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Artisanal and Small-Scale Mining in Zambia

Blueprint for a National Formalization and Business Acceleration Strategy

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ACRONYMS AND ABBREVIATIONS

ASM	Artisanal and Small-Scale Mining
SSM	Small Scale Mining
LSM	Large Scale Mining
OHS	Occupational Health and Safety
ASMEs	Artisanal Small Scale Mining Enterprises
GDP	Growth Domestic Product
MRDA	Mineral Resource Development Policy
MMDA	Mines and Mineral Development Act
MCTI	Ministry of Commerce, Trade and Industry
MOF	Ministry of Finance
NRERA	Ndola Rural Emerald Restricted Area
CEEC	Citizens Economic Empowerment Commission
GSD	Geological Survey Department
ZDA	Zambia Development Agency

WORKING DEFINITIONS

Formal mining: mining operations based on the mining licenses defined in the national legislations, typically Mining Acts or Mining Regulations. They have to report production and pay revenue as per their national legislation.

Informal mining: mining operations, not based on a mining license.

Formalization: the authorities' efforts to have individuals, groups of persons or an established Association or Cooperative obtain a license to work following prescribed legal requirements of the national mining legislation. Authorities use different types of interventions such as policies and incentives to support this process in terms of providing technical, administrative and financial support, monitoring as well as further extension services. In short, formalization is the process of bringing informal income-earning activities and economies such as ASM into the formal sector through legal, regulatory and policy frameworks.

Business Acceleration: is defined as methods in which businesses can develop and expand by identifying and implementing solutions to remove barriers to their growth by offering access to mentors and information, capacity building, connections and networks with corporates and startups, all of which contribute to increasing the chances of entrepreneurial success.

Development Minerals: Development Minerals are minerals and materials that are mined, processed, manufactured and used domestically in industries such as construction, manufacturing, and agriculture. Development Minerals are economically important close to the location where the commodity is mined and include

(i) Construction materials (such as gravel, crushed aggregate, sand, clay, Limestone);
(ii) Dimension stones (such as marble, granite, syenite and basalt);
(iii) Industrial minerals (such as limestone, phosphate and silica sand); and
(iv) Semi-precious stones (such as amethyst, garnet and quartz)

Artisanal and Small-Scale Mining (ASM): There is no single definition of artisanal and small-scale mining (ASM). However, for this strategy, ASM refers to a range of activities of individuals using mostly rudimentary mining methods, manual and rudimentary tools to access mineral ore, usually available on the surface, or at shallow depths mostly for subsistence.

ASM may also be understood as prospecting, exploration, extraction, processing, and transportation, on a small scale, and the use of more simplified labour-intensive technologies and practices with the use of light equipment in comparison to large-scale mining (LSM). ASM takes place in small operating units, whereas LSM takes place in large operating units.

EXECUTIVE SUMMARY

1. Background and Definition

Zambia is endowed with a variety of Development Minerals that includes mineral commodities such as sand, clay, limestone, dolomite, basalt, micaceous shale, stone aggregate, and construction sand, dimension stones (Baseline Assessment Report, 2018). By and large the Development Minerals are mined by Artisanal and Small Scale Miners. Based on estimates, in 2018, Zambia collected an estimated mine revenue of US$1,376.96 million from an estimated 100,000 ASM population (Buxton, 2013). Artisanal and Small Scale Mining is an important source of labour intensive, non –agricultural rural and peri-urban work for more than 100,000, Zambians, almost 30% of which are women and youth. ASM is mostly manual, disorganized and informal.

In terms of extraction costs, Development Minerals in Zambia offer the least costs and acts as a motivation factor citizens to invest in the business, despite making a number of Artisanal and Small Scale Miners being at the same level. Hence, only a few individuals who can afford to make substantial investments in the industry have been able to reap good profit while hundreds of thousands of people continue to operate marginally at the ASM level.

2. Case for Formalization and Business Acceleration

The demand for Development Minerals in Zambia continues to increase largely due to massive infrastructure projects and industrial development embarked on by Private Sector and Government. However, the ASMs are unable to tap into such opportunities because they are disorganized and lack the basic requirements with which to enter meaningful partnerships with other formal entities such as the financial institutions and equipment suppliers who can in turn, boost their operations. In particular, they neither have the formal documentation nor the business exposure that can enable them participate in local tendering processes and thus, benefit from the huge infrastructure investments being made by the Zambian Government.

3. Lessons from Global Mining Challenge

The key obstacle in various mining countries for some time now has been that of finding the correct method of managing and growing the informal ASMs, together with the formal, medium and large scale mining firms. In Zambia, the drive for formalization of ASMs is in early stages as recognized by the mining resources development policy, 2013 and Mines and Minerals Act of 2015. The Mosi-oa-Tunya Declaration on Artisanal and Small-scale Mining, Quarrying and Development emphases the important contribution of ASM to national and regional rural economies and acknowledged that ASM was a fully integrated industry unlike the enclave nature of large scale mining. At the continental level, the Africa Mining Vision (AMV) is the recognised joint initiative that was put in place and widely accepted by the African Union (AU) Heads of State in 2009 as the roadmap with which to harness the potential of African States to sustainably exploit their

mineral resources. However, since then, AU member states have registered little progress in 11 the process of domesticating the AMV and developing their own Country Mining Visions aligned to the AMV.

4. Mineral Development Priorities under the Policy Context in Zambia

Zambia is endowed with a diverse range of Development Minerals, which are also widely distributed geographically. Despite being endowed with a variety of mineral resources, Zambia has continued to be highly dependent on copper. The exploitation of copper has not fully supported growth of a diversified and resilient economy. Policy initiatives to diversify the economy after the privatization of copper mines have not yielded much results. Challenges that have led to this include:

(i) Inadequate capacity of government to support the growth of a productive ASM sub-sector;

(ii) Weak backward and forward production linkages between the mining sector and other sectors; and

(iii) Inadequate environmental management systems in mining.

The potential of the artisanal and small-scale mining sub-sector to contribute to economic development has been highlighted in past national development plans but little has been achieved. This could be attributed to the manner in which programmes to address challenges in the sector were designed. The Seventh National Development Plan focuses on formalizing and empowering small-scale miners to make them more productive. Formalizing ASM operations is important and focus on improving Policy, Legal and Regulatory frameworks is a must. It is therefore contingent upon capacity of Government, Policymakers and Regulators to put in place the right policies, legislation and sector support strategies. Further, the formalization of mining activities has proved to be the best way in developing small scale enterprises into environmentally and socially responsible operators

Notwithstanding the ready availability and wide distribution of Development Minerals locally, Zambia is yet to take advantage of this potential to ensure a more diversified economy as well as the development of local (District and Provincial) economies driven by extraction and use of Development Minerals found at these local levels. This would spur inclusive economic development, from the grassroots to the national level countering the current trend where Zambia still imports, at great cost, significant amounts of ceramic products such as tiles, toilet pans and accessories; silica sand products such as glass; gypsum products such as boards; raw materials for the manufacture of cement such as gypsum; raw materials for manufacturing fertilizer such as phosphate; and dimension stone products such as wall and floor tiles.

5. Findings of the study on Formalization and Business Acceleration

The following were the major findings from this study on formalization and business acceleration:

(i) The Ministry of Mines and Mineral Development did not provide geological data of mineral deposits to ASM;
(ii) The Ministry of Mines and Mineral Development was not adequately funded to monitor the ASM;
(iii) Access to affordable finance was a hindrance to the development of the ASM sector. Even in cases where individuals had licenses, banks and other financial institutions were reluctant to engage them because of high-risk perceptions. This led individuals, both legal and unlicensed, to turn to middlemen for support, a move that had caught the attention of scholars and donors. It was observed that miners who were desperate to increase their yields, were forced to broker unfavourable deals worsening their already-precarious financial positions.
(iv) A lack of available and appropriate equipment was also a major hindrance to the development of the sector.
(v) The poor road network to remote areas where ASM operate was a challenge.
(vi) Requirements from ZRA, PACRA and other regal requirements to acquire to export minerals were difficult to meet.

6. Approach to Strategy

In dealing with a strategic pathway to the successful implementation of the ASM sector, the strategy has outlined the national formalization strategy as a first step and designed a business acceleration/development package as a second step to be done in a phased approach. The national formalization and business acceleration shall complement each other in developing the ASM sector.

In seeking to address the perennial challenges, the Formalization Strategy has been designed to pursue nine Strategic objectives and further proposed an accompanying set of activities aimed at managing the challenges and thereby, leading to formalization of ASMs and subsequently, transforming them into successful, formal and sustainable ASMEs. The Business Acceleration component proposes twelve Strategic objectives with an accompanying set of activities aimed at managing the challenges and ensuring that the Development Minerals ASMEs successfully develop their businesses and remain sustainable. Legalization is a critical part of the Business Development Acceleration Strategy and also covered in the second part of the report.

7. A Note on the Study Approach and Implementation Roadmap

For this report to be compiled, in-depth data collection was undertaken out of which six major challenges to formalisation was established. These were identified to include, the enhancement of a legal and regulatory framework for the management of ASM operations; the lack of a coherent ASM Formalisation Strategy; informal and disorganised ASM operations that discourage private sector involvement; misinformation and lack of awareness about the benefits of formalisation; perceived high costs of formalisation; and

conflicts over land and concessions with formal mining companies. The report is accompanied by a detailed five-year road map outlining critical implementation activities that should ensure formalisation and the business acceleration. A detailed Monitoring and Evaluation (M&E) Plan is also included to provide the basis for monitoring progress and performance.

1.0 Introducing Zambia's Development Minerals Sector

1.1 Defining and understanding Development Minerals

Development Minerals is a general term used to define minerals and materials that are mined, processed, manufactured and applicable for use in industries such as manufacturing, agriculture and construction (Baseline Assessment Report, 2018). Development Minerals have closer links with the domestic economy, and have the potential to create jobs, with a greater impact on poverty reduction. This is because Development Minerals have a closer utilization of the mined commodity, the sector minerals include industrial minerals, construction materials, dimension stones and semi-precious stones.

Zambia is endowed with a variety of Development Minerals that includes mineral commodities such as sand, clay, limestone, dolomite, basalt, micaceous shale, stone aggregate, and construction sand, dimension stones (Baseline Assessment Report, 2018). By and large the Development Minerals are mined by Artisanal and Small Scale Miners. Based on estimates, in 2018, Zambia collected an estimated mine revenue of US$1,376.96 million from an estimated 100,000 ASM population (Buxton, 2013). Artisanal and Small Scale Mining is an important source of labour intensive, non –agricultural rural and peri-urban work for more than 100,000, Zambians, almost 30% of which are women and youth. ASM is mostly manual, disorganized and informal.

Despite the high value of ASM production, the sector remains highly informal with the majority of the workforce earning very little from their mining activities. Individual incomes average about $200 per annum or less than half of the gross national income (GNI) per person. This is largely attributed to three factors: sharp declines in production and employment during the rainy season; production inefficiencies resulting in low quality, low - priced products; and the informal nature of ASM that puts off financial institutions, resulting in almost half of production value (estimated at 48% on average) accruing to site and pit owners, supervisors, landowners and other economic actors.

1.2 The Challenge of Informality and illegality in the Mining Sector

In Zambia, like any other country in developing world, there is very small difference between illegal and informal mining. Most scholars, have argued that there is variation in definitions of formal, informal and illegal mining across countries resulting in, no clear cut. But it's vital that clear distinctions is needed to have a clear understanding for effective policy and legal requirements to support ASM (Singo and Seguin, 2018).

The mining of Development Minerals in Zambia, is mostly done by artisanal mining characterized more of informality. The perception between the two may be rather clear at the Central Government level but tends to become blurred at the Local Government level where informal ASM activities are considered legitimate operations. Nevertheless, informality denies the ASM actors opportunities to grow their mining operations and ultimately enhance their incomes, livelihoods and operational safety, in the same way it deprives Local Governments the much-needed local revenues needed to supplement Central Government budgetary allocations.

Formalization is key to development of the ASM sector. Through formation of cooperatives, ASM can access finance, grants and equipment loans to grow their enterprises; enter into partnerships for business ventures; acquire concessionary finance from institutions such as the Citizen Economic Empowerment Commission (CEEC), which is mandated to empower citizens; and access funding through grants similar to those provided by multi-lateral organisations such as EU and UNDP.

2.0 Baseline Assessment of Zambia's Development Minerals

In 2019, the ACP-EU Development Minerals Programme in Zambia undertook a comprehensive "Baseline Assessment of Development Minerals in Zambia" with a special focus on ASM operations and related Micro and Small Enterprises (MSEs). The study, inter alia, sought to support evidence-based decision-making and enhanced performance of Development Minerals value chains as a means to increase the sector's contributions to inclusive development, sustainable wealth creation and fulfilment of Zambia's Vision 2030.

That Baseline Study concluded that an estimated 98% of ASM production and 56% of the MSM production of Development Minerals takes place outside the current legal framework. It further noted that for Zambia to fully capitalize on the tremendous economic potential of Development Minerals, policy, legal and institutional actions needed to be undertaken to integrate this neglected sector into the mainstream economy through formalization of ASM which can then guarantee Government support to improve performance, increase productivity and incomes and tackle critical issues therein.

2.1 Making the case for formalization Strategy

The Report presents an Artisanal and Small-Scale Mining in Zambia Blueprint for a National Formalization and Business Acceleration Strategy. The strategy will lead to policy actions to transform the artisanal mining into a more transparent and well-regulated sector that generates improved incomes to the ASM and increased revenue collection at sub regional and national levels. It has been developed from the Terms of reference specific objectives as follows:

The specific objectives include the following;

(i) Develop sector proposals for improved access to finance, technologies, tools, markets and market information;
(ii) Strategies on enhancing sector actions on responsible mining; and
(iii) Review of existing regulations, particularly in terms of simplifying registration, licensing and accounting requirements and increasing productivity

3.0 Developing the Strategy: Methodology and Approach

3.1 Mixed method Approach

In order to ensure that the process for the development of a Formalization and Business Development Acceleration Strategy for the Development Minerals Sector in Zambia is highly participatory and representative, the Consultant used a mixed-method design using both qualitative and quantitative methods across a sample size of 45 interviewees, Communities, Government, and Traditional leaders. The purpose was to increase the reliability and viability of the study by use of two methods to neutralize the biases of using one method. These included Site Owners, Site Workers, Traditional Leaders, District Commissioners, Local Authority Officers, Mining Bureau Officers, Government officials and the Directorate at the Ministry of Mines and Minerals Development, community informants.

3.2 Literature Review

A critical review of the existing literature was conducted focusing on the ASM operations worldwide, Sub-Sahara, and the region Zambia inclusive. The major focus was on the Baseline Assessment of Mineral Development in Zambia 2019, Vison 2030 and the comprehensive literature review of the Artisanal value chain framework and other relevant reports and documents on ASM mining.

This was followed by the review of the Mineral Resources Development Policy, 2013, regulatory framework and other reports of formalization's. Furthermore, benchmarking was conducted with other international countries that have successfully implemented formalization strategies for ASMEs and draw some lessons. Additionally, the Consultant then narrowed the literature review focus down to Africa, and closely examined countries such Rwanda, Mozambique and Tanzania that have implemented ASM formalization strategies with relative success.

The Consultant relied extensively on the Baseline survey of the Development Minerals in Uganda Reports to get the in-depth understand of challenges to formalization highlighted in the reports in order to address them in the Strategy.

3.3 Scope

The report was confined to the key Development Minerals as identified by the Baseline Assessment of Development Minerals in Zambia such as:

- Construction materials (such as gravel, crushed aggregate, sand, clay, Limestone);
- Dimension stones (such as marble, granite, syenite and basalt);
- Industrial minerals (such as limestone, phosphate and silica sand); and
- Semi-precious stones (such as amethyst, garnet and quartz)

For purposes of this assignment, Zambia's Development Minerals were sub-divided under provinces as shown in **Table** 1

Development Mineral Commodity/Product	Location of Occurrence	Comments
Amethyst	Mapatizya, Zimba District of Southern Province; Lufwanyama District of Copperbelt Province & Solwezi District of Northwestern Province; and Mumbwa District in Central Province	Occurs in veins and geods hosted by Metamorphic rocks.
Barite	Chibote Mission in Luwingu of Northern Province; Chasefu in Lundazi of Eastern Province; Ndabala in Mkushi of Central Province	Remains largely unextracted but occurs within basement rocks. Grade ranges from 90 to 95 wt. % $BaSO_4$.
Beryl	Lufwanyama District of Copperbelt, and Lundazi and Nyimba Districts of the Eastern Province, Feira District of Lusaka Province	Associated with pegmatites.
Clay: ball clay .	Chamba Valley, Lusaka Province; Solwezi, Northwestern Province; Loshi, Luapula Province	River and dambo clay deposits of variable plasticity & fired colour
Clay: bentonite	Luano Valley, Central Province	Low quality bentonitic clays associated with mudstone, Lower Karoo
Clay: brick clay	Dambo clay throughout Zambia but mostly in Kalulushi District of Copperbelt Province	Large volume resource, however little information on firing properties
Clay: fire clay	Maamba Colliery, Southern Province	Fireclay hosted in mudstone associated with Karoo age coal measures.
Kaolin	Masuku kaoline in Choma District in Southern Province	The kaolin is from weathering of feldspar from pegmatites.
Corundum	Rufunsa, Lusaka Province and Lundazi, Eastern Province	Corundum occurs within pegmatites & micaschists.
Crushed stone aggregate	(basalt, granite and marble)Livingstone of Southern Province (basalt); Kafue of Lusaka Province (granite); Chilanga and Makeni of Lusaka Province (marble); Ndola Copperbelt Province (marble)	Many other rocks crushed stone aggregate such as quartzite, gabbro, and gneiss
Diatomite	Mongu District of Western Province	Assessed in 2012 by Spectra Mining Ventures Limited for high value applications in the filtration and paints industries.
Dimension stone: black granite’	Chipata, Eastern Province; Lusaka, Lusaka Province, Mpika District Muchinga Province	Occurrences of gabbro and meta-gabbro.

Dimension stone: marble	occurrences across Zambia but mainly in Lusaka and Copperbelt Provinces	Occurrences of marble (or metamorphosed limestone).
Dimension stone: syenite	West of Solwezi in Northwestern Province and Mumbwa, Central Province Solwezi	occurrence consists of sodalitebearing syenite
Dimension stone:	micaceous banded quartzite Siavonga District of Southern Province	Banded quartzite within Palaeoproterozoic to Mesoproteroic Basement rocks
Red garnet (semi-precious stone)	Siavonga District of Southern Province and Lundazi District in Eastern Province	Associated with schists in basement rocks
Graphite	Petauke, Eastern Province and Mkushi in Central Province	Occurs in graphitic schists.
Kyanite Kafue	Leopards Hill, Mwembeshi River & Chalenga River, Lusaka Province	Kyanite schists with large resources of high purity kyanite (up to 61% Al2O3)
Limestone/marble and dolostone	Throughout Zambia but mainly in Chilanga and Makeni Areas of Lusaka Province; Ndola of Copperbelt Province; Central, Sowlezi of Northwestern Province; Magoye of Southern Province	Limestone/marble is produced Oriental Quarries and Larfage Zambia for cement and aggregate
Magnesite	Leopards Hill, Lusaka Province	High purity magnesite, although low volume
Mica (muscovite)	Southeast of Serenje, Central Province; Lundazi, Eastern Province; Southeast of Choma, Southern Province	Coarse muscovite mica in pegmatites associated with granitic gneisses
Phosphate (apatite)	The Nkombwa Hill carbonatite in Isoka District; Muchinga ProvinceThe Chasweta, Mwambuto, Nachomba and Kaluwe carbonatites Luangwa-Rufunsa area in the Feira District); Lusaka Province; Chilembwe, Petauke District Eastern Province; Sugar Loaf, in Mumbwa District, CentralProvince and Keshya Ravine carbonatite, Kafue District in Lusaka Province	The Nkombwa carbonatite surface samples average 4 – 5% P2O5. The Chilembwe deposit has been fully assessed and the produced partially acidulated phosphate fertilizer found to compare very well with conventional fertilizer
Quartz and tourmaline (semi-precious stones)	Serenje of Central Province (quartz and tourmaline); Nyimba of Eastern Province & Siavonga of Southern Province (tourmaline); quartz in Lufwanyama District	Hosted in veins and pegmatites.
Salt	Northern, Luapula, Northwestern., Western & Southern Provinces	Salt pans association with saline spring water
Sand	Occurs throughout Zambia but significant amounts supplied to urban centres are from Chisamba, Chongwe, Chibombo	Focussed on sand exploited closed to Lusaka City.

Silica sand	Throughout Zambia, but notable deposits around Solwezi in Northwestern Province; Kapiri Mposhi in Central Province; Rufunsa in Lusaka Province and the Copperbelt	Currently silica sand is being supplied to large mining companies where it is used in smelting as a flux; The unprocessed silica sand in Kapiri Mposhi contains 99% Quartz. The Rufansa one has largely remained unexploited.
Talc	Lilayi and Chipapa talc deposits in Lusaka Province; Mushish deposit in Ndola in Copperbelt Province; Other occurrences are reported in Central, NorthWestern and Eastern Provinces	Talc results from regional metamorphism of siliceous dolostones and hydrothermal alteration of basic intrusions hosted in Dolostones. Lilayi is the most important deposit. The Mushishi deposit has, after floatation, been found to between 95 and 99 wt.% talc and ranging in brightness from 54 to 78%
Vermiculite	Kankomo dambo, Kalulushi, Copperbelt Province	Weathered shale and clay deposits
Zeolite	Dombwe Hill, Kafue in Lusaka Province; Singwe Gorge, Livingstone, Southern Province; Mongu, Western Province	Stilbite & heulandite occur as vesicular infilling in Karoo basalts.

Table 1. Zambia Development Minerals

Source: Baseline Assessment of Development Minerals in Zambia

In each province, selection of the target district was done purposively, guided by the scale of Development Minerals ASM activity of a given mineral in the district as well as the level of innovation and small-scale industries there.

3.4 Stakeholders Consultations

The Consultant engaged various ASM stakeholders located in various districts from the five provinces sampled on formalization and business acceleration strategy. The stakeholders included site owners, traditional leaders, local authorities, and government agencies. In-person and telephone interviews were conducted in each of the target districts with ASM site owners, officials from the Zambia Environmental Management Agency, Ministry of Mines and Mineral Development, Citizens Economic Empowerment Commission (CEEC) and Ministry of Commerce, Trade and Industry.

3.5 Mitigating against the Spread of COVID-19 during the assignment

The Consultant recognized the importance of establishing the impact of COVID-19 on the ASM operations while undertaking the assignment, especially during the stakeholder's engagement and develop mitigating measures.

During the assignment, COVID-19 guidelines prescribed by Ministry of Health were adhered to especially during the data collection and Validation meeting. Therefore, the consultant collected data through interviews and the validation and inception meetings conducted by virtual. Field visits were not conducted as guided by the ministry of Health Zambia.

3.5.1 Assignment Limitations

The fact that this assignment was undertaken in the midst of COVID-19 restrictions, this in it was a major limitations. Due to the restrictions in movements enforced by the government through the Ministry of Health, the site visits were not conducted and data collection was done through telephone interviews while meeting were conducted virtually. The study covered five (5) Provinces even though ASM is practiced in all the ten (10) provinces in Zambia. Notwithstanding, the coverage was extensive enough and was done where ASM is most prevalent, hence, providing a national picture. For some sites, collection of data, particularly quantitative data, was a challenge due to the lack of records particularly on monetary values as staff were skeptical to disclose such information.

4.0 Review of relevant Literature and Policy Landscape

4.1 Defining Artisanal and Small Scale Mining

ASM is a term that in reality describes a diverse sector that comprises a range of mining-related activities that differ in scale and structure. The distinction between artisanal mining (AM) and small-scale mining (SSM) is often based on scale. Artisanal and small-scale mining (ASM) is labour intensive and uses little heavy equipment in comparison to large-scale mining (LSM). ASM takes place in small operating units, whereas LSM takes place in large operating units.

The sector is characterized by the following:

(i) Low barriers to entry and widespread informality, which further explains the low productivity and recovery of mineral ores in the sector.
(ii) A significant proportion of people engaged in the sector are women, youths and children.
(iii) Very manual and labour-intensive, using simple tools like shovels, hoes, pick-axes, buckets and basins to carry out mining without conducting any exploration
(iv) Large in scale, involving up to thousands of unlicensed, disorganised or loosely organised people across a relatively small area.
(v) Somewhat mechanised or using light machinery and equipment like generators and
crushers.

4.2 Categories and Description of Development Minerals in Zambia and their value

Zambia is endowed with a diverse range of Development Minerals, which are also widely distributed geographically. Examples of Development Minerals in Zambia that are reported as occurrences, deposits being extracted currently or have been extracted before and abandoned for economic reasons, and, as defined by the EU-ACP Development Minerals Programme, include:

(i) Construction Materials: sand, gravel, crushed stone aggregate (granite, marble, basalt, quartzite), sandstone, limestone/dolostone, clay, shale and phyllite;
(ii) Industrial Minerals: gypsum, potash, salt, graphite, clay, bentonite, talc, phosphate, limestone/dolostone, feldspar, silica sand, barite, kyanite, magnesite, mica, vermiculite, zeolite, kyanite, diatomite, pyrite, zeolite, fluorite and kaolin;
(iii) Dimension Stones: granite, rhyolite, gneiss, marble, syenite, quartzite, slate and gabbro/meta-gabbro; and
(iv) Semi-precious stones: amethyst, citrine, rose quartz, tourmaline, quartz, beryl, red garnet and corundum.

Notwithstanding the ready availability and wide distribution of Development Minerals locally, Zambia is yet to take advantage of this potential to ensure a more diversified economy as well as the development of local (District and Provincial) economies driven by extraction and use of Development Minerals found at these local levels. This would spur inclusive economic development, from the grassroots to the national level countering the current trend where Zambia still imports, at great cost, significant amounts of ceramic products such as tiles, toilet pans and accessories; silica sand products such as glass; gypsum products such as boards; raw materials for the manufacture of cement such as gypsum; raw materials for manufacturing fertilizer such as phosphate; and dimension stone products such as wall and floor tiles. A description of the major Development Minerals in Zambia is provided in Table 1 above.

4.3 Lessons from other countries on Formalization efforts

4.3.1 Democratic Republic of Congo (DRC) approach

Estimates suggest the DRC's ASM sector produces 80 per cent of the DRC's total mineral production and that it is also a significant contributor to mineral exports (Polinares, 2012). There is significant variation between minerals, for example, ASM is estimated to produce upward of 60 per cent of the country's cobalt (Öko-Institute, 2011; World Vision, 2013) and 100 per cent of the country's tantalum. Other significant ASM activities occur in gold (first and foremost), copper, tin, tungsten and diamonds.

ASM is mostly a poverty-driven activity for the miners (creasers) and is typically hierarchically structured, with various layers of intermediaries. While no comprehensive census data is available and estimates are therefore guessing, rather than informed exercises, ASM data from 2009 estimates that 2 million Congolese are working in ASM, with 10 to 20 more million dependent on their activities (Polinares, 2012). While important as a social safety net, ASM activities come with significant challenges that have been highlighted extensively in various reports on the sector and include a collection of human rights-related challenges, corruption, unsafe working environments, contribution to conflict financing and various others (Pact, 2010, SARW, 2012, Amnesty International 2014).

ASM's precise contribution to the DRC's fiscal revenues remains very low, as a result of widespread informality and underdeveloped record-keeping capacity both at the operator and Government of DRC level. However, levels of formalisation vary not only by minerals but also geographically. For example, ASM gold production in Orientale is noted as being organised enough to allow for the creation of partnerships and pilot projects (PAC, 2013), which contrasts with perhaps lesser-organized regions such as the Kivus.

The lesson that can be leant from DRC is that many ASM produced minerals in eastern DRC are exported formally and a greater level of formalization is incentivized through the implementation of certification schemes, such as the ICGLR's RCM, CTC and the Better Sourcing Program.

4.3.2 The case of Burundi

Burundi's present-day mining sector is mainly composed of gold, wolframite and coltan (cassiterite is minor), as well as construction materials. Prospects for nickel and rare earth elements (REE) are in the advanced exploration stage as the official opening of the exploitation mining company activities were launched October 2014. Currently, ASM miners undertake 100 per cent of the mineral extraction in the country. The most promising Nickel deposit (Musongati) is expected to start large-scale production in approximately five years, subject to typical risk factors applying to implementing a high-investment industrial mining project in a poor-governance local environment.

According to the Mining Code of December 2013, ASM miners are no longer allowed to organise themselves in not-for-profit associations but must form cooperatives. The result of this change is that previously applicable tax exemptions for non-profit organisations no longer apply to for-profit cooperatives. However, the lack of capacity of cooperatives to manage accounts and establish adequate record-keeping practices presents a significant obstacle to transparency in the ASM sector.

There are concerns that with the increase in the fees to be paid by cooperatives, there is a tendency to reduce the number of actors in the mining sector as well as to create a relationship of dependency between the individual(s) having registered the cooperative and the ASM miners active on the mine site. Similarly, the number of compatriots that are accredited by the Government and have obtained the operating license has dropped sharply since the enactment of the new Mining Code.

The lesson leant from Burundi's experience is that if Governments put up stringent measures, the number of ASM will drop. The alternative way is to give incentives for entry to enhance formalization and then accelerate business growth.

4.3.3 The case of Tanzania

Tanzania is endowed with a variety of minerals, including gold, gemstones, base metals, coal and other industrial minerals. Both artisanal and small-scale miners (ASM) and world-class large-scale mining (LSM) operators conduct mineral exploitation.

Despite the presence of LSM operations, ASM remains the greatest employer in Tanzania's mining industry, employing slightly over 680,000 people (492,810 men and 187,575 women), while the total number of people employed by LSM is estimated at 12,000 people. Since 2004 the Government has set aside special areas of more than 589,613 ha specifically for ASM activities (Baseline Survey on ASM Activities, Draft MEM 2012).

Most ASM miners are itinerant and have at least two working seasons during the year. During the wet season, many engage in agriculture and venture into mining areas during the dry season. In ASM communities, households combine different activities for a livelihood, although mining is the most significant cash income earner for the households

The lesson that can be learnt from Tanzania's experience is that formalization of the SSM sector is done through the issuing of PML licenses to individuals or groups of persons

(Associations). The staff visits informal mining operations from the relevant zonal office, which assists with the application for licenses. The incentive for formalization for ASM miners is the possible economical support from the Small Grant Facility and the technical support from the zonal office of MEM and Stamico as well as from the GST.

5.0 The Africa Mining Vision

The Africa Mining Vision (AMV) represents the main initiative of transforming Africa's mineral resources for economic growth and structural transformation of mining economies. Adopted by the AU Heads of State in 2009, the AMV, seeks to harness the potential of ASM in order to spur local entrepreneurship and enhance socio-economic development. However, historically, little attention has been given to the Development Minerals Sector as an engine of grass root economic development. The AMV therefore aims to foster the establishment of resilient ASM communities through formalizing their activities and supporting them with skills, knowledge and technology to enhance their mining operations. It addresses six major areas of intervention, two of which have a direct bearing on ASM, i.e., improving the quality of geological data; and elevating artisanal and small-scale mining by acknowledging its developmental role thereby harnessing this potential through formalization and integration into local and regional economic development. Nevertheless, while the AMV was adopted at the continental level, there has been unsatisfactory progress by member States to domesticate the Vision through their own Country Mining Visions. In Zambia, the push to domesticate the AMV through a National Mining Vision has remained a Civil Society-led affair probably because the Government has chosen to incorporate ASM issues in other national planning documents and policies.

The Mosi-oa-Tunya Declaration on Artisanal and Small-scale Mining, Quarrying and Development emphases the important contribution of ASM to national and regional rural economies and acknowledged that ASM was a fully integrated industry unlike the enclave nature of large scale mining.

5.1 Historical Legal, Policy and Institution Bottlenecks

According to the ASM Report about 70% of ASM production of Development Minerals takes place outside of the current mining sector legal framework (Hinton et al., 2018). The overall minerals development policy is well developed and has holistic objectives – from the Africa Mining Vision; to Zambia Vision 2030; to the Mineral Resources Development Policy. While the aspirations of those frameworks are highly complementary to the Development Minerals agenda, they are not Development Minerals specific. However, the Policy has no explicit statement on licensing, but it encourages and facilitates orderly and sustainable development of the ASM.

6.0 Moving towards reforming the Mining Sector in Zambia

The overall policy and legislative framework with regards to mining in Zambia has a clear vision, objectives and implementation strategies for the Development Minerals sector.

This vision is broadly aligned to international frameworks such as the Africa Mining Vision and SADC Protocol on Mining. The current Mines and Minerals Development Act does not reflect the different capacities and needs of different types of mining operations. This lack of differentiation has the potential to severely hinder formalization of the ASM Development Minerals sector.

It is also worth noting that adherence by miners of Development Minerals to different legislation is not always consistent – i.e. that mine operators are either compliant with everything or nothing. Formalization can be achieved, in part, through greater decentralization. Individuals, communities and companies are all required to apply for licenses and submit reports in Lusaka. There are several factors in the legislative framework, that discourage formalization, and these include the:

(i) very short tenure of 2 years for an artisanal license which is renewable;
(ii) very high obligations and reporting requirements under section 35 of the Mines and Minerals Development Act (2015), irrespective of the size of an operation;
(iii) need for an Environment Project Brief approval from Zambia Environmental Management Agency (ZEMA); and
(iv) Licensing function is still centralized.

6.1 Production value and geographical occurrence of Development Minerals in Zambia

There is low institutional capacity to support extraction and value addition to Development Minerals within the MMMD. The Geological Survey Department lacks geologists with adequate technical expertise on Development Minerals and capacity to carry out reserve estimation. The geo-data on the Development Minerals sector is not readily available to actors in the sector and this is especially so with the ASM sector. UNDP through the ACP-EU Development Minerals Programme is working with Geological Survey Department (GSD) to compile data into a database (Baseline Assessment of Development Minerals in Zambia, 2019).

6.1.1 The State of Exploration of Development Minerals in Zambia

Most of the operators in the Development Minerals sector are informal and have little to no environmental management plans, occupational health and safety, and community health and safety management plans. This has also led to lack of mitigation measures for the various negative environmental impacts, unfavorable practices in occupational health and in community health and safety at informal sites. In general, the formal operators implement good mining practices and overall have mitigation systems. However, some of the operators have environmental health and safety systems that are insufficient to address the range of environmental impacts at such sites.

6.1.2 The Social Economic Contribution of Development Minerals Artisanal Mining

The Development Minerals sector contributes revenue to the national, subnational, chiefdom, and community governance system through levies, royalties and taxes. The sector is a source of construction material responsible for infrastructure development in

the country, agricultural lime used in the agricultural sector, as well as a wide range of industrial and semi-precious stones. Additionally, it provides rural employment, and improved livelihoods of rural communities through provision of jobs and employment for women and youths.

6.1.3 Environmental Impacts

ASM sites rarely adhere to any environmental standards partly because of lack of knowledge as well as inadequate oversight by the responsible institutions. (Hinton et al., 2018). Direct dumping of effluents into water sources, poorly constructed tailings dams, river damage in alluvial areas, river siltation, erosion damage and deforestation are some of the most significant impacts of mining on the environment. Operating without permits also exacerbates irresponsible mining and lack of compliance to environmental and safety provisions due to the absence of this control, monitoring and reporting mechanism.

The Environmental Management Act (EMA) of 2011 gives Zambia Environmental Management Agency (ZEMA) the mandate to issue environmental permits and monitor compliance of extractives and processing industries, including the small scale miners in Development Minerals. ZEMA enforces this, while educating the general public on matters of environmental and public health. For proposed Development Minerals projects by ASM, the EMA also requires carrying out environmental impact assessments.

6.2 The state of Conflict in the Development Minerals Sector

The lack of distinction of the various minerals at licensing stage is a gap that can hinder the extraction of Development Minerals. Most Development Minerals do not require long periods of exploration as is the case with gemstone. Exploration, mining and mineral processing activities are regulated based on the conditions of grant and regulations issued from time to time. The conditions of grant do not in most cases take into account the peculiarity of different minerals. For instance, license holders are required to pay the same area charges regardless of the differences in the values of minerals being extracted. In addition, the mineral production returns and mineral sales and export returns appear to be designed mainly for metals. This creates room for non-compliance by players in the Development Minerals sector.

Although the Act provides for different rates of mineral royalty payments for different categories of minerals, not all minerals are adequately catered for. Mineral royalty is most suited for high value minerals which are in most cases exported. For industrial minerals which are consumed locally, another type levy would be appropriate both for ease of collection and affordability by the miner. Further, unlike gemstones, there is no provision in the Act for the Minister to prescribe regulation particularly for Development Minerals, (Industrial Minerals) in this case.

Although the Act recognizes the different categories of minerals extracted in Zambia, there are no provisions to address their peculiarities. In this regard, the Act does not adequately cater for Development Minerals. The Act is more tailored to minerals such as copper, cobalt and gemstones.

6.3 Participation of Women and Children in Zambia

Both the formal and informal segments of the Development Minerals sector provide the opportunity for employment and income generation for women and youths. Overall, 33 % of the entire workforce across the 10 sites visited for this report consisted of women. According to the World Bank, the Zambian national labour force consisted of 47.8% female in 2017.6 However, jobs for females are often limited to the agricultural sector in Zambia, and females made up only about 22 % of the non-agricultural work force. Therefore, the Development Minerals sector employs more women in Zambia than the national female labour force participation rate in non-agricultural work

6.4 Cooperatives as a vehicles for Formalization

The Zambian Industrial Policy seeks to promote the growth of cooperatives and of micro and small to medium-sized enterprises, including ASMs, through development of the framework for formalization.

6.4. 1 The Process of registering a cooperative

A co-operative is a distinct form of enterprise that provides services and/or products to its members. Profits, known as surpluses in a co-operative, are divided among members in relation to the amount of the business each member did with the co-operative.

By registering a co-operative, members create a legal entity with powers and responsibilities as prescribed in the amended Co-operatives Act 6 of 2013.

Before a co-operative is registered, there is need to have a formation meeting to decide on the common purpose and an agreement to register a co-operative. At the formation meeting the members have to decide on the form and type of co-operative. There must be at least five natural persons or two juristic persons or a combination of any five persons in order to form a primary co-operative. Co-operatives have certain principles and are expected to include certain values in all their work that they undertake.

6.5 The Operational and Legal Context for Formalization

6.5.1 Understanding the meaning of formalization

Formalization is described as "the authorities' efforts to have individuals, groups of persons or an established Association or Cooperative obtain a license to work following prescribed legal requirements of the national mining legislation". Authorities use different types of interventions such as policies and incentives to support this process in terms of providing technical, administrative and financial support, monitoring as well as further extension services. In short, formalization is the process of bringing informal income-earning activities and economies such as ASM into the formal sector through legal, regulatory and policy frameworks.

However, formalization is not the ultimate goal of ASM development chain. The main objective is to achieve legalisation and transform them into ASMEs in order to be fully integrated into the formal economy.

In Zambia, formalization is understood differently by ASM owner managers and other stakeholders. The findings of the study indicated that formalisation is a process involving four stages; Elementary (Artisanal operations), Organisation (formation of cooperatives), Registration and Legalization. However, studies and lessons learnt from countries where formalisation has been successful have signaled that the ultimate goal is.

The ASM Formalisation Strategy serves as a guide to ASM actors, cooperating partners and the government on how to progress to legalisation, in the process transforming into ASMEs. This process will be complimented by Business Development Acceleration Strategy that details the actions that can be taken to ensure that the ASMEs grow their business operations sustainably and profitably to compete favourably in the formal economy.

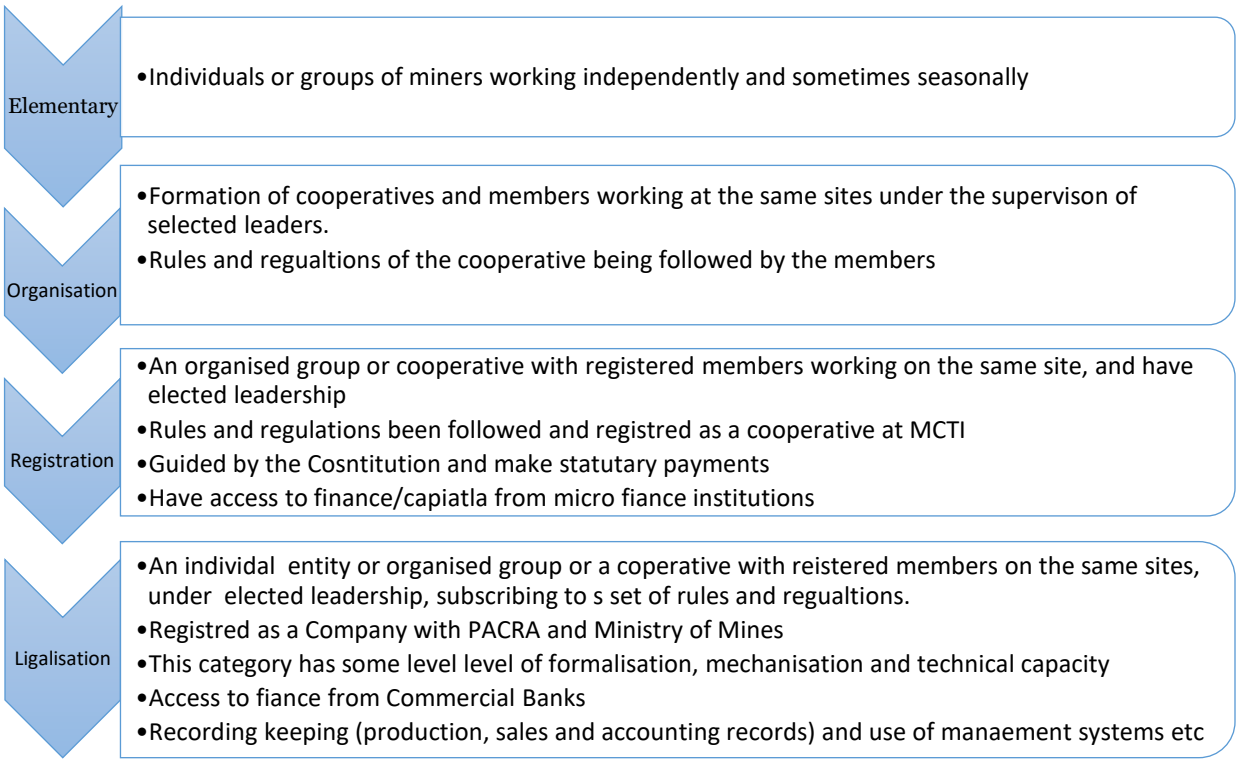
Furthermore, the study reported mixed feelings amongst ASMs on whether formalisation will have a positive impact on their operations and ultimately, their livelihoods. While some miners, especially those who have advanced from artisanal to small scale, believe that formalisation can have a positive impact, others perceive formalisation as an inconvenience that will only invite unwanted high payments to the Zambia Environmental Management Agency for Environmental Impact Assessment, Mining associations and tax payments to the Zambia Revenue Authority.

On the contrary, license holders, MSM and LSM companies are supportive of formalisation because they see it as an avenue to regulate their relationship with ASMs, rid the sector of illegal mining and streamline, regulate and manage ASM operations. They see formalisation as an avenue for ASMs to access geological data, mining extension services, organise miners into flexible and dynamic organisations and access capital, equipment and technical assistance from the Government.

6.5.1 The Successful Formalization Pathway

The ASM formalization process involves four distinctive stages as presented below:

Figure 1: ASM Formalization process



Source: Study findings

Elementary: As indicated above, at the elementary level, the lowest level of the ASM Formalisation Pathway, has absolutely no form of organisation- they are individuals, semi-permanent, working by themselves, or in small groups with no structure at all. In some cases, it may be a landlord who employs people to crush some rocks or extract a particular Development Mineral from their land. In other cases, it may be a few locals extracting a Development Mineral on public land, unsupervised. This level is purely artisanal with most of the miners being indigenous to the communities where they operate, although some may be seasonal, trying to make ends meet.

Organisation: This level involves the formation of cooperatives, ASMs pursuing similar goals and objectives can mobilise around a working area and commence a mining operation. Usually, they have a known membership created only for purposes of order at the mine site. They are not registered either with the local authorities or MCTI. This group only needs sensitisation and support to register accordingly and advance to the next level.

Registration: The groups or associations described under Level Two will have taken an extra step to make a group constitution and register as a cooperative with MCTI. This level usually has groups that can access financing from microfinance institutions.

Legalisation: Which is perhaps the most difficult to achieve because it involves registration as a company or formal business entity at PACRA and the later at the Ministry of Mines. It is expensive and involves putting systems in place that will ensure good governance. It is the apex of the legal transformation of ASM Associations to ASMEs.

In reality the progression from the first elementary to ligalisation possess a number of challenges to ASMs. The road or pathway becomes harder for ASMs to travel and most of them end up operating illegally.

6.6 Formalization Challenges of formalisation and proposed measures

Table 2 below presents the key challenges of formalization and some of the proposed measures

No.	Challenge	Proposed measures to promote formalization
1.	ASM feel there is little difference between being legal and illegal	Linking technical support and capacity building activities to formalisation
		Linking access to credit to formalization
		Government purchasing commodities at a higher price than informal markets
2.	ASM lack of knowledge of legal requirements	Capacity building/awareness programmes
		Communicating more regularly and effectively with miners
3.	Traditional and cultural practices of ASM – e.g. operating individually without seeking permits; chieftaincy systems	Baseline information to understand target community
		Increasing local participation, including traditional authorities, in initiatives linked to formalization
		Working closely with local organisations and communities
4.	Licensing fees are too high for miners	Reducing costs in licensing, royalties, taxes and fees
5.	Miners fear having to pay taxes, royalties and fees if legalized	Tax incentives
		Incentives that provide direct access to markets which pay higher prices for commodities than the informal market Capacity building and training programs linked to formalisation
6.	The complex, bureaucratic process to formalize	Simplifying licensing procedures
		Providing decentralised support to ASM in the formalisation process
7.	ASM have to travel to large centres to apply for a license	Decentralising licensing procedures to regions where ASM is taking place
8.	Miners have to re-apply for licenses every two to three years, making it difficult and costly for miners to maintain legal status	The increasing license expiration period
		Reducing bureaucratic procedures for reapplication of license
9.	Free access to most convenient buying agents (Inc.	Provide access to markets that pay higher prices for commodities than the informal market,

	non-licensed) as informal enterprises	
10.	Mobility of small-scale and artisanal miners – informality helps to maintain flexibility in shifting from one site to another	Geospatial data and Geological mapping
11.	Limited access to mining concessions for small-scale and artisanal miners	Demarcation of areas for ASM
12.	Rare visits and inspections of ASM mines	Decentralization of offices to mining areas. Decentralizing monitoring responsibilities Up-skilling miners to monitor health, safety and environmental practices
13.	Providing incentives requires a level of capacity from the government that might not exist	Capacity building for government
		Increased advocacy to encourage resources and attention to be directed at ASM
		Public-private partnerships

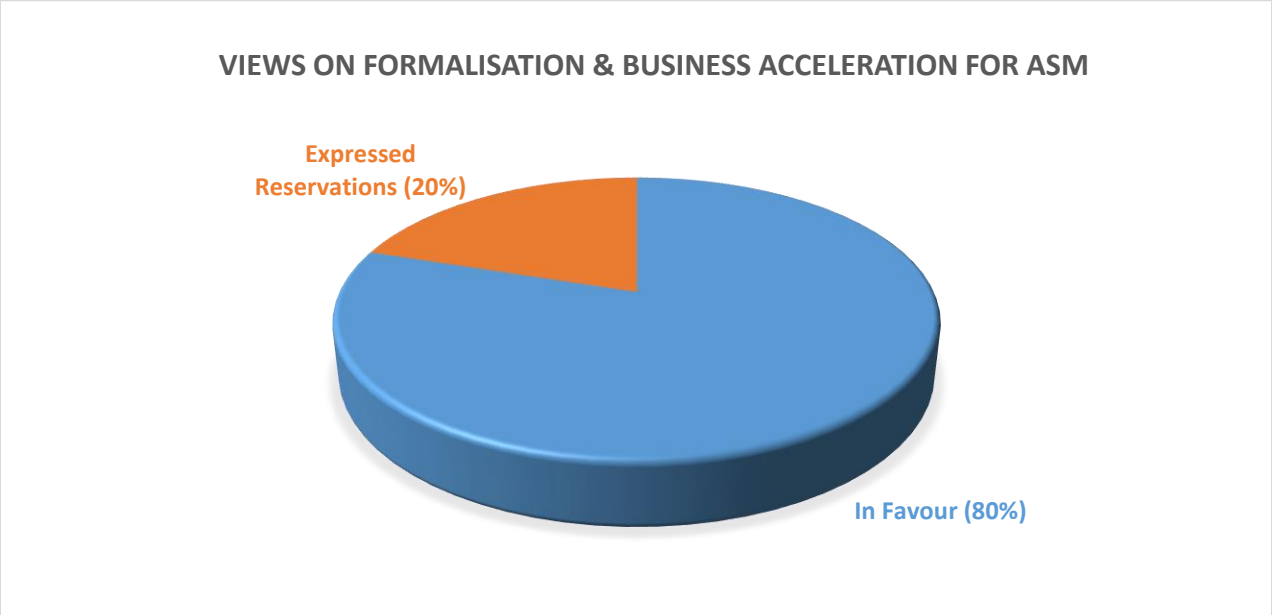
7.0 Study Findings and Analysis

This chapter presents and discusses findings of the study conducted on various ASM stakeholders located in various districts from the five provinces sampled on formalization and business acceleration strategy. The stakeholders included site owners, traditional leaders, local authorities, and government agencies. The chapter further provides recommendations.

7.1 Views and experiences of ASM site owners on formalization

A total of 45 ASM site owners were interviewed from five provinces namely Central, Copperbelt, Eastern and Southern provinces. The study found that the majority, 36 respondents representing 80% of site owners welcomed the proposal of developing a formalization and business acceleration strategy for ASM in development minerals while a minority, 9 respondents representing 20% expressed reservations on the proposal.

Figure 2: Views of ASM site owners on formalisation & business acceleration



Source: *Author's Primary data*

7.2 Policy and legal framework

7.2.1 The Policy Framework

The study found that the policy framework governing artisanal and small-scale mining in Zambia was anchored on the Mineral Resources Development Policy of 2013. In terms of aiding the ASM sector, the Policy provided for the promotion of exploration of industrial minerals for industrial development; provision of occupational health and safety guidelines for ASM operations and collaboration with ASM associations to facilitate the formalization of illegal mining activities by the ASM sector. Further, Government through the 7NDP identified ASM as one of the key focus areas which if well developed, could

contribute significantly to attaining an export-led and diversified mining sector including job creation.

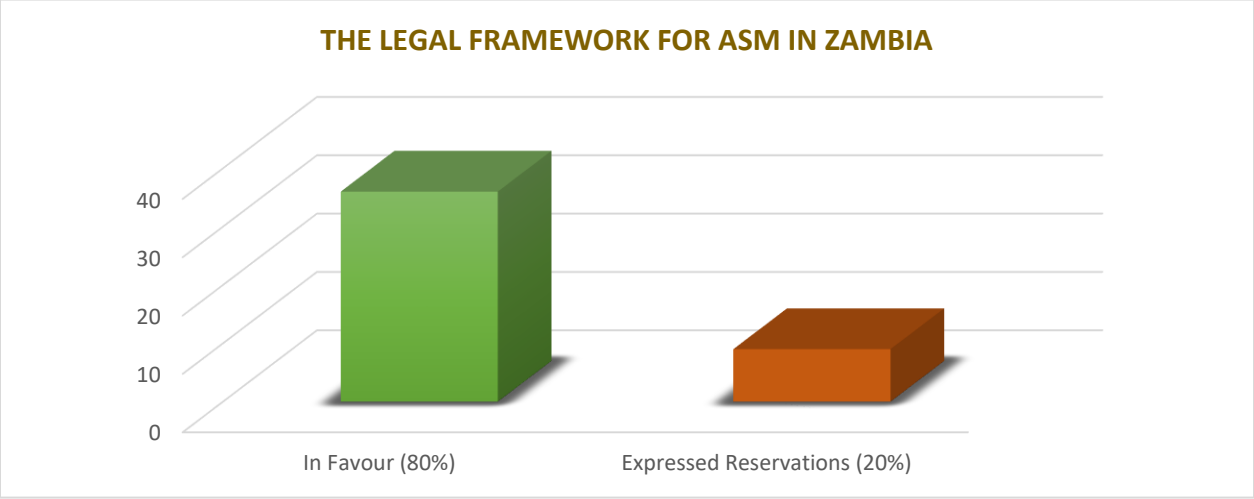
7.2.2 The Legal Framework

Regarding the legal framework, the study revealed that the primary law governing the mining sector in Zambia was the Mines and Minerals Development Act No. 11 of 2015 of the Laws of Zambia (MMDA) as read together with the Mines and Mineral Development (amendments) Act No. 14 of 2016. The MMDA provides for mining rights, licenses, large scale mining, gemstone mining, health and safety, environmental protection, geological services on analysis, royalties, and charges. Other pieces of legislation other than the MMDA include the Mines Acquisition (Special Provisions) Act, Chapter 218, volume 13 of the Laws of Zambia, and the Mines Acquisition (Special Provisions) (No.2) Act, Chapter 219, volume 13 of the laws of Zambia.

The artisanal mining rights are issued to only Zambians over an area not exceeding (6.68) hectares. However, in line with the Citizens Economic Empowerment Act of 2006, Section (29) (3) of the Mines and Minerals Development Act of 2015 provides that small scale mining rights can equally be owned by foreign nationals if they partner with Zambian nationals. Small scale exploration and mining rights are issued over an area not exceeding one thousand (1000) hectares for exploration and four hundred (400) hectares for mining respectively.

The study revealed that 18 respondents representing 50% out of the total 36 respondents who were in favour of formalization expressed concerns about the current legal framework.

Figure 3: The Legal Framework for ASM in Zambia



Source: *Author's Primary data*

Respondents that raised concerns reported that the legal and regulatory framework was insufficient and lacked a clear and streamlined process for ASM licensing. The legal administrative approval system for acquiring licenses is generally complex, cumbersome, and lengthy which becomes a barrier to formalization.

Respondents furthermore argued that "even though operators had formal access, the mining rights rarely provided for the security of tenure. Under section 34 of the Mines and Minerals Act of 2015, the tenure for the artisanal mining license was 2 years while that of small-scale mining was 10 years.

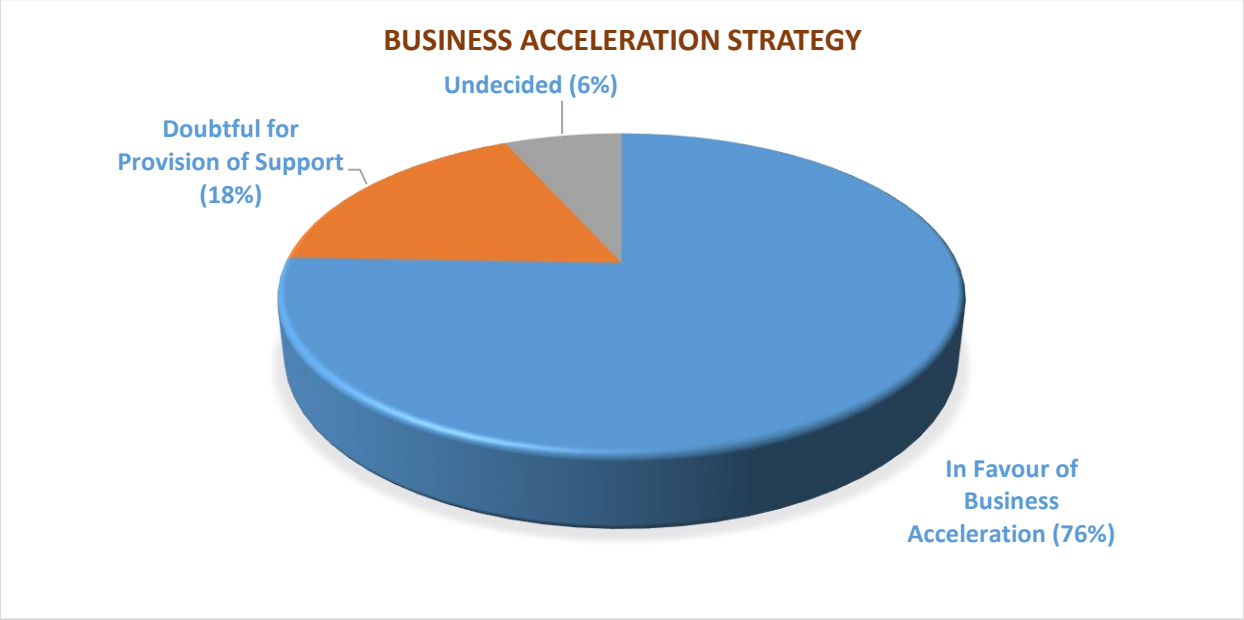
The cost of an Environmental Impact Assessment (EIA) from the Zambia Environmental Management Agency (ZEMA) was too high (K13, 500) while the cost of engaging a consultant to develop the EIA was also high (between K20, 000 and K30, 000). The high costs were a barrier to entry. Further, the application fees (K28) per specific square meter were high.

The study also revealed that the impact of ASM activities on the environment was severe ranging from land degradation, deforestation, groundwater pollution, displacement of animals from their natural habitation, and water pollution due to poor solid waste disposal.

7.2.3 Views on Business Acceleration for the ASM sector

The study also interrogated the stakeholders on how best Government can support the ASM players through a business acceleration strategy to run their businesses profitably.

Figure 4: Business Acceleration Strategy



Source: *Author's Primary data*

Out of a total of 45 ASM interviewed, 34 respondents representing 76% reported that the business acceleration strategy could work only if several key capacity building interventions such as access to finance, training, mining equipment, extension services, and market linkages, were provided. Six (8) respondents representing 13%, however, were doubtful as to whether Government could provide capacity-building assistance to the ASM as they had been mining for a long time without such help. Three (3) respondents

representing 6% were undecided as some of them did not want to pay tax or levy to local authorities.

The study revealed that ASM respondents who were in favour of business acceleration, but that key capacity building interventions had to be put in place and those who had expressed doubt, raised similar concerns that needed to be resolved to enable the strategy to work. These included the following:

(vii) The Ministry of Mines and Mineral Development did not provide geological data of mineral deposits to ASM;
(viii) The Ministry of Mines and Mineral Development was not adequately funded to monitor the ASM;
(ix) Access to affordable finance was a hindrance to the development of the ASM sector. Even in cases where individuals had licenses, banks and other financial institutions were reluctant to engage them because of high-risk perceptions. This led individuals, both legal and unlicensed, to turn to middlemen for support, a move that had caught the attention of scholars and donors. It was observed that miners who were desperate to increase their yields, were forced to broker unfavourable deals worsening their already-precarious financial positions.
(x) A lack of available and appropriate equipment was also a major hindrance to the development of the sector.
(xi) The poor road network to remote areas where ASM operate was a challenge.
(xii) Requirements from ZRA, PACRA and other regal requirements to acquire to export minerals were difficult to meet.

7.3 Views from Government Agencies/Partners on Formalization and Business Acceleration

The Citizens Economic Empowerment Commission (CEEC) was interviewed and reported that the Commission had supported ASM through the provision of finance. The commission had at the time of the interview, supported 13 ASM Projects in gemstones in Eastern Province worth K1, 880,592.55. The Commission to give space for polishing gemstone in the newly created Industrial Yards.

The Bankers Association of Zambia were also interviewed. They reported that the ASM were considered high-risk customers which made it difficult to finances to them. Most ASM did not have audited financial statements. The ASM, therefore, needed to be formalized before they access finances from financial institutions.

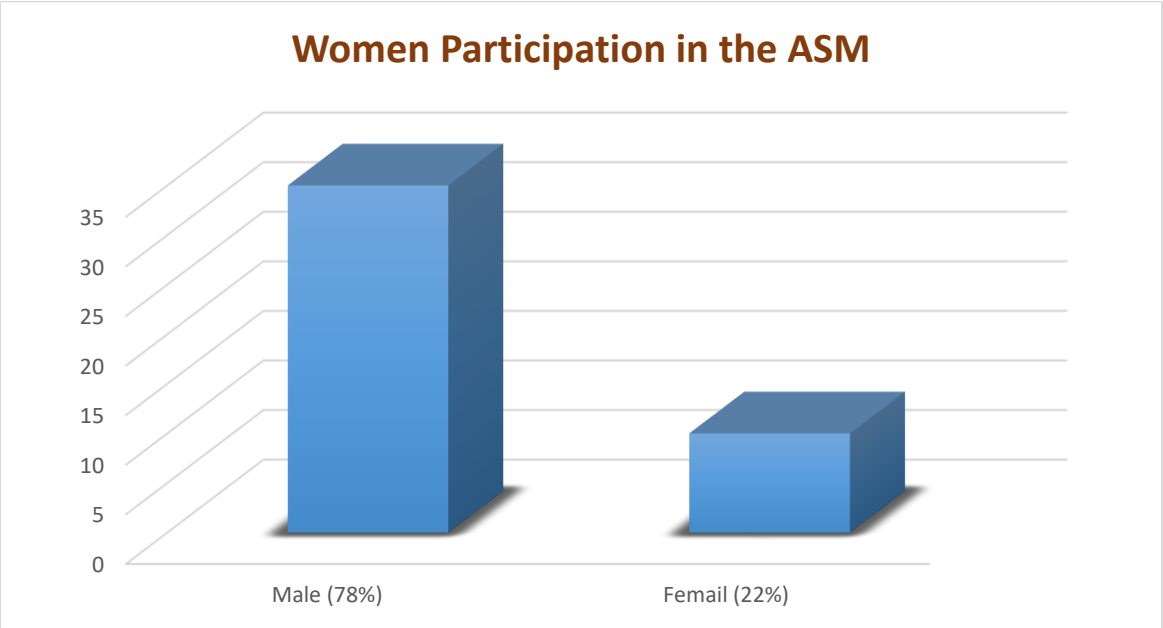
From the interviews with the Ministry of Mines and Mineral Development, it was revealed that the Ministry did not have a dedicated Department to handle the affairs of ASM but a Unit within the Department of Mines. Further, the staff levels were low, and the Unit was inadequately funded to monitor ASM activities. To formalize and increase productivity, the Ministry was encouraging ASM to form cooperatives. Mine licensing processing is centrally done at Cadaster in Lusaka although officers have been placed in Provincial Centers to facilitate the process. As of

According to the Ministry (MMMD, 2018), as of August 2019, the Mining Cadastre had registered 1,666 active Artisanal and Small-Scale mining rights in Zambia. The high number of ASM licenses shows a growing interest to venture into ASM.

7.4 Women Participation in the ASM

This study interrogated the status of gender dimensions in the ASM sector and assess how the existing legislation on ASM contributed to the success of women in ASM. The study revealed that the mining codes and policies did not discriminate against gender. However, it was important to understand the structure of gender inequality due to the complex nature of ASM.

Figure 5: Women Participation in the ASM



Source: *Author's Primary data*

The study revealed that out of the 45 ASM site owners' respondents, 35 representing 78% were male while 10 representing 22% were female. The study revealed that the remoteness of the sites, high mobility, illegality, poverty-driven nature, culturally bound, highly physical character were some of the factors negatively affecting women participation in the ASM sector. The women were mostly involved in digging, crushing, washing, and sorting materials of aggregate, manganese, amethyst, and gold.

7.5 Job Creation for the local communities

Findings from the study revealed that it is immense from the artisanal small-scale mining to local economies. These include employment creation and income generation. Income generation enabled local families to meet their basic needs such as food, health, education, and Shelter.

8.0 Presentation of the Formalization Strategy

8.1 The Goal of Formalization Strategy

The goal of the formalization strategy is to promote inclusive growth and sustainable development through the formalization of Artisanal Small Scale Mining operators by bringing them into the formal sector through legal, regulatory and policy frameworks and providing them capacity building support services.

8.1.1 Guiding Principles

The strategy will be administered by the following guiding principles which are aligned to the African Mining Vision, Vision 2030, Mineral Resources Development Policy and National Industrial Policy and shall be adhered to by all stakeholders in its implementation:

(i) **Inclusiveness** - Deliberate efforts must be made to ensure that Artisanal and Small-Scale miners are formalized for them to equitably participate in the industrialization process. In addition, other disadvantaged groups such as women, youths and people with disabilities should be given equal opportunities to actively participate in the economy.

(ii) **Realism and Implementability** - Interventions and measures in this strategy should be based on a realistic implementation plan informed by results-based management principles.

(iii) **Responsiveness** - Interventions and measures should be responsive to the needs of Artisanal and Small-Scale Miners and be aligned to the broader national objective of reducing inequality, poverty, employment creation and uplifting the living standards of the majority in line with Vision 2030.

(iv) **Policy Predictability** - This strategy underscores the need for policy consistency, transparency and commitment to a conducive and predictable economic

8.2 National Formalisation Strategy Recommendations

To promote inclusive growth and sustainable development, there is a need to integrate the informal ASM activities into the legal system and the formal economy through legal, regulatory and policy frameworks. The goal is to uplift the lives and safety of thousands of artisanal and small-scale miners in Development Minerals.

(a) **Policy and Legal Framework** Although the ASM sector is key to poverty alleviation and rural development, the sector is rarely compliant with legal requirements set by National Standards Bodies and the Bureau of Mines. Formalization implies becoming compliant with legal, technical, environmental, economic, social, and labour aspects to be recognized as a legal, legitimate, profitable, safe, and environmentally sustainable activity. In that regard, there is a

need to develop a process that ensures that ASM actors possess mining titles, related rights, licenses, and permits required by national law to operate in an ASM sector.

8.3 Recommendations and Way forward/ Next Steps

Develop appropriate and Supportive Policies, Laws and Regulations: The study revealed that the legal and regulatory frameworks are insufficient and lack a clear and streamlined process for ASM licensing. The legal administrative system is complex and lengthy. Mine application and approval process take a long time. There is a need to streamline the licensing process for artisanal and small-scale mining that will be efficient, easy to understand, and simple to implement. In that regard, there is a need to review all existing regulations to determine if there are any legal barriers to ASM development to develop comprehensive legislation specific to ASM needs such as simplified registration and accounting requirements to increase productivity.

- ✓ **Intensify awareness of the benefits of formalization:** Unlicensed miners perceive formalization as a threat. ASM is notoriously difficult to locate, especially when road transportation networks do not cover areas where the mining is taking place. Therefore, the miners to a large extent need to be convinced that entering the formal system is going to benefit them by increasing their economic returns and contribute to a rise in their standard of living. The study further recommends that awareness of the legal framework governing ASM operations in Zambia should be conducted.

- ✓ **Incentivizing the Formalization Process:** Most players in ASM cannot afford costs or meet conditions of formalization. If the cost of licensing and/or tax payments and any other costs associated with formalization is too high, informal miners will resist entering the mainstream system. The policies governing formalization must consider the cost/benefit structure of the ASM sector in question – i.e., it will be different for various commodities (gemstones, decorative stones, industrial minerals, etc.). An agreement between MMMD and MoF is required to reduce the tax amount for those who want to formalize. Formalisation can also be done through the formalization of ASM into legal entities such as associations, cooperatives, and companies with the provision of extension services, market access and financing. This can enable the state to regulate miners more effectively, lower the cost of application compliance, and provide training and other extension services.

- ✓ **Complex and Centralized Licensing Procedure:** The processing of mining licensing is complex and the Cadaster office that provides mining licenses is centrally located in the Capital City contributing to high travel and accommodation

costs. Although officers are stationed at Provincial centres, they barely assist ASM players due to budgetary and low staff level constraints including reaching the remote rural mining sites. In study recommends that there is a need to decentralize this aspect.

- ✓ **Lengthy and expensive environmental requirements:** For example, the cost of getting EIA stands at K12, 999.90 and the ASM operator has to engage a consultant to draft the EIA bringing the total cost to K30, 000.00. Further, it takes on average more than 8 months for it to be cleared (MMMD 2018). There is a need to address the high cost of compliance.

(b) Socio-economic dimension: The socio-economic dimension is diverse and often comprises the de facto social arrangements that govern the sector locally, and all cultural aspects, working conditions, and considerations of vulnerable and marginalized groups. Another major aspect in the socio-economic dimension includes cross-cutting gender considerations, organizational capacity of ASM actors, cultural norms and values, interactions with local and indigenous populations, working conditions and health, access to basic services such as education, health care, transportation, and access to technical assistance.

8.4 Recommendations and Way forward/ Next Steps

- ✓ **Improve Women's Livelihood and Participation in ASM:** To improve women's livelihood and their participation in ASM, there is a need to understand the specificities of women's participation in ASM. In addition, there is a need to increase the income generation options for women, by developing mechanisms that will capacitate/train women in a range of economic activities that will reduce their vulnerability.

- ✓ **Devise Programmes for Women to Increase their Participation in ASM:** There is a need to devise programmes that will increase the participation of women/in the earth science subjects at technical Colleges and Universities. Such an increase in women geosciences graduates will motivate other women including those in ASM on one hand. On the other hand, it will allow the delivery of training programmes to women ASM by women (women talking to women). This should yield better results than men training women.

- ✓ **Mainstream cross-cutting issues in ASM:** Mainstream cross-cutting issues of HIV and AIDS, gender, youth and Disability in the formalization of ASM

(c) Geo-environmental dimension: Currently, informal miners are operating without reliant geological data and technical training to enable them to understand

the mineral deposits they are mining. The Geological Survey Department faces challenges in accessing up-to-date information returns from ASM. The unavailability of funds for monitoring visits by geologists to ASM mining sites has hampered the ability of the geological survey in building a robust database with the latest information on the ASM sector. The Department has relied on desk reviews and satellite imagery to monitor the activities of the ASM. Consequently, this has made enforcement of regulations a challenge.

The geo-environmental dimension that the Department should be acquainted with includes the geological potential and mineralogy, geological mapping and geo-prospecting, access to geological data, environmental aspects related to the sector, such as geological characteristics, improving extraction and processing techniques, as well as mitigating environmental impacts.

8.5 Recommendations and Way forward/ Next Steps

- ✓ **Training in Mining Extraction Techniques and access to Geological data:** Without access to geological data, those working in the ASM sector are often left with little to drive their activities except guesswork or trial and error. This often results in low yields, loss of investment and increased environmental degradation. In that regard, the study recommends that Government should facilitate mapping to assess the country's potential reserves, provide access to this data including land use to be able to determine appropriate locations for ASM. Some benefits that may accrue to small-scale miners include efficiency and longevity at sites, minimized environmental degradation and improved profitability.

- ✓ **Secure Funds to undertake ASM site Visits and update Geological information:** Government should provide enough funds to the Department of Geological Survey to undertake site visits to ASM and update the geological information. The Ministry of Mines should conduct a baseline study on the ASM sector to provide an informed basis for the development of an overall ASM policy and the implementation and evaluation of the ASM Formalization strategy.
  While Government should facilitate the acquisition of mineral processing technology for ASM, capacity building for local authorities should be also be facilitated in terms of skills development and resources mobilisation to supervise ASM;

(d) **Increased collaboration between ASM stakeholders:** Individuals within the ASM sector can be involved throughout the formalization process to ensure changes are in tune with realities on the ground. To create long-term sustainable formalization strategies, several things need to be considered.

(e)

8.5 Recommendations and Way forward/ Next Steps

- ✓ Create a platform for positive and regular dialogue between ASM stakeholders and government to provide a conduit for consultation on changes, informing dialogue based on research on mining communities to understand the complexities of the ASM sector and establishing a co-created roadmap outlining interventions with input from various stakeholders, including non-mining ones, at all levels

(f) Capacity Building for Implementing Agencies in Government and other Issues: The study revealed that Government institutions also faced numerous challenges in the quest to assist the ASM sector to maximize its gains and turn the activity into an economic, social and environmental viable one. Capacity building for Implementing Agencies in Government is key if formalization is to be achieved. Stuffing levels, financial constraints should be resolved.

8.6 Recommendations and Way forward/ Next Steps

- ✓ Implementing agencies need to be strengthened. Resources should be found to build capacity within Government institutions for increased knowledge about the dynamics of ASM and policy formulation.

- ✓ The Ministry of Mines and Minerals Development may also consider establishing a national steering committee comprising key stakeholders (MMMD, MCTI, ZEMA, associations and academia) to spearhead the development, implementation, and evaluation of the strategy.

8.6.1 Specific Objectives of the Strategy

(i) Establishment of National Steering Committee for Formalization of Artisanal and Small Scale Miners;

(j) To provide incentives for the currently unlicensed ASM to enter the Ministry of Mines and Mineral Development legal framework;

(ii) To provide a streamlined licensing process for artisanal and small-scale mining that will be efficient, easy to understand, and simple to implement;

(iii) To review legislation to determine if there are any legal barriers to ASM development, revenue collection, investment, etc. and to develop policies related to ASM;

(iv) To monitor the level of activity undertaken by unlicensed ASM miners and to identify these and to encourage them to become legalized;

(v) To ensure that the Ministry of Mines and Mineral Development has sufficient resources to manage an increase in numbers of licensed ASM; - site visits

(vi) To provide funding and other types of technical support to ASM through government support programs

(vii) To mainstream cross-cutting issues of HIV and AIDS, Gender, Youth and Disability in the formalization of ASM

(viii) Improve value chain in ASM

8.7 Approach

The blueprint/strategic pathway for national formalization and business acceleration strategy for the artisanal and small-scale mining in Zambia is a tool that seeks to provide appropriate recommendations to government and development partners in executing plans and strategies aimed at achieving long-term goals in the ASM sector aligned to the overarching development goals.

Business formalization and business acceleration strategy shall work in complementarity. However, national formalization shall be undertaken as the first phase to allow recognition of legal mining entities while the business acceleration package will be provided in the second phase to provide capacity-building support.

The blueprint/strategic pathway will follow three stages in strategic management. First, the strategy will align itself to the mission, vision, values, objectives, and strategies as envisaged in the Mineral Resources Development Policy of Zambia, 2013, the 7NDP and the Africa Mining Vision (AMV) for the development of the ASM sector. Secondly, based on the findings, the strategy has identified areas of improvement with key performance indicators. The third step is the formulation of interventions to best address changes to achieve the desired outcomes.

A dedicated team, resources, a clear organizational structure outlining responsibilities, reporting structure and capabilities including tools will be required to facilitate a successful strategic implementation. It is also essential to periodically review progress as firms operate in a dynamic environment to make the necessary changes to policies that no longer serve a distinct purpose.

The strategic pathway is divided into three (3) phases. Phase 1 sets out national formalization which includes issues to do with policies, the legal framework, permits and licenses involved in setting up a mining company and obtaining environmental permits. Phase 2 outlines business acceleration which includes issues to do with capacity building, processing, financing and procurement of mining equipment, among others. Phase 3 contextualizes market access and encompasses product development and standardization/certification, among others.

8.7 Strategic actions and Key strategies

(i) Establishment of a National Steering Committee on Formalization of Artisanal and Small Scale Miners in Development Minerals;

Specific strategies

- Develop the Terms of Reference for the National Steering Committee on formalization
- The Ministry of Mines and Mineral Developments identify and nominate the key stakeholders to sit in the National Steering Committee on formalization;
- Call for quarterly meetings to review and discuss implementation of the Formalization Strategy

(ii) To provide incentives for the currently unlicensed ASM to enter the Ministry of Mines and Mineral Development legal framework ;

Specific strategies

- Provide guaranteed contracts for ASM construction materials through Trade Center;
- Review royalty rates and other costs related to formalization;
- Provision of Extension Services;
- Provide Access to Explosives; and
- Formalization timeframe and penalties

(iii) To provide a streamlined licensing process for artisanal and small scale mining that will be efficient, easy to understand, and simple to implement;

Specific strategies

- Develop specific procedures for ASM licensing; and
- Incorporate the procedures into the communications/outreach plan.

(iii) To review legislation to determine if there are any legal barriers to ASM development, revenue collection, investment, etc. and to develop policies related to ASM;

Specific strategies

- Review legislation to ensure there are no barriers to revenue collection;
- Develop specific policies for minerals that could be mined by ASM;
- A comprehensive policy on ASM should be developed for Zambia;

(iv) To monitor the level of activity undertaken by unlicensed ASM miners and to identify these and to encourage them to become legalized;

Specific Strategies

- Enhance Ministry of Mines and Mineral Development capacity at the provincial level

- Develop partnerships to strengthen monitoring

(v) To ensure that the Ministry of Mines and Mineral Development has sufficient resources to manage an increase in numbers of licensed ASM.

Specific Strategies

- Increase numbers of relevant staff, infrastructure and capacity of provincial MMMD office;
- Ensure that the staff in the Department of Mines can manage ASM; and
- Provide training to MMMD staff who will be in charge of the support services for the ASM

(vi) To provide funding and other types of technical support to ASM through government support programs.

Specific Strategies

- Government to set up financial support mechanisms;
- Government establishes a Technical Steering Committee for ASM; and
- The government provides a development support function based on shared equity.

(vii) To mainstream cross-cutting issues of HIV and AIDS, Gender, Youth and Disability in the formalization of ASM.

Specific Strategies

- Support the integration of HIV and AIDS issues in the formalization of ASM;
- Facilitate increased participation of women and youth in the ASM formalization;
- Promote initiatives aimed at empowering persons with disabilities to participate in ASM formalization; and
- Strengthen monitoring of interventions on mainstreaming of cross-cutting issues in ASM formalization strategy implementation.

(xi) Increase exploration, mining, processing

Specific Strategies

- Increase exploration, mining, processing and promote use of industrial minerals and gemstone products through government deliberate policies to increase exploration, mining, processing and use of industrial minerals and gemstone products through policy interventions.
- Develop a national programme for upgrading of ASM technology and quality management systems;

(xii) Improve value chain in ASM

Specific Strategies

- Facilitate development of value chains in localities where there is a comparative and/or competitive advantage in producing products and services to enhance utilization and value addition of local resources (development minerals).
- Enhance forward and backward linkages by connecting small low-income ASMs, producers to processors. Connect producers, processors and traders to large buyers.

9.0 Business Development and Acceleration Strategy

9.1 Case for Business Development and Acceleration for Development Minerals ASM

In the previous section, a process of formalization ASMs and transforming them into ASMEs was presented highlighting the four distinctive stages such as elementary, organizing, registration and legalization. This section outlines how the ASMEs trading in development minerals can be supported to enhance and sustain their business. Given the challenges ASMEs are facing in Zambia, this support is considered to be inevitable and critical for their success. Some of the significant challenges include the following:

- Lack of sector-specific business acceleration program
- Lack of capacity building on training; access to financing and equipment
- Lack Identified ASM competitive advantages in the COVID-19 era
- Weak value chain and minimum diversification of local economies

Additionally, the section highlights the findings and recommendations of the study and suggests strategies that can be used to address key challenges that exist at both enterprise and system level.

Furthermore, guidance is provided on how to eliminate the major hindrances faced by ASMs in Development mineral as outlined below:

- Limited access to affordable financing
- Limited access to affordable, appropriate technology and equipment
- Limited access to market information
- Poor Value Chain Support
- Inadequate capacity and skills for business management, innovation and value addition, and;
- Poor product quality that affects competitiveness

Therefore, a matrix outlining a collective stakeholder action towards achieving formalisation and business development acceleration outcomes for the Development Minerals Sector in Zambia is presented.

9.2 Key Business Challenges faced by ASMEs in the Development Minerals Sector

During the study, the Consultant identified seven (7) business specific challenged ASMEs in Development mineral are facing in Zambia. The challenges are presented as follows:

9.2.1 Inability to apply best business practices

Application of best business practices provided the strong foundation for business growth and sustainability. Most of the ASMEs being informal and lack of enforcement of regulations by some agencies has contributed to the application of poor business practices. The study findings also confirmed inability to apply best business practices when respondents were assessed on the five pillars such as developing and managing customer relationship, managing employees, managing customers and accessing marketing information which also hinders their access to market especially international

market. Most of the ASMEs have not employed internal systems to help them adopt best business practices. To a larger extent, this can be attributed to the absence of business development services.

9.2.1 Lack of access to Affordable Financing

Like other sectors in the economy, the Development Minerals Sector is also one of the sectors experiencing financing challenges. The study findings revealed the financing challenges the sector is facing have been compounded by the COVID-19 pandemic which faced most of the ASMEs businesses to close for sometimes. However, it was observed that after the resumption, most of the ASEMs have not recovered from the loss of revenue incurred during the partial lock down and are operating with limited capital.

9.2.2 Lack of Access, Acquisition and use of Equipment

Development minerals sector has been experience the problem of low productivity due to lack of use of equipment by the ASMEs. The study reported that most of the players are unable to access, acquire and use equipment for their mining operations. Despite having few institutions (UNDP, CEEC etc.) offering credit and trading finance products, most of the ASMEs cannot afford the cost of equipment and they are an able to meet some of the requirements needed for them to access credit and trade finance. This situation has been hampered by the COVID-19 pandemic. Therefore, most of the ASMEs have resorted to employ more people which in many ways does not improve efficiency but further diminishes incomes and revenues. Without equipment, the sector is unable to realise better efficiencies in quality and quantity as well as value addition.

9.2.3 Limited Access to Geological Information

The ministry of mines and minerals department has adequate geological information which can be used by ASMEs for their planning and investment. However, the most of the miners have limited access to geological data due to high cost of the information. The ASMEs cited the need to make the cost of Geological data affordable for them to make effective investment decisions.

9.2.4 Lack of standardization/certification

The Zambia Bureau of Standards has a mandate to test and certify Development Minerals. However, the institution lacks equipment to be used to test precious minerals. The findings of the study revealed that Geological department under the ministry of mines has the capacity to test all the development minerals but cannot provide certification. As a result, ASMEs that are engaged in value addition and manufacturing lack guidance on how to produce quality items. This hinders ASMEs access to lucrative local and international markets. Hence the need for a multi-faceted approach to invest in sensitization, technical service provision, institutional-level interventions and trade facilitation in this regard to harness compliance to international product standards. In turn, this will ensure market competitiveness of products within the domestic, regional and international markets.

9.2.5 Lack of linkages/collaboration with MSM/LSM

The local content strategy for Zambia provides for an inclusion of more goods and services produced by the local content entity any activity or operation in Zambia. However, the enforcement of the local content strategy has not been achieved due to luck legal framework to support despite the minerals Act stipulating the local content requirements. This has made it difficult for ASMEs to collaborate or partner with MSM/LSM and cannot participate in some of the tendering process especially on infrastructure projects due to limited capacity.

9.2.6 Weak Unified Advocacy Front

The Development Mineral Sector in Zambia is characterized inadequate unified advocacy front. Despite the sector having an industry association, it has a lot self-organizations operating independently rendering advocacy and lobby function weak. As indicated by the responses from the miners, there are a number of small associations operating independently in different areas such Federation of small scale mining association Zambia, Kalomo Miners association, Small scale miners association of Zambia, Emeralds and semi-precious stones association of Zambia. This fragmentation existing in the Development minerals sectors has made it difficult to enforce a code of conduct by which ASMEs can call themselves to order and there is a general lack of member-driven services.

9.3 How to achieve the required Business Acceleration

Having looked at the business challenges for ASMEs, this section presents interventions to undertaking by all the stakeholders across the value chain (from exploration to marketing and distribution) to achieve the Business Acceleration. , To achieve business acceleration for ASMEs in the Development Minerals Sector, interventions have to be implemented by a multitude of stakeholders across the entire value. Table 3 below shows the challenges, measures to mitigate these challenges and responsivities.

Table 3: Business challenges and measures

Description	ASMEs Value Chain				
	Reserves and Resource Estimation	Extraction	Processing	Transport	Marketing & Distribution
The Bottlenecks	a) High cost of Geo data b) High cost of EIA c) High cost of exploration d) Sector Fragmentation e)Limited access to finance f) ASMEs not partnering with MSM/LSM	a) Labour intensive b) Lack of equipment c) Poor safe, health environmental practices d) ASMEs have no expertise in extraction	a) Outdated equipment for value addition b) Environmental pollution c) Lack of SOPs d) Limited knowledge on processing	a) High cost of outsourcing transport b) Poor road infrastructure making it difficult to access the sites c) Transporters being middlemen and taking advantages of ASMEs	a) limited access to market information b) poor quality of final products due to lack of testing and certification c) No market linkages d) ASMEs have no formal distribution channels
What needs to be done? (Interventions)	a) Make Goe data available & affordable	a) To collaborate with financial institutions	a) To collaborate with financial institutions	a) Work with financial institutions & cooperating	a) Facilitate access to marketing information and make it available to ASMEs

	b) Subsidies/make EIA affordable c) Government to set aside exploration budget to support ASMEs by providing expertise, subsidized exploration licenses, extension services and equipment d) Government to develop a legal framework to govern the ASMEs activities and enforce the code of conduct and ensure that member-driven services are provided. e) Work with financial institutions and cooperating partners to facilitate ASMEs access to credit	and cooperating partners to facilitate leasing or outright purchase of equipment. b) Training ASMEs in Occupation health and safety and environmental management c) Provide training to equipment ASMEs with knowledge and skills required in extraction.	and cooperating partners to facilitate leasing or outright purchase of equipment. b) Capacity building in the area of environmental management c) Develop SOPs and make the available to ASMEs at no cost. d) Provide training to equip miners with process knowledge and skills.	partners to facilitate leasing and out right acquisition of transport b) Government to rehabilitate the road network for easy access to Development minerals sites c) Impart negotiating skills to ASMEs for them to get the best out of middle men	b) Engage ZABS to introduce affordable Development Minerals standards/certifications and make them available to ASMEs c) Engage ZDA and other cooperating partners to facilitate the creation of market linkages. d) Develop a legal framework which support the enforcement of local content which in turn will increase ASMEs access to appropriate distribution channels.

	and trade finance				
By whom? (Responsibility)	MCTI, MMMD, ZRA & NGOs	MCTI, ZDA, ZEMA & NGOs	MMMG, ZDA, ZEMA, NGOs, Private partners	MCTI, NGOs & Private partners	

9.4 Overall goal of Business Acceleration Strategy

The ultimate goals of the business development and acceleration strategy has been considered and stated thus:

To increase participation, productivity, growth and sustainability of Development Minerals ASMEs

9.4.1 Objectives of the Strategy

The main objective of this Business Development and Acceleration Strategy is to provide the Development Minerals Sector stakeholders in Zambia with informative tools that they can use to improve participation, productivity, growth and sustainability of the ASM Development Minerals Sector.

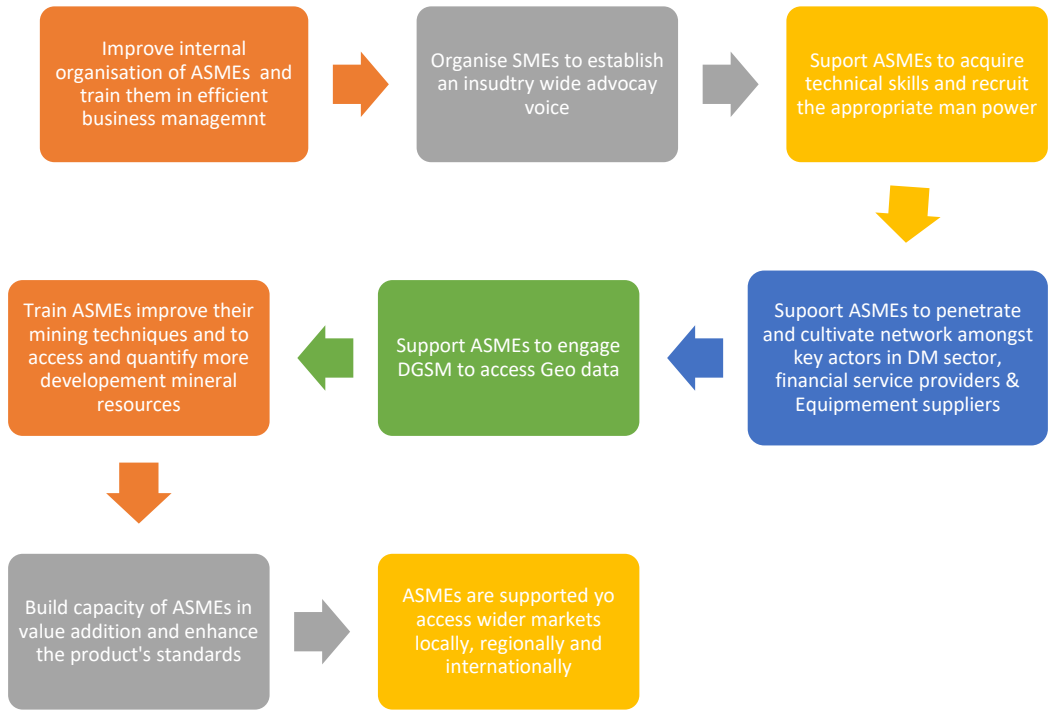
Specific objectives include the following:

a) To increase participation, business performance and growth of Development Minerals ASMEs;
b) To develop and enhance partnership/collaborations between Development Minerals ASMEs and Key stakeholders like financial, mining extension services, business development services providers, equipment suppliers and others;
c) To address management and technical skills and capacity gaps identified in the Development Minerals ASMEs.

9.4.2 The Business Development Acceleration process

The process of Business Development and Acceleration for Development Minerals ASMEs is an all-inclusive process which requires the participation of various stakeholders such as Government institutions, Private Sector, Civil Society, Development Partners and others. To increase participation of ASMEs, productivity, growth and sustainability, there is need for attractive incentives to be offered, facilitate their internal organization and access to financial and technical resources to make them competitive and sustain their operations.

Figure 6 below illustrates the key steps that are necessary in enhancing business development of ASMEs in the Development Minerals Sector:



One of the major drivers of business growth for ASMEs is building their capacity to add value to their mineral commodities and sustainably supply the market with quality products, many of which are being imported into Zambia currently

9.5 Strategic Goals and key specific objectives

Below are the key Strategic Goals (SGs) and related specific objectives needed for the Development Minerals ASME Business Acceleration Strategy:

SG # 1 Improve Business Management and Entrepreneurship Skills of Development Minerals ASMEs

a) Enhance ASME Internal business management practices

Due to high degree of informality, most of the ASMEs have no or little ability to apply basic business management skills such as record keeping, inventory management, customer relationship management, supplier relationship management, preparing income statement and bank reconciliations etc. This inability hinders them from meeting the requirements needed for them to access finance from lending institutions and other cooperating partners and also from being contracted by larger companies operating in Zambia and outside. Hence, the need for ASMEs to be equipped with necessary knowledge and skills required to strengthen their internal business management processes. This calls for collaboration with major stakeholders providing business development services such as the Zambia Development Agency, the private sectors, cooperating partners and academia.

b) Support Improvements at Enterprise Level

The findings of this study have indicated that ASMEs internal business management practices are lacking in most of them and were they are present they are generally weak. To address this challenge, ASMEs should be supported in the following areas:

(i) Developing and implement Customer Centered business Strategies

Because ASMEs do not offer any customer-centric experience to their customers to ensure they build long-term relationships, their consumers (and these are at different levels and nodes within the value chain) have no loyalty. The turnover of customers is so high and for those that kept some form of records, mainly receipts, it was evident that they had very few repeat customers. Many had no data on their customers and suppliers, no system for managing stock and inventory; there was no clear system for dealing with customer complaints, while filing and documentation was thin. The lack of records makes it difficult for the ASMEs to segment their customers, understand their needs and create value propositions that suit their unique needs. Because of this, enterprises generally have weak customer relationships and this is compromising their ability to grow sales volumes.

(ii) Business Incubation, Research, Mentoring and Coaching

This sector lacks innovation and product development. Development Minerals customers are price sensitive and they shop based on the quality of the product which is a disadvantage for the ASMEs as they are paid less because of the quality. This creates loss of revenue and slows down the sectors as many buyers see this as an opportunity to exploit the miners. To address this challenge, there is need for increased innovation and expanding the product range to facilitate diversification and niche application among ASMEs. This support should be in the form of linkages with incubation and research centers such as National Technology Business Center (NTBC) and the National Science and Technology Council (NSTC) and other institutions offering incubation, research, mentoring and coaching services.

(iii) Computer literacy

Study findings revealed that the sector players did not know how to operate a computer which hindered them from accessing on-line platforms were information like Geological data and information, marketing, regulations can be accessed and sources of finance and business development services provider's sites. The sector should be supported as this will open their doors to access for business information required for them to be competitive and also be able to operate systems and improve on their record keeping. Enhancing computers literacy in the sector will entice youths (digital age) to participate because of their interest in operating in the cyber space (accessing and using e-platforms).

Specific Objectives under SG#1

- Training of ASMEs in business start-ups, management and sustainability.

- Training of ASMEs in Computer literacy and establishing internal business management structures.
- Build and operate an online platform dedicated to marketing and selling Development Minerals products with interface provided to both supply and demand sides for direct and easy access.

SG # 2: Improve the value chain and maximize diversification of local economies

The study finding reported low value chain and lack of diversification in the Development Mineral ASMEs. This calls for the need to intensify resource diversification (creation of a conducive environment for the development of backwards and forward linkages, value addition especially semi processing and cluster development, with technology sharing among entities) and use resources from rent/capital generated through resources into other local economic sectors. This will allow for the maximization of local economic multipliers and spillovers.

Specific objectives under SG#2

- Undertake a scoping study on the status of value addition, required skill sets and skills gap in the Development Minerals Sector
- Strengthen enforcement of the industrial development policy
- Training of miners in value addition of development minerals
- Create a fund that can be accessed by legalised ASMs to start small scale industries for example cement, building blocks, etc.
- Enhance collaborations with existing innovation and incubation centers.
- Build partnerships with SMART Zambia and other e-business platforms to innovate digital business solutions for the Development Minerals Sector.

SG # 3: Improved Market Access

For ASMEs, improved market access, product development and standardization/certification among others are the critical success factors for their growth and sustainability. Responses from the miners indicated that once the ASM is formalized and can trade legally, market access for ASM to lucrative local and international markets can be enhanced. It is common for the artisanal miners to be exploited by unscrupulous traders/dealers who know that the miners may have no choice but to sell their products at whatever price the dealers may decide since it is informal.

Specific Objectives under SG# 3

- Enhance capacity of ASMEs to understand public procurement processes to enable them compete in bidding processes.
- Capacity building of ASMEs to negotiate effectively for the best price at the right quality with traders/dealers
- Facilitate ASMEs access to market information for quality decision making.

- Promote producer to consumer links by creating partnerships between ASMs and MSM, LSM, construction companies and other supply chain actors.
- Engage the Zambia Bureau of Standards to put in place a quality control, verification, and standardisation system for Development Minerals production.
- Facilitate ASMEs to participate in local and international trade fairs.

SG # 4: Facilitate Accessing to finance

One of the major challenges ASMEs are facing in Zambia as indicated by the respondents are lack of startup or working capital and lack of processing centers that would allow for high productivity characterize the ASM sector. With a combination of formalization, capitalization can be attained. This can enable ASM to register, gain a concession and buy the necessary equipment to process minerals at the mine. In that regard, Government should facilitate access to finance, credit and savings, grants, government loans, royalties, fees, and systems of taxation, resource allocation for formalization, distribution of revenue related to the sector and ethical standards initiatives.

Specific Objectives under SG# 4

- Create linkages with financial institutions and other institutions that can provide financial support to ASM
- Creating grants or funds to bridge challenges in accessing capital.
- Promote the use of digital financial and payment solutions at ASM production sites and markets.
- Build the capacities of Development Minerals supply chain actors to partner with financial service providers.

SG # 5 Facilitate access and acquisition of appropriate equipment

Another major challenge for ASMEs reported during the study is the lack of equipment to replicate or adapt mining techniques. To increase access to equipment for those in the ASM sector, Government can facilitate the production of such equipment locally or reduce the duty on them so that they become affordable to individual miners. They can then combine manual and mechanized processing techniques to produce and process their minerals.

Specific Objectives under SG # 5

- Facilitate the production of affordable equipment produced locally
- Bridge the gap between ASMs and financial institutions to access bank guarantees and/or equipment leasing.

SG # 6: Provide training to address skills gap

ASMEs are observed to employ unskilled labour who have limited capacity to sources, acquire and operate equipment. Besides training on the basics of running a small business there is also need for mining operators to be trained on mining operations. In order to increase productivity of ASMEs it is important conduct training which should include

practical considerations that apply "growing" business acumen, especially what sort of financial structure and support is needed to move from a basic artisanal level of activity to a small-scale mining venture that requires a high degree of technology, equipment, and human resource capacity.

Specific Objectives under SG# 6

- Partner with Technical Education, Vocation, Entrepreneurship and Training Agency (TEVETA) in collaboration with Trade Schools located indifference provinces to develop tailor made short courses for ASMEs.
- Create partnerships between MSM/LSM and the ASMEs in order to enable market-oriented apprenticeship and internship placement programmes.
- Work with partners in government, international development partners and the private sector to launch a scholarship programme that addresses the skilling and skills gaps in the sector.

SG #7: Increase access to geological data and information

During the study, it was reported that ASMs that are involved in the extraction of semi-precious stones and industrial minerals, gemstones and dimension stones, among others, do not have access to credible geological information that can enable them plan losses and enhance their production.

Specific Objectives under SG# 7

- Facilitate access to affordable geological information to in simplified and easily accessible formats.
- Engage with Financial Institutions to advocate for utilisation of Geodata and reserve estimations to inform credit and other financing decisions

SG #8: Mapping out of Development Minerals ASM zones

In most cases, there are conflicts between ASMs especially new entrants and MSM/LSM operating in licensed and protected areas. As illustrated by the miners, this conflict is caused by non-availability of Geographical maps. ASMs are usually displaced from areas they have been operating in for many years by MSM/LSM. Therefore, creating ASM zones in areas of good mineralization can be a way of protecting ASMs' livelihoods while also taking care of the interests of MSM/LSM companies. Government should facilitate mapping to assess the country's potential reserves, provide access to this data including land use to be able to determine appropriate locations for ASM. Some benefits that may accrue to small-scale miners include efficiency and longevity at sites, minimized environmental degradation and improved profitability.

Specific Objectives under SG #8

- Map and gazette Development Mineral rich areas specifically for the ASMs in all the provinces as a form of affirmative action

- Facilitate ease of access to affordable top Geodata and maps of Development Minerals
- Engage the MMMD to update the Mining Cadastre with information on Development Minerals sites

SG #9: Improve ASM technical capacity to improve mining and quarrying practices

Without technical capacity, those working in the ASM sector are often left with little to drive their activities except guesswork or trial and error. This often results in low yields, loss of investment and increased environmental degradation. In that regard the ministry of mines and other stakeholders like the Civil Society should consider equipping ASMs with knowledge, skills and tools to conduct proper mining and quarrying. This will help to improve also the safety at the mine sites and improve productivity.

Specific Objectives under SG #9

- Provide soft skills to miners and extractors on best practices in mining and quarrying.
- Train miners and extractors on the use and applicability of mining equipment in resource extraction
- Incentivise good mining practices.
- Support cross-regional learning and sharing among ASMs about good mining practices.

SG# 10: Enhance participation of women and support women-owned ASMEs

To improve women's livelihood and their participation in ASM, there is a need to understand the specificities of women's participation in ASM. In addition, there is a need to increase the income generation options for women, by developing mechanisms that will capacitate/train women in a range of economic activities that will reduce their vulnerability. There is a need to devise programmes that will increase the participation of women/in the earth science subjects at technical Colleges and Universities. Such an increase in women geosciences graduates will motivate other women including those in ASM on one hand. On the other hand, it will allow the delivery of training programmes to women ASM by women (women talking to women). This should yield better results than men training women.

The study revealed that out of the 45 ASM site owners' respondents, 35 representing 78% were male while 10 representing 22% were female. The study revealed that the remoteness of the sites, high mobility, illegality, poverty-driven nature, culturally bound, highly physical character were some of the factors negatively affecting women participation in the ASM sector. The women were mostly involved in digging, crushing, washing, and sorting materials of aggregate, manganese, amethyst, and gold. Value chain and market initiatives need to take account of this and seek to redress the gender inequity in terms of income and access to employment.

Specific Objectives under SG #10:

- Develop gender policy on women participation ASM activities
- Build the capacity of women led ASMEs to enhance their business management and negotiation skills.
- Engage Local Governments to give special consideration to women led ASMEs in the local tendering processes.
- Develop training programmes for Women in Earth Science

SG # 11: Enhance Compliance to Health, Safety, Social and Environment standards

Mining is considered by ILO as one of the most unsafe human activities. Apart from the medium and large-scale mining sites run by companies, Development Minerals ASM sites in Zambia are generally unsafe and prone to a range of hazards depending on the mineral being mined at the site. HSE Management is very poor at ASM sites mostly because of their informal and unregulated nature with most of them operating outside of health and safety legislation or enforcement. Furthermore, they have no legal obligation to restore mine sites after activities most of which, once abandoned, pose environmental, health, social and economic challenges. This calls for a multi-stakeholder approach to offer guidance on mitigating the adverse effects of mining activities, especially abandoned mines, on the ecosystem and health of adjacent communities while at the same time, promoting a peaceful mining atmosphere among ASMs, construction companies, authorities and communities.

Specific Objectives under SG # 11

- Establish a mechanism to monitor and enforce compliance to health, safety and environmental standards.
- Undertake sensitisation campaigns to raise awareness among players in the industry and promote use of health, safety and environmentally sound technologies.
- Conduct a precise inventory and assessment of abandoned and active mine sites.

SG #12: Enhance Enforcement of Human and Labour Rights, Including Child protection

Study findings established that the Development Minerals ASM sector in Zambia employs children, have a number of women working with children on site and there are many violations of human and labour rights in general. These are children who are expected to be in school being denied the right to education by their own parents and other ASM employers. There are many occurrences of forced displacement of ASMs on the Copperbelt and Western provinces of Zambia. This displacement has resulted into limited access to mining areas for Development Minerals ASMs.

Specific Objectives under SG # 12

- Develop the Child protection policy
- Conduct awareness campaigns on promoting Human and labour rights and child protection
- Establish a mechanism to monitor and enforce compliance to Human and labour rights and child protection

9.6 Institutional and Implementation Framework

Ministry of Mines and Mineral Development

The Ministry of Mines and Mineral Development will be the primary Government institution responsible for the implementation of the ASM Formalization Strategy which will be done through its lines departments within the Ministry and in collaboration with other line ministries and agencies. Among key implementing agencies with whom the Ministry will collaborate include the following:

The Zambia Development Agency (ZDA)

The mandate of ZDA is to promote and facilitate investment; Provide support to micro and small business enterprises; Promote exports and market development; Provide market intelligence to the business community, and Promote and encourage education and skills training to increase productivity in business enterprises.

The Zambia Environmental Management Agency (ZEMA)

The mandate of ZEMA is to do all such things as are necessary to ensure the sustainable management of natural resources and protection of the environment, and the prevention and control of pollution.

The Patents and Companies Registration Agency (PACRA)

The mandate of PACRA is to implement the legal and regulatory framework for business registration, protection and use of intellectual property rights through which businesses can be established and be able to conduct their commercial transactions.

The Competition and Consumer Protection Commission (CCPC)

The mandate of CCPC is to enforce competition and consumer protection legislation; and Initiate and support relevant research within the field of competition and consumer welfare, among others.

The Zambia Bureau of Standards (ZABS)

The mandate of ZABS is to promote quality product assurance in industry and commerce; and the development of Zambian standards and promote their use.

The Citizens Economic Empowerment Commission (CEEC)

The mandate of CEEC is to promote access to affordable finance to targeted citizens; encourage effective and meaningful participation of targeted citizens in the economy to contribute to sustainable economic growth; mobilize resources for economic empowerment programs; and Monitor and evaluate economic empowerment initiatives, among others.

Government Ministries and Other Partners

The effective implementation of the Strategy requires other complementary policies and programmes. Therefore, there will be a need to promote the creation of policy coordination and synergies across all line ministries and agencies.

Private Sector

The private sector, through its umbrella associations, will be encouraged to mobilize its members to actively participate in the formalization process, deliberation of Sector Working Groups and other consultative fora.

Academia and Research Institutions

Representatives from academia and research institutions will be encouraged to research Development minerals and market development.

Cooperating and Development Partners

Cooperating partners will work in collaboration with the Government at bilateral, regional and multilateral levels to support the implementation of the Strategy by way of providing both technical and financial support.

Resource Mobilization and Financing

The Government is committed to funding the implementation of the Strategy and will also secure additional resources from cooperating partners and the private sector.

Monitoring and Evaluation

Through a strengthened institutional coordination and implementation framework, the Ministry in collaboration with its statutory bodies, cooperating partners and other stakeholders, will be required to conduct periodical monitoring and evaluation of the implementation of the ASM Formalization Strategy. Sanctions will be imposed on companies that fail to comply with the ASM formalization Strategy requirements as contained in the Mines and Mineral Development Act.

9.7 Implementation Frameworks

Table 4: Implementation plan for ASM formalization

Strategic Goal	Specific Objectives	Activities	Performance Indicators	Targets to be achieved by end of 2026	Responsible Offices
Strategic Objective # 1 Establishment of National Steering Committee for Formalization of Artisanal and Small Scale Miners	Develop the Terms of Reference for the National Steering Committee on formalization	Drafting of TORs	TORs developed	1	**MMMD**
	The Ministry of Mines and Mineral Developments identify and nominate the key stakeholders to sit in the National Steering Committee on formalization;	Identification of Key Stakeholders	Number of stakeholders on the National Steering Committee	15	**MMMD**
	Call for quarterly meetings to review and discuss implementation of the Formalization Strategy	Call of meetings	Number of meetings held	4	**MMMD**

Strategic Objective #2 To provide incentives for the currently unlicensed ASM to enter the Ministry of Mines and Mineral Development legal framework	**A. Provide guaranteed contracts for ASM construction materials through partnerships**	1. Provide guaranteed supply contracts to unlicensed ASM. 2. Develop a monitoring system of ASM subcontractor 3. Encourage partnerships between ASM and larger small scale miners to execute contracts	1. Number of guaranteed supply contracts awarded to ASM 2. Monitoring system developed 3. Number of the partnership created and contracts executed	1. Guaranteed supply contracts awarded to unlicensed ASM 2. Monitory systems developed and operationalized. 3. Partnerships created and developed	MMMD, MCTI & ZDA
	B. Review royalty rates and other costs related to formalization	1. Review royalty rates charged on unlicensed ASM operations and proposed rates	Reviewed royalty rates charged to unlicensed ASM	Mineral royalty rates charged to Unlicensed ASM should have been reviewed	MMMD, MOF & ZRA
		2. Provision of tax holidays	Number of tax holidays provided to ASM	Tax holidays (different types) provided to ASM	MMMD, MOF & ZRA
	C. Provision of Extension Services	1. Provide training to ASM	Number and types of training provided	ASM training in various mining operations	MMMD, ZEMA
		2. Create mineral development fund for ASM	Mineral development fund developed	Mineral development fund created and accessed by ASM	MMMD, CEEC
		3. Promote the formation of cooperatives, associations or other semi-legal entities	Number of legal or semi-legal entities created	Legal or semi-legal entities created (cooperatives, associations and others)	MMMD, MCTI, ZDA, PACRA

	C. Provide Access to Explosives	1. Facilitate access to explosives.	Increased access to explosives	Increase access to affordable explosives by ASM	MMMD
Strategic Objective #2: **To provide a streamlined licensing process for artisanal and small scale mining that will be efficient, easy to**	**A. Develop specific procedures for ASM licensing**	1. Develop and circulate procedures based on cadastre work	Procedures developed and circulated in all mining areas	Procedure for ASM licensing developed and accessed by ASM in all the mining areas	MMMD
		2. Increase exploration and mining period from 2 to 10 years	Increase exploration period	Exploration period granted for 10 years	MMMD

understand, and simple to implement	**B. Incorporate the procedures into the communications/outreach plan**	1. Include procedures for ASM licensing into the communications	Procedures for ASM licensing included in the communication/ outreach plan	Procedures for ASM licensing made a key component of communication strategy	MMMD
Strategic Objective #3: **To review legislation to determine if there are any legal barriers to ASM development, revenue collection, investment, etc. and to develop policies related to ASM**	**A. Review legislation to ensure there are no barriers to revenue collection**	1. Review legislation governing small business registration, etc. that could affect the formalization process of ASM	Reviewed legislation	Reviewed legislation being enforced	MMMD, MOJ
		2. Remove the unnecessary steps in the application process	Application process simplified	Simplified application process being used by applicants	MMMD
		3. Review legislation regarding investment policies that could protect investors from paying tax	Reviewed legislation	Reviewed legislation regarding investment policies being enforced	MMMD
	B. Develop specific policies for minerals that could be mined by ASM;	1. Develop mineral-specific policies	Mineral–specific policies Developed	Mineral-specific policies developed and implemented	MMMD
	C. A comprehensive policy on ASM should be developed for Zambia	1. Develop overall ASM policy at national policy	Overall ASM policy developed	Overall ASM policy developed at the national level and implemented	MMMD
Strategic Objective #4: **To monitor the level of activity undertaken by unlicensed ASM**	**A. Enhance Ministry of Mines and Mineral Development capacity at the provincial level**	1 Develop monitoring system of ASM in provinces (Inspection by policy and MMMD officers)	ASM monitoring system developed	Monitoring system developed and implemented.	MMMD
		2. Define specific functions of MMMD officials	Inspection-specific functions specified	Inspection-specific functions of MMMD	MMMD

miners and to identify these and to encourage them to become legalized				officials defined and adhered to	
		3. Provide training on monitoring ASM	Number of training conducted	All MMMD officials involved in monitoring ASM trained.	MMMD , ZEMA
	B. Develop partnerships to strengthen monitoring Institutional Strengthening	1. Develop community self-monitoring function	Number of community self-monitoring functions developed	Community self-monitoring functions developed in all the mining areas and operationalised	MMMD
		2. Establish working relationships with other organizations that are mandated to monitor illegal activity	Number of relationships established	Working relationships established and operationalised	MMMD, ZDA, CEEC
Strategic Objective # 5 **To ensure that the Ministry of Mines and Mineral Development has sufficient resources to manage an increase in numbers of licensed ASM.**	***A.*** **Increase numbers of relevant staff, infrastructure and capacity of provincial MMMD office**	1. Define tasks of provincial MMMD staff that will be engaged with the licensing, management and monitoring of ASM	Defined tasked developed	The defined task for provincial MMMD staff developed and being executed	
		2. Defined infrastructure needed	The infrastructure needed to be defined	The defined infrastructure needed made available and operationalised	
	B. Ensure that the staff in the Department of Mines can manage ASM; and	1. Define tasks of national MMMD staff that will be engaged with oversight functions related to the duties carried out by provincial	Defined tasks of national MMMD staff	Defined tasks of national MMMD staff being executed	

		2. Provide sufficient infrastructure (computer access and training) to ensure that these functions can be carried out	Sufficient infrastructure provided	Sufficient infrastructure was provided to enhance the execution of functions	
	C. Provide training to MMMD staff who will be in charge of the support services for the ASM	1. Provide training to MMMD staff in ASM support services	Number of training provided	All MMMD staff in ASM support services trained	
		2. Provide training in the assistance to informal, disorganized ASM in setting up cooperatives, associations and other forms of legal or semi-legal entities	Number of training conducted	All MMMD staff in charge of the support services for the ASM trained.	
Strategic Objective #6 **To provide funding and other types of technical support to ASM through government support programs**	**A. Government to set up financial support mechanisms**	1. Establish mineral development fund	Mineral development fund established	Mineral development fund established and accessed by ASM	
		2. Develop micro-financing facility through partnerships with NGOs and other financial institutions	Miro financing facility developed through partnerships	Microfinancing facility developed through partnerships and operationalised	
	B. Government establishes a Technical Steering Committee for ASM	1. Set a small technical committee for proposal review	Technical committee appointed	Proposal reviewed by the technical committee and submitted	
		2. Provide microfinance loans for ASM	Number of microfinance loans provided	Microfinance loans provided for ASM	
Strategic Objective # 7 **To mainstream cross-cutting issues of HIV, gender, youth and**	**A. Integrate HIV and AIDS issues in the formalisation of ASM**	1. Incorporate HIV and AIDS issues in the ASM formalisation processes	HIV and AIDS issues included in the formalisation process	HIV and AIDS issues to have been incorporated in the formalisation of ASM	

Disability in the formalisation of ASM	**B. Facilitate increased participation of women youth and persons with disability**	1. Create quotas for women and youths	Quotas created	Increased participation of women and youths through the application of quotas	
		2. Provide incentives to encourage women and youth participation.	Incentive scheme developed	Increase participation of women and youth through the incentive scheme	
	D. Strengthen monitoring of intervention on mainstreaming of cross-cutting issues in ASM formalisation strategy and implementation	1. Develop the database of women, youths and persons with disabilities engaged in ASM activities	Database developed	Access to information by the key stakeholder on mainstreaming of cross-cutting issues in ASM formalisation for monitoring and provision of interventions	
Strategic Objective # 8 ***To develop a sector-specific business acceleration program***	A. Increase entrepreneurial and innovation ambidexterity of both existing formalized ASM and startups,	1. Develop policies to lower taxes and remove bureaucracy	Polices developed	Increased entrepreneurial and innovation activities for ASM and start-ups	
		2. Provide infrastructure for innovation	The infrastructure provided for innovation	Increased entrepreneurial and innovation through infrastructure for innovation	
	B. Increase collaboration opportunities through open innovation or operational expansion.	1. Promote a community working environment for ASM	Collaborations established	Increase collaboration opportunities through open innovation or operational expansion	
	C. Support ASM participants through experienced mentors and coaches, working on a	1. Develop mentorship and coaching programmes	Mentorship and coaching programmes developed and operationalised	Mentorship and coaching support were provided to ASM participants.	

	one-to-one basis in the ASM to define and meet their goals, leading to upgrading their innovation potential.				
Strategic Objective # 9 ***Capacity building – training; access to finance; access to equipment, Market Access***	A. Training and Technical Assistance:	1. Enhance firm capabilities by providing sustainable training and technical assistance services	Firms capabilities enhanced	Enhanced firm capabilities through training and technical assistance.	
	B. Access to finance:	2. Facilitate access to finance for ASM	Finance accessed by ASM	Access to finance by ASM provided.	
	C. Access to Equipment:	3. Facilitate access to ASM mining equipment	Mining equipment accessed by ASM	Access to mining equipment facilitated.	
	D. Create an information network platform	Create an information network platform	Information network platform created	Information network created and market accessed by ASM	
Strategic Objective # 10 ***To identify ASM competitive advantages in the COVID-19 era.***	A. Identify ASM competitive advantages to improve productivity, profitability	1. Profiling of critical success factors for ASM	Critical success factors identify	Critical success factors for competitive advantage, productivity and profitability identified	
	B. Prepare for future operational effectiveness.	1. Develop a plan for future operational effectiveness	Plan for future operational effectiveness developed	Future operational effectiveness plan developed and operationalized.	
Strategic Objective # 11 ***Increase exploration, mining, processing***	A. Increase exploration, mining, processing and promote the use of industrial minerals and gemstone products through government deliberate policies to	1. Develop policies to increases ASM value chain activities	Policies developed to increase ASM value chain activities	Policies developed and operationalized.	

	increase exploration, mining, processing and use of industrial minerals and gemstone products through policy interventions.				
	B. Develop a national programme for upgrading of ASM technology and quality management systems;	1. Develop a national programme	National programmes developed	National programmes developed and operationalised	
Strategic Objective # 12 Improve value chain in ASM	A. Facilitate the development of value chains in localities where there is a comparative and/or competitive advantage in producing products and services to enhance utilization and value addition of local resources (development minerals).	Develop value chains developed in localities	Value chain developed in localities	Development of value chain in localities facilitated.	
	B. Enhance forward and backward linkages by connecting small low-income ASMs, producers to processors. Connect producers, processors and traders to large buyers.	1. Promote forward and backward linkages	Forward and backward linkages created	Forward and backward linkages are created by connecting small low-income ASMs, producers to processors. Connect producers, processors and traders to large buyers.	

Table 5: Implementation plan for Business Acceleration

Table 5 below presents a detailed road map and the critical implementation activities for the Business Acceleration Strategy for the ASM sector in Zambia by way of a Tabular Matrix. It is presented in terms of proposed strategic goals, specific objectives, activities, performance indicators, target to be achieved and responsible offices.

Strategic Goal	Specific Objectives	Activity	Performance Indicators	Targets to be achieved by end of 2026	Responsible Offices
Strategic Objective #1 Improve Business Management and Entrepreneurship Skills of Development Minerals ASMEs	**A. Training of ASMEs in business start-ups, management and sustainability**	1. Conduct training in business startup, management and sustainability	1. Number of training conducted for ASMEs	1. All Development Minerals ASMEs trained have their entities formalized	MMMD, MCTI & ZDA, Civil Society
	B. Training of ASMEs in Computer literacy and establishing internal business	1. Conduct computer literacy trainings for ASM operators	Number of ASM operated trained in computer literacy	ASM operators to have the ability to use computers and engage in e-business	MMMD, MOF & SMARTZRA

	management structures	2.Estab,ish internal business management structures	Number of ASMEs with established internal business management structures	ASMs transformed into Small Scale Miners	ZDA & MMMD
	C. Build and operate an online platform dedicated to marketing and selling Development Minerals products with interface provided to both supply and demand sides for direct and easy access.	1. Develop an online platform	Online platform developed	Increase visibility of Development Minerals in both local and international markets	MMMD, ZDA
		2.Facilitae ASMEs access to online platform	Number of ASMs accessing market information online	Increased Knowledge of DM markets	MMMD, ZDA

Strategic Objective #2: **To improve the value chain and maximize diversification of local economies**	**A. Undertake a scoping study on the status of value addition, required skill sets and skills gap in the Development Minerals Sector**	1. Under take a scoping study	Scoping study report on value chain and skill gap	Increased information and knowledge on the status of value addition in the Development Mineral Sub-sector	MMMD & MCTI
	B. Strengthen enforcement of the industrial development policy	1. Monitor value addition activities in the DM Sub-sector	Value addition reports of development minerals	Enhanced value addition activities of development minerals	MMMD

	C. Training of miners in value addition of development minerals	1. Conduct training on value addition for ASMEs	Number of trainings conducted for ASMEs	All the ASMEs trained on value addition of development minerals	MMMD & MCTI
	D. Create a fund that can be accessed by legalised ASMs to start small scale industries for example cement, building blocks, etc.	1. Create fund for ligalised ASMs	Fund created and accessed by ASMEs	Increased the number of small scale industries	MCTI & CEEC
	E. Enhance collaborations with existing innovation and incubation centers.	1. Facilitate collaboration with innovation and incubation centers	Number of collaborations created	ASMEs have access innovation and incubation services	MMMD & MCTI
	F. Build partnerships with SMART Zambia and other e-business platforms to innovate digital business solutions for the Development Minerals Sector.	1. Identify and build partnerships with SMART Zambia and other e-business platforms	Number of partnerships identified and developed	ASMEs have innovative digital business solutions for the Development Minerals Sector.	MMMD & MCTI
Strategic Objective #3: **To improve Market Access**	**A. Enhance capacity of ASMEs to understand public procurement processes to enable them compete in bidding processes**	1. Undertaking training on public procurement basic processes	Number of trainings conducted	More ASMEs competing in bidding processes	MMMD, MOJ

	B. Capacity building of ASMEs to negotiate effectively for the best price at the right quality with traders/dealers	1. Train ASMEs in effective negotiations	Number of ASMEs trained	ASMEs equipped with effective negotiating skills and	MMMD
	C. Facilitate ASMEs access to market information for quality decision making	1. Link ASMEs to sources of market information	Number of ASMEs accessing market information	ASMEs accessing market information of making quality decision	MMMD
	D. Promote producer to consumer links by creating partnerships between ASMs and MSM, LSM, construction companies and other supply chain actors	1. Create partnership between ASMS and MSM LSM, construction companies and other supply chain actors	Number producer to consumer links created	ASMEs is fully integrated in DM supply chain.	MCTI & ZDA
	E. Engage the Zambia Bureau of Standards to put in place a quality control, verification, and standardization system for Development Minerals production	1. Conduct engagement with Zambia Bureau of Standards	Number of engagements with Zambia Bureau of Standards	ASMEs quality control, verification, and standardization system in place for Development Minerals production	
	F. Facilitate ASMEs to participate in local and international trade fairs.	1. Organise ASMEs to participate in trade fairs.	Number of trade fairs participated in	ASMEs fully participating in all the local and international trade fairs	MCTI

Strategic Objective #4: **To facilitate Accessing to finance**	**A. Create linkages with financial institutions and other institutions that can provide financial support to ASM**	1. Identify and link ASMEs to financial institutions and other institutions.	Number of ASMEs accessing financial support	Increase access for ASMEs to start up and working capital	MMMD
	B. Creating grants or funds to bridge challenges in accessing capital	1. Develop grants or funds for ASMEs	Number of grants or funds developed	Improved access to capital for ASMEs	MMMD
	C. Promote the use of digital financial and payment solutions at ASM production sites and markets	1. Senstise ASMEs on the use digital financial and payment solution	Number of ASMEs using digital financial and payment solutions	ASME fully exploiting digital and financial solutions	MMMD & MCTI
	D. Build the capacities of Development Minerals supply chain actors to partner with financial service providers.	1. Train and encourage DM supply chain actors create partnership	Number DM supply chain actors partnering with financial services providers	All DM supply chain actors partnered with financial service providers	MMMD & MCTI
Strategic Objective # 5 ***To facilitate access and acquisition of appropriate equipment***	***A.*** Facilitate the production of affordable equipment produced locally	1. Promoted local production of mining equipment	Number of workshops producing mining equipment locally	ASMEs to have access to affordable mining equipment made locally	MMMD & MCTI
	B. Bridge the gap between ASMs and financial institutions to access bank	1. Promote collaboration between ASMEs and financial institutions	Number of ASMEs accessing bank guarantees and/or equipment leasing	Improved ASMEs accessing bank guarantees/or equipment leasing	MMMD & MCTI

	guarantees and/or equipment leasing.				
Strategic Objective #6 **To provide training to address skills gap**	**A. Partner with Technical Education, Vocation, Entrepreneurship and Training Agency (TEVETA) in collaboration with Trade Schools located indifference provinces to develop tailor made short courses for ASMEs**	1. Develop short trainings in collaboration with TEVETA and Trade Schools	Number of short training developed through collaboration	ASMEs trained in running the business and managing mining operations	MMMD & MCTI
	B. Create partnerships between MSM/LSM and the ASMEs in order to enable market-oriented apprenticeship and internship placement programmes	1. Create partnership between MSM/LSM and the ASMEs	Number of ASMEs accessing market-oriented apprenticeship and internship placement programmes	ASMEs capacity built through market-oriented apprenticeship and internship programmes	MCTI & MCTI
	C. Work with partners in government, international development partners and the private sector to launch a scholarship programme that addresses the skilling	1. Develop and Lunch scholarship programme that addresses the skilling and skills gaps in the sector.	Number of scholarships lunched for ASMEs	ASMEs skill gap addressed through scholarships	MCTI & MMMD

	and skills gaps in the sector.				
Strategic Objective # 7 **To Increase access to geological data and information**	**A. Facilitate access to affordable geological information to in simplified and easily accessible formats**	1. Develop an e-platform for Geological data and information	E-platform developed and accessed By ASMEs	ASMEs to have easy access to affordable Geological data and information for decision making	MMMD
	B. Engage with Financial Institutions to advocate for utilisation of geodata and reserve estimations to inform credit and other financing decisions	1. Senstise Financial institutions on the availability of Geodata	Number Financial Institutions utilizing Geodata	Financial Institutions using Geodata and reserves estimation to inform credit and other financing decisions	MMMD & MCTI
Strategic Objective # 8 ***To Mapping out of Development Minerals ASM zones***	A. Map and gazette Development Mineral rich areas specifically for the ASMs in all the provinces as a form of affirmative action	1. Undertaking mapping of DM rich areas	Geological map prepared	All Development Minerals ASM zone captured on the map	MMMD
		2. Gazette DM rich areas	Published gazette of DM ASM zones	All the Development Minerals ASM zone gazzeted and information made available	MMMD
Strategic Objective # 9 ***Improve ASM technical capacity to improve mining and quarrying practices***	A. Provide soft skills to miners and extractors on best practices in mining and quarrying	1.Conduct training for miners and extractors	Number of miners and extractor trained	Enhanced miners and extractors best practices in mining and quarrying	MMMD & MCTI
	B. Train miners and extractors on the use and applicability of mining equipment in resource extraction	1. Train miners and extractors	Number of miners and extractors trained	Enhanced use and applicability of mining equipment in resource extraction by miners and extractors	MMMD & MCTI

	C. Incentivise good mining practices	1. Develop incentives to encourage good practices	Incentive scheme developed	Miners and extractors to engage themselves in good mining practices	MCTI & MMMD
	D. Support cross-regional learning and sharing among ASMs about good mining practices	1. Facilitate regional learning and sharing among ASMs	Number of ASMs adopting good mining practices	ASMEs employing good mining practices	MCTI
Strategic Objective # 10 ***Enhance participation of women and support women-owned ASMEs***	A. Develop gender policy on women participation ASM activities	1. Develop the gender policy document	Gender policy document developed	Gender policy developed and implemented	MCTI & MMMD
	B. Build the capacity of women led ASMEs to enhance their business management and negotiation skills Prepare for future operational effectiveness.	1. Conduct training for women led ASMEs	Number of women trained	Increased participation of and support of women led ASMEs	MMMD & MCTI
	C. Engage Local Governments to give special consideration to women led ASMEs in the local tendering processes	1. Facilitate for special consideration for women led ASMEs	Number of women led ASMEs given considerations	Increased number of women led ASMEs participating in local tendering process	MCTI
	D. Develop training programmes for Women in Earth Science	1. Conduct training for women	Number of training conducted for women	Capacity built for women led ASMEs in Earth Science	MMMD & MMMD
Strategic Objective # 11 To enhance Compliance to Health, Safety, Social	A. Establish a mechanism to monitor and enforce compliance to health, safety and	1. Develop a mechanism to monitor and enforce compliance	Mechanism developed	Enhanced compliance to health, safety and environmental standards	MMMD & ZEMA

and Environment standards	environmental standards				
	B. Undertake sensitisation campaigns to raise awareness among players in the industry and promote use of health, safety and environmentally sound technologies	1. Conduct awareness campaigns	Number of awareness campaign's conducted	ASMEs sensitized to raise awareness among players in the industry and promote use of health, safety and environmentally sound technologies	MMMD & ZEMA
	C. Conduct a precise inventory and assessment of abandoned and active mine sites.	1. Undertake inventory and assessment of abandoned and active sites	Inventory and assessment report	Inventory and assessment of abandoned and active mine sites conducted and reports made available	MMMD & ZEMA
Strategic Objective # 12 To enhance Enforcement of Human and Labour Rights, Including Child protection	A. Develop the Child protection policy	1. Develop policy document	Policy document developed and approved	Policy document developed, approved and implemented	MMMD & MCTI
	B. Conduct awareness campaigns on promoting Human and labour rights and child protection	1. Conduct awareness campaigns	Number of ASMs sensitized	Improved Human and labour rights and child protection	MCTI & MMMD
	C. Establish a mechanism to monitor and enforce compliance to Human and labour rights and child protection	1. Develop mechanism to monitor and enforce compliance	Mechanism developed	Mechanism developed and operationalised	MMMD & MCTI

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