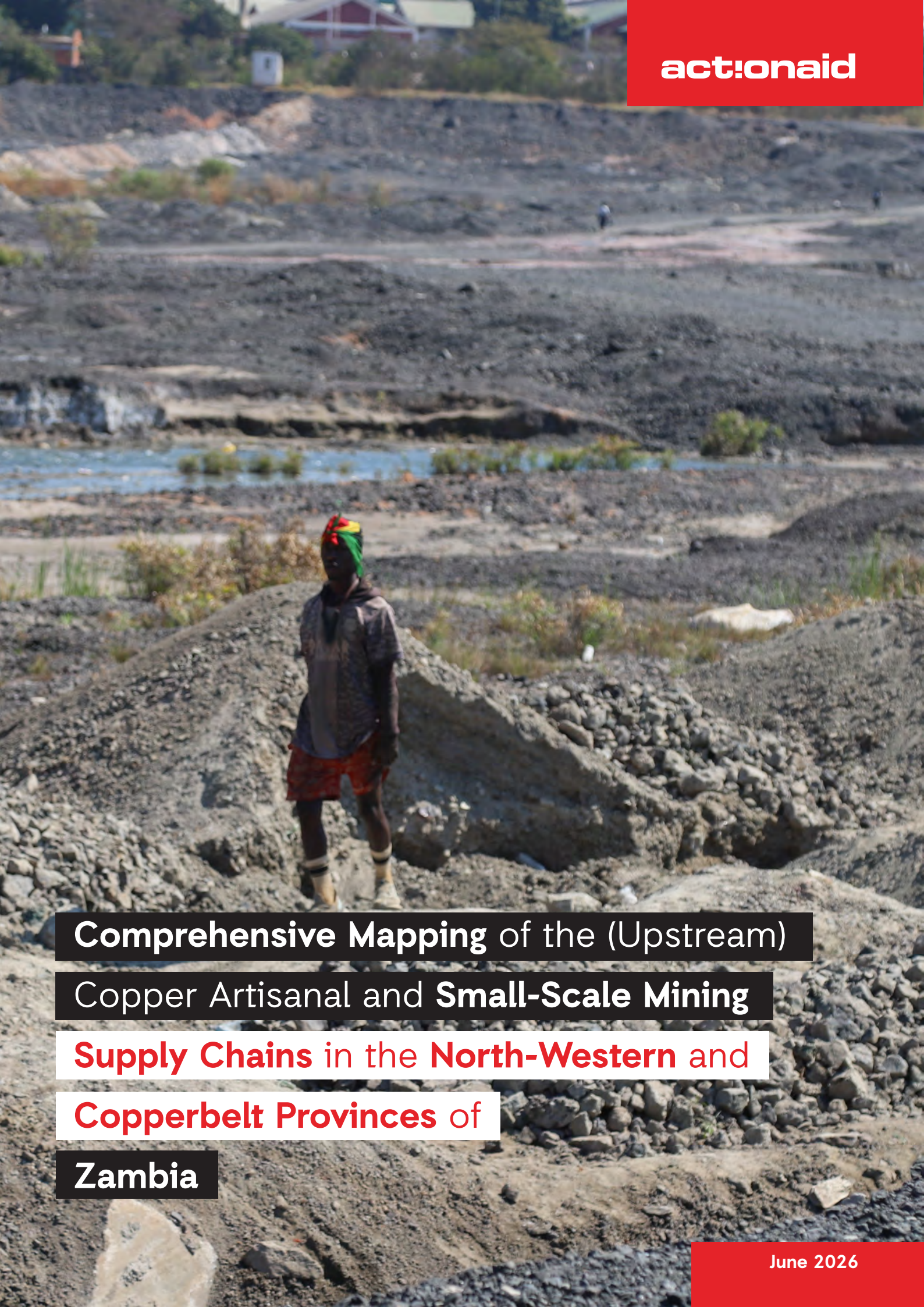
actionaid



Comprehensive Mapping of the (Upstream) Copper Artisanal and Small-Scale Mining Supply Chains in the North-Western and Copperbelt Provinces of Zambia

June 2026

Acknowledgement

This study was commissioned and conducted by ActionAid Zambia (AAZ) and ActionAid Netherlands (AANL) with support from the European Partnership for Responsible Minerals (EPRM) under the Co-Mining: United in Responsible Copper and Cobalt Mining, project.

AAZ and AANL wish to extend their sincere appreciation and gratitude to all individuals, civil society organizations, artisanal and small-scale mining (ASM) associations and academia that directly and indirectly contributed to the development of this report. Appreciation also goes to the Ministry of Mines and Minerals Development for their valued support rendered. In this regard, AAZ and AANL recognise the efforts of Dr. Hapenga M. Kabeta, Permanent Secretary, during the validation of the study.

Special recognition goes to Manon Wolfkamp whose expertise in supply chain management proved highly beneficial to this study. Special thanks go to ActionAid Zambia Country Director, Faides TembaTemba for her exceptional leadership and oversight during the study. We also wish to thank Bertha Kabengele, Programmes and Policy Manager at ActionAid Zambia for her strategic guidance.

Special mention goes to Aquila Ng'onga and Maaike Van Adrichem for leading and coordinating the entire study. We also recognise the important roles played by Anna Hengeveld, Ucizi Ngulube, Simona Thiel, Kwaleyela Sililo and Michael Mwansa. Lastly, we would like to recognize Zondwayo Duma, the research consultant who undertook this study-we appreciate his dedicated time and expertise.

Acronyms	Definition/Context
8NDP	Eighth National Development Plan (2022–2026)
AMV	African Mining Vision
ASM	Artisanal and Small-Scale Mining/ Miner(s)
AZWIM	Association of Zambian Women in Mining
BoZ	Bank of Zambia
CEEC	Citizens Economic Empowerment Commission
EITI	Extractive Industries Transparency Initiative
FGDs	Focus Group Discussions
ICGLR	International Conference on the Great Lakes Region (Certification Mechanism)
ICSG	International Copper Study Group
KIIs	Key Informant Interviews
LME	London Metal Exchange
LSM	Large-Scale Mining
MMMD	Ministry of Mines and Minerals Development
MOSES	Mineral Output Statistical Evaluation System
MRC	Minerals Regulation Commission
MRCA	Mineral Regulations Commission Acts
MSME	Micro, Small and Medium Enterprises
OECD	Organisation for Economic Co-operation and Development
PPE	Personal Protective Equipment
ToR	Terms of Reference
ZACCI	Zambia Chamber of Commerce and Industry
ZAM	Zambia Association of Manufacturers
ZAMEFA	Metal Fabricators of Zambia
ZDA	Zambia Development Agency
ZEMA	Zambia Environmental Management Agency
ZRA	Zambia Revenue Authority

Table of Contents

List of Tables

List of Figures

AT A GLANCE

ZAMBIA ASM SECTOR

OVERVIEW, KEY FINDING & RECOMMENDATIONS

Artisanal and Small-Scale Mining (ASM) is a vital part of Zambia's mining landscape powering livelihoods, communities and the economy

OVERVIEW OF THE ASM SECTOR

17.4%
ECONOMIC IMPACT

The mining sector contributed approximately 17.4% to Zambia's GDP in 2024 and nearly 70% of export earnings.

25,000-50,000
LIVELIHOODS

ASM provides direct livelihoods for an estimated 25,000 to 50,000 people, acting as a vital informal safety net.

7.9%
PRODUCTION TRENDS

While national copper production declined by 8.5% in 2023, small-scale production grew by 7.9% to roughly 34,087 metric tonnes, showing notable resilience.

KEY FINDINGS

1. SUPPLY CHAIN STRUCTURE

The flow is largely linear and asymmetric

EXTRACTION → MIDDLEMEN/ BUYERS → PROCESSOR → EXPORTERS/ OFFTAKERS

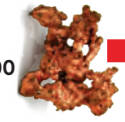
VISIBILITY GAPS

Monitoring tools like MOSES are underutilized, and most ASM copper enters global markets indirectly through Chinese-owned processors without formal due diligence.

2. PRICING GAPS

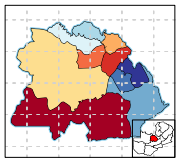
ASM miners typically receive less than 7% of the international market value for their copper.

GLOBAL MARKET PRICE (3035 AVG.)	ASM MINER RECEIVES
USD 8,300-8,500 PER TONNE	USD 400-600 PER TONNE (AFTER GRADE ADJUSTMENTS)



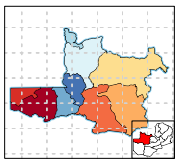
Miners receive < 7% of the international market value.

3. GEOGRAPHIC DIFFERENCES



COPPERBELT

Activities are dense and youth-dominated (ages 16-24), primarily centered around mine tailings like "Black Mountain".



NORTH-WESTERN

Mining is more dispersed and family-based, hindered by high transport costs to processing centers.

4. GENDER INEQUITY

Women represent about 30% of participants but are often confined to lower-paid roles like washing and sorting.

Ownership of tools and licenses is overwhelmingly male-dominated.

5. FORMALIZATION BARRIERS

High compliance costs prevent many from entering the formal legal framework.

K60,000 for an Environmental Project Brief

High costs

Complex procedures

Limited access to regulatory services

POLICY & GOVERNANCE

LEGAL FRAMEWORK

Recent advancements include the Minerals Regulation Commission Act (2024) and the Geological and Minerals Development Act (2025), which established an ASM Fund.

VISIBILITY GAPS

Monitoring tools like MOSES are underutilized, and most ASM copper enters global markets indirectly through Chinese-owned processors without formal due diligence.

ASM FUNDS (2025)

A dedicated fund to support ASM development, formalization and sustainability.

CORE RECOMMENDATIONS

1. TRANSPARENCY

Implement simplified grading systems and collective marketing to improve price fairness.

2. SUPPORT

Promote value addition through shared processing facilities and targeted financing for women.

3. COMPLIANCE

Reduce licensing costs and decentralize regulatory services to encourage formalization.

Executive Summary

Rationale

The mining sector remains the backbone of Zambia's economy, contributing approximately 17.4 percent of GDP in 2024 and accounting for nearly 70 percent of export earnings. Copper dominates this landscape, positioning Zambia as a key supplier to global markets driven by energy transition and industrial demand. Within this context, artisanal and small-scale mining (ASM) plays a critical yet under-recognised role, providing livelihoods to an estimated 25,000 to 50,000 people directly and many more indirectly. Despite its importance, the ASM copper subsector remains structurally marginalised, characterised by informality, weak governance, limited access to finance and technology, opaque pricing, and minimal value addition.

This study, therefore, aims to generate granular evidence on how ASM copper moves from extraction to the first point of sale and export, who participates in these processes, and how power pricing, gender and policy frameworks shape outcomes along the upstream supply chain.

Key Findings

- Highly Asymmetric Supply Chain Structure: The ASM copper supply chain follows a largely linear flow:

Extraction → Middlemen/buyers → Processors → Exporters/offtakers

- This position allows the middlemen to exercise significant control over pricing, payment terms and market access. While ASM miners operate as price takers with limited bargaining power and minimal information on grades, deductions or international benchmarks such as the London Metal Exchange (LME).
- Copper pricing at the ASM level is informal, negotiated verbally and based on visual estimation of ore quality. Prices are rarely linked to international market movements despite rising global prices. Deductions for grade, moisture, transport and risk are poorly understood and inconsistently applied.
- In the Copperbelt, ASM activity, particularly at sites such as Black Mountain, is dense, youth-dominated and closely linked to Chinese-owned processing facilities in Kitwe and Chambishi. In North-Western Province, ASM is more dispersed, family-based and constrained by long distances to processing centres, resulting in lower prices and higher transport deductions. The absence of local processing facilities in North-Western Province significantly weakens miners' bargaining power.
- In North-Western, women occasionally participate in washing, their earnings are lower than men's due to irregular work access, lack of tools and limited bargaining power.
- Field findings highlight a significant concentration of young people in ASM activities at Black Mountain, with most diggers aged between 16 and 24.
- In Copperbelt, particularly Black Mountain, miners receive approximately K10,000 per tipper truck of slag, equivalent to 15-20 tonnes.
- In North-Western, pricing is set per bag or kilogram, with buyers assessing quality visually. Reported earnings range from K3 to K6 per kilogram, depending on perceived grade and site distance.
- While the global copper price during the survey period (August–September 2025) averaged around USD 8,300-8,500 per tonne, ASM miners in Zambia effectively received equivalent prices of USD 400-600 per tonne, representing less than 7% of the international market value after adjusting for grade.

- Women constitute an estimated 30 percent of ASM participants nationally, but remain concentrated in lower-paid, auxiliary roles such as washing, sorting and vending. Ownership of mining sites, tools and licenses is overwhelmingly male-dominated. High licensing and environmental compliance costs, cultural norms and unsafe working conditions further exclude women from higher-value activities. While women's participation is more visible in North-Western Province than in Copperbelt, income and decision-making disparities remain pronounced.
- Weak Governance, Low Formalisation and Data Gaps: Despite a robust policy and legal framework, including the Minerals Regulation Commission Act (2024), MOSES, and EITI, most ASM operations remain outside formal systems. Awareness and use of digital monitoring tools are extremely low, and compliance rates are negligible. Institutional presence at ASM sites is limited, resulting in poor oversight of safety, environmental management, child labour risks and production reporting.
- A critical gap identified in the study is the near-total absence of international due diligence engagement with the ASM copper sector. Although ASM miners do not typically export directly to international markets, their copper enters global supply chains indirectly through Chinese-owned processors, sales to Australian-linked buyers, and, in rare cases, cross-border trade to the Democratic Republic of Congo.

Recommendations

- Improve price transparency and market information through simplified grading systems, reference pricing tools and collective marketing arrangements.
- Strengthen ASM formalisation pathways by reducing licensing and environmental compliance costs and decentralising regulatory services.
- Promote gender-responsive interventions, including targeted financing, equipment access and safe working conditions for women.
- Support incremental value addition through shared processing facilities, cooperative models and linkages to domestic manufacturers.
- Enhance governance and traceability by adapting MOSES and Due diligence tools to ASM realities and strengthening institutional presence at the site level.
- Engage international buyers and downstream companies, differentiated by destination market, to embed ASM due diligence obligations into responsible sourcing frameworks and leverage international procurement as a driver of ASM formalisation.

1. Introduction And Background

Zambia's mining sector remains a cornerstone of the national economy, contributing 17.4% to Gross Domestic Product (GDP) in 2024 and accounting for roughly 70% of export earnings, with copper alone generating approximately US$7.6 billion in exports in 2024. In addition, the 2024 Labour Force Survey indicates that the mining sector employs approximately 90,117 people, accounting for 2.3% of the country's employed population. Artisanal and small-scale mining (ASM) has emerged as a vital livelihood source, particularly in the Copperbelt and Northwestern provinces. According to the Ministry of Finance and National Planning 2023 Annual Economic Report, Zambia's copper sector experienced divergent trends between large-scale and small-scale operations.

While the nation's overall copper production declined by 8.5%, falling from 763,550 metric tonnes in 2022 to 698,566 metric tonnes in 2023, the small-scale sector showed notable resilience. Small-scale copper production increased by 7.9%, rising to approximately 34,087 metric tonnes from the 31,591 metric tonnes recorded the previous year. This growth is primarily attributed to increased processing activities at mine tailings' dumps, which allowed smaller operators to maintain output despite the operational and recapitalisation challenges that hindered mining houses.

Within this context, artisanal and small-scale mining (ASM) has become an increasingly important livelihood option in Zambia, especially in mining-dependent regions such as the Copperbelt and North-Western provinces. ASM is a long–established activity in the country and mirrors global trends, with the sector directly employing over 40 million people and supporting millions more through associated services, globally. In Zambia, between 25,000 and 50,000 people are estimated to be directly engaged in ASM, with many others benefiting indirectly through transport, equipment supply, mineral trading and related activities. The sector, therefore, plays a dual role as a source of income and as an informal safety net for populations with limited alternative livelihood opportunities.

Despite its socioeconomic relevance, ASM in Zambia remains characterised by informality and limited integration into formal markets. Existing studies and policy discussions on ASM activities have largely focused on environmental management, licensing and formalisation challenges, with comparatively less attention to how ASM minerals are traded once extracted. In the case of copper, there is limited systematic information on the structure and functioning of upstream supply chains, including the roles of intermediaries, pricing mechanisms, market access conditions and the distribution of value along the chain. This lack of supply chain visibility constrains effective policy responses and limits opportunities to improve transparency, inclusion and income outcomes for ASM operators.

At the same time, government recognition of ASM as a legitimate component of the mining sector has increased in recent years. The enactment of the Minerals Regulation Commission Act No.14 of 2024, which provides a formal definition of ASM and affirms citizen participation in mining activities, reflects a growing policy commitment to the sector. Similarly, the Government implemented the Geological and Minerals Development Act No.68 of 2025, which sets up the ASM fund. Thereby indicating political will to enhance ASM performance in the country. However, realising the potential of ASM to contribute to employment creation, inclusive growth and responsible mineral sourcing requires evidence-based interventions informed by a clear understanding of how the sector operates in practice.

Further, the relationship between ASM copper flows and international buyers has received insufficient attention. The field findings of this study confirm that Zambian ASM copper reaches international markets through at least three distinct pathways: indirectly via Chinese-owned international processors that export concentrates to China; through buyers linked to Australian, DRC, or South African off-takers; or through informal cross-border exports into the region. Despite these linkages, international companies purchasing Zambian copper have largely failed to extend their due diligence obligations upstream to the ASM level. This gap represents both a governance failure and a missed opportunity, as international buyers with responsible sourcing commitments could drive ASM formalisation if they required their Zambian suppliers to disclose and manage ASM sourcing risks.

It is against this background that this study sought to examine the upstream artisanal and small-scale copper supply chains in Zambia, with particular focus on the Copperbelt and North-Western provinces. The purpose of the study was to generate practical insights to inform policy development, programme implementation, and responsible sourcing initiatives.

2. Landscape Of Artisanal And Small-scale Mining In Zambia

2.1. Performance of Artisanal and Small-Scale Mining in Zambia

Artisanal and Small-Scale Mining (ASM) in Zambia is a long-standing livelihood activity in Zambia, providing employment and income opportunities for tens of thousands of people, particularly in rural and peri-urban areas. While reliable data are limited, available estimates indicate ASM supports livelihoods for over 500,000 Zambians (AMDC, 2017). According to the 2021-2024 Extractive Industry Transparency Initiative (EITI) reports, ASM production figures in Zambia remain sparse and unavailable due to non-compliance, despite the introduction of Mineral Output Statistical Evaluation System (MOSES). However, between 2021 and 2024, small-scale mining companies' production is estimated as follows:

Table 1: Copper Production in Zambia (Artisanal Small-Scale Production vs National Total) (2021 - 2024)

Year	Small-Scale Companies Production (Tonnes)	National Total (Tonnes)	Percentage Difference
2021	26,610	803,747	3.3%
2022	31,591	763,550	4.1%
2023	34,017.23	736,585	4.6%
2024	45,678.46	822,824	5.6%

Source: EITI Reports 2021-2024

The above figures represent only the formalised part of ASM mining. It does not include the non-reported informal mining volumes.

ASM has attracted considerable attention from policymakers and researchers due to its economic potential and its role in supporting livelihoods. However, much as the subject is important, there is no globally accepted definition of ASM. According to the World Bank (2024), Artisanal and small-scale mining is a term used to define a range of mining activities that employ basic tools for extraction and processing with a tendency toward high labour intensity. In Zambia, ASM is defined under the Minerals Regulation Commission Act (2024) as small-scale mining activities carried out by a Zambian citizen or a cooperative made up entirely of citizens, operating under a mining licence issued in accordance with Part III of the Minerals Regulation Commission Act, 2024. Such operations are legally recognised, subject to licensing, environmental approval and regulatory oversight, and are intended to enable citizens to access and benefit from mineral resources using limited capital and relatively simple mining methods.

In Zambia, copper is among the most important minerals extracted by artisanal miners, owing to the country's geological endowment and global copper demand. The International Copper Study Group (ICSG, 2025) identifies copper as a critical industrial mineral with widespread application in energy, transport and digital technologies.

2.2. Geographic Distribution of ASM Copper Activities

The distribution of ASM copper mining activity in Zambia shows marked concentration in specific provinces and sites. The majority of documented ASM copper operations occur within the Copperbelt

Province, especially near mine-waste dumps and sideline tailings around towns such as Chingola, Kitwe, Mufulira, Chililabombwe, Luanshya and Kalulushi. These locations benefit from proximity to large-scale mines and legacy infrastructure, which reduce extraction and transport cost hurdles associated with remote sites (Siaciti, 2022).

In contrast, activity in the North Western Province, including areas around Solwezi, Kasempa and Kalumbila, is less dense and often more dispersed, reflecting the combination of newer mining zones, stronger regulatory overlay and fewer accessible tailings. For instance, remote sensing and geospatial analysis estimate ASM concentrations of thousands in key Copperbelt districts, while many North-Western districts show lower site densities (Musukwa et al., 2023).

The spatial pattern suggests three linked operational drivers: (1) access to leftover materials (mine waste, tailings and spillage zones) alongside large-scale operations, (2) existing infrastructure (such as roads, power, transport hubs) which reduces cost and risk for ASM actors, and (3) institutional visibility, that is, ASM in heavily prospected zones tends to be documented more fully, reinforcing the concentration effect. In practical terms, this implies that efforts to engage the upstream supply chain must be tailored to high-density zones like the Copperbelt while also recognising that lower-density zones in North-Western may present access, transport and oversight challenges.

2.3. Organization and Operational Realities of ASM in Zambia

Artisanal and Small-Scale Mining (ASM) in Zambia is highly heterogeneous, ranging from informal individual miners using rudimentary tools to semi-mechanized cooperatives with limited processing capacity. Most ASM operations are family-based or organized in loose groups that share tools, labour and proceeds, reflecting the sector's low capital intensity and limited access to formal finance (Mwakacheya et al., 2019). Where miners are licensed, they commonly register as cooperatives, both to meet statutory requirements under the Minerals Regulations Commission Act (2024) and to pool resources for equipment and compliance costs. In practice, cooperatives exist largely on paper, often lacking financial management capacity, legal literacy and access to capital.

Production techniques remain predominantly manual, picks, shovels and hammers are common, though some sites in the Copperbelt and Northwestern Provinces use compressors, small crushers or rudimentary ball mills (Mwakacheya et al., 2019). The ore is extracted from open pits or shallow shafts, with minimal geological surveying or safety reinforcement. Production volumes are small and irregular, highly dependent on mineral grade, rainfall patterns and access to buyers. Because miners often lack storage or beneficiation facilities, ore is sold as soon as it is extracted, usually at the pithead or roadside to itinerant buyers or middlemen (Mulunda, Musonda, & Luwanga, 2015).

Licensing and regulatory engagement are limited. The majority of ASM operators function outside the formal legal framework due to the high cost and complexity of obtaining licences and environmental permits (Pearce, Lungu, & Mumba, 2023). According to Pearce, et al., (2023) obtaining am ASM license attracted a k900 fee and associated fees such as the Environmental Project Brief costing approximately k60,000 and the Zambia Environmental Management Agency (ZEMA) certification costing k13,000. Those who are licensed frequently depend on local government or traditional leaders to mediate land access and resolve disputes. Interactions with the Ministry of Mines and Minerals Development (MMMD) tend to occur mainly through inspection visits or enforcement exercises rather than proactive extension services (Government of Zambia, 2022). Consequently, there is little technical support on mining practices, occupational safety or business management.

Labour relations are informal. Workers are paid daily or by output, with few contractual protections or safety provisions. Women generally occupy auxiliary or lower-paid tasks such as crushing, washing and

sorting, while men dominate excavation and transport (Mwakacheya et al., 2019; Pearce et al., 2023). Child labour, though officially prohibited, persists in some areas, particularly during school holidays, when children assist in ore hauling or sieving (Adriana et al., 2012). Seasonality also influences operations where heavy rains often halt production, while dry months intensify competition for limited ore deposits.

Access to finance and technology remains a major operational constraint. Formal credit institutions regard ASM as high-risk and largely unbankable due to informality and lack of collateral (Pelon & Walser, 2009). As a result, traders often provide working capital or pre-financing arrangements, which in turn bind miners to particular buyers at unfavourable terms (Mulunda et al., 2015). Limited mechanization and inadequate energy supply further constrain productivity and prevent scale-up. Safety standards are largely self-regulated, with inadequate personal protective equipment (PPE) and no consistent training on environmental management (ZEMA, 2011).

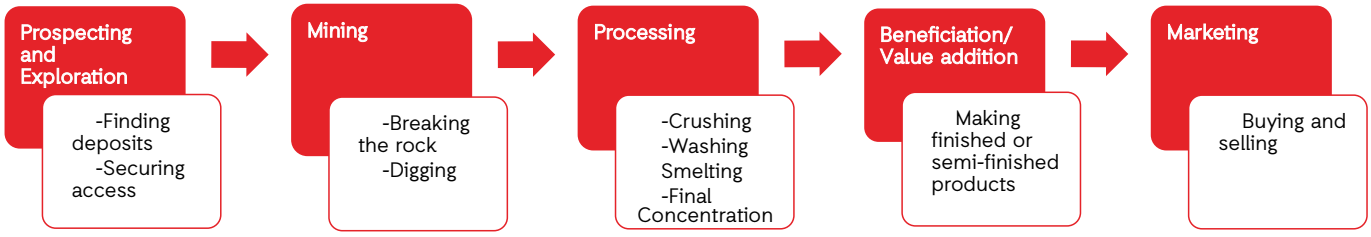
Despite these constraints, ASM miners demonstrate resilience and adaptive capacity. Evidence from existing studies suggests that ASM participation is largely driven by livelihood necessity in contexts of limited alternative employment, rather than by long-term occupational preference (Kaczmarska et al., 2025). Within these constraints, many miners exhibit entrepreneurial behaviors and a willingness to engage with formal systems where these reduce risk, improve earnings, or provide greater stability. Formalization should therefore be viewed as one of several possible livelihood improvement pathways, rather than a universal objective for all ASM participants (Mwakacheya et al., 2019). The presence of organized groups such as the Association of Zambian Women in Mining (AZWIM) shows emerging institutional frameworks that could anchor future reforms. However, realizing the sector's potential will require targeted interventions in capacity building, access to finance, market linkages and safer mining technologies.

2.4. Copper Value Chain and Supply Chain Dynamics

2.4.1. Actors in the Mining Supply Chain In Zambia

Understanding ASM copper requires situating it within Zambia's broader copper value chain, which includes exploration, extraction, processing, refining, and fabrication (Adriana et al., 2012). Figure 1 below depicts some key activities along the copper value chain. It highlights the broader copper value chain, including activities that fall outside the scope of this study. This study focuses specifically on the upstream supply chain, from extraction through to processing and smelting. It should also be noted that smelting is a distinct and critical stage not explicitly shown in Figure 1. It is addressed in the province-specific supply chain maps in Section 4.1.3. In addition, the supply chain differs geographically. In later sections, the variance between the Copperbelt and North-Western Provinces will be presented.

Figure 1: Copper Value Chain in Zambia



The mining value chain begins with prospecting and exploration. However, a firm wishing to carry out mineral exploration activities is required to obtain a licence. The second stage is the actual mining and the third stage is mineral processing. Given the nature and driving factors for ASM – informality, poverty and perception of a get rich quick activity (see Kaczmarska, et al., 2025; Mwakacheya, et al., 2019; Pelon and Walser, 2009) – they mainly operate at stage 2 (Mining) of the value chain. In Zambia, there are over 500,000 Artisanal Small-scale miners in Zambia both formally and informally. According to the Minister of Finance and National Planning in the 2026 speech 1498 ASM licenses (issued since 2023) are recorded as having possessed mining rights, with over 300 being licenses for gold mining as of 2025.

The third stage in the value chain is processing. Processing involves the removal of impurities from the mined ore to produce, for example, copper concentrates, copper blisters, copper anodes and copper cathodes (Mulunda, Musonda, & Luwanga, 2015). The activities of producing especially copper anodes and cathodes requires huge investments and as such is naturally performed by large scale mining firms with smelters such as Konkola Copper Mines and Chambishi Metal Smelters.

The fourth stage is mineral beneficiation. The stage involves metal fabricators that transform copper cathodes into semi-finished products like copper wire, copper bars, alloying and inductor coils and producers of finished products such as electrical Gadgets and Appliances (Mulunda, Musonda, & Luwanga, 2015). In Zambia, the fabricators in the copper value chain are produce mainly copper wire and include Metal Fabricators of Zambia (ZAMEFA), Neelkanth Cables, Uniflex Wire and Cable and ZALCO (Weate, Chabala, Mpofu, Sishemo, & Doppler, 2024). However, producers of finished products in Zambia are limited to a handful, like Elswedey Electric, which produces electrical transformers and substations, Non-Ferrous Metal Works, which produces mining products and small copper and Alloy foundries (Weate et al., 2024).

It is worthwhile to note that due to limited capacity at stage 3 (processing) and stage 4 (mineral beneficiation) the bulk of the copper mined in Zambia as well as refinery and smelter products like copper cathodes are exported mainly to China, Middle East, Asia and far East Asia (Kambole & Kambani, 2019). The buying and selling of products along the value chain takes place both domestically and internationally and this is mainly an activity that excludes the ASM sector, a few ASMs export their copper products (Mwakacheya, et al., 2019).

ASM activity is largely confined to the mining phase (stage 2), given the high capital and technological demands of processing and refining (Mulunda, Musonda & Luwanga, 2015). Large-scale mining (LSM) companies dominate midstream and downstream segments, benefiting from integrated operations and established export logistics while artisanal miners supply low-grade ores to informal traders (buyers) or processors.

ASM actors rely on intermediaries to aggregate and transport their ore or concentrates to processors and smelters. These intermediaries coordinate trade logistics and manage cash flow but wield disproportionate market power.

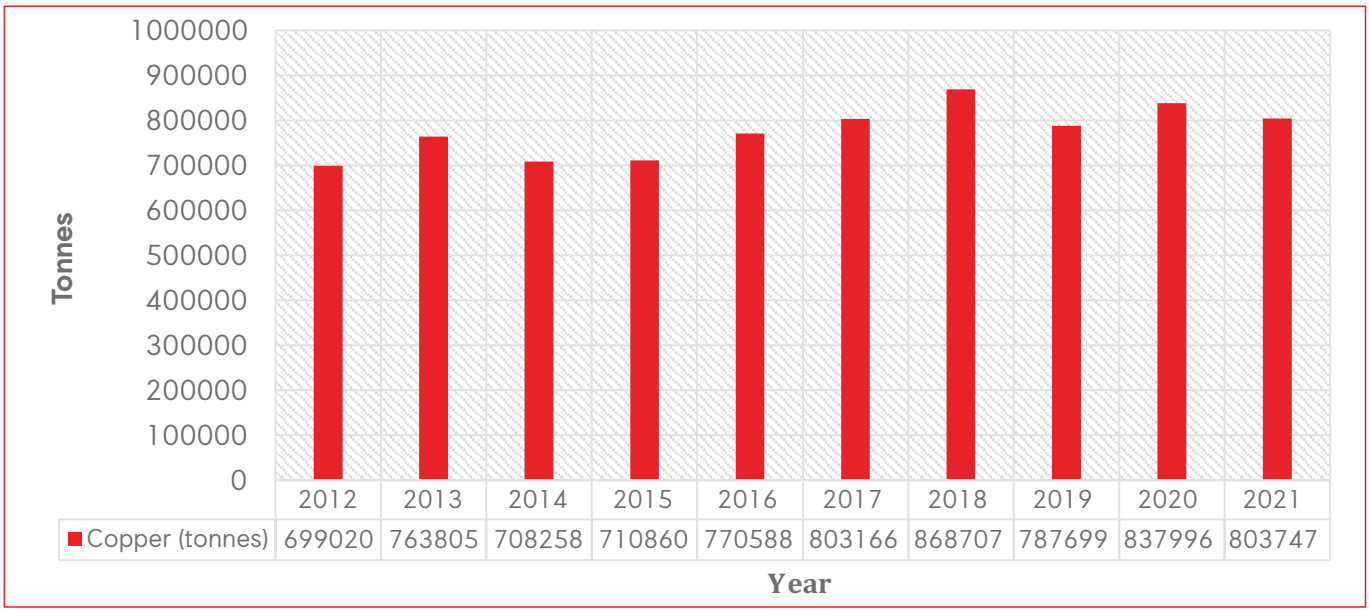
Power asymmetries define relationships along the value chain. The ASM tend to have very low power, something evident in the price negotiations with buyers who offers lower prices than ASM actors would consider genuinely fair (Mwakacheya, et al., 2019). The relationship appears to be opposite between buyers and sellers of copper anodes and cathodes. This is evident in the perceived unfairly high price of copper cathodes charged by mining firms to local fabricators (Weate, et al., 2024). Therefore, it is logical to conclude that the structure of relations among actors in the copper value chain is characterised by power which is not evenly distributed.

2.5. Market, Pricing and Value Addition

2.5.1. Copper Production, Value Addition and Trade

The Government of the Republic of Zambia (GRZ) aspires to achieve 3 million metric tonnes of annual production by 2030. However, the sector's performance has remained below the target. Figure 2 below shows that Zambia's copper production has remained almost stagnant, increasing by only 104,726 tonnes over the period 2012-2021. In 2021, Zambia's total smelter production was 760, 000Mt of copper blister and anodes (Weate, et al., 2024). From the 760,000Mt, Zambia produced 350,000 Mt of cathodes and exported the balance for further processing outside (Weate, et al., 2024). Of the total cathodes produced, 95% are exported to mainly into China, Middle East, Asia and Far East Asia (Kambole & Kambani, 2019). The domestic downstream industry (fabricators) in 2021 only absorbed about 15,000 Mt of cathodes into copper rod, wire and cable (Weate, et al., 2024).

Figure 2: Zambia's Copper Productions Output (2012 - 2021)



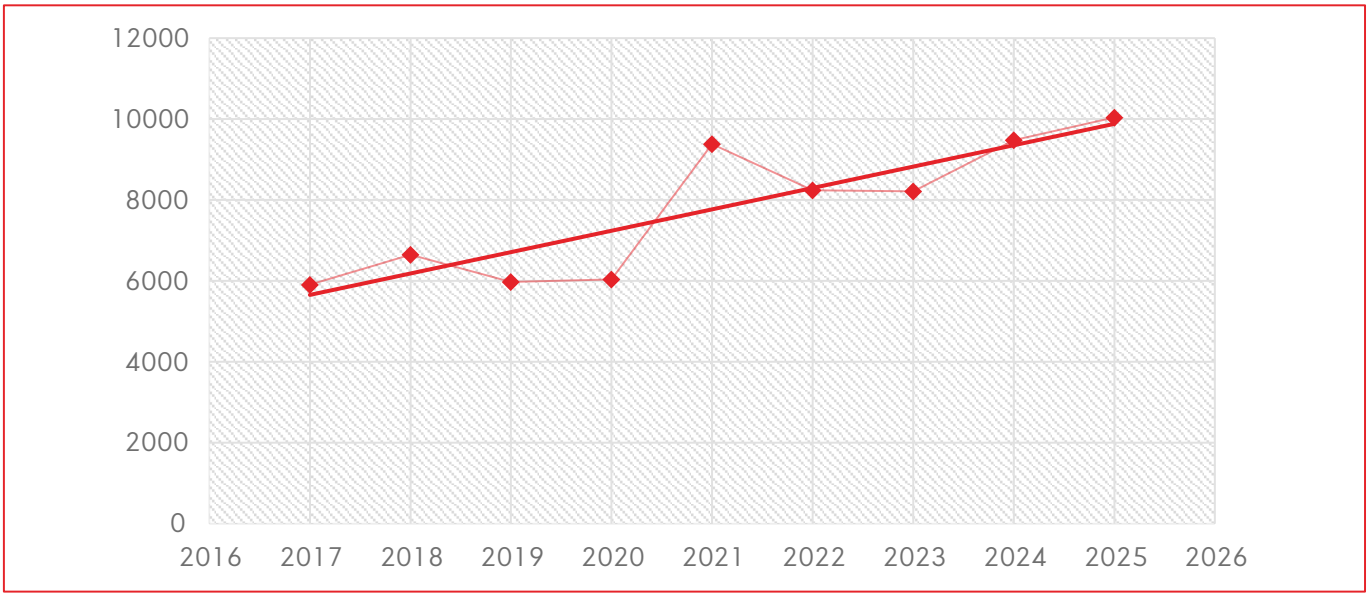
Source: (Ministry of Mines and Minerals Developments, 2022)

ASMs in Zambia participate in copper exports. However, only a handful of ASMs export their copper. A study conducted in 22 districts across Eastern, Central, Luapula, Copperbelt, Southern and Lusaka Provinces found that only 7% of ASMs exported their minerals to other countries (Mwakacheya, et al., 2019). The rest of the ASMs sold their minerals domestically to foreign nationals at prices considered lower than fair (Mwakacheya, et al., 2019).

2.5.2. Price mechanism of ASM vis-à-vis international market prices

Figure 3 below shows the international copper prices per ton over the period 2016-2025.

Figure 3: Copper Prices for the Period June 2017 - 2025 (US$/ton)



Source: https://www.cavicel.com/copper-prices/

Over the period, copper prices on the international market have fluctuated. However, between 2016 and 2025, an upward movement in prices is observed with prices increasing from US$ 5,907.50 in 2017 to US$ 10, 040 in 2025. Given that the majority of ASMs don't export but sale their minerals domestically (Mwakacheya, et al., 2019), the export of minerals in Zambia remains skewed towards large scale miners. Therefore, only a handful of ASMs are likely to benefit from higher international prices.

ASM operators in Zambia occupy a structurally weak position within the copper value chain leading to copper pricing within the ASM ecosystem being opaque and largely determined by middlemen and buyers who operate informally or semi-formally. They have minimal bargaining power and frequently sell copper ore at prices well below market value (Mwakacheya et al., 2019) without reference to London Metal Exchange (LME) or domestic large-scale mining (LSM) prices, even after accounting for grade or impurities. As a result, ASM producers function as price takers rather than market participants. Although global copper prices have increased substantially in recent years, from USD 5,907 per tonne in 2017 to over USD 10,000 in 2025 (ICSG, 2025), ASM miners typically sell at prices far below these benchmarks. The difference arises from deductions for ore grade, impurities, transport, and the risk associated with informal operations (Mwakacheya et al., 2019). In contrast, large-scale producers and fabricators hold significant leverage in price determination.

This lack of price transparency limits miners' ability to negotiate and reinforces exploitative relationships with buyers. Unlike large-scale mines that sell under long-term contracts referencing the London Metal Exchange (LME) price, ASM miners rarely have access to verified pricing data and seldom transact using contracts that reference recognized benchmarks or independent assays, resulting in information asymmetry and thin bargaining power (Hilson, 2009).

In terms of value addition, local beneficiation is minimal. Zambia's ASM copper is typically sold as raw ore or semi-processed concentrate, with limited linkages to manufacturing industries (Kambole & Kambani, 2019). Although policies such as the Local Content Strategy (2022) and the National Industrial Policy (2018) encourage domestic value addition, high energy costs, limited finance, and licensing hurdles

prevent ASM operators from upgrading to higher value chain segments. Additionally, the domestic copper fabrication industry remains small, focusing mainly on intermediate products such as wire and cable (Weate et al., 2024). This limited capacity reinforces Zambia's dependence on exports and restricts local value addition, further marginalizing ASM producers.

2.6. Gender and Social Inclusion in ASM

The ASM sector has created economic opportunities for women such as paid work and ownership of mining sites (Kaczmarska, et al., 2025; Mwakacheya, et al., 2019). However, the ASM has not been spared from gender inequality. Ownership of mining sites and assets related to ASM sector are largely controlled by men while women are side-lined (Pearce, Lungu, & Mumba, 2023). The argument of women being slide lined is confirmed by Mwakacheya, et al., (2019) that finds that only 17% of women own mining sites in the ASM sector compared to 83% for men. The reasons for women being slide-lined or pushed into low-income roles include the high cost of acquiring mining rights, price exploitation by mineral buyers and cultural and traditional beliefs such linking difficulties in finding minerals to women entering mining sites during their menstrual cycle (Pearce, et al, 2023). According to Pearce et al. (2023), obtaining an ASM license attracted a K900 fee and associated fees, such as the Environmental Project Brief costing approximately K60,000, and the Zambia Environmental Management Agency (ZEMA) certification costing K13,000. Hence, women are more disadvantaged, considering that the majority of women mainly operate in low income streams. Interacting with several Government agencies creates entry barriers, especially for an activity that is predominantly rural and likely to be performed by a less educated population. Mining activities in the ASM sector are often unsuitable for women workers, with mining owners lacking measures to minimise the negative impact on women (Mwakacheya et al., 2019).

Further, Section 132 of the Labour Code Order of 1992 restricts employment of women in the mines through the provision that states that: "No woman shall be employed on underground work in any mine except with the written approval of the Labour Commissioner in such circumstances as the Minister may by regulation prescribe" such as:

- Women holding managerial positions who do not perform manual work;
- Women in health or welfare services;
- Women training underground as part of their studies;
- Women who occasionally enter underground parts of the mine for non-manual tasks.

Although the Employment Code Act, 2019, prohibits discrimination based on sex and generally promotes equal employment opportunities, the specific mining restriction has not yet been fully repealed and replaced by the current mining health and safety legislation. Henceforth, women remain discriminated against in underground mining activities unless they have a permit, which is not the case for me. Although the law does not entirely affect ASM as they are largely informal, it remains important especially that the main goal is to formalise ASM activities.

2.7. Governance, Transparency and Monitoring Tools

Zambia's governance framework for ASM includes the Minerals Regulation Commission (MRC) Act No.14 of 2024 and the Geological and Minerals Development Act. These frameworks provide for licensing, environmental management, funding and monitoring of ASM activities in the country.

Digital tools such as FlexiCadastre (for licence management), ZIMIS (Zambia Integrated Mining Information System) and MOSES (Mineral Output Statistical Evaluation System) were introduced to improve transparency and reduce leakages. However, many ASM actors remain outside these systems due to lack

of digital literacy, weak enforcement, and limited local government capacity (IGF, 2017; IEA, 2016). Consequently, production and exports from ASM sources are underreported, undermining both policy oversight and revenue mobilisation. According to EITI (2023), ASM compliance stood at 0.021% against more than 4000 ASM license holders.

International standards, such as the OECD (Organisation for Economic Co-Operation and Development) Due Diligence Guidance for Responsible Supply Chains of Minerals (2016), Extractive Industries Transparency Initiative (EITI), Internation Conference on Great Lakes Region (ICGLR) Certification Mechanism, and the African Mining Vision (AMV), provide normative frameworks for responsible mineral sourcing and traceability. While Zambia participates in these initiatives, their application remains limited to LSM operations. Extending traceability and due diligence principles to ASM copper would help integrate small producers into legitimate global supply chains, but this requires simplified systems and practical incentives.

2.8. Synthesis of Evidence and Knowledge Gaps

The reviewed literature paints a coherent picture of a sector that is socially important and economically active yet structurally marginalised within Zambia's copper economy. The following cross-cutting gaps emerge around this study:

- **Supply chain visibility and actor mapping:** There is limited granular evidence tracing material and money from the pit to the first processing and export. Most studies focus on production and licensing but do not trace the full upstream copper ASM supply chain, from extraction through trading, processing and export. Intermediary types, services and margins are insufficiently documented (Mwakacheya et al., 2019; Pelon & Walser, 2009).
- **Price formation and fairness:** There is little verified documentation of how grade, moisture, logistics and risk deductions are calculated and communicated at the point of sale. This makes it difficult to propose realistic transparency solutions (Hilson, 2009; ICSG, 2025).
- **Gender-disaggregated participation and outcomes:** Roles, incomes, asset control and governance participation by women are under-quantified; safeguarding and voice in mixed settings are recurring concerns (Mwakacheya et al., 2019; Pearce et al., 2023).
- **Policy-practice disconnect:** Progressive laws and systems exist, but implementation is uneven with costly licensing and compliance and limited capacity of institutions to deliver consistent services (Government of Zambia, 2022; IGF, 2017).
- **Data systems and use:** Tools like MOSES and FlexiCadastre are not yet adapted to ASM realities with variable coverage and data quality, and limited actionable use of data (IEA, 2016; IGF, 2017).
- **Lack of spatially grounded comparative analysis:** Existing literature often treats ASM as a homogeneous activity, overlooking site-specific differences in geology, market linkages and governance structures such between Copperbelt and North Western Provinces. This limits the design of localized interventions responsive to different ASM realities.
- **Feasible value addition pathways:** There is limited analysis of realistic, staged entry points for ASM to upgrade within the chain, including the practical requirements (permits, power, capex/opex) and bankable offtake models (Kambole & Kambani, 2019; Mulunda et al., 2015).

The reviewed literature paints a picture of Zambia's ASM copper sector as dynamic but under-supported, operating in an environment where policy ambition far exceeds institutional capacity. Informality, asymmetrical market relationships, and gender inequities remain defining features.

2.9. Policy, Legal and Institutional Context of ASM in Zambia

Zambia's ASM copper subsector operates within a broad national development framework that links mineral resource governance to industrialisation, job creation and inclusive growth. At the top of this hierarchy are the Vision 2030 and the Eighth National Development Plan (8NDP, 2022–2026), both of which articulate the government's aspiration to transform Zambia into a diversified, export-oriented middle-income economy driven by sustainable mining and manufacturing. The 8NDP specifically recognises ASM mining as an important pillar for inclusive economic participation and local value addition. It calls for strengthening mineral governance, promoting responsible mining practices and formalising ASM operations to enhance productivity and environmental stewardship. These frameworks collectively provide the overarching policy direction guiding the sector's development and align Zambia's resource governance with global sustainability and gender equity goals.

At the sectoral level, the Minerals Regulation Commission Act (MRCA) of 2024 remains the principal legal framework governing the exploration, extraction, processing and trading of mineral resources. The Act provides for the issuance of artisanal and small-scale mining licences, environmental and safety compliance, and mineral trading permits. However, implementation challenges persist, particularly in relation to administrative bottlenecks, overlapping institutional mandates and limited awareness among ASM operators. The Act is complemented by the National Mineral Resources Development Policy (2022–2027), which seeks to promote transparency, value addition, gender inclusivity and environmental protection across the mining value chain. The policy explicitly acknowledges ASM as a critical subsector and calls for structured support to improve access to finance, technology and markets. In tandem, the Geological and Minerals Development Act (2025) provides for geological mapping and data management as well as provide for the establishment of the Artisanal and Small-Scale Mining (ASM) Fund, which are vital for evidence-based planning and participation of ASM, while the Mineral Trading Regulation (2024) and the MOSES (Mineral Output Statistical Evaluation System) are designed to enhance traceability, formal trading, and revenue monitoring. Although these instruments represent important strides, they are constrained by limited enforcement capacity, fragmented data systems and the persistence of informal trading channels.

Recently, Zambia enacted the Geological and Minerals Development (Local Content) Regulations, 2025 through Statutory Instrument No. 68 of 2025 taking effect on 1 January 2026. The regulations require mining right holders to increase local procurement, services, and employment in order to expand citizen participation in the mining value chain. The regulations set phased local procurement targets, starting at 20% of annual spend by mid-2026 and rising to 40% by mid-2031, apply a 15% preference margin for local companies, and reserve selected non-core services for Zambian firms. Mining companies must also implement supplier development programmes, submit regular reports and comply with enforcement measures, with penalties for non-compliance. The policy objective is to translate mining activity into jobs, enterprise development and broader industrial growth.

For ASM, the regulations create indirect but important opportunities. Many ASM activities and associated enterprises fall within service areas targeted for local participation, including secondary recovery, haulage, waste handling, site services and basic processing. The framework strengthens incentives for ASM formalisation, as registered cooperatives and small firms are better positioned to engage with mining houses seeking to meet local content thresholds. At the same time, the regulations raise performance expectations, requiring ASM-linked suppliers to meet standards on safety, quality, and reliability. Overall, the local content regime provides a pathway for ASM to move from informal activity toward structured integration within the mining value chain, provided capacity building and access to finance keep pace.

Several complementary policy instruments shape the enabling environment for ASM. The Local Content Strategy provides the overall framework that promotes domestic procurement and participation of

Zambian-owned enterprises across the mining value chain, while the National Industrial Policy and Micro, Small and Medium Enterprises (MSME) Policy encourage value addition and support for small businesses. The Citizens Economic Empowerment Act No. 9 of 2006 and the Zambia Development Agency (ZDA) Act No. 17 of 2022 provide financial and institutional mechanisms to support citizen-led enterprises, including mining cooperatives. The National Gender Policy underlines gender equality as a cross-cutting development priority, committing to address structural barriers that prevent women from participating fully in productive sectors such as mining. Together, these instruments provide a policy framework that promotes inclusivity, industrial diversification, and equitable participation in economic activities.

Zambia's policy environment is also influenced by several international and regional frameworks. The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals provides global standards for traceability and responsible sourcing, EITI promotes accountability in mineral revenue flows and production reporting. The African Mining Vision (AMV) advocates for integrating mining into national development frameworks, with a focus on linkages, beneficiation, and gender-sensitive governance. The International Conference on the Great Lakes Region (ICGLR) Certification Mechanism aims to curb the trade in conflict minerals through regional certification and due diligence systems. These frameworks collectively shape Zambia's obligations and approaches to transparency, responsible sourcing and market access, which are increasingly crucial in aligning ASM operations with international expectations and investor requirements.

Institutionally, the Ministry of Mines and Minerals Development (MMMD) remains the lead authority overseeing mining regulation, supported by the Minerals Regulation Commission and the Geological Survey Department. The Zambia Revenue Authority (ZRA), the Ministry of Finance and National Planning, and the Bank of Zambia (BoZ) contribute to fiscal oversight, mineral trade regulation, and foreign exchange monitoring. The Zambia Environmental Management Agency (ZEMA) is responsible for environmental compliance and monitoring mine closures, while the Ministry of Labour enforces occupational safety and health standards. Other important actors include the Citizens Economic Empowerment Commission (CEEC), which facilitates financing and business support, and local authorities, which play a role in land use planning and coordination at the community level. On the non-state side, organisations such as the Federation of Small-Scale Mining Associations of Zambia (FSSMAZ) Association of Zambian Women in Mining (AZWIM), the Zambia Association of Manufacturers (ZAM) and the Zambia Chamber of Commerce and Industry (ZACCI) provide advocacy and capacity-building support. Civil society actors such as Oxfam Southern Africa, ActionAid Zambia, Publish What You Pay and the Zambia EITI Secretariat contribute to policy dialogue and transparency and accountability initiatives.

Despite this robust legal, policy and institutional architecture, several challenges persist. Overlaps between institutions, inconsistent enforcement and limited inter-agency coordination weaken the effectiveness of regulation. The implementation gap between policy intent and practice remains wide, particularly regarding licensing simplification, gender integration and value addition at the ASM level. Awareness of due diligence frameworks among ASM actors is still low, and enforcement mechanisms are under-resourced. Furthermore, gender commitments, while present in policy, are seldom operationalised through targeted budgets or capacity support. These gaps highlight the need for a more coherent, inclusive, and practical approach to policy implementation that aligns ASM development with broader economic diversification and responsible sourcing objectives.

Of relevance is the ICGLR Certification Mechanism. Field evidence indicates that some ASM copper from the Copperbelt province is exported to the Democratic Republic of Congo, and some is exported informally. This creates a direct and live risk: copper exported without documentation may be absorbed into ICGLR-certified supply chains on the DRC side, undermining regional traceability systems. Zambia's engagement with the ICGLR must extend beyond policy participation to active monitoring of informal cross-border mineral flows, particularly from border-adjustment mining areas.

In summary, the policy, legal and institutional landscape provides a solid foundation for formalising and integrating ASM into Zambia's mineral economy. However, translating this framework into tangible improvements requires stronger coordination, decentralised capacity and gender-responsive programming. This study, therefore, uses these policies not only as reference points but also as benchmarks to assess how effectively they are reflected in field realities and supply chain practices across the Copperbelt and Northwestern provinces.

3. Methodology

This section outlines the methodological approach used to conduct the ASM Copper Supply Chain Mapping study. It describes the study area and scope, the research design, the sampling strategy, the data collection and analysis procedures, and the ethical considerations. The approach was designed to meet the study's objectives, as defined in the Terms of Reference, with an emphasis on participatory, gender-sensitive, and evidence-based methods.

3.1. Study Areas and Scope

The study was conducted in two provinces, namely Copperbelt and North-Western, covering six (6) districts with known artisanal and small-scale copper mining (ASM) activity: Kitwe, Chingola, Kalulushi, Solwezi, Mwinilunga and Kalumbila. These districts were purposively selected for their concentration of ASM operations, proximity to large-scale mines, and relevance to the national copper value chain.

The scope encompassed upstream ASM copper supply chains, from extraction to the first buyer or processor, with linkages to export where information was available. The work addressed four pillars: supply chain mapping; market, pricing, and value addition; policy and institutional context; and gender analysis.

Table 2: Distribution of Target Districts by Province and Mining Activity

Province	District	Key ASM Activity/Commodity
Copperbelt	Kitwe	Copper scavenging on tailings and dumps
	Chingola	ASM extraction near mine waste dumps and slug heaps
	Kalulushi	ASM activity operating on waste rock
	Solwezi	ASM near Kansanshi and surrounding settlements
North-Western	Kalumbila	ASM near Sentinel/Lumwana corridor
	Mwinilunga	Emerging ASM and trader networks

3.2. Study Design

The study adopted a mixed-method design, integrating qualitative and quantitative approaches to ensure a comprehensive understanding of ASM dynamics. The design combined a structured survey of ASM miners, key informant interviews, gender-segregated focus group discussions, direct site observations and a targeted desk review. This approach enhanced reliability by triangulating data from multiple sources and perspectives.

- Qualitative components captured perceptions, practices, and relationships among ASM actors, policymakers and regulators, and local communities through interviews, focus group discussions (FGDs) and observations.
- Quantitative components provided measurable insights into production trends, income and gender participation, validated against existing studies.

This design ensured the study generated both descriptive and analytical evidence on ASM copper supply chains, aligned with the requirements for policy, gender and market analysis.

3.3. Target Population and Sample Size

The target population included key stakeholders directly or indirectly involved in ASM copper production and trade. These comprised:

- ASM miners, site owners, traders and processors
- Local government officials and district mining officers
- Traditional leaders and community representatives
- Government and regulatory institutions: Ministry of Mines and Minerals Development and others
- Private sector and civil society actors engaged in ASM and related advocacy and governance

A total of 27 key informant interviews (KIIs) and 7 Focus Group Discussions (FGDs) were conducted, involving 105 participants. FGDs were disaggregated by gender to ensure inclusive participation and mitigate bias in responses.

3.4. Sampling Technique

A combination of purposive and snowball sampling techniques was employed.

- Purposive sampling was used to identify participants with expert knowledge or direct involvement in ASM copper operations.
- Snowball sampling facilitated the identification of additional actors such as informal traders and processors who operate without formal registration.

This approach ensured that the study captured both visible and hidden actors in the ASM copper supply chain, including women miners and community-based traders, who are often overlooked in formal datasets.

3.5. Data Collection and Analysis

Data collection integrated both primary and secondary sources:

- Primary data was gathered through a structured Miner survey questionnaire, semi-structured KIIs, FGDs and site observations. Field visits were conducted in the six selected districts to document operational realities, trading activities, pricing structures, and local value-addition activities.
- Secondary data included policy documents, previous ASM studies, EITI reports and other relevant literature reviewed during the inception and desk review phases.

Data analysis followed two complementary paths:

- Qualitative data was analysed thematically, identifying key patterns in governance, gender and market linkages.
- Quantitative data were examined using descriptive statistics, triangulated with findings from KIIs and FGDs.

Visual tools such as supply chain maps, actor relationship diagrams and flow charts were developed to support interpretation and traceability of findings.

3.6. Limitations

While extensive efforts were made to ensure inclusivity and representativeness, several limitations were encountered:

- **Geographic constraints:** Access challenges and dispersed ASM sites limited broader coverage in remote areas.
- **Data reliability:** Absence of formal records on production and trade values at ASM sites necessitated triangulation through interviews and secondary sources.
- **Time constraints:** Data collection was implemented within tight timelines aligned with the project work plan, affecting the depth of engagement in certain districts.

Despite these limitations, the data collected was sufficiently robust and validated through cross-checking between multiple respondent categories and documentary evidence.

3.7. Ethical Considerations

Ethical principles guided the entire study process. Informed consent was obtained from all participants before interviews or discussions. Respondents were assured of confidentiality, voluntary participation and the non-attributive use of their inputs. Special attention was paid to gender sensitivity during FGDs, ensuring women were provided safe spaces for participation and that facilitators were trained in gender-responsive interviewing techniques.

4. Findings And Analysis

4.1. Provincial Context and ASM Profiles

This section presents the provincial context and field findings from the Copperbelt and North-Western Provinces, where ASM copper activities were observed. Data is drawn from field surveys, key informant interviews (KIIs), focus group discussions (FGDs) and site observations conducted between August and September 2025. The findings capture demographic characteristics, organisation of mining activities, production methods, gender participation and market linkages in each province.

4.1.1. Copperbelt Province: The Black Mountain ASM System

4.1.1.1. Site Context

The Copperbelt represents the historical and industrial heart of Zambia's copper economy. The study focused on the Black Mountain site in Kitwe, a legacy slag dump resulting from decades of large-scale mining and smelting. The site hosts a dense concentration of ASM miners engaged in recovering copper-bearing slag, rivets, and, in some cases, chrome. Other places visited include Chingola and Kalulushi.

ASM activities at Black Mountain are semi-structured yet informal. Access to the site is controlled through local agreements with miner groups, yet most production occurs outside formal licensing frameworks.

4.1.1.2. Demographic Profile

Field data show that youths aged 16–24 years constitute approximately 90% of the diggers. The majority are single, male and have attained education up to Grade 9. Many have been involved in ASM for three to four years, with entry into mining driven by unemployment and limited livelihood alternatives. Older miners, who typically have more experience, work independently or in smaller teams.

Box 1: Youth participation, school dropout and child labour risk in ASM at Black Mountain

Field findings highlight a significant concentration of young people in ASM activities at Black Mountain, with most diggers aged between 16 and 24. Many reported having left school at Grade 9, despite the existence of a national free education policy in the past few years. This pattern points to structural barriers beyond school fees, including household poverty, pressure to contribute to family income, limited access to secondary school infrastructure, and weak transitions from basic education to skills training or employment.

The presence of participants below the age of 18 raises child labour and safeguarding concerns. Thereby, this goes against the Worst Forms of Child Labour Convention, 1999 (No. 182), which requires the elimination of the worst forms of child labour for all persons under 18 years old.

While ASM activities at Black Mountain are informal and group-based, there are no mechanisms in place to verify age, enforce minimum age requirements or provide protection for underage participants. Entry into ASM is largely self-directed and shaped by peer networks, with younger participants often joining existing groups led by older youths.

Field discussions further indicate that livelihood pressure is the primary driver of early school exit. ASM offers immediate, visible income, even if irregular and low. For some youths, participation also provides social recognition and a sense of independence that are otherwise difficult to attain in contexts of limited employment opportunities. These social and economic incentives contribute to continued engagement in ASM despite exposure to physical risk, income insecurity and weak legal protection.

These findings suggest that child labour risks in ASM are closely linked to broader livelihood and education system challenges rather than isolated household decisions. Addressing these risks requires integrated responses that combine safeguarding measures at ASM sites, stronger links between education and livelihood pathways after Grade 9, and targeted youth support that offers viable alternatives to hazardous informal work.

4.1.1.3 Organisation and Work Practices

- Miners work in groups of 13 to 15 members, operating in defined sections of the dump.
- Some groups are in the process of registering cooperatives, but formal recognition remains limited.
- The older, more experienced diggers tend to operate independently, often acting as informal supervisors or intermediaries between younger miners and buyers.
- Each group owns basic tools, namely picks, shovels and pinch bars, and shares equipment among members.

Box 2: Secondary recovery and ASM copper production at Black Mountain (Nkana Slag Dump)

Secondary Recovery and ASM Copper Production: The Black Mountain Example
A significant share of ASM copper output comes from secondary recovery. This involves reprocessing historical slag dumps and tailings rather than extracting fresh ore. The most visible case is the Black Mountain, also known as the Nkana Slag Dump, located in Kitwe.

Resource magnitude
The Nkana slag dump alone historically held more than 20 million tonnes of smelter slag. Average grades are estimated at about 1.2 percent copper, with cobalt grades ranging from 0.34 percent to 4.5 percent.

Operational model
Public authorities allocated sections of these dumps to youth cooperatives and local consortiums. These groups work with private capital providers who finance excavation, hauling and processing. Material is transported to existing processing facilities rather than treated on site.

Implications for production capacity
Secondary recovery removes the need for exploration and mine development, enabling rapid entry into production. Across the Copperbelt, including Nkana, Mufulira and Luanshya, slag dumps and tailings are estimated to contain tonnes of recoverable material. At prevailing grades, this represents a latent feedstock capable of yielding several hundred thousand tonnes of copper metal over a short to medium time horizon, subject to processing efficiency and market conditions.

4.1.1.4. Production and Output

Diggers focus on extracting slag and rivets, which are sold in raw form. Chrome is sometimes collected as a secondary product and yields higher income. On average, a team loads two tipper trucks per week, earning around K10,000 per truck as agreed with the buyer. The material is sold to local buyers (middlemen) who provide small cash advances for meals or logistics, deducted from final payments.

4.1.1.5. Pricing and Payments

Prices are set through verbal negotiation with no formal contracts. The diggers have a limited understanding of copper grades or market indices such as the London Metal Exchange (LME). As such, the middlemen determine prices based on visual estimation of copper content. Payment irregularities are common, with miners often receiving less than the agreed amount and, in some cases, not being paid at all, particularly among new entrants lacking experience or bargaining power.

4.1.1.6. Processing and Market Flow

Buyers clean and aggregate the slag before selling it to Chinese-owned processors located in Kitwe's industrial area and Chambishi. These processors crush, grind, and produce copper concentrates, which are primarily exported to China. The current export duty waiver on concentrates incentivises this flow. When the waiver is lifted, processors tend to redirect material to Sino Metals and other domestic off-takers.

4.1.1.7. Gender Participation

Women's involvement at Black Mountain is very minimal. Most women operate as food vendors and small traders, selling water and meals to miners. Physical mining tasks are considered unsuitable for women due to the manual intensity of the work and cultural perceptions surrounding decency, as miners often wade through water and mud. The absence of safety infrastructure and protective gear further limits women's participation in extraction.

4.1.1.8. Health and Safety Conditions

No safety standards are observed at the site. Personal protective equipment (PPE) is absent, and miners work without helmets, gloves or boots. There are no first-aid facilities or designated safety marshals. As such, injuries and fatigue are common, but incidents go unreported due to a lack of formal oversight.

4.1.1.9. Government Oversight

The site has no active presence of the Ministry of Mines and Minerals Development (MMMD) or local mining inspectors. Furthermore, the miners stated that there have been no visits from government inspectors. In addition, none of the miners interviewed were aware of the Mineral Output Statistical Evaluation System (MOSES). Field findings further indicate that even where awareness was to be improved, practical barriers would remain. Use of MOSES requires a valid mining licence number and a Taxpayer Identification Number (TPIN), which most ASM operators do not possess due to informality. As a result, ASM production and transactions remain largely outside official reporting systems. This regulatory invisibility has enabled informal networks to independently manage site access, production, and sales, while limiting government institutions' ability to accurately capture production data or strengthen traceability at the ASM level.

Table 3: Summary of Copperbelt ASM Profile

Attribute	Observation
Site Type	Slag dump (Black Mountain), semi-organised informal mining
Main Material	Copper-bearing slag and rivets; small quantities of chrome recovered incidentally
Dominant Age Group	16–24 years
Group Structure	13–15 members; informal groups and emerging cooperatives
Tools Used	Picks, shovels, pinch bars
Average Output	Two tipper trucks per week (K10,000 per truck)
Pricing Mechanism	Negotiated; no LME reference
Buyers/Processors	Local middlemen → Chinese processors (Kitwe, Chambishi)
Gender Roles	Women are mainly in the vending and catering, with very minimal mining participation
Safety and Oversight	No PPE; no government inspection
Formalization Status	Informal with low awareness of licensing and the MOSES system

Note: Chrome is recovered opportunistically alongside copper-bearing slag and rivets. It is not a primary target mineral at Black Mountain and does not materially shape the ASM copper supply chain analysed in this study.

4.1.2. North-Western Province: Solwezi, Kalumbila and Mwinilunga

4.1.2.1. Site Context

Solwezi and Kalumbila are newer, less dense, and often more dispersed ASM sites, reflecting the combination of newer mining zones, a stronger regulatory overlay, and fewer accessible tailings. On the other hand, Mwinilunga represents a growing ASM copper mining frontier, situated in a region with accessible primary deposits. Activities occur in rural villages and forested areas, often on family-owned or customary land. The proximity to rivers enables small-scale panning and ore washing, though flooding and water management pose recurring challenges.

4.1.2.2. Demographic Profile

ASM operations in North-Western involve a diverse mix of youths and older adults, including family members working together. Many miners are from the local area, but some youths migrate from nearby towns seeking short-term income. Men lead most extraction activities, while women support through washing, sorting and vending.

4.1.2.3. Organization and Work Practices

- Miners form small groups of around 10 members, usually from the same village or family.
- Group members share tools and divide proceeds based on pre-agreed arrangements.
- Work is seasonal, with production slowing during heavy rains when pits flood.

4.1.2.4. Tools and Equipment

Miners use manual tools such as picks, hammers, shovels and iron bars. Lack of water pumps is a major limitation, as there are instances pits often filling with water, forcing miners to halt operations. This is more particularly in Mwinilunga.

4.1.2.5. Production and Market Flow

The extracted copper ore is sold to buyers who visit mining sites or the districts. The buyers are mainly small-to medium-scale traders who aggregate ore from multiple ASM sites and transport it to processors. They operate with limited infrastructure and transact largely in cash without formal contracts. They evaluate the ore visually and determine prices based on perceived grade and transport distance. Given the long distance to processing facilities win the Copperbelt, miners are offered significantly lower prices. Ore is transported for processing in Kitwe, Chambishi, or Ndola.

Processing capacity for ASM in North-Western Province is minimal. Field findings and KIIs confirm the absence of operational copper processing facilities accessible to ASM miners within the province. Large-scale mining operations in the area operate closed processing systems that do not accept ASM ore. As a result, ASM production from North-Western Province is not processed locally.

Processing therefore takes place primarily in the Copperbelt, where buyers transport aggregated ASM ore to established facilities in Kitwe, Chambishi and Ndola. These facilities are privately owned and operated, with ownership predominantly linked to foreign-invested companies, including Chinese-owned or Chinese-affiliated processing firms, alongside a small number of locally registered entities. None of the processing facilities identified are owned or operated by ASM groups.

The absence of nearby processing capacity increases transport costs and reduces miner bargaining power, contributing to lower prices offered at ASM sites in North-Western Province.

4.1.2.6. Pricing and Payments

Pricing is purely negotiable, with no reference to LME benchmarks. Buyers exploit distance and miners' lack of knowledge to offer 'take-it-or-leave-it' prices, with payments made in cash and transactions undocumented.

4.1.2.7. Gender Participation

Women participate more actively in Mwinilunga than in the Copperbelt. They engage in washing, carrying and sorting ore, as well as in food preparation at mining sites. Perhaps this is partly due to the family approach towards ASM. However, women typically lack ownership of tools and depend on male miners for access to equipment and pits. Their earnings are consequently lower, and they face social and physical barriers to equal participation.

4.1.2.8. Safety and Oversight

Similar to the Copperbelt, no inspections or enforcement from the MMMD were observed and the miners indicated that they have not received any visits from government officials. Environmental and safety standards are absent. Despite being located near large-scale mines, ASM operations remain invisible to regulatory authorities.

4.1.2.9. Infrastructure and Accessibility

Road networks are relatively accessible, but telecommunication coverage is mostly weak, and power supply is absent in ASM mining areas. The distance to processing centres imposes high transport costs and delays, reducing miners' net income.

Table 4: Summary of North-Western ASM Profile

Attribute	Observation
Site Type	Primary copper ore pits; rural, family-based
Main Material	Copper ore and sometimes gold
Group Structure	10 members on average; family or community-based
Tools Used	Picks, hammers, shovels, iron bars
Main Challenge	Water management; lack of pumps
Pricing Mechanism	Negotiated; based on grade and distance
Buyers/Processors	Local buyers → Transport to Copperbelt processors
Gender Roles	Women involved in washing, sorting and food preparation
Safety and Oversight	No PPE; no government inspection
Formalization Status	Fully informal with no licenses or MOSES awareness

Table 5: Cross-Province Comparison

Feature	Copperbelt (Black Mountain)	North-Western (Mwinilunga)
Dominant Age Group	16–24 (youths)	Mixed (youths and adults)
Mining Material	Slag and rivets	Primary copper ore
Organization Type	Informal youth groups; emerging cooperatives	Family and community groups
Average Output	Two trucks per week	Small-scale bagged ore
Pricing Basis	Negotiation per truck; no LME	Negotiation per grade and distance
Gender Participation	Minimal; vending and support	Moderate; washing, sorting and preparation of food
Regulatory Oversight	None	None
Main Constraints	Unfair pricing, unsafe work, lack of cooperatives	Distance, transport costs, lack of equipment
Market Linkages	Direct to processors in Kitwe/Chambishi	Through buyers to Copperbelt processors

4.1.3. Structure of the ASM Copper Supply Chain

The ASM copper supply chain differs greatly between the two provinces. Notably, no smelting capacity exists in North-Western Province, with smelting taking place in the Copperbelt Province, meaning materials from North-Western Province are transported long distances to the Copperbelt before reaching the smelting stage. Below is a breakdown of the supply chains for the Copperbelt and North-Western Provinces.

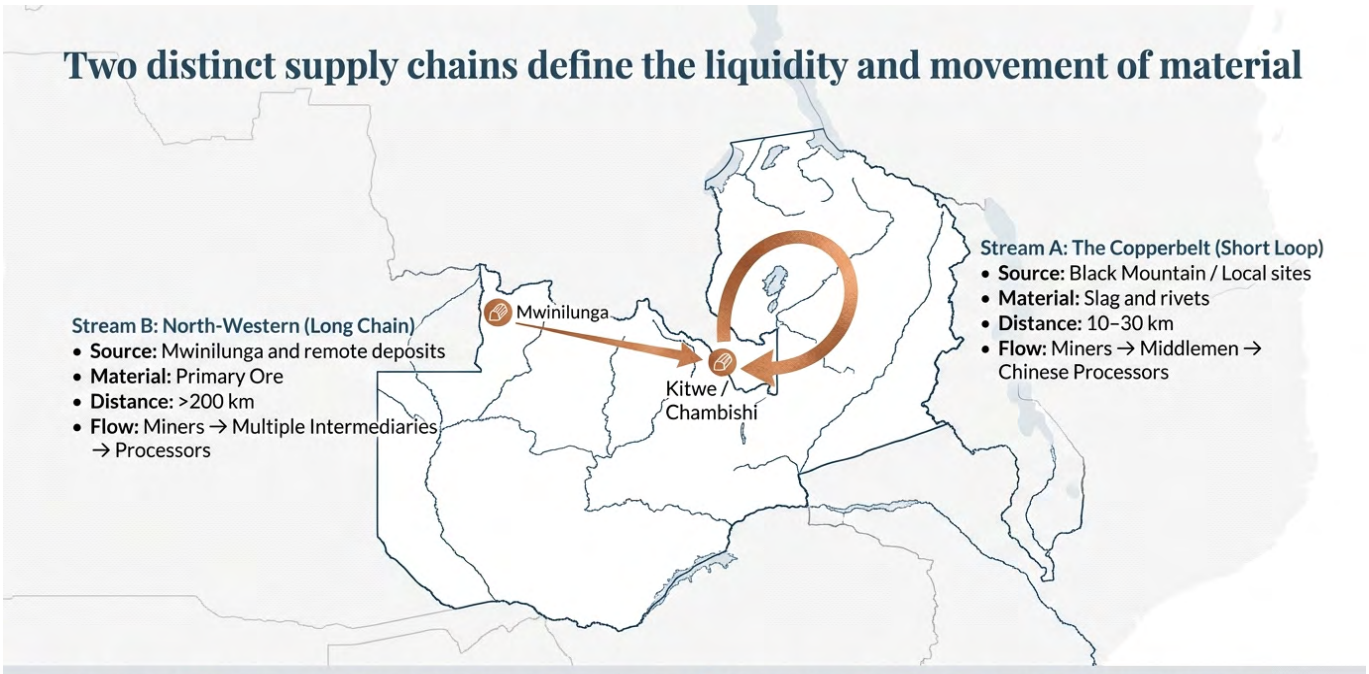
Table 6: Copper Supply Chain based on Province (Copperbelt Province Vs. North-Western Provinces)

Province	Supply Chain
Copperbelt	ASM Miners (Slag/rivets) → Agents → Local Buyers/Middlemen → Chinese-owned Processors (Kitwe/Chambishi) (Concentration) → Smelters (Chambishi Copper Smelter / Sino Metals) (Smelting → blister/anode) → International Markets (China, Congo DR, Australia)
North-Western	ASM Miners (raw ore) → Local/Travelling Buyers (long -distance transport, 300 – 500 km) → Copperbelt-based Processors (Concentration) → Smelters (Chambishi Copper Smelter/ Sino Metals) (Smelting → blister/anode) → Exporters → International Markets.

There are distinct geographical variations between the Copperbelt and North-Western provinces in how these linkages function and who dominates each stage.

- In the Copperbelt, the chain is relatively short and localised, with miners selling slag and rivets directly to middlemen (buyers) who supply Chinese-owned processors in Kitwe and Chambishi. There are instances of agents before the buyer receives it.
- In North-Western, the chain is slightly longer and more fragmented, as buyers transport raw ore over long distances to processors in the Copperbelt, increasing transaction costs and reducing miners' net earnings.

It is worth noting that transport costs from ASM miners to processors are borne by the aggregators (middlemen/buyers). Consequently, this is a major contributing factor in price negotiations.



4.1.4. Stages of the ASM Supply Chain

The supply chain can be visualised as a continuous flow of material and value, beginning at the mine site and ending at international export markets.

The stages below show the

Stage 1: ASM Extraction

Actors:

- Individual diggers and small groups (13–15 members in Copperbelt; about 10 in North-Western)
- Emerging cooperatives, though most remain unregistered
- Occasional inclusion of family labour, especially in North-Western

Functions:

- Manual extraction of copper-bearing slag, rivets or primary ore
- Basic sorting and bagging for sale
- Negotiation of prices directly with visiting buyers

Findings:

- No use of mechanised equipment. No testing equipment
- Production is low volume but constant, with two tipper trucks per week on average in the Copperbelt.
- Safety and environmental management are absent.
- There is no awareness of government reporting tools such as MOSES.
- ASM miners are the least informed actors regarding pricing, quality standards or legal requirements.

Value Share: Approximately 10% or less of total chain value.

This estimate is derived by comparing miner-reported point-of-sale prices with indicative prices received by processors for cleaned and aggregated material, as reported through KIIs and desk reviews. The calculation considers price differences across successive transaction points rather than formal profit margins. Given the absence of documented weights, grades and receipts, the estimate should be interpreted as indicative of relative value capture rather than an exact percentage.
The estimate reflects the relative position of ASM miners in the chain and is intended to illustrate disparity in value capture rather than to quantify precise margins.

Stage 2: Middlemen and Local Buyers

Actors:

- Local traders operating informally
- Intermediaries linked to processors or foreign agents
- Youths with access to small capital or transport contracts

Functions:

- Purchase and aggregate ore from multiple ASM groups
- Provide small cash advances for daily meals, upkeep, or transport
- Clean and prepare the material for resale
- Determine purchase prices based on perceived copper grade

Findings:

- Middlemen are the most influential actors in the ASM economy. They bridge the gap between informal miners and formal processors.
- Pricing is set through verbal negotiation, often without scales or testing.
- Cash-based transactions dominate, and no receipts or records are maintained.
- In North-Western, middlemen use the long transport distance to Copperbelt as justification for low prices, reinforcing miners' dependence.

Value Share: 25-30% of the final value.

Governance Observation: Middlemen are generally not licensed mineral traders, are not differentiated by gender or nationality, yet they perform functions equivalent to those of commercial brokers. Their dominance reflects the absence of structured mineral-buying centres and transparent market mechanisms.

Stage 3: Processing

Actors:

- Chinese-owned processing plants in Kitwe and Chambishi.
- Small domestic processors with limited capacity
- Local transporters handling the movement of material from buyers to plants

Functions:

- Crushing, grinding, and concentrating copper-bearing material
- Quality testing and grading (not shared with ASM actors)
- Sale or export of copper concentrates

Findings:

- The processing stage captures the largest share of value in the chain (about 40–50%).
- Processors maintain strong relationships with middlemen and exporters but have little direct engagement with ASM miners.
- Exports are prioritized when the export duty waiver on copper concentrates is active.
- When the waiver is removed, processors supply local off-takers such as Sino Metals or Chambishi Copper Smelter.
- Traceability systems are weak: processors seldom disclose the ASM origin of material in export documentation.

Governance Observation: This stage operates within the formal industrial framework but draws on an informal base. The lack of traceability and certification limits Zambia's compliance with international responsible sourcing standards.

Stage 4: Export and Off-take

Actors:

- Exporters linked to processors, often Chinese or Lebanese-owned trading companies
- Logistics operators handling bulk shipments via Tanzania and South Africa
- Domestic off-takers (Sino Metals and Chambishi Copper Smelter) during export restrictions

Functions:

- Aggregation and sale of copper concentrates abroad
- Handling export documentation, customs clearance and logistics
- Negotiation of international sales contracts based on LME benchmarks

Findings:

- The export stage is fully formalized, with required documentation and customs declarations.
- However, export data does not differentiate between ASM- and LSM-sourced material.
- This lack of disaggregation obscures ASM's contribution to total copper exports.
- Exporters benefit most from policy incentives, capturing the margins between LME-linked prices and local purchase costs.

Value Share: Approximately 10-15%, but with higher profit margins due to scale and international market access.

Table 7: Comparative Flow Dynamics

Aspect	Copperbelt	North-Western
Material Flow	Slag and rivets cleaned locally, sold to processors	Raw ore transported to Copperbelt for processing
Dominant Intermediaries	Middlemen	Buyers, often traveling from Copperbelt
Distance to Processing	30 km	300-500 km
Transport Cost Impact	Minimal	High; lowers price to miners
Linkage to Processors	Direct and frequent	Indirect and occasional
Pricing Basis	Negotiated per truck (K10,000 typical)	Negotiated per bag or grade, often lower. Distance being major basis for pricing
Gender Participation	Low (mostly vending)	Moderate (washing, sorting)
Data Visibility	None; cash-based transactions	None; unrecorded field sales

Governance and Traceability Gaps

The mapping exercise reveals consistent weaknesses across the ASM copper chain:

1. **Licensing and Legality:**
   - Most ASM miners and buyers operate without valid mineral licenses.
   - Trading activities are undocumented, resulting in untraceable mineral flows.
2. **Pricing Transparency:**
   - No standard price references or quality testing available at ASM level.
   - Buyers and processors control pricing information, leading to systemic underpayment.
3. **Data and Traceability:**
   - ASM production is not recorded in MOSES or MMMD systems.
   - Export data aggregates ASM and LSM sources, preventing responsible sourcing verification.
4. **Institutional Oversight:**
   - No field presence of MMMD or ZEMA at ASM sites.
   - Local authorities lack mandate and capacity to monitor or license ASM activity.
5. **Environmental and Social Standards:**
   - Safety and environmental compliance are absent.
   - Gender-based violence and occupational hazards remain unaddressed.

Table 8: Summary of Actor Relationships and Value Distribution

Supply Chain Stage	Key Actors	Main Functions	Value Share (%)	Key Bottlenecks
ASM Extraction	Individual miners, informal groups	Manual extraction, basic sorting	10–15	Low prices, unsafe work, no finance
Middlemen/Buyers	Local traders, transporters	Aggregation, cleaning, informal financing	25–30	No licenses, exploitative pricing
Processors	Chinese-owned plants, small local facilities	Crushing, concentration, export preparation	40–50	Weak traceability, limited local beneficiation
Exporters/Off-takers	Trading companies, logistics operators	Export and domestic sales	10–15	Lack of ASM source disclosure, profit repatriation

The ASM copper supply chain in Zambia is short, dynamic and heavily informal. Material and value move rapidly upward through a network dominated by middlemen and processors. ASM miners remain the most vulnerable actors, lacking price control, safety standards and institutional support.

Despite these challenges, the chain demonstrates a functional informal efficiency, an ability to move copper from pit to port without formal oversight. This efficiency, however, comes at the cost of transparency, equitable value distribution and environmental responsibility.

A future formalisation strategy must therefore focus on transforming these existing linkages rather than replacing them, by embedding transparency mechanisms, licensing traders, and introducing fair pricing structures within the chain as it currently operates.

Box 3: Interpreting value share estimates in informal ASM supply chains

Value share estimates presented in this report are indicative and derived through triangulation of field observations, surveys, FGDs, KIIs and desk review. Due to the informal nature of ASM supply chains, transactions are largely undocumented and prices vary by grade perception, timing and buyer presence. Estimates therefore represent relative positions within the chain rather than precise financial accounting. Ranges are used to reflect observed variability across sites and actors.

4.2. Market Dynamics and Pricing Mechanisms

4.2.1. Market Structure and Flow

The ASM copper market in Zambia is buyer-driven. Miners extract and sell raw material directly to middlemen or local buyers, who control liquidity and transport logistics. From there, material flows to processors located primarily in Kitwe and Chambishi, and later to exporters or domestic off-takers such as Sino Metals.

The absence of formal mineral buying centres or government-supervised depots has allowed middlemen to monopolize pricing, especially at the ASM level. Transactions are cash-based, undocumented and conducted on-site.

Two distinct market flows exist:

- Copperbelt Stream: Short and localized, dominated by Chinese processors purchasing slag and rivets from middlemen.
- North-Western Stream: Long and fragmented, involving multiple intermediaries before reaching processors, with prices reduced to offset transport costs.

4.2.2. Price Formation at ASM Level

At both field sites, pricing is determined through verbal negotiation, with no written contracts, receipts, testing certificates or reference to any international price benchmarks.

- In Copperbelt, particularly Black Mountain, miners receive approximately K10,000 per tipper truck of slag, equivalent to 15-20 tonnes. However, reported payments are often inconsistent with some diggers receiving as little as below quarter the agreed amount.
- In North-Western, pricing is set per bag or kilogram, with buyers assessing quality visually. Reported earnings range from K3 to K6 per kilogram, depending on perceived grade and site distance.

The lack of standardised grading means buyers exploit miners' limited technical knowledge.

No scales, moisture tests, or sampling methods are used. Instead, buyers rely on 'visual colour grading,' which is subjective and often manipulated to justify lower payments.

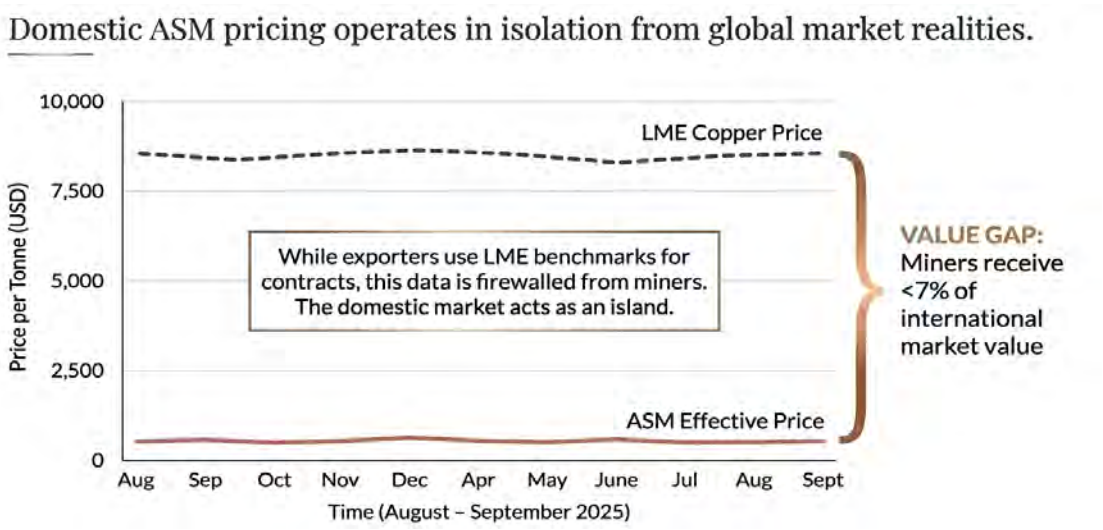
4.2.3. Reference to International Copper Prices

None of the miners interviewed in either province referenced London Metal Exchange (LME) prices when selling their copper. While some cooperative/group/site leaders in the Copperbelt were aware of the LME system, there was no formal mechanism linking domestic ASM pricing to global market trends.

By contrast, buyers, processors and exporters at higher levels of the chain do apply LME benchmarks when negotiating contracts. This creates a sharp disconnect between upstream (ASM) and downstream (export) value systems.

For example, while the global copper price during the survey period (August–September 2025) averaged around USD 8,300-8,500 per tonne, ASM miners in Zambia effectively received equivalent prices of USD 400-600 per tonne, representing less than 7% of the international market value after adjusting for grade. Generally, the price margins are as indicated below:

Figure 4: Domestic ASM Pricing Operates in Isolation from Global Market Realities



4.2.4. Role and Influence of Middlemen

Middlemen function as informal market regulators. Their power arises from three main factors:

1. **Control of Capital:** They are the only actors providing liquidity. Cash advances for meals tie miners to specific buyers.
2. **Information Advantage:** They understand market conditions and export parity prices but do not share this information with miners.
3. **Logistics Control:** They own or hire trucks, determine collection schedules and bear transport costs, allowing them to dictate prices.

Most middlemen have verbal agreements with processors. Some are linked to Chinese buyers who fund their purchasing operations. This creates a closed trading loop where ASM miners are price takers and the market functions as a monopsony (single-buyer system).

These findings suggest that reducing miner dependence on middlemen could improve bargaining power and price outcomes. Cooperative arrangements, where effectively structured and supported, may offer one pathway to rebalance power by pooling production, accessing shared transport and improving access to price information. However, field evidence also indicates that cooperatives alone are not a guaranteed solution. Without access to working capital, reliable buyers, governance capacity and protection from elite capture, cooperatives may reproduce existing power asymmetries or remain dependent on the same intermediaries.

As such, cooperatives are best understood as part of a broader set of interventions rather than a standalone solution. Their effectiveness depends on complementary measures, including access to transparent buying points, shared logistics, basic testing and weighing facilities, and predictable market linkages. Where these conditions are absent, middlemen continue to play a dominant role as liquidity providers and logistical coordinators in ASM supply chains.

Income Distribution and Value Capture

Analysis of value distribution along the chain indicates that ASM miners capture the smallest portion of value, while processors and exporters retain the largest.

Table 9: Income Generation and Value Capture

Stage	Typical Activity	Value Capture (%)	Average Net Margin	Key Determinants
ASM Extraction	Manual mining, washing, and bagging	About 10	Low (survival income)	Labour-intensive with no mechanisation
Middlemen/ Buyers	Aggregation, cleaning, transport	25-30	Moderate	Price control, informal financing
Processors	Crushing, grinding, and concentration	40-50	High	Export duty waiver, scale economies
Exporters/Off-takers	Sale of concentrates	10–-15	High	LME-linked pricing, tax incentives

On average, ASM miners can earn between K500 and K1,500 per week from group operations, depending on team size, production volume and buyer power. Middlemen and processors can earn several times more per tonne, particularly when export incentives are in place.

4.2.5. Influence of Transport and Geography

Transportation distance is a critical factor shaping ASM copper pricing:

- In Copperbelt, transport distances from mine site to processor average 10-30 km, creating minimal cost pressure.
- In North-Western, material must be transported over more than 200 km to reach Copperbelt processors. Buyers offset this by reducing purchase prices at the source, often by 20-40% compared to Copperbelt rates.

The lack of access local processing or storage facilities in North-Western, particularly Mwinilunga, makes miners dependent on itinerant buyers. During rainy seasons, road inaccessibility further depresses demand, as buyers reduce travel to remote areas.

4.2.6. Financing and Credit Mechanisms

The ASM copper trade operates entirely on informal credit.

-
- Middlemen advance small amounts (K50-K200 daily) for food or minor equipment, deducted from sales.
- There are no microfinance institutions or savings groups specifically serving ASM miners.
- Banks do not lend to unregistered (even registered) ASM operators due to the absence of collateral or formal contracts and the perceived high risk of the sector.

This dependency perpetuates a cycle of debt and dependency, where miners rely on buyers for survival while losing control over pricing.

4.2.7. Value Addition and Domestic Retention

There is minimal value addition within the ASM copper chain. All material is sold as unprocessed slag or low-grade concentrate. Even small processors in the Copperbelt export semi-processed material rather than smelting locally.

The export duty waiver on copper concentrates has unintentionally discouraged domestic beneficiation by making exports more profitable than local refining.

When the waiver is suspended, processors shift temporarily to domestic sales, mainly to Sino Metals, but revert to exports once the waiver is reinstated.

4.2.8. Gender and Pricing Disparities

Women's participation in copper trade is limited to low-value, non-decision-making roles.

Women rarely engage in direct sales, but instead, they support men by washing and sorting ore or vending at mining sites. They lack access to market information and are often excluded from price negotiations.

In North-Western, women occasionally participate in washing, their earnings are lower than men's due to irregular work access, lack of tools and limited bargaining power.

Policy and Institutional Implications

1. **Need for Market Transparency:**
   - Establishing district mineral buying centres with certified weighing and testing facilities would introduce transparent price discovery mechanisms. However, this may come with a lot of resistance from buyers.
   - Disseminating weekly copper price bulletins linked to LME averages could help ASM miners make informed sales.

2. **Local Processing and Value Addition:**
   - Encouraging establishment of community-scale concentrators in North-Western and other remote areas could reduce transport costs and retain more value locally.

3. **Formal Financing and Cooperative Credit:**
   - Supporting ASM cooperative financing models or partnerships with microfinance institutions could reduce dependency on exploitative buyer advances.

4. **Gender-Responsive Market Support:**
    - Designating Women's ASM Market Groups to access tools, safety equipment and transparent trading arrangements would address systemic gender exclusion.

Table 10: Summary of Market Dynamics[1]

Indicator	Copperbelt	North-Western
Pricing Basis	Per tipper truck of copper-bearing slag (K10,000 typical, per truck)	Per kilogram of ore (K3-K6 per kg)
Indicative Earnings (ASM)	Highly variable; shared across groups of 13–15, resulting in low and irregular per-person earnings	Highly variable; distance and price discounts reduce per-person earnings despite higher labour input
Reference to LME	None at ASM level	None
Payment Method	Cash, informal	Cash, informal
Middlemen Role	Strong; linked to processors	Dominant; exploit transport gap
Transport Distance	10-30 km	More than 200 km
Women's Role	Vending, food sales	Washing, sorting and food preparation
Local Value Addition	Concentration only	None
Policy Incentive Effect	Export duty waiver drives exports	Lack of processors limits local gains

The market analysis underscores a systemic imbalance: ASM miners, despite forming the foundation of the supply chain, remain the least rewarded actors. Their weak negotiation capacity, combined with the absence of transparent market structures and government oversight, perpetuates a low-value equilibrium. Without targeted interventions, particularly in pricing transparency, localized processing and access to finance, the ASM copper economy will continue to operate in survival mode rather than as a pathway toward inclusive industrial development.

4.3. Production, Processing, and Value Addition

4.3.1. Overview of ASM Copper Production

ASM copper production in Zambia is low-volume, labour-intensive and unmechanized.

Across both provinces, mining is carried out with basic tools such as picks, shovels, hammers, and iron bars. There is no use of drilling equipment, crushing machines or mechanized washing systems at the ASM level. Output is therefore modest and variable, depending on manpower, pit conditions and access to buyers.

[1] *Pricing units differ by province due to differences in material type and logistics. In the Copperbelt, slag is traded in bulk and priced per truck, while in North-Western Province primary ore is sold by weight and perceived grade. As a result, prices are not directly comparable across sites. Earnings per miner depend on group size, frequency of sales, deductions, and transport costs, and are therefore presented as indicative rather than fixed values.*

- In Copperbelt, production focuses on recovery of slag and rivets from historical mine waste dumps. These materials contain residual copper and, in some cases, chrome.
- In North-Western, production targets primary copper ore extracted from shallow pits located near villages and rivers.

Average production capacity per group is estimated at:

- **Copperbelt:** Two tipper trucks per week (15-20 tonnes each).
- **North-Western:** 30-50 sacks per week (each averaging 25-50 kg).

Seasonality affects productivity. During the rainy season, pits flood, halting operations due to a lack of pumps and drainage systems.

4.3.2. Nature and Quality of Output

The quality of the ASM copper material varies by site.

- Slag and rivets from Black Mountain generally contain low copper content (2–5%), requiring further concentration.
- Primary ore shows slightly higher copper content, but ore is mixed with impurities and sold raw without grading or sampling.

There are no certified testing facilities accessible to ASM miners. Quality is determined visually by buyers or processors. The absence of laboratory-based analysis prevents miners from negotiating fair prices and discourages value-oriented extraction.

4.3.3. Processing Pathways

The processing chain begins once material leaves the ASM site.

1. Local Cleaning and Sorting (Middlemen):
Buyers undertake basic cleaning using water and sieves to remove visible impurities. Material is then sun-dried and re-bagged for transport. This stage adds minimal value but increases the selling price by an estimated 10-15%.

2. Industrial Processing (Processors):
Processing is carried out mainly by Chinese-owned facilities located in Kitwe, Chambishi, and Ndola. The process includes:

- Crushing and grinding the material.
- Screening and separating copper-rich fractions.
- Processing into copper concentrates, which typically contain 20-35% copper.
- Packaging for export or sale to local off-takers.

The concentrates are exported primarily to China. When the export duty waiver on concentrates is active, processors prioritize international sales. When suspended, processors divert material to Sino Metals and other domestic smelters.

3. **Domestic Off-Take (When Applicable):**
During periods when export duties are reintroduced, processors supply Sino Metals or Chambishi Copper Smelter at negotiated domestic prices. However, these sales are short-term adjustments rather than permanent market shifts.

4.3.4. Technical Efficiency and Value Capture

Processing plants in the Copperbelt operate with industrial-scale efficiency, capturing most of the technical value from ASM-sourced material.

However, ASM miners receive no benefit from processing improvements, as they sell ungraded material at the lowest value point in the chain.

Table 11: Technical Efficiency and Value Capture

Stage	Type of Processing	Typical Copper Content (%)	Estimated Value Increase	Beneficiaries
ASM Extraction	Raw slag or ore	2–5	Base value	Miners-
Local Cleaning	Manual washing, drying	3–6	+10–15%	Middlemen
Industrial Concentration	Crushing, grinding, screening	20–35	+60–80%	Processors
Smelting (External)	Refining to pure copper	99+	+100%	Exporters and foreign refiners

This structure shows that the greatest value addition occurs outside Zambia, during smelting and refining stages abroad. The domestic ASM chain therefore contributes raw or semi-processed inputs to international value chains without capturing proportional returns.

4.3.5. Role of Policy Incentives

Zambia's export duty waiver on copper concentrates has been a key policy driver influencing the direction of ASM copper flows.

- When the waiver is active, processors focus on export, as international buyers offer higher returns.
- When the waiver is lifted, processors redirect to domestic sales, but at lower margins.

While intended to stimulate exports and foreign exchange, the policy has discouraged domestic value addition by making the export of raw concentrate more profitable than local refining. The result is a weak domestic beneficiation base and limited industrial linkages with ASM suppliers.

4.3.6. Barriers to Local Value Addition

1. **Limited Processing Infrastructure:**
    - No small-scale or community-based concentrators exist in remote ASM areas.
    - All processing capacity is concentrated in Copperbelt industrial zones, far from production sites.
2. **High Transport Costs:**
    - Movement of ore from North-Western to Copperbelt adds significant cost and delays, eroding miners' earnings.

3. **Lack of Technology and Skills:**
    - ASM miners lack access to simple beneficiation technologies, such as manual crushers or gravity concentrators.
    - Training in mineral grading, processing or environmental safety is unavailable.
4. **Weak Coordination:**
    - There is no linkage framework connecting ASM to processors under formal agreements.
    - ASM remains excluded from formal supply contracts or beneficiation partnerships.
5. **Regulatory Gaps:**
    - Current mining policies and investment incentives favour large-scale operations.
    - No fiscal or technical incentives exist to promote micro- or small-scale processing plants within ASM zones.

4.3.7. Opportunities for Upstream Value Addition

The study identified several potential entry points to enhance value addition within the ASM copper chain:

1. **Decentralized Processing Facilities:**
    - Establish small community-level concentrators in remote sites to reduce transport distance and enhance local employment.
2. **Cooperative Partnerships with Processors:**
    - Encourage joint ventures between ASM cooperatives and processors to facilitate access to testing, crushing, and concentration services.
3. **Technical Training and Equipment Leasing:**
    - Introduce capacity-building programs for ASM miners in ore grading, beneficiation and waste management.
    - Promote leasing or shared-use models for small processing units.
4. **Incentive Realignment:**
    - Review the export duty waiver framework to balance export competitiveness with domestic value retention.
    - Provide tax relief for processors sourcing from registered ASM cooperatives.
5. **Traceability and Certification:**
    - Integrate traceability into processing stages to enable responsible sourcing certification, making ASM-derived copper more attractive to formal markets.

4.3.8. Gender and Value Addition

Women's participation in copper processing and value addition remains minimal.

- In the Copperbelt, women are excluded from processing plants due to labour intensity and safety risks.
- In North-Western, women assist in washing and drying ore but are not involved in concentration or sales.

- No evidence of women-led processing initiatives was recorded.

Targeted interventions, such as establishing women-managed micro-processing units or providing technical training, could enhance women's participation in the higher-value segments of the chain.

4.3.9. Environmental and Safety Considerations

Field observations show no adherence to environmental standards during ASM production or preliminary cleaning. Waste disposal is unregulated, and there are no protective barriers to prevent soil or water contamination.

Processing plants in the Copperbelt comply partially with national environmental laws, but monitoring by the Zambia Environmental Management Agency (ZEMA) remains limited.

Introducing environmentally safe, small-scale beneficiation technologies (e.g. gravity separation, flotation with minimal chemical use) would reduce ecological risks while improving ore recovery efficiency.

Table 12: Summary of Production and Value Addition

Indicator	Copperbelt	North-Western
Type of Material	Slag, rivets	Primary copper ore
Average Copper Grade (%)	2-5	4–8
Processing Availability	Multiple plants in Kitwe and Chambishi	None locally
Main Value-Addition Activities	Concentration and export	None
Transport Distance to Processor	10-30 km	More than 200 km
Export Duty Impact	Encourages concentrate exports	Discourages local beneficiation
Women's Participation	Minimal	Washing, sorting only
Environmental Compliance	Low	Very low

The findings indicate that Zambia's ASM copper economy remains resource-extractive rather than value-creating. Production is primarily dominated by manual extraction, and most of the material is exported as low-grade concentrate. Without deliberate policy measures to decentralise processing, improve grading transparency, and promote gender-inclusive value addition, ASM will continue to operate at the lowest tier of the copper value chain.

5. Conclusion And Recommendations

The comprehensive mapping of the ASM copper supply chains in the North-Western and Copperbelt provinces confirms that the ASM sector is a dynamic activity of significant social and economic importance, supporting tens of thousands of livelihoods in Zambia. However, the sector is structurally marginalised within the country's copper economy. The key finding is that while Zambia possesses a solid legal, policy, and institutional foundation for ASM formalisation, there is a wide implementation gap between policy ambitions, such as Vision 2030 and the 8NDP, and the realities faced by miners on the ground. This gap is characterised by several distinct features.

1. Market Asymmetry and Exploitation: ASM operators function as price takers. They are overwhelmingly radiant on intermediaries and informal buyers, who wield disproportionate market power. This results in miners selling role ore at prices considered well below market value, even when international copper prices are high. This asymmetry is exacerbated by the fact that 78.57% of ASM respondents were unaware of international mineral prices.

2. Operational Constraints and Informality: The majority of ASM operations remain informal due to the high cost and complexity of obtaining licenses and environmental permits, (such as the K900 license fee, K60,000 for the Environmental Project Brief, K13,000 for ZEMA certification). Operations are further constrained by a reliance on rudimentary tools (such as a pick and shovel) and limited access to formal finance or technology, which prevents scale-up and ensures production remains small and irregular.

3. Gender Inequality: Although coupled with other production constraints, women are frequently sidelined from lucrative activities, pushed into lower-paid auxiliary tasks (crushing, washing, sorting), and face structural barriers that limit their asset ownership.

4. Governance and Visibility Challenges: Existing monitoring tools like MOSES AND FlexiCadastre are poorly adapted to ASM realities, resulting in variable data quality and underreported production. Furthermore, efforts to engage the supply chain must be tailored due to the differences in site densities and accessibility challenges between high-density zones, such as the Copperbelt, and lower-density, dispersed sites in the North-Western Province.

To address the deep-seated constraints and realise the sector's potential for inclusive economic participation and responsible resource governance, the report suggests the following targeted interventions:

1. Support Capacity Building and Value Addition

- Increase budgetary allocation to MSMED for safer mining practices, environmental management, and business skills.
- Design mechanisms, potentially through the CEEC or ZDA, to help cooperatives acquire semi-mechanised equipment, thereby increasing productivity, reducing reliance on rudimentary tools, and improving overall output.
- Analyse and promote realistic, staged entry points for ASM operators to upgrade with the value chain, moving beyond raw ore extraction into bankable beneficiation activities such as processing of concentrates.

- Increase sensitisation citizens on the acquisition of funding opportunities from the ASM Fund and those from CEEC.

2. **Enhance Market Transparency and Pricing Fairness**
   - Develop Mineral Buying Centres where all minerals will be traded at benchmarked prices, possibly referencing the London Metal Exchange
   - Provide technical and logistical support to enable ASM groups to overcome export barriers to facilitate

3. **Promote Gender Equity and Social Inclusion**
   - Operationalise the National Gender Policy and Gender Equity and Equality Commission commitment by developing gender responsive programming and targeted budget allocations to facilitate women's access to finance, mining rights, occupational safety and health and ownership of mechanised assets.
   - Revoke Section 132 of the Labour Code Order of 1992 to allow women's participation in underground activities.

4. **Simplify and Decentralise Formalisation and Governance**
   - Review and reduce the costs of licenses and environmental permits
   - Modify data systems like MOSES and FlexiCadastre to make them more accessible and user-friendly for ASM actors, improving coverage, data quality and reducing revenue leakages.

5. **Engage International Buyers and Address the Cross-Border Export Risk**
   - Require processors applying for export licences or export duty waivers to declare the proportion of ASM-sourced feedstock in their shipments. This simple disclosure requirement would begin to make ASM contributions visible in official data and create an opportunity for due diligence.

References

Adriana, E., Katherine, H., John, S., Jennifer, H., Kuntala, L.-D., & Nellie, M. (2012). Gender Dimensions of Artisanal and Small-Scale Mining: A Rapid Assessment Toolkit. World Bank Group.

AMDC (Africa Minerals Development Centre) (2017). Report on Artisanal & Small-Scale Mining in Africa: Selected Countries Policy Profile Review. Available at: https://delvedatabase.org/uploads/resources/ASMStudyReport2017.pdf. Date accessed: 20th October 2025.

Government of Zambia. (2022). National Mineral Resources Development Policy. Government of Zambia.

Hilson, G. (2009). Small-scale mining, poverty and economic development in Sub-Saharan Africa: An overview. Resources Policy, 34(1-2), 1-5.

ICSG. (2025). World Copper Fact Book 2024. Lisbon: International Copper Study Group.

Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF). (2017). Global Trends in Artisanal and Small-Scale Mining (ASM): A review of key numbers and issues. International Institute for Sustainable Development.

International Energy Agency. (2016). Mineral Output Statistical Evaluation System. Retrieved October 12, 2025, from International Energy Agency: https://www.iea.org/policies/28192-mineral-output-statistical-evaluation

Kaczmarska, M., Clube, R., Mubanga, F., & Tomei, J. (2025). A policy and practice divide? Zambia's artisanal and small-scale mining sector and the sustainable development goals. Journal of Rural Studies, 120.

Kambole, K., & Kambani, S. (2019). Review of Zambia's Potential for Copper Value Addition to the Downstream Copper Chain. Journal of Natural and Applied Sciences, 3(4). doi:https://doi.org/10.53974/unza.jonas.3.1.463

Ministry of Finance and National Planning (2024). 2023 Annual Economic Report. Lusaka; GRZ

Mulunda, C., Musonda, E. K., & Luwanga, E. (2015). Review of Value Addition to Raw Copper in Zambia. International Journal of Science and Research, 6(7).

Mwakacheya, B., Mwiinga, I., Chimwasu, L., Nsenduluka, M., Maseko, E., Chishimba, C., Ingombe, L. (2019). An Overview of Artisanal and Small-scale Mining in Zambia. Lusaka: Government of the Republic of Zambia.

Pearce, A., Lungu, M., & Mumba, E. (2023). Ownership of Artisanal and Small-scale Mining Rights in Zambia: Challenges and opportunities for women's participation. Lusaka: Policy Monitoring and Research Centre .

Pelon, R., & Walser, G. (2009). Mining Together - Large-scale Mining Meets Artisanal Mining. Washington D.C: World Bank Group.

Weate, J., Chabala, R., Mpofu, P., Sishemo, M., & Doppler, S. (2024). Zambia Copper Wire and Cable Market Assessment. Landell Mills International Ltd.

World Bank (2024) Achieving sustainable and inclusive artisanal and small-scale mining (ASM): A renewed framework for World Bank engagement. Washington, DC: World Bank Group.

Annexes

Annex i: Key Informant Interview Guide – Government/Regulatory Authorities

Key Themes:

- Legal & Policy Frameworks
- MOSES & Monitoring Tools
- Gender & Inclusion
- Supply Chain Structure
- Pricing, Market Access & Value Addition
- Traceability & Compliance

Questions:

1. What are the main regulatory or licensing procedures for ASM copper?
    - What challenges exist in regulating the ASM copper supply chain?
2. Who are the main actors in the ASM supply chain and how do they relate?
3. How is the MOSES system functioning, and what gaps have been observed?
    - How does the MOSES system function in tracking ASM output?
    - Are ASM actors required to report production data? How is compliance monitored?
    - How have ASM responded to MOSES?
4. How are production volumes tracked, especially in informal operations?
5. What is your understanding of women's participation in ASM? Are there policies to support this?
6. Are prices monitored or benchmarked? Is there concern about underpricing or smuggling?
7. Is there any data on profit share across the value chain?
8. What mechanisms are in place to promote or regulate local value addition?
    - What is the government's position on value addition at ASM level?

Focus Group Discussion Guide – ASM Male and Female Miners

Key Themes:

- Roles and Responsibilities
- Income and Market Access
- Gender Dynamics
- Challenges in Formalisation
- Pricing Knowledge
- Processing & Value Addition

Questions:

1. Can you describe your typical day in the mining process?
2. On average, how much copper is mined per day/month?
3. What is the average price of the copper per kg?
4. Who do you sell your product to? Do you know how the price is determined?
5. Do women and men have equal opportunities in accessing equipment, mining or selling copper?
6. Have you heard of any government rules or policies for ASM?
7. Have you registered or attempted to register? If not, why?
8. Do you process copper yourselves, or sell it raw? Why?
9. Are buyers transparent about how they calculate prices?

Note: FGDs will be conducted separately for men and women to create safe spaces for honest dialogue.

Key Informant Interview Guide – Traders/Intermediaries

Key Themes:

- Trade Volumes
- Pricing Mechanisms
- Regulatory Interactions
- Gender Representation
- Transparency

Questions:

1. Where do you source ASM copper from and in what volumes?
2. How do you set purchase prices? Are they tied to international benchmarks?
3. Do you use formal contracts or is it mostly verbal agreements?
4. Are women involved in the trading business?
5. Are you required to provide traceability documentation?
6. What are the key risks in sourcing ASM copper?

Key Informant Interview Guide – Processors/Manufacturers

Key Themes:

- Source Verification
- Local Value Addition
- Compliance and Licensing
- Market Access

Questions:

1. Where do you source the copper you process?
2. What types of processing do you perform?
3. Does any of it come from ASM? If Yes,
    - What is the nature of your interaction with the ASM when they are selling to you?
    - Do they come as individuals or cooperatives?
    - Do you perform any due diligence when buying from ASM?
    - Do you have any systems for verifying copper origin?
    - What challenges do you face in buying copper from ASM?
4. What challenges exist in scaling up value addition in Zambia?
5. What licenses or standards do you operate under?

Key Informant Interview Guide – Large-Scale Mines (LSMs)

Key Themes:

- Interaction with ASM
- Procurement Policies
- Environmental/Social Risk Management
- Due Diligence and Compliance

Questions:

1. Do you engage directly or indirectly with ASM producers?
    - Is there any formalised cooperation with ASM?
2. Are there risks or conflicts from ASM operating near LSM concessions?
    - Are there encroachments by ASM on your concessions?
3. What challenges do you face with ASM?
4. How can the ASM value chain be improved?
5. What risks or opportunities does ASM copper present for your operations?
6. Are you required to adhere to international due diligence frameworks?
7. Are there partnerships with government to improve ASM practices?

Key Informant Interview Guide – Civil Society, NGOs, Think Tanks, Academia etc

Key Themes:

- Advocacy & Monitoring
- Gender Equity in Mining
- Policy Engagement
- Traceability & Human Rights

Questions:

1. What has your organisation observed about ASM supply chains in Zambia?
2. What gaps exist between formal policy and implementation?
3. Has your organization done any research or work on ASM? If Yes,
    - What challenges have you observed?
    - How can they be addressed?
4. What programmes exist to support ASM formalisation or gender inclusion?
    - What reforms are necessary to strengthen traceability and formalisation?
    - How are women represented in governance or benefit-sharing mechanisms in ASM?
5. Are ASM cooperatives receiving sufficient support?
6. Do you engage with government on improving traceability or value addition?
7. How transparent is current reporting on ASM copper production and exports?

Annex ii: Survey Tool for ASM Miners (Structured Questionnaire)

Section 1: Respondent Profile and Demographics

Question	Type	Notes
1. Sex of respondent	Single Choice (Male/Female)	For gender-disaggregated analysis
2. Age group	Multiple Choice (18–25, 26–35, 36–45, 46+)	Age-based trends
3. Marital Status	Single Choice	For contextual income/social analysis
4. Education level	Single Choice (None, Primary, Secondary, Tertiary)	Correlates with awareness and financial literacy
5. District/Location	Open-ended	Kalumbila / Kitwe
6. Are you a member of a cooperative?	Yes/No	Assesses formalization

Section 2: Production and Mining Practices

Question	Type	Notes
7. How long have you been mining?	Numeric (Years)	Experience metric
8. What mineral(s) do you mine?	Multiple Choice (Copper, Cobalt, Others)	Core mineral focus
9. What mining tools or equipment do you use?	Multiple Choice / List	For value chain entry level
10. Do you own or rent equipment?	Single Choice	Asset ownership analysis
11. On average, how much mineral do you extract per day/week?	Numeric	Compare with market and trader claims
12. Do you process the mineral before selling? If yes, how?	Yes/No + Describe	Value addition angle

Section 3: Market Access, Pricing, and Value Addition

Question	Type	Notes
13. Who do you usually sell to?	Multiple Choice (Cooperative, Trader, LSM, Agent, Others)	Actor mapping
14. How is the price determined?	Multiple Choice + Open	Capture pricing models
15. Are you aware of international copper prices?	Yes/No	Price transparency
16. Do you feel you are paid fairly?	Likert Scale (1–5)	Perception indicator
17. What is your average price per KG/ton?	Numeric	Comparative pricing
18. What share of your sales income do you keep after costs?	Numeric / Range	Profit share
19. Are there local processors/value addition facilities?	Yes/No + Describe	Inform policy options
20. Have you ever sold directly to an exporter or buyer outside Zambia?	Yes/No	Supply chain reach

Section 4: Gender Roles and Participation

Question	Type	Notes
21. What specific activities do women undertake in mining here?	Open-ended	Gender roles
22. Are there any differences in pay or opportunities between men and women?	Yes/No + Explain	Gender gap evidence
23. Do women have access to equipment or tools?	Yes/No	Participation barrier
24. Do women face any specific risks (e.g. GBV, health, legal)?	Yes/No + Specify	Vulnerability lens

Section 5: Policy Awareness, Formalisation and Monitoring Systems

Question	Type	Notes
25. Are you aware of Zambia's ASM laws (e.g. mining license, environmental compliance)?	Yes/No	Legal knowledge
26. Are you registered/licensed as a miner or part of a registered group?	Yes/No	Formalisation indicator
27. Have you ever been visited by government agencies for monitoring?	Yes/No + Agency	Policy enforcement
28. Are you aware of the MOSES system?	Yes/No	Traceability tool assessment
29. If yes, do you report data into MOSES?	Yes/No + Why/Why not	System functionality
30. What support would help you improve your work?	Open-ended	Reform ideas from the ground

Annex iii: ASM Policy Matrix

Policy/ Framework/ Law	Year/Status	Purpose	Key Provisions Relevant to ASM or Applies to ASM?	Gender Provisions	Enforcement/ Custodian/Lead Institution(s)	Observed Gaps/Notes
Constitutional Foundation						
Constitution of Zambia (Amendment) Act No. 2 of 2016	In force	Supreme law of the Republic. Provides the foundation for all natural resource governance and sectoral legislation.	Vests ownership of all land, minerals, and natural resources in the President on behalf of the Republic (Art. 253). Requires sustainable and equitable management for current and future generations (Art. 255). Provides the legal basis for state custodianship and licensing systems under the Mines and Minerals Development Act.	Promotes equality and non-discrimination, forming the legal foundation for gender equity across all sectors.	Government of the Republic of Zambia; implemented through all ministries and agencies.	Does not specify ASM or mining detail but anchors all subsequent mining laws and policies. Implementation of equity principles in ASM requires sector-level instruments.
National Development Frameworks						
Vision 2030	2006 (Long-Term Plan)	Guide Zambia's long-term development to be a prosperous middle-income country by 2030.	Supports economic diversification and inclusive growth, which indirectly provide an enabling environment for ASM formalisation.	High-level mention of inclusivity but no specific mining gender provisions.	Ministry of Finance & National Planning	Does not explicitly address ASM; broad development goals rather than sector-specific regulations.
8th National Development Plan (8NDP)	2022-2026	Operational plan to implement Vision 2030 goals including mining, value-chains, and formalisation.	Explicit focus on ASM formalisation, mineral beneficiation, rural job creation tied in national development agenda.	Specifies inclusive participation and calls for disaggregated data collection.	Ministry of Finance & National Planning	Implementation detail for ASM is limited; needs stronger sector policies to operationalise it.
1. Core Policies (Directly Impact ASM)						
Mines and Minerals Development Act	2015 (Amended 2016, 2022)	Legal framework for licensing, rights, and regulation of mining operations.	Defines ASM, sets licensing requirements, safety standards, exclusive Zambian ownership for ASM sector.	Gender neutral; does not provide special measures for women in ASM.	Ministry of Mines and Minerals Development (MMMD)	Licensing remains burdensome for some ASM actors; enforcement weak especially in remote areas.

Policy/ Framework/ Law	Year/Status	Purpose	Key Provisions Relevant to ASM or Applies to ASM?	Gender Provisions	Enforcement/ Custodian/Lead Institution(s)	Observed Gaps/Notes
National Mineral Resources Development Policy (2022–2027)	Active since 2022	Provides strategic direction for mining sector growth, including geological exploration, regulatory reform, production targets, and investment attraction	Recognizes ASM as a critical contributor to national production and job creation. Prioritizes formalisation, data collection, and enhanced oversight	Mentions need for community and social safeguards, but lacks specific gender focus on ASM	Ministry of Mines and Minerals Development	Implementation is early-stage. Budgeting for ASM formalisation not clearly allocated. Gender-specific indicators not yet integrated.
Minerals Regulation Commission Act, No. 14 of 2024 (MRCA)	Enacted 2024, commenced 2025	Overhauls Zambia's legal mining framework. Replaces MMDA 2015. Strengthens oversight, licensing, mineral trading, safety and environmental regulation	Yes. Contains explicit recognition of artisanal and small-scale mining rights and permits. Regulates mineral trading, ownership thresholds, safety standards and mineral processing.	Not explicit, but references to community safety and equitable access may offer entry points for gender inclusion.	Ministry of Mines and Minerals Development (MMMD); new Minerals Regulation Commission (MRC)	Implementation capacity of MRC still evolving. Gender is not well-integrated. Requires harmonisation with older sectoral legislation.
Mineral Trading/ Mineral Trading Permit Regulations under Minerals Regulation Commission Act, 2024	Enacted 2024; commenced in 2025 (Act No. 14 of 2024)	To regulate and monitor the trading of minerals, ensure that trading is legal, transparent, and tied to oversight systems; to bring mineral trading (including ASM level trade) into formal oversight via a permit system.	Requires a mineral trading permit for persons trading in minerals if not holding a mining or processing licence; provides legal structure for mineral trading, reporting of transactions, oversight of traders; helps prevent illegal or informal mineral trade.	Not gender-specific; no affirmative provisions for women traders	Minerals Regulation Commission (the new regulatory body under Act 14 of 2024); Ministry of Mines and Minerals Development is duty bearer through oversight; presumably also customs, revenue, local government in their jurisdictions.	New law – capacity for enforcement at local ASM/trader level unclear; awareness among regular/traditional traders may be low; risk that cost or complexity of obtaining permits might exclude or burden small-scale informal traders; gender inclusiveness in permit access not addressed.
National Critical Minerals Strategy (NCMS)	2024-2028	To guide Zambia's role in global critical minerals (copper, cobalt, etc.) and green economy transitions.	Emphasises traceability, value addition, and formalisation of ASM involvement in critical minerals supply chains.	Mentions inclusion and equity among guiding principles.	MMMD; Ministry of Green Economy and Environment	Newly adopted; details on funding, enforcement, and ASM-targeted implementation are yet to be fully developed.
Geological and Minerals	2025	Provides for geological survey, mapping, exploration; establishes	Establishes Artisanal & Small-Scale Mining Fund; mandates preferential employment and	The Act supports inclusion of women and youth in ASM fund	Ministry of Mines and Minerals Development	As it is newly enacted, implementation details (guidelines, funding,

Policy/ Framework/ Law	Year/Status	Purpose	Key Provisions Relevant to ASM or Applies to ASM?	Gender Provisions	Enforcement/ Custodian/Lead Institution(s)	Observed Gaps/Notes
Development Act		regulatory framework and institutions; supports ASM fund.	procurement for local businesses; supports mapping and surveying for ASM.	eligibility; emphasis on enabling access for women miners.	(MMMD); Geological Survey & Minerals Development Department.	capacity) are just emerging; possible lag in institutional capacity.
National Action Plan for Artisanal and Small-Scale Gold Mining (Zambia)	Adopted 2023 (under the Minamata Convention on Mercury); active plan	To reduce mercury-use in ASGM, improve environmental and health outcomes, formalise ASGM operators, and strengthen institutional and technical capacity in gold mining communities.	Includes provisions for training miners on safer practices; environmental regulation and monitoring; registration/formalisation of ASGM miners; reducing mercury use; improving alternative processing methods.	Acknowledges women's roles in gold panning and ore processing; includes measures to support women miners; intention to include gender considerations in implementation.	Zambia Environmental Management Agency (ZEMA) under the Minamata Convention framework; relevant ministries including Mines and Health also involved.	Implementation challenges due to resource constraints; reach in remote mining areas may be limited; institutional coordination and awareness among ASGM operators remains uneven.
National Three Million Tonnes Copper Production Strategy (Zambia)	Launched/ published around 2024; active strategy aiming for scale-up to 3 million metric tonnes per annum by ~2031.	To dramatically increase copper production, attract investment, improve exploration, enhance infrastructure, and position Zambia strongly in the global copper market.	While strategy is LSM-oriented, it includes improving geological information (which ASM actors may benefit from), regulatory reforms, possibly enabling ASM participation in production scaling or supply chain linkages.	Not clearly detailed; No gender-specific measures in this strategy.	Ministry of Mines and Minerals Development (MMMD); government's mining sector agencies; likely working in coordination with investors and regulatory bodies.	Key constraints identified include: high cost of capital; power supply challenges; unstable tax regime; weak exploration data; possible exclusion of ASM actors unless specific inclusion measures are adopted.
Export Diversification Strategy for Gold and Gemstones	2020 – Launched strategy (active)	To formalise the gold & gemstone mining sector, improve export value, stabilize supply chains, increase value addition, and broaden export base beyond copper.	Supports ASM formalisation: register miners, simplify licensing, improve market access, establish trade hubs/market centres in mining areas; promote value addition before export.	Not explicit; strategy emphasises inclusivity in general terms; some reference to cooperatives/training which could benefit women but no strong, specific gender-targeted clauses identified.	Ministry of Mines and Minerals Development (MMMD); Ministry of Commerce, Trade & Industry (MCTI)	Actual implementation lags: difficulties in licensing, infrastructure for value addition (processing/refining centres) are limited; cooperatives capacity weak; women and marginalized groups may not fully benefit without targeted interventions.

Policy/ Framework/ Law	Year/Status	Purpose	Key Provisions Relevant to ASM or Applies to ASM?	Gender Provisions	Enforcement/ Custodian/Lead Institution(s)	Observed Gaps/Notes
Co-operative Societies Act (1972)	Ongoing legislation (amended 1998)	Regulates formation, registration, and operation of cooperatives across all sectors	Yes. Many ASM groups operate as cooperatives. This Act provides legal recognition, structure, and dispute resolution pathways.	No direct gender provisions, but inclusive cooperative models can enhance women's participation	Ministry of Small and Medium Enterprise Development; Department of Cooperatives	Act is outdated; may require updating to reflect new economic realities, especially around mining cooperatives and access to finance
2. Supportive Policies (Enable ASM through MSME, Local Content, etc.)						
Citizens Economic Empowerment Act, 2006 (as amended by Act No. 5 of 2021)	Enacted 2006; amended 2021; in force	To promote broad-based, inclusive and sustainable economic empowerment of citizens, especially targeted groups, through access to finance, preferential procurement, and enterprise support.	- Establishes the Citizens Economic Empowerment Commission (CEEC) and a Fund for financing citizen-owned businesses. - Prioritizes empowerment of Zambians through participation in economic sectors including mining. - Provides for **preferential procurement**, support to **targeted citizens**, and **reservation schemes**. - Applies to MSMEs, cooperatives, and informal sector actors—therefore relevant for formalising ASM entities.	Recognizes women as a **targeted group** eligible for empowerment support; includes provisions for gender equity in access to funds and programs.	Citizens Economic Empowerment Commission (CEEC); Ministry of Small and Medium Enterprise Development (post-2021 restructuring); collaborates with other ministries like Mines or Local Government where applicable.	Does not specifically reference ASM, but its provisions (on MSME support, citizen ownership, women's empowerment, etc.) can be applied to ASM formalization or local beneficiation. However, **uptake among ASM actors is currently limited**, and **linkages to mineral policy not well established**. Awareness in rural mining communities remains low.
Revised National Micro, Small & Medium Enterprise Development Policy (MSMED Policy 2023)	Launched December 2023; implementation plan 2023-2027 active	To enhance the contribution of MSMEs to socio-economic transformation; improve competitiveness, productivity, market access, regulatory environment.	ASM actors (often MSME scale) can benefit from improved market access, simplifying requirements, finance, business support, standards. Policy addresses infrastructure, trade facilitation, access to finance and markets.	The policy includes inclusivity principles: gender, disability, equitable participation regardless of gender etc.	Ministry of Small and Medium Enterprise Development; MSME Secretariat; relevant local government agencies.	Still high level in many sections; implementation challenges expected in rural and remote ASM areas; financial or technical capacity constraints; some regulatory overlaps and lack of enforcement detail for MSMEs in mining context.

Policy/ Framework/ Law	Year/Status	Purpose	Key Provisions Relevant to ASM or Applies to ASM?	Gender Provisions	Enforcement/ Custodian/Lead Institution(s)	Observed Gaps/Notes
National Industrial Policy (2018-2027)	Adopted 2018; implementation plan under review and update for 2024-2027.	To shift Zambia from dependency on primary product exports toward value-added manufacturing; promote competitiveness, industrial parks, upstream/downstream linkages.	For ASM: possibilities where ASM copper/cobalt ore could feed into local processing; also relevant for linkages with manufacturing and standards; industrial policy may support infrastructure or processing capacities.	Some mention of inclusive industrial growth; sectors for MSMEs and local supplier development are part of policy. But explicit activities for gender in ASM not strongly spelled out.	Ministry of Commerce, Trade & Industry; Zambian Development Agency; Zambia Association of Manufacturers; standards and regulatory agencies.	Gaps: small-scale mining / ASM rarely foregrounded; many industrial policy incentives benefit larger scale or formalised firms; capacity and investment needed in ASM areas; likely policy-practice gaps in remote areas.
National Local Content Strategy	2018-2022	To promote linkages between large enterprises & MSMEs; increase local participation in high growth sectors.	Encourages use of Zambian suppliers and businesses; supports procurement locally; can benefit ASM supply chains via supplier development.	No explicit ASM-gender policies; general support for MSME gender inclusion.	Zambia Development Agency (ZDA); line ministries relevant to sectors.	Strategy period ended 2022; need updated or renewed strategy/regulation to enforce local content in ASM & newer minerals.
Local Content Regulations under the Geological and Minerals Development Act	Enacted 2025; Effective Jan 2026	To increase domestic participation in the mining supply chain, promote inclusive growth, and strengthen local supplier development.	Requires mining companies to source minimum 20% local goods and services within 6 months, 40% within five years; mandates supplier development, publication of procurement plans, employment of Zambians, and penalties for non-compliance. Creates indirect market opportunities for ASM cooperatives and local processors.	Gender-neutral text but aligns with empowerment goals under Citizens Economic Empowerment Act; no explicit provisions for women suppliers or ASM.	Ministry of Mines and Minerals Development (MMMD); oversight by Minerals Regulation Commission (MRC) once fully operational.	Implementation capacity will determine real benefits for ASM. Risk of exclusion if supplier development schemes do not include small-scale miners and cooperatives. Potential positive impact if ASM groups gain certification and production consistency.
National Trade Policy 2018	Launched 2018; active policy under review as of 2024.	To contribute to Zambia's economic diversification by promoting a competitive trade sector; increase global market share; manage	Relevant to ASM: trade policy sets framework for goods/export, non-traditional exports; ASM minerals (gold, gemstones, copper) may benefit from improved trade	The policy includes language about inclusive participation and trade for all sectors, but does not have strong, explicit gender-specific	Ministry of Commerce, Trade & Industry (MCTI)	Enforcement especially for small and informal ASM actors may be weak; trade policy components may not be fully tailored to challenges of traceability, informal

Policy/ Framework/ Law	Year/Status	Purpose	Key Provisions Relevant to ASM or Applies to ASM?	Gender Provisions	Enforcement/ Custodian/Lead Institution(s)	Observed Gaps/Notes
		tariff and non-tariff measures.	facilitation, tariff regimes, export licensing.	clauses in its mining or ASM components.		trade, ASM compliance costs.
National Export Strategy (NES)	First NES (2018-2022) published; may be updated.	To increase Zambia's export base, diversify exports beyond raw commodities, add value locally, strengthen export competitiveness.	Applies to ASM: export strategy may include value addition or better market access for ASM minerals; could influence export regulations and formal channels.	General inclusivity mentioned, but gender-targeted export support for ASM or mining sector not prominently detailed in sources.	Ministry of Commerce, Trade & Industry; export promotion agencies; customs/revenue authorities.	Implementation challenges: infrastructure, trade costs, capacity for small exporters; awareness among ASM actors of export procedures may be low.
3. Cross-Sectoral Policies (Supportive but Indirect)						
National Gender Policy 2023	Approved 2023, currently active	To promote gender equality and equity across sectors in Zambia; ensure inclusion of women and girls in economic, social, political decision-making.	Applies indirectly to ASM: policy mandates gender equity in economic participation which could support ASM women access to markets, training, and decision-making roles.	Explicit provisions for inclusion, non-discrimination; requirement for gender-disaggregated data; recognition of women's economic empowerment.	Cabinet Office – Gender Division; relevant ministries in implementation.	Does not specifically address mining or ASM in detailed implementation; mechanisms for applying gender norms in remote ASM communities or small-scale mining settings are not clearly spelled out.
Environmental Management Act	2011 (Active)	Regulates environmental impact, requires assessments and community participation in environmental decisions related to mining and other sectors.	ASM operations are included under general mining activities albeit compliance hard for informal miners; ESIAs and environmental licenses apply across the board	No specific gender provisions in the mining context.	Zambia Environmental Management Agency (ZEMA)	Difficult to enforce in informal ASM settings; costs and complexity deter compliance.
Bank of Zambia Foreign Exchange Market Guidelines & Export Proceeds Tracking	Foreign Exchange Guidelines: 2024; Export Proceeds Tracking Directives: 2023/ Effective 1 Jan	To regulate foreign exchange transactions; to ensure exporters repatriate and report export proceeds; to govern BoZ's mandate over foreign exchange and oversight functions.	All exporters must submit export proceeds through Zambian bank accounts within prescribed timelines; - Customs declaration (Form CE 20) with Unique Consignment Reference (UCR) mandatory; BoZ monitors foreign exchange inflows/outflows, international	No specific gender-targeted provisions in the publicly available regulations. The regulations are gender-neutral.	Bank of Zambia is the lead, working with commercial banks and financial institutions, Zambia Revenue Authority (ZRA) for export declarations, and	Many ASM actors may be unaware of the requirements or lack access to formal banking; compliance burdens (timelines, documentation) could exclude informal or remote miners; no clear

Policy/ Framework/ Law	Year/Status	Purpose	Key Provisions Relevant to ASM or Applies to ASM?	Gender Provisions	Enforcement/ Custodian/Lead Institution(s)	Observed Gaps/Notes
Framework & BoZ Act 2022	2024; BoZ Act: 2022		transactions; Foreign exchange transactions prohibited unless through authorised dealers.		other regulatory bodies.	support for women or small-scale traders to meet banking or procedural requirements. Also, enforcement capacity at local level may be limited.
4. International & Regional Frameworks						
OECD Due Diligence Guidance	2016 (3rd Edition, in force globally)	Provide responsible sourcing guidelines for companies dealing with minerals from conflict-affected & high-risk areas.	Sets standards for supply chain due diligence, risk assessments, traceability, and responsible sourcing which apply to ASM contexts.	Includes gender-sensitive risk assessments as part of due diligence procedures.	OECD; voluntarily adopted by private sector and buyers	Non-binding unless adopted; local awareness and capacity among ASM actors is low.
Extractive Industries Transparency Initiative (EITI)	Ongoing (Zambia member)	Promote transparency, accountability, and beneficial ownership disclosures in the extractives sector.	Encourages disclosure of production volumes, revenues, and licensing; increasingly pushing to include ASM.	2023 EITI Standard requires gender-disaggregated reporting.	ZEITI Secretariat	ASM inclusion is still limited; many ASM actors are outside reporting channels. Capacity at local level weak.
EPRM (European Partnership for Responsible Minerals)	Established recently; active project in Zambia	Promote responsible sourcing of minerals by strengthening due diligence, environmental, social, governance (ESG) practices in ASM and LSM supply chains.	In Zambia, supports ASM formalisation, market access, training in ESG practices, and better traceability.	Gender-responsive components are included in many EPRM-supported interventions.	European Union / Donor partners; ActionAid / local partners	Implementation can vary by locale; sustainability of interventions beyond project timelines is always a concern.
ICGLR Certification Mechanism	Established via ICGLR protocols (ongoing)	Provide standard to certify minerals' origin in Central Africa to reduce illicit trade and support traceable supply chains.	Certification includes requirements for legal origin, traceability, chain of custody; can apply to copper/cobalt if adopted fully.	Some mechanisms include gender or human rights indicators; varies by country mechanism.	International Conference on the Great Lakes Region (ICGLR); national authorities in member states	Zambia participates; effectiveness depends on enforcement, capacity, and alignment with domestic law and practice. many ASM actors may lack documentation to certify.

Policy/ Framework/ Law	Year/Status	Purpose	Key Provisions Relevant to ASM or Applies to ASM?	Gender Provisions	Enforcement/ Custodian/Lead Institution(s)	Observed Gaps/Notes
African Mining Vision (AMV)	2009 (AU framework, various stages of domestication)	Blueprint for transformation of Africa's mining into drivers of sustainable development and shared growth.	Strong emphasis on formalisation of ASM, linkages with local communities, value addition, and diversified mineral economies.	Recognizes women's inclusion; calls for benefit sharing and equitable participation.	African Union; implemented through national policies such as MMMD	Domestication in national laws is partial. So is National implementation in Zambia. Hence, enforcement and monitoring weak.

Annex iv: Matrix of Specific Questions by Thematic Area by Stakeholder Category

Theme	Government/ Regulatory Bodies	ASM Cooperatives/Miners	Traders/ Intermediaries	Processors/ Manufacturers	LSMs	CSOs/NGOs/Academia
1. Supply Chain Mapping	- What are the official supply chain routes from extraction to export? - Who are the key actors and how are they related? - Are there systems for tracking or registration of traders/processors?	- Who do you sell your copper to? - What are the steps from when you extract to when the copper is sold? - Who helps you with transport or processing?	- Who are your main suppliers and buyers? - What influences your buying decisions? - Are transactions formal or informal?	- Who supplies you with copper? - Do you know the source (ASM or LSM)? - Are there traceability mechanisms in place?	- How do you engage with ASM supply chains? - Do you procure or collaborate with ASM producers?	- What have you observed in terms of ASM supply chain linkages and bottlenecks?
2. Pricing & Markets	- How are prices set or influenced in the ASM copper trade? - Are ASM prices monitored or regulated?	- How much are you paid per kg or tonne? - Do you know international copper prices? - Do you feel the price is fair?	- How do you set prices with miners? - Do you negotiate based on grade or market prices?	- Are purchase prices linked to global copper rates? - How is pricing negotiated with suppliers?	- What pricing models do you use when engaging with ASM or intermediaries?	- Are ASM actors receiving fair compensation? - Is there price transparency in the chain?
3. Value Addition	- What local beneficiation exists for ASM copper? - Are there efforts to increase local processing capacity?	- Do you process your copper before selling? - What stops you from doing so (costs, equipment, knowledge)?	- Do you conduct any value addition (concentration)? - If not, why?	- What value is added during your processing stage? - Are there challenges to scaling up local processing?	- Is there scope for beneficiation partnerships with ASM or processors?	- What advocacy or programming exists to support local value addition in ASM?
4. Gender Dimensions	- What is your assessment of women's participation in ASM? - Are there policies in place to support gender equity?	- Are women involved in mining, trading, or processing roles? - What challenges do women face?	- Are women represented in the trade sector? - Do they face unique barriers?	- Are women present in the processing workforce? - Are there gender equity policies?	- What is the gender profile of your ASM engagement?	- What interventions or findings exist around gender in ASM supply chains?

Theme	Government/ Regulatory Bodies	ASM Cooperatives/Miners	Traders/ Intermediaries	Processors/ Manufacturers	LSMs	CSOs/NGOs/Academia
5. Policy & Regulatory Context	- What policies govern ASM copper? - How is MOSES functioning? - What reforms are needed? - Are international due diligence norms adopted?	- Are you aware of any mining laws? - Have you had visits from government? - Are you registered or part of a cooperative?	- Do you operate formally or informally? - Are there any regulatory challenges?	- Are there licensing or regulatory hurdles in your operations?	- Do you comply with international norms (OECD, EITI,)? - How are ASM relationships governed?	- What are key gaps in current ASM policies or enforcement?
6. Transparency & Traceability	- What data is collected through MOSES or other tools? - Are ASM flows traceable? - How effective is current monitoring?	- Do you record how much you mine or sell? - Who keeps those records? - Are buyers interested in traceability?	- Do buyers demand origin documentation? - Are there incentives or penalties for traceability?	- Do you report inputs and outputs? - Do you know where your product goes after you process it?	- What challenges exist in tracing copper from source to export?	- What data exists on ASM copper traceability and transparency?

Notes

actionaid

ADDRESS
38G Kabulonga Road
Ibex Hill
Lusaka
Phone: +260 966 453 677

CONTACT INFORMATION
info.zambia@actionaid.org
@ActionAidzambia
@actionaidzambia
@actionaidzambia_
https://zambia.actionaid.org