



Credit: Stephanie Shumsky/Pact

ANALYZING SUPPLY CHAIN COLLABORATION FOR ASM COBALT FORMALIZATION IN THE DRC

AUTHORS: Benjamin Katz, Luca Maiotti

ORGANIZATION(S): Organisation for Economic Co-operation and Development (OECD)

INTRODUCTION

A multiplicity of roles and relationships define artisanal and small-scale mining (ASM) production and trade of cobalt in the Democratic Republic of the Congo (DRC). This is a result of a highly developed upstream market but is also indicative of the parallel and sometimes conflicting operating models in use, leading producers and traders variously to contest the same resources, circumvent efforts to promote transparency, and play by different rules.

A central question then arises: what collaborative policy responses and due diligence practices are best positioned to shift market expectations in favor of an ASM formalization process that is robust, scalable, and allows the sector to support livelihoods? Based on in-depth mapping and prior research, the details of which can be found in OECD (2019), this case study demonstrates the importance of mapping the details of the cobalt supply chain in DRC and presents a set of policy recommendations to enhance ASM formalization.

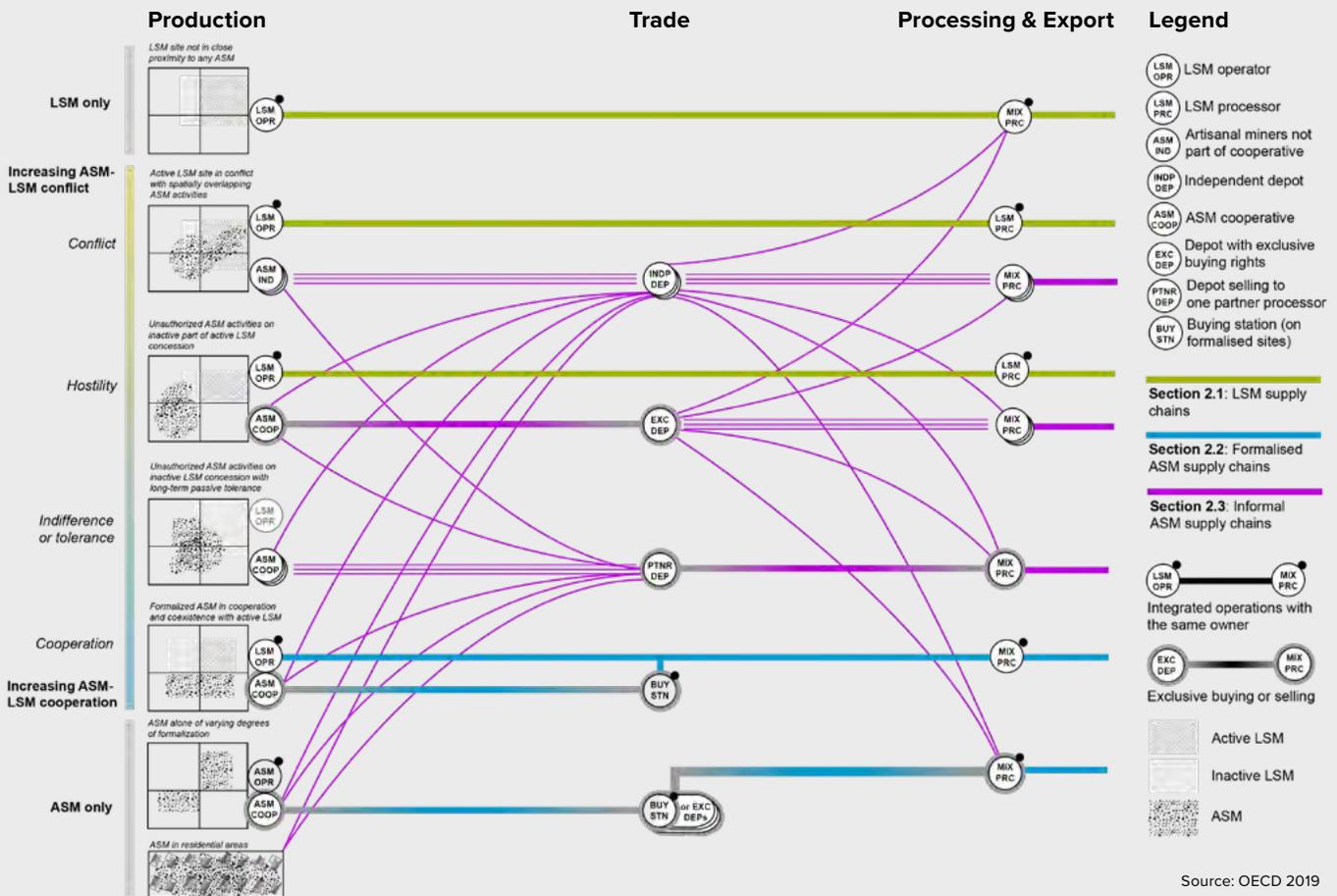
Supply chain structure

DRC supplies approximately 60-70 percent of the world's cobalt. Of this, large-scale mining (LSM) represents 70-80 percent of DRC cobalt production, while the rest (20-30 percent) is from ASM. This means artisanal cobalt production in DRC comprises 13-20 percent of world production.¹ Figure 21 illustrates how different operating models bring miners, traders, and processors in the DRC into contact through sourcing relationships and on-site interface. It is this level of data and detailed mapping that is needed to develop robust policy recommendations to improve ASM. Some of the largest LSM companies operating in the DRC have integrated supply chains in which the mine operator also owns and operates the facilities that process ore into products for export, typically cobalt hydroxide. The mapping shows such companies maintain custody of the minerals from production through to export, and sometimes beyond (Figure 21).

However, despite the perception of the downstream market, a significant number of LSM operators, processors, and refiners also source material produced by ASM, which may be blended with LSM material at various points in the supply chain.² This often takes the form of an LSM operator and refiner that also purchases ASM materials from *dépôts* (buying centers) because the operator or refiner does not have an active exploitation permit, or, when they do, in order to supplement their production (Figure 21, lines 1,3, 5, and 6).

The 2018 DRC Mining Code (*RDC Code Minier* 2018) limits ASM activity to Artisanal Mining Zones (ZEAs). However, due to the existence of few viable ZEAs and the concentration of deposits on private Exploitation Permits (PEs) intended for industrial mining, most ASM cobalt production currently takes place on PEs. ASM activities overlap with active LSM operations or occur on inactive or residential areas of the concession. This means that the extensive

FIGURE 21. DRC Cobalt Supply Chain Overview



LSM-ASM interface is variously contested, fraught with ambiguity, and managed through a combination of improvisation and regulatory workarounds.

Some LSM operators also operate ASM sites and blend material with ore from LSM sites to reach target grades and production volumes (Figure 21, lines 7, 8, and 9). In this configuration, ASM operations have recognition from mining regulatory authorities and explicit authorization of the permit holder or operator, which establishes a supply agreement with ASM cooperatives. The LSM operator carries out the overburden removal, distributes personal protective equipment, and performs safety checks in the pits. Among the nearly 100 known ASM mining sites³ (BGR 2019; Faber et al. 2017), at least four may be considered to have these features of formality.

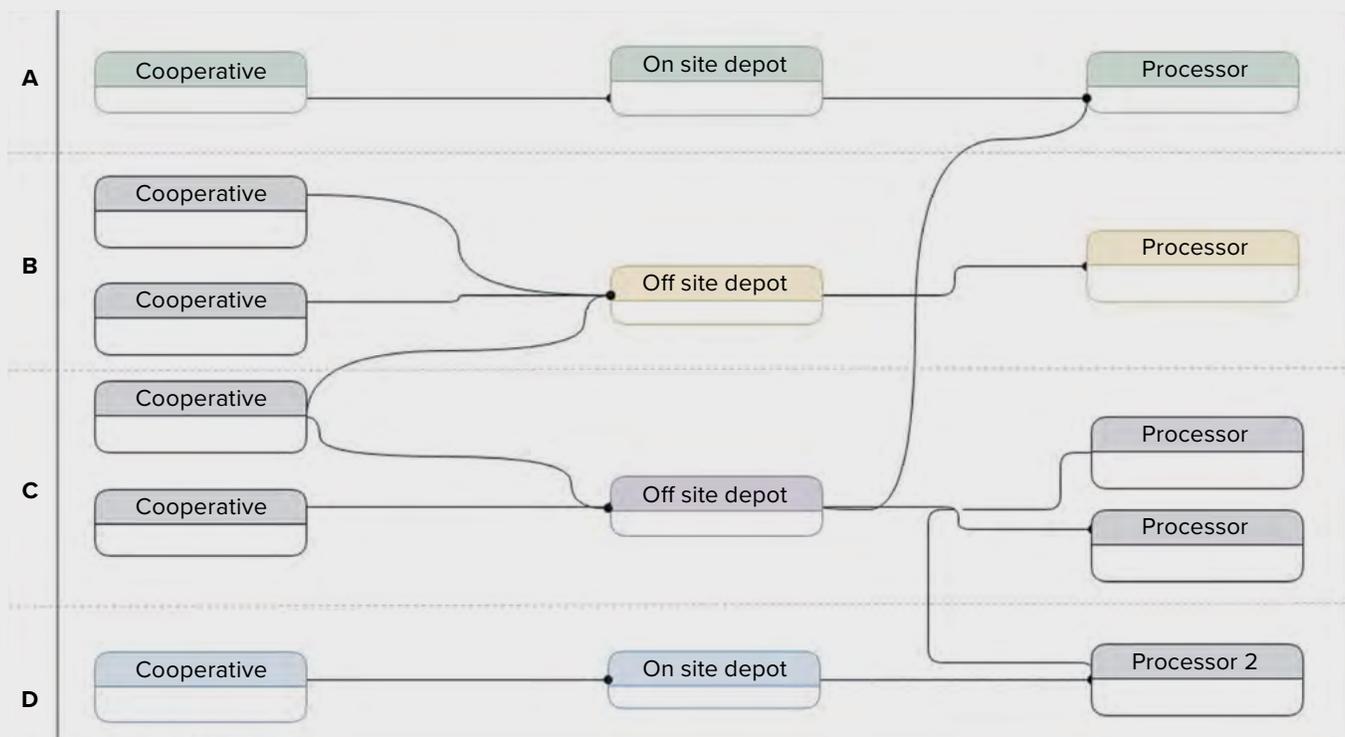
The ore extracted by informal ASM miners is brought to *dépôts*, which can be located directly on the mine site, along major roads, or sometimes in private homes. The relationships between processors, *dépôts*, and cooperatives are often complex. The leverage and visibility of each actor largely depends on political affiliations and financial ties,

as Figure 22 shows. Again, using data to map these relationships is key to developing robust policy recommendations and collaboration among ASM partners for change.

In line A, formalized ASM production, the processor supervises all commercial relations on the site through ownership of on-site *dépôts* and paying management fees to the cooperative. The same processor can also buy from the *dépôts*, with which it has no financing relationship to top up production. On-site *dépôts* also exist in informal ASM (Figure 22, line D), but the ability to set the terms of the relationship rests with whichever party is better connected.

For off-site buying centers, the *dépôt*-processor relationship can either be monopolistic, when the processor buys all the production of a *dépôt* (Figure 22, line B), or oligopolistic, when more than one processor (usually between two and five) buy material from the *dépôt* (Figure 22, line C). Even off-site *dépôts* are often not independent, but instead are part of vertically integrated supply chains through either ownership or exclusive buying relationships with processors.

FIGURE 22. Financial Links and Commercial Relationships within Different Trading Models



Source: OECD 2019

Resolving systemic impediments to formalization

Considering the complexity of the supply chain and the competitive incentives of various supply chain actors, ASM formalization faces four systemic challenges that, with further research and data, consultation, and policy action to resolve them, could significantly contribute to a paradigm shift in favor of ASM formalization sensitive to commercial and livelihood needs alike.

The first is the **regulatory environment**. Among wider governance challenges related to the extractive sector in the country, co-operation between entities involved in ASM production and LSM operators is not straightforward based on current regulations. There are exceptional approvals granted for this kind of co-operation, but the process for obtaining them should be made more transparent and accessible. Some form of co-operation is likely critical in order to address both the currently contested nature of mining concessions as well as the need for sufficient capital and expertise to invest in and maintain formalized ASM sites, including the removal of overburden.

A second systematic challenge is **inconsistent industry expectations**. The way leverage and pressure are currently applied by companies in the cobalt supply chain in support of due diligence practices is highly inconsistent and sometimes counterproductive. A significant share of downstream companies appears to be exercising either very little due diligence or compelling suppliers to cease sourcing ASM altogether, regardless of identified risk or considering at which sites risks are identified, and without first making attempts to mitigate risks. Besides being out of step with the OECD Due Diligence Guidance for Responsible Mineral Supply Chains (OECD 2016), this fosters an uneven playing field between ASM with formal features (which in many cases is being excluded from supply chains due to de-risking strategies and no-ASM policies) and informal operations (whose production is still being accepted by many companies without due diligence even being conducted).

Market volatility is the third systemic challenge that needs to be overcome to support ASM formaliza-

tion. International commodity prices and the cost structures they impose on mining operations are constantly changing. This is also true for ASM with formal features. Below certain international price thresholds, operating formalized sites may not be profitable. Simply relying on the contingency of switching operations on or off depending on market conditions, however, leaves the development of formalized ASM in a precarious place and could periodically foster redevelopment of informal activities with lower costs. Research and operational planning should give due consideration to leveraging capacity development as well as investments in complimentary—though not necessarily alternative—livelihoods to cushion the impact of employment disruptions for ASM workers and support a lasting framework for formalization even as market conditions change. Taking a similar approach, better mine planning, price transparency, and proactive communication with ASM workers could help reduce disruptions to employment, encourage a race to the top to attract miners to formalized sites, and reduce friction as miners shift between commodities.

A final challenge is the **opacity of informal operating costs**. The costs linked to due diligence in formalized sites are offset by lower prices paid to miners, who nonetheless enjoy safer working conditions. Artisanal miners at informal sites may be paid slightly higher prices for their minerals, but also face higher costs to be able to work, such as informal payments solicited by various state agencies, cooperatives, and traders. The pricing system for ASM material is more transparent at sites with formal features, but more work is needed on developing worker representation norms and labor management practices to ensure that ASM miners have the necessary information and a seat at the table regarding pricing decisions, even if most ASM workers remain independent contractors.

Recommendations

In light of the challenges outlined, stakeholders in the cobalt supply chain may consider the following measures to move towards robust and scalable ASM formalization. Potential benefits include improved labor conditions for ASM miners, more

predictable levels of responsible production, and reduced social conflicts that are both harmful to local communities and present security risks for LSM operators and their employees. The recently established state-owned enterprise *Entreprise Générale de Cobalt* could be an avenue for taking ASM formalization into the next phase, but naturally necessitates careful management as well as goodwill, and collaboration from the private sector. Further research and robust data could assist the DRC government and industry actors by testing these hypotheses and recommendations for incorporating them into industry and regulatory policies.

POLICY ENVIRONMENT—FOR CONSIDERATION OF THE DRC GOVERNMENT

Clarify requirements for LSM-ASM cooperation.

Clarify specific avenues and/or further institutionalize regulatory approaches that promote LSM-ASM cooperation on industrial concessions. This can help to ensure consistency for production sharing or supply agreements, reduce uncertainty around the business environment, and make it more attractive to LSM operators to work with artisanal miners on a commercial basis.

Create economically viable ZEAs. This includes providing official legal recognition to new ZEAs in areas that are already known to possess deposits that are favorable for artisanal extraction and are close enough to towns and population centers to be accessible by ASM miners. Viable ZEAs also require regulatory approaches that attract investors, partners, and customers to help carry out overburden removal and mine planning without compromising the integrity of a ZEA's purpose. In addition, state agents like the *Service d'Assistance et d'Encadrement des Mines Artisanales et de Petit Echelle* (SAEMAPE) and the Mining Division should be equipped with or have access to reliable sampling and weighing instruments. In addition, consider how concessions that do not fulfil the requirements of the Mining Code can be used to create ZEAs, with a particular attention to state-owned enterprises. Specific requirements of the Code include holding a maximum of 50 exploitation permits; paying surface rents, complying with all operational, social, and environmental requirements, demonstrating actual

commencement of work for renewal of exploration permits, and public tendering.

Empower cooperatives to be actors for positive change.

Apply clear criteria to the evaluation of cooperatives' applications for registration and the assignment of cooperatives to mining sites. While cooperative directors do not necessarily have to be drawn from among local artisanal miners themselves to provide value for miners working at sites under their supervision, authorization given to cooperatives should be based at least to some extent on the value they provide to miners. For example, in the form of services, representing collective interests, access to finance, or technical expertise.

MARKET ENVIRONMENT—FOR CONSIDERATION BY COMPANIES AND INTERNATIONAL PARTNERS

Engage with legitimate ASM. Consider formally engaging with legitimate artisanal and small-scale miners and progressively build capacity and improve practices by adapting know-your-customer protocols to the specific characteristics of ASM and setting realistic expectations for improvement within clear timeframes, as per the recommendations of the OECD Due Diligence Guidance for Responsible Mineral Supply Chains (OECD 2016).

For downstream companies, avoid pursuing ASM-free sourcing strategies as a form of risk mitigation. Pursue cross-industry collaboration among different segments of the supply chain in order to invest in and scale up ASM formalization projects to the critical mass needed to overcome competitiveness challenges with respect to informal ASM. It is therefore important for industry and multi-stakeholder initiatives in responsible sourcing to put in place accountability mechanisms for members against their own policies, commitments, and recommendations.

For upstream companies sourcing material from artisanal miners, help build capacity among ASM cooperatives in areas such as governance, access to finance, production techniques, and involvement in local procurement initiatives to increase financial stability for ASM workers and promote cooperatives' ownership of the formalization process.

Robust supply chain mapping. Step up site visits, data collection, and communication with suppliers to improve the integrity of chain of custody documentation for ASM material purchased through

depots and open markets, as an entry point for promoting formalization efforts at origin sites. This should be done hand in hand with the sector reform process underway by the DRC government.

END NOTES

- 1 The percentage of artisanal production of cobalt ranges between 18 percent and 30 percent. The discrepancy between these values stems from the degree of informality in ASM, which makes it difficult to measure the exact number of workers, and the mobility of ASM workers, which depends on factors such as the international price of cobalt (with workers switching to other commodities such as copper in the same provinces or other minerals in other parts of the country) and seasonality.
- 2 The research for this article case study did not attempt to corroborate specific companies' claims to source exclusively non-ASM material.

- 3 Due to the varying methodologies of studies and mapping exercises (BGR, 2019; CEGA, 2017), as well as the fluidity of the situation on the ground, it is difficult to indicate a precise number of informal ASM operations taking place on LSM concessions. Nonetheless, 100 is the lower bound for such estimates.

REFERENCES

BGR (Bundesanstalt für Geowissenschaften und Rohstoffe). 2019. *Mapping of the Artisanal Cobalt Mining Sector in the Provinces of Haut-Katanga and Lualaba in the Democratic Republic of the Congo*. https://www.bgr.bund.de/EN/Themen/Min_rohstoffe/Downloads/studie_BGR_kupfer_kobalt_kongo_2019_en.html

Faber B., Krause B., and Sanchez De La Sierra R. 2017. *Artisanal Mining, Livelihoods, and Child Labor in the Cobalt Supply Chain of the Democratic Republic of Congo*. Center for Effective Global Action, University of Berkeley. http://cega.berkeley.edu/assets/cega_research_projects/179/CEGA_Report_v2.pdf

RDC Code Minier. 2018. *Loi n°18/001. JOURNAL OFFICIEL de la République Démocratique du Congo*. Extractive Industries Transparency Initiative. https://eiti.org/files/documents/j_o_ndeg_speical_du_28_mars_2018_code_minier.pdf

OECD (Organisation for Economic Co-operation and Development). 2016. *OECD Due Diligence Guidance for Responsible Supply Chains of*

Minerals from Conflict-Affected and High-Risk Areas: Third Edition. OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264252479-en>

OECD (Organisation for Economic Co-operation and Development). 2019. *Interconnected supply chains: a comprehensive look at due diligence challenges and opportunities sourcing cobalt and copper from the Democratic Republic of the Congo*. OECD Publishing, Paris. <https://mneguidelines.oecd.org/interconnected-supply-chains-a-comprehensive-look-at-due-diligence-challenges-and-opportunities-sourcing-cobalt-and-copper-from-the-drc.htm>