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DEPARTMENT OF MINERAL RESOURCES AND ENERGY

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THE EXPLORATION STRATEGY FOR THE MINING INDUSTRY OF SOUTH AFRICA



**mineral resources
& energy**
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA



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GLOSSARY

CGS	Council for Geoscience
COGTA	Department of Cooperative Governance and Traditional Affairs of South Africa
CSIR	Council for Scientific and Industrial Research
DFFE	Department of Fisheries, Forestry and Environment of South Africa
DHSWS	Department of Human Settlement, Water and Sanitation of South Africa
DMRE	Department of Mineral Resources and Energy of South Africa
DSI	Department of Science and Innovation of South Africa
GDP	Gross Domestic Products
GFC	Global Financial Crisis
GHGs	Greenhouse Gases
IRP	Integrated Resource Plan
MHSA	Mine Health and Safety Act of 1996
MPRDA	Minerals and Petroleum Resources Development Act of 2002
MW	Megawatts
NEDLAC	National Economic Development and Labour Council
PGMs	Platinum Group Metals
R&D	Research and Development
SA	South Africa

STRATEGIC OVERVIEW

South Africa's endowment with a wide range of minerals as well as their mining and export has historically positioned the country as a global mining powerhouse. This has been characterised by over 130 years of mining resulting into a sizeable contribution to the GDP. Consequently, South Africa's skills and expertise have a huge footprint in a number of high performing industries in the mining value chain across the world. The mineral endowment that South Africa still has is a major driving force to the conceptualisation of this Exploration Strategy for the Mining Industry in South Africa. Evidently, with the declining gold resources, the appeal of the South African mining industry lies in the minerals of the future. This strategy is designed to take South Africa on that path to bring back its shine in line with the green economy through the deployment of clean technologies.

Currently Canada continues to be a top destination for exploration spending and globally offers unparalleled access to capital markets. However, as South Africa we should be up there with the best in attracting such foreign investments as we are innovative, have robust junior mineral exploration, clean technology, processing, and mining supply and services sectors to boost a reinvigorated mining exploration strategy.

VISION

Unveil South Africa's mineral resources potential for a sustainable mining industry that responds to the needs of South Africa and the world.

GOALS

To attract mineral exploration investment, reignite mineral development, accelerate new mineral discoveries and encourage optimal utilisation of the South African mineral resources in line with the environmental, social, and corporate governance principles for sustainable growth and propel South Africa to a competitive position against other jurisdictions of comparable mineral endowment.

1. CONTRIBUTION OF MINING TO THE NATIONAL ECONOMY

The much-recorded number of years of mining in sectors such as gold, diamond and coal, indicates that the industry remains a significant contributor to the economy in terms of employment numbers, export earnings, as well as attracting foreign direct investment. In 2020, the mining industry accounted for about 1.5 million both indirect and direct (451,427) employment.

In addition, the sector contributed 8.2% to the Gross Domestic Product (GDP), attracted over R575 billion in export earnings, contributed R 608 billion in total mineral sales, R27.2 billion in corporate taxes and R11.8 billion in royalties (Minerals Council SA, 2021¹). Over and above direct contributions, the industry is an anchor to other sectors of the economy, including agriculture, infrastructure, and energy etc.

2. STRATEGY FOCUS

The exploration strategy is drafted on the strength of South Africa being host to over 50 mineral commodities. It is anchored on three critical pillars of sustainable development, namely, economic growth, social benefits, and environmental care through good governance. It focuses on the attainment and availability of geoscience information to support exploration and development of mineral resources.

The strategy further addresses significant steps to be taken by the Government, the industry, academia, and other relevant social partners in an effort to secure a minimum of 5% share in global exploration expenditure within a period of five years. The initiatives set herein commit each partner in executing their roles and responsibilities to ensure revitalisation of the exploration sector and be endorsed by signing a social compact.

¹ Minerals Council of South Africa, 2021. Facts and figures pocketbook 2020.

2.1 ELEMENTS OF THE STRATEGY

The strategy is anchored on three rudiments

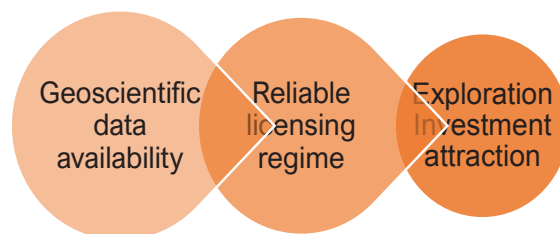


Figure 1: Elements of the strategy

2.2 OBJECTIVE

To secure a 5% share of global exploration expenditure, catalyse mineral exploration to increase mining contribution to the economy of South Africa in the next five years.

3. MINING INDUSTRY LANDSCAPE FOR EXPLORATION

3.1 STRENGTHS

3.1.1. Mineral Endowment and Publicly Available Geoscience Data

South Africa prides itself on the quality of exceptional mineral endowment. The country is host to a number of minerals such as diamonds, gold, coal, iron ore, platinum group metals (PGMs), manganese, chromium, copper, and uranium amongst others. The country's production by quantities is dominated by coal (25%), PGMs (24%), gold (16%), and iron ore (11%). This mineral wealth presents South Africa with a comparative advantage in minerals such as manganese, chromium, and vanadium amongst others. As of 2021 the Government has made the geoscience data publicly available to improve transparency and accessibility. This is a big step towards realising

the aspirations of the strategy milestone which is geared towards showcasing the country's mineral potential and supporting investment decisions.

3.1.2 Mining Experience

South Africa prides itself on more than 130 years of exploring and exploiting minerals. Since the advent of the post 1994 democratic dispensation, there has been a greater emphasis that all the minerals beneath the soil must benefit the people of South Africa as a whole. Consequently, this led to the promulgation of the Minerals and Petroleum Resources Development Act (2002) which vested all minerals beneath the soil onto the State on behalf of all South Africans. Throughout the years, the country produced both traditional and contemporary minerals needed to fuel the current and future economies, such as iron ore and chrome. In many countries across the world, such minerals contributed to urbanisation and continues to anchor their growth and development in infrastructural upliftment. To date South Africa continues to be a global player in the PGMs sector, more particularly in minimising greenhouse emissions from cars amongst others.

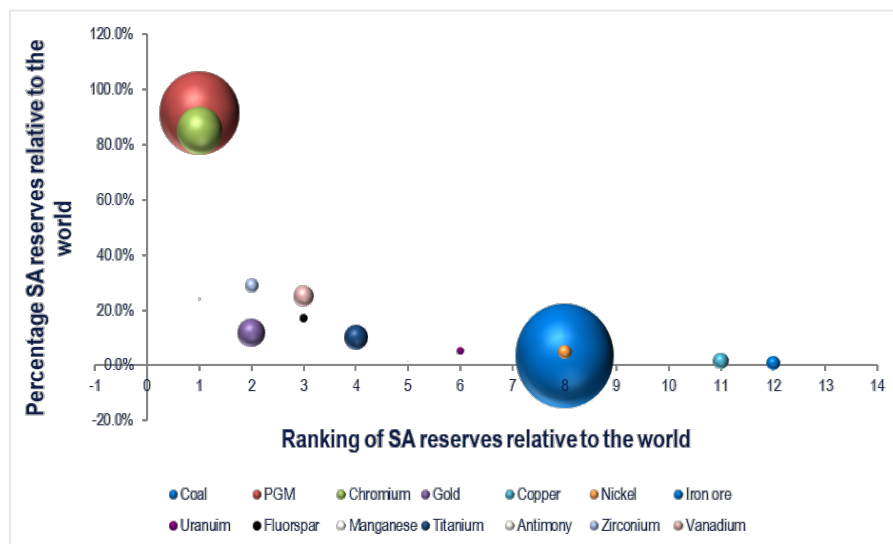


Figure 2: Notable Mineral Reserves Vs the world.
Minerals Council SA

Source: Investec Securities estimates, U.S. Geological survey,

3.1.3 Internationally Renowned Research Institutions

The country has strong research institutions such as the Council for Geoscience (CGS), Mintek and the Council for Scientific and Industrial Research (CSIR), as well as top world ranking universities. This ensures that the country has high-quality geoscientific data, mineral technology innovation and relevant research and development initiatives that support exploration and mining sectors.

3.1.4 Access to International Market

South Africa's ports and terminals are catalysts for the country's economic growth. The country is located on one of the busiest international sea routes, critical to international maritime transportation. Due to its geographical location, the country's ports and terminals allow ease of access to major international markets such as China, Europe and Asia in general.

3.2 WEAKNESSES

3.2.1 Energy Instability

Since 2008, South Africa has been experiencing energy instability due to high demand as a result of population growth and the mass connection of households to the grid. This has been compounded by an aging infrastructure such as the grid itself as well as coal powered stations some of which are decommissioned as they reach their end of lifespan. However, the country is speedily implementing the Integrated Resource Plan (IRP 2019) to increase energy generation and supply capacity through an inclusive energy mix. This is largely dominated by clean energy sources as the country transitions to a low carbon economy.

3.2.2 Lack of Precompetitive Geoscientific Data

The country is currently at a below-par of 9% when it comes to the 1:50 000 geology map scale, which does not speak to exploration revitalisation efforts. The lack of geoscientific data at a requisite scale to inform investment decisions diminishes appetite towards exploration investment.

3.2.3 Infrastructure Challenges

In as much as South Africa has one of the best rail and road infrastructure compared to other African countries, there are notable concerns regarding network coverage, capacity, and proactive maintenance. These concerns have negative consequences on domestic, regional, and international trade. In an attempt to address this challenge, Government has budgeted R900 billion (until 2027) to build and maintain transportation infrastructure (International Trade Administration, 2020²).

3.2.4 Unsatisfactory Policy Implementation

According to investor perceptions, South Africa has developed world-class legislative frameworks that govern the sector. However, implementation remains a great concern and hinders the growth of mineral exploration. Thus, it is imperative that Government focus its attention on in-depth implementation of the available legislative frameworks governing the mining industry.

3.2.5 Industrial Actions and Community Unrest

South Africa's mining industry has experienced periodic instability due to reasons tied to the history of the industry and the relationship between social partners. The sector has experienced various periods of industrial actions wherein workers down tools and or due to community unrest with locals demanding economic opportunities from mining operations, which led to political instability. Accordingly, these actions, albeit necessary, sometimes led to decreased appetite by private investors due to political uncertainty concerns. The Executive nonetheless continues to reassure the world of its political willingness and measures taken to address any concerns of instability as periodically communicated through the Government Communication Information System (GCIS) and post Cabinet meeting briefings by the Presidency.

3.3 OPPORTUNITIES

3.3.1 Diverse Mineral Base

The country hosts a diverse mineral base both tapped and untapped such as PGMs, chromium, iron ore and base metals which feature prominently in the renewable

² International Trade Administration, 2020. South Africa country commercial guide, 01 October 2020.

energy space and the minerals of the future. Unlocking the potential presented by these natural resources may usher in a new generation of the mining industry that is responsive to current and future market demands. For example, there are opportunities presented by the largely under-explored Northern Cape Province with known prospects for base metals and chrome amongst others.

3.3.2 Industry 4.0

Vast mineral reserves remain unexplored due to the lack of recent technology in the country. Furthermore, the country contains several sources of sustainable energy such as wind and solar, which could drive the market for and supports the exploitation of minerals such as the minerals of the future. The Department of Minerals Resources and Energy recently increased the threshold for embedded power generation from a mere 1MW to a whopping 100MW.

These minerals are instrumental in driving the Fourth Industrial Revolution (Industry 4.0), the ongoing automation and data exchange in manufacturing and industrial practices using modern technology. There is an imminent need for the country to feature Industry 4.0 in the sector whilst striking a balance between socio-economic needs and technological advancement.

3.3.3 Rising Demand for Clean Energy

South Africa should take advantage of the opportunities presented by the growing demand for minerals needed by the internet era with a high reliance on battery storage, artificial intelligence, robotics, electric vehicles, and clean energy with a growing market demand globally. The rising market demand for these minerals is mainly attributed to the growing need to reduce greenhouse gases (GHGs) as per the Paris Agreement on Climate Change, advancement in technologies and the rising government funding towards low carbon economies. The country contains known deposits of minerals that contribute to these markets, such as copper, nickel, lithium, rare earth metals, graphite, and cobalt amongst others, yet these remain largely under-explored.

3.3.4 *Research and Development*

While the country has made strides in research and development (R&D), South Africa lags amongst its peers when it comes to exploring innovative technologies. This presents an opportunity for more research in exploration geoscience to strengthen the sector and put the country in a more competitive position globally.

3.4 THREATS

3.4.1 *Competition for Global Capital*

Competition for global capital is continuously increasing due to the green economy agenda and the need to address the social needs of communities ("social license to operate"). Of late, even financial institutions around the globe undertook to move away from funding fossil fuel projects and targeting those associated with low carbon sources. South Africa's IRP 2019³ advocates for a "Just Transition" as Government policy on energy generation. The country commits to systematically transition towards a low carbon economy but, acknowledges that this will happen over time as the country's economy is still developing. As part of the signed compacts between social partners, the industry undertook to contribute to the socio-economic development of local communities and labour sending areas. This undertaking goes a long way in ensuring that communities' needs are taken into consideration before mining activities occur.

4. TARGETED MINERALS COMMODITIES

The strategy identifies critical minerals and metals that are essential for responding to shift towards the green economy (e.g., batteries for electric vehicles, solar, wind), low carbon economy, and digitisation amongst others. Furthermore, the strategy acknowledges South Africa's reality that the country is currently reliant on fossil fuels for power generation and the production of other fuels. These have been identified as critical for economic growth. The exploitation and development of these will be placed on a path towards a "Just Transition" as advocated in the 2019 IRP.

³ South Africa's Department of Energy, 2019. Integrated Resource Plan, October 2019.

Table 1: Targeted critical minerals and metals

MINERALS	CURRENT / FUTURE NEEDS
Cobalt Nickel Copper Zinc Lead Rare Earth Minerals	Minerals of the future / Green economy
Manganese Iron ore	Steelmaking
Coal Uranium	Energy Minerals
PGMs Chrome	Competitive advantage and hydrogen economy
Vanadium Lithium	Battery minerals

5. STRATEGIC INITIATIVES AND ACTIONS

In order to take advantage of the country's mineral wealth, socio-economic imperatives, current and future minerals market demands and the need to fulfil obligations of the climate change protocol, the strategy identifies focus areas to aid in the change of the trajectory of the country's exploration sector. The table below outlines critical areas of recommendation of the strategy.

- The Council for Geosciences (CGS) to increase 1:50 000 mapping footprint from 9% to 14% in the next five years. This means that the strategy targets 1% extra 1:50 000 mapping coverage each year for a duration of five years. This exercise will improve the country's geoscience data and information and encourage investment in the exploration space. In the past 3 to 5 years, the country has moved from 5% to 9% coverage in the public funded mapping sphere.

- This mapping programme led to the identification of the prospective corridors such as the Garamokoka anomaly in the North-West province, Kenhardt in the Northern Cape, Kleinfontein in Gauteng and Giyani in Limpopo and Ntaba Kandoda in the Eastern Cape. Targeted mapping exercise through public funding has over the years proven to be essential in accelerating investment in the exploration sector.

The value to be generated from this programme will reveal new opportunities, de-risking exploration and drive significant exploration investment in the country.

- Through the strategy, the exploration sector commits to increasing the number of exploration drilling projects in the country. The sector aims to implement at least 25% of active prospecting rights with the remaining period of 3 years or more in the next five years. Accordingly, this step seeks to re-introduce the 'use it or lose it' principle to fast-track use of licenses at the same time encouraging investment in the sector.
- Government will incentivize exploration through the following mechanisms:
 - (i) Government through **DMRE will direct more support to junior exploration companies.**
 - (ii) The DMRE will identify projects with the greatest geological potential over the next five years, provide both technical and financial support to these projects until feasibility stage, if positive. This initiative will be in the form of public private partnership (PPP) and will target junior exploration companies with at least 51% Historically Disadvantaged South Africans (HDSA) ownership in the right. The CGS will be fundamental in assessing the potential of projects to be funded at any given time. Attached to this initiative will be mandatory training of geoscientists through an internship programme.

5.1 INVESTMENT PROMOTION

- The strategy targets **to attract 5% share of global exploration expenditure** by 2025. The global exploration expenditure is estimated to be in the region of

\$18 Billion in 2025. Thus, South Africa aims to claim approximately \$0.9 Billion in 2025 as a result of the outlined interventions as per the strategy.

- In line with the national investment drive, **the exploration and mining investment promotion plan** will be outlined focusing on promoting the country's minerals industry cognisant of the global trends within the mining and metals sector, and the economic realities of the country such as unemployment and slow economic growth. The country's exploration sector will form part of the broader mining industry's local and international investment promotion programme,

A robust marketing campaign, utilising both targeted and mass campaigns, will be employed depending on the intended market and objectives of the campaign. The exploration strategy document is an adaptive framework that is flexible to market sentiment, commodity interest, tailor-made technological and political changes to keep the South African mining jurisdiction competitive.

Strategic initiatives

INITIATIVES	INTENDED BENEFITS	RESPONSIBILITY	TIMEFRAMES
Full application of Exploration Implementation Plan.	<ul style="list-style-type: none"> • Unlocked regulatory bottlenecks. • Sufficiently funded geoscience programme. • Conducive environment for exploration. • A functional and effective cadastral system. 	Social partners	Five years
Collaborative research between relevant research institutions in the field of exploration geoscience. Focused funding is critical.	<ul style="list-style-type: none"> • Improved availability of geoscience data, information and innovative technology. 	Government institutions such as DSI, CGS, industry, Universities and other research institutions.	Five years
Increased Exploration investment.	<ul style="list-style-type: none"> • Accelerated exploration activities. 	CGS and Mining Companies	Five years

Streamlining regulatory requirements across licensing departments.	<ul style="list-style-type: none"> Aligned regulatory processes amongst departments. Improved turnaround time on the processing of prospecting rights. 	DMRE, DHSWS, DFFE and COGTA	12 months
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6. CRITICAL ROLES OF SOCIAL PARTNERS

In order to achieve the strategic objectives of this strategy, Government, industry and other social partners will play a specific role as per the initiatives identified. Table 3 identifies social partner roles and responsibilities.

Table 2: Roles and responsibilities

PARTNER	EXPECTATIONS
Government	<ul style="list-style-type: none"> Funding of public geoscience data and research. Create an investor friendly environment through efficient regulation and licensing. Promote South Africa's mining industry as an investment destination of choice.
Industry	<ul style="list-style-type: none"> Invest in the exploration sector to achieve the objective of the strategy. Collaborate with Government on various research and development initiatives.
Organised Labour	<ul style="list-style-type: none"> Provide a conducive environment for exploration activities to take place through compacting with the industry workforce.

7. MONITORING AND EVALUATION

Review on performance and impact of the strategy will be undertaken on an annual basis. Section 28 of the MPRDA will be applied for this purpose.



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SOUTH AFRICA'S EXPLORATION IMPLEMENTATION PLAN, 2022



DEPARTMENT OF MINERAL RESOURCES AND ENERGY
REPUBLIC OF SOUTH AFRICA

SOUTH AFRICA'S EXPLORATION IMPLEMENTATION PLAN

2022

MINISTER'S FOREWORD

The dawn of a democratic dispensation in South Africa necessitated an urgent need towards normalisation of society, with a particular focus on upliftment of the country's majority that was previously marginalised and deliberately excluded from active participation in the country's mainstream economy. To achieve this, equitable distribution of the nation's wealth was identified as a fulcrum for sustainable development, which will be attained through a constructive dialogue and sheer political will. In this regard, the country has replaced an abhorrent apartheid system, which denied basic economic and political rights to the majority of the country's population with a move towards a market democracy.

As part of a process of managing democracy and inherent expectations of the country's majority, a massive programme to re-write and modernise policies and laws was initiated to integrate the previously excluded majority into the mainstream economy through socio-economic transformation.

The South African mining industry played a pivotal role in shaping the country's economy and remains one of the core components of our natural resource-based economy. This presaged an urgent need for regulatory reforms in the mining industry and further necessitated the development of policy and its enunciation through legislative instruments to effect necessary inclusive socio-economic growth and transformation of the mining industry to be consistent with the envisaged democratic landscape.

Whereas the mining regulatory reform remains a critical intervention in pursuit of societal normalisation, it also constituted a

path least traversed and landed the nation in an environment of uncharted territory. Since the introduction of regulatory reform in the mining industry, we now have the benefit of hindsight and a well-established jurisprudence, which highlights amongst others, requisite capacity to implement established regulatory framework as well as incremental divergence in expectations of the intent of the afore-stated reforms, supplementary policies and legislations, the beneficiaries of such reforms and the investment community. A coalescence of these factors presented a gross misunderstanding of the nation's regulatory framework in its entirety and resulted in internationally acclaimed perception surveys ranking South Africa at 101 out of 141 jurisdictions amongst its peers in terms of government regulations (WEF, 2019). The importance of such surveys cannot be overstated as they have a profound effect on investment decisions in mining, in general and exploration activities in particular. As such, it is of paramount importance that these regulatory factors are urgently addressed as proposed in this document.

Several initiatives were instigated in an attempt to streamline the regulatory framework, such as "*one environmental system*", albeit its implementation is yet to be fully realised. During my tenure, I have also amended the Mining Charter, as contemplated in section 100 of the Mineral and Petroleum Resources Development Act (MPRDA) and engaged robustly with the mining stakeholders to significantly improve the requisite certainty of the regulatory framework for the industry

South Africa's economy has shrunk to the lowest levels in the last decade. This has had a significant impact on the country's

SOUTH AFRICA'S EXPLORATION IMPLEMENTATION PLAN, 2022

socio-economic development and the realisation of the National Development imperatives. The unprecedented emergence of the COVID-19 pandemic has further exacerbated this situation with the economy shrinking by more than a quarter in the current financial year. Furthermore, the unemployment rate has drastically increased with more than 2 million people losing employment in the second quarter of the current year. This has placed a great strain on the country's economy and has further necessitated the Government to initiate aggressive interventions.

South Africa's mining, minerals and exploration industry has historically been the backbone of the nation's development. Mining has contributed almost R0.5 trillion to South Africa's Gross domestic product (GDP) annually with approximately 500,000 jobs in the industry. Furthermore, it is reported that South Africa has only exploited a small fraction of its total mineral wealth. Clearly, the minerals and mining industry of South Africa remains the sunrise industry.

It is for this reason that the President of the Republic, His Excellency Ramaphosa initiated a comprehensive programme through the social partners in National Economic Development and Labour Council (NEDLAC) to respond to the

current economic crises, which he aptly named "South African Economic Reconstruction and Recovery Plan".

This document outlines the economic recovery implementation plan to unleash the full potential of the minerals exploration industry of South Africa. Critical barriers that have been inhibiting the industry are identified and succinct interventions are proposed. These interventions are expected to revive the share of South Africa's global exploration expenditure to a minimum of 5% over the next 3-5 years.

It is expected that post-COVID-19 recovery, supplemented by a colossal appetite for minerals in various applications is imminent and an important precursor for the next boom, which requires an urgent investment in mineral exploration with immediacy.

It was Chief Albert Luthuli, the first African winner of the Nobel Peace Prize in 1961 who said, "Scientific inventions, at all conceivable levels, should enrich human life ...". The White Paper on Science, Technology and Innovation (STI) presents a cogent sound policy framework for a well-coordinated research and development in South Africa.

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1. INTRODUCTION

South Africa has historically been home to exceptional mega-deposits and exploitation of gold (Witwatersrand gold), PGM's and base metals (Bushveld Igneous Complex), and diamonds (numerous kimberlite mines and west-coast placers) over the past 150 years of historical mining. The country still has a rich-endowment of unrealised mineral potential, albeit it is grossly under-explored in respect of modern mineralisation models and exploration technologies with some of the best exploration potential.

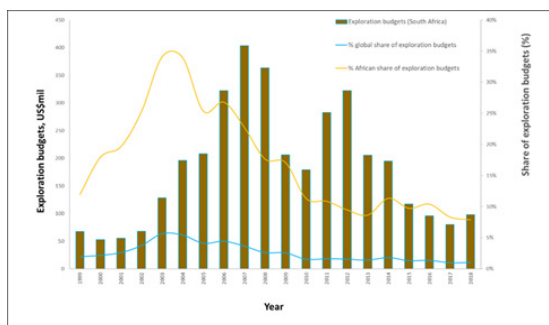


Figure 1: South Africa's share of global exploration expenditure.

Exploration activity in South Africa has systematically declined from its peak of 5% of the global exploration expenditure share in 2003 to the lowest ebb of below 1% (Figure 1). A critical assessment of the South African context illuminates a number of factors that have sustained a pedestrian exploration performance. This has accentuated the need for Government, in partnership with protagonists in the mining industry to develop apposite

interventions intended to resuscitate exploration activities in South Africa.

To this end, it was fitting and prudent to develop a practical time-bound, measurable and implementable exploration implementation plan to identify a suite of critical barriers and propose requisite corrective actions in order to attain a minimum of 5% share of the global exploration expenditure within 3-5 years.

The exploration implementation plan constitutes part of the mining industry's contribution to the South African Economic Reconstruction and Recovery Plan. Essentially, exploration is the lifeblood of sustainable mining development in that it replenishes currently exploited commodities and secures minerals of the future.

Notwithstanding a protracted heritage of mining, the South African mining sector has not only been a magnet for foreign investment to the country, but has also been an anchor for the emergence and sustenance of a number of world-class industries which include; energy, food, financial, manufacturing, water, infrastructure and land-use.

The mining industry continues to contribute a critical role to the South African socio-economic developmental imperatives. This is corroborated by the 2019 performance indicators which affirmed in excess of 1.5 million people employed in the mining industry, inclusive of 454 861 direct employees, wages of R135.9 billion and contributed R360.9 Billion or 8.1% to GDP. Furthermore, the industry contributed R94.7 Billion to fixed investment, R300 Billion expenditure on goods and services,

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R24.3 Billion in taxes, R8.6 Billion in royalties and R22.7 Billion PAYE (Pay As You Earn) collected.

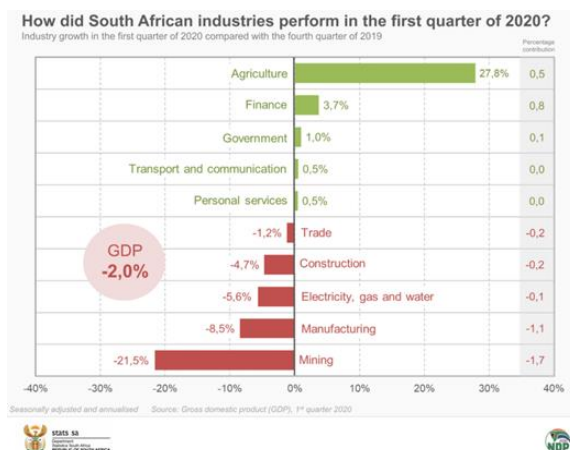


Figure 2: First quarter (2020) performance of selected South African industries including Mining. Source: Stats SA, 2020.

The importance of the mining industry to the national economy is amplified in Figure 2, which affirms a direct correlation of the mining industry performance to the GDP. Synchronously, the interdependencies of components of the constituent industries to the GDP is highlighted with mining as the foundation thereof.

As part of the mining value chain, it has been established that the exploration industry contributes its socio-economic impact arising from

every R1 Billion spent on exploration as follows:

- R1.2 Billion is added to the GDP through direct, indirect and induced impacts
- 3,200 new jobs created and/or sustained on average,
- R0.3 Billion added to total government revenue through direct, indirect tax collection.

In essence, the value proposition advances a necessary exploration driven paradigm-shift to revive the mining industry and the economy of the Republic of South Africa. The exploration implementation plan contained in this document therefore presents a national priority for this resource-rich country to aptly evaluate and reevaluate its hidden and exposed mineral wealth. It is intended to provide the right enabling framework and to facilitate a successful exploration and a junior mining industry that unlocks future wealth, economic development, job creation and transformation.

2. SOUTH AFRICA'S EXPLORATION IMPLEMENTATION PLAN

The re-imagination of exploration in South Africa is instrumental to, *inter alia*, economic recovery, sustenance and inclusive growth of the mining industry, protection of existing jobs and creation of new employment. This section will succinctly state the problem, define the barriers and propose remedial interventions to resuscitate the exploration industry and locate South Africa within the top 10 attractive investment jurisdictions.

2.1 PROBLEM STATEMENT

The South African share of the global exploration expenditure has consistently declined since 2003 and remained below 1% over the past decade. This pattern does not resonate with the residual prospects of discovering world-class deposits consistent with the quality of the country's prolific geologic environment. This was further exacerbated by the effect of Corona Virus, colloquially known as COVID-19 pandemic, which has suppressed the average global exploration budget by 30% in 2020 to \$6.6 Billion, Figure 3.

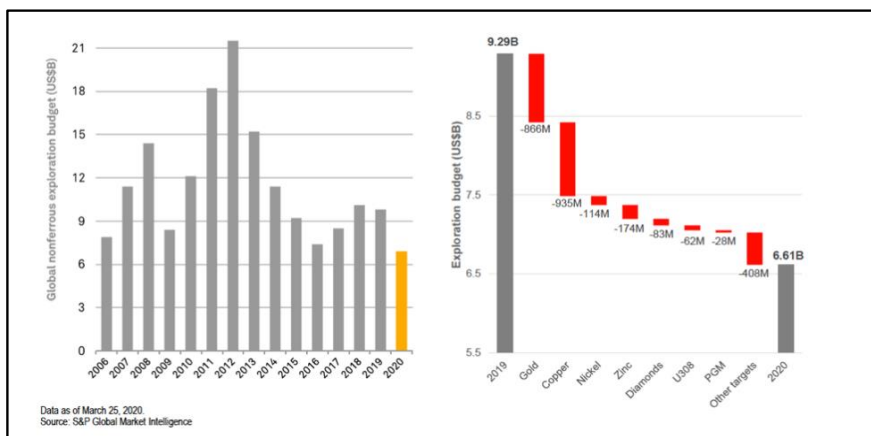


Figure 3: Global non-ferrous exploration budget from 2006 to 2020. Source: S&P Global Market Intelligence, 2020.

2.2 OBJECTIVE

This document presents a comprehensive implementation plan to catalyse mineral exploration in South Africa, secure more than 5% share of the global exploration expenditure within 3-5 years and bolster the mining sector's contribution to the GDP, consistent with the "*South African Economic Reconstruction and Recovery Plan*". The imminent economic recovery post-COVID-19, augmented by substantial growth in demand for both traditional and minerals of the future necessitate immediate implementation of this plan in order to leverage inherent value and prepares South Africa for the next commodities boom.

2.3 BARRIER CHARACTERISATION AND REQUISITE INTERVENTIONS

Available information corroborates the significance of the mining industry value chain across the South African economy and affirms its status as a sunrise industry. Notwithstanding, this proposition reveals underlying barriers to optimise the performance of the industry, considering the role of exploration as the élan vital of the mining sector. This section characterises a selection of critical barriers identified and

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proposes apposite interventions sought to enable this industry to perform at the apex of its potential, allocated resources and timeframes. These interventions constitute quintessential ingredients to the economic recovery programme.

Addressing the existing barriers to investment attraction will require, among others, eliminating bureaucratic red tape, fast-tracking of licensing applications, and easing the regulatory compliance regime to improve the country's competitiveness (Arnoldi, 2020¹). In order to catalyse this industry, a conducive and enabling environment is required wherein synergies exist amongst the exploration activities, regulatory policies, systems and processes, financial/fiscal instruments, research and development as well as exploration investment.

2.3.1 Regulatory/policy matters

There are aspects of the current architecture of the mining regulatory framework that require improvement to sharpen the efficacy of the law, protect the sanctity of the investments, facilitate cooperation amongst stakeholders and effect optimal exploitation of the mineral resources in a manner that advances the notion of shared value which benefits both the investor, workers, host communities and the Government alike. It is also prudent to strengthen the capacity of the regulator to implement the law efficiently and effectively including consistent application of the law, timely processing of applications as well as enforcement, monitoring and evaluation.

2.3.1.1 Barriers

- 2.3.1.1.1 Existing timeframes for exploration rights as provided for in the MPRDA present a limitation on timeframes required in complex geological settings for certain minerals to graduate from prospecting to apposite pre-feasibility study that makes it impossible to secure the sanctity of investments that are required to achieve the stated objective.
- 2.3.1.1.2 The existence of multiplicity of rights that have lapsed beyond the tenure prescribed in the law illuminates significant challenges that include, amongst others, sterilisation of exploration activities that are contrary to the intended objectives of exploration development.
- 2.3.1.1.3 A significant quantum of prospecting rights (PR) have been issued but are largely inactive and have not graduated to mining rights and as such have sterilised the mineral potential and mining development. This is attributable to conspicuous lack of all South African financial institutions (commercial and DFIs) to fund exploration activities, limited technical

¹ Arnoldi, M. 2020. Minerals Council bemoans lack of competitiveness focus in economic recovery plan. Creamer Media publication, 16 October 2020.

capability and paucity of skills to assess, administer and monitor the Prospecting Works Programmes, as envisaged in the MPRDA and its regulations.

2.3.1.1.4 Refusal of access to privately owned land is increasingly becoming an inhibitor to both geoscience data collection and exploration activities.

2.3.1.1.5 The principle of first come first served imbued in the MPRDA has had unintended ramifications of promoting mediocrity in the implementation of exploration activities.

2.3.1.1.6 There exist policies and legislations across the government landscape that are seemingly incongruent with the intentions for sustainable prospecting activities, including but not limited to the following:

- Open-ended appeal and objection processes in the National Environmental Management Act (NEMA), which further extend the timeframes for prospecting;
- Application of Spatial Planning and Land Use Management Act (SPLUMA) as well as Protected Areas Act does not adequately consider mineral development requirements in their execution, especially in geological settings with the highest prospects;
- The Preservation and Development of Agricultural Land Bill presents a threat to the potential coexistence of mining and agriculture;
- Protracted timeframes in applications for water use licenses in terms of the National Water Act further undermine the development of advanced exploration that underpins bulk sampling to augment feasibility studies to enable transition of a prospecting right to a mining right.

2.3.1.1.7 Applications of some critical aspects of the Principal mining legislation, the MPRDA, are reportedly obfuscated. These include, albeit not limited to modalities for full application of s2D.

2.3.1.1.8 Notwithstanding the importance of transformation as a central policy tenet in South Africa in general and the mining industry in particular, the pace and consensus on the suite of instruments towards attainment of this objective remain blurred amongst protagonists.

2.3.1.2 Interventions

2.3.1.2.1 To address the barrier contemplated in paragraph 2.3.1.1.1, the DMRE is to streamline the legislative instruments taking into account the stated contradictions. This will address the discrepancies in the requisite longer

timeframes where required. It is accordingly proposed that the MPRDA amendment be prioritised and fast-tracked to imbue the recommended intervention.

2.3.1.2.2 In dealing with the barrier contemplated in paragraph 2.3.1.1.2, the DMRE is to:

- Urgently take corrective administrative actions on the stated challenge of PRs that have existed beyond their legislated tenure;
- Urgently assess active prospecting rights including quantification of value (direct and associated), catalytic value, as well as employment creation as contained in the Prospecting Works Programme is required; and
- Urgently invest in an efficient mining cadastre system (online licensing system) and prioritise the implementation of this new system with due consideration of the mining industry pledge to support the DMRE both financially and with technical expertise

2.3.1.2.3 In dealing with barrier 2.3.1.1.3, the DMRE to consider:

- Strengthening administrative processes to obviate prospects of multiplicity of interpretations of requirements, deploy due diligence mechanisms throughout the processing of a prospecting right with a multidisciplinary approach to prospecting rights application assessment as envisaged in s17 of the MPRDA, read with attendant Regulations; and
- Invocation of relevant provisions of the transformative legislation to encourage established mining companies to be recognised for their financial contribution towards a minimum of R200 million IDC established "*junior exploration fund*"

2.3.1.2.4 An intervention dealing with the barrier contemplated in paragraph 2.3.1.1.4 lies in the invocation of relevant provisions as contained in various legislative instruments detailed hereunder:

- Provision of s54 of the MPRDA, which has previously not been utilised to promote and nurture the advancement of mineral prospectivity.
- Provision of s55 of the MPRDA, which gives the Minister authority to expropriate land for the advancement of prospecting within reason.
- A technical amendment to strengthen provisions in the Geoscience Act for land access is required.

2.3.1.2.5 To attend to the barrier as contemplated in 2.3.1.1.5, the first come first served system must be replaced with a meritocratic system that aptly considers national developmental imperatives. It is accordingly

proposed that the MPRDA amendment be prioritised and fast-tracked to imbue the recommended intervention.

2.3.1.2.6 To attend to the barrier as contemplated in 2.3.1.1.6, it is recommended that the relevant authorities not only implement apposite provisions of their respective legislations but also collaborate on streamlining and synergising the respective policies and legislation to enhance socio-economic and environmental development imperatives of the Republic of South Africa in a cogent manner, taking cognisance necessary due diligence in consideration of sensitive areas such as the environment, community and heritage.. In this regard, the following must be considered:

- The development of an efficient mechanism to address long-winded appeals and objections (as catered for in the NEMA) is required. 30 days is recommended as the maximum period for processing appeals and objections.
- Streamlining of requirements in various legislations (environment, water, mining, land use etc.) to enable timeous finalisation of authorisations and security of tenure.
- Deliberate investment in new technological interventions for sustainable coexistence between mining and other land activities such as agriculture (e.g. coordinated engagement of the custodian of the Preservation and Development of Agricultural Land Bill to facilitate coexistence). This must be done within six months of adoption of this report.

2.3.1.2.7 Dealing with the barrier contemplated in paragraph 2.3.1.1.7 requires further regulatory clarification and possible amendment of the Principal mining legislation as well as augmentation of Regulations / guidelines that enunciate contested provisions.

2.3.1.2.8 Dealing with the barrier contemplated in paragraph 2.3.1.1.8 the DMRE to reconvene critical social partners including the Minerals Council, organised labour, community based organisations as well as other relevant structures/ institutions to enter into a social compact to achieve a meaningful transformation and inclusive growth of the mining industry.

2.3.2 Processes and systems

A regulatory framework is essentially as good as the underpinning modalities in terms of processes and systems that support it's effective and efficient deployment. This section unpacks a selection of critical barriers that negatively affect the regulatory framework which by extension obfuscate the investment climate in South Africa's exploration and mining industry.

2.3.2.1 Barriers

- 2.3.2.1.1 The extended timeframes of applications for cessation, PRs, renewals and amendments of conditions of the PRs in terms of s11, s17, s18 and s102 of the MPRDA, respectively have an adverse effect on investment decisions and seek urgent interventions.
- 2.3.2.1.2 Opacity in the administration of PR applications promotes, *inter alia*, lack of confidence in SA as a preferred investment jurisdiction, unethical behaviour of some officials and certain industry protagonists as well as multiple granting of PRs within the same area. In addition, the manual administration of PRs is a challenge and yields undesirable consequences.
- 2.3.2.1.3 The administration of PRs is currently largely process and compliance-focused instead of considering multiple prisms such as economic, transformative, legal, geoscientific, social and environmental as a holistic licensing approach.

2.3.2.2 Interventions

- 2.3.2.2.1 In an effort to address the barrier contemplated in paragraph 2.3.2.1.1, Government must immediately invest in an efficient and transparent cadastral system.
- 2.3.2.2.2 In response to the barrier contemplated in paragraph 2.3.2.1.2, the DMRE must formally invalidate PRs that continue beyond prescribed timeframes, revoke those that are inactive, update the system and maintain an accurate record of valid PRs.
- 2.3.2.2.3 In resolving the barrier contemplated in paragraph 2.3.2.1.3, a multidisciplinary approach for licensing processes is urgently needed and must consider, amongst others, matters such as priority ranking of commodities.

2.3.3 Fiscal/financial instruments

It has been established that lack of access to funding or financing instruments constitutes one of the critical inhibitors to exploration in general and junior exploration principally Historically Disadvantaged South Africans (HDSA) in particular. It is further noted that the challenges of access to funding have to be considered and addressed in accordance with other interventions contained in this document, such as investment

in research and development to sufficiently de-risk and enhance the value of exploration assets that make it more readily attractive to investment.

2.3.3.1 Barriers

2.3.3.1.1 There is a glaring decline and absence in appetite for investment in exploration.

2.3.3.1.2 Thus far, s12J of the Income Tax Act, and other similar incentives contained within the Development Financing Institution (DFI) has not proven to benefit junior explorers.

2.3.3.1.3 There exist limitations to the diversity of available financial instruments, particularly for junior miners.

2.3.3.1.4 Lack of dissemination of available legislative benefits has resulted in a disjuncture on the use of tax rebate benefits to support exploration development.

2.3.3.2 Interventions

2.3.3.2.1 In dealing with the barrier contemplated in paragraph 2.3.3.1.1, the following is to happen:

- Stakeholders to jointly explore fiscal instruments that can be considered in supporting exploration development in South Africa.
- There must be sustainable State investment in a detailed integrated multidisciplinary geoscience mapping programme to de-risk exploration as well as improve investment attractiveness and confidence.
- State and private sector to consider, on the balance of evidence, establishment of a junior exploration fund.
- Exploration activity-based incentives for minerals of strategic importance in South Africa should be considered.

2.3.3.2.2 In resolving the barrier contemplated in paragraph 2.3.3.1.2, DMRE to consider the use of a portion of enterprise development of established mining companies in support of junior explorers in accordance with the transformative agenda. Furthermore, the financial requirements, expectations and utilisation should be administered and monitored constantly to ensure that the objectives are met.

2.3.3.2.3 In addressing the barrier contemplated in paragraph 2.3.3.1.3, the Minerals Council South Africa to engage stakeholders to assess the efficacy of the Flow-Through Shares (FTS) instrument and its

applicability to the South African mining exploration jurisdiction. Consideration for FTS modalities to be applied in South Africa for exploration needs to be further evaluated. In addition, other funding mechanisms favourable to the South African exploration industry must be explored.

- 2.3.3.2.4 In order to address the barrier contemplated in paragraph 2.3.3.1.4, a one-stop shop for information pertaining to opportunities (an inventory of funding opportunities with designated champions) including an inventory of all legislative and fiscal incentives for exploration must be established.

2.3.4 Research and development

The demands of sustainability, innovation, research and development, cost efficiency, productivity and management, and meaningful transformation are high for South Africa's exploration and mining industry. This equally requires environmental stewardship to promote energy efficiency, green mining, health and safety, dedicated investment in technology and research.

Investment in innovative research and development within the mineral exploration industry is a necessary foundation to bequeath sustainable development of the industry to posterity, meeting current needs whilst securing future requirements for humanity. Studies that were conducted in Australia, Canada, Chile and USA demonstrated that for every \$1 that the State invests in geoscience created an opportunity to attract \$5 in mineral exploration investment within 3-5 years, which culminates into a direct return on investment of \$125 in the medium to long term that ranges between 10 and 20 years.

The research and development value chain presents, amongst others, incentives and opportunities for technical skills development and decent employment for the youth. Cutting-edge research on future technological development is critical for unraveling the mineral potential and discovery of tier-1 and tier-2 world-class deposits.

This is one of the key drivers to improve exploration investment attractiveness of South Africa's mineral "real estate", which will translate into meaningful economic transformation and sustainable job creation.

With the renewed investment in high-quality geoscience data generation through the national geoscience programme, South Africa will reignite mineral exploration to take advantage of an imminent boom in the industry.

2.3.4.1 Barriers

- 2.3.4.1.1 Fragmented geoscience data and information management amongst the key stakeholders.
- 2.3.4.1.2 SA has not fully embraced applications of new exploration technologies and techniques.
- 2.3.4.1.3 Lack of geoscientific data at a requisite scale to inform investment decisions relative to peer exploration jurisdictions.

2.3.4.2 Interventions

- 2.3.4.2.1 In resolving the barrier contemplated in paragraph 2.3.4.1.1, all geoscientific data and information must be lodged with the mandated custodian of geoscientific information, viz. The Council for Geoscience. It is imperative to finalise the Regulations of the Geoscience Act within 3 months.
- 2.3.4.2.2 In an effort to address the barrier contemplated in paragraph 2.3.4.1.2, more investment/funding and institutional collaborations in technological advancement within the industry must be exacerbated.
- 2.3.4.2.3 In resolving the barrier contemplated in paragraph 2.3.4.1.3, it is imperative for the Government to ramp up non-interrupted and continuous long-term investment in geosciences.

2.3.5 Exploration Investment

As it has been established that the pace and level of green-fields exploration in South Africa necessary to replenish the pipeline of mining projects is distinctly incongruent with the quality of exceptional geological endowment in the country for a number of reasons outlined above. Notwithstanding, the country has well-established membership of corporate citizenry that has not participated actively in deploying its resources towards exploration activities.

2.3.5.1 Barriers

- 2.3.5.1.1 There's a glaring lack of investment in green-field exploration activities in South Africa by both established mining companies and emerging junior companies.

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2.3.5.1.2 A lack of listing of exploration companies in the Johannesburg Stock Exchange (JSE) limits access to necessary resources underpinning exploration activities.

2.3.5.1.3 The South African FDI and banks generally display the lowest, if any, appetite in supporting green-field exploration.

2.3.5.2 Interventions

2.3.5.2.1 In order to address the barrier contemplated in paragraph 2.3.5.1.1, a commitment of the established mining industry operating in South Africa to invest in replenishing the pipeline through exploration is necessary. In addition, prospects of collaboration between established mining companies and emerging junior mining/exploration companies is necessary both of which are intended to "*lead the charge*" in leveraging the nation's exploration prowess within 3 months.

2.3.5.2.2 In addressing the barrier contemplated in paragraph 2.3.5.1.2, an engagement with the JSE by the DMRE and the Minerals Council to explore necessary interventions to unlock barriers to listing of exploration companies is necessary within 3 months.

2.3.5.2.3 In an effort to address the barrier contemplated in paragraph 2.3.5.1.3, an engagement with the financial services is necessary to demonstrate the value proposition of exploration and the extent to which investment in geosciences fundamentally de-risks exploration exposure is an indispensable intervention to be led by the DMRE and the Minerals Council within 3 months.

3. CONCLUSIONS

The development of the plan is timely, as it fundamentally responds to the *South African Economic Reconstruction and Recovery Plan*, and as such, its implementation is deemed to feature in the top quartile of priorities for implementation without delay. It is accordingly apt to reaffirm that exploration is the lifeblood of sustainable mining development in that it replenishes currently exploited commodities and secures minerals of the future. This plan is characteristically intentional to proverbially “turn South Africa into an exploration site”, secure more than 5% share of the global exploration expenditure within 3-5 years and bolster the mining sector’s contribution to the GDP. It is inevitable that the post-COVID-19 economic recovery is forthcoming and the attendant boom in mining is projected to materialise in the medium term, which emphasises the urgent need for restoration of confidence in the prospects, competence and capability of the country to ready itself for maximum returns from its geological prowess.

The exploration implementation plan represents the first quantum leap in addressing the underlying challenges that have coalesced to constrain exploration in South Africa. The plan identified 5 groups of barriers and recommends corresponding interventions, some of which are already a subject of part implementation requiring commitment for the full implementation. Other interventions are implementable immediately (within 3 months), whilst the remainder can be deployed in the short to medium term, not longer than 12 months.

In conclusion, the plan proposes re-imagination of South Africa’s exploration investment landscape and introduces a necessary exploration driven paradigm-shift to revive the mining industry and the economy of the Republic of South Africa. It seeks to re-introduce an enabling environment to facilitate successful exploration and junior mining industry that unlocks future wealth, economic development, job creation and transformation.

ANNEXURES

A. SOUTH AFRICAN EXPLORATION AND MINING INDUSTRY OVERVIEW

South Africa prides itself on an inexhaustible geological landscape, immense mineral potential, low sovereign risk, sound governance and legal frameworks, sustained Constitutional democracy, rigorous business support mechanism, well-established infrastructure, as well as social stewardship. This was corroborated by the Citigroup report indicating that South Africa remains the wealthiest mineral jurisdiction, with a conservative minimum measurable in-situ valuation of US\$2.5 Trillion (excluding energy commodities, such as coal, oil and gas), with Russia and Australia ranked at a distant second and third place, respectively.

In 2020, the Global Mining Market Intelligence Platform² reported 130 mining projects for South Africa with a compounded investment value of approximately \$13 billion (see Figure 4). In light of the fact that mining is a long-term business, this investment commitment demonstrates the positive appetite and confidence of the investment community in South Africa. However, this figure falls below the inherent mining development potential, affirming the importance of the exploration plan, it's impeccable timing of development coinciding with the dire need to revive the national economy broadly and the mining industry in particular, as well as the need to commit and implement the plan to deliver desirable results. As an example, under-explored Northern Cape Province presents considerable opportunities for exploration and mineral development for minerals such as copper, nickel, chrome, cobalt, and lithium.

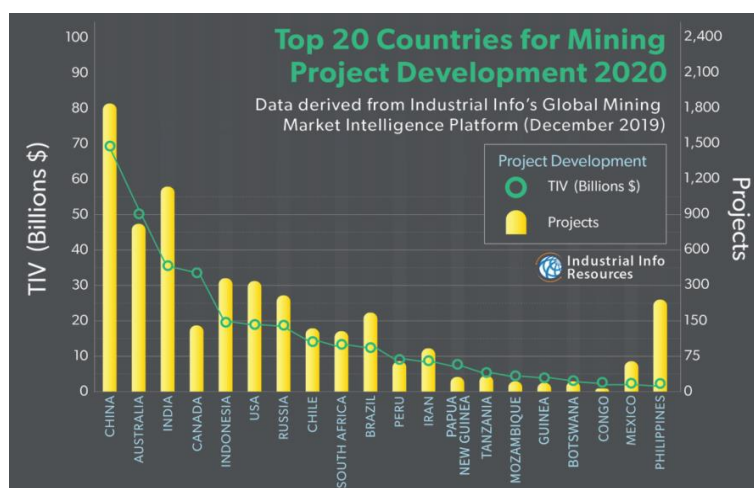


Figure 4: Outlook on total investment value in relation to projects for 2020.

² Govreau, J., F., 2020. Global Project Spending Outlook. E & MJ Engineering and Mining Journal. (<https://www.e-mj.com/features/2020-global-project-spending-outlook/>) accessed 15/11/2020.

A1. South Africa's Competitiveness

According to the WEF-2019 global competitiveness survey, South Africa's overall global competitiveness ranking was 60 out of 141 countries, representing an improvement from 67th position in 2018. This improvement strengthens the capability of the mining industry's rapid advancement, as the industry is part of a national competitiveness ecosystem. It must be borne in mind that computation of global competitiveness is based on 13 pillars which makes it robust with comparative assessment. Table 1 demonstrates a selection of comparative performance indices related to some of the pillars which are deemed to be of relevance to the exploration environment in South Africa.

South Africa has generally gained confidence in efficiency of the legal framework and prudent governance. However, it is evident that the country needs specific attention on burden of Government regulation, Government responsiveness to change and Government's ensuring policy stability continue to feature in the bottom quartile of the WEF competitiveness ranking. It is accordingly fitting that the implementation plan isolates pertinent aspects of the regulatory related barriers and recommend apposite interventions.

Although the infrastructure ranking has provisionally regressed from 64 (2018) to 69 (2019), the presidential infrastructure programme has prioritised critical infrastructure sought to significantly improve access, reliability, cost efficiency and quality. It is expected that forthcoming improvements resulting from this investment will not only improve the infrastructure competitiveness ranking amongst peer jurisdiction, but would also boost the mining industry development.

In terms of financial systems, the overall ranking appears fairly stable although the two sub-elements of this ranking, namely; financing of SMEs and venture capital availability attributes that are critical for exploration and junior mining have feathered poorly in the WEF ranking system. It is for this reason that the implementation plan has also identified the financial and fiscal instruments as one of the barriers and proposed a fitting intervention.

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Table 1: Global competitiveness indices: South Africa's performance (WEF, 2019³)

Index Pillar	Index Component	2018 Rank/140	2019 Rank/141
Overall ranking		67	60
Institutions		69	55
	Budget transparency	27	1
	Efficiency of legal framework in challenging regulations	56	40
	Burden of government regulation	84	101
	Efficiency of legal framework in settling disputes	40	31
	Government's responsiveness to change	-	110
	Governments ensuring policy stability	-	108
Infrastructure		64	69
	Road connectivity	5	7
	Railway density	46	47
	Electrification rate	102	107
Macroeconomic stability		57	59
	Inflation	106	107
	Debt dynamics	58	57
Product market		74	69
	Trade tariffs	87	90
	Complexity of trade tariffs	93	94
Labour market		55	63
	Labour tax rate	14	13
Financial system		18	19
	Financing of SMEs	72	96
	Venture capital availability	63	77
	Insurance premium	3	3
	Market capitalisation	2	2
Market size		35	35
	Gross domestic product	30	30
	Import of goods and services	91	90
Business dynamism		56	60
	Cost of starting a business	4	4
Innovation capabilities		46	46
	Research and Development Expenditure	49	45
	Research Institutions Prominence	39	41

According to Global Innovation Index (2020⁴), South Africa ranked 63 out of 129 countries in 2019 in terms of innovation. The Republic has since improved to 60th place in 2020 because of increased capacity for innovation attributed to institutions, market and business sophistication, knowledge, technological and creative outputs.

³ World Economic Forum Global Competitiveness Report 2018-2019.

⁴ Global Innovation Index, 2020.

For instance, the initial state investment in geoscience mapping is already yielding desirable outcomes, albeit that this programme must be ramped up.

A2. South African Exploration Investment Attractiveness

An assessment of the global exploration expenditure pattern over a period preceding the commodities' boom averaged \$5 Billion per annum from 1975 to 2005 notwithstanding vicissitudes displaying peaks and troughs (Figure 5). This pattern demonstrates a conservative doubling of the average expenditure for the period 2006 to 2019, with an extraordinary anomaly of \$33 Billion in the year 2012. The Standards and Poor Global Market Intelligence report predicted at least 29% decrease in global exploration spend for 2020 because of the adverse impacts of the COVID-19 pandemic. The \$18 billion projection (for which South Africa aims to secure 5% in 5 years – \$0.9 billion) for 2025 is likely to be adjusted down as the globe recovers from the pandemic.

The expected growth in appetite for both current and future minerals is projected to shorten the post-COVID-19 economic recovery timelines and reset the search for mineral deposits required to meet such demand. This suggests that projected global exploration expenditure is expected to rise to \$18 Billion by 2025, at which the exploration implementation plan contemplates capturing a minimum share of 5% per annum translates to \$0.9 Billion per annum. This roughly translates to R14 Billion of expected annual exploration expenditure in South Africa, using current exchange rates. In applying the socio-economic impact indicators explained in the introduction of the plan, it is accordingly extrapolated that implementation of the exploration plan will:

- Catalyse R14 Billion in direct annual exploration expenditure, as a minimum
- Contribute a minimum of R17 Billion to GDP
- Create 45 000 new jobs
- Contribute R4.2 Billion to total Government revenue

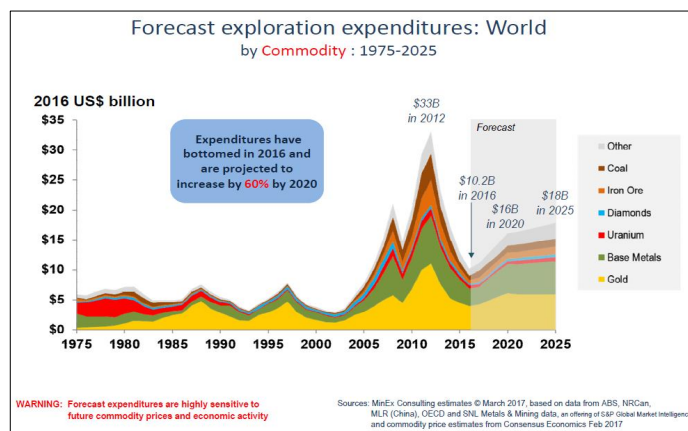


Figure 5: Global exploration expenditure pattern since 1975, including forecast to 2025.

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The UN conducted a survey of mining companies to formulate specific priority investment criteria that the exploration industry deems to be important for exploration investment decisions (

Table 2). These are placed in order of importance. In the table, data from the 2020 Fraser Institute Annual Survey of Mining Companies is also indicated and juxtaposed with the UN survey priorities.

The UN survey priority investment criteria for exploration place geological information at the apex of the requirement, whilst the Fraser Institutes scores for South Africa have improved from 38% in 2019 to 66% in 2020. The Government has rekindled investment in geological information whilst the exploration implementation plan recommends further prioritisation of this initiative.

Other priority investment criteria in Table 2 can be grouped as policy/regulatory (including possible contradictions) and fiscal/financial (including tax-related), all of which are subject of consideration in the recommendation of the implementation plan. Addressing these barriers is part of concerted effort to create an enabling environment to achieve optimal exploration development prospects.

Table 2: UN survey of priority investment criteria for exploration and mining compared to the scores of the related indicators from the 2020 Fraser Institute Annual Survey.

Priority investment criteria	Priority investment criteria for exploration	Investment attractiveness criteria	2020 Fraser Institute scores for SA (%)
Geological potential of target minerals	1	Geological database	66.5
Security of tenure	2	Political Stability	23
Consistency and constancy of mineral policies	3	Policy Perception Index	60.81
		Uncertainty Concerning the Administration, Interpretation and Enforcement of Existing Regulations	24
		Regulatory duplication and inconsistency	26
Company has management control	5	Socioeconomic Agreements/ Community Development Conditions	20
Mineral ownership	6	Uncertainty Concerning Disputed Land Claims	26
Realistic exchange regulations	7	-	-
Stability of exploration and mining terms	8	Best practices mineral potential Index	53.33
		Legal System	41
Ability to predetermine tax-reliability	9	Tax regimes	45
Ability to predetermine environmental obligations	10	Uncertainty concerning environmental regulations	59
		Uncertainty Concerning Protected Areas	80.5
Stability of fiscal regime	11	Trade Barriers	40
Ability to raise external financing	12	-	

B. INCLUSIVE PARTICIPATION IN EXPLORATION AND MINING

A recent study by Kilambo (2016⁵) confirms existence of higher barriers faced by small-scale and junior companies in South Africa's mining industry, more so for Black people. This is exacerbated by, amongst others, the lack of access to capital, cost of compliance to a suite of regulatory requirements, affordability of high-quality geoscience data, the cost of doing business, utilisation of substandard technologies as well as impediments to the access of land and access to markets. Owing to South Africa's history of injustices, the government has not been able to adequately support new entrants to the mining industry, which has often had an effect on the entrant's success and survival in the industry.

Efforts to bring about transformation in South Africa have resulted in the creation of the patriotic black bourgeoisie, albeit a handful and not sufficiently representative as means through which the de-racialisation of the mining industry could be attained. This philosophical stance would find expression in Section 100 of the MPRDA, which provided for the Minister to, within six months of the promulgation of the MPRDA, establish a charter whose main purpose is to redress historical imbalances and to ensure the empowerment of Historically Disadvantaged South Africans (HDSA). The Mining Charter was subsequently developed and later revised as a product of, similar to the legislation, extensive consultations and engagements between government, organised labour and industry seeking to address the challenges that face the mining and minerals industry.

Inaccessibility to quality geoscience data encumbers exploration. Small-scale or junior companies experience major deterrent to meaningfully participate in exploration, spanning inordinate amount of time and money sought to access geoscience data to direct exploration activities. The relevant State entity (i.e. Council for Geoscience) is legislatively mandated to conduct accurate and detailed geoscience data generation. The appropriate modalities for the resultant data to be made available to small and junior companies should be duly considered. This will create an inclusive environment for a significant amount of South African companies to de-risk the exploration programme, participate in wealth creation through exploration and mining activities.

⁵ Kilambo, S. R. 2016. Black economic empowerment and changes in ownership and control in South Africa's mining industry. Edinburgh Research Archives, the University Edinburgh of 28 November 2016.