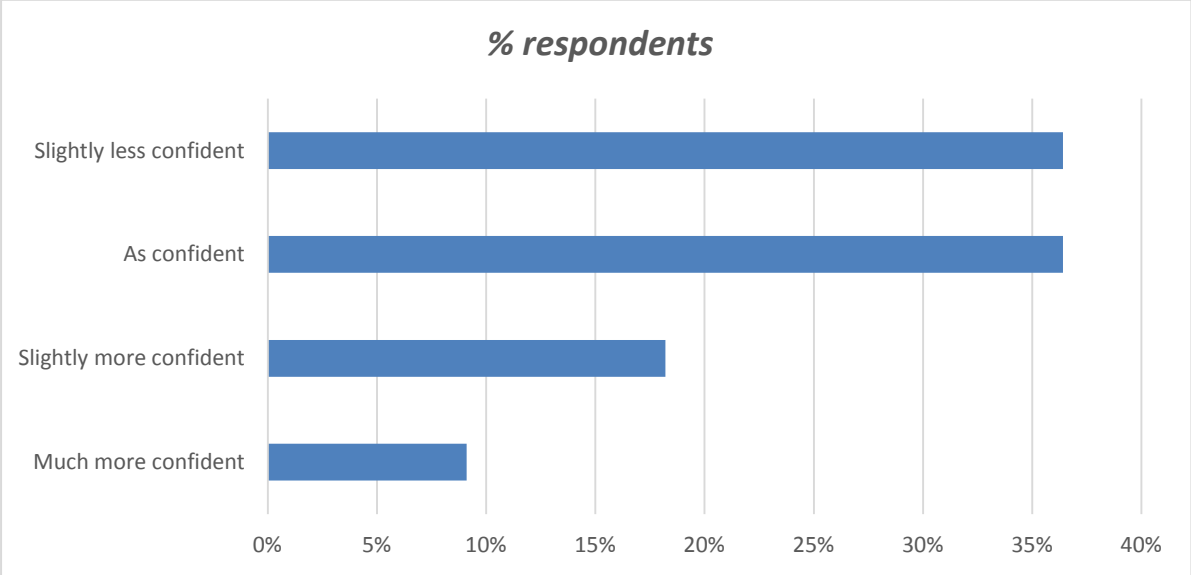
Figure 116: Access to and Cost of Capital



Source: Survey

The mining industry does not expect their capital situation to improve in 2016 as indicated by the confidence score which stood at -18.2. The results of the State of the Mining Industry Survey show that 37% of the mining businesses have no confidence that they will access capital to fund their operations and even if they do they are wary about the high finance charges that are prevailing in the market at present and are showing no signs to go down any time soon. 18.2% of Survey respondents are all the same less confident about their businesses' access to and cost of capital in the next 12 months. 9.1% expect their access to and cost of capital to remain about the same, while 18.2% and 18.2% of the mining businesses are more confident and absolute confident respectively about their businesses accessing capital at reasonable terms in 2016.

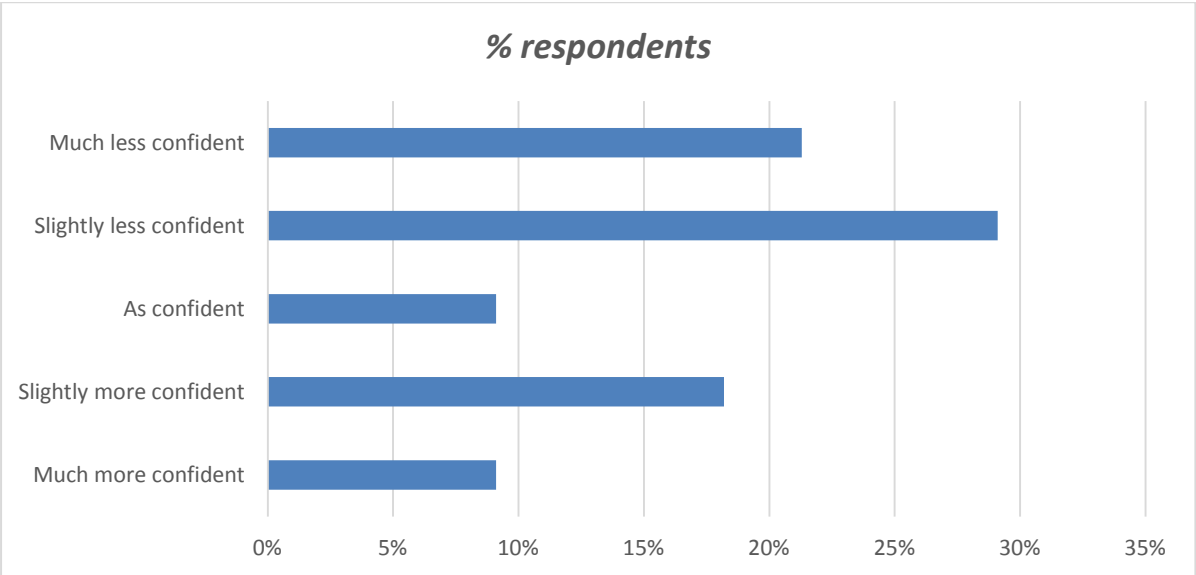
Figure 117: Employment Forecasts



Source: Survey

The mining industry is less likely to increase their head count in the next 12 months as indicated by the confidence index score of -9.1. 36.4% of the Survey respondents are less confident to increase their employees in the next 12 months. All the same 36.4% are ambivalent, they foresee employment opportunities in their sector to remain about the same. Of the Survey respondents 18% remains more confident to increase their headcount in the next 12 months. In the same vein 9.1% are absolutely confident that they will increase their employees in the next 12 months.

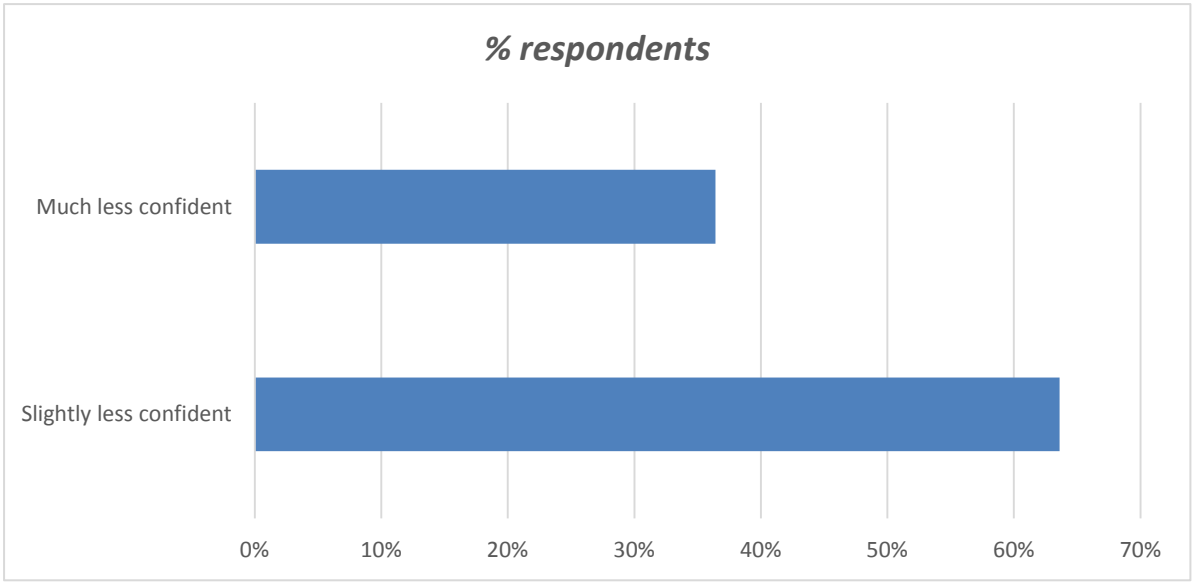
Figure 118: Investment Plans and Commitments



Source: Survey

The results of the State of the Mining Industry Survey show that 21.3% of the mining businesses are not confident to increase investment plans and commitments in 2016. All the same, about 29.1% highlighted that they are less confident to increase their investment plans and commitments in 2016. 9.1% are as confident about their plans to invest and commitments. 18.2% and 9.1% of the mining businesses are more confident and absolute confident respectively, about their investment plans and commitments in the next 12 months. The overall investment plans and commitments index score stood at -23.1.

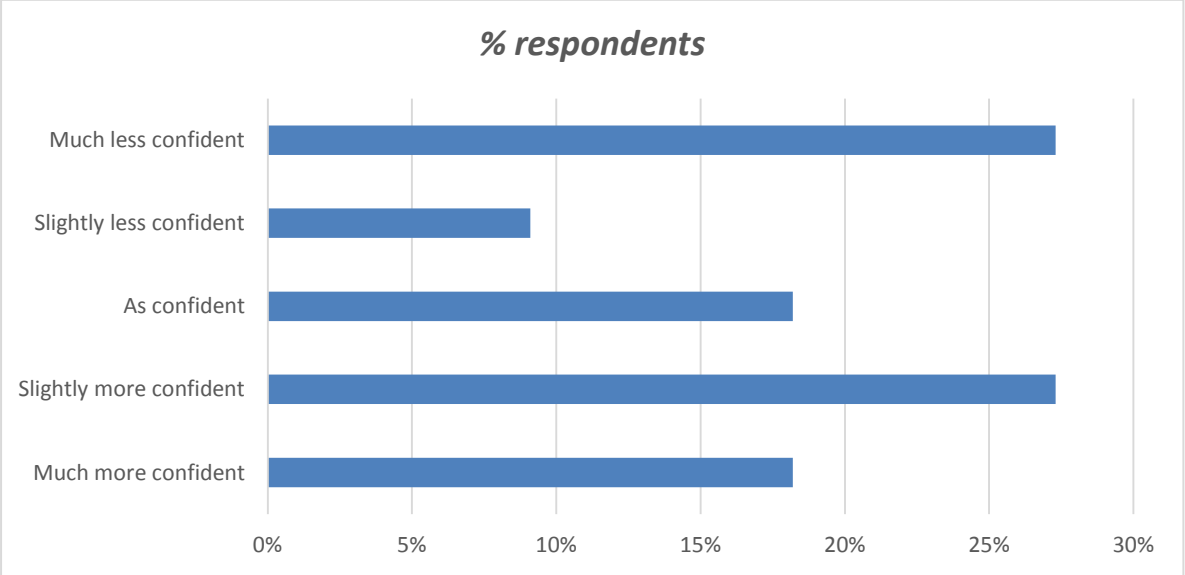
Figure 119: Investment Competitiveness



Source: Survey

The businesses expect the investment competitiveness in the Zimbabwe mining industry to remain bleak. The confidence index score for investment competitiveness stood at -100. 36.4% of the Survey respondents highlighted that they have no confidence that the investment competitiveness in the mining industry will improve in 2016. In the same vein, 63.6% are less confident about the mining industry investment competitiveness in 2016.

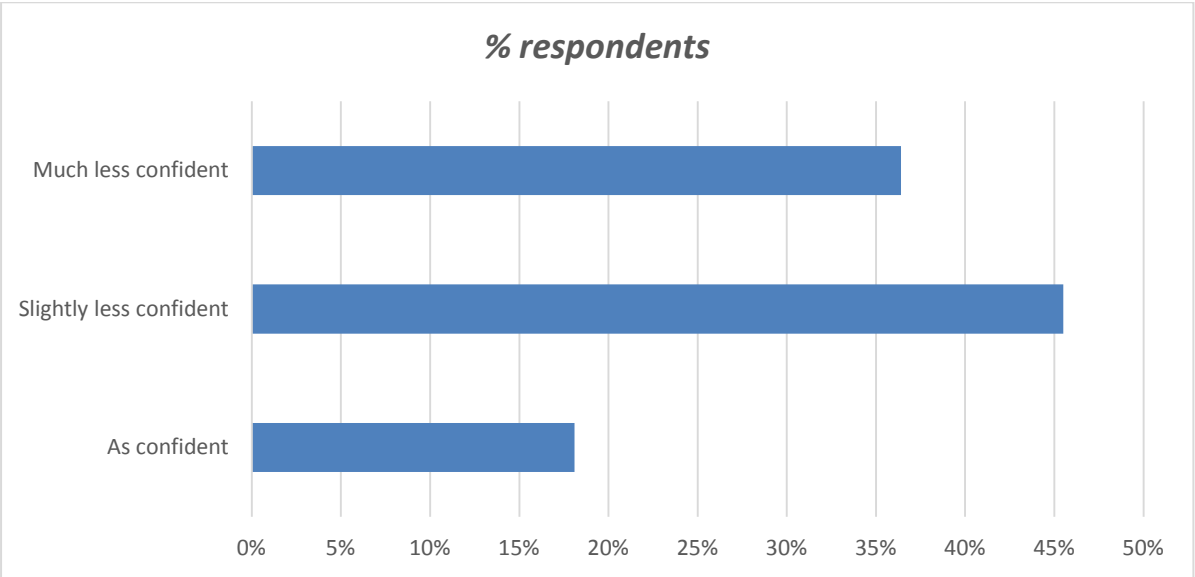
Figure 120: Mining Title Security



Source: Survey

The mining industry to a greater extent feels their concessions are secure under the current mining title regime. The confidence index score stood at +9.1. Of the Survey respondents, 27.3% and 18.2% are more confident and absolutely confident with the current mining title regime and 18.2% expect the mining title security to remain about the same. However, 9.1% feel less confident that the mining concessions are secure. In the same vein, 27.3% are not confident about the security of their mining title.

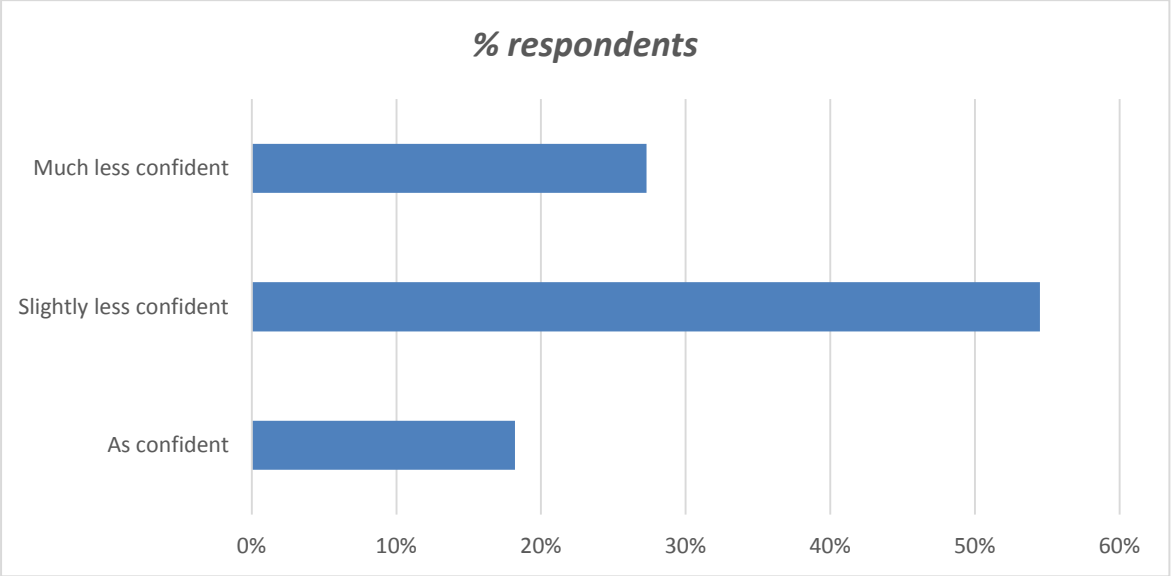
Figure 121: Stability of Mining Fiscal Regime



Source: Survey

The mining industry feels the mining fiscal regime is unstable and undermining business confidence. The confidence index score stood at -100, showing that mining businesses are pessimistic about the stability of mining fiscal regime in 2016. More than three quarters of the Survey respondents (81.9%) highlighted that they have less to no confidence in the stability of the mining fiscal regime in 2016. 18.2% indicated that they are as confident about the stability of the mining fiscal regime in 2016.

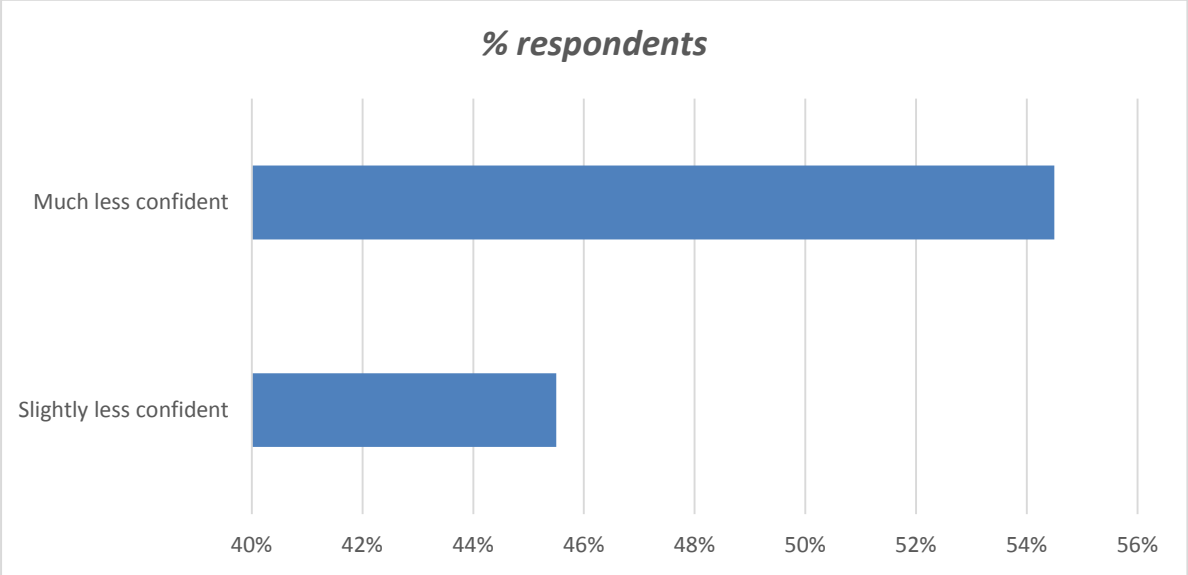
Figure 122: Consistence and Predictability of Mining Policies



Source: Survey

The mining industry is concerned with the inconsistence and unpredictability of mining policies as shown by the confidence index score of -100. Slightly over a quarter of the mining businesses surveyed indicated no confidence in the consistence and predictability of mining policies in 2016. 54.5% indicated that they are less confident about the consistence and predictability of the mining policies in 2016, while 18.2% of the mining businesses surveyed have remained as confident with the mining policies in 2016.

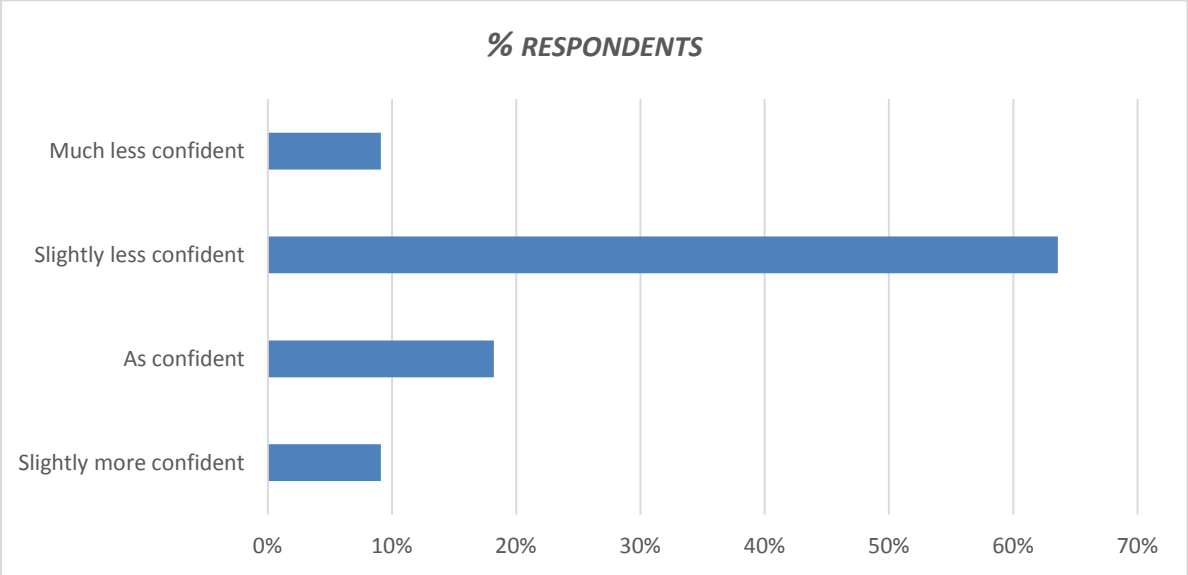
Figure 123: Perception of Political Risk



Source: Survey

Political risk is perceived the biggest risk factor in the mining industry. The confidence index score about the perception of political risk in 2016 stood at -100. The profiles of respondents were as follows: 54.6% indicated that they are not confident with the stability of the political environment in 2016. 45.5% of the surveyed mining businesses remained pessimistic about the Zimbabwe's political landscape in 2016.

Figure 124: Market Outlook



Source: Survey

The mining industry expects the 2016 market outlook to be on the downside. This is shown by the market outlook confidence index score of -63.6. More than half of the surveyed mining businesses indicated that the market outlook will remain about the same. 27.3% remained optimistic that the market outlook improves in 2016. 9.1% of the mining businesses surveyed have remained less confident to the market recovery in 2016.

5.7 Conclusion

The findings of the confidence index largely align to the findings on the policy brief.