

Leveraging Transition Mineral Extraction for Zimbabwe's Socioeconomic Development

The Case of Lithium

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“Transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development.”

- Africa Mining Vision

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EXECUTIVE SUMMARY

Zimbabwe's mining sector accounts for 14 percent of the country's gross domestic product (GDP), 75 percent of the country's export earnings, and 20 percent of state revenues. The sector contributed US\$5.6 billion to GDP in 2022 and is expected to contribute \$20 billion in 2030, with transition minerals including lithium contributing a significant portion. Lithium alone contributed \$209 million to the country's mining exports in 2023. Despite this significant contribution to the country's economy, Zimbabwe does not have a standalone national mining policy or a transition mineral-specific strategy to ensure it reaps the full benefits from its lithium boom.

Lithium has become an essential ingredient in the quest to transform the world economy toward a low-carbon and more resilient growth path. In particular, lithium is key to the development of battery energy storage systems used in electric vehicles and other renewable energy technologies worldwide. Zimbabwe has 0.6 percent of the world's lithium deposits, making it host to Africa's largest lithium reserves. The country is therefore best positioned to take the lead in sustainable lithium mining on the African continent, yet substantial challenges remain in encouraging development spillovers at both the national and local levels. China, besides being the leading manufacturer of battery energy storage systems and electric vehicles, is the main source of investment in Zimbabwe's lithium mining subsector.

This research paper examines the impact of lithium mining on the country's socioeconomic development trajectories at both the local community level and the national level. It uses key stakeholder interviews and a survey of local communities proximate to lithium mining sites to identify policy gaps in community engagement, environmental and social impacts, and infrastructure development to explore how Zimbabwe can better leverage its lithium operations to spur a more sustainable growth path. The paper draws on regional and international transition mining best practice to propose solutions to unlock the maximum developmental benefits for Zimbabwe's economy, including by catalyzing infrastructure development for the country and the Southern African Development Community (SADC) region as well as benefiting local communities.

Our key findings are that:

- **Zimbabwe's lithium mining subsector has advanced significantly** compared with the rest of the continent, despite the current outdated policy framework. This growth has been driven primarily by Chinese investment and demand.
- **There is a need for legal and policy reform** to best serve the country and local communities and enable fast-tracked sustainable lithium-based development.
- **Evidence from community surveys and interviews indicates that while lithium mining companies provide some local support, local-level engagement remains limited.** There are opportunities to be explored to ensure a mutually beneficial and inclusive relationship. There has been limited investment in infrastructure such as towns by lithium mining companies, compared with investment by multinational corporations in the pre-independence period. Although companies are not legally obligated to provide public infrastructure, the state could play a stronger strategic role to coordinate investment in infrastructure that would benefit both mining companies and broader development goals.
- **Zimbabwe's sovereign wealth fund (Mutapa Investment Fund, MIF) is strategically placed** to drive infrastructure and broad socioeconomic development, including through partnerships with multinational mining companies.

Our key policy recommendations for policymakers in Zimbabwe include:

- **Strengthen the policy framework for the mining sector**, including lithium mining, to address infrastructure and broad socioeconomic development through a clear, transparent, coordinated, and inclusive consultation process, including learning from regional and international best practice.
- **Prioritize local inclusion through benefit-sharing initiatives** with mining companies that promote livelihood diversification and development of social enterprises in mining communities.
- **Strengthen government agencies' policymaking, implementation, monitoring, and enforcement processes** through greater emphasis on transparency and accountability, especially with relation to environmental and social governance.
- **Strengthen the role of the knowledge community**, including academia, think tanks, consultancies, and civil society experts, in training; research; policy advocacy, formulation, and oversight; and innovation through greater investment in research and curriculum development.
- **Develop and diversify international partnerships** that advance all parties' economic and development priorities to create mutually beneficial relationships throughout the lithium mining value chain, including downstream and sidestream development.
- **Strengthen the capacity of the MIF** to drive initiatives around investment in economic infrastructure such as transportation, energy, and water management.

This report argues that by strengthening lithium mining governance, Zimbabwe can position itself as a regional leader within SADC while leveraging transition minerals to promote socioeconomic development. To achieve this, Zimbabwe needs a comprehensive lithium strategy that addresses the development of local value chains in the subsector, thereby increasing development benefits for not only local communities but for the country and wider region.

Zimbabwe has the potential to lead the SADC region in migrating beyond lithium extraction and into midstream and downstream in the lithium value chain, such as processing and manufacturing, while simultaneously strengthening environmental and social oversight. This migration is possible with significant infrastructure investment in supporting enablers such as energy, transport, and water. This requires urgent action, as technological advances could disrupt the country's current competitive advantage in the lithium sector.

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Zambia. Photo by Fiona Barclay Smith via Shutterstock.



INTRODUCTION

Zimbabwe's Mineral Wealth

Zimbabwe is richly endowed with mineral resources. The mining sector accounts for 14 percent of the country's gross domestic product (GDP), 75 percent of the country's export earnings, and 20 percent of state revenues (IFC 2024). The sector contributed US\$5.6 billion to GDP in 2022 and is expected to contribute \$20 billion in 2030, making the country highly dependent on the resource (IFC 2024). Zimbabwe possesses a number of transition minerals (TMs), positioning Zimbabwe as a key player in the global shift towards a low-carbon economy. Demand projections associated with the green transition have improved the long-term prospects of Zimbabwe's store of energy TMs, notably lithium, nickel, copper, and platinum group minerals (PGMs). These TMs are required to support renewable energy technologies, and PGMs are needed for the emerging green hydrogen economy.

Zimbabwe holds 0.6 percent of the global lithium deposits, making it home to Africa's largest lithium reserves (IFC 2024). In order to meet energy transition goals, it is estimated that lithium production worldwide must grow by an average of 5.4 percent yearly until 2050 (Hund et al. 2020). Among the major players driving this increase in production, Chinese companies have emerged as leading actors shaping the global dynamics of lithium supply chains. Lithium mining production in Zimbabwe has boomed since 2021, driven primarily by investments by Chinese mining companies. The International Financial Corporation (IFC) states that the lithium mining subsector is one of three sectors with significant potential for private sector investment and structural transformation in Zimbabwe (IFC 2024). In order to empirically investigate this potential, this report aims to answer the research question: To what extent is lithium mining in Zimbabwe contributing to sustainable socioeconomic development at both local and national levels?

Leveraging Lithium for Sustainable Development

This research focused on the six lithium mining sites that were identified as operational in the Ministry of Finance, Economic Development and Investment Promotion's 2024 National Budget: Arcadia Lithium Mine, Sinomine Bikita Minerals Mine, Sabi Star Mine, Zulu Lithium Mine, Kamativi Lithium Mine, and Sandawana (Kuvimba) Mine.⁶ The majority of these mines are operated by Chinese private companies or jointly with the Zimbabwean government,⁷ through the Sovereign Wealth Fund established in 2014 and restructured as the Mutapa Investments Fund (MIF) in 2023. The MIF's mission is to "drive economic growth, create jobs, and generate value and wealth," and is committed to achieving "sustainable economic development" for the country (MIF n.d.). It is well-positioned to deliver these benefits through its participation in the lithium subsector.

While mining partnerships are financially beneficial for the country, civil society and academic experts have raised questions around the restructured MIF's mandate, governance structure, and transparency, as well as the government's ability to develop laws and regulations that are non-discriminatory and to enforce the rule of law where it is a party to noncompliant transactions (Mutowekuziva 2023, Moyo et al. 2025). The track record of Chinese companies' non-adherence to host-country environmental laws and internationally accepted environmental principles on working conditions and rights of local communities, often facilitated by close relationships with the host

⁶ A list identifying the same six sites was also provided to the researchers in communications with the Zimbabwe Ministry of Mines and Mining Development in February 2025.

⁷ See Section 3.6.1 for a list of the relevant companies.

government, is well-documented (Kakore 2024; Owusu et al. 2025; Springer et al. 2023; Voituriez et al. 2019).

China's influence in the global lithium industry encompasses not only extraction but also exploration, processing, manufacturing, and technological innovation. While China is not the world's largest producer of raw lithium domestically—it falls behind Australia and Chile as of 2023—it holds a near-monopoly on refining and processing capacity (IEA 2024). Its battery manufacturing sector accounts for over 70 percent of global lithium-ion battery production, and China also accounts for 60 percent of global lithium processing capacity (IEA 2023). China imports approximately 80 percent of the lithium it consumes, meaning these industries are reliant on dependable supplies of the mineral ore from abroad (Graham et al. 2021). The Chinese model of investing in extraction overseas to serve industrial and manufacturing needs at home has become a worldwide trend, and Zimbabwe is no exception. Although Zimbabwe introduced measures banning the export of raw lithium in 2022, these measures are not watertight and do not guarantee meaningful beneficiation or the establishment of local manufacturing capacity.⁸

Zimbabwe has been in the process of updating its Mines and Minerals Bill since 2015 and recently gazetted an updated bill (2025). However, until the Bill is enacted into law by parliament, Zimbabwe's mining sector remains governed by the colonial-era 1961 Mines and Minerals Act (Chapter 21:05). Zimbabwe's primary lithium export is bulk concentrate, which has approximately 6 percent lithium content, though there are plans and initial steps to move up the value chain in a manner that benefits the whole country. The Constitution of Zimbabwe, adopted in 2013, provides for the right of local communities to participate in, and benefit from, the development of their local resources in the general context of the devolution agenda.⁹ Additionally, the Zimbabwe National Industrial Development Policy (ZNIDP) provides for an integrated approach to the industrial development of all sectors of the economy, with the Local Content Strategy (LCS) as one of the overarching strategic thrusts of the policy (Ministry of Industry and Commerce of Zimbabwe 2019). However, there is no general or specific policy for transition minerals. Despite lithium's economic potential and the government's involvement in lithium mining through the MIF, there is no clear strategy to leverage lithium operations to drive socioeconomic, industrial, and infrastructure transformation.

Zimbabwe produces approximately 1 million tons of lithium per year, mostly from hard rock deposits (IFC 2024). The bulk of the lithium ore is transported to the Port of Beira via the national road network en route to China. On any given day, there are more than a hundred 30-ton trucks (excluding trucks carrying chrome or coal) on the road either to Beira or to local crushing facilities in Gwanda (Chin'ono 2024). The rail system is in a state of collapse, making road the preferred mode for transporting bulk freight. The impact on road infrastructure, which was built primarily for passenger traffic, and on surrounding communities is clearly visible. Rail transport presents a more efficient and sustainable option for the movement of large volumes of heavy materials over long distances (IEA 2019). The lithium subsector therefore offers Zimbabwe an opportunity to resuscitate and modernize its railway network.

Concerns around infrastructure services affected by lithium mining operations also extend to water and electricity. Lithium processing threatens water security because of its high level of water consumption and wastewater discharge (Graham et al. 2021).¹⁰ Zimbabwe is a water-scarce country and has been experiencing an extended drought since 2023 triggered by the climate phenomenon El Niño (UNICEF Zimbabwe 2024). Poor wastewater management resulting in contamination of

⁸ Statutory Instrument 213 of 2022 gazetted in December 2022 bans the export of raw lithium to push for local processing, discussed further in section 3 of this report.

⁹ Cf. Section 264 of the Constitution of Zimbabwe.

¹⁰ Lithium processing uses high amounts of sulfuric acid and sodium carbonate and discharges saline wastewater.

fresh water sources, combined with increasing demand for lithium, compounds the strain on water resources. In addition, lithium ore processing is energy intensive. The extended drought in Southern Africa has led to low water levels at the Kariba Dam and consequent curtailment of hydropower generation, leading to high energy insecurity and challenging the scaling up of lithium mining and processing operations.

These infrastructure challenges represent a bottleneck and call for an integrated approach to infrastructure planning and development. The country's lithium mining subsector stands to benefit from coordination between the Ministry of Mines and Mining Development and the various government ministries with infrastructure delivery responsibilities, i.e. Transport and Infrastructural Development; Energy and Power Development; and Lands, Agriculture, Fisheries, Water and Rural Development. This would also provide an opportunity for the government to develop the transport network and water systems via public-private partnerships (PPPs) or other project finance structures to ensure Zimbabwe continues to meet and benefit from current and future levels of lithium demand. For example, the government could leverage the sovereign wealth fund, as the MIF's mandate includes financing infrastructure projects as the private party in a PPP transaction with the state.

Turning to the local level, environmental and social concerns are widespread in relation to mining, with mining operations worldwide regularly linked to issues such as labor rights violations, environmental degradation, adverse health impacts, and poor community engagement. Reports indicate a rise in complaints against Chinese mining operations in recent years, likely linked to the ramping up of demand for transition minerals. In Zimbabwe specifically, 12 allegations against Chinese lithium mining companies were recorded in 2023 and 2024, primarily related to worker rights and protections, compared with just two between 2010 and 2022 (Business & Human Rights Resource Center 2024). Nevertheless, existing studies have found that Chinese extractive practices are not fundamentally different from those of Western firms, which also face environmental and social governance (ESG) controversies relating to mining and other extractive activities (Ray et al. 2017). The key difference lies in Chinese companies' tendency to rely on host-country regulations rather than implementing independent ESG standards, making strong governance policies in resource-rich nations even more crucial. This is especially urgent given that lithium extraction lacks the well-established governance frameworks of older mining industries (Albright et al. 2023).

The ongoing development and enforcement of ESG standards is essential to ensuring that transition mineral extraction is sustainable and inclusive. In Zimbabwe, where concerns about ESG are pronounced at all lithium mining sites, it is necessary to assess (1) the extent to which companies adhere to such standards, and (2) where international best practice and partnerships could help ensure that the lithium sector contributes to both national and local development.

Research Objectives

This report examines Zimbabwe's lithium mining subsector and its potential to drive socioeconomic transformation through sound policy, sustainable practices, and inclusive development. The research objectives used to answer the overarching research question (see Section 1.1) are to determine the level of:

1. Community engagement and participation in lithium mining projects
2. Community socioeconomic development through lithium mineral development
3. ESG in lithium mining areas
4. Infrastructure development at local and national levels that leverages lithium mining
5. National socioeconomic development planning that leverages lithium mining

METHODOLOGY

Research Design

This research employs a mixed-methods approach, including both quantitative survey results and qualitative stakeholder interview data. The research team conducted an extensive review of relevant literature on lithium mining, regulatory frameworks, benefit sharing, environmental and social impacts, linkages with infrastructure development, and local value chains to establish a foundation for the study. The researchers looked into international mining best practice and those followed by “traditional” multinational corporations (MNCs) currently operating in Zimbabwe and the Southern African region. Historically, mining has been important in the development of infrastructure to the extent that most mines formed commercial centers and permanent communities around them, and indeed most towns in the country started as “mining towns.” Examples include Kadoma, Kwekwe, Bindura, Shamva, and even the capital city, Harare. MNCs spearheaded the implementation of the Indigenisation and Economic Empowerment Act (2008) by establishing Community Share Ownership Trusts (CSOTs), although the local ownership provisions of the Act have since been relaxed in order to attract further foreign investment.

In addition to being listed on the local Victoria Falls Stock Exchange and Zimbabwe Stock Exchange, some of the traditional large-scale MNCs operating in Zimbabwe are also listed on foreign stock exchanges (such as the London Stock Exchange, Toronto Stock Exchange, and Johannesburg Stock Exchange) and are therefore guided by the regulations applicable in these jurisdictions. International and regional mining standards include, inter alia, the Global Reporting Initiative (GRI), the Extractive Industries Transparency Initiative (EITI), the Initiative for Responsible Mining Assurance (IRMA), China’s Green Investment Principles, the African Union’s (AU’s) Africa Mining Vision (AMV), and the Southern African Development Community (SADC) Protocol on Mining and “Harmonisation of Mining Policies, Standards, Legislative, and Regulatory Framework” in Southern Africa. The Stock Exchanges and various transnational standards have requirements that seek to promote good mineral resource governance, particularly transparency, accountability, responsible mining and sourcing of minerals, and other ESG requirements. Thus, a comparative approach was used to juxtapose the traditional large-scale mining companies against the new crop of investors entering the lithium mining sector in Zimbabwe in terms of adopted standards, voluntary initiatives, and impacts.

Field Sites and Survey Data Collection

There are various lithium mining sites in different phases of development scattered throughout Zimbabwe. This project focused on the six sites identified as operational by the Government of Zimbabwe: Arcadia Lithium Mine, Bikita Lithium Minerals, Sabi Star Lithium (Max Mind Investments), Zulu Lithium Mine (Premier African Minerals), Kamativi Lithium Mine, and Sandawana Lithium Mine (Kuvimba Mining House). Importantly, all six of these projects involve significant participation by Chinese companies (although this was not an independent criterion for site selection as part of the study). The team initially set out to also conduct work on an announced battery manufacturing plant, the Mapinga Mines to Energy Industrial Park (Mining Zimbabwe 2024). However, this work was not conducted, as the industrial park is not yet underway and is currently a chrome mining site. Figure 1 shows the location of the operational lithium mining projects in Zimbabwe.

Figure 1: Map of Operational Lithium Mining Projects in Zimbabwe



Source: Authors’ elaboration.

Note: The six blue sites represent operational lithium mines as defined by the Government of Zimbabwe. The red site is the location of the proposed battery manufacturing industrial park, which was also visited as part of this study but where no survey was conducted as it was determined that the industrial park did not yet exist.

All six mining sites are located in rural or farming areas. Table 1 provides a brief overview of each site; additional description of the mining companies involved is provided in Section 3.6.1.

Table 1: Field Sites

Mine	Company	Province	Local Town(s)	Survey Responses
Arcadia	Arcadia Lithium	Goromonzi	Marondera	41
Bikita	Bikita Minerals	Masvingo	Masvingo	39
Sabi Star	Max Mind Investments	Manicaland	Buhera	39
Kamativi	Kamativi Mining Company	Matabeleland North	Kamativi	37
Zulu Lithium	Premier African Minerals	Matabeleland South	Filabusi	39
Sandawana	Kuvimba Mining House	Midlands	Mberengwa	35
Total				230

Note: Zulu Lithium was not operational at the time of fieldwork in May 2025, though surveys were conducted based on the past experiences of local residents.

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The objective of the survey administered at each site was to collect firsthand information from participants directly affected by lithium mining to determine the level of community engagement, environmental and social impact, and local infrastructure development leveraged by lithium mining (Research Objectives 1, 2, 3, 4). The level of community engagement (Objective 1) was determined through questions on:

- Prior and ongoing consultations (level of participation, length and frequency of engagement) and grievance mechanisms in place, including whether these were viewed as effective and secure
- Perceptions on whether communities' concerns were taken seriously, addressed, and feedback provided

To determine the level of socioeconomic development (Objective 2) as a result of lithium mining, social and economic data collected from community members included:

- Perceptions on whether socioeconomic development is taking place in their area; whether the mines are sensitive to socioeconomic issues; and whether mining companies conduct assessments of environmental, social, and economic impact on the surrounding communities
- Employment and local business opportunities supported by mining companies
- Service delivery (education, health/medical) supported by mining companies

The level of environmental and social governance (Objective 3) was determined through questions on prevailing environmental and labor practices.

Finally, the level of local infrastructure development leveraged by lithium mining (Objective 4) was determined through questions on participants' perceptions on the state of infrastructure (roads, electricity and water availability). Field-based observation (e.g. on air quality and the state of roads, schools, and health clinics) and informal conversations complemented survey research at the six sites.

The target populations for the survey were members of the communities within a 10-km radius of each of the six mines. Convenience sampling was the primary method of selecting respondents, with efforts to include a diversity of participants based on age, gender, education, and profession. Thirty to forty interviews were conducted per site, with a total of 230 responses.

Key Stakeholder Interviews

Key stakeholders were identified during the literature review process for qualitative interviews, including relevant government ministries and agencies, mining company representatives, industry associations, academics, and civil society groups (see Appendix 1). The general purpose of the interviews was to understand the government's policy position with respect to lithium mining by addressing national development planning, infrastructure development, and alignment of lithium mining operations with development goals and international standards. The specific objectives of each key stakeholder interview are set out in Appendix 1. The stakeholder interviews were semi-structured, allowing for flexible conversations guided by a set of core questions to explore the themes while capturing participants' perspectives in their own terms.

The following ministries and private sector voluntary associations were approached but were not available to participate:

- Ministry of Mines and Mining Development
- Ministry of Finance, Economic Development and Investment Promotion
- Ministry of Energy and Power Development
- Ministry of Local Government and Public Works
- Ministry of Labor and Social Welfare
- Chamber of Mines of Zimbabwe

In addition, the team reached out to Chinese companies regarding their participation in the lithium mining subsector in Zimbabwe but did not receive a response.

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Zulu Lithium Mine, Zimbabwe. Photo by Dr. Tinotenda Chidhawu and Earnest Chinyanga.



LITERATURE REVIEW

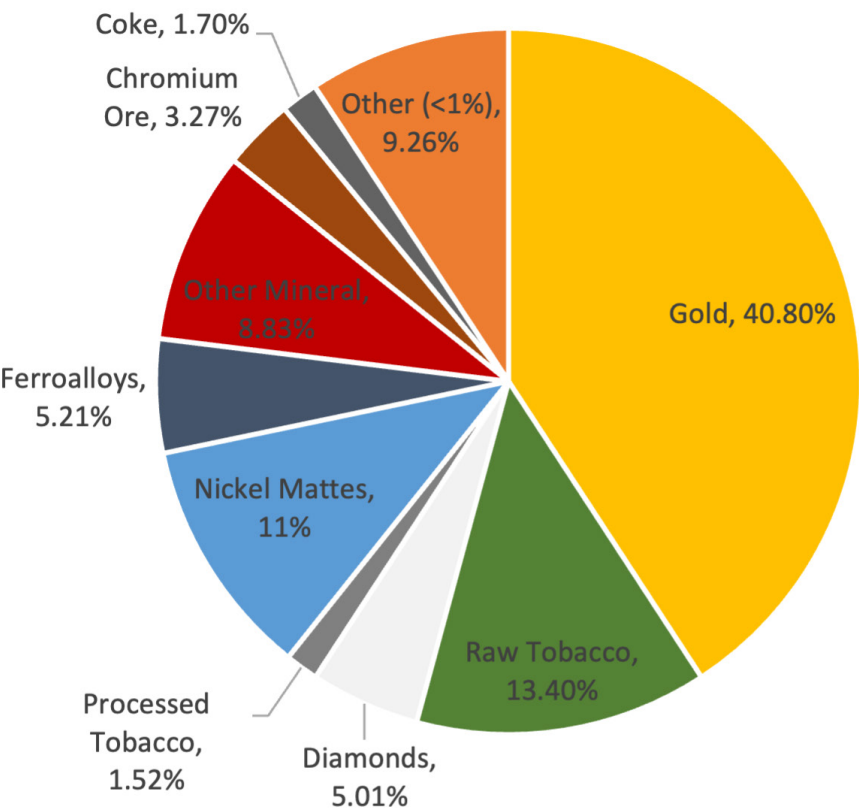
This section provides an overview of Zimbabwe’s geology, the legal and political environment for mining, the role of the mining sector in infrastructure development, and the role of sovereign wealth funds in development; a picture of the regional policy context through South African and Namibian case studies; and an international perspective analyzing China’s positioning in the global lithium value chain.

Overview of Zimbabwe’s Mining Sector

Zimbabwe has a highly diversified mineral resource base linked to several prominent geological formations, namely an expansive craton, widespread greenstone belts (also known as gold belts), the famous Great Dyke, the Precambrian and Karoo basins, and metamorphic belts (Ministry of Mines and Mining Development of Zimbabwe 2018). Lithium is commonly found in certain types of coarse-grained igneous rocks called pegmatites, where it occurs in minerals such as spodumene, petalite, lepidolite, and amblygonite.

The country has huge mineral potential due to its geology, as shown by the dominance of the mining sector’s contribution to the country’s export basket (Figure 2).

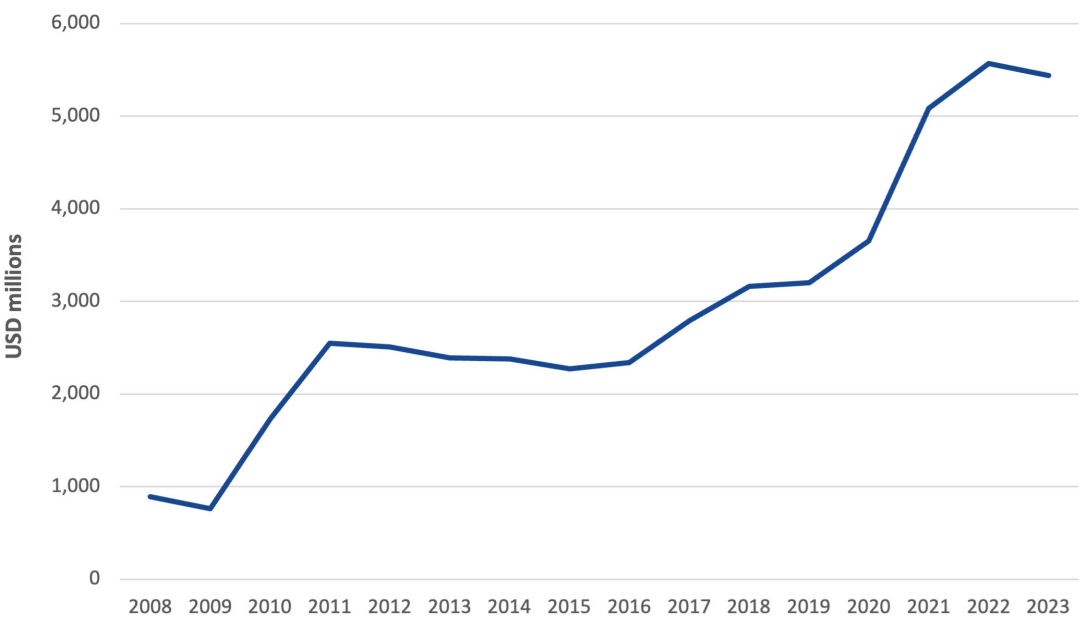
Figure 2: Zimbabwe’s Export Basket, 2023



Source: Authors’ elaboration based on Observatory of Economic Complexity (2025).

Mining activities have generally been on an upward trajectory since 2018 (Reserve Bank of Zimbabwe 2024a). In 2023, the mining sector contributed 70 percent to foreign direct investment, 80 percent to exports, 19 percent to government revenues, 3 percent to direct formal employment, and 13.5 percent to national income (ZIDA 2023). Gold, the platinum group of metals (PGMs), ferrochrome, lithium, diamonds, and coal anchor the country's plans to earning US\$20 billion from mining by 2030 (Mlambo et. al 2022). Figure 3 shows the mineral exports trend since 2008.

Figure 3: Total Mineral Exports, USD Millions, 2008-2023



Source: Authors' elaboration based on Reserve Bank of Zimbabwe (2024b).

Zimbabwe's rich reserves of transition minerals such as lithium offer a significant opportunity for the country, despite fluctuations in global mineral prices and disparities in the worldwide resource landscape. Leveraging mineral resources has the potential to enhance income levels, expand fiscal capacity, and facilitate a shift toward industrialization (Mlambo and Chinyanga 2022). Table 2 shows the country's TM reserves and positioning in the global market.

Table 2: Zimbabwe's Transition Mineral Production, Reserves, and Share of Global Reserves, 2021

Product	Output	Production 2021 (Metric Tons)	Share of Global Production, 2021 (%)	Reserves (Metric Tons)	Share of Global Reserves (%)
Copper	Mined	8,650	0.04	1,615,000	0.10
	smelter	0			
Cobalt	Mined	230	0.20	8,300	0.03
	refined	0			
Nickel	Mined	13,949	0.50	2,059,600	0.50
Lithium		25,476	1.10	6,756,300	0.60
Platinum group (kg)		30,546	6.50	3,751,000	5.60

Source: Authors' elaboration based on IFC (2024).

The growing global push towards electric vehicles (EVs) has seen significant capital injections into Zimbabwe's lithium mining sector (COMZ 2022). Zimbabwe has registered an increase in investors undertaking exploration and mine development projects, mostly in lithium, with China being the major source of foreign investment (ZIDA 2023). Chinese mining companies, including Zhejiang Huayou Cobalt, Sinomine Resource Group, Chengxin Lithium Group, Yahua Group, and Canmax Technologies, are investing in, acquiring, or developing lithium projects. Since 2021, Chinese companies have invested more than US\$1.4 billion in acquiring lithium projects in Zimbabwe. In 2023 alone, Chinese companies were awarded licenses that could allow US\$2.79 billion in investment flow into the country, mostly in the mining and energy sectors (Reuters 2024). Table 3 presents lithium production and export figures from 2018.

Table 3: Zimbabwe's Lithium Production and Exports (2018-2023)

Year	Lithium Production (Metric Tons)	Lithium Exports (USD Millions)
2018	76,517.27	18.2
2019	62,622.80	15.4
2020	20,858.90	5.1
2021	40,726.00	11.0
2022	102,420.00	70.6
2023	826,925.00	674.0

Source: Authors' elaboration based on Reserve Bank of Zimbabwe (2024b).

Table 3 shows that lithium production and exports have been increasing since 2018 except for a slight decrease in 2020 caused primarily by the COVID-19 pandemic, with a significant spike in 2023 owing to increased lithium demand driven by demand for EVs and the growing need for energy storage solutions. Table 4 shows lithium projects under exploration in Zimbabwe.

Table 4: Projects Under Exploration for Lithium Deposits

Name	Description
Red Rock Resources (UK)	Acquired lithium claims in Zimbabwe in 2022, and established a lithium exploration unit in the country, African Lithium Resources, to hunt for more concessions
Prospect Resources (AUS)	After selling its stake in Arcadia Mine to Huayou, Prospect is exploring a new claim, Step Aside, 8 km from Arcadia Mine
Galileo Resources (UK)	Spending US\$1.5 million to explore for lithium and gold at claims held by BC Ventures near Kamativi
Arkle Resources (IRE)	Granted three licenses covering 163 hectares in Insiza district
Marula Mining (UK)	Entered Zimbabwean market in 2023 after identifying opportunities in copper and lithium
Li3 Lithium (CAN)	In a 50-50 joint venture with Premier African Minerals in the Mutare Lithium Project, which has 1500 ha of licences near Sabi Mine
CAT Strategic Metals Corp. (CAN) and partner Zim Lithium Company	Developing the Kamativi tailings facility left by the old tin mine
China National Resources (CHN)	NASDAQ-listed exploration company exploring in Manicaland through Williams Minerals, owned by Top Pacific Ltd and Feishang Group, also shareholders of China National Resources

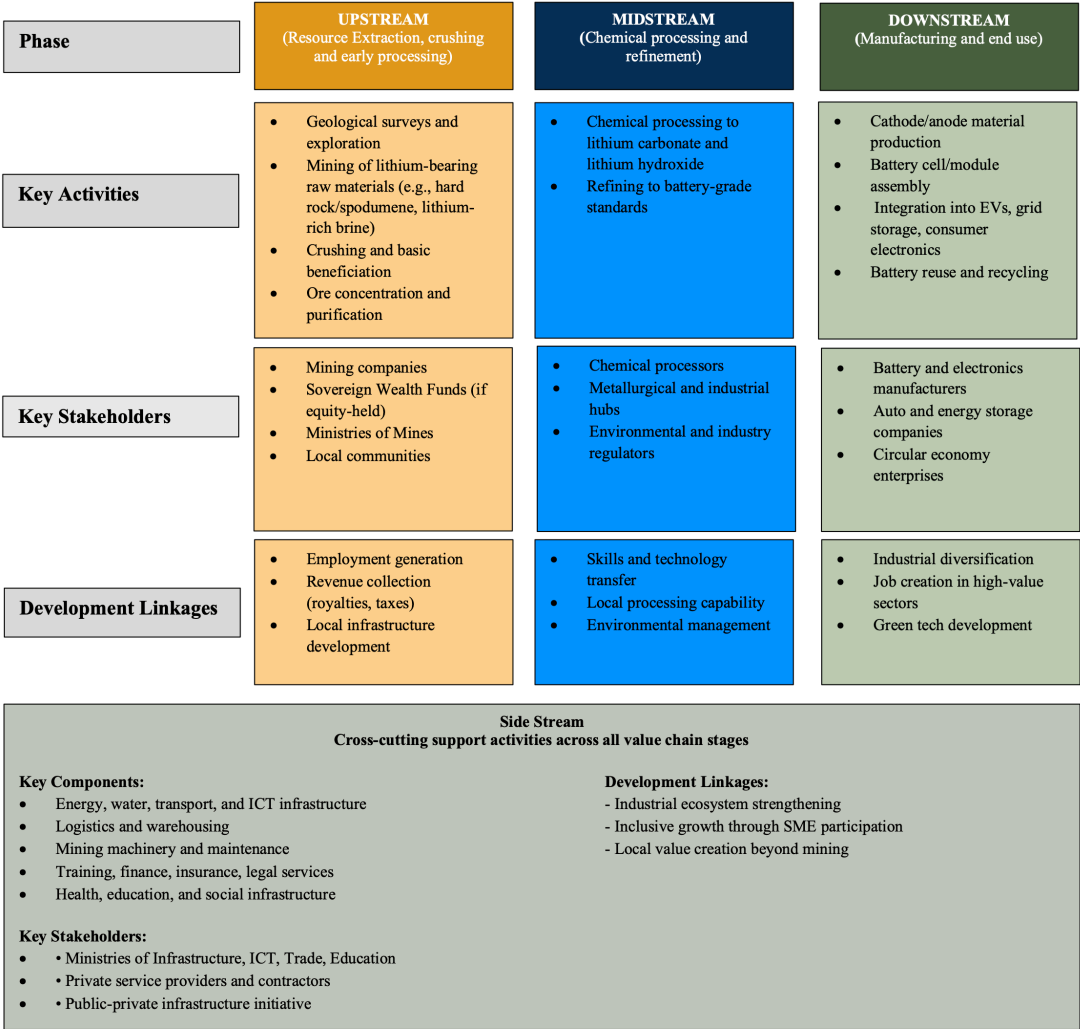
Source: Authors' elaboration based on Zimbabwe Investment and Development Agency (2023).

It is important to note that while the six lithium mining operations that are the subject of this study involve participation by Chinese companies, the majority of companies with exploration licenses in Zimbabwe are from the United Kingdom, Australia, Canada, and Ireland. These have not yet moved into production because of the long timeframe for exploration and related necessary activities.

THE LITHIUM VALUE CHAIN

The Africa Mining Vision (AMV) adopted by the African Union calls for a “transparent, equitable and optimal exploitation of mineral resources,” which entails downstream linkages into mineral beneficiation and manufacturing; upstream linkages into mining capital goods, consumables and services industries; and sidestream linkages into infrastructure (power, logistics, communications, water) and skills and technology development (human resources development, HRD, and research and development, R&D); mutually beneficial partnerships between the state, the private sector, civil society, local communities, and other stakeholders; and comprehensive knowledge of its mineral endowment (AU 2009). This necessitates a coordinated approach between sectors to ensure integration across all the streams. Lithium development in Zimbabwe has focused mainly on extraction, with little attention given to the other elements espoused in the AMV. Figure 4 shows a high-level lithium value chain.

Figure 4: High-Level Lithium Value Chain



Source: Authors' elaboration based on African Union (2009).

Mining, crushing, grinding, and concentrating entail simply extracting the lithium concentrate from ore and discarding waste, and are considered part of the upstream phase. At the refining stage, other raw materials are required as inputs, including sulfuric acid and sodium carbonate. These can form part of the midstream local content inputs produced and supplied by domestic companies. Refining ore locally reduces transport costs, which are a significant component of production costs. There are also a significant waste handling costs, of the order of 10–12 tons of waste from a refinery per ton of lithium hydroxide (OECD and IGF 2024).

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THE ROLE OF ZIMBABWE'S MINING SECTOR IN INFRASTRUCTURE DEVELOPMENT

Although infrastructure development is primarily a government function, MNCs such as Anglo American, Rio Tinto, and Lonrho have historically played a significant role in building mining towns in Zimbabwe. Towns such as Kwekwe, Shamva, and Bindura have their origins in mining activity, as mining companies sought to provide accommodation and related services for their staff. The same is true of Zambia's Copperbelt towns (Kitwe, Ndola, and Mufulira) and South Africa's Johannesburg. These towns were formed mainly to serve the mining operations and provided a labor market, as they were located a short distance from the mines. For as long as the resource can be commercially extracted their existence is justified; when it no longer can be, they deteriorate into ghost towns (Kamete 2012).

Beyond town infrastructure, MNCs have also played a key role in the development of infrastructure that serves their operations but also surrounding communities. This includes road and rail networks for moving supplies between towns, importing capital goods, and exporting ore via ports, as well as electricity and water for refining purposes. Understanding this link between infrastructure development, economic activity, and the long-term sustainability of mining towns is important from an integrated planning perspective in light of the current lithium mining boom.

Leadbeater (2009) highlights that reliance on single-resource towns risks leaving communities vulnerable, particularly where infrastructure depends on the economic viability of resource projects. For Zimbabwe, the emerging lithium mining sector can act as an anchor for infrastructure investment, provided that policies are designed to ensure mining companies continue to contribute to shared transport, energy, and water systems (Kamete 2012). Proactive government planning can facilitate the diversification of associated economic activities on the back of mining operations. However, the current development of the lithium mining subsector has seen little investment in towns and other public infrastructure around the six mining sites, although in the case of Bikita and Arcadia the companies have built last-mile transmission lines and substations to serve their energy needs (Wang et al. 2024). Sabi Star has also commissioned a 15 MW coal-fired power plant, built by the Chinese company China Railway Group Limited (CREC), where excess capacity of 3 MW will be fed into the national grid (The Herald 2024). Further developing associated industries to support the lithium subsector and beneficiation of lithium-ion components will help in building resilience beyond the life of the mines, hence the push for the government to fast-track policies that promote midstream and downstream value chains, where possible, around the mining sites.¹¹

Besides extraction, the mining sector is a large and mostly creditworthy purchaser of infrastructure services (IFC 2024). This presents the Government of Zimbabwe and other infrastructure developers with an opportunity to structure PPPs or project finance transactions underpinned by this creditworthy customer base. For instance, lithium processing and mining are water-intensive processes and pose a significant risk to water resources in affected communities. The Natural Resource Governance Institute estimates that 40,000 liters of water per ton is required in the refining stage for hard rock lithium (Scurfield and Sefa Adjei 2025). This presents an opportunity for a water PPP program. In addition, truck volumes on roads leading to the Port of Beira or South African ports are expected to increase. The IEA (2019) reports that rail transportation presents a more efficient and sustainable option for moving large volumes of heavy materials over long distances. Lithium extraction therefore also presents an opportunity to transform Zimbabwe's rail and road network

¹¹ In the case of South Africa, mining companies have gone beyond being offtakers for government rail and ports infrastructure to being co-developers and owners of such infrastructure. For example, mining companies such as Glencore, Exxaro, and Anglo American developed, operate, maintain, and own the Richards Bay Coal Terminal and related rail infrastructure. This was made possible through investor-friendly policies and resource companies' vested interest in ensuring efficient passage of coal to global markets.

into a more sustainable e-mobility mode of transport, while assisting the country in meeting its Paris Agreement commitments.

The abundant supply of lithium and other TMs, recent restrictions on the export of raw lithium, and the incentives for local beneficiation present investors with Zimbabwean risk appetite with an opportunity to make the Zimbabwean manufacturing sector the “next factory of the world” through industrialization and diversification (Sun 2017). A boom in mineral processing could generate inflows of capital and hard currency, elevated state revenues, additional revenue streams from associated minerals currently extracted with lithium ore, and new sources of well-remunerated, formal employment in Zimbabwe (IFC 2024). Success hinges on Zimbabwe’s ability to address the barriers to industrialization, such as the constraints on export opportunities, erection of entry barriers, and stifling of rents from value chain trade identified by Owusu et al. (2025).

Given fiscal limitations, the country needs to adopt investment-friendly policies that include intentionally directing lithium mining revenues into shared infrastructure development. By leveraging mining companies as anchor customers and channeling resource rents through the MIF, the government can ensure that transport, energy, and water investments serve both the mines and broader socioeconomic development.

Legal and Policy Environment for Mining in Zimbabwe

Despite the plethora of legislation strengthening the mining sector in Zimbabwe, the legal framework is primarily governed by the 1961 Mines and Minerals Act (Chapter 21:05). This Act serves as the foundational legal framework for exploration, mining rights, and mineral resource governance. Under this system, mineral rights are vested in the president. To prospect, individuals or entities must obtain either a prospecting license or an Exclusive Prospecting Order (EPO). The EPO grants exclusive rights over a defined area for specific minerals for a set period. Once a claim is pegged,¹² the holder has the perpetual right to dispose of extracted minerals as long as they fulfill minimum work requirements or pay retention fees. Zimbabwe mandates special mining leases for investments of over US\$100 million whose product is intended for export (Mashingaidze and Phiri 2024). Landowners receive nominal compensation from the government for the loss of land, but there have been instances of displacement without proper consultation or compensation (see Section 4.2.3; see also Chitagu 2024; Mutondoro 2024).

The Mines and Minerals Act is outdated, and efforts to overhaul it have been underway since 2015, with the goal of harmonizing it with contemporary economic practices and globally acceptable environmental and social standards. The proposed amendments in the recently gazetted Mines and Minerals Bill (Government of Zimbabwe 2025) include the establishment of the mining cadastral, meaningful localization, and making mining-related processes more transparent. However, the Bill has been published without a clear national mining strategy.

¹² A mining claim is a piece of land for which the claimant has asserted a right of possession and the right to develop and extract/mine a discovered, valuable, mineral deposit.

LEGAL AND POLICY ENVIRONMENT IN THE CONTEXT OF LITHIUM

Lithium has become a cornerstone of Zimbabwe's mining sector. However, the existing legal and policy environment regarding lithium has been fraught with challenges and inconsistencies. The development of robust mineral value chains is hampered by challenges related to lack of national strategy, policy inconsistency, technical capacity gaps, lack of transparency, and inadequate local content requirements (Kabemba and Malungisa 2025). Previous attempts to foster local beneficiation included a moratorium on the export of raw lithium in Statutory Instrument 213 of 2022, issued under Base Minerals Export Control (Lithium Bearing Ores and Unbeneficiated Lithium) of the 1961 Act (Government of Zimbabwe 1961; 2022). The instrument aimed to ensure that the country benefits from local value addition, such as processing and refining, before the resource leaves the country (Government of Zimbabwe 2023). However, it was silent on local manufacturing and the policy framework surrounding it was inconsistent. For instance, the Minister of Mines and Mining Development may grant export licenses at their discretion if a mining company applies for a waiver, is exporting ore as samples, or shows that there are exceptional circumstances to justify export of raw ore. In 2025, the government announced plans to ban the export of lithium concentrates beginning in 2027 to boost local refining and increase revenues from the export of refined lithium products (Standard and Poor Global 2025). In February 2026, this ban was extended to all raw mineral ore and the deadline brought forward in response to revenue loss due to widespread under-declaration (The Herald 2026).

Zimbabwe's Vision 2030 (V2030) sets out the country's aspiration of becoming an upper middle-class country by 2030 guided by a set of cardinal values—among them decentralization and devolution—and the Constitution (Government of Zimbabwe 2018). V2030 is implemented through five-year strategic national development plans. The government's approach to managing lithium extraction through the lens of the devolution agenda reflects an attempt to align mining resources with local economic development (SARW 2024).¹³ The National Development Strategy 1 (2021–2025) is emphatic on leaving no one behind and on aiming for all citizens to buy into Vision 2030 to deal with Zimbabwe's inter- and intragenerational developmental priorities and goals (Zinyama and Chimanikire 2019). The 2013 Constitution seeks to tackle existential risks of uneven and unbalanced development plaguing the country, including lack of community development, inequality, and marginalization of certain communities. The decentralization and devolution agenda is key in rallying support for community interventions and providing for a substantial degree of autonomy at the grassroots level. By avoiding a top-down process and having the demand side push progress, the devolution agenda aspires to uplift and empower by identifying resources and taking into account the needs of communities.

The decentralization and devolution pathway will help to address issues around the meaningful participation of local communities in lithium mining. However, the legal and policy framework surrounding the devolution of mining resources remains unclear and inconsistent. In the case of Bikita, for instance, the government created the Marozva CSOT to facilitate local benefit-sharing (Nechena and Kurebwa 2018), but this initiative lacked adequate community engagement and consultation: local residents and the Bikita Rural District Council were not consulted or informed about the CSOT arrangement (SARW 2024). Although the CSOT initially constructed several classroom blocks, it is now defunct, with no participation by Chinese investors (Thematic Committee on Indigenisation and Empowerment 2024).

¹³ The desirability of devolution stems from democratic systems of governance that promote citizen participation in intergenerational community development. The devolution agenda, therefore, aims to bring the government closer to the people, making the government more accountable to local communities.

Similarly, at the Sandawana Mine, which is jointly owned by the MIF (through Kuvimba Mining Group) and Chinese investors, there are serious concerns about the lack of transparency and fairness in how lithium claims were handled (Global Witness 2023). Villagers were deceived into extracting lithium with promises of compensation, only for the government, backed by riot police, to forcibly seize the extracted lithium and hand over the claim to the Zimbabwe National Army (Gumbo 2023). This episode highlights the gaps in legal protections, leaving surrounding communities struggling to sustain their livelihoods. Zimbabwe's lithium mining sector has faced challenges rooted in state-driven takeovers, mirroring issues seen in the Chiadzwa diamond mining.¹⁴ While other mining subsectors have allowed community involvement through artisanal mining, the government's unwritten policy has largely excluded communities from the lithium subsector, favoring larger, state-owned, and state-backed operations, mostly Chinese. The government's push for devolution and local economic development aims to ensure that communities benefit from mining, but the practical implementation of these policies is hindered by weak governance, lack of transparency, conflicts of interest, and community leaders who are often compromised by the promise of financial benefits from mining companies and government officials. Government's ability to enforce compliance is further hindered by lack of resources.

Some of the operational lithium mines run corporate social responsibility (CSR) initiatives to address community issues. However, CSR is voluntary and cannot be a substitute for legislation. The National Environmental Policy and Strategies (2009) objective is to "reduce poverty and improve the standard of living of Zimbabweans" (Ministry of Environment and Natural Resources Management of Zimbabwe 2009, 6). It stipulates that an Environmental and Social Impact Assessment (ESIA) be conducted prior to the commencement of mining activities, and ongoing monitoring and evaluation. Implementation is a requirement for granting a license to mine. Stakeholder engagement is a key component of an ESIA and, if properly conducted, will help address some of the current challenges in the lithium mining sector. For intra and intergenerational community development to be realized, the country must focus on a people-centered development philosophy that reconfigures community development interventions to promote inclusive socioeconomic development driven by the citizenry.

¹⁴ The army and politicians used force to displace communities (Human Rights Watch 2009).

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LINKING MINING WITH INTEGRATED INFRASTRUCTURE DEVELOPMENT

Infrastructure development is one of V2030's 14 goals for achieving an ambitious transformation target. The government recognizes the importance of infrastructure in achieving socioeconomic development and has identified infrastructure and utilities as a national priority. It also recognizes the contribution of the mining sector to achieving this vision, with a specific focus on moving up the mining value chain.

To position itself to derive the maximum benefit from global demand, Zimbabwe needs to invest in infrastructure development. Currently the lithium mining sector relies on road infrastructure to transport lithium ore or concentrate, as the rail network has deteriorated due to decades of underinvestment (Reuters 2024). Lithium mining consumes significant amounts of water, and the ongoing drought threatens water security and socioeconomic development. Refining minerals is an energy-intensive process and energy insecurity—partly due to the ongoing drought—will undermine Zimbabwe's chances of exploiting the lithium growth opportunity. Achieving V2030 is premised on availability of energy, transport, and water services essential for value addition production processes. This requires funding.

Given the fiscal limitations, an innovative and integrated infrastructure development approach is required to meet the infrastructure demands of this fast-growing subsector. This entails coordination between key stakeholders (i.e. the Ministry of Mines and Mining Development, Ministry of Energy and Power Development, Ministry of Lands, Agriculture, Fisheries, Water and Rural Development and Ministry of Transport and Infrastructural Development) through a “whole of government approach” to avoid overlaps and inefficiencies at the planning level and to create a transparent enabling environment. The Mineral-Electricity Nexus for Development (MEND) framework recommended by Wang et al. (2024) provides a partial solution that seeks to tackle the energy infrastructure challenges from a lithium mining company's perspective, which should be complemented with a national development agenda.

Through transparent regulatory processes, a PPP approach has the potential to address these infrastructure challenges by leveraging mining sector actors as anchor offtakers to unlock the socioeconomic development goals set out in V2030. Zimbabwe has a PPP Unit, housed within the Ministry of Finance and Economic Development, which has successfully implemented the Plumtree-Harare-Mutare toll road and more recently the Beitbridge Border Post PPP projects. Benefits of PPPs include appropriate risk transfer to the private sector, efficient service delivery, and freeing up capacity within government, both financially and technically. Despite the benefits, PPP uptake has been slow in Zimbabwe, taking years to get to the appointment of preferred concessionaires, mainly because of the high perceived political risk, perceived lack of political will, and policy uncertainty associated with the country since the early 2000s. This is one area where the MIF could assist in providing patient capital that could unlock private sector funding.

The Role of Sovereign Wealth Funds

Historically, sovereign wealth funds (SWFs) have been used to manage and minimize a range of negative economic and political consequences of natural resource wealth, often lumped together as the “resource curse” (Frynas 2017). They are classified as either “stabilization funds” (to address the challenges related to the volatility of the income from natural resources) or “savings funds” (to address the need to save a portion of the resource income) in resource-rich countries (Bacon and Tordo 2006; Davis et al. 2001; Frynas 2017). For example, the Norway Sovereign Wealth Fund’s mission is “to safeguard” the wealth from the country’s oil and gas resources for current and future generations and to avoid the “curse of resource wealth” (Clark et al. 2013, 20; NBIM 2025). The Fund currently manages assets from oil and gas revenues worth US\$1.9 trillion. Assets under management include global investments in companies, fixed income, unlisted real estate, and renewable energy infrastructure (NBIM 2025).

The Zimbabwe Sovereign Wealth Fund was established in June 2015 by the SWF of Zimbabwe Act (Chapter 22:20) and renamed the Mutapa Investment Fund (MIF) under Statutory Instrument 156 of 2023. The MIF’s objectives are investing for the benefit and enjoyment of future generations of Zimbabweans; supporting the long-term economic and social development objectives of the government; supporting fiscal or macroeconomic stabilization; and contributing to the revenues of Zimbabwe. A fifth objective implied in these four and in the MIF’s portfolio is diversification in order to reduce reliance on natural resources (Bacon and Tordo 2006; Clark et al. 2013; Frynas et al. 2017). The MIF’s portfolio includes assets across different sectors, among them energy assets (under the electricity utility, Zimbabwe Power Company), transition mineral assets (under Kuvimba Mining House), transport assets (under the National Railways Holding Zimbabwe), telecoms assets (under Telone, Netone, and Telecel), and financial services (via the Post Office Savings Bank and other state-owned entities). Section 23 of the SWF of Zimbabwe Act mandates the MIF to withdraw funds and “invest any part of its funds for the purpose of infrastructure development as the private partner with the State under a joint venture agreement” (MIF n.d.). The MIF is therefore strategic to Zimbabwe’s development and can take advantage of the lithium rush to drive socioeconomic and infrastructure transformation.

Despite the MIF and its predecessor’s stated objectives and ownership of some of the country’s crown jewels, local development outcomes in Zimbabwe remain limited. In its 2019 Country Economic Report, the African Development Bank reported that Zimbabwe was meeting just 25–30 percent of its infrastructure needs and that it performed worse than Africa as a whole on almost all Sustainable Development Goal outcome indicators (AfDB 2019). SWF studies have shown that a small number of resource-rich countries (such as Norway, Canada, Botswana, and Chile) have been able to largely mitigate the resource curse (Frynas et al. 2017). Studies show that diversification of the economy, good governance, and special fiscal institutions need to be in place for SWFs to be more efficient and effective in driving development (Humphreys et al. 2007; Rosser 2006; Stevens 2005).

The Ethiopian Sovereign Wealth Fund—established in 2021 to improve the performance of state-owned assets, drive industrialization, create jobs, develop infrastructure, and attract domestic and foreign investment—owns US\$45 billion of government assets and is the largest SWF in Africa. Assets include the critical sectors of agriculture, logistics, tourism, energy, manufacturing, and technology (Gessesse 2025). Although its foundation is not based on mineral wealth, there are lessons to be learnt from its success. The US\$330 billion Mubadala Sovereign Wealth Fund of the United Arab Emirates was established in 2002 to diversify Abu Dhabi’s economy beyond oil and gas, focusing on strategic investments in various sectors such as aerospace, healthcare, and technology. It is now ranked among the top 15 SWFs.

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THE MIF'S STRATEGIC ROLE

Although there is mixed empirical evidence on the impact of resource funds, the MIF (like the Norwegian, Ethiopian, and Mubadala SWFs) is well positioned to deliver developmental benefits for the country, especially driven by lithium and other TMs because of their anticipated growth. A key element in infrastructure financing is bankability, demonstrated through funding availability, strong project sponsors, and creditworthy offtakers. Deposits into the MIF include at least 25 percent of all mining royalties, duty, and fees; at least 25 percent of the “special dividend” on the sales of diamonds, gas, granite, and other extractable minerals by or on behalf of the Minerals Marketing Corporation of Zimbabwe (MMCZ) that is payable by the MMCZ to the Consolidated Revenue Fund and dividends from its underlying investments. Based on the lithium export figures shown in Table 3, lithium mining contributions from the MMCZ were worth approximately US\$200 million from 2018–2023.¹⁵

The lessons above are critical for Zimbabwe. The MIF could serve as a stabilization and savings mechanism, while also co-financing domestic infrastructure (transport, energy, water, etc.) where mines act as anchor offtakers. The MIF receives adequate hard-currency resources to support infrastructure development in these sectors and is well positioned to provide the funding to crowd in private sector investors. Adopting sound governance principles would help ensure transparency, investor confidence, and long-term developmental impact. Given the current state of the country's infrastructure, the MIF can boost lithium production and exports by:

- Addressing market failure through co-financing infrastructure projects and helping unlock private sector funding
- Providing offtake guarantees for the country's utilities in order to unlock private sector investment
- Deepening and widening Zimbabwe's capital markets by funding alongside commercial banks that are not able to fund long term
- Acting as a market maker through the creation of a new asset class for electricity, water, road, or rail infrastructure that relies on the MIF's guarantee (backed by hard-currency funds) and uses lithium mining sector actors as anchor offtakers

¹⁵ Calculation based on 25 percent of lithium exports between 2018 and 2023 (Reserve Bank of Zimbabwe 2024b).

Regional Context

A number of African countries are in the process of revisiting their mining policies in light of recent natural resource discoveries and to guard against the resource curse. This section reviews the South African and Namibian policy contexts to give a comparative perspective on how other SADC states are leveraging their mining sectors for development. Namibia was selected because of its lithium mining activities and initiatives, and South Africa because of its developed mining sector and general policies and practices in mining value chains.

SOUTH AFRICA

Pre-1994, South Africa was plagued with apartheid policies characterized by differentiated access to quality education, economic opportunities, and general living conditions. With democratic elections and the onset of a new government, a new Constitution was adopted in 1996 with the vision of improving the quality of life for all citizens through fundamental rights including human dignity, equality, a clean environment, property, information, and good government (Government of South Africa 1996a). Despite these policies, South Africa continues to be a highly unequal society (Cuevas et al. 2022).

The Vision for 2030, articulated in the South African National Development Plan, is aimed at eliminating poverty and reducing inequality by providing goals to be achieved by 2030; building consensus on identified key obstacles and actions to be taken; providing a common framework for detailed planning; and creating a basis for making choices about how best to use limited resources.

The South African mining sector is expected to play a major role in this transformation. The country is rich in various mineral resources, and mining has been a significant contributor to South Africa's GDP for years. Vision 2030 states that more attention will be given to stimulating labor-absorbing activities such as supplier linkages, in relation to both capital goods and services that form the basis for participating in the global mining value chain (Government of South Africa 2012). The country's mineral resources include gold, platinum group metals, diamonds, coal, vanadium, manganese, industrial minerals, iron ore, chrome, and copper. The sector contributes 6 percent to GDP, 475,000 jobs, R43.6 billion in taxes, R16 billion in royalties, and 12 percent to overall fixed investment in South Africa (MCSA 2025). The industry has been instrumental in developing:

- Infrastructure including rail, roads, ports, and electricity. The Richards Bay rail line and Richards Bay Coal Terminal (RBCT) were supported and developed by a consortium of mining companies, and the RBCT is owned by these companies. The industry, which for years has been the anchor electricity offtaker, is now working toward decarbonizing its operations by 2050 (MCSA 2025). Mining companies are developing a combined 16,000 MW of renewable power with independent power producers and finding ways of producing green hydrogen.
- New towns, e.g. Johannesburg and Rustenburg.
- Institutions of higher education: University of the Witwatersrand started as a school of mines serving the industry.
- Industries associated with the mining industry value chains, either in the upstream production and supply of goods and services, or as consumers of primary outputs from the sector.
- Related institutions including the Council for Geological Services, the Council for Scientific and Industrial Research and Mintek, which is responsible for developing downstream processing technologies.

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Mining Policy Framework

The Minerals and Mining Policy for South Africa (Department of Minerals and Energy of South Africa 1998) articulates the government's vision for the country's mining sector in the following six clusters:

- Business climate and mineral development, providing policy conducive to investment
- Participation in ownership and management of mines, providing equal opportunities to all races
- People issues, addressing skills development, social, safety, migrant labor, and industrial relations issues
- Environmental issues, laying the foundation for the “polluter pays” principle
- Regional cooperation, particularly through the SADC
- Good governance, emphasizing coordination within government entities and the establishment of a board to advise the Minister of Mineral Resources

Mineral rights in South Africa are vested in the state. All laws and matters dealing with minerals are managed by the Department of Mineral and Petroleum Resources. The primary law is the Minerals and Petroleum Resources Development Act (MPRDA) number 28 of 2002 (Government of South Africa 2002). A Draft Mineral Resources Development Bill, aimed at overhauling the MPRDA and addressing challenges in the mining sector, increasing investor confidence, streamlining regulations, and promoting local beneficiation, has recently been released for public comment (Department of Mineral and Petroleum Resources of South Africa 2025). While not yet law, it is important to highlight some of the proposed changes in the preamble, as they are aligned with the Africa Mining Vision 2009 and are meant to:

- Provide for matters relating to the formalization and regulation of small-scale and artisanal mining
- Regulate associated minerals, i.e. any mineral which occurs in mineralogical association with, and in the same core deposit as, the primary mineral being mined in terms of a mining right, where it is physically impossible to mine the primary mineral without also mining the associated mineral
- Enhance provisions relating to the beneficiation of minerals in order to promote local manufacture of higher-value mineral products
- Provide for enhanced consultation with stakeholders affected by mining and meaningful landowner and community engagement and grievance resolution
- Align the Act with domestic legislation for policy certainty
- Provide for enhanced sanctions for noncompliance with the MPRDA and associated legislation

The draft bill also tightens the ownership of mining assets by the state and previously disadvantaged South Africans. It empowers the minister to approve any changes in ownership and to sanction the export of minerals in favor of local beneficiation in order to advance development outcomes. It also sets out key considerations for issuing licenses, namely financial and technical capability as well as social and environmental requirements as prescribed by legislation. Although the draft bill has been criticized for giving the minister too much discretion over beneficiation and ownership, it is aligned with the recently approved Critical Minerals and Metals Strategy and, in many respects, the Africa Mining Vision, which advocates for the transparent, equitable, and optimal exploitation of mineral resources to underpin broad-based sustainable growth and development (AU 2009).

In section 100(2) of the current MPRDA, the minister is required to develop a broad-based socioeconomic empowerment charter to set a framework, targets, and timetable for the empowerment of historically disadvantaged South Africans to benefit from the mining sector. The first charter was developed in 2004 and was reviewed in 2010 and 2014. The current Mining Charter was adopted in 2018 (Department of Mineral Resources of South Africa 2018). It sets six compliance targets for ownership (minimum 30 percent Black ownership, which requires 30 percent compliance): inclusive procurement and supplier and enterprise development; employment equity; human resource development; housing and living conditions; and mine community development (100 percent compliance). Despite it being perceived by some as an added regulatory uncertainty, industry has undertaken several initiatives to comply with the requirements.

Since a Social and Labor Plan (SLP) is a requirement for applying for a mining license, companies prepare commitment plans in accordance with the six Mining Charter elements. These then form the basis for annual progress reports as implemented with communities. Companies report making necessary investments in communities, but community protests against mining companies, which often turn violent, suggest otherwise. In some cases, the SLPs are not developed in consultation with communities and hence do not really address their concerns. The 2025 draft Bill calls for meaningful consultation with all stakeholders, including communities and landowners.

South Africa has also developed the Beneficiation Strategy for the Mineral Industry, aimed at translating mineral resources into a competitive advantage (Department of Mineral Resources of South Africa 2011). It is aligned with the country's national industrialization program, which is driven by the Department of Trade, Industry and Competition and aimed at increasing high-value exports, creating employment, and promoting green economy. The strategy outlines integrated development interventions, taking into account related Acts and policies in the mineral sector mentioned above. Although South Africa has well-developed downstream processing facilities and capabilities, many processing facilities have been constrained due to unreliable energy supply and increasing energy costs since 2008.

The South African tax regime is regulated by the Income Tax Act No. 58 of 1962 (Government of South Africa 1962), as amended. Taxes that are applicable in the mining sector include Corporate Income Tax (CIT), Withholding Tax, Value Added Tax, Capital Gains Tax, the Diamond Export Levy, Royalties, and Carbon Tax. The country has not joined the EITI, but the government has affirmed that it subscribes to the principles of the EITI and has adequate regulations dealing with transparency and good governance. In addition, South Africa has a robust and vocal civil society which plays a crucial role in influencing public discourse and policy, overseeing democratic institutions and holding the government accountable.

Critical Minerals in South Africa

Lithium is classified as a mineral with moderate criticality in South Africa, perhaps because lithium operations have not reached the same scale as in Zimbabwe. According to Matikinca (2024), there are two small lithium operations in South Africa, namely:

- SA Lithium Project, in KwaZulu Natal Province, an open cast operation at development stage. Some communities have complained that they were not consulted before operations, while others were engaged after exploration activities had started. Company officials never returned to discuss issues.
- Norrabees Mine, owned by Namli Exploration and Mining, in Northern Cape, which started operations in February 2024, reprocessing stockpiles left in the 1960s, which were mined for tantalum. At the time, operators did not have any use for lithium.

Neither of these operations are owned by Chinese companies.

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NAMIBIA

Minerals make a significant contribution to Namibian GDP, infrastructure development, community initiatives, training, and skills development, including artisanal and small-scale mining. Chapter 11 of the Namibian Constitution outlines the Principles of State Policy that guide the government in making and applying laws (Government of Namibia 1990). These principles include promotion of the welfare of the people; economic order based on a mixed economy; encouragement of foreign investments; and sovereign ownership of natural resources. Namibia's Vision 2030 is a long-term strategic framework to improve the quality of life of the people of Namibia to the level of that of their counterparts in the developed world by 2030 (Government of Namibia 2004). The Vision sets out eight objectives; Objective Six (Art 3.4) in respect of the mining sector is to "Ensure the development of Namibia's 'natural capital' and its sustainable utilisation for the benefit of the country's social, economic and ecological well-being." The envisaged outcome is industrialization, with abundant prosperity, interpersonal harmony, peace, and political stability.

Namibia's 6th National Development Plan 2025/26 to 2030/31 is the last stage toward achieving Vision 2030 and is currently undergoing consultation. The 5th National Development Plan 2017/2018-2021/2022 (Government of Namibia 2017) was focused on structural transformation and modernization. Strategies for achieving these goals emphasize linkages between the mining sector and the rest of the economy, including intensifying value addition, establishing mining value chain activities, and promoting industries that will produce mining inputs and services. The sector continues to play a significant role in the economy.

The Mining Industry Association of Southern Africa (MIASA) (2025) reports that in 2023 the sector in Namibia contributed 14.4 percent to GDP, 18,189 jobs, and N\$6.861 bn (equivalent to R390 million) to government revenue (Corporate Income Tax contributing 57.8 percent and royalties and export levies 42.2 percent). Most of the government revenues were attributed to uranium, diamonds, and gold. MIASA also reported two significant challenges facing the industry: water supply shortages in certain mining areas, and the Ministry of Mines and Energy's proposal to introduce free carried shareholding in mines. While the mining companies consider this as a cost to the mining operations, most African governments are now actively looking into increasing their participation in transition minerals, either directly or through sovereign wealth funds.

Namibia's Mining Policy Framework

Namibia has a standalone national mineral policy adopted in 2004 (Ministry of Mines and Energy of Namibia 2004) with nine themes: (1) promoting the mineral sector, (2) social issues, (3) small-scale mining, (4) value addition, (5) environment, (6) training, (7) research, development, and technology, (8) governance, and (9) regional integration. To implement this policy, the relevant policy statements are converted to legislative instruments, though not all policy statements are converted to mining law in Namibia. Other policy statements are implemented by administrative arrangements or provisions, as is the case with Zimbabwe. As custodian of the mineral resources, the Ministry of Industry, Mines and Energy developed a Strategic Plan 2017-2022 around four pillars: social progression; environmental sustainability; stakeholder relations and cooperation; and good governance.

Mineral rights in Namibia are vested in the state, governed by the Minerals (Prospecting and Mining) Act No 33 of 1992 together with the Diamond Act of 1999 (Government of Namibia 1992, 1999). A mining commissioner and designated officers are appointed by the minister to exercise and implement the Minerals Act. The mineral administration system lays out the types of mining licenses and basic conditions for each. The Act provides for the establishment of the Minerals Board of Namibia, which advises the minister on policy, application, and amendments of provisions of the

Act. Membership of the board is derived from the Chamber of Mines, the artisanal and small-scale mining subsector, trade unions, and the ministry itself. The minister may also co-opt one member each from the ministries of: (1) Finance, (2) Wildlife, Conservation and Tourism, (3) Fisheries and Marine Resources, (4) Health and Social Services, and (5) Agriculture, Water and Rural Development.

The environmental aspects are governed by the Environmental Management Act No 7 2007 (Government of Namibia 2007) and the Environmental Impact Assessment Regulations: Environmental Management Act 2007 (EIA). To be granted an exploration or a mining license, a company requires an Environmental Clearance Certificate (ECC), issued by the Commissioner of Environmental Affairs. The application for an ECC must be accompanied by an independently developed EIA containing stakeholder concerns, monitoring activities, degree of environmental and social impact of proposed activities, and how they will be managed. Currently there is no legislation for mine closure. The Chamber of Mines has developed a mine closure framework and best practices guideline, in coordination with the Namibia Chamber of Environment, the Ministry of Mines and Energy, and industry players (Chamber of Mines of Namibia 2023). This will be reworked and adopted by the government and incorporated into the Mining Act.

The development of a mining charter has been forthcoming since the adoption of the Mineral Policy (2004). The charter is expected to include the following pillars: local ownership, human resources and skills development, procurement and enterprise development, and communities and infrastructure. In the meantime, the industry allocates 60 to 70 percent of total procurement to local suppliers. This translates to between 40 and 50 percent of total revenues generated by the industry (Namibia Industrial Supply 2025). In addition, industry has produced a database, launched in 2024, of all goods and services consumed by the sector to assist Namibian entrepreneurs in identifying business opportunities in the supply chain.

Namibia's mining fiscal regime covers allowable deductions, preproduction exploration, development costs, capital equipment, royalties, export levies, operating costs, loan interest, post-production exploration, withholding taxes, import duties, and payroll and corporate taxes.

Transition Minerals in Namibia

Like Zimbabwe, Namibia has a ban on the export of unprocessed lithium, introduced in 2023. This instrument seeks to promote local value addition, but a strategic partnership agreement excludes lithium carbonate and tantalum exports to the EU from this ban. The partnership aims to ensure a secure and sustainable supply of raw materials to support the green transformation of the EU and promote local value addition in Namibia. The partnership is focusing on six pillars: integration of (critical) raw materials and renewable hydrogen value chains, cooperation to leverage ESG criteria and align with international standards, mobilization of funding for the development of soft and hard infrastructure required for project development and for leveraging private sector funding, capacity building along raw materials and renewable hydrogen value chains, cooperation on research and innovation along the raw materials value chain, and regulatory alignment, particularly on hydrogen definitions, standards, and certification (European Commission 2022).

Lithium in Namibia occurs in the form of pegmatites and spodumene rocks. Development of the lithium subsector provides a huge opportunity for diversification from uranium and diamond mining, which are the key mined commodities. According to the Ministry of Industry, Mines and Energy of Namibia (2024), early mines of tin and tantalum minerals are associated with lithium minerals.

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Ten lithium projects have been identified in Namibia but only five are active: Kalibib Lithium Project (Lepidico, Australia), Uis (Afritin, UK), Uis Tailings Project (Canada), Tantalite Valley (HeBei Xinjian Construction, China), and Soris Lithium Project (Canada) (Ministry of Mines and Energy of Namibia 2023). Only one is owned by a Chinese company. The Kalibib project is the most advanced and will export concentrates to Abu Dhabi for refining (Mining Weekly 2024). There are no public records of lithium production and export, except for advanced stages of studies. Small quantities can be exported at the Minister's discretion, supposedly for evaluation purposes. Global Witness (2023) has reported on the much-publicized behavior of Namibia's Xinfeng, accused of obtaining one of its licenses through bribery and corruption as well as skirting environmental regulations and exporting unprocessed ore.

KEY LESSONS FROM REGIONAL CASE STUDIES

In summary, these two regional case studies highlight a number of gaps in Zimbabwe's mining sector policy environment, from the policy formulation process to implementation. They show the importance of an extensive stakeholder engagement process which avoids confusion (as evidenced by Zimbabwe's reactionary statutory instruments to address emerging problems) and ensures transparent and effective policies are implemented with majority buy-in. Having a clear Critical Minerals Strategy and Beneficiation Strategy, and broad stakeholder representation on the Mineral Board, is also important for transparency and building efficient and inclusive participation.

China in Global Lithium Supply Chains

Chinese companies play pivotal roles in securing access to lithium deposits worldwide through exploration, investments, and acquisitions. In particular, China has established significant stakes in Australia's lithium mines as well as in Latin America's "Lithium Triangle" (consisting of the salt flats of Chile, Argentina, and Bolivia). The Belt and Road Initiative (BRI) has further bolstered China's strategic position in lithium supply chains, in that providing financing for infrastructure in resource-rich countries can enable the extraction of transition minerals such as lithium.

Zimbabwe has been a member of the BRI since 2018. The China Export-Import Bank provided loans for the refurbishment of the 300 MW Kariba South Hydropower Plant and the construction of the 2×300 MW Hwange Coal Power Plants, while China Metallurgical Group Corporation has invested in the 100 MW Munyati Solar Plant (Global Development Policy Center 2025). These power plants together contribute substantially to Zimbabwe's electricity supply, which has been plagued by scarcity and instability, although drought has also impacted the production of hydropower plants including Kariba South (Shen and Zhou 2023). Stable electricity supply is critically important to the productivity of the energy-intensive mining industry. However, Zimbabwe's electricity grid remains reliant on coal-fired power in spite of renewable energy goals (SARW 2024). Chinese banks have not to date financed other infrastructure in Zimbabwe that would support lithium mining, such as road or rail networks (Global Development Policy Center 2024). However, as highlighted in Section 3.6, Bikita and Arcadia have invested in transmission network and substations while Sabi Star has commissioned a 15 MW coal-fired power plant.

CHINESE COMPANIES IN ZIMBABWE’S LITHIUM SECTOR

China and Zimbabwe have strong political and economic ties, bolstered by Zimbabwe’s “Look East” policy. This policy, adopted under former president Robert Mugabe in 2003, shifted Zimbabwe’s focus away from Western countries toward China and other Asian nations for trade and investment (Tiezzi 2018). Chinese development finance institutions, commercial banks, government entities, and private companies have loaned Zimbabwe a collective US\$3 billion across 28 loans since 2000 (Global Development Policy Center 2024). The consistency of strong relations between China and Zimbabwe since the latter’s independence has likely contributed to a favorable environment for Chinese firms, especially as diplomacy and business negotiations have tended to go hand in hand in the case of this bilateral relationship. Meanwhile, many Western companies withdrew from Zimbabwe in the early twenty-first century during a time of economic and political crisis, leaving room for Chinese companies in the mining sector (Kärkkäinen 2016).

Chinese firms have made significant investments in Zimbabwe’s lithium sector in recent years, acquiring large stakes in key mining projects since 2021. In 2022, Zhejiang Huayou Cobalt, a leading Chinese company in the battery materials and manufacturing sector, acquired Arcadia Lithium Mine from Prospect Resources, an Australian firm, for US\$422 million (Reuters 2023b). Sinomine, another Chinese mining giant, invested in Zimbabwe’s Bikita Minerals in 2022, one of the oldest lithium mines in the country (Reuters 2023c). Both companies have pledged further investments to expand production and processing capacity (Marawanyika 2024). Chengxin Lithium Group acquired Sabi Star Mine (by purchasing a 51 percent stake in its owner Max Mind Investments in 2021), which was constructed by the Chinese state-owned enterprise Power China (Chengxin Lithium 2023; Chiguvare 2024). In addition, in 2022, Yahua Group formed a joint venture—via subsidiary Sichuan PD Technology Group—to invest in the Kamativi Mine (Kamativi Mine 2024). On a more minor scale, Canmax Technology reached a US\$35 million offtake agreement with Premier African Minerals (operator of Zulu Mine) in 2022, which has since been extended due to delays in production.¹⁶ Canmax now holds at least 13.38 percent of Premier African Minerals (Mining Zimbabwe 2025a). Sandawana Mines, owned by Zimbabwe’s state-owned Kuvimba Mining House, also recently partnered with Zhejiang Huayou Cobalt and Tsingshan Holding Group to develop Sandawana through a build-operate-transfer agreement (Bloomberg 2024; Mining Zimbabwe 2025b).¹⁷

Table 5 summarizes these six large-scale lithium mines with significant Chinese company involvement. These investments are financed via private capital rather than through Chinese public development finance institutions (Global Development Policy Center 2024; Shen and Zhou 2023).

¹⁶ The cash injection was made in exchange for the future supply of 48,000 metric tons of spodumene concentrate (Reuters 2023a).
¹⁷ The details of this agreement had not been publicly disclosed as of July 2025.

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Table 5: Major Lithium Mines and Chinese Company Involvement in Zimbabwe

Mine	Owner	Chinese Company Involvement	Chinese company	Reported Size of Investment (USD)	Year of Agreement
Arcadia	Arcadia Lithium	Sole owner	Zhejiang Huayou Cobalt (private)	\$422 million	2022
Bikita	Bikita Minerals	Sole owner	Sinomine Resource Group (controlling shareholder is China Nonferrous Metals Mining Co., a state-owned enterprise)	\$180 million	2022
Sabi Star	Max Mind Investments	Sole owner	Chengxin Lithium Group (private)	\$77 million	2021
Kamativi	Kamativi Mining Company	Joint venture	Yahua Group (private)	\$249 million	2022
Zulu	Premier African Minerals	Shareholder	Canmax Technologies (private)	\$35 million	2022
Sandawana	Kuvimba Mining House	Build-operate-transfer agreement	Zhejiang Huayou Cobalt and Tsingshan Holding Group (both private)	Unknown	2024

Source: Authors' elaboration.

Importantly, many of the companies listed above were not impacted by Zimbabwe's 2022 unprocessed lithium ore export ban. A 2023 amendment to the 2022 export ban stipulated that licensed exporters "must either operate an Approved Processing Plant (APP) under a permit or have plans for its construction" (Mutondoro 2024, 24). Because Huayou (Arcadia), Sinomine (Bikita), and Chengxin (Sabi Star) already own or are constructing processing plants, they were able to apply for export permits that granted them exceptions to the ban. The current processing plants, however, remain at a relatively low level of value addition and involve basic crushing, milling, and flotation of ore, yielding spodumene concentrate rather than lithium carbonate or hydroxide. Further, reportedly nearly all of Zimbabwe's lithium ore being exported despite the ban is destined for China, including that which is smuggled, due to China's dominance in lithium processing capacity (Mkodzongi 2024). As a result, there have been claims that Chinese companies are in fact benefiting from the export ban, as it gives Chinese importers de facto monopsony status (Gbadamosi 2023; Mutondoro 2024). The 2026 announcement banning all raw mineral ore and lithium concentrate exports seeks to further incentivize mining companies to invest in local beneficiation.

It is also notable that many of the Chinese companies involved in lithium mining in Zimbabwe are global leaders within mid- and downstream transition mineral supply chains. Huayou Cobalt, for example, has major refining facilities for both lithium and cobalt as well as producing lithium-ion batteries. Canmax Technologies prides itself on being "the world's leading manufacturer of lithium-ion battery materials" (Canmax 2024). These firms' substantial investments in lithium mining in Zimbabwe illustrate a strategy of vertical integration (backwards) across the lithium-ion battery supply chain (Altiparmak 2023).

GEOPOLITICAL IMPLICATIONS

China's dominance in the lithium industry, in Zimbabwe and around the world, has significant geopolitical implications in that global dependence on Chinese companies to confront the demands of the green energy transition is widely viewed in the West as compromising energy security (Castillo and Purdy 2022; Graham et al. 2021; Vivoda 2023). In response, the U.S. and EU have sought to diversify their supply chains by forging alliances with lithium-rich nations and investing in extraction and processing capabilities. Although the U.S. has substantial lithium reserves domestically, as of 2024 it relied on imports of lithium for over 50 percent of consumption (USGS 2025). Initiatives such as the Inflation Reduction Act (IRA) and the Mineral Security Partnership (MSP) are aimed at counterbalancing China's influence by incentivizing local production and strengthening partnerships with allies such as Australia and Canada, in addition to "elevat[ing] environmental, social, and governance (ESG) standards across the global minerals sector" (U.S. Department of State 2024). Western companies, seeking to differentiate themselves from Chinese firms, have promoted ESG initiatives to support their geopolitical and energy security strategy (Riofrancos 2023).

In 2022, the Biden administration signed a memorandum of understanding with the governments of Zambia and the Democratic Republic of the Congo (DRC) "seeking to facilitate the development of an integrated value chain for the production of electric vehicle" (U.S. Department of State 2022). Chinese companies have an important presence in the extraction of transition minerals in both countries (Soule 2023). In terms of financial support, the U.S. International Development Finance Corporation (DFC) is currently supporting a rare-earths processing facility in South Africa, expansion of a graphite mine in Mozambique, and a feasibility study for a copper mine in Zambia (DFC 2023). In the case of Zimbabwe, however, U.S. and other Western companies have been hesitant to invest due to perceived political risk, governance concerns, and economic sanctions that have been in place since the early 2000s although lithium exploration licenses have recently been issued to companies based in the United Kingdom, Australia, Canada and Ireland.¹⁸

European initiatives to secure transition mineral supplies from Africa have intensified since 2024, driven by the European Union Critical Raw Materials Act (CRMA) and strategic imperatives to reduce dependence on Chinese supply chains. The Act introduces "strategic projects" for supplying the EU with minerals that are critical for the energy transition, including lithium. Several of these strategic projects are located in Southern Africa, including South Africa, Zambia, Namibia, and Malawi but not Zimbabwe (European Commission 2025). None of the current CRMA African projects produce lithium.

Looking to the future, Zimbabwe may find pathways to benefit from the geopolitical competition to secure transition mineral supply chains. Western companies may look to invest in Zimbabwe's lithium resources despite the barriers that have so far precluded their involvement, including sanctions and governance concerns. Zimbabwe could leverage this demand to insist on international investment in value-added mineral processing—as it has attempted to do with the current export ban (Mkodzongi 2024; SARW 2024) and through the proposed changes in the Draft Mines and Minerals Bill 2025. However, realizing potential benefits from geopolitical competition will depend on Zimbabwe's ability to channel the contributions of mining toward sustainable development at the national and local levels.

¹⁸ The U.S. Zimbabwe sanctions regime was terminated in 2024, having been in place since 2003, replaced by sanctions on select individuals and businesses (U.S. Department of the Treasury 2024).

CHINESE GUIDELINES ON ESG

Several Chinese-operated lithium mines in Zimbabwe illustrate the ESG challenges tied to the industry's rapid expansion. At the Arcadia Lithium project, safety concerns intensified in 2023 after two worker fatalities highlighted substandard working conditions. Similarly, Bikita Minerals was temporarily shut down due to violations of labor rights, unsafe working conditions, and lithium smuggling. The mine was also implicated in a chemical spill that polluted local waterways, leading Zimbabwe's Environmental Management Agency to fine its operator, Sinomine (Chitagu 2024). At Sabi Star, relocated families reported a lack of legal representation while economic hardship has driven some displaced students to drop out of school to work in the mine (Chiguvare 2024).

Despite these issues, Chinese extractive practices are not fundamentally different from those of Western firms, which have also faced ESG-related controversies. It is also important to note that Chinese environmental standards have been strengthened in recent years (Shen and Wang 2025). For example, the 2022 Guidelines for Ecological Environmental Protection of Foreign Investment Cooperation and Construction Projects urge Chinese companies to apply international standards where host country frameworks are insufficient, including specific recommendations for the mining sector focusing on pollution control and waste disposal (Nedopil and Bing 2022). These sets of standards move beyond the previous approach of requiring Chinese enterprises operating abroad to comply with host-country standards. The China Chamber of Commerce for Metals, Minerals and Chemicals Importers and Exporters has developed ESG standards for Chinese mining companies operating internationally, including the Due Diligence Guidelines for Mineral Supply Chain (revised in 2022) encompassing governance, human rights, and environmental issues (Gu et al. 2025). In addition, the ongoing development of a complaint and consultation platform by the Responsible Critical Minerals Initiative (RCI), is engaging directly with civil society in Zimbabwe in its pilot stage (Sibanda 2023).

Despite these steps in raising the bar for ESG for Chinese international investments, the standards discussed above are not rigorously enforced. A review of five Chinese projects in Africa, for example, revealed that they did not meet the ESG standards set out in the Green Development Guidance for Belt and Road Initiative (BRI) projects (Springer et al. 2023). This indicates the need for more robust enforcement mechanisms on the part of both Chinese firms and African host countries.

INTERNATIONAL BEST PRACTICE FOR TRANSITION MINERAL ESG

International ESG standards have been developed to mitigate the well-recognized environmental and social impacts that often accompany large-scale mining. Perhaps most relevant to the present study, the UN Secretary-General's Panel on Critical Energy Transition Minerals was established to address the challenges associated with the extraction and utilization of minerals essential for the global shift toward renewable energy. In September 2024, the Panel released a report establishing seven principles emphasizing transparency, sustainable investment, and robust governance throughout the mineral value chain (UN Secretary-General's Panel on Critical Energy Transition Minerals 2024). On a more general level, the UN Guiding Principles on Business and Human Rights are a global framework that sets out the responsibilities of businesses and states to prevent, address, and remedy human rights abuses linked to business activities (UNHCR 2011). They are based on three pillars: state duty to protect human rights, corporate social responsibility to protect human rights, and access to remedy. While they are not legally binding, they provide a common baseline unanimously endorsed by the UN Human Rights Council (UNHCR) in 2011.

In addition to multilateral standards promulgated by the UN, private initiatives have been developed to support mining industry stakeholders in improving ESG outcomes. For example, the GRI offers a standardized framework for ESG reporting, including a specific set of standards tailored to the mining sector (GRI 2024). Certification schemes like the IRMA provide third-party validation of a company's adherence to rigorous social and environmental standards. IRMA certification would require Zimbabwean lithium mines to undergo comprehensive audits, assessing factors such as labor rights, environmental impact, and community engagement (IRMA 2018). The EITI, meanwhile, emphasizes open and accountable management of natural resources through public disclosure of payments, contracts, and financial flows (EITI 2023). While Zimbabwe is not an EITI member, such transparency could help ensure that mining revenues are utilized for national development and reassure stakeholders of the country's commitment to responsible resource governance. Subscribing to such international standards can enhance market access, particularly in regions where consumers and regulators demand ethically sourced minerals. Another benefit is access to finance, as many international lenders and donors view EITI membership as a prerequisite for concessional loans or technical assistance.

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Damaraland, Namibia. Photo by Eelco Böhlingk via Unsplash.



RESULTS

Community Survey Results

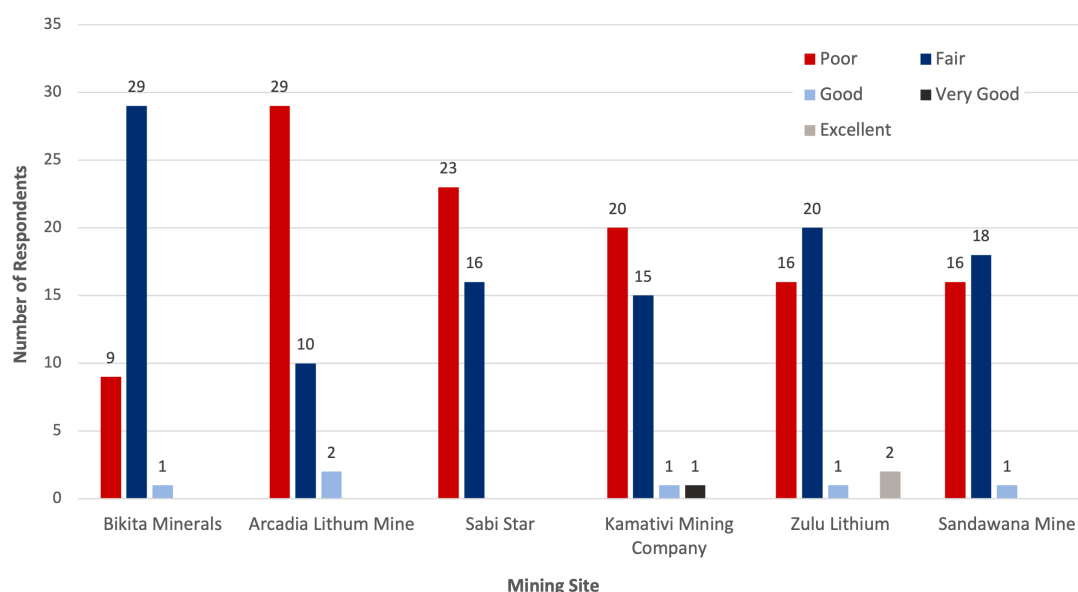
This section summarizes the results of the surveys conducted in all six mining sites. Detailed survey results for each site are presented in Appendix 2. Questionnaires were administered to a total of 230 participants across the six mining sites—70 women and 160 men. The vast majority of respondents held Ordinary Level certificates (four years of secondary school education) and identified their skillsets as “General” or “Administrative,” though a subset (20 percent) identified mining as a skill. More than 75 percent of participants had lived in their community for more than five years, except for the Sabi Star mining community, where 48 percent of the population had lived in the area for less than five years.

LEVEL OF COMMUNITY ENGAGEMENT BY MINING COMPANIES (RESEARCH OBJECTIVE 1)

This section presents findings on the level of community engagement by lithium mining companies, including consultations before mining operations started, ongoing engagement, the existence of formal grievance mechanisms, and general responsiveness to community needs.

The majority of respondents (91 percent) reported that, to their knowledge, consultative meetings were not held prior to the start of the mining project (Appendix 2, Graph 9). Those who knew of prior consultations stated that the meetings were brief and that only a select few were invited. Responses on ongoing, regular consultations on socioeconomic or mine matters that impact communities were also negative across all six sites, as shown in Figure 5.

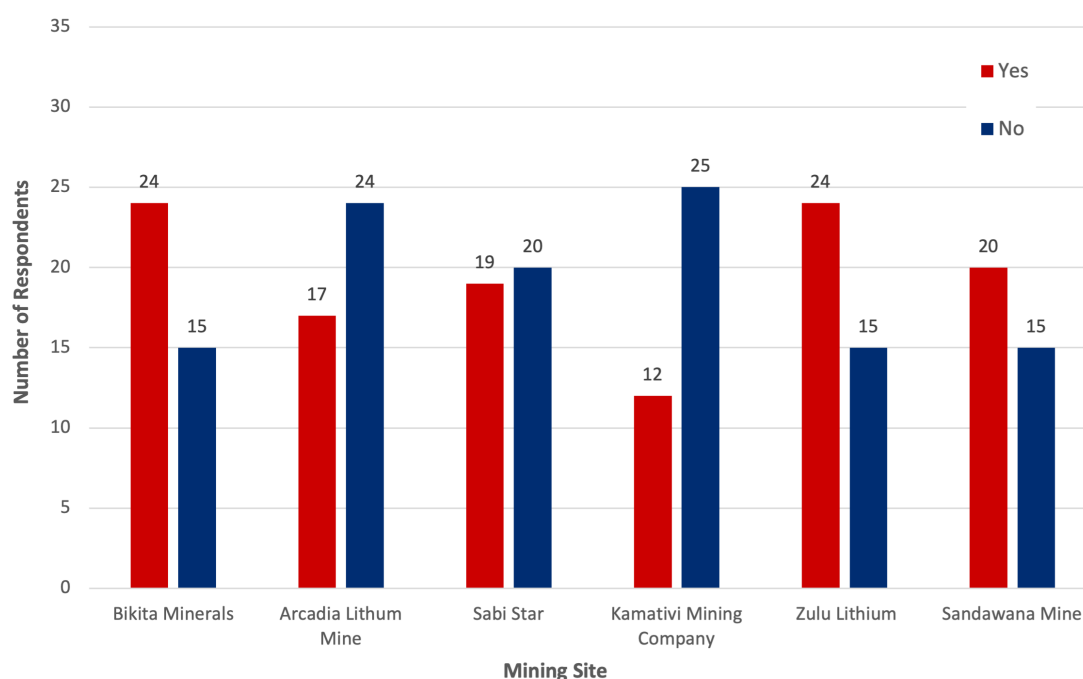
Figure 5: Regular Consultation by Mining Companies



The results reveal that consultations are not regularly held by mining companies, with just eight respondents rating regular consultations as “Good,” “Very Good,” or “Excellent.” Only 13 participants out of 230 indicated that they participated in such meetings (Appendix 2, Graph 12). Communities expressed the view that the companies do not engage or even educate them about mining issues, responding overwhelmingly that company communication and education efforts were either “Poor” or “Fair” (though Bikita and Zulu rank somewhat higher in this regard; see Appendix 2, Graphs 7 and 8). Although there was variation among the sites, respondents at all sites called for improved communication with the relevant company. Responses to a further question on whether community inputs are valued by lithium mining companies show that most respondents (94 percent) feel that their input and feedback is not valued, a perception that was consistent across sites (Appendix 2, Graph 21).

Figure 6 presents findings regarding the presence of a grievance mechanism at all sites, showing mixed perceptions. The majority of participants in Bikita, Zulu, and Sandawana indicated the presence of grievance mechanisms. On the other hand, in Arcadia, Sabi Star and Kamativi most respondents indicated there were no such mechanisms. Notably, Huayou Cobalt reported in an interview that there is a grievance mechanism at Arcadia, although 59 percent of respondents believed there was not. The variety of opinions on this question indicate that even when grievance mechanisms exist, they are not necessarily well publicized or widely accessible.

Figure 6: Presence of a Grievance Mechanism

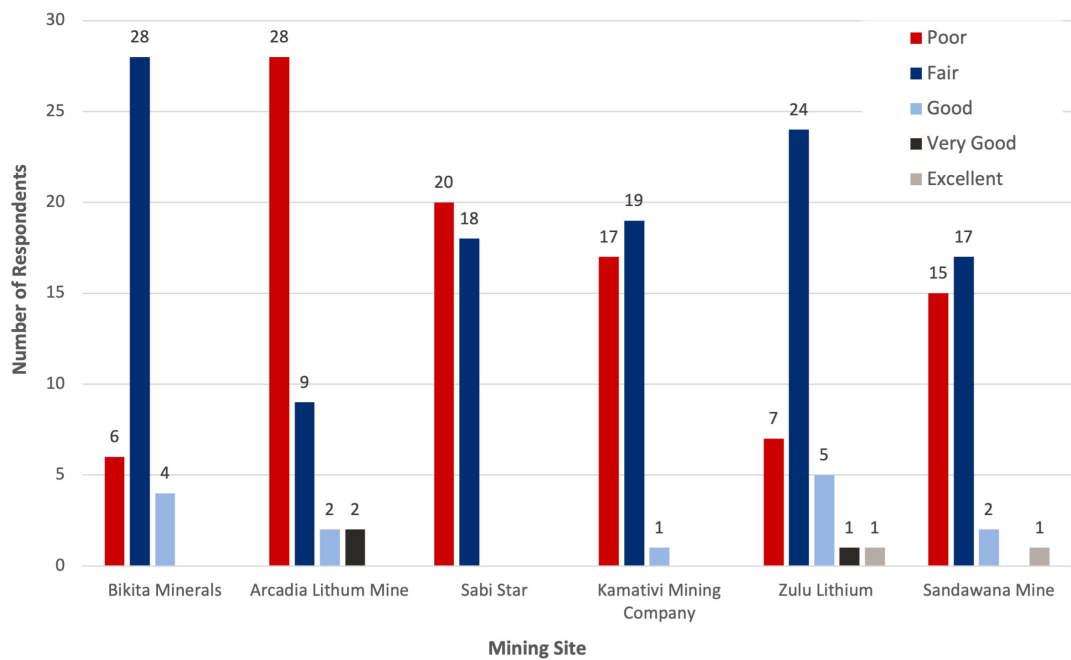


The overwhelming majority (95.5 percent) said that any grievance mechanisms that do exist are not effective or secure (Appendix 2, Graph 15). The consensus on this question demonstrates the need for significant improvement in meeting the needs of communities.

LEVEL OF SOCIOECONOMIC DEVELOPMENT (RESEARCH OBJECTIVE 2)

Figure 7 shows that, in general, respondents were not satisfied with the level of socioeconomic development in their communities. Overall, 40 percent ranked socioeconomic development in their area as “Poor,” 50 percent ranked it as “Fair,” and less than 10 percent found it “Good,” “Very Good,” or “Excellent.”

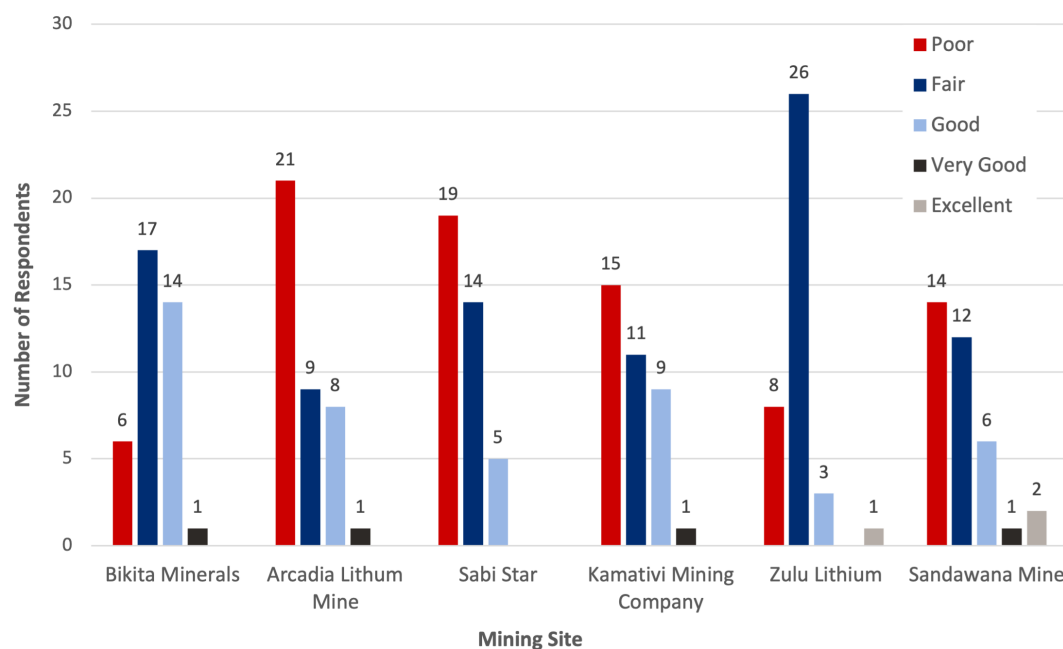
Figure 7: Area Is Moving Forward in Socioeconomic Development



When asked about Chinese companies’ reinvestment of profits in the development of local communities, only 3 percent responded in the affirmative (Appendix 2, Graph 25). There was little variation in this perception across field sites, despite the diversity of companies and in the nature of their investment (see Section 3.6). The exception was Zulu Lithium (Premier African Minerals with investment by Canmax Technology), where 13 percent answered positively. However, on a separate question, respondents identified several areas where they did receive support from the lithium mining companies, including as a source of employment and as consumers of local services (Appendix 2, Graphs 5 and 6). Respondents in the areas of Bikita and Sabi Star also shared that mining companies regularly bought livestock from residents as a form of informal support.

As shown in Figure 8, the majority of respondents expressed an overall negative perception regarding the availability of jobs and services to local people, although there is some variation across sites. This indicates that even if jobs are being offered to local communities, a relatively large number of respondents at all sites feel that these are too few and that mining companies should do more to recruit community members.

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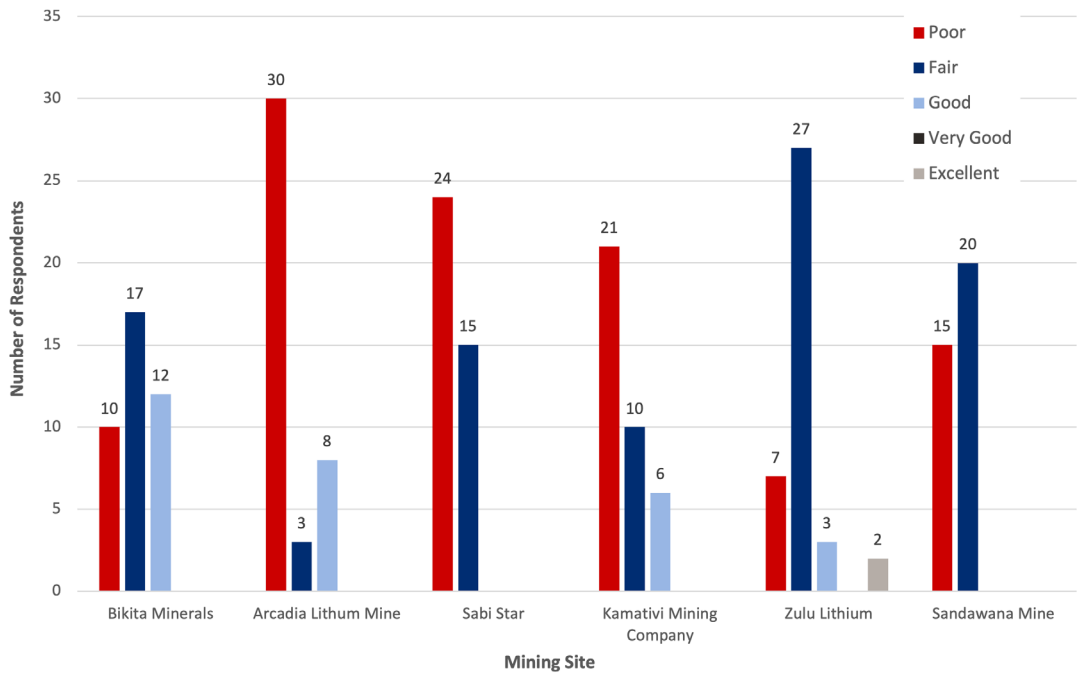
Figure 8: Availability of Jobs and Services to Local Communities

As shown in Figure 8, Bikita Minerals received a significantly larger number of positive responses (39 percent) compared with other mining companies, followed by Kamativi (28 percent), Sandawana (26 percent), Arcadia (23 percent), Sabi Star (13 percent), and lastly Zulu Lithium (10 percent). Regarding the provision of vocational skills training, 46 percent ranked it as “Poor” while 50 percent ranked it as “Fair,” with the remaining 4 percent ranking it positively (Appendix 2, Graph 22). Overall, participants felt that the mining companies should do more to provide training in order to boost their chances of securing jobs at the mines.

LOCAL-LEVEL INFRASTRUCTURE DEVELOPMENT (RESEARCH OBJECTIVE 4)

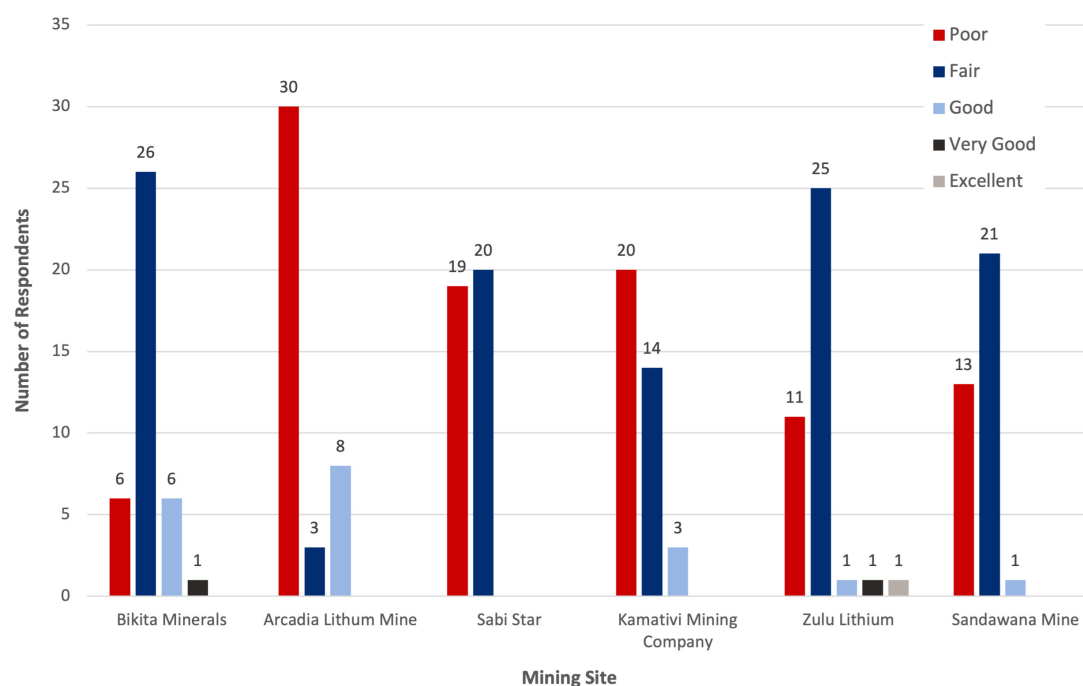
This section presents findings on the quality and maintenance of roads as well as the provision of water and electricity by lithium mining companies. Figure 9 presents respondents’ perceptions of the overall quality of roads in their area.

Figure 9: Quality of Roads



The results present mixed perceptions, although they are generally negative. Based on field observations, the research team can confirm that Bikita Minerals is located along the highway that connects to Birchenough Bridge and Masvingo, hence the somewhat higher ratings in that area. However, the trucks carrying lithium ore to Beira via Mutare now have to bypass the more direct route through Birchenough Bridge, as the bridge load was reduced to 25 tons due to safety concerns after years of no maintenance. In the case of Arcadia, the road is in especially poor condition and emits a lot of dust. Figure 10 shows perceptions regarding the provision of road infrastructure by lithium mining companies.

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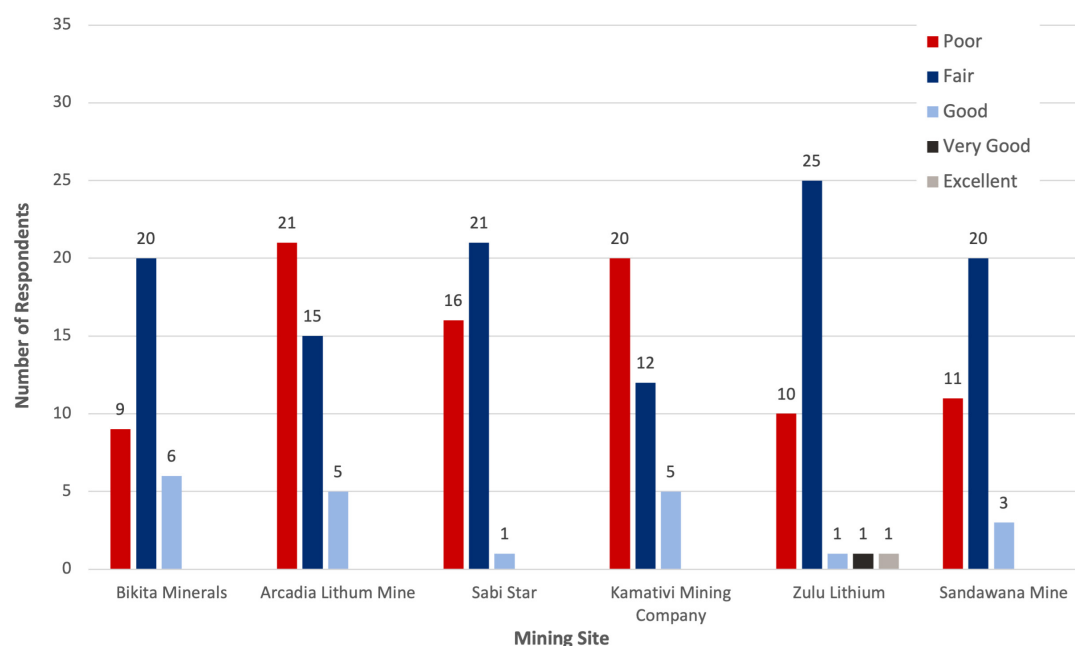
Figure 10: Provision of Road Infrastructure by Mining Companies

The results show mixed perceptions, with seven respondents in Bikita believing the mining company is providing road infrastructure. The majority indicated that more needed to be done in terms of road provision by the mining company. On the other hand, at Arcadia, the road that connects to the mine is a gravel road that residents consider to be in poor condition, and they say the mining company is not doing enough to improve it. The same applies to the Sabi Star, Zulu, and Sandawana gravel roads. The Kamativi road (connecting Bulawayo and Victoria Falls) is in the worst state as observed by the research team.¹⁹ The findings show that lithium mining companies need to provide regular maintenance due to the volume of heavy trucks impacting roads that were originally built for passenger traffic.

Figure 11 shows participants' perceptions regarding provision of water by lithium mining companies, with the majority across sites responding that it is "Poor" or "Fair." However, the overwhelming majority of respondents at all sites also confirmed that they had water availability seven days a week and did not face water rationing (see Appendix 2, Graphs 19 and 20). Bikita and Zulu had the most positive average responses out of the six sites, while water provision was rated most poorly in Arcadia and Kamativi.

¹⁹ The research team observed that the coal trucks from Hwange Mine also contribute to the road damage.

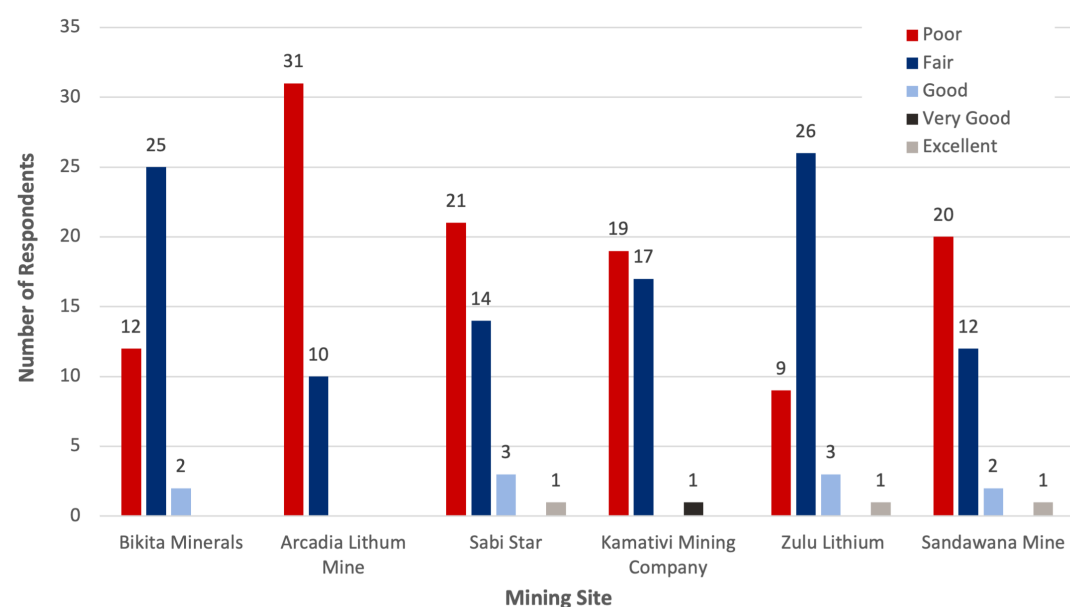
Figure 11: Provision of Water by Mining Companies



In communities near Sandawana Mine, residents indicated that the mine had drilled a borehole for the primary school. However, some residents must travel a relatively long distance to access safe water. As a result, community members feel there is need for improvements in terms of providing access to safe water and, if possible, more water to support irrigation schemes. Similar sentiments were shared in the case of the Sabi Star Mine.

As shown in Figure 12, responses were also “Poor” or “Fair” regarding whether companies had improved access to electricity for local residents, with Bikita and Zulu again averaging better responses than the remaining four sites. The responses overall indicate that communities do not feel that mining companies are having a substantial impact in improving local access to electricity.

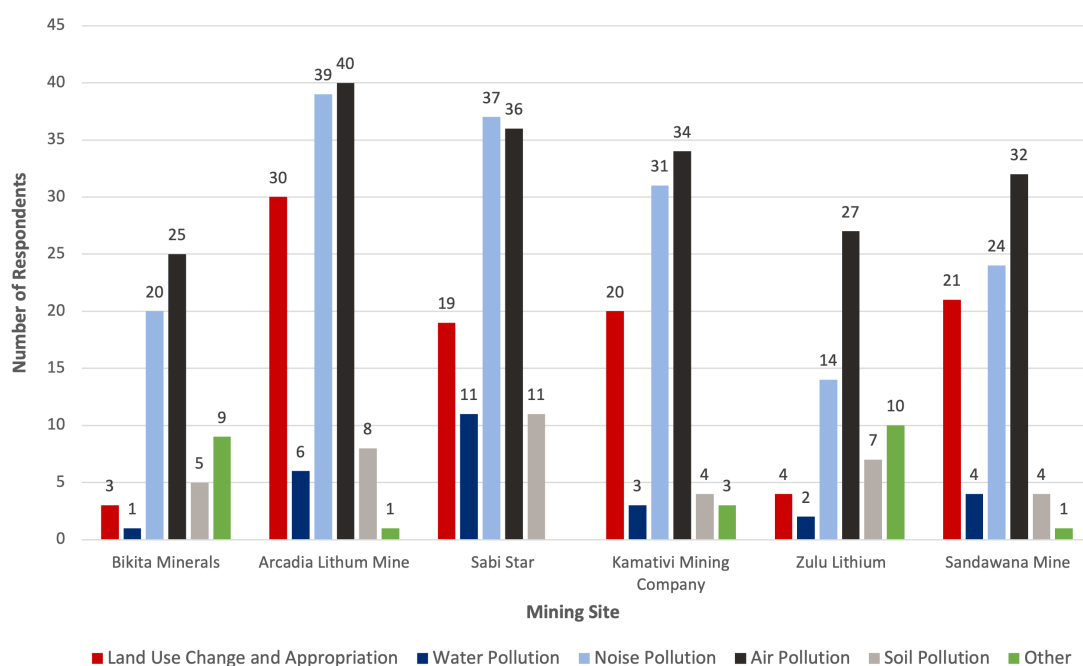
Figure 12: Provision of Electricity for Local Residents by Mining Companies



LEVEL OF ESG IN LITHIUM MINING AREAS (RESEARCH OBJECTIVE 3)

This section presents the findings on the main environmental²⁰ and social issues that participants have identified since the lithium mining operations started. Concerns about air pollution (especially dust) were high across sites, with 84 percent respondents identifying this, followed by noise pollution (72 percent). In the case of Arcadia, Sabi Sar, and Sandawana, residents also indicated land use change and appropriation as key environmental harms (42 percent of respondents overall). Soil and water pollution were also mentioned, though less prevalent (see Figure 13).

Figure 13: Environmental Damages Being Witnessed



Participants were also asked to identify key service delivery challenges in their areas (Appendix 2, Graph 26). Lack of accountability for mining proceeds, poor communication by the mining company, lack of adequate water supply, and poor road infrastructure were all identified as significant across sites. Poor communication garnered the most responses, with 90 percent of respondents identifying it as a significant challenge.

In response to open-ended questions regarding what improvements they would ask lithium mining companies to address in their communities, respondents echoed the above concerns, as demonstrated in the word cloud depicting the most-used words in Figure 14. Evidently, infrastructure, including roads and water access, was among the most important issues raised across sites, alongside broader community development concerns including employment and education.

²⁰ These environmental damage categories include noise pollution, land use change and appropriation, water pollution, air pollution, soil pollution, and other environmental challenges.

Key Stakeholder Interview Results

Interviews were conducted with stakeholders including relevant government ministries and agencies, mining company representatives, industry associations, academics, and civil society groups (see Appendix 1). The key stakeholders acknowledged Zimbabwe's strategic position in lithium mining and the significant socioeconomic development impact for the country. The interviews also revealed gaps related to environmental management, strategic planning, and infrastructure development policies. Government officials explored the role of public entities in enforcing sustainable practices and ensuring socioeconomic benefits and the challenges they face in executing their mandates. Perspectives from civil society organizations, highlighting concerns about environmental pollution, human rights issues, levels of community engagement, and the development impact of foreign investment, were also explored. The stakeholders collectively discussed policy gaps in the lithium mining subsector and practical difficulties in overseeing the mining sector and leveraging its potential for development.

This section is divided into three subsections addressing national development planning, infrastructure development, and perspectives on local-level impacts.

LOCAL-LEVEL ENGAGEMENT, DEVELOPMENT, AND ESG (RESEARCH OBJECTIVES 1-3)

Stakeholders raised concerns about the damaging nature of mining, particularly open-cast methods, and issues such as environmental pollution levels (water, dust, noise) and land degradation (see Figure 15). In addition, social impacts reported by civil society members include unfair labor practices, limited contribution to local welfare, and inadequate compensation or relocation for affected communities.

Lithium mining assets are designated as "prescribed projects," and the Environmental Management Act requires impact assessment and consideration of alternatives for such projects. According to regulatory authorities, Zimbabwe's environmental laws require mining operations to conduct detailed ESIA's, obtain an environmental authorization certificate, and have an Environmental Management Plan (EMP) in place before operations start. Companies are also required to decommission the mining site and restore it to its original state or repurpose it at the end of the mining concession. Statutory bodies such as EMA and water catchment councils are in place to ensure mining companies adhere to these requirements through environmental auditing, mandated biannually, and quarterly inspections. Nevertheless, civil society actors highlighted the enforcement of environmental regulations as lacking, mainly because of inadequate resources.

Figure 15: Dust on the Gravel Road to Arcadia Lithium Mine, Goromonzi



Source: Photograph taken by research team, May 2025.

Social sustainability and inclusivity also involve creating employment opportunities. Interviews with government entities and companies emphasized that mining operations do create local employment. Huayou Cobalt reported that it employs approximately 2,000 local Zimbabweans and offers vocational education programs. Kuvimba Mining House stated that it has a policy of employing 75 percent of unskilled labor from the local communities surrounding the mines, although survey results show that the implementation of this policy is not at a satisfactory level. Local residents, mostly semi-skilled and general labor, are also employed in infrastructure projects linked to mining as part of government policy. However, stakeholders across both government and civil society expressed concern that employment for locals is often in low-skilled roles, without prospects of job training or skills transfer. Technical jobs are often filled by personnel from outside the community or country.

There are also serious concerns regarding land rights and displacement in several of the mining communities, including Sandawana and Kamativi (see Figure 13). According to civil society interviews, there have been cases where locals occupying land adjacent to mines have been arbitrarily evicted before mining commences. Communities may also be forced to “voluntarily” displace themselves because their living conditions become unsafe due to mining activities. Where mining operations necessitate the use of land occupied by locals, Kuvimba Mine stated that it resettles those affected with compensation sufficient to build new homes which are “more than what they currently have.” The high number of survey participants who indicated incidents of land use change and appropriation at Sandawana Mine indicates that the company needs to do more in this respect. The International Finance Corporation’s Performance Standard 5 provides a framework for managing the adverse effects of project-induced land acquisition or restrictions on land use, stipulating that involuntary resettlement must be avoided where possible and mitigated with full compensation and restoration of livelihoods. Measures to minimize impact include proper disclosure, consultation, and informed participation including a grievance mechanism for affected communities, as well as an implementation plan to improve or restore livelihoods and standards of living (IFC 2012).

Transferring skills and know-how to local people was seen across stakeholders as important for empowerment and sustainability, enabling surrounding communities to continue activities even after mining ceases. While some skills transfer between Chinese and Zimbabwean teams was brought up by mining company representatives, other stakeholders asserted that more structured training programs are needed for Zimbabweans to move into advanced roles. Furthermore, stakeholders indicated that Zimbabwean universities and technical colleges have not sufficiently revised their curricula to address the specific skills required for the growing lithium sector. Traditional programs in geology, metallurgy, and mining engineering have not yet incorporated focused modules on lithium extraction or value addition. There is also a lack of internships and training partnerships between universities and the mining companies.

Government and company representatives noted that lithium companies engage in CSR initiatives, including contributing to local schools and clinics (see Figures 16 and 17). The Zimbabwe Energy Regulatory Authority (ZERA) states that as part of CSR, what communities need should be determined through consultation, not via a “top-down approach.” Huayou Cobalt, for example, developed a multipronged CSR program at Arcadia that includes public health education, a women’s empowerment initiative, and an energy storage system for the local school. Kuvimba highlighted its initiatives such as the Onzar scholarship scheme, allowing communities to benefit from mine clinics, providing fuel and vehicle servicing for chiefs, and assisting with community requests such as for schools. However, some stakeholders questioned the effectiveness and intent of CSR, noting that since it is voluntary, it can be used for marketing purposes rather than meaningful development impact. Lack of transparency and accountability were raised as issues by civil society, with concerns about corruption and local authorities benefiting more than residents.

Figure 16: Clinic for Both the Mine and the Community at Bikita Minerals



Source: Photograph taken by research team, May 2025.

Figure 17: Primary School at Sandawana Mine



Source: Photograph taken by research team, May 2025.

Mechanisms to ensure a certain level of profits are reinvested within the country were identified by key stakeholders in the discussion on CSOTs (Section 3.2), including the Ministry of Industry and Commerce, as a mechanism to ensure communities can benefit directly from resource extraction in their area. However, lithium mining companies were perceived by some stakeholders as lacking transparency regarding their profits and not paying enough attention to environmental impacts or their social contributions, making it difficult for communities and civil society organizations to hold them accountable or to trust them. Corruption was reported to be significant, diverting benefits away from communities. Corruption can also make it challenging to enforce environmental standards, as is difficult to hold companies accountable due to their potentially close ties with the government or elite.

Concerns exist that there is a lack of effective community consultation and participation, and of adequate communication regarding mining matters affecting them, as reflected in the community survey results (Section 4.1). Chinese mining companies have a “very poor record of local interaction with communities” according to a civil society representative. While consultation may occur through the ESIA process overseen by EMA, civil society comments and survey data attested that these consultations are not comprehensive and that the concerns raised may not be taken up.

According to mining companies, there are some instances of direct engagement with communities and traditional leadership. Kuvimba Mining House, for example, states that it is in constant liaison with the chiefs at Sandawana and strives to have “social licenses from the communities.” Huayou Cobalt employs community coordinators to collect feedback, identify concerns or complaints, and facilitate a grievance resolution mechanism. The survey results, on the other hand, reflect that such measures are not currently perceived as sufficient by local residents.

INFRASTRUCTURE DEVELOPMENT THAT LEVERAGES LITHIUM MINING (RESEARCH OBJECTIVE 4)

According to government officials, the development of infrastructure such as roads, water supply, and power lines is undertaken by mining companies not only to support their own operations but also to benefit the broader community. This infrastructure is intended to remain beneficial to the community after mining operations cease. The Ministry of Transport and Infrastructural Development notes that mining companies enter into agreements or memoranda of understanding with the Ministry of Mines which can include aspects of infrastructure development, such as road infrastructure planning that is sensitive to villages on affected routes.

Inadequate infrastructure, particularly unreliable electricity supply, the state of the roads, and the lack of a functioning railway network, hinders the processing and transporting of bulk minerals. Some mining companies are investing in power generation capacity to support processing activities, such as Bikita Minerals' operation of a solar plant with battery storage. Kuvimba stated that a power line being built to connect the upcoming processing plant would also enable local households and businesses to tap into the electricity infrastructure. Similarly, Huayou Cobalt announced that it had established two water stations to serve the local community, and Sabi has established a coal-fired power plant.

The reliance on road transport to move bulk minerals is damaging roads, as shown in Figure 18. This problem was reflected in the community survey results, which indicated dissatisfaction with companies' maintenance of local roads.

Figure 18: Bus Stuck on the Road Near Sandawana Mine



Source: Photograph taken by research team, May 2025.

NATIONAL SOCIOECONOMIC DEVELOPMENT PLANNING THAT LEVERAGES LITHIUM (RESEARCH OBJECTIVE 5)

Zimbabwe has the potential to leverage its significant lithium reserves for sustainable and inclusive development, but governance gaps exist. These include a lack of a specific national policy or a roadmap for lithium development, fragmented regulations, and challenges in enforcing existing laws. There is also a risk of future demand changes due to technological shifts such as a move toward alternative battery chemistries like sodium-ion. Against this backdrop, the current state of lithium mining investment in Zimbabwe is one of rapid growth and largely foreign investment focused on extraction and initial processing.

The existing policy instruments governing mining include the 1961 Mines and Minerals Act (Government of Zimbabwe 2025), the Environmental Management Act addressing environmental and social issues (Government of Zimbabwe 2006), policies under the Ministry of Industry and Commerce on industrialization, and those under the Ministry of Energy and Power Development that support value addition and energy storage technologies and exports (Government of Zimbabwe 1961, 2006). The mining sector is also mentioned in the Zimbabwe National Development Strategy 1 as a key driver of Zimbabwe's transformation (Government of Zimbabwe 2020). However, the country currently lacks a dedicated transition mineral strategy or policy. This means there is no clear roadmap for how the country intends to maximize benefits from the exploration and sale of lithium, leaving the country in a reactive position rather than proactively defining its objectives for this strategic resource.

Moreover, the main law governing the mining sector, the Mines and Minerals Act (1961), is outdated, crafted at a time when issues such as climate change, responsible mining, and comprehensive ESG standards were not primary concerns. Under the existing legal framework the state holds the rights to underground minerals and other resources, even if the land above is privately owned. Some stakeholders argue that this system is patrimonial and inadequate for contemporary challenges, and that its colonial origins mean it protects economic and political elites rather than the broader population.

The issue of poor integration and coordination between laws and ministries was also highlighted by key stakeholders. One stakeholder noted that the Mines and Minerals Act and the Environmental Management Act “do not speak to each other” effectively. There is also a lack of coordination between the Ministry of Mines and Mining Development and the Ministry of Industry and Commerce, leading to lack of clarity about where mining (extraction) ends and value addition or beneficiation begins. This hinders a cohesive approach to regulating the sector and leveraging it for industrialization.

Interviewees echoed the findings of the literature review that Chinese investment plays a dominant role in the lithium mining landscape and is also increasingly involved in providing electricity, including coal-fired power plants. Chinese companies are therefore seen as playing a significant role in the energy sector and renewable energy projects, but concerns exist regarding their adherence to environmental and labor laws, limited technology transfer, limited skills transfer to local labor, lack of transparency, and a perceived focus on extraction for China's benefit at the expense of local industrialization. Concerns were also brought up regarding the undervaluing of mineral reserves for the purposes of tax and royalty avoidance, and the lack of transparency around associated minerals, i.e. those extracted with lithium ore especially at Bikita Mine.

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To leverage lithium for development effectively, there was a strong emphasis across stakeholders on value addition and beneficiation. The reliance on exporting raw materials exposes Zimbabwe to fluctuations in global lithium prices, which have been falling since 2023. While Statutory Instrument 213 of 2022 bans the export of raw lithium (discussed in Section 3.2), the focus currently remains on the crushing and initial processing step of producing lithium concentrate (which has a lithium content of about 6 percent). The value of concentrate is significantly lower than that of further processed forms such as lithium sulphate, which is worth six or seven times more per ton or manufactured lithium-based components, which are worth even more. The current focus on exporting lower-value lithium concentrate means that potential revenue is lost and jobs and innovation are exported. Stakeholders consistently argued that processing lithium further within the country could increase its contribution to local and national development.

The Ministry of Industry and Commerce supports the idea of identifying and supporting industries that can add value to lithium. The goal of developing a lithium value chain was addressed by the Ministry of Mines and Mining Development in the 2025 announcement that the export of lithium concentrates would be banned beginning in 2027, which was subsequently brought into immediate effect in February 2026 (The Herald 2026). According to government officials interviewed, plans are underway to move beyond producing lithium concentrate toward refining to lithium sulphate and eventually manufacturing batteries, as envisaged in the case of the Mapinga Mines to Energy Industrial Park announced by the president in 2023. However, as was discovered during a field site visit to the announced battery manufacturing plant in Mapinga, these plans have not yet got off the ground as the designated site is being used for chrome mining. Meaningful participation by Zimbabweans throughout the lithium value chain requires funding. As discussed in Section 3.4, the MIF has the capacity to play a catalytic role and drive the conversation on local participation in midstream (refining), downstream (manufacture), and sidestream (infrastructure and funding, capacity building) activities linked to the lithium mining sector.

Another important implication of the current regulatory and export restrictions is that artisanal and small-scale miners are effectively excluded from the lithium sector by the ban. The industrial policy marginalizes small-scale mining. The MIF has an important role to play in developing inclusive frameworks, including financial support to ensure no one is left behind. The proposed changes in the new 2025 Mines and Minerals Bill also seek to address some of these shortcomings.

ANALYSIS

The current state of lithium mining investment in Zimbabwe is characterized by significant activity, driven primarily by high global demand and substantial reserves but heavily focused on the extraction and export of raw or semi-processed material, predominantly involving Chinese investors. The short-term benefits entail increased foreign direct investment and significant growth in the country's GDP and employment figures. The downside is serious environmental and social impacts (from air, noise, and water pollution to land use change and appropriation and unfair labor practices), as well as deterioration in the road infrastructure due to insufficient investment at both community and national levels. Moreover, because of the scale and pace at which these developments are taking place, legal structures are failing to keep up with the policy measures necessary to properly regulate this subsector.

The Africa Mining Vision (AU 2009) provides a comprehensive framework that African countries should follow for a more sustainable mining sector. Four main phases in the lithium value chain are identified, i.e. upstream, midstream, downstream, and sidestream, as shown in Figure 4. The framework highlights the main activities, key stakeholders, and development linkages for each stage, as well as the importance of an inclusive and coordinated approach that engages all relevant stakeholders. It identifies the stages in the value chain where national value is maximized, the enabling role of infrastructure across the value chain, bottlenecks and investment needs, and the institutional and governance arrangements necessary to strengthen positioning in the value chain. The AMV refers to the threat of “finite” mineral resources. Another threat is that lithium has several substitutes across its industrial applications, and this has the potential to reduce or wipe out lithium demand in some applications, depending on factors such as cost, availability, and performance (Yao et al. 2025). At the current pace, this leaves Zimbabwe vulnerable to global price fluctuations and technological shifts that could rapidly diminish the value of its reserves. In light of this, the country needs to move quickly towards finalizing the Mines and Minerals Act in alignment with the AMV.

While there is a stated intent and some initial steps have been taken toward greater value addition in Zimbabwe, these lag behind a fast-changing sector. Substantial challenges related to governance, social equity, and value maximization and retention hinder the full realization of sustainable and inclusive development benefits. The government has announced plans to establish processing plants and potentially move toward battery-level production, yet the dominant model remains extraction-focused. The necessary changes in the Draft Mines and Minerals Bill 2025 which were originally planned to come into effect only in 2027 have been brought forward to February 2026 because of the immediate ban on export of raw lithium and lithium concentrate. There are also significant governance gaps regarding under-invoicing and lack of oversight of exports. Moreover, the government rarely consults academic institutions or civil society proactively and does not consistently base decisions on evidence or research. This has led to poor alignment between research, legislation, and the actual needs of industry and communities.

The key findings of this research paper are:

- **Zimbabwe's lithium mining subsector has advanced significantly** compared with the rest of the continent, despite the current outdated policy framework. This growth has been driven primarily by Chinese investment and demand.
- **There is a need for policy and legal reform** to best serve the country and local communities and enable sustainable lithium-based industrialization. Although the AU adopted the AMV in 2009 and SADC Protocol on Mining in 2006, at the national level Zimbabwe urgently needs to develop a comprehensive Mines and Minerals Strategy that prioritizes local value

addition through processing and manufacturing. This should be followed by a review of the proposed reforms in the Draft Mines and Minerals Bill 2025 to advance the development of local industries, create quality jobs, reduce costly imports, and strengthen the national economy. At the same time, institutional strengthening is required to ensure compliance by mining companies with legislative requirements (e.g. the Environmental Management Act).

- **Community surveys and interviews indicate that while lithium mining companies provide some local support, local-level engagement remains limited.** There are opportunities to be explored to ensure a mutually beneficial and inclusive relationship. These include community engagement before and after mining operations start on matters that concern communities, in order to understand the socioenvironmental impacts of operations as well as local infrastructure and other development needs.
- **Local communities are not involved in the ownership structures** of these mining operations and therefore not benefiting directly, by way of dividends or direct cashflows into community projects that they have developed with the mining operations. Employment for locals is often concentrated in low-skilled and unskilled roles. White collar and more technical job opportunities are limited, and socioeconomic development is widely perceived as inadequate. Concerns exist about corruption, where local authorities may prioritize personal benefits over community needs, potentially diverting revenue or benefits away from the community. Mechanisms for accountability, such as public platforms for reporting concerns, are being developed by civil society but are not yet scaled up. While there are stated policies and there is some evidence of benefit-sharing (particularly basic employment and infrastructure contributions by some companies), the overall picture reflects that local communities are not consistently or adequately benefiting from lithium mining projects. There is no meaningful participation by the communities or structures in place to hold companies accountable.
- **There has been limited investment in public infrastructure** such as towns by lithium mining companies, compared with investment by multinational corporations in the pre-independence period. Mining companies contribute to infrastructure development such as schools, health facilities, roads, powerlines, and water lines that can benefit both the mining operation and the broader community. However, upkeep of road infrastructure is deficient in lithium mining areas and hinders the national goal of higher value-added processing. Infrastructure is key to local beneficiation, particularly efficient transport networks, reliable and affordable energy, and access to water.
- **The success of the national agenda depends on coordination and cooperation** between relevant government ministries along with parastatals, the private sector, tertiary education, and vocational skills training institutions. There is a need for accountability and transparency at both national and local government levels.
- **Zimbabwe can learn from its regional neighbors** South Africa and Namibia, namely on broad participatory processes, improving ownership by society, and contributing to the achievement of national objectives.²¹ South Africa's Critical Minerals Strategy for green and digitalization technologies highlights the benefit of participation in regional and global value chains, thereby creating jobs, new skills, new technologies, and increased revenues, among other benefits. This strategy should encompass plans to participate at all stages of the value chain over time. It should not be limited to lithium only but should include other TMs available in Zimbabwe and the possibility of importing from neighboring countries. Zimbabwe's Draft Mines and Minerals Bill presents an opportunity to allow stakeholders to

²¹ The South African Mining Charter, a broad-based socioeconomic empowerment policy, despite its shortcomings, provides opportunities for the participation and benefit of the citizen majority in the minerals value chain.

drive the national agenda together, not just as the prerogative of the Ministry of Mines and Mining Development alone.

- **Zimbabwe's sovereign wealth fund (the MIF) is strategically placed** to drive infrastructure and broad socioeconomic development, including through partnerships with multinational mining companies. Going downstream is not only reliant on mining law and strategy; it requires interrelationship with the industrial sectors and a champion for effective coordination. Access to technology and finance are also key, and the MIF can play a significant role by leading these conversations.
- **Zimbabwe has the potential to lead the SADC region** in migrating from the upstream to the midstream and downstream in the lithium value chain, given the scale and pace of lithium mining development in the country.

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While lithium mining investments are boosting Zimbabwe's GDP and offering some benefits in terms of job creation and infrastructure, they are currently weakly aligned with national development goals, particularly those related to comprehensive value addition, sustainable practices, meaningful community participation, and long-term economic resilience. Integrating value addition into Zimbabwe's lithium mining sector is crucial to maximizing socioeconomic development and long-term resilience. Existing mining policies are fragmented, reactive, and often introduced without prior consultation with stakeholders such as academia or civil society.

At the local level, survey results indicate that communities are not adequately benefiting from lithium mining and are suffering major environmental and social impacts. Although mining companies are not legally obligated to provide infrastructure or other services, the Zimbabwean government, through the MIF, could play a strategic role in mobilizing the provision of such services to mutually benefit mining companies and the public at large.

Future research should examine two additional dimensions that were beyond the scope of this study's interview and survey data. First, data collection is critical on the nature and prevalence of local health impacts arising from the presence of lithium mines, particularly to inform policy on health impact assessments and systematic monitoring. Second, the inclusion and regulation of small-scale and artisanal mining warrants closer attention, given its significance for livelihoods, local economies, and environmental governance at these mining sites.

Policy Recommendations

There are a number of lessons that can be considered based on the findings of this report:

- **Strengthen the policy framework for the mining sector** to address infrastructure and broad socioeconomic development through a clear, transparent, coordinated, and inclusive consultation process, including learning from regional and international best practice. In particular, a clear, transparent, inclusive, and coordinated policy development and public consultation process is needed regarding the new Mines and Minerals Bill 2025, as well as the transition minerals strategy and local content policy to be developed by the Ministry of Industry and Commerce. A database of the opportunities available throughout the lithium value chain would assist in creating a transparent investment environment.
- **Prioritize local inclusion through benefit-sharing initiatives** with mining companies that promote livelihood diversification and development of social enterprises in mining communities. Establish an independent grievance and monitoring platform, administered jointly by the Environmental Management Agency and civil society organizations, to enable community members to report violations, corruption, or noncompliance with benefit-sharing commitments.
- **Strengthen government agencies' policymaking, implementation, monitoring and evaluation, and enforcement processes** through greater emphasis on transparency and accountability especially with relation to environmental and social governance. This will improve revenue collection and resource management through an understanding of the full lithium value chain, including both where opportunities lie and where value is lost.
- **Strengthen the role of the knowledge community**, including academia, think tanks, consultancies, and civil society experts, in training, research, policy advocacy, formulation and oversight, and innovation through greater investment in research and curriculum development. Reduce the importation of these skills over time by partnering with mining companies.
- **Develop and diversify international partnerships** that advance both parties' economic and development priorities to create mutually beneficial relationships throughout the value chain, including downstream and sidestream development. This will assist in mobilizing funding, capacity building, mining and related technology transfer, skills development, and market creation for economies of scale.
- **Strengthen the capacity of the MIF** to drive initiatives around investment in economic infrastructure such as transportation, energy, and water management.

By addressing these recommendations, Zimbabwe has the potential to leverage its lithium mining sector for both local and national socioeconomic development while addressing and mitigating the negative impacts of the sector on communities. Implementation requires political will; coordinated efforts between government ministries; active participation of civil society and communities; and holding politicians, local elites, and mining companies accountable. On the other hand, without decisive action to ensure that the benefits of lithium extraction are retained and reinvested domestically, Zimbabwe risks squandering its potential, leaving behind environmental damage, unresolved social challenges, unrealized economic opportunities, and unfulfilled dreams.

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Harare, Zimbabwe. Photo by Omoniyi David via Unsplash.



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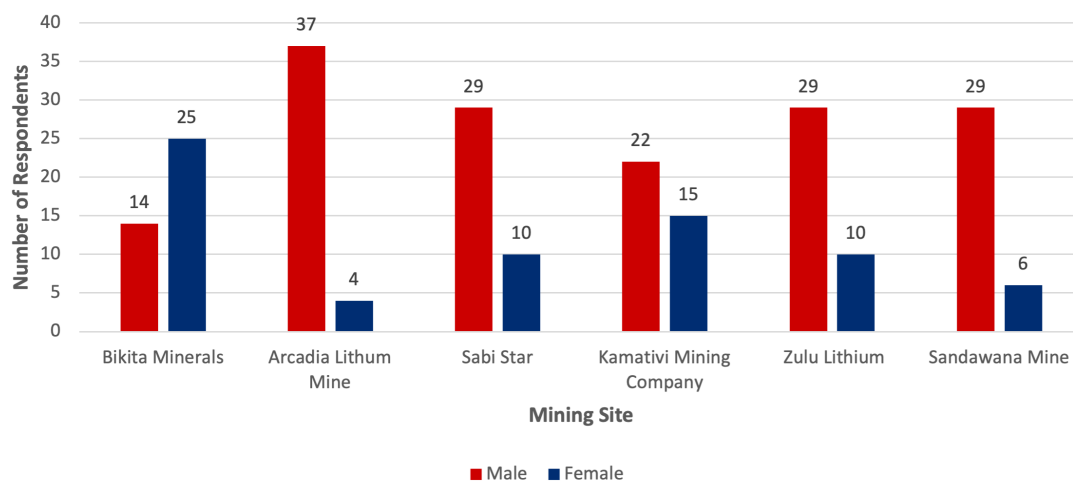
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APPENDIX 1: KEY INFORMANT INTERVIEW OBJECTIVES

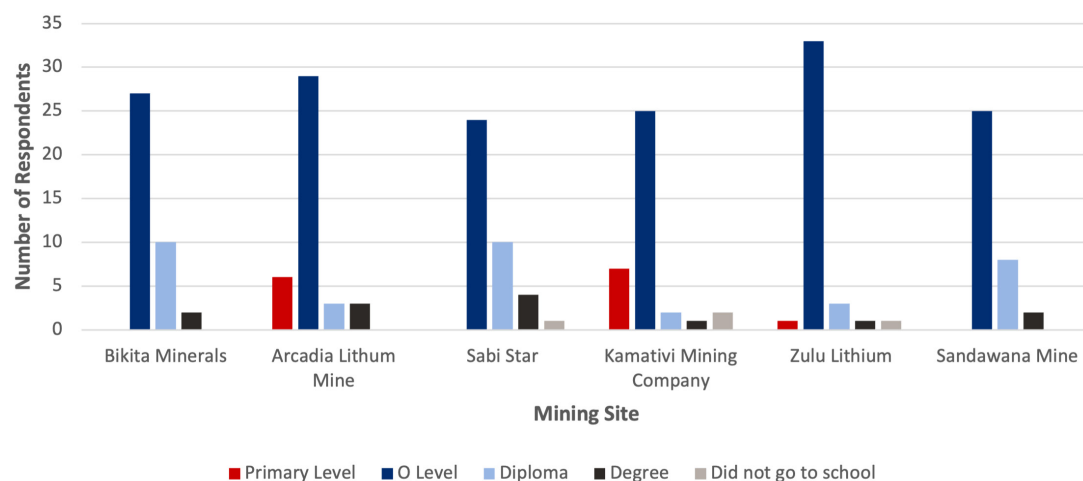
Key informant	Interview objective
Government Ministries	
Ministry of Industry and Commerce	To explore how the Ministry of Industry and Commerce can support Zimbabwe to strategically and sustainably use its lithium resources to drive industrialization, innovation, and inclusive economic growth.
Ministry of Environment, Water and Climate	To understand the Ministry of Environment’s role in environmental governance, particularly in policy development and oversight of environmental standards, and identify policy and enforcement gaps.
Ministry of Transport and Infrastructure	To understand how Zimbabwe’s transportation system supports lithium extraction and export and how the Ministry of Transport collaborates with other government bodies on lithium-related infrastructure and explore alternative funding opportunities.
State agencies and/or State-owned Entities	
Zimbabwe Power Company	To assess the electricity needs for mining operations, the relationship between mining companies and power supply and to explore alternative funding opportunities.
Zimbabwe Energy Regulatory Authority (ZERA)	To clarify ZERA's regulatory role and explore the intersection of energy policy and lithium/transition minerals, especially the role of lithium mining companies in Zimbabwe’s renewable sector.
Environmental Management Agency (EMA)	To gain a comprehensive understanding of how the Agency manages the environmental and social aspects of lithium mining, including regulatory frameworks, environmental and social impact assessments, and monitoring of impacts of these projects on communities.
Civil Society Organizations (CSOs)	
Center for Natural Resource Governance (CNRG)	To gain insight into the role of civil society in promoting responsible lithium mining practices that contribute to sustainable socio-economic development. Specific topics include community rights, environmental sustainability, economic benefits, and role in policy advocacy.
Powershift Africa	
Action Aid Zimbabwe	
Academia and Independent Researchers, Industry Associations	
Academia and Independent Researchers	To understand academia’s contributions in research, policy advisory, innovation, and capacity building.
The Zimbabwe Chamber of Mines	To understand how the extraction of transition minerals can be a catalyst for industrialization: the opportunities (economic, industrial, technological) and challenges (governance, sustainability, social equity) that come with such a transformation.
Private companies	
Zimbabwe lithium mining company (Kuvimba Mining House – Sandawana Mine)	To understand how lithium mining companies contribute to the broader goals of industrialization, economic diversification, and sustainable development in Zimbabwe, while balancing business interests with the social and environmental impacts of mining.
Chinese lithium mining company (Huayou Cobalt – Prospect Mine)	

APPENDIX 2: SURVEY RESPONSES

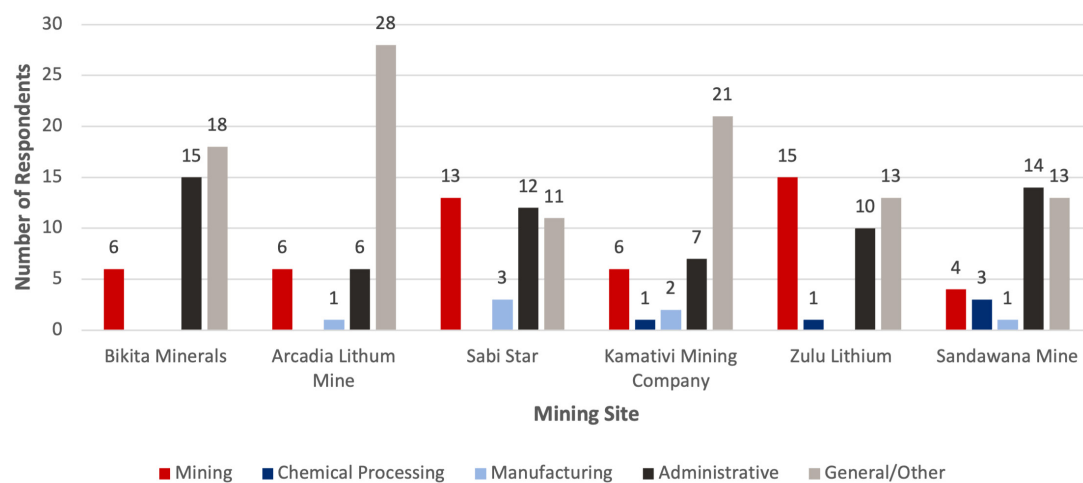
1. Gender of Respondents



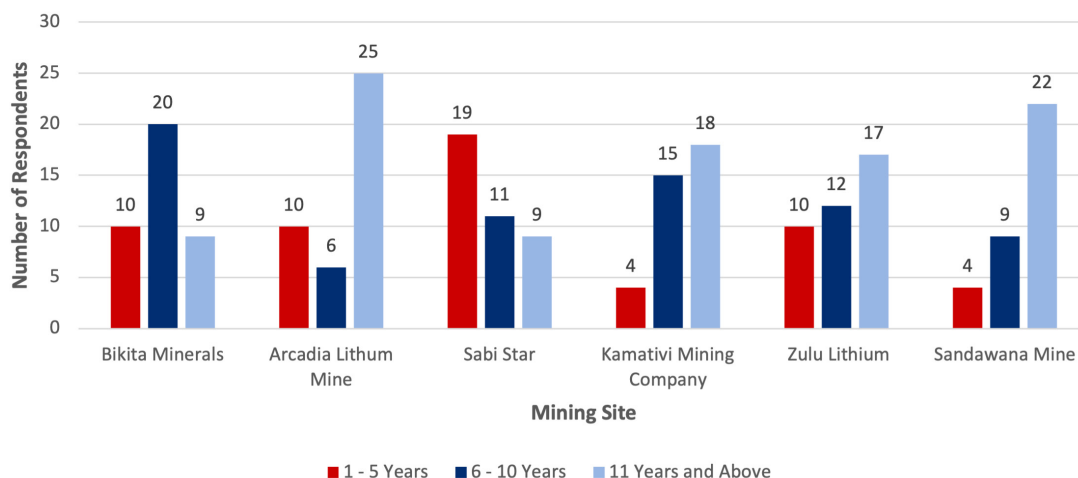
2. Level of Education



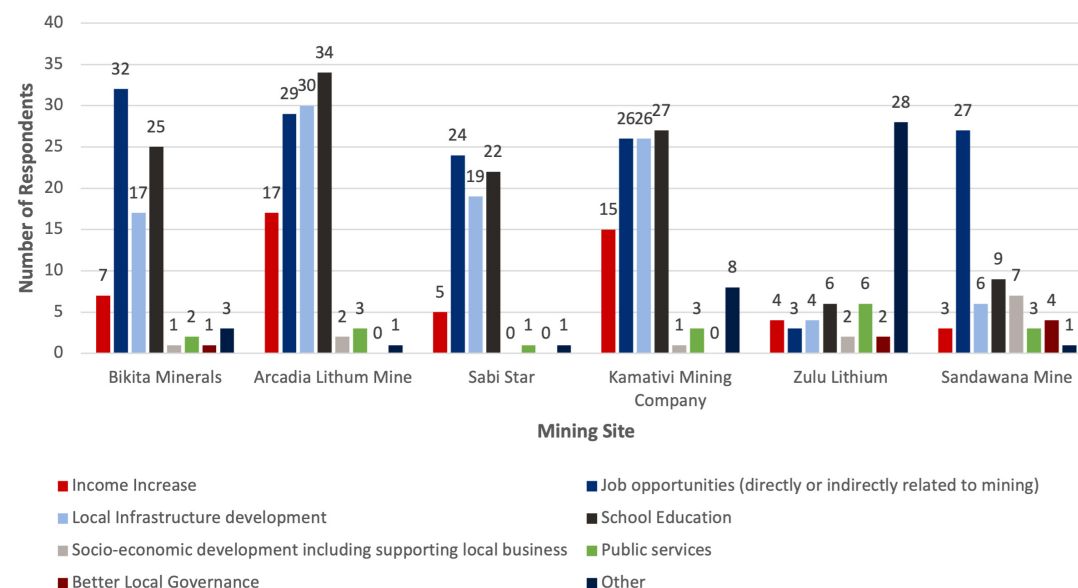
3. Skills Set Relevant for Mining



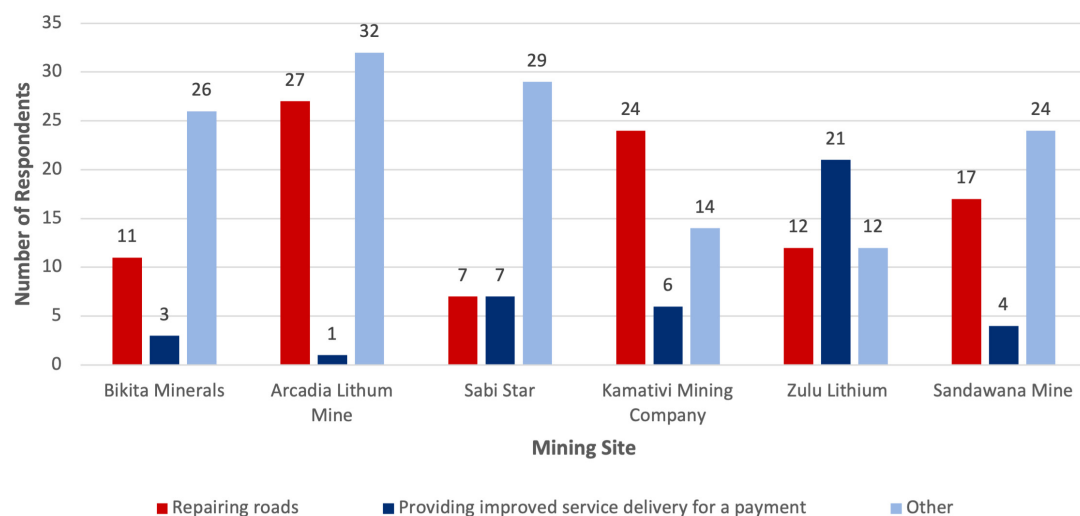
4. Years Residing in Respective Communities



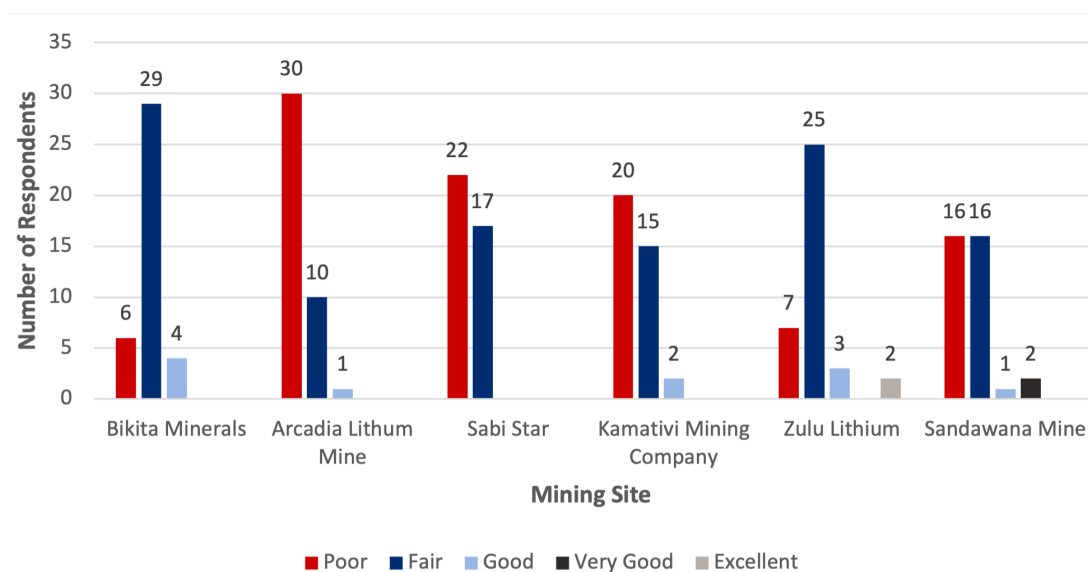
5. Benefits of Chinese Mining Investments in Community



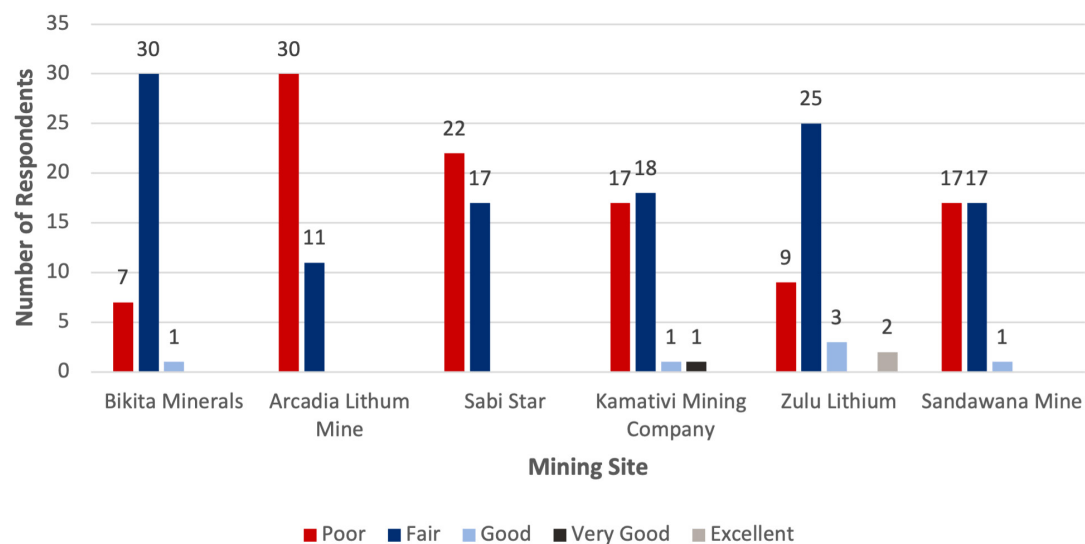
6. Help Received by Community from Chinese Mining Company



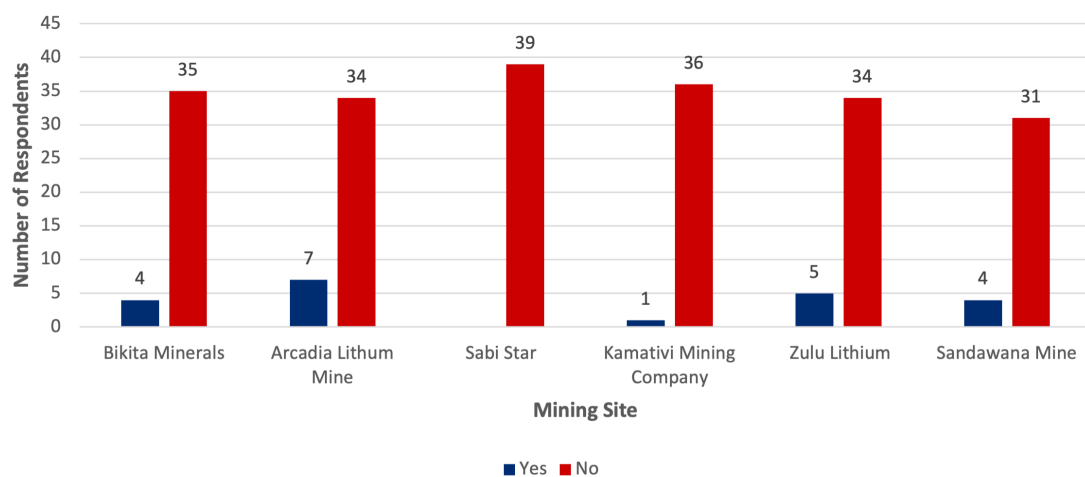
7. Education Provided by Chinese Company About Mining Issues (Ranking)



8. Regular Communication by Chinese Company Regarding Socio-economic Issues Affecting the Community (Ranking)



9. Were Consultative Meetings Held Prior to the Start of the Project?

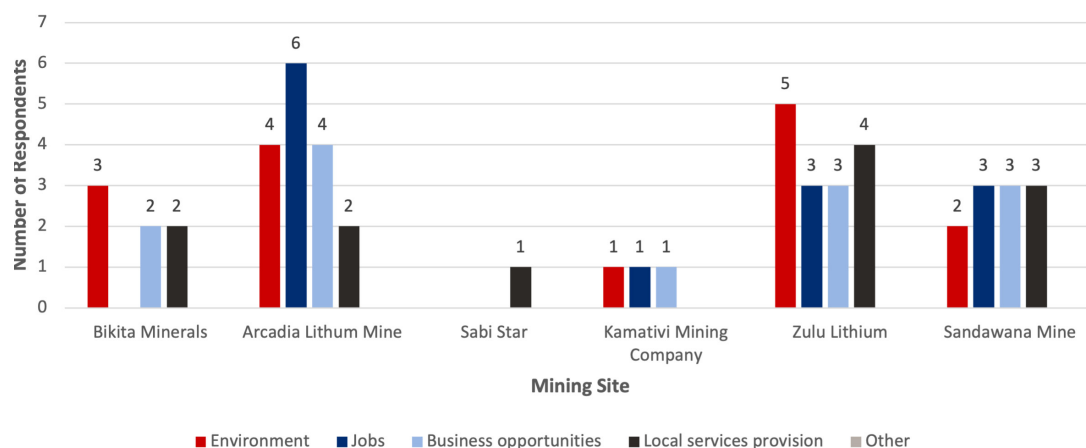


10. Reported engagement period for consultative meetings

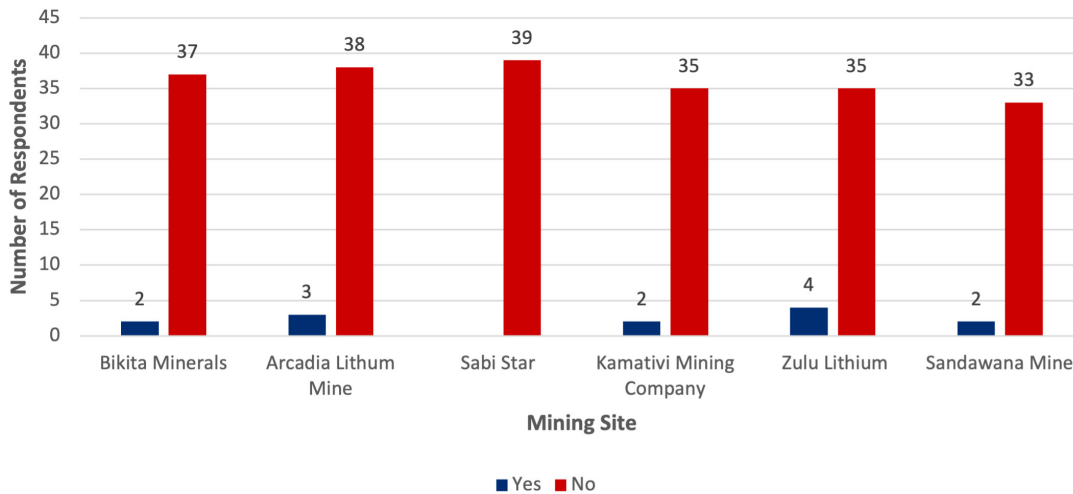
Mining Site	Engagement Period
Bikita	3 months
Bikita	3 months
Arcadia	I am not privy about the period
Arcadia	Engagement meeting lasted for 2hrs only a few people were invited and those invited are aligned to the current regime so the outcome of the meeting was biased. EISA was not done properly, we are being affected by environmental issues including Abstraction of water, air pollution, blasting is affecting houses and dust pollution affecting food security
Arcadia	Since 2023 up to now
Arcadia	6 months
Kamativi	2 hours
Sandawana	Not for long
Sandawana	6 weeks
Sandawana	4 months
Zulu	Half Day
Zulu	Three hours

Note: The table reflects only those participants who provided a response to this question.

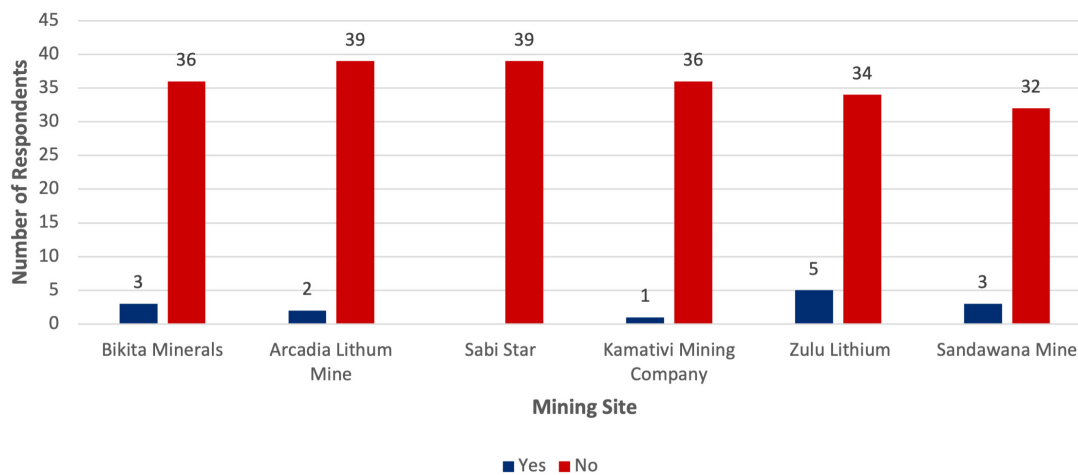
11. Issues Raised in Consultative Meetings



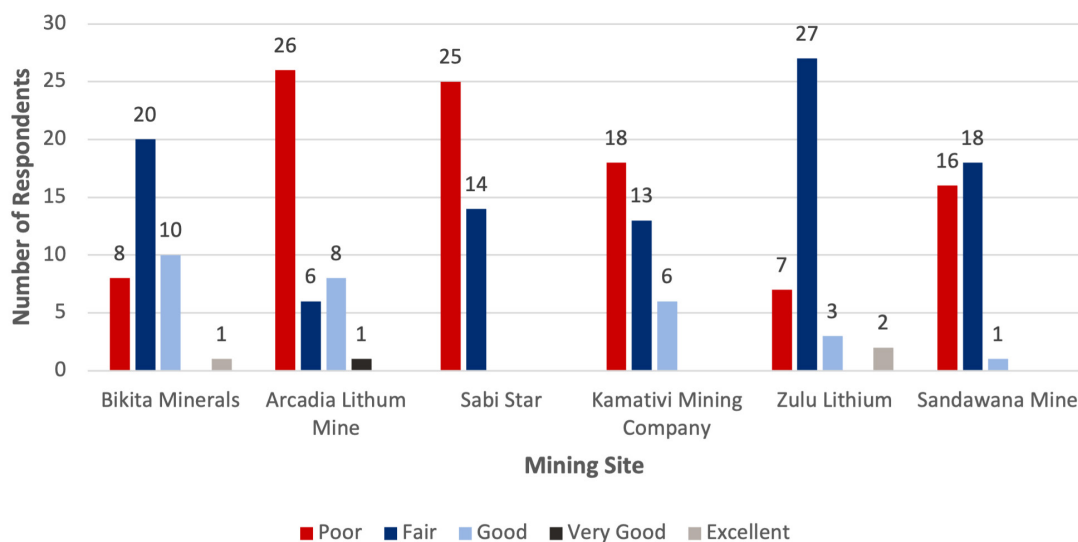
12. Do You Participate in Consultative Meetings During the Project?



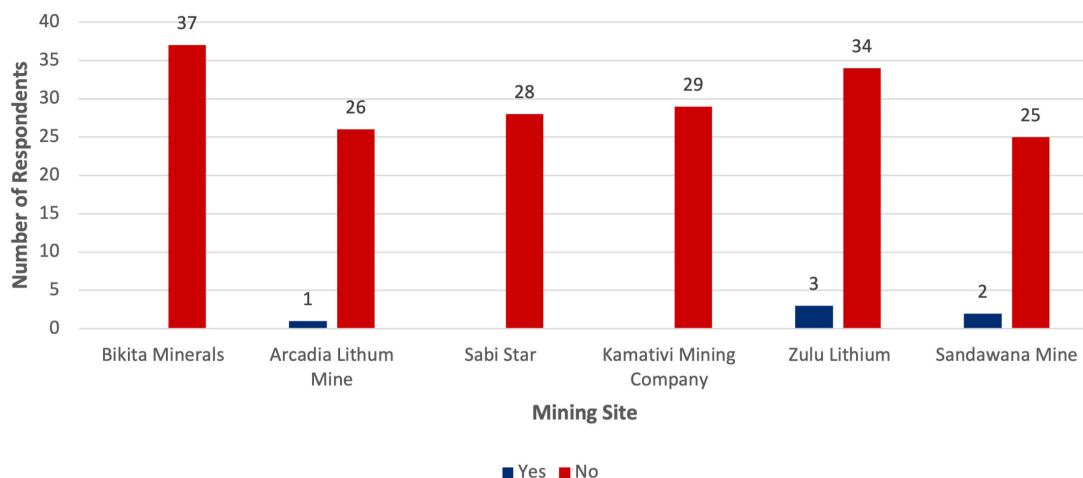
13. Does the Chinese Mining Company Address Issues Raised During Consultative Meetings?



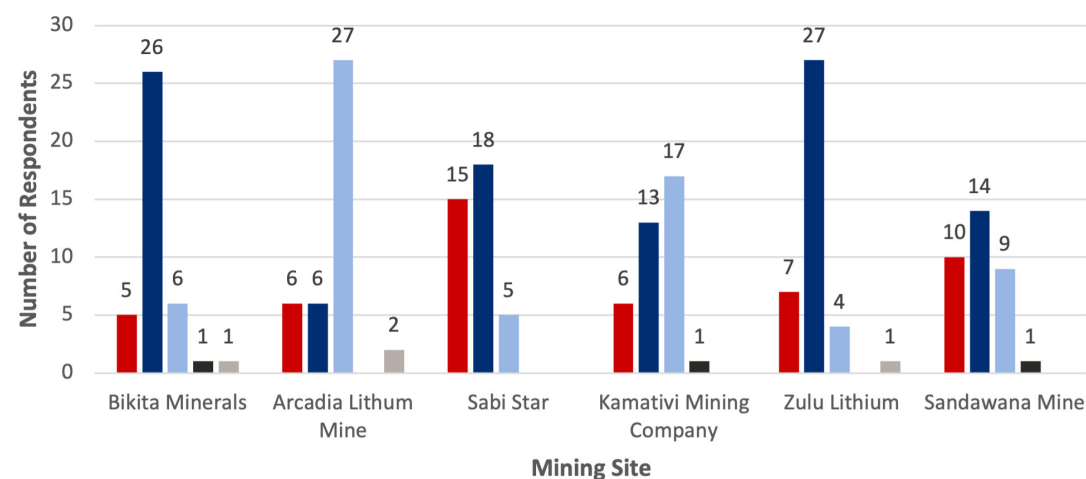
14. Proper Maintenance of Roads (Ranking)



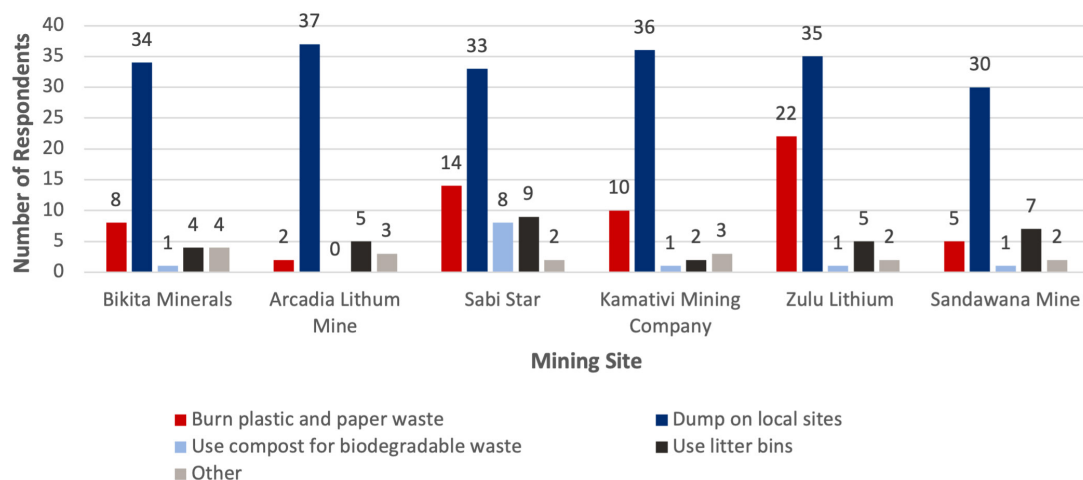
15. Are Grievance Mechanisms Effective and Secure?



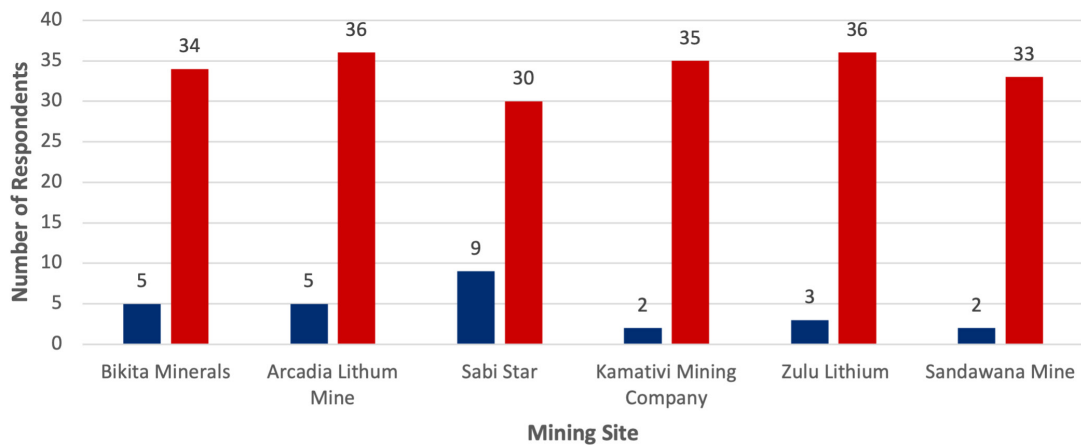
16. Knowledge of Environmental Issues from Lithium Mining (Ranking)



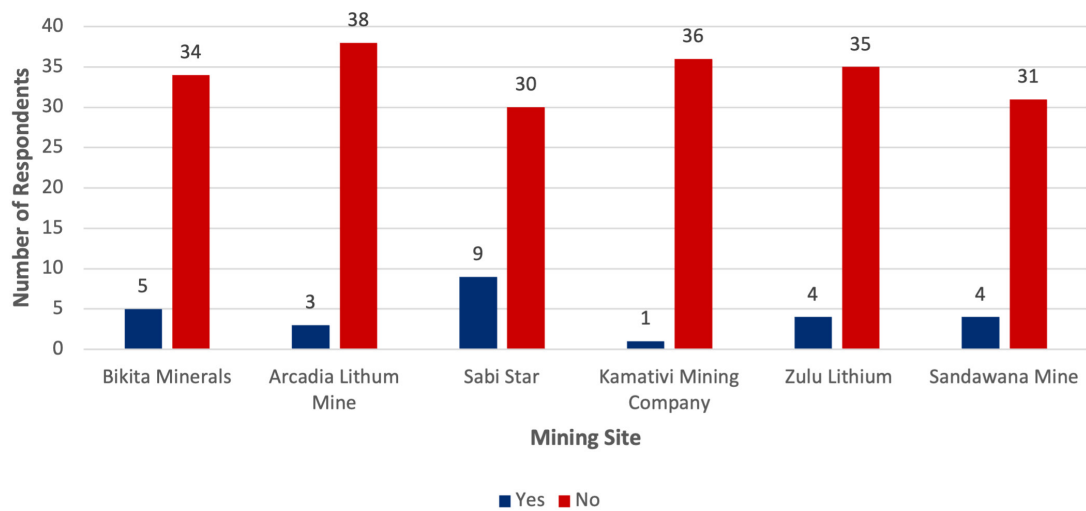
17. Waste Disposal Method Used by Chinese Company



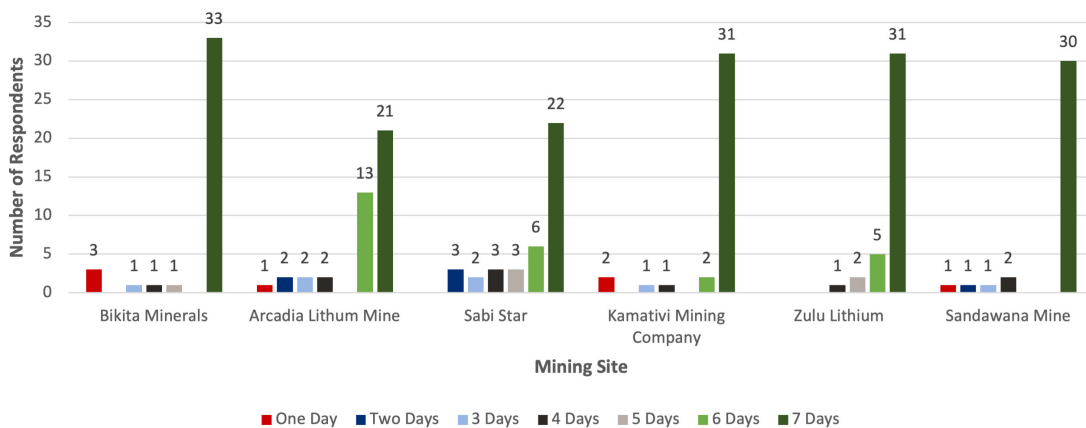
18. Do You Have Illegal Waste Dumping Sites in Your Area?



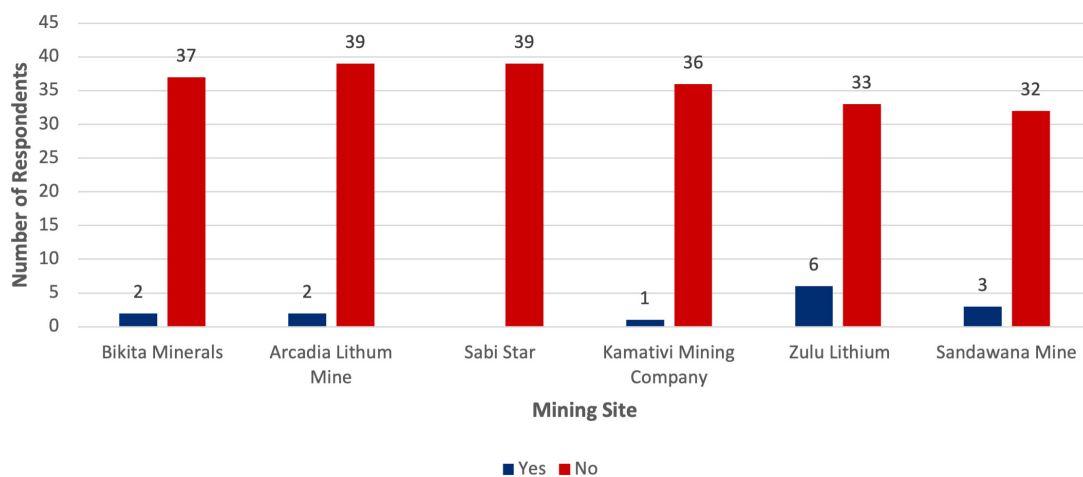
19. Is There Water Rationing in Your Area?



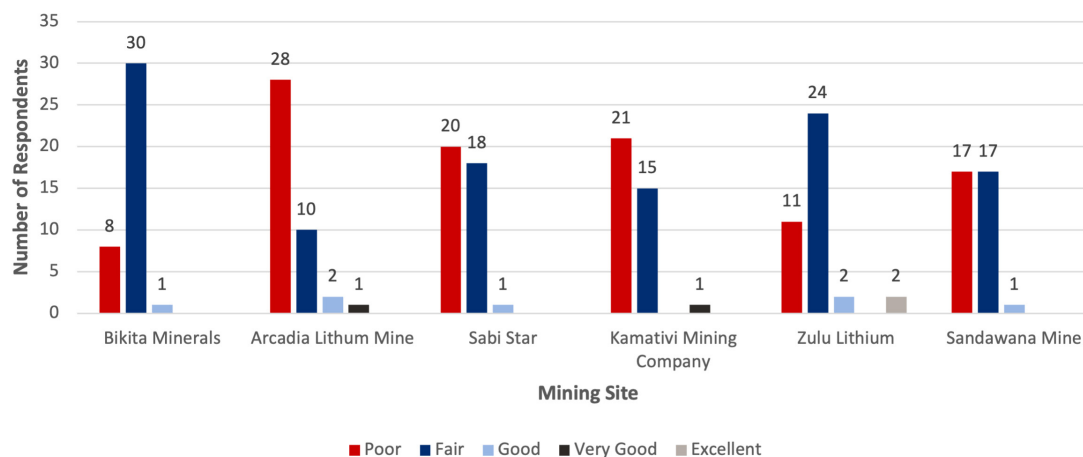
20. Number of Days per Week with Water



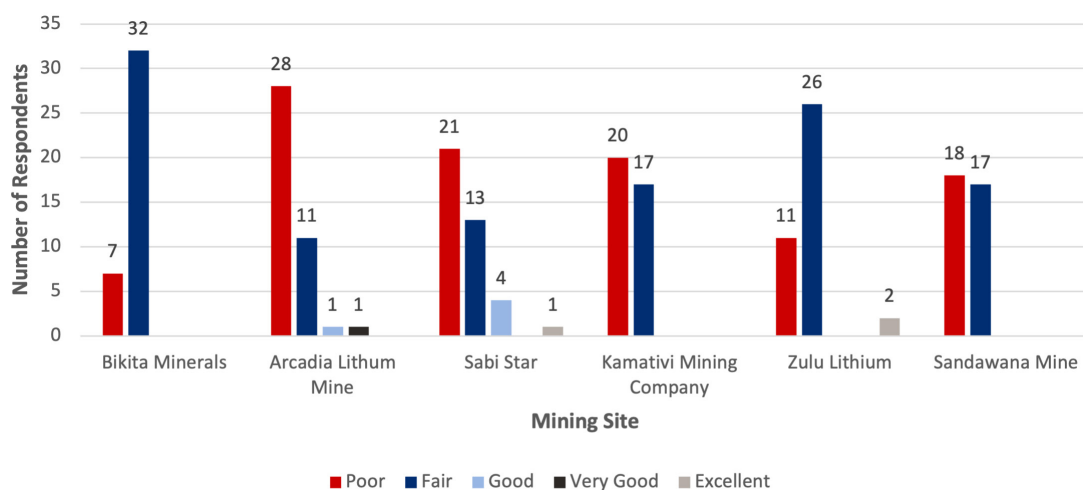
21. Do You Think the Chinese Mining Company Values Your Input and Feedback?



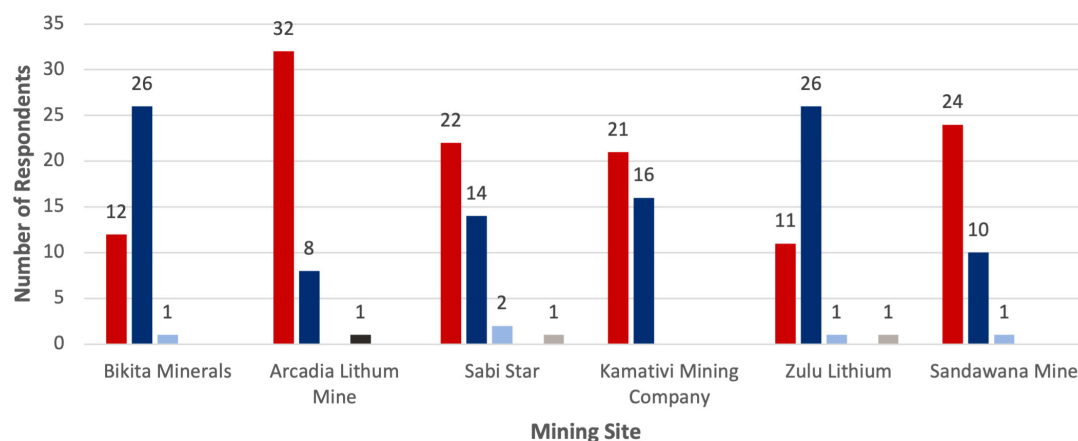
22. Provision of Vocational Skills Training to Surrounding Residents (Ranking)



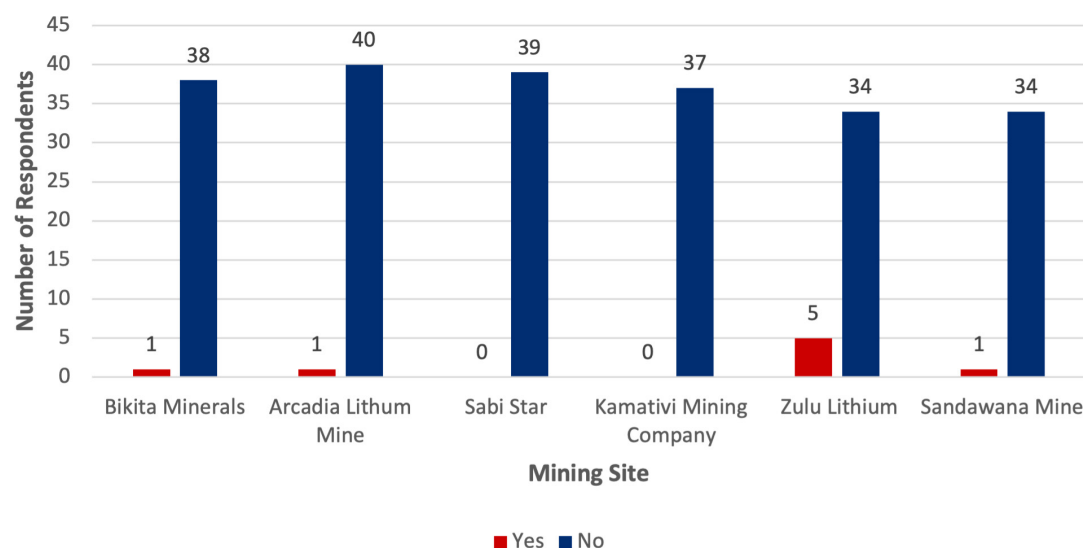
23. Build Enterprise Cooperation Platform for Youth (Ranking)



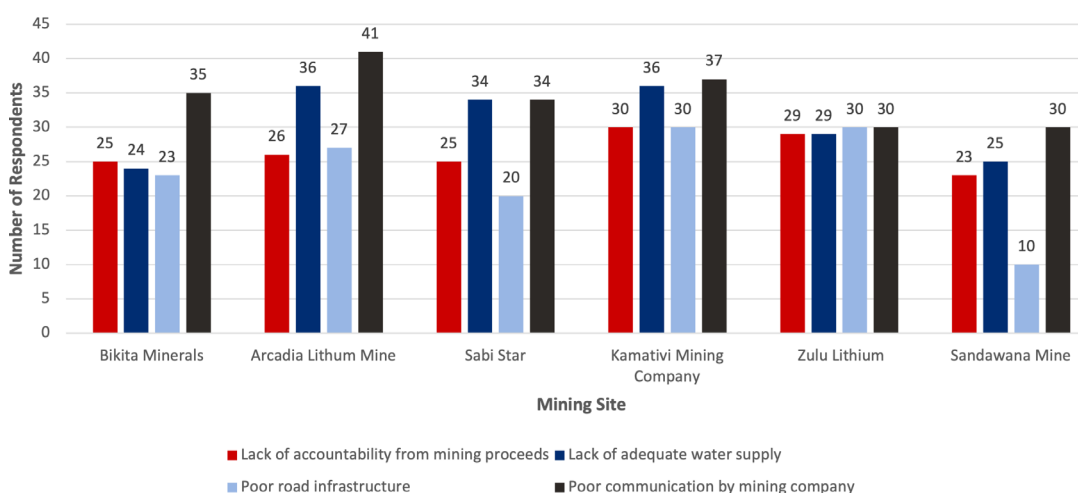
24. Provision of Stable and Accessible Green Energy to SMEs (Ranking)



25. Do You Think the Chinese Company is Making Good Use of their Profits to Develop Local Communities?



26. Most Significant Service Delivery Challenges in Your Area



27. Do You See Any Challenges in Your Community with regard to the Following?

