

POLICY BRIEF ON THE ECONOMIC DIVERSIFICATION IN THE MINING SECTOR

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CENTRE FOR TRADE POLICY AND DEVELOPMENT



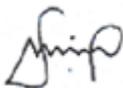
JOINT COUNTRY PROGRAMME **ZAMBIA**

Executive Summary

Zambia boasts of several mineral resources within its geographical confines including copper, gemstones, manganese, uranium, and coal. However, since the start of mining in the 1930s the country has been heavily reliant on the copper mining sub-sector dwarfing the exploitation of other mineral resources. This has subjected the country to financial risk emanating from copper price and production fluctuations. This being so, there is a need for the country to embark on a robust diversification agenda within and outside the mining sector. Mineral resources such as manganese, gold, and gemstones are potential game-changers in this quest. To expedite the process there is a need to address the many challenges that the non-copper subsector continues to face. On this basis, a SWOT analysis was undertaken to identify its strengths, weaknesses, opportunities, and threats. Strategic interventions were then proposed to remedy the challenges. These include:

- (i) Construction of gold and precious metals refinery plants;
- (ii) Capitalisation of the gemstone processing and lapidary training centre in Ndola;
- (iii) Formalisation and organization of the non-copper Artisanal and Small-scale Mining (ASM) sector by providing geological information, access to cheap finance, and building capacity through skills development; and
- (iv) Developing the capacity of state institutions such as the Zambia Revenue Authority (ZRA) to deal with possible illicit financial flows in the large-scale non-copper mining sector.

It is worth noting that the country has somewhat an adequate policy and legal framework that supports diversification to the non-copper sub-sector. This is evidenced by the provisions of several policy and legal documents such as the Vision 2030, Seventh National Development Plan (2017 – 2021), Mineral Resources Development Policy of 2013, Export Diversification Strategy for Gold and Gemstones (2020), the Mines and Minerals Development Act No.11 of 2015, and the National Industrial Policy (2018).



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Table of Contents

Executive Summary
About the Author & Citation
Acknowledgements
List of Tables & Figures
Acronyms

| | |
|---|----|
| 1.0 Introduction | 1 |
| 2.0 What is the contribution of Zambia's minerals to economic development? | 2 |
| 3.0 What is the legal and policy framework that governs diversification in the Zambian mining sector? | 4 |
| 4.0 Is the legal and policy framework adequate? | 4 |
| 5.0 What is the suitability of the investment climate to support non-copper mining investment? | 8 |
| 6.0 What are the strengths, weaknesses, opportunities, and threats of the non-copper mining sub-sector? | 9 |
| 7.0 What strategic interventions can be instituted in the non-copper mining sub-sector to promote economic growth? | 11 |
| 8.0 Concluding Remarks | 13 |

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List of Tables

| | |
|--|---|
| Table 1 Summary of policies, strategies, and laws that support diversification in the mining sector..... | 6 |
|--|---|

List of Figures

| | |
|--|---|
| Figure 1 Distribution of Minerals in Zambia..... | 1 |
| Figure 2 Value of traditional and non-traditional exports..... | 2 |
| Figure 3 Export earnings of copper, gold and Cobalt..... | 3 |
| Figure 4 Ferro-silico manganese, nickel ore and concentrates export value..... | 3 |

Acronyms

| | |
|---------|---|
| AFCTA | Africa Free Continental Trade Agreement |
| ASM | Artisanal and Small-scale Mining |
| COMESA | Common Market for Eastern and Southern Africa |
| GDP | Gross Domestic Product |
| MCTI | Ministry Commerce Trade and Industry |
| MFEZ | Multi Facility Economic Zone |
| MMD | Mines and Minerals Development |
| MMMD | Ministry of Mines and Minerals Development |
| MRDP | Mineral Resources Development Policy |
| MSMED | Ministry of Small-scale Medium and Enterprise Development |
| NTE | Non-Traditional Exports |
| SADC | Southern Africa Development Community |
| SWOT | Strengths, Weaknesses, Opportunities and Threats |
| TE | Total Exports |
| USD | Unites States Dollar |
| VAT | Value Added Tax |
| ZCCM-IH | Zambia Consolidated Copper Mining Investment Holding |
| ZDA | Zambia Development Agency |
| ZRA | Zambia Revenue Authority |

1.0 Introduction

Zambia's mining history dates back over 100 years ago. This rich history is attributed to its unique geographical positioning. In addition to copper, Zambia boasts of other mineral resources including base metals, precious, industrial, gemstones, and energy minerals (see Figure 1). It is important to mention that the country's overdependence on copper has dwarfed the exploitation of these minerals making it susceptible to fiscal risks emanating from production and price volatility (Banda, 2019). Therefore, the government must create systems that support the diversification agenda within and outside the mining sector. In doing so, there is a need to exploit a multi-sectoral approach by creating a symbiotic relationship between mining and other sectors of the economy such as agriculture and tourism. The government in recent years has employed different policy initiatives to promote Non-traditional Exports (NTE). It is important to stress that these exports have increased and grown in value and variety (Figure 2). This state of affairs shows that Zambia is on the right trajectory in terms of the economic diversification agenda. Overall, it is worth noting that the country has made some notable progress in overcoming the heavy reliance on the copper mining sector. There has been generally an aggression and political will to exploit other resources such as gold, gemstones, industrial and energy minerals.

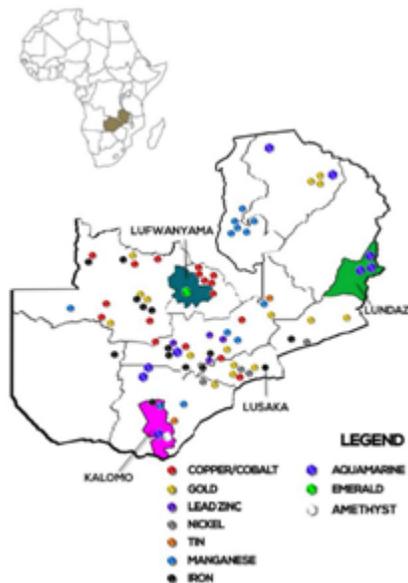


Figure 1 Distribution of Minerals in Zambia (Siwale and Siwale, 2017)

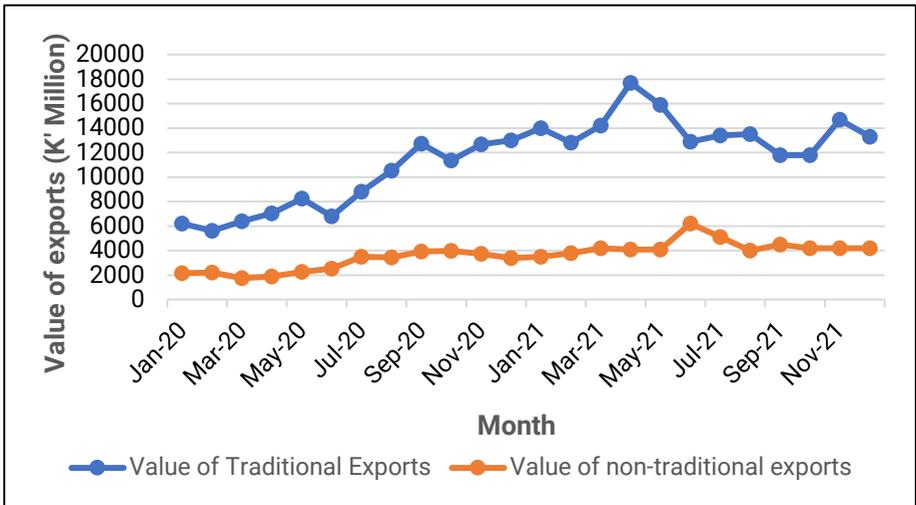


Figure 2 Value of traditional and non-traditional exports
(compiled from Zambia Statistical Agency monthly statistics)

2.0 What is the contribution of Zambia’s minerals to economic development?

Mining continues to be the mainstay of Zambia’s economy contributing around 10 – 14 percent of Gross Domestic Product (GDP) and over 70 percent of export earnings. The sector contributes around 26 – 31 percent to domestic revenue generation and around 2 percent of the country’s total employment. As introduced in the preamble, the country has several minerals within its geographical confines including copper, gold, cobalt, nickel, and manganese. Figure 3 shows the export earnings generated from the gold, cobalt, and copper sub-sectors from 2014 to 2019. Additionally, Figure 4 shows the contribution of ferro-silico manganese and nickel ores and concentrates to Total Exports (TE) and NTE. From the figure, it can be deduced that the contribution of the minerals to TE and NTE has increased. Therefore, these minerals represent a potential avenue to propel Zambia’s diversification agenda.

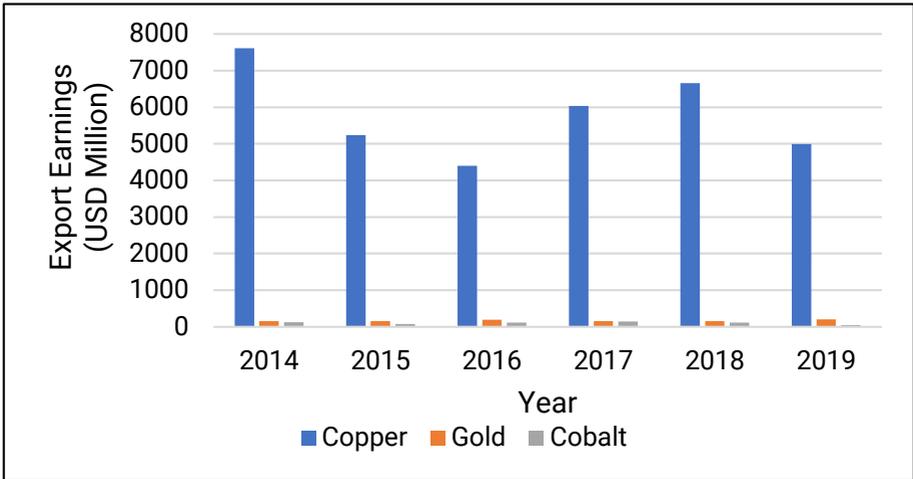


Figure 3 Export earnings of copper, gold and Cobalt (Oxfam, 2021)

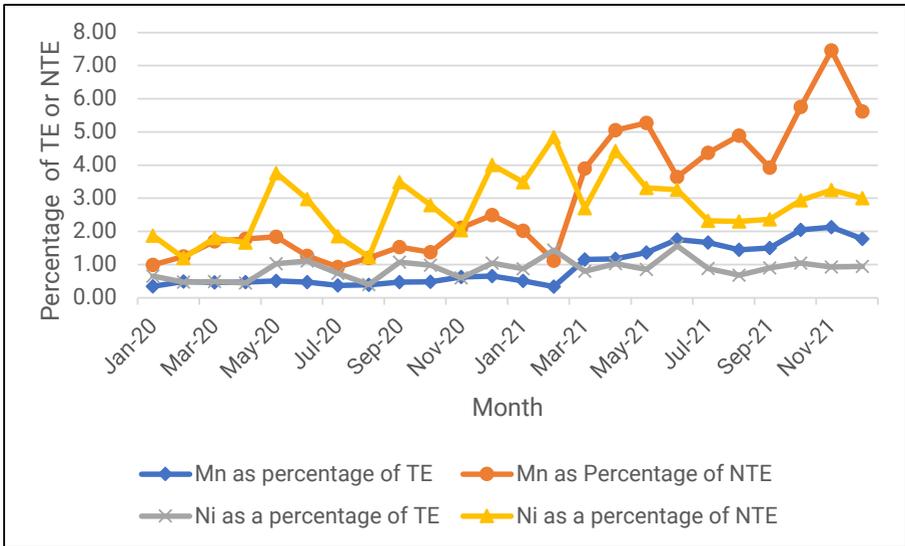


Figure 4 Ferro-silico manganese, nickel ore and concentrates export value

3.0 What is the legal and policy framework that governs diversification in the Zambian mining sector?

There are several pieces of policy and legal documents that speak to the economic diversification of Zambia's mining sector. Key among these include the Vision 2030, Seventh National Development Plan (2017 – 2021), Mineral Resources Development Policy (MRDP) of 2013, export diversification strategy for gold and gemstones (2020), the Mines and Minerals Development (MMD) Act No.11 of 2015, and the national industrial policy (2018). Table 1 provides a summary of these policies, strategies, and laws.

4.0 Is the legal and policy framework adequate?

A thorough discussion of the legal and policy documents highlighted in Table 1 will aid in answering whether the current legal and regulatory framework supports economic diversification in the mining sector. The following provides a summary:

- (i) The National Vision 2030 – This has the long-term objective of promoting a well-organized sector led by private mineral resource exploration and exploitation that contributes to the sustainable socio-economic development of the country. It aims to achieve this through the geological mapping of Zambia's surface by 2030. Although the vision does not make explicit reference to economic diversification it does this indirectly by mentioning the objective to geo-map Zambia's resources.
- (ii) The Seventh National Development Plan (7NDP) (2017 – 2021) – This was principally a policy document that outlines the Government's desired developmental outcomes as well as the accompanying strategies and programmes. It covered the period of four years from 2017 to 2021. The 7NDP strongly aligned with the vision 2030 in terms of poverty reduction, economic diversification, human resource development, and governance. The plan had the strategic objective to diversify and make economic growth inclusive through the mining, agriculture, and tourism sectors. Particularly,

for the mining sector, it promoted a diversified and export-oriented mining sector based on four strategies:

1. Promotion of exploration and exploitation of gemstones, and industrial minerals;
2. Promotion of local and foreign participation in the mining value chain and industrialization;
3. Promotion of petroleum and gas exploration; and
4. Promotion of small-scale mining.

Based on the above strategies, it is clear that the 7NDP limited the diversification agenda to gemstones, industrial, and energy minerals and left out other potential strategic resources such as gold, manganese, uranium, etc. Lastly, the plan did not encapsulate the artisanal sector.

- (a) The Mineral Resources Development Policy (MRDP) of 2013 – This policy is heavily reliant on Vision 2030. It promotes economic diversification within the mining sector through the geological mapping of mineral resources. Additionally, it promotes the exploitation of the non-traditional mining subsectors, namely, industrial minerals, and energy minerals (e.g., oil, gas, and uranium). However, it is quite disappointing that the policy does not have an explicit objective to diversify the mining sector from copper. Additionally, there is too much emphasis to exploit energy and industrial minerals at the neglect of other strategic minerals such as gemstones, manganese, and gold.
- (b) The Zambia export diversification strategy for gold and gemstones (2020) – This is a plan that was jointly crafted by the Ministry of Mines and Minerals Development (MMMD) and the Ministry of Commerce Trade and Industry (MCTI) as a guiding framework for the government to facilitate the realization of the 7NDP objective of promoting a diversified export-oriented mining sector. It aims to achieve this through the lens of Artisanal and Small-scale Mining (ASM). The strategy resonates well with the vision 2030 of making Zambia a middle-income state by 2030 through the conduit

of mining. This strategy is robust in its own right because it explicates the strategic objectives and the proposed interventions on a sector-by-sector basis.

- (c) The MMD Act No.11 of 2015 – This is the principal Act that governs the mining sector in Zambia. It outlines the rules and regulations of how to effectively and efficiently explore, develop, and exploit ore deposits to the benefit of the citizenry. It is important to point out that any agenda put forward to diversify the mining sector must strictly conform and be compliant with the provisions of this piece of legislation.

Table 1 Summary of policies, strategies, and laws that support diversification in the mining sector

| Policy/Strategy/Law | Overall goal | Main emphasis | Main instruments |
|---|---|---|---|
| Mineral Resources Development Policy (2013) | Strategic repositioning of the mining sector | Attract local and foreign private sector participation in the exploration and exploitation of mineral resources | Promotion of exploration of energy and industrial minerals resources |
| Mines and Minerals Development Act (amendments) 2015 | Governance of Zambia’s resources | It outlines the rules and regulations of how to effectively and efficiently explore, develop, and exploit ore deposits to the benefit of the citizenry. | Legal provisions around issues of mining and non-mining rights, geological mapping of reserves, conflict resolution through the mining appeals tribunal, mineral royalty rates, etc. |
| 7th National Development Plan (2017–21) | Diversified and resilient economy for sustained growth | promoted a diversified and export-oriented mining sector | Instruments are centred around Promotion of exploration and exploitation of gemstones, and industrial minerals; promotion of local and foreign participation in the mining value chain and industrialization; promotion of petroleum and gas exploration; and promotion of small-scale mining |
| National Industrial Policy (2018) | Diversified, innovative, and globally competitive industrial base to cater for economic growth and generation of jobs | Focuses on mineral processing of metallic and non-metallic minerals | Promotion of cooperatives, formulation of local content strategy, development of infrastructure, support of micro, small, and medium enterprises, etc |

| | | | |
|--|--|---|--|
| National Vision 2030 | Zambia to attain middle-income status by 2030 | Well organized private sector-led mineral resource exploration and exploitation that contributes to the sustainable socio-economic development of the country by 2030 | Geological mapping of Zambia's surface area by 2030 |
| Zambia's Export Diversification Strategy for Gold and Gemstones | Promote a diversified export-oriented mining sector | Focuses on artisanal and small-scale gold and gemstone mining | <ul style="list-style-type: none"> • Promotion of human resource development • Promotion of technical services and cooperative governance • Geological mapping of gold and gemstones resources • Establishment of gemstone exchange centers • Attract investment in the gold and gemstones mining sector through the creation of brands |
| National Export Strategy | To enhance the export sectors contribution to sustainable socio-economic development | To annually increase the exports of gemstones and non-metallic minerals by 10 and 25 percent, respectively | <ul style="list-style-type: none"> • Strengthening the regulatory framework for the gemstone and gold sectors • Promote value addition of gemstone products for exports |

- (d) The National Export Strategy (NEST) (2017) – This is a strategy crafted by MCTI to enhance the export sector's contribution to socio-economic development. It is centered on promoting a structurally transformed diversified and competitive export sector. The NEST makes sector-specific demands on the mining sector to annually increase the exports of gemstones and non-metallic minerals by 10 and 25 percent, respectively. The NEST is mainly focused on facilitating diversification from the copper sub-sector to non-metallic minerals and gemstones.
- (e) National Industrial Policy (2018) – The overall goal of this policy is to promote Zambia as an industrialized and competitive nation with a diversified, innovative, and globally competitive industrial base, which contributes to sustainable growth and employment creation by 2027. The Industrial Policy was designed to guide the accelerated growth of the manufacturing sector and increase efficiency in the utilization of natural resources. It is worth noting that the policy focuses on the mineral processing of metallic and non-metallic minerals.

The legal and policy framework governing the diversification agenda in the mining sector is somewhat adequate. What needs attention is the strengthening and harmonization of these policy and legal documents so that they send out one unifying message. In strengthening the documents, it is important that the government crafts more detailed strategies (i.e., such as the Zambia export strategy for gold and gemstones) that are going to explicitly set out the plan on how we can attain diversification from copper using other minerals such as manganese, and iron. It is also important that the legal, regulatory, and policy framework should not be limited to gold, gemstones, industrial, and energy minerals but must extend to encapsulate other strategic minerals such as manganese.

5.0 What is the suitability of the investment climate to support non-copper mining investment?

There are a lot of incentives in the non-copper mining sector that make it a favorable investment arena, these include:

- (i) Value Added Tax (VAT) incentives particularly input tax claim for five years on pre-production expenditure for exploration companies in the mining sector
- (ii) Zero rate on mining products for exports
- (iii) Duty-free importation of some mining equipment
- (iv) 100 percent repatriation of profits
- (v) Carryforward period of 10 years for the disallowed interest deduction
- (vi) Loss carryforward period of 10 years (copper and cobalt mining) and five years for other mining sub-sectors
- (vii) Signed double taxation agreements with several countries including but not limited to Mauritius, the United Kingdom, China, Denmark, and Finland
- (viii) Provision of incentives as stipulated by the Zambia Development Agency (ZDA) Act no.11 of 2006
- (ix) Zambia is a party to various trade agreements which include the Common Market for Eastern and Southern Africa (COMESA), Southern African Development Community (SADC), and the African Continental Free Trade Agreement (AfCTA).
- (x) Zambia has signed bilateral investment treaties with various countries.

6.0 What are the strengths, weaknesses, opportunities, and threats of the non-copper mining sub-sector?

The challenges and opportunities of the non-copper mining subsector are best summarized and elucidated using a SWOT analysis which is simply an appraisal of strengths, weaknesses, opportunities, and threats. The non-copper mining sector under this section will constitute the gold, manganese, gemstone, cobalt, and industrial minerals sub-sectors. The focus heavily gravitates toward these minerals because they provide the potential to economically propagate Zambia's developmental progression. It is important to note that the analysis encompasses some sub-sector-specific elements and also focuses on critical cross-cutting issues.

6.1 Strengths of the non-copper mining sub-sector

The following are the strengths of the non-copper mining sub-sector:

- ◇ The potential of establishing backward and forward production linkages e.g. the availability of smelters in Pensulo area in Serenje provides an opportunity to enhance the value addition of manganese ore into ferro and silico manganese
- ◇ Availability of unexploited high-quality wide range of non-copper mineral reserves dotted across the country e.g. emeralds, uranium, nickel, gypsum, gold, manganese, etc.
- ◇ Availability of a gemstone processing and lapidary training centre in Ndola
- ◇ Qualified and experienced technocrats

6.2 Weaknesses of the non-copper mining sub-sector

The following are the weaknesses of the non-copper mining sub-sector:

- ◇ Lack of a gold refinery
- ◇ Lack of a local gemstone exchange centre
- ◇ Incapacitated Ndola gemstone processing and lapidary training centre
- ◇ Lack of geological information as some parts of the country have not been mapped
- ◇ Poor occupational health and safety at non-copper ASM sites emanating from poor mining practices and the continued use of inefficient processing techniques e.g. the use of mercury in the recovery of gold
- ◇ Use of inefficient processing techniques in the artisanal and small-scale

gold and manganese sectors

- ◇ Lack of access to cheap finance in the non-copper ASM sector
- ◇ Lack of access to lucrative markets for artisanal and small-scale miners in the non-copper mining sub-sector
- ◇ Lack of a refinery to process precious metals from the Anodic slimes emanating from the copper electro-refining process
- ◇ Lack of technical and management skills in the non-copper ASM sector
- ◇ Small and unviable mining license areas in the gemstone sector

6.3 Opportunities of the non-copper mining sub-sector

The following are the opportunities in the non-copper mining sub-sector:

- ◇ Presence of Multi facility Economic Zones (MFEZ) e.g., Kafue Steel and Iron MFEZ
- ◇ The political will to organize artisanal and small-scale miners into cooperatives
- ◇ Availability of local Universities (i.e., the University of Zambia, School of Mines and the Copperbelt University, School of Mines and Mineral Sciences) to undertake skills development, and training of non-copper artisanal and small-scale miners on efficient and environmentally benign techniques of exploiting minerals
- ◇ Availability of fiscal incentives to support the growth of the non-copper mining sub-sector
- ◇ Presence of regional mining bureaus in Chipata, Mkushi, Mansa, and Solowezi to provide technical extension services to artisanal and small-scale miners in the non-copper mining sector
- ◇ Presence of cooperatives that can be supported to exploit the non-copper mining sub-sector
- ◇ Availability of cooperating partners that can aid build capacity in the non-copper mining sub-sector
- ◇ Stable political environment since independence
- ◇ Potential establishment of public partnerships in the non-copper mining sub-sector
- ◇ Existence of policy, legal and regulatory framework to govern the non-copper mining sub-sector
- ◇ Existence of some coordination among state institutions that can offer support to the artisanal and small-scale miners e.g., MMMD, MCTI, and Ministry of Small-Medium Enterprise Development (MSMED)

- ◇ Purchase of gold by the Bank of Zambia from artisanal and small-scale miners and some large-scale players directly or indirectly through Zambia Consolidated Copper Mining Investment Holdings (ZCCM-IH)

6.4 Threats of the non-copper mining sub-sector

The following are the threats in the non-copper mining sub-sector:

- ◇ Presence of illegal miners
- ◇ Illegal trade i.e., smuggling of minerals (e.g. gold) from Zambia to other neighboring countries
- ◇ The unfavorable fiscal regime for non-copper ASM sub-sector
- ◇ Exertion of political influence in the mining sector particularly ASM
- ◇ Illicit financial flows in the non-copper large scale mining sector mainly attributed to trade misinvoicing
- ◇ Price exploitation of artisanal and small-scale miners by traders or buyers
- ◇ Perceived bureaucratic and high-cost framework for obtaining mining licenses
- ◇ The poor regulatory framework governing the ASM sector
- ◇ Inadequate investment in infrastructure to support the non-copper mining sub-sector e.g., roads, railway lines, energy, etc.
- ◇ Potential influence from traditional leadership to induce inefficiency in the licensing process of non-copper mining activities
- ◇ The USD 50,000 minimum investment threshold for Zambians to qualify for incentives under the income tax or the excise and duty act (ZDA Act no.11 of 2006) is still high for non-copper artisanal and small-scale miners.

7.0 What strategic interventions can be instituted in the non-copper mining sub-sector to promote economic growth?

Based on the SWOT analysis, the following are some of the strategic interventions that government can undertake to enhance the contribution of the non-copper mining sub-sector to the economy:

- (i) Government should facilitate the development of a gold and precious metals refinery
- (ii) Government should facilitate the skill development of lapidaries and gemstone exchange center's

- (iii) Government should join forces with cooperating partners to provide geological information to artisanal and small-scale miners in the non-copper mining sub-sector
- (iv) The Government through regional bureaus should partner with Universities, and technical colleges to facilitate the training of artisanal and small-scale miners on efficient, effective, and environmentally benign methods of mining and processing non-copper minerals e.g. manganese
- (v) Government should facilitate easy access to cheap finance for the non-copper ASM sector through some form of state financing and partnership with financial institutions.
- (vi) Government through the MCTI, MMMD, and MSMED to develop market linkages for the non-copper ASM sector
- (vii) Government to facilitate the amalgamation of small and unviable gemstone areas to make them viable
- (viii) Government should spearhead formalisation of the non-copper ASM sector through the cooperatives model by providing access to finance, reduction of high fiscal rates, etc.
- (ix) Government should enhance monitoring at borders to prevent the smuggling of minerals
- (x) Government should develop the capacity of state institutions such as the Zambia Revenue Authority (ZRA) to deal with possible illicit financial flows in the large-scale non-copper mining sector
- (xi) Decentralise licensing of Artisanal and Small-scale mining at the provincial level
- (xii) Government should strengthen regulatory procedures for licensing

- (xiii) The Government should develop the necessary infrastructure to support the diversification of the mining sector
- (xiv) The Government should further reduce and express in Kwacha terms USD 50,000 minimum investment threshold for Zambians to qualify for incentives to douse the foreign exchange risk

8.0 Concluding Remarks

Zambia has been heavily reliant on copper mining. However, this narrative is fast-changing through the promotion of the diversification agenda. The non-copper mining subsector presents itself as a favorable arena to drive Zambia's objective of promoting economic diversification and subsequently sustainable socio-economic development. This is against the backdrop that the country has a wide range, of high-quality non-copper resources that are dotted across the country. Additionally, apart from this rich endowment, the country has a legal, regulatory, and policy framework that supports mineral development in the non-copper mining sector. For instance, the tax incentives provided for in the ZDA Act promote a favorable investment climate. However, to engineer a robust diversification strategy there is a need to exploit the strengths and opportunities of the sub-sector to address its many weaknesses and threats through some strategic interventions highlighted in Section 7.

References

- Banda, W. (2019). Zambia's Domestication of the Africa Mining Vision: A Gap Analysis. Lusaka, Zambia : Centre for Trade Policy and Development (CTPD).
- OXFAM. (2021). Copper for Development Report . Lusaka, Zambia: OXFAM international Zambia.
- Siwale, A., & Siwale, A. (2017). Has the Promise of Formalising Artisanal and Small-scale Mining (ASM) failed? The Case of Zambia. The Extractives Industry and Society, 4(1), 191-201.



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