



Institute for Sustainability Africa

'Advancing Sustainability Initiatives for Africa'



Strengthening the gold mining value chain in Zimbabwe:

An investigation of linkages between large scale gold mining companies and Artisanal Small-Scale Gold Miners as an alternative strategy.

Supported by:



Kingdom of the Netherlands



Zimbabwe Environmental Law Association (ZELA)

Consortium members





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TABLE OF ABBREVIATIONS

ASSGM	Artisanal Small-Scale Gold Miners
CASM	Communities and Small-Scale Mining
EIA	Environmental Impact Assessments
EMA	Environmental Management Agency
FPR	Fidelity Printers and Refineries
ICMM	International Council on Mining and Metals
LSGMC	Large scale gold mining companies

EXECUTIVE SUMMARY

Zimbabwe is endowed with gold, a natural resource which could be extracted for sustainable economic development. The gold mining sector contributes approximately 40 % to mineral revenue in Zimbabwe and about 20% to total exports. Large Scale Gold Mining Companies (LSGMC) continue to announce cooperation with artisanal and small-scale gold miners but an absence of national data and sustainable reporting statistics on such cooperation discredits such claims.

This report presents the findings of a research supported by Netherlands Embassy which seeks to establish the nature, extent, and effects of cooperation between LSGMC and Artisanal Small-Scale Gold Miners (ASSGM) in Zimbabwe. The research is meant to establish a basis for engaging with large gold mining companies to strengthen the gold mining value chain. The research created a platform for sustained dialogue on common approaches and practices enabling stakeholders to appreciate the relevance of cooperation for sustainable mining development and poverty alleviation in Zimbabwe.

The research covered major gold mining companies and registered ASSGM operating in gold mineral-rich provinces of Midlands, Manicaland, Matabeleland South, Mashonaland Central, Matabeleland North, Mashonaland West and Mashonaland East. The research was conducted using cross sectional survey and desk review of artisanal and small-scale gold mines and LSGMC to assess the nature and extent of cooperation for Zimbabwe gold mining sectors. Further, desk review was adopted to review international, regional and local cases of cooperation to establish a trend of cooperation and best practices. Samples of 30 ASSGM who are formally registered were selected in at most two districts from aforementioned provinces in Zimbabwe. Again, samples of 8 large mining companies (Mimosa, Metallon, Falcon Gold, Vast Resources, RioGold, Caledonia, Fredda Rebecca and Bubi) were selected for analysis using both secondary and primary data. 35 experts who are directly/indirectly involved in gold mining were also selected for expert opinion on topical issues of coexistence between LSGMC and ASSGM.

The study concludes that there is little cooperation in Zimbabwe between gold mining players. In addition, the result highlights perceptions as barriers to cooperation in the gold mining sector, mainly reputational perceptions. Cooperation was found to be unlegislated for, optional and often not appreciated by LSGMC as they consider themselves not to be a surrogate government for rendering assistance to ASSGM. Therefore, research findings show that though cooperation is an alternative strategy of strengthening the gold value chain it is not being whole heartedly implemented by large

gold mining companies in Zimbabwe, albeit sometimes professed. This is attributed to lack of legislation that requires mentoring of emerging gold miners or incentives to do so. ASSGM in Zimbabwe continues to face various challenges ranging from lack of finance, lack mining equipment, lack of expertise, lack of capacity to comply with the strict Environmental Impact Assessments regulations and lack of representation by females in the sector. Cooperation between ASSGM and large-scale gold mines could be an alternative to address these challenges. An evaluation of regional and international case studies shows that cases in Zimbabwe are behind in terms of cooperation between LSGMC and ASSGM.

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.0 Background of the research

Artisanal and Small Scale Gold Mining (ASSGM) in Zimbabwe dates back to at least the 13th century when the Munhumutapa Empire traded gold with the Portuguese. Modern mining began in the 1890's with the British South Africa Company's reappraisal of old mining techniques. The official distinction between artisanal gold miners and small-scale gold miners in Zimbabwe is currently based on the scale of operation and degree of mechanization where the law expects both categories of miners to be registered. To avoid clumsy the research has considered them to be synonymous. However, in reality, small- scale miners are generally registered whereas many artisanal miners operate illegally. In Zimbabwe, a significant proportion of the country's gold comes from the artisanal and small-scale gold mining sector. However, the sector continues to be hampered by the lack of technical knowledge to evaluate deposits; low levels of safety; lack of equipment and machinery; strict environmental regulations; predatory custom millers and failure to access loans from financial institutions (RBZ, 2016). A lot of tools used by operators in the sector are rudimentary or sometimes not available. Importantly, with conflicts identified or envisaged between LSGMC and ASSGM in Zimbabwe, this can work against the maximization of value along the gold value chain in the country.

In 2014, Zimbabwe had approximately 500,000 artisanal and small scale miners, of which 400,000 mined gold and approximately 25000 registered (ZMF, 2016). Largely for gold bearing nations, such as Tanzania, Ghana and Mongolia, efforts have shifted from trying to establish clear definitions of artisanal and small scale gold mining to cooperation between ASGM and Large Scale Gold Mining Companies (LSGMC) emphasizing partnership for local economic development. Outstandingly, the government of Tanzania in 2013 signed a framework of the agreement with two of the biggest gold mining companies in Tanzania - African Barrick Gold (ABG) and AngloGold Ashanti¹. On the other hand, in one way or the other, Zimbabwe is yet to confirm as a patron to best practices of supporting ASSGM or at least conventions that guide cooperation between ASSGM and LSGMC such as ICMM cooperation toolkits for large scale mines.

According to monetary policy statements, gold leakages particularly from ASSGM have been cited as a major contributor to the decline in gold sales from 27 tons in 1999 to 12 tons per year in 2015 (RBZ, 2016). This comes as the country, which was removed out of the London Bullion Market Association in

¹ The framework agreement serves as the Terms of Reference (TORs) for the large scale gold mines and ASGMs' cooperation where a national Steering Committee is responsible for ensuring the implementation of the initiatives.

2007 due to depressed output, is making agitated efforts to be readmitted within the club. The multi-currency regime to some extent has helped to eliminate the middlemen crisis; ensuring artisanal and small-scale gold miners to obtain fair value for their gold (RBZ, 2016).

Financing is required for exploration, licensing, and operation, both in loans and equity. In the past Zimbabwe government rendered significant assistance to the large scale gold mining sector in the form of advisory support, frequent monitoring of safety standards, mobile drilling facilities, plant hire schemes, loan schemes, export promotion schemes, mining project fund for the importation of equipment, *et cetera* (Mlambo, 2016). These facilities were also available to Artisanal and Small Scale Gold Miners (ASSGM) as the gold mining industry in Zimbabwe was generally characteristically small-scale, and some of these programs, for example, the plant hire scheme, were specifically targeted at ASSGM. Most of these support programmes are believed by ASSGM in Zimbabwe to be difficult to access because of the constrained fiscal space.

In Mozambique, a mining development fund was set up by the government to help ASSGM gain access to finance and to the market. In South Africa, government facilitated the establishment of a loan/private equity fund, the African Mining Fund, held by International Finance Corporation (IFC), specifically to provide finance for small-scale operators-the *Zamazama* (IFC, 2014). These schemes, however, all assume the ability to pay back borrowed funds, viable business plans, and this is the biggest problem for most ASSGM operations, particularly in Zimbabwe.

Illicit flows in the gold sector through smuggling, illegal dealing, corruption, fraud, tax evasion, and externalization, have largely contributed to an estimated \$1.8 billion annual national loss of revenue. Due to its marketability, portability, high demand, and accessibility, gold is one of the most illegally traded commodities in Zimbabwe (Ministry of Finance, 2015). In 2016, the government suspended eleven small-scale gold miners for noncompliance with mining regulations in a drastic measure to curb gold leakages and increase gold deliveries (Chamber of mines, 2016). Draconian strategies have been proposed or sometimes implemented by the government or interested stakeholders, particularly civil society to strengthen gold mining value chain. Other strategies for reducing gold leakages in Zimbabwe include formalizing small-scale gold miners and efficient ASSGM-LSGMC business linkages.

It is against this background that this research investigates and propounds cooperation or linkages between LSGMC and ASSGM as an alternative strategy to plug out leakages, possible conflicts and to increase ASGM capacity in Zimbabwe. Cooperation is mainly envisaged to improve the capacity of ASSGM to access finance and other technical services from a mentoring relationship with LSGMC.

1.1 Definition of ASGM, Institutional and Legal Framework Governing Them in Zimbabwe

Though in a conceptual sense the distinction is critical, little distinctions in Zimbabwe has been made between artisanal gold mining and small-scale gold mining. However, working definitions or distinctions are important to make it possible to undertake practical analysis. Deductively, there is no universal agreement among experts and researchers on the practical (from an application point of view) definition of artisanal and small-scale gold miners. Maponga (2004:4) deduced that countries have different definitions for ASSGM based on different benchmarks as follows:

- ✚ Level of capital investment (Argentina, Mexico, South Africa, Pakistan and Thailand).
- ✚ Level of employment (Chile).
- ✚ Level of production (Philippines and Senegal).
- ✚ Stage of mechanization (Brazil, Burkina Faso, Ghana and Sri Lanka).
- ✚ Depth of working (Colombia, Senegal and Ethiopia).
- ✚ Size of Concession (Ghana, Zambia and Zimbabwe).

Consequently, the dominant distinction between artisanal gold mining and small scale gold mining is that, artisanal mining involves individuals or groups and it is purely manual, and small-scale mining, is more extensive and usually better mechanized. In particular, artisanal gold miners engaged in alluvial gold mining do not use mechanized equipment or motor-powered equipment (excavators, dredges, generators, and earth-moving equipment such as front end loaders and bulldozers). Another clear distinction is in the nature of their rights to the land. In some instances, small-scale gold miners have legal title to the land that they work on, which is recognized by the state and community leaders. Between the two groups, artisanal gold miners are more likely to be working without legal mining title and therefore tend to be mobile (Garret, 2015).

Importantly, regarding the institutional and legal framework governing ASGM in Zimbabwe, in 2014, alluvial gold mining (often practiced by artisanal gold miners) was effectively banned through Environmental Management Regulation.² At the international level, the ASGM sector is governed by

² ..It states on (p.485) that, "alluvial mining shall not take place on land within 200 metres of the naturally defined banks or land within 200m of the highest

the United Nations Environment Programme (UNEP) guidelines on mining that apply to all aspects of mining activities including exploitation, mine operation, mine site rehabilitation and small-scale mining. Zimbabwe is also a signatory to Rio declaration on environment and development; hence its ASGM activities are bound by this pact to carry out mandatory environmental impact assessments (EIA). This has since been domesticated into Zimbabwe's national environmental policy. Small-scale miners generally have legal mining title registered with the Ministry of Mines and Mining Development.³

Artisanal and small-scale gold miners share more similarities than differences. Generally they are both labour intensive, lack capital and equipment, achieve low recovery rates (due to inefficient recovery methods), work in hazardous conditions, exploit small and abandoned mineral deposits, have minimal marketing advantages and often do not recover their costs significantly. Artisanal and small-scale gold miners cause greater environmental costs per unit of output than large mining enterprises. Since their operations are often subsistence-driven the two groups tend to focus more on immediate livelihood concerns than the long-term consequences of their activities (CASM, 2010)

1.2 Statement of the Research Problem, Objectives and Significance of Study.

The relationship between large-scale gold mining companies (LSGMC) and the artisanal and small-scale gold mining (ASGM) sector is often poorly understood and has been troubled by a general mismatch of expectations, which has led to mistrust and conflict in some cases. In the absence of effective engagement, LSGMC can face delays in project development or impacts on production as they respond to ASGM concerns or actions. These could include potential competition for the same mineralization, impacts on livelihoods if access to resources is limited and changing social conditions, including conflict between ASGM, host communities and LSGMC companies.

The intention of LSGMC engagement with ASSGM in most jurisdictions typically varies in almost all operating circumstances, but it is likely to be explained by at least one of several reasons such as managing reputational risk, maximization of community development, pressure for corporate accountability and maximization of company benefit such as exploration benefits. While these reasons are not explicitly enlightened in this report, for LSGMC engagement with ASSGM to succeed, consideration also must be given to the business case for ASSGM engagement with LSGMC (IFC, 2007). Importantly, developing a relationship with the ASSGM can be critical to accessibility of

flood level of any body of water conserved in natural or artificially constructed water storage work or stream; or any bed or banks or course of any river or stream; or land within 200m from any wetland".

³ Registered ASGM expected to work within the provisions of the mines and minerals act chapter 21:05 (1996), the environmental management act chapter 20:27 (2002) and regulations such as mining (management and safety) regulations (1990), and the 2014 environmental management (control of alluvial mining) regulations.

exploration licenses, improve local miner's capacity, artisanal miners formalisation and the acquisition of local social license to operate (Hinton et al, 2002).

The aim of this study is to establish whether linkages/cooperation between LSGMC and ASSGM could be an alternative strategy for strengthening the gold mining value chain in Zimbabwe. The goal is that with a strong gold value chain in Zimbabwe, gold delivery would increase, hence contributing to national and local economic development. Specific objectives of this study include:

1. To establish various nature (types) and extents or significance of existing linkages or cooperation between ASSGM and LSGMC at various stages of the value chain in Zimbabwe;
2. To identify challenges that militate against development of linkages between the two subsectors, hence against the strengthening of the gold value chain in the country;
3. To identify opportunities for development of cooperation and hence design an optimal model of cooperation between LSGMC and ASSGM on the basis of the opinions from the survey as well as cited cases from other jurisdictions;
4. Draw conclusion on whether linkages and cooperation between LSGMC and ASSGM would be an appropriate strategy for strengthening the gold mining value chain in Zimbabwe.

1.3 Conceptual Approach to the research

The research adopted a **coexistence conceptual framework** in the mining sector to investigate business linkages in the gold mining value chain for sustainable mining in Zimbabwe. Researchers have adopted a framework or toolkits for use by LSGMC companies developed by ICMM in collaboration with Communities and Small-Scale Mining (CASM) and CommDev.⁴ The toolkits/framework discusses key issues facing ASSGM- LSGMC relationship and best practices of cooperation. The framework divides the gold mining sector into ASSGM and LSGMC to enable assessing actual or potential linkages/cooperation between the two groups. The framework identifies linkages to take place mainly in the form of technical assistance⁵; conflict resolution⁶; training; Segregation of Mineral Concessions⁷ and mine site employment⁸. The research maps out actual and potential business linkages between the two in the gold mining value chain in Zimbabwe.

⁴ There are 17 toolkits giving business Case for companies to engage with ASGM; providing guidance on how an LSGM company can go about working with ASGM community members to identify the appropriate development projects in a participative manner, and develop a partnership to implement them.

⁵ Programmes can include improvements in health, safety and environmental practices, improved mining and processing techniques, facilitation of access to processing plants or markets and many other activities.

⁶ The tool is designed to offer companies an approach to the resolution of conflict, without reliance upon either legal remedies or use of force and point out the Importance of government involvement in conflict resolution mechanisms, particularly with informal ASGM activities.

⁷ Involves inviting ASGM on concession or designated areas which can't be mined by LSGM companies in form of tributary arrangements which applies when LSGM and ASGM are operating in very close proximity.

CHAPTER TWO: LITERATURE REVIEW ON GOLD MINING VALUE CHAIN

2.0 Introduction

United Nation Industrial Development Organisation (UNIDO) and Harvard University have identified mechanism through which large gold mining companies can partner ASSGM to support business linkages, these mechanisms include: partnerships along individual company value chains; groups of companies working collectively together in the gold sector; gold trade; gold miners' associations; mentoring and capacity building.

The value chain means all the activities that an organization or sectors takes to bring a product from its conception point of its use. The gold value chain are activities where gold passes through until its final stage. The understanding of dynamic factors within the entire value chain system is crucial. Linkages can be defined in different ways: quantitatively as inputs and outputs into the mining operation, or qualitatively in terms of the relationships between enterprises in the value chain or even as the exchange of ideas. In gold mining, every stage of the process from exploration through trade to the final product has linkages.

ASSGM and large scale commercial gold miners are key participants in the gold mining value chain. According to Garret (2015), their linkages are vital in strengthening the gold value chain and to create solutions to environmental problems associated with ASSGM. ASSGM have limited access to market information and financing, and lack management skills, production expertise, and the capacity to meet product quality and quantity requirements. Besides helping to formalize artisanal mining, closer interaction between small-scale and large-scale gold miners helps protect the environment, provides a more accurate picture of artisanal miners' economic contributions, and harnesses these contributions for sustainable gold mining development (Simpson, 2014). More often than not, there are many links in the gold value chain. For this research, the main focus is on the cooperation between the emerging gold sector (ASSGM) and established mining sector(LSGMC) in the gold mining value chain globally (global value-chain), internationally (other continents), regionally(Africa) and locally (Zimbabwe).

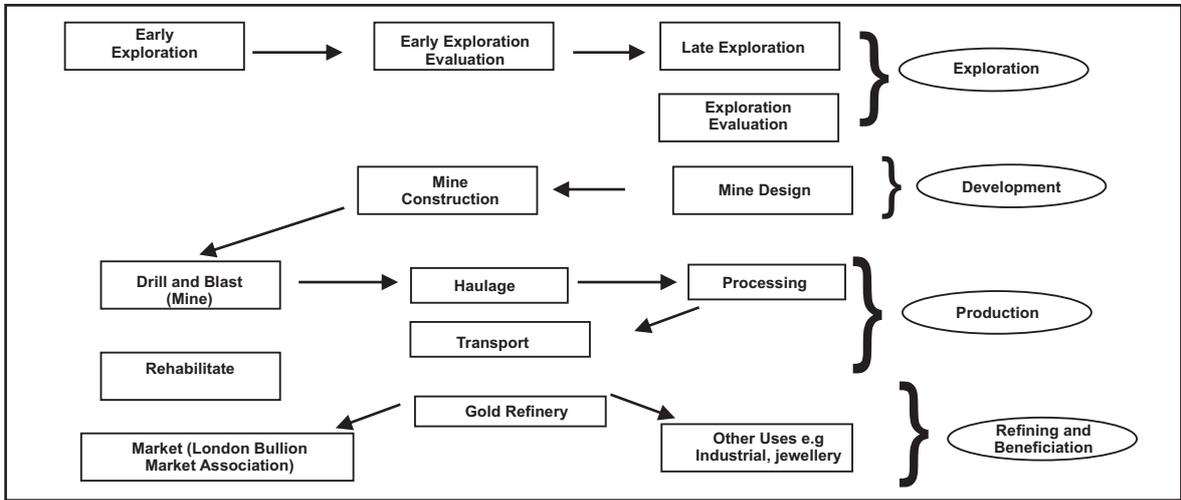
2.1 Global Context of Gold Mining Value chain and Case Studies

It might be important to note that there are various other key players at each stage of the global value chain other than the large gold mines themselves, and these other players could create linkages of

⁹ Probably, the most common requested from ASGM. The tool seeks to advise companies on how to manage these requests and distribute available work equitably by giving different roles for ASGM miners at different stages of LSGM mineral cycle – exploration, construction, operation, closure etc

their own with ASSGM or facilitate those between the latter and LSGMC. Examples are exploratory companies, assayers, mine developers, suppliers, and ministry of mines departments, and Jewellery Councils. However, officially gold value chain is divided into four broad sections namely: (i) the exploration section dealing with locating and proving a deposit; (ii) the mine development section dealing with the construction of a mine to access a proven reserve; (iii) the production section dealing with the extraction of the mineral from the ore body, processing the ore and refining; and (iv) beneficiation section concerned with the production and marketing of pure gold bars, coins, medals, jewellery, and use of gold as an industrial good in electronics and dental industries. Figure 1 next shows the nature of the global gold value chain⁹.

Figure 1: The Global Gold Value Chain



Source: Mbendi Information services, 2015

Figure 1 reveals that the global mining value chain partially includes ASSGM and seems standardized for LSGMC. ASSGM normally face eviction challenges when the LSGMC is at the stages of detailed evaluation (feasibility studies) and mine development in the value chain, at this point the LSGMC commit millions of dollars for such projects. ASSGM is therefore implicitly included in the gold refinery end of the global value chain where gold is bought/ refined regardless of its origin.

Generally, firms commonly referred to as large scale gold mining companies¹⁰ participate directly or indirectly in two sub chains of exploration and production (gold mining). Most African countries' gold value chains exclude the refining and beneficiation sub chain. However, countries like Zimbabwe has beneficiation and value addition taking place in the gold value chain. Fidelity and Printers Refineries

⁹See –<http://www.mbendi.com/indy/ining/p0010.htm> (Accessed 13 June 2017).

¹⁰ Firms like Metallon Gold, Vast Resources, RioGold and Blanket Mine.

(FPR) refines the gold to more than 99.5% purity while the Jewellery Council of Zimbabwe is involved in the manufacture of end-user products like rings, chains, earrings, bracelets, etc. Furthermore, AUREX Holdings a company owned by the RBZ does manufacturing. However, there is evidence of exclusion of Zimbabwe from the far end of the global value chain as it is not a member of the London Bullion Market Association.

2.2 International country experiences of linkages in gold mining value chain

In principle, large gold mining companies are interested in developing relationships with local artisanal and small-scale gold miners. However, such relationships can be costly to form and maintain, and as a result, they rarely develop easily or smoothly. Nevertheless, some international gold mining companies have moved ahead despite these challenges, working either on their own, collectively with other companies, or collaboratively with a variety of other key stakeholders. In the next three case studies (1-3) that follow, international cooperation efforts are highlighted while taking note of the fact that national mineral laws were not fully supportive to ASSGM.

Box 1: Case study of la Rinconada, Peru

The context is that in Peru, La Rinconada town, one of the largest gold mine in the world, Corporation Ananea Lt d, small scale miners historically existed within the property of the mining company. Actions undertaken include a mediation process, facilitated by an external mediator to address the conflicting situation. It started with a series of roundtable meetings to develop rules for the process. The negotiations over two years led to an agreement allowing the artisanal miners to buy shares of the larger mining company. Results are that (a technical assistance project sponsored by the Swiss Government) the position was to create a bond between the mining company and artisanal gold miners. The identification of the "win-win options" for ASSGM and LSGMC resulted in a contract proposal that equally benefited both mining sub-sectors and that converted "enemies" into "allies."

Source: IFC, 2007

Box 2: Case study of Placer Dome company-las Cristinas, Venezuela

The Context is that in the Las Cristinas gold district in Venezuela, the Placer Dome Gold Company had been granted access to a mining concession within an area with active artisanal mining. Actions taken includes systematically applying a participatory approach, offering ASSGM communities with technical assistance, environmental management, training, and financial support, as well as in creating a legal market to sell the gold produced. Placer Dome, in partnership with a Venezuelan state-owned corporation, was able to establish harmonious relations with local ASSGM players and surrounding communities in the Las Cristinas gold project. Through an extended process of dialogue and technical assistance, the production and income of the miners improved. In addition, Placer Dome in cooperation with other stakeholders contributed to the construction of a community health centre serving 12,000 people, which was inaugurated in February 2001. The safety and security of the project afforded new work opportunities for women and led quickly to the elimination of child labor in the concession. The company saw a dramatic reduction in the tension with the local mining communities and was able to proceed with the development of the property in relative peace and harmony. With the project recognized as an industry best practice, it boosted Placer Dome's international reputation as a corporate leader in social responsibility. Lessons learned include that local miners are typically open to cooperation, but they usually will not accept being used. Any viable solution has to be found with them, not mandated for them.

Source: Priester, 2008

Box 3: Case study of Bayankhongor, Mongolia

Context is that a long-established placer gold mine became overrun by herders who resorted to panning after becoming destitute following climatic disasters in the Gobi Desert that slaughtered their herds of livestock. No alternative livelihood other than mining was available to the herders. Actions taken include negotiations and the mining company (Mongobulgargeo) agreed to provide a limited number of panning sites for artisanal miners, who were required to form a loose cooperative. The company's mechanized method of mining was having a hard time recovering gold from the lowest part of the placer. The ASSGM Cooperative members were allowed to dig and bag the gold ore left behind by the machinery. Results were that some of the gold lost by the company was recovered by the artisanal miners. The artisanal miners sell the gold to the company, which boosts the company's production and profits. The government receives 5% royalty that it otherwise would not receive. The artisanal miners benefit too: they receive some security of tenure and their panning pits filled.

Source: Priester 2011

2.3 Case Studies of gold mining value chain linkages in Africa.

In the next three cases (4-6), African large gold mining companies' cooperation efforts are highlighted.

Box 4: Case study of South Africa's gold value chain linkages

The gold mining sector in SA provides employment and livelihoods to thousands of people. According to the Chamber of Mines fact sheet of 2015, mining contributes 500 000 direct and 800 000 indirect jobs with 16% contribution to GDP. The African Rainbow Minerals (ARM), which started off as a small contract gold mining company called Future Mining in 1994, ARM acquired some marginal shafts from a big mine called Vaal Reef on favourable financial terms in 1998, and this was followed by the purchase of other marginal shafts from another big gold mine AngloGold (ILO, 2016). Today ARM is the world's fifth largest gold producer and a leading diversified South African mining and minerals company with interests in platinum and nickel (ARM Platinum), Iron and chrome (through ARM Ferrous), gold (Harmony) and an exploration wing (ARM Exploration) (Chamber of Mines of South Africa, 2014:3). Here we depicts an estimated marketing gold value chain where ASSGM and LSGMC are linked in South Africa.

Figure 2: Marketing gold value chain in South Africa



The number of involved individuals becomes smaller as we go up the hierarchy and the price of gold gets higher at each level. The final destination of gold is at International markets where gold trading is liberalized and formalized. At this stage, no one questions the origin of the product and illegally-mined gold is legitimized. In South Africa three categories of buyers exist: (i) primary buyers who buy the gold directly from the miners through the intervention of agents; (ii) primary buyers sell their gold to secondary buyers who usually operate in the 'black market'; and (iii) secondary buyers sell their commodity to tertiary buyers who are usually linked to big gold mining companies and possess gold trading licenses. Informal buyers claimed that licensed brokers sell gold at the highest price of the day which fluctuates between R1, 100 and R1500.

Source: Munakamwe, 2015

Box 6: Case study Tanzania's Gold mining value chain linkages/cooperation

In the 1980s Tanzania decided to allow the registration of claims and selling of gold for a ny citizen. This has set their gold value chain as a nation on a level where their mining industry became more appreciated. The Tanzanian gold mining value chain excludes the refining and beneficiation sub-chain. There are no beneficiation firms in Tanzania. The output is refined and beneficiated mostly in South Africa.

To strengthen gold value chain the government of Tanzania in 2013 signed a framework of the agreement with two of the biggest gold mining companies in Tanzania - African Barrick Gold (ABG) and AngloGold Ashanti. The purpose of the pact was to work together in a multi-stakeholder initiative aimed at improving the coexistence of small-scale and large-scale gold mining in the country. The framework agreement serves as the Terms of Reference (TORs) for the stakeholder collaboration. A national Steering Committee is responsible for ensuring the implementation of the initiatives, meeting on a quarterly basis to review progress (ILO, 2016).

The initiative seeks to improve ASSGM-LSGMC coexistence in Tanzania by fostering the legal, regulated, safe, sustainable development of an ASSGM sector that operates within the rule of law; allowing small scale operators to exercise a scale of mineral activity that suits their financial capacities and long-term ambitions.

The initiative also received endorsement from the private sector, where AngloGold Ashanti believes strongly in the need to engage with all stakeholders in finding strategies to address ASSGM problems in Tanzania

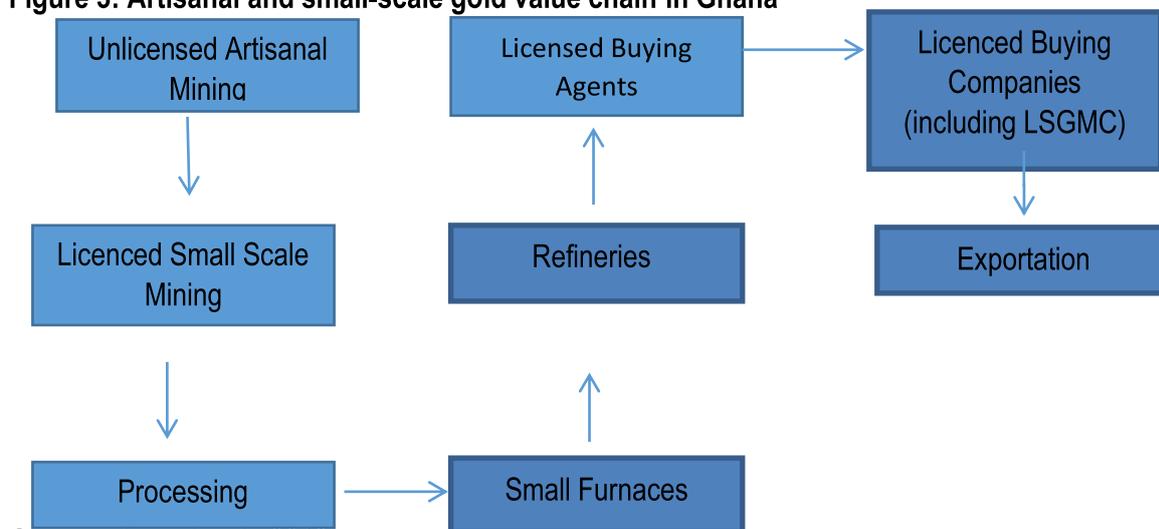
Source: World Bank, 2016.

Box 5: Case study of Ghana gold mining value chain linkages

For over 1000 years Ghana has been producing gold. Ghana has had its fair share of the benefits from the mining sector by way of direct revenue generation and job creation. Figure 3 below explicitly shows how the gold value chain looks like for ASSGM in Ghana. The gold mining value chain for ASSGM in Ghana (figure 3) is seemingly analogous with the global mining value chain.

Source: Amankwah. 2013

Figure 3: Artisanal and small-scale gold value chain in Ghana



Source: Amankwah, 2013.

Figure 3 shows that ASSGM are not independent in the gold mining value chain hence linkages among value chain participants, LSGMC included. Companies have been reported in Ghana, such as Gold Fields Ghana Ltd to have a mutually beneficial partnership in their value chain with small-scale gold miners by awarding certain areas of the land concession containing alluvial gold suitable for small-scale mining to resident small-scale gold miners. The company purchases the gold produced by the small-scale miners at prevailing market prices (Hinton, 2002).

2.4 Synthesis of gold mining value chain case studies.

Large scale gold mines can cooperate or link with artisanal and small-scale gold miners through technical assistance, safety and health training, legalisation drive, formalisation drive, and integration of ASSGM into mine development/closure planning. Table 1 highlights success of past LSGMC approaches to sustainable coexistence with artisanal and small-scale miners. Long-term success means improvements in ASSGM livelihoods while short term success is context dependent. Table 1 highlights long term country success cases of cooperation.

Table 1: LSGMC Treatment to ASSGM: LSGMC Responses and Success

Long-term success - ASSGM improves rural livelihoods and integrates into the rural economy”.

LSGMC RESPONSES	SUCCESS	METHOD
<p>Honduras: Eurocantera, Gold Lake</p>	High	<p>ASSGM workers on a contract basis were employed to liberate gold in deposits on LSGMC site. LSGMC processes ore and sells to premium markets.</p>
<p>Venezuela: Las Cristinas, Placer Dome</p>	Medium	<p>The policy of tolerance, technical assistance to ASSGM workers for formalisation, mercury and safety issues. There was no coherent integration in mine closure planning.</p>

<p>Philippines: Benguet Corporation</p>	Medium	LSGMC company identifies sites for ASSGM, assists set up and buys ore from ASSGM producers. Not highly successful because of lower price offered to ASSGM.
<p>Tanzania: North Mara, Africa Barrick Gold</p>	Low	Technical and organizational assistance to ASSGM producers working near LSGMC site. However there are implementation challenges.
<p>Ghana: Abooso, Goldfields</p>	Low	Live and Let Live approach. Segregation of concession. Not sustainable for a range of reasons. No implementation success.
<p>Bolivia: San Simon, Excalibur</p>	Low	Dialogue with ASSGM workers and signed agreement. Little success in implementing.

Garrett (2015)

Table 1, therefore, shows that countries have cooperation elements offered using varying approaches, by large mining firms, but generally, cooperation/linkage programs were not for long-term or not sustainably implemented on emerging miners (ASSGM).

CHAPTER THREE: ECONOMIC CONTRIBUTION OF GOLD MINING IN ZIMBABWE

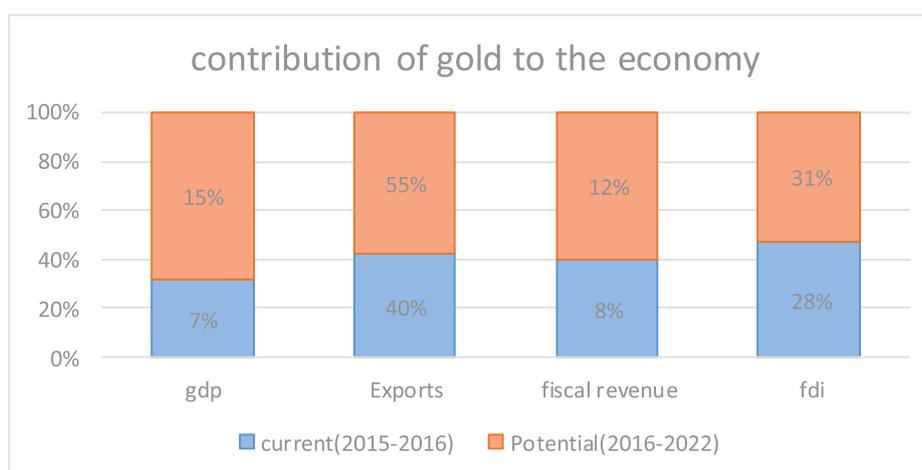
3.0 Introduction

Two key players, large scale gold mines and artisanal and small-scale gold miners are worth discussing. Large scale gold miners have been considered to be the traditional contributor to the growth of the Zimbabwean economy. However, ASSGM sector's increasing contribution to both gold production and livelihood in Zimbabwe has led the government to appreciate the importance of the sector.

3.1 Contributions of Gold Mining

Regardless of problems faced by the gold mining sector, stakeholders are keen to listen to an observable fact that the gold sector contributes significantly to the growth of the economy. Figure 4 depicts the contribution of gold to the Zimbabwean economy

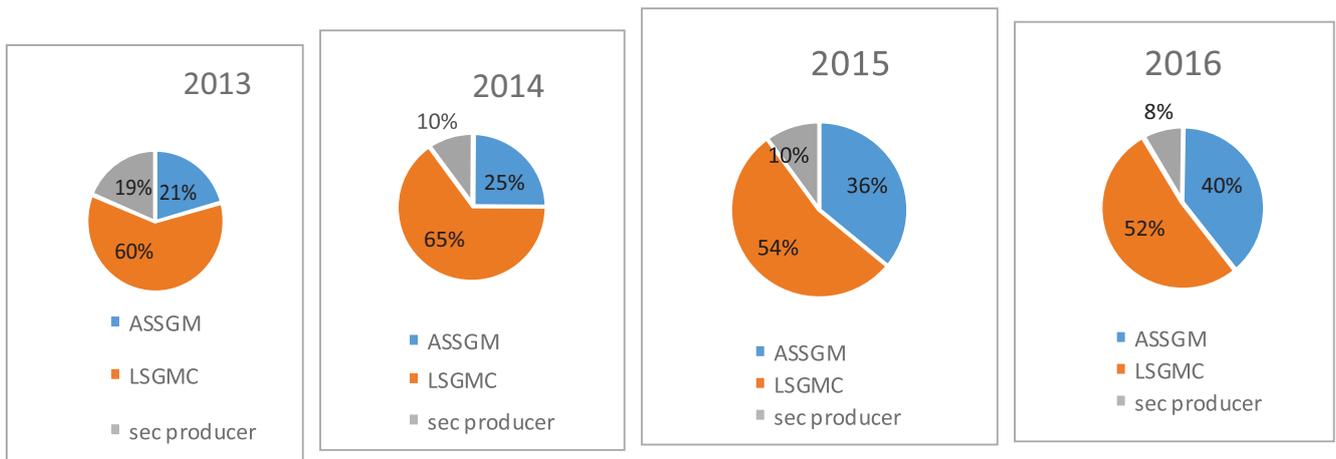
Figure 4: Contribution of gold to the economy.



Source: Matimba (2015).

The gold sector directly contributed to 7 percent of GDP, but it has a potential of 15% by 2022. Equally important 40% is contributed to total export earnings with a spurring potential of 55%. Gold contributes around 4% to the fiscus through government taxes and other fiscal charges, and an additional 4% is generated in the value chain with the potential of an overall of 12% by 2022. 28 percent is contributed by gold mining to foreign direct investment. Figure 5 next explicitly depicts trends in sectoral contribution to gold deliveries to FPR from 2013 to 2016.

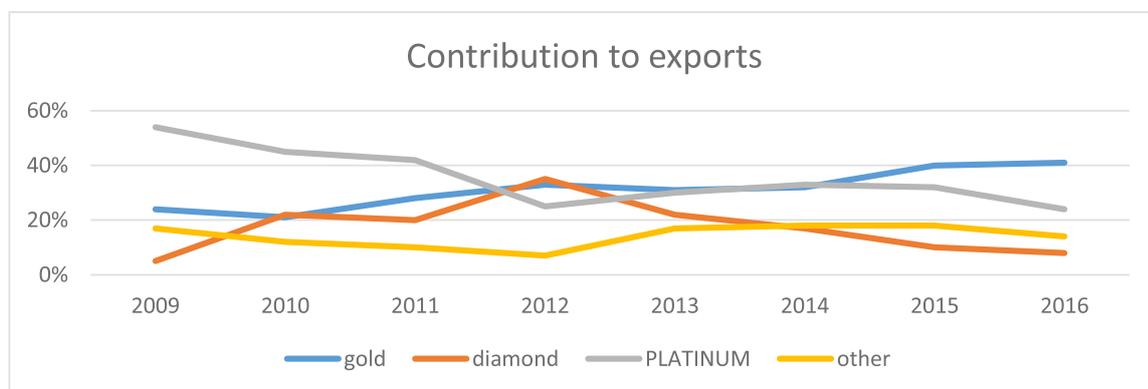
Figure 5: Trends in contribution of ASSGM to FPR



Source: RBZ (2016)

Large scale gold producers' deliveries were decreasing over the period as some mining companies were being delayed for various reasons ranging from low ore grades, unsustainable power regime, high labor costs and low commodity prices. In 2017, the country's national gold delivery target stand at 40 tonnes which can be reachable on condition that royalties are reduced for gold, which stands at 1 percent for small-scale producers and a sliding scale for LSGMC of 5% and 3% (the latter applied on incremental production based upon 2015 production level). Strategies are in place to increase gold production and deliveries, including finalization and operationalization of the USD 100 million gold facilities from South Korea and USD 20 million gold development initiative (ZMF, 2017). Figure 6 depicts the increase in gold contribution to total mineral exports surpassing diamond, platinum and other types of minerals.

Figure 6: Contribution of gold to mineral exports



Source: ZIMSTAT (2016)

Gold contribution to mineral exports has been increasing since 2009 and has a potential contribution to the Zimbabwe's economy in terms of both economic growth and development¹¹.

¹¹ *The analysis of gold mining economic contribution is held constant in the study, for concise analysis refer to "Maximising the potential of gold Industry-Growth strategies for the gold industry" by on www.chamberofmines.org.za*

CHAPTER FOUR: RESEARCH DESIGNS AND METHODS

4.0 Introduction

The overall aim of this research was to establish the linkages between LSGMC and ASSGM as an alternative strategy for strengthening the gold mining value chain in Zimbabwe. This chapter describes the research methodology used in trying to achieve the objectives mentioned earlier in Chapter One. This chapter outlines the research design, study population, sample size, data collection procedures and how data is analysed to provide results and findings presented in the next chapter.

4.1 Research approach

The research sought to examine whether or not there was cooperation, between ASSGM and LSGMC in gold mining value chain which has received limited attention in Zimbabwe by mixing qualitative and quantitative data. The research used mixed methodology with four approaches to the subject-descriptive approach; desk review; case study and survey strategy.

4.2 Data collection: Primary and Secondary Data

Data collection methods were designed to address these objectives such that quantitative and qualitative data were collected. Survey Monkey software was employed to collect both qualitative and quantitative data from primary sources. Using Survey Monkey software and telephone interviews primary data was collected through three questionnaires targeted at ASSGM, LSGMC, and experts respectively. ASSGM data was collected using Survey Monkey software generated questionnaire and telephone interviews. LSGMC and expert's data was collected using Survey Monkey software questionnaire. Secondary data was collected from mine reports on corporate social responsibility and research publications on cooperation between mining companies and emerging gold miners.

4.3 Population and Sample

The research included large gold mining companies, registered ASSGM and gold mining experts. Mine respondents were drawn from operations in Midlands, Manicaland, Matabeleland South, Mashonaland Central, Matabeleland North, and Mashonaland West and Mashonaland East provinces. 30 ASSGM who are formally registered were selected in at most two districts from each province. Samples of 8 large scale gold mining companies (Mimosa; Metallon; Falcon Gold; Vast Resources; RioGold; Caledonia; Fredda Rebecca and Bubi) were selected. 35 experts who are directly involved in gold mining were also selected for expert opinion on topical issues of coexistence between LSGMC and ASSGM.

4.4 Sampling procedure

Cluster sampling was employed to identify subjects directly involved in gold mining. Identified respondents were probed on whether or not they knew any ASSGMs and LSGMCs that coexist well in Zimbabwe.

In determining the sample size, researchers use Saunders *et al* (2013) Business Research methods table of sample determination yielding the distribution shown in Table 2.

Table 2: Sampling distribution

Respondent group	Approximated Total population	Suggested active population	Targeted sample size	Survey responses
ASSGM	2000	322	40	30
Large scale gold mining Companies(LSSGM)	20	15	8	7
Officials: in-depth interviews: EMA, NSSA, ZSM, RDCs, IMR, GMAZ, ZMF, Traditional leaders, NSSA, Police, MOM, and FPR etc.	100	50	40	35

Source: Researcher's own construct, 2017

4.5 Data Analysis

The extent, challenges, and opportunities of cooperation in the gold mining sector were derived using descriptive and correlation analysis with SPSS 21 for data imported from SurveyMonkey software and coded responses. Researchers have adopted toolkits for use by LSGMC companies developed by ICMM in collaboration with CASM and CommDev. To examine the impact of coexistence/linkage programs based on the coexistence toolkit in an ASSGM-LSGMC relationship, researchers apply descriptive and correlation analysis. The desirable outcome variable, the gold output of ASSGM was linked with composite independent variable constructed by linkages mainly coexistence factors (technical assistance, mine Tributing, mine site employment and mine rescue services).

4.6 Ethical Considerations

In undertaking research, ethical issues were carefully considered to protect survey participants' rights. Secondary review of extractive companies was based on publicly available information for assessing linkages. During interviews, participants had consented to the research and decide whether they

would want their names mentioned or not. As such mention of names was restricted in the presentation of research findings.

4.7 Limitations

The research's primary focus was to build a case for policy interventions; therefore, an assessment of the overall research and data collection limitations had little significant impact on the outcomes and findings of the research. Other gold mining companies could not respond to the questionnaire, supposedly being skeptical on researchers' motives. An analysis of this limitation showed limited impacts to alter findings from aggregated data for the research. Due to political sensitivity, one regulator could not be available to respond to the distributed questionnaire. However, the missed respondent had limited impacts to alter the research findings.

CHAPTER FIVE: FINDINGS

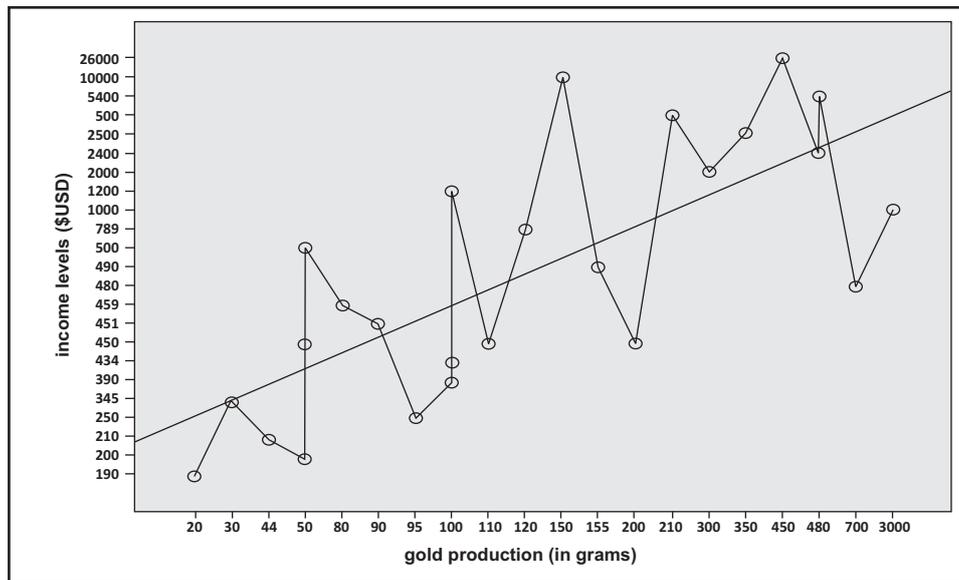
5.0. Introduction

This chapter presents results and findings on the current nature, extent, and relevance of cooperation between large scale gold mines and emerging small-scale gold mines operating in Zimbabwe while highlighting success cases of cooperation and linkages for benchmarking. The findings of the research are presented with some descriptive information about small-scale gold mining and the extent of cooperation while highlighting challenges and opportunities.

5.1. Why ASSGM need support.

Figure 7 shows the relationship between ASSGM output and income. Using USD to measure income per month it was found that income is positively dependent on gold production with an explanatory capacity of 54% as shown by an interpolation and a regression plot. This implies that 54 percent of the variation in ASSGM income is attributed to variations in gold production.

Figure 7: Why Gold production a livelihood option.



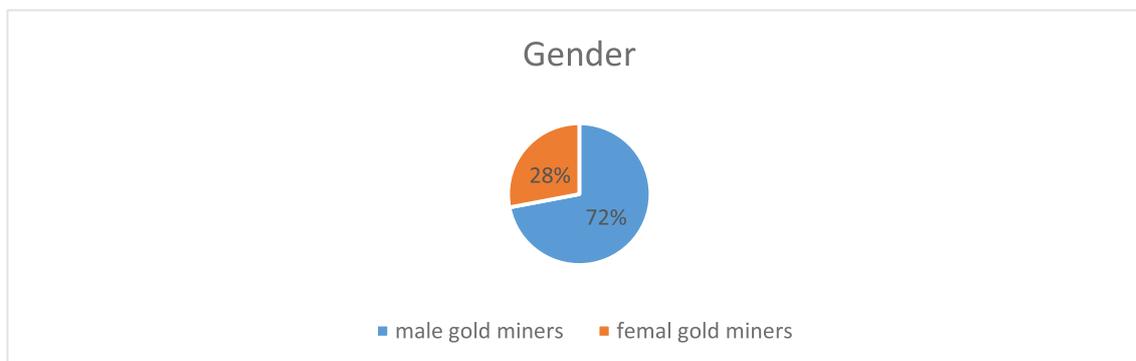
Source: Survey results

Figure 7 suggests that small-scale gold mining is an economically viable business and a livelihood option worth supporting by various stakeholders, LSGMC included. This is supported by the fact that more than half of the interviewed gold miners were exclusively involved in gold mining.

5.2 Demographic information

5.2.1: Gender in small scale gold mining

Figure 8: Gender disparity in Artisanal and Small-scale gold mining



Source: Survey results

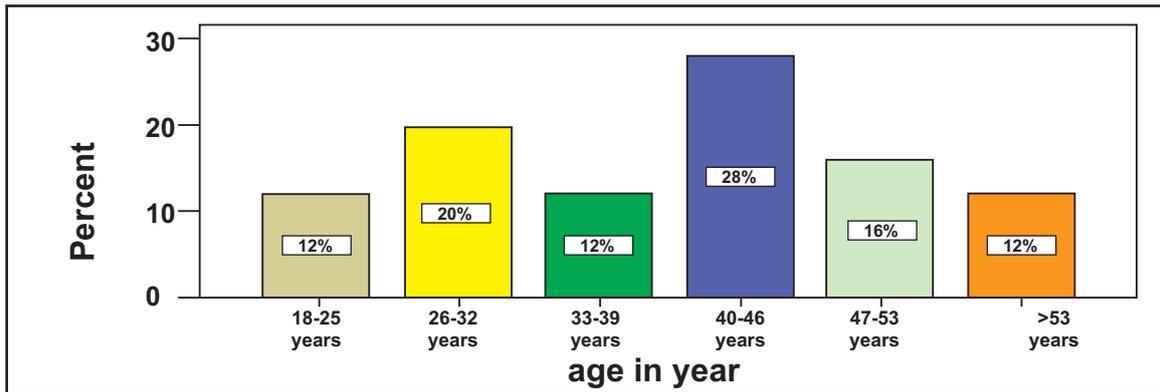
As figure 8 depicts, for the Interviewed ASSGM, 28% were women and 72% were male gold miners indicating that women are under-represented in small-scale gold mining.

5.2.2 Age and experience profile of respondents

Figure 9 shows age profile of respondents revealing that a large percentage of gold miners (28%) were aged 40-46 years old, 20% were 26-32 years old, 12% were aged 18-25, 12% were aged 33-39 and 12% were above 50 years old, while 16% were aged 47-53 years old. This would suggest that gold mining is a business option for mature people who are above the minimum legal age of adulthood and are economically active to take it as livelihood source. Importantly, the chart highlights that a substantial fraction of the youth (18-39 years) have taken up gold mining, apparently because of high unemployment in Zimbabwe. For instance, one of the emerging gold miners in Bubi who holds a medical degree has concluded that gold mining from his claim is currently the best livelihood option for him.

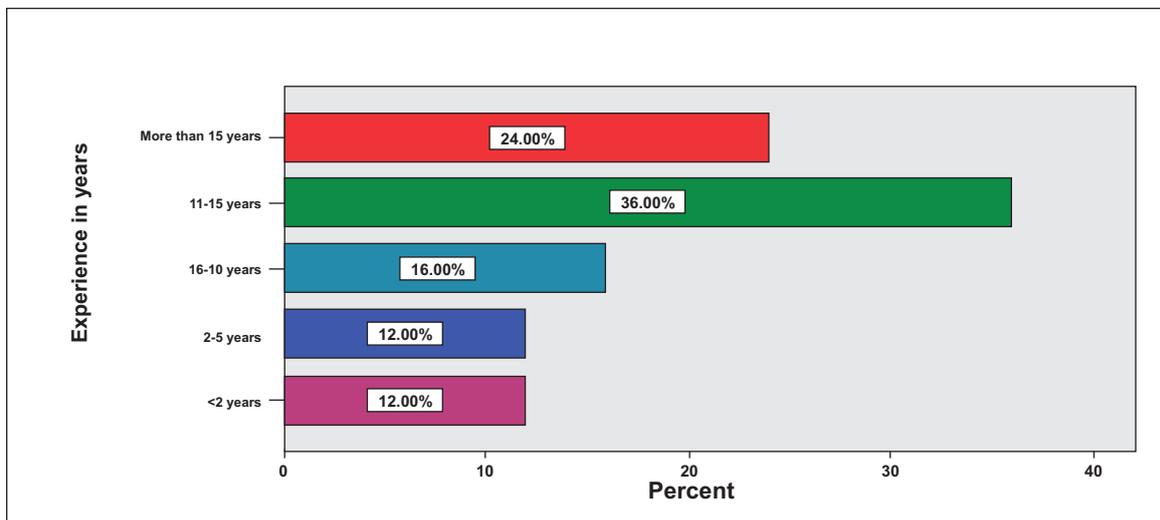
"I hold a degree in Medicine but I just felt gold mining is an option since I risk being in the unemployment pool"

Figure 9: Age distribution of gold miners



Source: Survey results

Figure 10: Experience in emerging gold sector

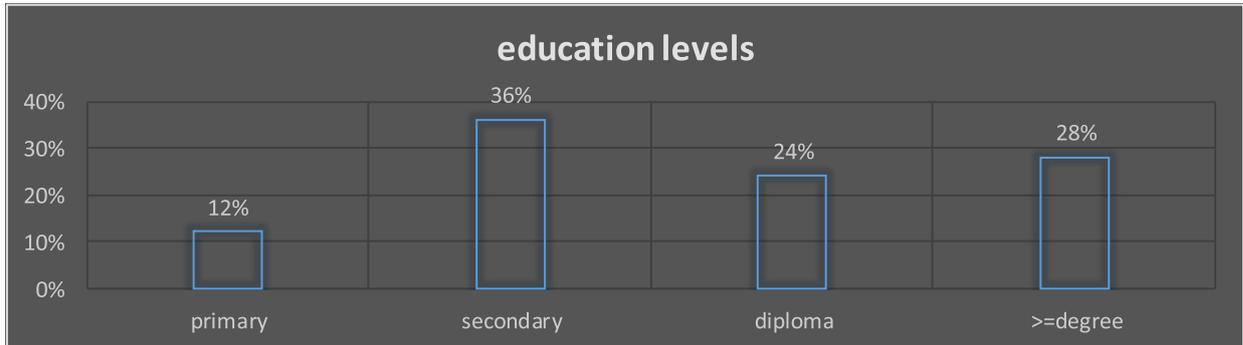


Source: Survey results

Figure 10 shows that 36 % of the respondents have been in the emerging gold sector for 11-15 years, 24% have been in the sector for more than fifteen years. The rest (a combined 40%) were in the sector for 10 years or less. Thus, small scale gold mining is worth supporting since more than half of respondents (24%+36%) have been in the sector for more than a decade.

5.2.3 Education levels of respondents

Figure 11: Education levels



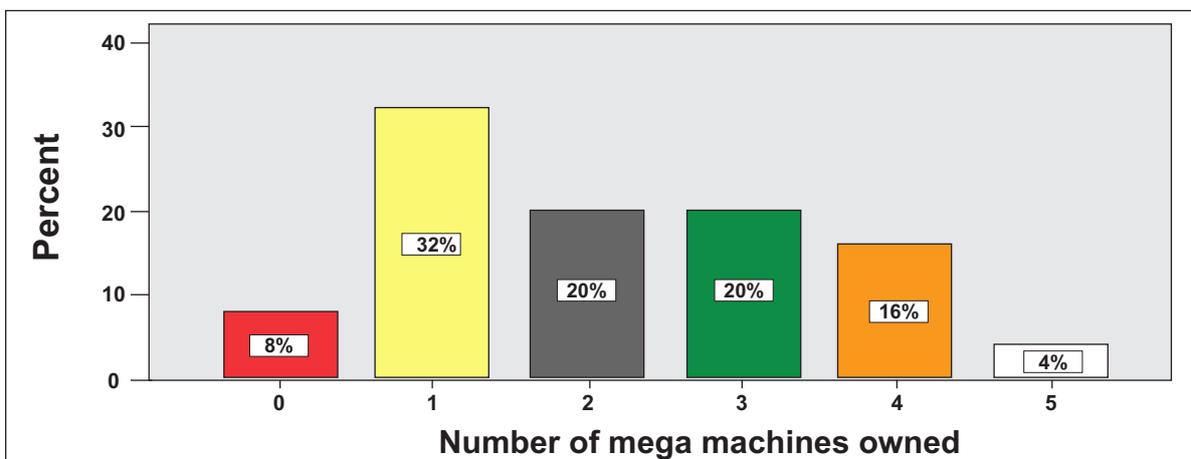
Source: Survey results

Figure 11 depicts that respondents in the Survey had at least primary level of education(12%), with a large percentage being secondary education certificate holders (36%), more than 50% (28%+24%) of ASSGM have attained tertiary education (degree or diploma) from universities or colleges. Since the greatest percentages are secondary education certificate holders, this might imply that they are the proper candidates to support because diploma and degree holders might have an outside option if the economy booms. Broadly, this suggests that the ASSGM sector in Zimbabwe has literate people with the capacity to undertake mining ventures to improve productivity and enhance sustainable mining practices.

5.3 Descriptive analysis

5.3.1 Capital requirements by ASSGM

Figure 12: Capital intensity for emerging gold miners



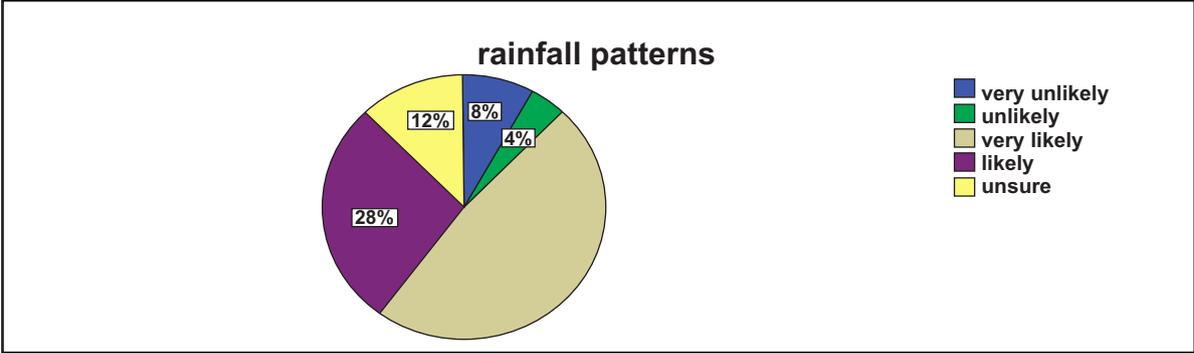
Source: Survey results

Gold production according to key informants interviewed is capital intensive, so mega machineries are needed at whatever scale of operation. Figure 12 shows that majority (32%) of ASSGM own only one

mega machine, 8% own nothing- justifying renting from LSGMC, 4% own at least 5 mega machines, while a cumulative portion (56%) own 2, 3 or 4 machines. The machinery owned by ASSGM includes compressors, trucks, water pumps, gold detectors, milling stations, generator among others. Thus, lack of machinery by ASSGM justifies the need for support from other stakeholders including LSGMC.

5.3.2 Effects of rainfall on ASSGM gold production

Figure 13: Rainfall and gold production

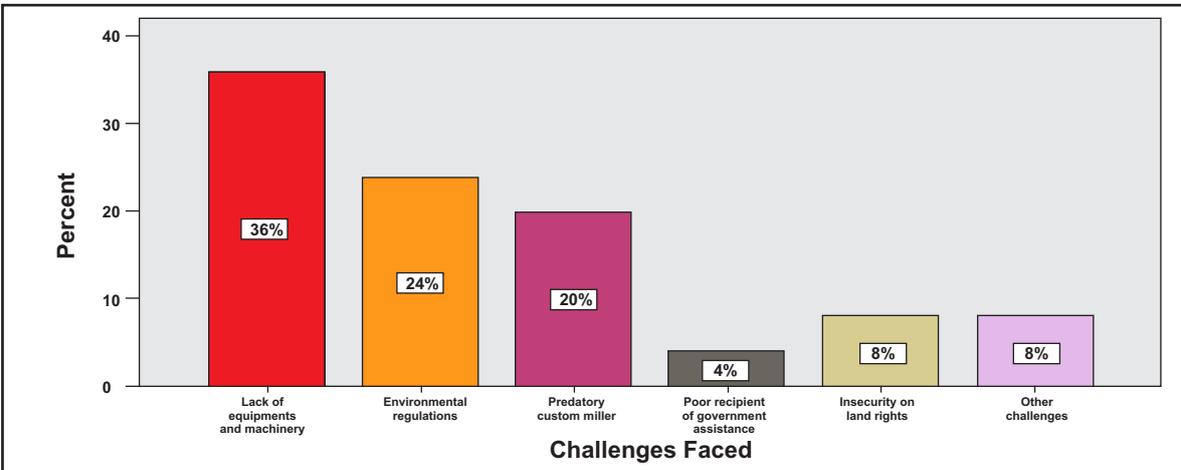


Source: Survey results

Figure 13 shows that majority of ASSGM holds the view that rainfall patterns affect their gold production adversely. Most emerging gold miners lament the lack of water pumps or its complements like diesel or petrol. Using a scale ranging from likely to very unlikely for that respective question, 48% agree that rainfall patterns are likely to affect their gold production, 28% fall under the ‘likely’ category 12% ‘unsure’, 4% ‘unlikely’ and 8% ‘very unlikely’. Therefore, rainfall proves to be a significant factor that causes a decline in gold delivery to Fidelity Printers and Refineries beginning of every year when heavy rains pour disturbing ASSGM operations.

5.3.5 Challenges faced by ASSGM

Figure 14: Challenges faced by ASSGM



Source: Survey results

Figure 14 shows majority of the respondents (36%) lack necessary equipment and machinery to extract and process their gold ore, 24% have difficulties meeting environmental impacts assessment requirements by EMA, 20% meet predatory middlemen, 4% never receive government assistance and 8% are insecure on land rights similar with those that face other challenges in gold mining including, such as lack of finances. The implication is a critical lack of mining equipment/machinery and tight environmental regulations in the sector.

5.4. Relationship between gold production and coexistence factors

Table 3 shows the nature of the relationship of the deliverable outcome variables (gold production) with cooperation or coexistence variables.

Table 3: Relationship between coexistence variables and gold production

	gold production
technical assistance by LSGMC	0.286
Training by LSGMC	0.073
Tributing of mining claims	-0.094
Past employment by LSGMC	0.107

Though correlation doesn't mean causation, the regression followed the same conclusions with correlation in the study; hence there was no need to display the regression results. Table 3 shows that the highest correlation is between artisanal gold output and technical assistance offered by large scale gold mines with a value of 0.286. This implies that gold output increases if technical assistance is provided to small-scale gold producers. The next highest correlation is between gold production and the past or present employment with an LSGMC with the positive correlation coefficient of 0.107 (that is, large gold mining companies can coexist with ASSGM by giving them jobs for them to sustainably mine their claims). Training offered by LSGMC follows with the positive correlation coefficient of 0.073. Finally, tributing of mining claims can be beneficial but, LSGMC must adequately reward ASSGM to avoid a negative relationship of -0.094

5.5 Cases of cooperation in Zimbabwe.

Early coexistence between LSGMC and ASSGM has been in existence mainly before the multicurrency regime period (Pact, 2015). Cooperation in the gold mining sector can be empirically described as in table 4 next:

Table 4: Success Cases for cooperation in Zimbabwe for benchmarking

“Success” – for ASSGM “success” is context dependent.

LSGMC	SUCCESS LEVEL	COOPERATION METHOD
Mimosa	High	Provision of mining equipment such as 20 Jackhammers and compressor to the Zvishavane Mberengwa small-scale miners as part of its CSR
Metallon Gold	Medium	The mine gave ASSGM permission to rework on old dumps at Redwing Mine in Penhalonga and eliminated the need for mercury use. The mine Invested in education on the dangers of using mercury. The mine believes that legal and safe ASSGM operations help in the uplifting welfare of communities. Through its operation countrywide it participates in rescue missions for artisanal miners. The mine, however, believe unused claims are key for attracting much needed fresh (local and foreign) investment into the mining sector
Falgold Farvic gold mine	low	The mine met with ASSGM to find out their needs leading to geological services for free to miners and mine laboratory services through subsidized charges. Tribute agreements by the mine have allowed miners to work legitimately. However, the company believes this (what it is doing currently) is only 5% of what could be done to ASSGM.
Rio Zim Dalny mine	Low	At the mine, planners take on a pact with the large gold mine board that gives them access to claims possessed by Dalny gold mine and allows them to access water for panning from the mine’s pipeline.

Source: Author Compilations

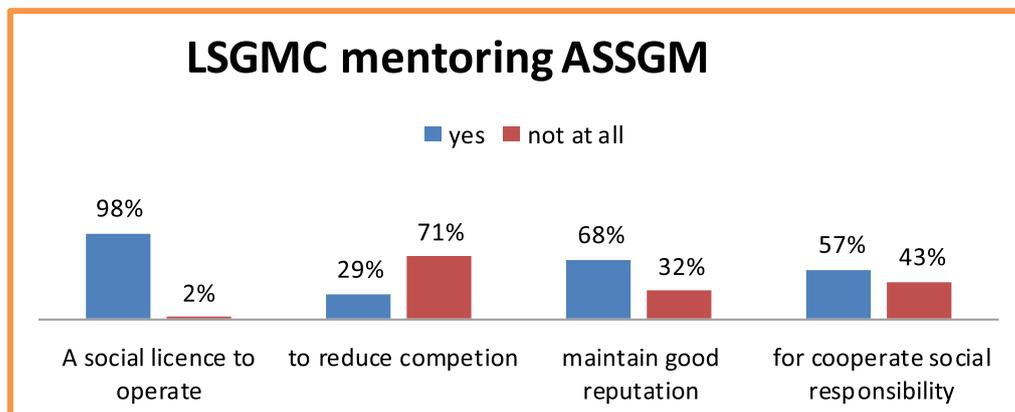
Table 4 shows that reviewed companies had cooperation elements albeit not highly successful. The research notes that cooperation is being offered using varying approaches, which include safety and health training, tributary arrangements, mining equipment, education toolkits and geological services.

Data collected show early cooperation but some of the cooperation programs were not wholeheartedly implemented.

5.6 Opportunities for large scale gold mines to mentor ASSGM

This section presents reasons for mentoring or cooperating with ASSGM from the perspective of the LSGMC. The results are presented in the form of a Likert scale ranging from strongly agrees to strongly disagree by looking at the most prevalent reasons. Figure 15 shows that generally for sampled large gold mining companies' representatives, cooperating with emerging counterparts is an opportunity. Where the relationship between the two is tense, engagement with ASSGM was considered to be a risk mitigation strategy. A substantial percentage (68%) appreciates the need to reduce risk and maintain good reputation where ASSGM and LSGMC activities occur in close physical proximity. The other reason for cooperation which was sensitive and rarely admitted to was reducing competition as shown by only 29% of sampled companies that admitted to that motive. Equally critical 57% of large scale gold miners said that they mentor ASSGM to maintain a good reputation through corporate social responsibility, since artisanal miners and small-scale miners are often a part of the local community and drivers of the local economy, with families depending on the income earned from gold mining.

Figure 15: Why Large-scale gold mines mentor ASSGM



Source: Survey results

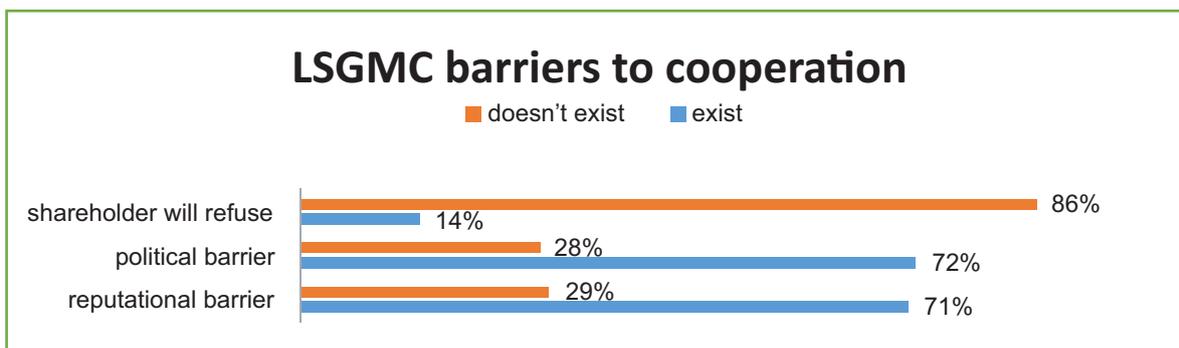
One ASSGM commented, “These companies have many claims and some of them do not make business sense to exploit hence the rationale to cooperate with artisanal miners who will find the mining activity profitable”. Therefore, the research established that mentoring ASSGM always exists in any large gold mining company strategy.

5.7 Challenges of cooperation in the gold mining sector

Barriers or challenges emanate from large gold mines and expert's viewpoint. One ASSGM, who is also a mining expert, commented: *"Large scale gold miners are reluctant to cooperate with small-scale gold miners largely because of their unwillingness to coexist. This unwillingness emanates from a natural suspicion that small-scale/artisanal miners are a disorganized lot who are a threat to large scale gold miners' operations. They are perceived to be both safety and environmental hazards that must be kept a good distance from"*.

Although, cooperation is a key strategy of sustainable gold mining and often believed to reduce gold leakages, one expert, however, wrote, *"The bottom line that matters in gold mining is cost versus benefits. If there are no benefits in assisting the small-scale gold miners, there will be little incentive to do so"*. Results of the barriers are presented in figure 16 next.

Figure 16: Barriers to cooperation between LSGMC and ASSGM in the gold mining



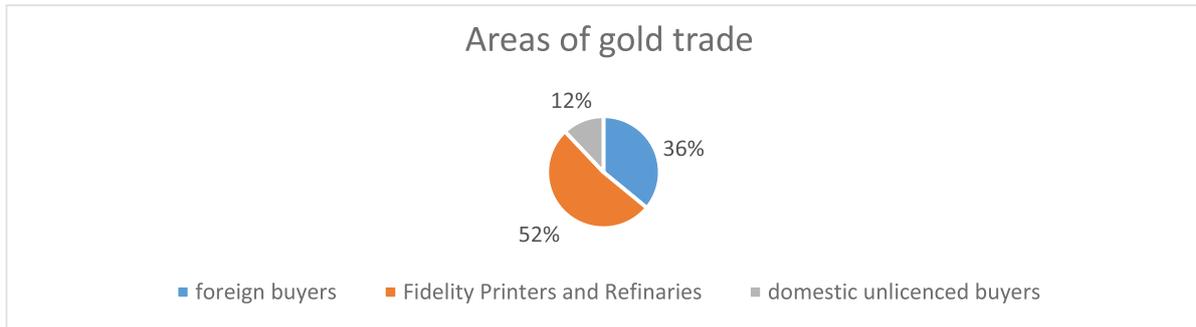
Source: Author Compilation

Of the total huge mining companies interviewed, most believe that there are barriers in cooperating with ASSGM. While 86% strongly believe that shareholders will not refuse the offer, almost equal percentages (about 72%) cited that political and reputational barriers are leading impediments to cooperation. On reputational barrier, it was deduced that by offering services or goods freely, LSGMC risk being accused of promoting and assisting illegal activity. On political grounds, often politicians determine the eligibility of beneficiaries for LSGMC initiatives making company officials to just rubber stamp the politicians' decisions thereby reducing the sustainability of the coexistence strategy.

5.8 Gold marketing in Zimbabwe

The most reported marketing zones for gold producers are presented in Figure 17.

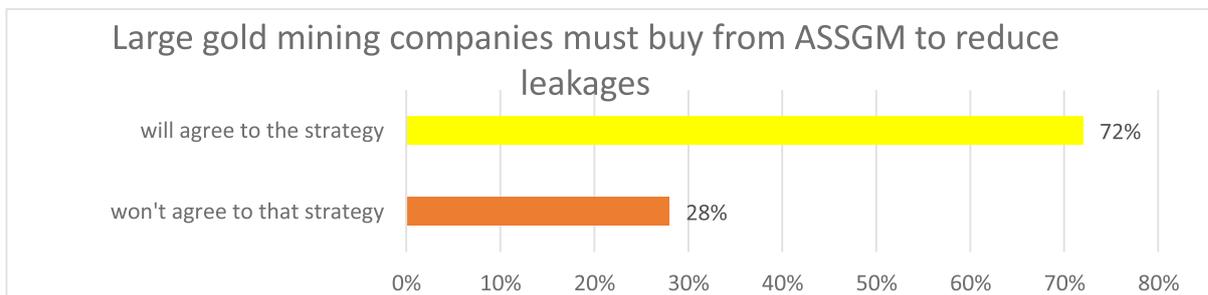
Figure 17: Areas of gold trade



Source: Survey results.

In Zimbabwe, Fidelity Printers and Refineries, a subsidiary of the Reserve Bank of Zimbabwe, is the decisive buyer of gold—commonly referred to as ‘Fidelity’ by ASSGMs. ASSGMs can, through its sanctioned agents, sell gold indirectly. All recognized custom millers are now required to be agents of Fidelity with gold buying licenses so they buy on behalf of Fidelity all the gold they recover from their mills. There are other licensed buyers who must also sell gold to Fidelity. Figure 17 shows the distribution of buyers of gold produced at the ASSGM sites. 52% of the respondents sell their gold to Fidelity or its agents. Only 12% of the miners said they knowingly sell their gold to unlicensed buyers, 36% said that they are sometimes tempted to sell to foreign buyers who promise them better equipment, an indication of potential illicit trade or leakages. In a follow-up question, figure 18 shows a consolidated view using the two mining sector respondents complimented by expert’s opinion on how to avert gold leakages.

Figure 18: Cooperation as a strategy to avert gold leakages.



Source: Survey data

One ASSGM commented *“Leakages are linked to informal operations that are difficult to handle. Linkages with large scale mining companies will be meaningful only if they capacitate the small-scale miners, such that their operations gravitate towards formal entrepreneurial entities.”*

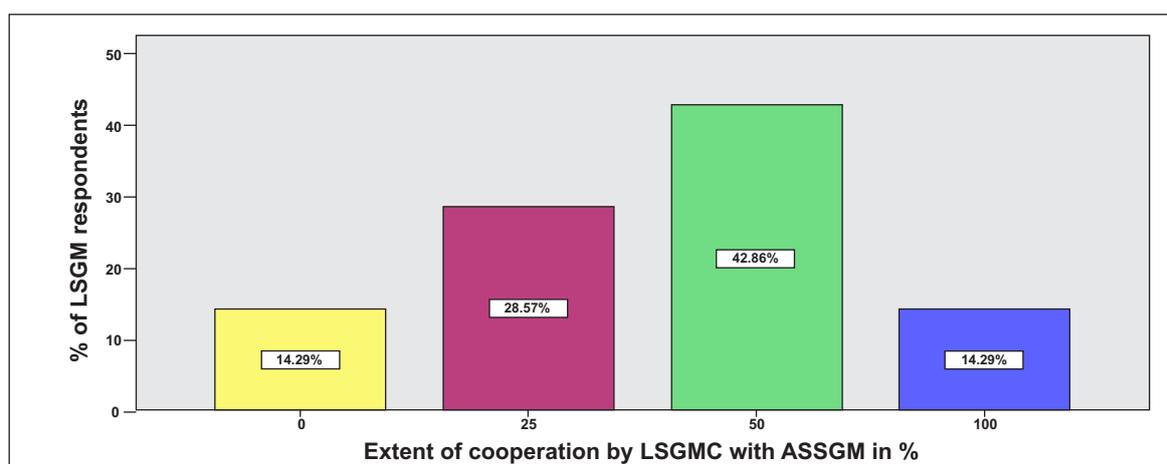
One expert commented *"It depends on the nature of the cooperation. If LSGMC gives milling facilities to the ASSGM and monitors their operation, then yes leakages will be reduced"*. The majority of the respondents (72%) indicated that they would agree to the proposition where LSGMC buys gold from ASSGM. While 28% said they won't agree to such idea or strategy, sighting that the FPR would not agree to let LSGMC have such privilege to change the status quo.

One ASSGM who is also an expert commented: *"Artisanal gold miners want to sell their gold close to where their operations are. They do not prefer to go long distances to gold buying centers for reasons like they will meet up with the law enforcing agents and have their gold confiscated. For that reason, they prefer someone who comes to them than them going out to look for gold buyers. All this however only happens if the LSGMC support the artisanal gold miner. The main reason why gold finds its way out of the formal systems is the 'middle man crisis'. He, who would have sponsored the artisanal miner to produce the gold, has the final say on how the gold should be marketed. Usually, it is this sponsor who buys the gold from the artisanal miner. The miner has no choice because he depends on this middle man called sponsor for the survival of his operations. So the underlying solution here is that whoever would want to buy the gold should support the operations that have led to the production of that gold first, this applies to the large scale mine as well"*. This signifies that leakages are not reduced easily or problems faced by ASSGM cannot be reduced overnight. As a result, it is an option for LSGMC to assist with immediate and effective solutions to problems affecting this emerging sector through cooperation with the latter.

5.9 Extent of Cooperation- LSGMC's Perspective

The overall and extent of cooperation is the mean level of assistance offered by LSGMC to ASSGM. Figure 19 presents results of cooperation between the two sector using responses from LSGMC-representatives who were asked extent of their cooperation, in percentiles for 5 categories (0%, 25%, 50%, 75% and 100%).

Figure 19: Extent of Cooperation-Large scale gold mines perspective



Source: Survey results.

The findings show an average level of cooperation to be about 43% showing that LSGMC are not so committed to assisting ASSGM in Zimbabwe. Most LSGMC showed half-hearted cooperation with ASSGM as shown by 42.86 % at the 50% level of cooperation, 14.29% who said that they are 100 percent not cooperating or 100 percent cooperating with ASSGM, 20.57% admitted to be just cooperating at low levels (25%). The response was validated by probing type of assistance/cooperation. Most of the assistance was in form of training, technical assistance, rescue services and contract mine site employment of ASSGM

5.10 Summary

Findings suggest that artisanal and small-scale gold mining is an economically viable business and a livelihood option worth supporting. Rainfall was established as a significant factor that causes a decline in the gold delivery beginning of every year. The problem faced by ASSGM were highlighted to include strict Environmental Impact Assessments (EIA) regulations, lack of mining equipment, queuing at milling station, exorbitant percentage charged by custom millers and lack of finances. The research notes that cooperation was being offered to a lesser extent using varying approaches, which include safety and health training, tributing arrangements and assistance with mining equipment, education toolkits, and geological services. The research establishes that mentoring ASSGM always exists in any large gold mining company mind-set albeit without wholeheartedly implemented. The results indicate that where there is cooperation or linkages gold leakages in the gold mining value chain can be reduced. The overall extent of cooperation was found to be low providing an opportunity for the development or establishment of cooperation between ASSGM and LSGMC.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

Conclusion

Results show that ASSGM in Zimbabwe continues to face challenges mainly strict EIA regulations and lack of mining equipment. The research has embraced a cooperation toolkit for use by LSGMC companies adopted from ICMM in collaboration and CommDev. Cooperation between ASSGM and LSGMC represents an avenue for ASSGM to access technical and financial assistance training. There are a few cases for benchmarking purposes where ASSGM have been able to cooperate with LSGMC successfully. Specifically, the first international success case of linkages includes Corporation Ananea Lt d, in Peru which allow artisanal miners to buy its shares. Secondly, in the Las Cristinas, Placer Dome Company the company provided the ASSGM communities with technical assistance to ASSGM. The final noticeable international case is that of Bayankhongor in Mongolia, which agreed to provide few panning sites for artisanal gold miners. In the African context, because of contract mining in South Africa, African Rainbow Minerals (ARM) gold mine, which started off as a small contract gold mining company has grown to become the world's fifth largest gold producer. The other African case is that of Tanzania where government, in 2013, which signed a framework agreement with two of the biggest gold mining companies in Tanzania, African Barrick Gold (ABG) and AngloGold Ashanti - a multi-stakeholder initiative aimed at improving the coexistence of small-scale mining and large-scale mining in the country. In Zimbabwe, the highly successful case is of Mimosa mine, which provides mining equipment including Jackhammers and compressors to ASSGM. Metallon Gold had medium success (context depended on ASSGM appreciation) where the mine gave ASSGM permission to rework old dumps at Redwing Mine in Penhalonga.

The overall extent of cooperation for Zimbabwe, in particular, indicates that large mining companies are half-heartedly cooperating with ASSGM. Large scale gold miners have a natural suspicion that small-scale/artisanal miners are a disorganized lot who are a threat to their operations. They also believe in political and reputational barriers (or risks) of cooperation. Challenges of conflicting perceptions were noted between LSGMC and ASSGM. However, the majority of the respondents would agree to the proposition where LSGMC buy gold from ASSGM as gold leakages were found to be a serious challenge. Leakages were found to be linked to informal operations that are difficult to handle. Results noted the underlying solution to be that whoever would want to buy gold should support the operations that lead to the production of that gold. Similarly, linkages of ASSGM with large scale mining companies are found to be meaningful only if LSGMC capacitate sma ll-scale gold miners, such that their operations gravitate towards formal entrepreneurial entities by giving milling facilities to the ASSGM and monitor their operation, to reduce leakages. Results show that

cooperating with emerging counterparts is an opportunity to acquire a social license to operate and maintain the good reputation with the community. Therefore, a case for curtailing gold leakages and strengthening gold value chain of ASSGM in Zimbabwe through linkages is empirically supported.

To complement the first-hand information obtained through interviews and questionnaires, a documentary review was used to identify best case scenario of cooperation by visiting both published and unpublished documents. Conclusively, despite barriers and negative perceptions, linkage was deduced to be an alternative strategy for strengthening gold mining value chain in developing nations such as Zimbabwe.

Recommendations

The recommendations target specific stakeholders based on analysis of research results:

Parliament of Zimbabwe

- To enhance cooperation between ASSGM and LSGMC, develop a legislative framework that promotes cooperation in the gold mining value chain in Zimbabwe.
- Create a framework that gives rights or titles to ASSGM to claims.
- Regulatory documents (act/ amendments/policies) need to be prepared in vernacular.
- Setting a clear mechanism for resolution of potential conflicts between ASSGM and LSGMC

Government of Zimbabwe

- The governments need to engage on creation of structured mechanisms to operationalize the relationship between LSGM and ASSGM.
 - Drew framework agreement that serves as the Terms of Reference (TORs) for the large scale gold mines and ASGMs' actual and potential cooperation
 - Create National Steering Committee responsible for ensuring the implementation cooperation initiatives.
- The RBZ should create a fair and accessible market for gold allowing ASSGM to participate fully in the gold mining value chain.
- There is need for a One-Stop Shop where every gold mining concerns are handled
- Develop facilities for mining equipment access for emerging miners who are formalised.
- Incentivize the ASSGM through loan facilities, subsidies, training and technical assistance.

Local Authorities

- RDCs should charge affordable levies to ASSGM.
- RDCs should not have discretionary production-invoicing after ASSGM recorded high levels of production, but rather a flat charge.
- Monitoring the activities of the ASSGM and ensuring their activities are not causing harm to the environment and communities.

Environmental Management Agency (EMA)

- There is a need for EMA to review its unfavourable regulatory framework, revise punitive fees and the requirements for EIAs certificates hampering gold production.
- EMA should empower ASSGM to protect environments through technical and training support.
- EMA to reconsider its regulatory framework and increase monitoring of the ASSGM activities contributing to environmental degradation and use of cyanide or mercury.

Chamber of Mines (COMZ)/Large Scale Gold Mining Companies (LSGMC)

- COMZ should promote coexistence with ASSGM and encourage members to support ASSGM through a Charter for members.
- LSGMC must adopt toolkits developed by ICMM in collaboration with CASM and CommDev which table best scenario cases for ASSGM - LSGMC engagement.
- Provide technical assistance to ASSGM towards sustainable gold mining development.
- LSGMC in actual or potential tributating of claims programs should provide good prices for the gold supplied to them by ASSGM, for the former to earn a reasonable return for their efforts.

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