



LEVIN SOURCES

Incubating New Mining Fund Concepts

Directing catalytic capital to where African mineral systems can deliver enduring benefits for all

October 2026



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Overview of “Incubating New Mining Fund Concepts: Directing catalytic capital to where African mineral systems can deliver enduring benefits for all”
October 2026

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We are a core team of strategists, researchers, project managers, educators and communicators with multidisciplinary abilities and collective expert knowledge in sustainable supply chains, extractives, minerals science & engineering, biodiversity and conservation, human rights and vulnerable groups, responsible business conduct and good governance.

We are trusted by the full diversity of players in the minerals system, from Fortune 500 companies and SMEs to industry associations and certification bodies to NGOs and civil society to governments in fragile states and in G20 economies.

Executive Summary

Africa holds much of the world's gold and critical-mineral resources, yet this wealth rarely reaches the host communities or economies. Investment is intensifying as global demand for energy- and digital-transition minerals grows, but capital remains concentrated in large, later-stage mines, established operators and downstream infrastructure. Earlier-stage, smaller-scale, locally owned and mining-adjacent enterprises are routinely overlooked, even though they are essential to producing minerals responsibly, keeping more value in-country, diversifying local economies and steadying supply. Drawing on Levin Sources' 2025–26 work for the Soros Economic Development Fund—which identified around 140 candidates, assessed 76 across 22 African countries and engaged more than 80 stakeholders—this paper shows that the central problem is not a shortage of capital, but a mismatch between conventional investment requirements and the realities of African mineral economies.

The paper identifies six emerging fund concepts where patient, catalytic capital could address these structural gaps and build commercially viable markets. These are:

- a dedicated fund for artisanal and small-scale mining (ASM);
- a mining-economies upliftment fund supporting local suppliers, shared infrastructure and community enterprise;
- a follow-on finance vehicle to bridge the donor cliff;
- a responsible-production technology fund;
- an integrated tailings, rehabilitation and post-mining land-use fund; and
- a women-focused access-to-finance fund or investment sleeve.

Across these opportunities, investees commonly fall into a “missing middle”: too large or complex for microfinance, but too small, early or operationally intensive for institutional investors. The answer is to combine appropriately sized finance with technical assistance, local intermediaries, safeguards and patient follow-on capital. Done well, this can help formalise enterprises, improve environmental and social performance, reduce reliance on exploitative informal finance and create investable pipelines for mainstream capital.

This paper therefore calls on investors to broaden their focus from individual mines to the mineral systems that make production resilient, responsible and locally beneficial. Catalytic capital providers are well placed to move first because their longer time horizons, greater tolerance for early risk and explicit social and environmental mandates allow them to support enterprises and market infrastructure before conventional mining capital can engage; conventional investors can then follow into de-risked businesses, proven models and stronger mining economies. The immediate priority is a revolving ASM fund paired with a technical-assistance facility, initially focused on gold and designed to address financing needs that often cluster around USD 2–5 million, while also enabling smaller-scale financial inclusion. More broadly, progress will require shared investment structures and partnerships that align impact and commercial capital with local-content, gender, human-rights and environmental objectives, so that mineral development strengthens supply security while generating durable prosperity, stability and opportunity in producing regions.



Table of Contents

Executive Summary 3

1. Introduction 5

 The opportunity in brief 5

2. Our calls to action 7

 Structural gaps are impeding capital flows..... 8

 Why impact capital? 9

 Why should conventional mining capital broaden its scope? 10

3. Six Emerging Fund Concepts.....10

 I. An ASM fund 10

 II. Mining Economies Upliftment Fund13

 III. A Follow-On Finance Fund (Bridging the Donor Cliff) 15

 IV. A Responsible Production Technology Fund17

 V. Tailings and Post-Mining Land Use17

 VI. A Women-Focused Access-to-Finance Fund 19

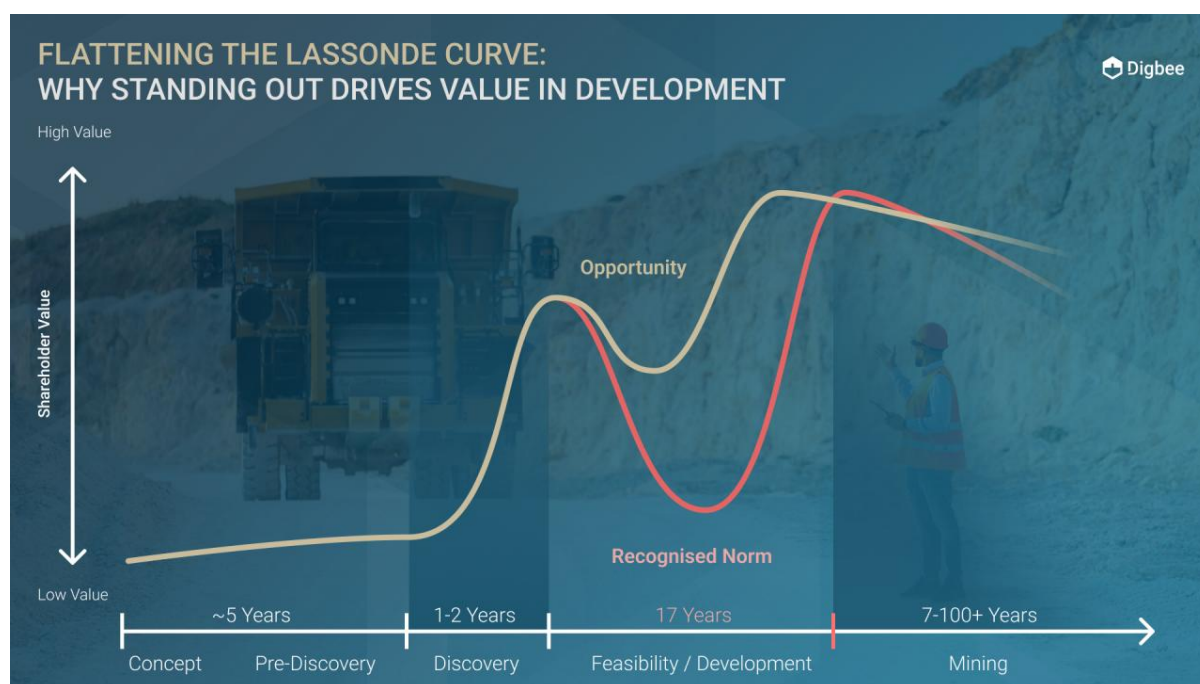
4. Conclusion: What This Means for Investors.....20

1. Introduction

The opportunity in brief

Africa's mineral wealth is delivering far too little for the communities and governments that host it, and it could deliver much more. Africa accounts for ~27% of global gold production and holds ~30% of reserves of critical minerals, including those for the energy transition (copper, cobalt, lithium, 3Ts, rare earths). While mines often set up mechanisms such as local content policies, community development agreements or funds to share benefits locally, limits on ambition, capacity, collaboration and governance stop these from reaching their full potential. At the same time, the communities that host mining, processing and trading projects often bear more than their fair share of the environmental and social harm, because governance and affected rights holders' leverage is often too weak. With bolder vision and innovation, Africa could turn far more of its mineral wealth into lasting local benefit.

Geopolitical and commercial interest in developing Africa's mineral sector is intensifying. However, investment is concentrating downstream in the project lifecycle and midstream in the product lifecycle, prioritising parts of the value chains that deliver greater supply to consumer nations (e.g., large mine development, established operators, DFI-backed projects, and big infrastructure). As a result, earlier-stage, smaller-scale, locally owned and mining-adjacent and enabling opportunities are systematically bypassed; many investable opportunities are left short of funding or funded only through informal lenders on exploitative terms. Narrow investment theses are stalling socio-economic development in some of the poorest places on Earth.



Source: [Flattening the Lassonde Curve: Turning Risk into Value Before the Valley of Death](#) | Digbee. Accessed 15th September, 2026.

This paper draws on research Levin Sources conducted in 2025–26 to support the Soros Economic Development Fund (SEDF) in contributing to the development of its investment strategy and pipeline investment prospects in gold and critical mineral value chains across Africa

- We identified ~140 and assessed 76 candidate funds, investment platforms and enterprises that had a strong social and/or economic impact proposition.
- Candidates spanned: direct enterprise investment (ASM, processing, midstream), indirect funds and finance vehicles, mining-adjacent and local procurement opportunities, and enabling technologies. We

Incubating New Mining Fund Concepts

initially considered exploration, recycling and large mine development projects, but eventually excluded them due to them not aligning with SEDF's focus for this work.

- These candidates spanned 22 countries, with a planned focus on the DRC, Ghana, Mozambique, South Africa, and Zimbabwe.
- The primary minerals covered were gold (36 of 76 profiled), critical minerals mix (18), copper (13), cobalt (7), tin/3Ts (6), lithium (6) and titanium (4).
- We held over 80 stakeholder engagements including a dedicated survey for organisations and individuals who could identify and refer us to candidates.
- We also analysed the investment landscape, dove deep into traceability, tailings reprocessing technologies and ASM markets to guide investment strategy, and scrutinised where finance is most needed to deliver sustainable development for Africa *and* the minerals needed for the energy and digital transitions whilst driving peace and stability.

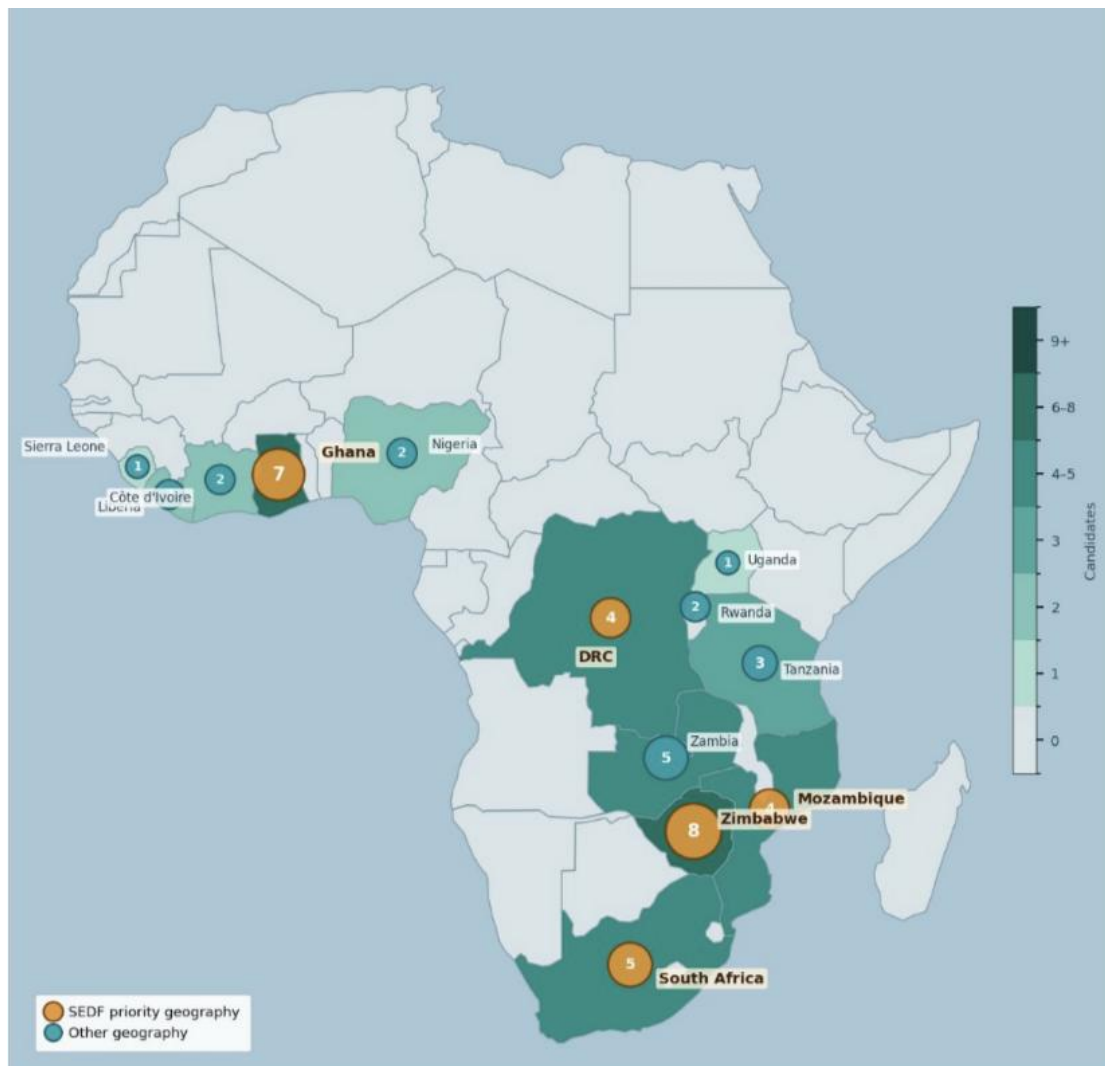
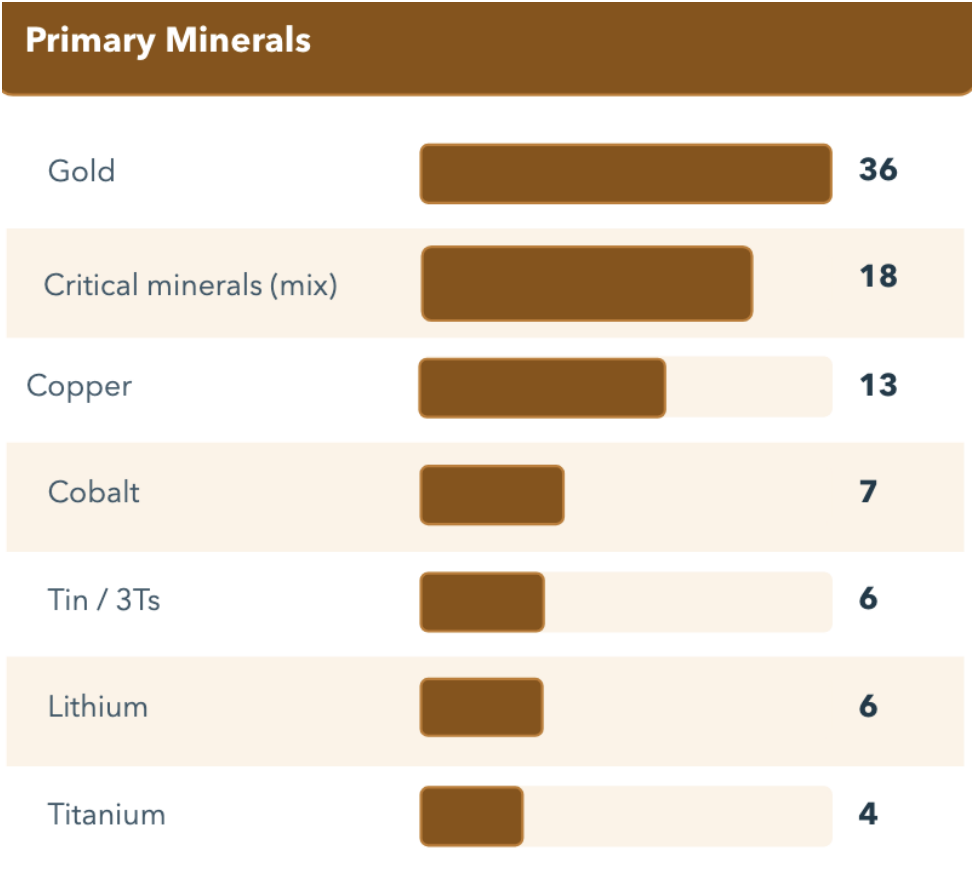


Figure 1: Geographic distribution of investee candidates across Africa by country.



Gold dominates (30+). Critical minerals, copper, cobalt, lithium, 3Ts and titanium reflect SEDF's priority areas.

Figure 2: Primary minerals across the investee candidate pipeline.

2. Our calls to action

This paper articulates three calls to action to the investment community building on our lessons learned.

First, we are advocating for investing in minerals systems more broadly. Investing in market systems grows a region's overall economic potential and, with it, its appeal to investors. This creates a positive feedback loop of economic diversification, resilience and thus prosperity. A focus on market systems thus serves both African nations and their trading partners: Africa is calling for trade and investment partners that deliver on their strategic plans for economic development *and* greater social stability; market nations wish to foster thriving mining economies and investment markets, and thus supply chain and economic security.

We identified the following markets as being systematically underserved by responsible investors:

- ASM enterprises, processing plants and financial institutions seeking to service ASM markets;
- mining company backward linkages and local content (mining suppliers, shared infrastructure, community-level economic participation);
- technologies to enable more efficient and responsible mining;
- early-stage, smaller, locally-owned and/or women-led or -owned enterprises;
- exploration and mine closure ventures (rehabilitation, post-mining land use); and
- recycling infrastructure and market systems.

Second, we are seeking to grow the appetite and comfort of impact investors to do more in mining and mineral systems and for conventional investors to broaden their investment theses. We believe this could support more efficient production of Africa's critical minerals and gold while improving environmental and social outcomes and driving lasting economic development. We have identified six potential new asset classes where a lack of access to responsible capital is holding back more circular, equitable, and prosperous economies and communities.

Third, we call on partners to build the investment structures needed to channel both impact and conventional mining capital into these emerging asset classes. With shared vision, intent and collaboration, we can address the structural barriers restricting capital flows, attract new investors and help mining economies grow, stabilise and strengthen. Let us start there.

Structural gaps are impeding capital flows

We need to pull a broad set of levers to shape the ability of mineral systems to drive sustainable development, but the most important lever is capital.¹ Minerals cannot create value without finance on appropriate terms. Yet conventional investors back only a few parts of the mining value chain, while some smaller, less exposed and/or privately owned operators ignore the law and the protections owed to communities and workers. Finance scarcity for earlier-stage, smaller-scale and mining-adjacent activities (including responsible ASM, local suppliers, shared infrastructure and mine closure) leaves the wider system undercapitalised, weak and slow-moving.

Capital is constrained not simply by a shortage of funds, but by a mismatch between investor requirements and the realities of mining economies. The capital gap reflects a cluster of constraints that differ by investment type.

- **Multilateral Development Banks (MDBs) and Development Finance Institutions (DFIs)** have a mission alignment to support African minerals systems, but minimum ticket sizes and co-financing requirements limits often exclude opportunities that require smaller amounts of capital.
- **Philanthropic foundations** can be flexible and patient but typically avoid capital-expenditure-heavy opportunities directly in extractives, struggle to quantify ESG risks in the value chain and may be uncomfortable with exposure to mining due to the generally poor reputation of the sector.
- **Pension funds and institutional asset managers** bring the largest pools of patient capital but are bound by fiduciary obligations, liquidity requirements and mandate restrictions that rule out unlisted, sub-scale operators.
- **Venture and growth-equity investors** are comfortable with early-stage risk and technical complexity but require scalable, asset-light business models, which don't apply to projects with capital intensity, long payback periods, and physical operations demands.
- **Family offices** are most structurally unconstrained, may not have the specialist knowledge to underwrite mining sector ESG and technical risk, and the deal origination system to source credible opportunities in the African minerals systems.

Risk, ticket size, time horizon and mandate all push conventional mining capital towards larger, later-stage and more familiar investments.

¹ Levin Sources' services are structured to drive more sustainable practices. For example, we help policymakers, regulators and standard-setters to set the right guardrails, incentives and enablers for business; we guide mineral off-takers to mainstream environmental and human rights due diligence systems that go beyond box-ticking and auditability to meaningful derisking operations and societies to deliver greater security for business and society; we support workers, local communities and civil society leaders to better claim their rights and maximise their resilience and welfare; and we work with corporate leadership to navigate these very varied and often opposing stakeholders' demands. However, if investors are not at the table, are not using their leverage to demand more sustainable practices, then industry and government are constrained by this misalignment and ultimately less motivated and capacitated to pursue sustainable development effectively.

- **Risk and weak de-risking infrastructure.** Mining is technically complex, capital-intensive and exposed to geological, regulatory, social and market risks. In frontier markets there are often too few local intermediaries who can prepare enterprises, mitigate risk and build a pipeline of deals investors trust, so investors are reluctant to support innovation or smaller operators.
- **The missing middle.** Many enterprises need more capital than microfinance can provide, but too little to justify institutional transaction, due-diligence and risk-management costs. As a result, even development-oriented institutional investors struggle to turn their long-term plans into the smaller, high-impact investments that are needed.
- **A narrow investment lens.** Most mining finance is designed to enable the production of metal, not the systems that make mining economies work: local suppliers, shared infrastructure, processing, responsible ASM, rehabilitation and post-mining enterprise. These activities can sit outside conventional mining mandates even where they strengthen project resilience and local development. Investing in them can create a virtuous circle in which more value stays, and is felt, locally.
- **Shareholder primacy and short time horizons.** Conventional mining capital is structured to maximise financial returns at enterprise level. Environmental, social and human-rights considerations are therefore often treated as risks to manage rather than as investments in durable social value and future economic opportunity; this is poorly aligned with the fact that mines operate for decades and shape communities for generations.
- **The donor cliff.** Donor programmes can help enterprises become viable, but support frequently ends before private investors are ready to commit. Without patient follow-on or catalytic capital, promising enterprises can lose momentum just as they are becoming ready for investment.

Together these constraints leave smaller, earlier-stage and mining-adjacent businesses reliant on informal finance – particularly in ASM – which keeps them informal, weakens their bargaining power and shuts them out of formal markets.

Why impact capital?

For sustainable finance providers, such as development finance institutions, philanthropic foundations, or private impact investors, **mobilising capital to transform the enterprise and the market systems that nourish it is precisely the point**; impact capital is deployed *in order to* support young enterprises in frontier and emerging markets to build both their people and their businesses, as a route to real social and economic development. Shareholder returns are important too, but the capital serves the mission rather than vice versa. This manifests as three characteristics that make impact capital well suited to mineral systems:

- **Impact investors are patient and looking for opportunities to back credible improvement**; it is in the imperfect parts of mineral systems that the true potential for transformation can be unlocked. They have a greater appetite for risk and approaches aligned to this: impact investors can invest in enterprises that do not yet meet every standard, provided there is a clear, time-bound plan to close the gap, with recognised standards as the floor. Their capital and technical support then drive the progress that conventional investors need to see before they can commit. They are able to take a longer-term view.
- **Impact investors are well suited to investing where mainstream capital cannot yet go and, in doing so, show where it can later follow.** They can bridge the gap between aid and trade. **Impact investors can help protect value for conventional investors**, because their attention to human rights, environmental stewardship and local economic development can strengthen a project's social licence to operate and its relationships with communities and authorities. That reduces the risk of disruption, conflict and reputational damage, which in turn protects returns for all capital in the deal.

Why should conventional mining capital broaden its scope?

Investors aligning with the critical minerals agenda should broaden their scope because supply security is not achieved by financing mines alone. Mineral production, profitability and supply fail at their weakest points: informal production, poor infrastructure, limited processing, access to reliable and renewable power, weak local suppliers, unmanaged environmental liabilities and fragile community relationships. Investing in these overlooked parts of the system makes supply more reliable, diversified and investable. It reduces operational disruption, improves access to responsible material, strengthens local capability and creates more durable routes from resource to market. The OECD and IEA both frame diversification, responsible sourcing, processing capacity and recycling as central to critical-mineral supply resilience.

For investors, this is not a departure from commercial logic. It is a way to derisk investments, create new investment arenas and access growth in the wider mineral economy. Local procurement, responsible ASM finance, shared infrastructure, traceability, reprocessing and rehabilitation can all strengthen the reliability and longevity of mineral supply, whilst building territories where economic prosperity begets peace and stability, which begets prosperity as barriers to investment weaken and capital is attracted.

This matters as public development finance tightens and strategic public capital increasingly focuses on mine bankability, smelting and refining. Impact investors can fund the earlier, smaller and more complex opportunities that build resilient supply chains; conventional investors can then follow into de-risked enterprises, proven models and stronger markets.

3. Six Emerging Fund Concepts

Over six months of engagement with the mining sector in Africa gave the Levin Sources team a rigorous understanding of where opportunities lie that are currently underserved by conventional finance. Initial support by patient investors should reduce these projects' risks enough to attract conventional mining capital later. Conventional mining finance may participate where these funds operate in territories where it has already invested, as a way to spread and reduce its own risk.

Levin Sources has a series of prospective investees for each of the below asset classes, derived from our pipeline of 140 candidate enterprises and funds, technical assistance partners with specialisms for derisking in each area and, in some cases, candidate investors.

I. An ASM fund

"ASM is often treated as a 'dirty word' by Western investors [others] have moved ahead because they integrate themselves directly into existing mineral flows."

Mehdi Ali, AETT

THE GAP & EVIDENCE

In May and June 2026 Levin Sources conducted research to test the business and impact case for establishing an ASM fund. Building on over two decades of experience on access to finance and ASM formalisation, we surveyed 34 ASM representatives and experts, including but not limited to representatives from processing plant operators, development finance institutions, gold market actors, ASM associations, and NGOs. We gathered their views on the nature of the financing gap, what types of finance are most needed and why, which parts of the ASM value chain should be a priority, fund structuring, and existing programmes and infrastructure to build on.

- **Access to finance** is described by stakeholders as "the single most important thing" and a significant "formalisation lever" for ASM across geographies. As a South African ASM miner put it, the formalisation gap has "relegated communities and artisanal miners to perpetual hunger and poverty".

- **A financing “missing middle” leaves many ASM unbanked or confined to informal finance markets:** ASM is a hugely diverse and complex space with a difficult reputation due to potential human rights abuses. Despite the nuances, most ‘responsible’ (well regulated) funders have a blanket ban on engaging with ASM due either to its risk profile or to ticket sizes. This compounds the structural barriers to the sector’s development (limited legal recognition; market access; weak governance; little incentive to formalise; poor knowledge; lack of access to geological data, etc.), most of which need capital to fix. It has also trapped many ASM enterprises in arrangements with informal, unregulated financiers, who advance cash against future output on exploitative terms, entrenching the very informality and risk profile that formal investors cite as reasons to avoid the sector in the first place. The cycle perpetuates itself not because the underlying enterprises are unviable, but because formal capital has largely failed to explore meaningful structures and terms for engagement.
- **Vulnerable groups within ASM communities are even further marginalised from access to finance:** According to a processing plant operator with experience building responsible ASM value chains across a suite of nations, “The finance gap is not neutral in who it excludes. When capital is scarce it flows to those who already hold collateral, title and bargaining power who are rarely women, Indigenous community members, or migrant and informal workers. Scarcity concentrates value at the top of the local hierarchy and pushes marginalised groups further down it... The common thread: finance designed around conventional collateral and formality automatically excludes those who lack them.” While intentional inclusion and economic empowerment of women, youth, Indigenous People and migrant/displaced workers should be cross-cutting, there is a distinct opportunity to provide ring-fenced support to marginalised entrepreneurs who are commonly excluded from access to finance on the basis of identity.
- **Evidence:** Our research identified 47 ASM-related candidates for investments, 20 of which were flagged as high and 8 as medium-high priority. Separately, 33 of 34 ASM survey respondents want to help develop a fund; there was near-unanimous stakeholder support. Furthermore, only two embryonic ASM funds were identified globally, and given how expansive ASM activities are, and how fundamental access to capital is across the over 80 countries where ASM arises, it could be beneficial to have several ASM funds under development to test which theses and structures are most likely to succeed. Furthermore, there are existing operating intermediaries (e.g., The Impact Facility, SigrFi, Pact) who have proven that ASM finance platforms *can* work, though they may struggle to access capital on terms that ensure the long-term presence and flexibility needed to build sustainable solutions in ASM markets, because they are commonly securing finance from donors and foundations.

THE OPPORTUNITY

- The ASM candidates in our pipeline indicate that **live ASM enterprise / initiative needs cluster at USD 2–5m**: too small for many institutional investors (USD 50m+), and too large for microfinance. In gold, the gap is currently filled by exploitative informal, largely UAE, Russian, Indian and Chinese pre-finance.
- **Need is concentrated at specific points, here defined from our targeted engagement on this topic throughout the project:**
 - *capex* is required by ASM enterprises to support prospecting, exploration, mine and/or processing plant development;
 - *equipment finance/leasing* for operations, including cleaner production systems and electrification;
 - *trade finance* for mineral buying schemes (The early pre-Final Investment Decision (FID) equity gap is most acute and a binding offtake does more for viability than supply-side finance alone, indicating the importance of commodity traders as finance partners.);

- *working capital* to support formalisation costs, e.g., debt finance to cover costs of incorporation and licensing, digitisation and product traceability, carrying out environmental impact assessments, professional training, etc;
 - *equity* in vertically integrated enterprises and processing plants.
- **There is a large market for lower-value debt finance to individual and micro-enterprise miners** (e.g. \$1,000-\$100,000). Supporting the financial inclusion of ASM individuals and microenterprises would be transformative for ASM communities and economies. Opportunities include greater penetration of ASM markets by mobile-money solutions-providers; providing capital pools or guarantees to domestic banks and/or microfinance institutions; more project finance for ASM cooperatives seeking to introduce cleaner technologies, train their staff in health and safety, etc.; and leveraging, replicating and/or scaling existing donor-funded initiatives catalysing markets in this space.
- Overall, there are few institutions serving these individuals or enterprises and a lack of structures that would permit investors and lenders to do business affordably, profitably and securely. An ASM fund could **disintermediate and diversify risk across ASM investments** via debt or equity, and handle a breadth of ticket sizes as appropriate to supporting ASM development.
- A **dedicated revolving fund paired with a technical assistance facility** is the recommended structure. Levin Sources' extensive network of on-the-ground and international partners could be engaged for this technical assistance.
- **Scope:** we propose prioritising gold, with an option to include critical minerals, gemstones and development minerals where it makes sense for the investment thesis. Geographically, opportunities concentrate in West and Central Africa, SADC, and the Amazon basin as well as Latin America more broadly.

POTENTIAL CANDIDATES

- **Artisan Metals** is a mercury-free, OECD-aligned ore-buying and processing platform for artisanal gold miners in Africa. Its hub-and-spoke model is phased: gravity-focused spoke plants in mining communities show miners, who recover around 30% of their gold, the uplift on their own ore, building trust before the spokes become ore-buying centres feeding a central hub which benefits from scale. Miners earn more, mercury leaves processing and gold reaches formal markets with due diligence behind it and royalties paid to the host state. Every miner is onboarded, and their delivery record supports progressive formalisation and, later, mine-level financing. The founders ran a first operation in Sudan and are developing their next in Nigeria. Artisan Metals also works alongside a non-profit partner that executes international artisanal gold mining programmes, and has the first opportunity to build and operate processing plants where those programmes identify a need.
- **PeaceGold** is an impact-driven enterprise working to formalise artisanal and small-scale gold mining (ASGM) in the conflict-affected regions of the Democratic Republic of Congo by integrating miners into legal, transparent, and traceable supply chains. By combining gold trading with peacebuilding, government support and community development, the project seeks to address the entrenched links between ASM, conflict, child labour and environmental harm.

II. Mining Economies Upliftment Fund

"We believe the future of mineral development in producer countries lies in creating interconnected mining ecosystems, where larger-scale operations provide the foundation for industrial capacity, while responsible integration of surrounding mineral producers strengthens supply chains, expands participation, and supports sustainable regional development."

Brooke Bibeault, CEO, Makor Resources

"I think to the extent that there are manufacturers who are a machine away from being able to manufacture more, that's where the focus should be."

Jeff Geipel, Mining Shared Value

THE GAP & EVIDENCE

Mining is one of the biggest opportunities for catalysing economic development available to a nation. Yet its true potential is underserved by misaligned ambitions and capacities amongst the key partners: governments, the mining industry (prospectors, developers, operators, processors, their suppliers, mineral offtakers), other local economic actors (e.g., agriculture, fisheries, forestry, manufacturing, etc.), local communities and civil society. Mining can deliver so much more if we are intentional about capturing and maximising its stimulus potential. This requires us to look beyond the mine itself, to what the mine can stimulate.

There are three 'mining-adjacent' impact domains for investment that can strengthen local economies: procurement (local content); community development funds; and mining sector infrastructure. One fund could cover one or all of these domains.

Mining Infrastructure Development

Description	Challenge	Opportunity
Access to power, water, transport links, telecommunications, etc. for the mine <i>and</i> other economic actors and providers of social services.	High upfront costs may deter private investment into the shared or public-goods component, while rural and remote locations amplify costs.	Provision of local infrastructure – access to power, water, transport links – can significantly benefit communities as well as mines if established thoughtfully. Their presence can be a catalyst for local communities to develop other economic activities separate to the mine, reducing their dependence on it and becoming more resilient.
Privileging of finance for shared infrastructure models to maximise stimulus and territorial upliftment.		Shared infrastructure models can act as economic multipliers for surrounding communities and other mines and industrial actors in the territory.
		Blended finance could de-risk the public goods component and attract co-investment from DFIs and development banks.
		A fund dedicated to investments in a 'hotspot' mining arena could support a diversity of developments that improve the investability of the mining landscape as a whole by addressing barriers to affordable and sustainable power, water, transportation, telecommunications infrastructure, etc.



Incubating New Mining Fund Concepts

Local Content

Description	Challenge	Opportunity
Procurement strategies and investments to use backward linkages to diversify local economies. May privilege support to vulnerable groups or fragile economic actors, e.g., women-led enterprises, SMEs; circularity and nature-based solutions; etc.	Local procurement is an overlooked driver of local industrialisation. Suppliers often lack capital or capacity to compete with international contractors, perpetuating import dependence and preventing countries from building domestic industrial capacity.	Supplier finance programmes can formalise local SMEs and enable them to compete for mining contracts, keeping value in-country and reducing import dependence. A mining industry association could establish a fund to direct additional capital that maximises the economic stimulus potential of their members' presence in rural economies. The fund would direct capital towards supplier development and local economic diversification.

Community Development Funds

Description	Challenge	Opportunity
Local investments to create better conditions for resilient economies and local development, e.g., health, education, financial literacy training, financial services provision, infrastructure, etc.	Many community development funds (CDFs) aren't established until projects are in production, missing significant investment phases and confining strategies to shorter time periods. CDFs may have weak sustainability logic and deliver a lower return on investment than could otherwise be possible. For example, they may deliver benefit through grants, rather than investments, which narrows the field of beneficiaries and undermines their potential impact for economic catalysis. CDFs are commonly undercapitalised and treated as a sunk cost rather than as an investment opportunity by the miners.	Pooled CDFs could offer impact investors a direct lever to raise the standard of social performance in mining, channelling capital into community-led priorities rather than company-defined ones. They could also pool downstream impact or due diligence mitigation capital and amplify the economic stimulus from mining's presence in host territories. For example, an automotive OEM connected to a landscape seeking to mitigate a child rights risk through investment in education infrastructure or child labour elimination. A fund could specialise in establishing new or evolving existing CDFs to be able to accept capital from other sources and/or to mobilise equity, debt or guarantees for local enterprise development.

THE OPPORTUNITY

A local economic upliftment fund deploying capital into supplier SMEs, shared infrastructure, and community enterprise in mining territories. This could be structured in partnership with major mining companies, leveraging their and their partners' emerging and existing institutions to grow return on investment.

POTENTIAL CANDIDATES

- **Aséli** is a Permanent Capital Vehicle (PCV) established by Savant and the Anglo American Foundation, with support from Krutham, to unlock the growth potential of South Africa's green economy. Through an innovative redeemable preference share instrument, Aséli deploys patient, flexible capital into early-stage, post-revenue green SMMEs, transforming them into scalable and investable businesses, and builds a permanent capital pool that recycles into the green economy. Developed to support the broader green economy, the model also has particular relevance for mining economies, where many of the businesses critical to local economic diversification fall between the gaps of conventional debt and equity finance. These include local suppliers, circular economy businesses turning waste streams into value, manufacturers producing green inputs, and downstream processors and recyclers in the energy transition mineral value chain. These businesses often have fluctuating revenue streams tied to mining cycles, which conventional debt struggles to accommodate, while equity can dilute founders' ownership. Aséli's instrument flexes with revenue rather than against it, making it well suited to their cash-flow profile and enabling investment in businesses that are often overlooked by conventional finance.
- **Kenmare Resources** plc is the world's largest producers of titanium minerals. Through its Kenmare Moma Development Association (KMAD), Kenmare proposed the establishment of an SME Supply Chain Finance and Development Fund to strengthen local enterprise participation in Mozambique's value chain. The fund would provide working capital, asset finance and growth and financing to qualifying local small and medium-sized enterprises (SMEs) supplying goods and services to Kenmare and other regional anchor businesses.
- **Mwamba Mining** is building a formal, mercury-free gold sector in Tanzania's Geita region through a mixed model. At its core are joint ventures with artisanal and small-scale (ASM) miners: Mwamba contributes capital, operational control and Wazi, its digital compliance platform for meeting international traceability standards, and its partners share in the value created. Mwamba also buys ore directly from vetted ASM suppliers, which takes mercury out of processing and loosens brokers' hold on the supply chain. Both routes feed Mwamba's mercury-free CIP plant, where diesel currently supplies around three-quarters of site energy. Mwamba is pairing the plant with a solar PV and Battery Energy Storage System to cut greenhouse gas emissions, displace diesel, stabilise operations during grid outages and lower processing costs, strengthening returns for JV partners and ASM suppliers alike. The system is also designed to share surplus power with the neighbouring Nyarugusu and Buziba communities, which lack reliable supply. Mwamba aims to pioneer this model in Tanzania's ASM sector: renewable infrastructure that delivers returns to the business and direct benefit to the community, and that can be replicated across the region.

III. A Follow-On Finance Fund (Bridging the Donor Cliff)

"We wanted a revolving fund. [...] A fund would have definitely helped top up the capital. Our experience is that if you don't have an anchor project, you can't attract more capital and leverage the impact."

James McQuilken, Former Director of Pact's Responsible Mining practice.



THE GAP & EVIDENCE

Donor-proven models for enterprise development in mining economies strengthen entities but not enough to secure conventional finance once donor funding ceases. Enterprises stall or, worse, fail once they hit the donor cliff. This is where catalytic capital is most urgently needed and most clearly additional. Catalytic first-loss tranches of \$0.5–5M can unlock disproportionate downstream capital.

CASE STUDY

- **Pact** funded a pilot project in a mine in Rwanda where artisanal miners replaced toxic, disposable AA battery hand torches with sustainable, rechargeable, LED head torches and solar-powered charging stations. This included the installation of a mini-grid, increased energy efficiency with an overall 70% reduction in energy costs, and increased women's participation by 50%. However, while they are now an investable mine, Pact cannot fund the project in the long-term and the project currently lacks the funding to expand the project to other mine sites, establish a revolving fund for rechargeable head torches, solar mini-grids, and mining equipment, and continue the training and sensitisation to more miners and communities.

THE OPPORTUNITY

- A revolving fund that acts as the bridge between Official Development Assistance (ODA) and private capital, with first-loss tranches of \$0.5–5M that crowd in downstream investment.
- It could be structured to work in partnership with existing donor programmes rather than replacing them, bringing in funding from a pool of donors as well as private capital to support that transition towards full private financing of donor partners.
- Based on our interviews with enablers and candidates for the ASM fund research, example donors with programming affected by this issue include the European Partnership for Responsible Minerals, GIZ Ghana, and planetGOLD country projects.
- One might see a pool of public financiers of ASM initiatives working together to introduce candidates to an ASM fund, and contributing capital to support their 'weaning' towards independence and gradual integration into conventional mining capital markets.

POTENTIAL CANDIDATE

- **Coopérative Essouan Gold** is a community-based artisanal gold mining cooperative in Abouakakro, Côte d'Ivoire, established in 2022 to formalise small-scale mining activities and improve the economic and social well-being of its members and the local community. The cooperative focuses on responsible gold production, stronger governance, environmental protection and the adoption of safer, mercury-free mining practices, in collaboration with government institutions and the planetGOLD Côte d'Ivoire project. Through planetGOLD CI, Essouan Gold is receiving technical support to strengthen its strategic planning, financial feasibility, accounting systems and financial inclusion, with the objective of improving its readiness to access sustainable finance. The cooperative has recently received a formal financing proposal from a commercial bank, with the grant initially intended for mercury-free equipment potentially being placed as a deposit/collateral mechanism to facilitate bank financing for the acquisition of appropriate mining equipment and technologies. This emerging financing structure illustrates how grant capital, technical assistance and commercial finance can be combined to support the transition towards more responsible and financially sustainable artisanal mining operations.

IV. A Responsible Production Technology Fund

THE GAP & EVIDENCE

- A range of emerging technologies have high potential to aid transparency and reduce adverse mining impacts. Candidates included actors in the arenas of traceability, digitisation, mercury elimination, and more efficient extraction.
- Investment in enabling ecosystems — telecoms infrastructure, piloting partnerships, distribution — is as important as investment in the technologies themselves.
- Challenges include finding suitable pilot sites (move up Technology Readiness Levels (TRL)) and an industry that is traditionally slow to innovate and adapt to new technologies.
- Universities and research institutions (Oxford, University of Queensland CSRM) are active in technology development and represent origination and validation partnerships for investors.

THE OPPORTUNITY

A technology-focused fund deploying venture or early-growth capital into responsible mining technologies, with a parallel grant/piloting facility:

- Could focus on technologies whose adoption would disrupt conventional methods that cause great social and environmental harm.
- Could work across a suite of technological workstreams relevant to different pieces of the minerals economy, e.g., cleaner production / pollution abatement (including mercury management), Earth systems for ESG impact early warning and management, exploration rationalisation, ore extraction and processing, worker voice and labour rights solutions, community engagement platforms, fintech, traceability and digitisation, data management and reporting platforms, etc.
- Could focus on technologies related to one frontier for improvement, e.g., circularity, human rights, productivity, etc.
- Could partner with university departments of mines for deal origination.

POTENTIAL CANDIDATES

- **APT's GoldFix** product is an organic, non-toxic putty compound that picks up both coarse and fine gold on contact, costs less than mercury, and requires no critical mass of material, making it one of the few viable mercury-free solutions for the smallest-scale ASM operators, where borax smelting is not an option. Beyond GoldFix, APT's modular processing systems open up tailings reprocessing opportunities that would otherwise be uneconomical, enabling more legacy sites to be retreated and remediated. APT's plants are available from artisanal size to large operations, allowing for client growth. The funding sought would allow APT to build the in-market distribution presence needed to scale adoption of both across African ASM gold markets.

V. Tailings and Post-Mining Land Use

THE GAP AND EVIDENCE

- Mine tailings and other historic mine wastes are often treated only as a closure problem but in many cases, they are better understood as a long-duration environmental, social and financial liability. Legacy facilities can create ongoing risks relating to water quality, dust, geotechnical stability, land sterilisation and community impacts, with management obligations that can persist long after active mining has ended.
- At the same time these materials may still contain economically meaningful quantities of metals and minerals that were not recoverable under older processing routes, cut-off assumptions or commodity



Incubating New Mining Fund Concepts

prices. Improved characterisation, hydrometallurgical methods and more selective processing technologies create renewed potential to recover critical and by-product minerals from historic waste streams.

- In contrast, bringing a new greenfield exploration project into production is typically slow, capital-intensive and socially complex. Reprocessing already-mined material may offer a shorter path to additional supply by working from known material already at surface, often within previously disturbed footprints and established mining districts.
- Tailings reprocessing should not however be seen as a universal solution. Many sites remain constrained by low grades, poor data, difficult mineralogy, unclear ownership, legacy liability allocation and weak incentives for private capital to take on remediation risk. These factors help explain why the theoretical opportunity is much larger than the currently financeable project pipeline.
- There is therefore a clear strategic gap: capital and project-development models are still poorly aligned to opportunities that sit between remediation, critical-minerals recovery and land regeneration. This is especially true where value creation depends not only on metal recovery, but also on safer waste management, rehabilitation planning and credible onward land use.

THE OPPORTUNITY

- The strongest opportunities are likely to be those that treat tailings reprocessing and rehabilitation as a single integrated proposition: recover residual value, reduce a legacy liability, and improve the condition of land and water so that the site can support a productive next use.
- The opportunity is not simply to mine waste but to convert stranded environmental liabilities into cleaner sites, more stable landscapes and more flexible development options for surrounding communities and landowners.
- Restoring legacy mining sites can also create a platform for post-mining economic use. Depending on local context, rehabilitation may enable commercial activity, renewable energy, agriculture, recreation, ecosystem restoration or other forms of economic diversification that provide longer-term value after mining has ceased.
- For impact investors this suggests a role broader than financing standalone retreatment plants. A more catalytic position may be to support enabling technologies, remediation-first platforms, aggregation models and project structures that combine metals recovery with closure improvement and land-use transition.
- The most appropriate use of patient, risk-tolerant capital is likely to be investment in green, modular or lower-footprint processing technologies, and in platforms seeking to remediate multiple sites, where catalytic capital can underwrite early deployment, aggregation, governance and liability risk that commercial finance is unlikely to take on.
- Many of these approaches may also be relevant to ASM, particularly where cleaner processing, shared infrastructure, pre-financing and formalised supply chains can reduce environmental harm while improving livelihoods and traceability.
- A fund focused on this segment could address a current market failure. Its value would lie in financing the interface between technical validation, remediation, stakeholder alignment and future land use that mainstream mining or infrastructure investors often struggle to support.
- Framed in this way, the investment case is both impact-led and commercially pragmatic: additional metal supply from already-disturbed material, reduced long-term environmental risk and improved prospects for durable economic use after mining. The potential is significant, but projects must be selected with discipline and designed around remediation, governance and community value from the outset.

POTENTIAL CANDIDATES

- **Africa Critical Metals Solutions (ACMS)** is an African mine acquisition, development, and execution platform focused on transforming dormant, undercapitalised, brownfield, tailings, and post-production mineral assets into investable opportunities. Working primarily across Central and Southern Africa, ACMS identifies and secures mineral projects, undertakes technical and commercial de-risking, and advances assets along a structured pathway from dormancy to investment readiness. The platform combines responsible resource recovery, environmental rehabilitation, project development, and local value creation, with a particular focus on unlocking value from historically overlooked mineral resources and legacy mining assets. By aligning technical expertise, local partnerships, and development capital, ACMS aims to create scalable opportunities that generate sustainable economic benefits for host communities while delivering access to critical minerals required for the global energy transition.
- **Golkor Self-Funded Rehabilitation (SFR)** is a joint venture between AMBEX and Government of Ghana, and is designed to rehabilitate approximately 4,500 km of river systems across Ghana's gold-producing regions devastated by decades of illegal artisanal mining, using a self-funding mechanism: residual gold in degraded river sediment is dredged and processed mercury-free, with proceeds from official sales through the Ghana Gold Board financing the clean-up works entirely. Post-rehabilitation community infrastructure, tilapia fish farms and agricultural plantations, constitutes a downstream social impact layer, embedding long-term livelihood development in the model.
- **NEF Exploration (NEFEL)** is developing an integrated, low-carbon lithium battery materials value chains in Nigeria. Rather than conducting primary extraction, NEFEL sources waste materials and low-grade mined ore from existing lithium-producing mines across Nigeria at below-market cost. They then aggregate and blend this feedstock at a facility near the seaport to reduce logistics costs, and processes it at a refurbished brownfield site.

VI. A Women-Focused Access-to-Finance Fund

THE GAP & EVIDENCE

- Within an already underfunded sector, women face compounding barriers: collateral requirements, land title issues, KYC/AML thresholds that systematically exclude those least likely to hold formal status. Women-led enterprises in our pipeline are among the strongest on governance and environmental performance — yet among the least funded.
- Evidence: Women-led and women-focused enterprises identified across the pipeline, particularly in gold ASM; structural exclusion of women from formal finance is well documented across geographies; investment in women-led enterprises in ASM correlates with stronger community outcomes and lower operational risk.

THE OPPORTUNITY

- A gender-lens fund deploying concessional and catalytic capital into women-led enterprises and women's financial inclusion within mining communities. Could be structured as a standalone vehicle or a dedicated sleeve within any of the other funds.
- Embedding requirements for female participation and ownership into investments could help to support change outside of a specific, women-focused fund.

- Could be done in partnership with WIM Associations across the world, potentially with a profit share to provide core funding to them.
- Clear (initial) cluster of opportunities in Southern Africa, but not to the exclusion of exploring more in key geographies like Ghana and DRC.

POTENTIAL CANDIDATES

- **Mberengwa Green Processing Plant by Women in Mining (WIM) Zimbabwe**, founded and led by Faith Mutete with 16 years of ASM experience, operates a cooperative-owned Green Processing Plant in Zimbabwe's Midlands Province providing solar-powered, mercury-free toll-milling services to affiliated women's mining cooperatives. This seeks to replace the economic exploitation, mercury exposure and opacity that characterise access to privately owned mills. District WIM Associations and Cooperatives hold direct co-ownership and equity stakes in both the extraction hubs and the central processing facility, ensuring profits flow to women miners rather than external intermediaries. Backed by UNDP renewable energy funding, WIM Zimbabwe is seeking investment to replicate the Green Processing Plant model across additional districts, creating a blueprint for inclusive, solar-powered ASM processing infrastructure across Southern Africa.
- **Moshe Capital** is a Black women-led investment and advisory firm based in Johannesburg, South Africa, founded in 2013 by CEO Mametja Moshe, that invests in small-to-medium enterprises across Africa with a deliberate focus on transforming male-dominated sectors including mining. Its model combines strategic investment, active management support and a Sino-Western deal-sourcing platform via VSA Capital, positioning Moshe as an intermediary capable of channelling capital to mining enterprises that conventional investors would not reach.
- **Makor Resources** is a Canadian-incorporated resource development platform operating in Zambia across copper and gold, whose MineHive initiative provides ASM formalisation support in the form of licensing, compliance, capacity-building and a free educational platform for ASM miners, alongside a mine-to-market connectivity network linking operators to responsible buyers through traceable, ESG-aligned supply chains. Led by CEO Brooke Bibeault, Makor's dual-track governance separates its commercial asset base from MineHive's social activities, the latter backed by Innovate UK funding for an AI-enabled remote sensing system monitoring ASM activity, environmental impact and mineral flows. Investment would enable Makor to deepen its ASM integration work in Zambia and scale MineHive as a replicable framework for formalising and financing women-led and community-linked ASM enterprises across Southern and Central Africa

4. Conclusion: What This Means for Investors

Africa's gold and critical minerals are central to the global economy, yet the capital flowing into the sector is bypassing much of where it is most needed. Investment concentrates downstream and late in the project lifecycle, on established operators, major mine developments and DFI-backed projects, while the earlier-stage, smaller-scale and locally owned opportunities that determine whether mineral wealth creates durable local value are systematically overlooked. Structural barriers entrench this pattern: a missing middle too large for microfinance and too small for institutional capital; investment theses too narrow to fund the systems that make mining economies work; and a donor cliff that strands promising enterprises just as they approach becoming investable. Where responsible finance is absent, informal and often exploitative capital fills the gap.



Incubating New Mining Fund Concepts

We have identified six emerging asset classes where this shortfall is most acute, from ASM and local procurement to responsible-production technologies, women-led enterprise and post-mining land use. Impact capital, being patient, more tolerant of early risk and explicitly committed to human rights and environmental performance, is well placed to invest ahead of the mainstream, professionalise enterprises and shape the market that follows.

Of these six opportunities, we are prioritising an ASM fund, beginning with gold. Stakeholders describe access to finance as the single most important lever for formalisation, yet most responsible funders maintain a blanket exclusion on artisanal and small-scale mining. This leaves a financing gap, clustered around USD 2–5 million, that is currently filled by exploitative informal pre-finance. The appetite to change this is near-unanimous: of 34 ASM experts we surveyed, 33 want to help develop such a fund. We identified 47 ASM-related candidates for investment, 42% of which are priority. Yet we found only two embryonic ASM funds globally. The field is open, existing intermediaries show the model can work, and what is missing is capital on terms patient and flexible enough to build lasting solutions and the structure(s) to pool and diversify risk and build efficiency into deployment and delivery. We propose a dedicated revolving fund paired with a technical-assistance facility, prioritising gold and concentrating where the need and the pipeline are strongest, in west and central Africa, the SADC region and the Amazon. This is where catalytic capital can prove a replicable model and build an investable pipeline for the commercial financiers who follow.

We would welcome the chance to take this forward with you. As the sector convenes at AFSIC, Resourcing Tomorrow in 2026 and Mining Indaba in 2027, we invite investors, funders and partners to reach out and learn more about our work supporting impact investment. We can connect you to candidate investees from the pipeline we have built across gold and critical-mineral value chains; explore with you how you might take part in, or help shape, an ASM fund; and support you to design or sharpen your own investment strategies across minerals systems, drawing on our methodology and our extensive network of on-the-ground and international partners.

The structures needed to channel both impact and conventional mining capital into these markets will only be built through shared vision, intent and collaboration. Join us.



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