



**Interconnected supply chains: a comprehensive look
at due diligence challenges and opportunities
sourcing cobalt and copper from the Democratic
Republic of the Congo**



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The OECD Due Diligence Guidance

The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (hereinafter “the OECD Guidance”) provides step-by-step recommendations endorsed by governments for global responsible supply chains of minerals in order for companies to respect human rights and avoid contributing to conflict through their mineral or metal purchasing decisions and practices. The OECD Guidance may be used by any company potentially sourcing minerals or metals from conflict-affected and high-risk areas, and is intended to cultivate transparent, conflict-free supply chains and sustainable corporate engagement in the minerals sector. The OECD Council adopted the Recommendation on Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas [OECD/LEGAL/0386] on 25 May 2011, based on a proposal from the Development Assistance Committee (DAC) and the Investment Committee. More information on the OECD’s work in the mining sector can be found at: <http://www.oecd.org/corporate/mne/mining.htm>.

The OECD cobalt stakeholder group

Since 2018, the OECD Secretariat has convened a yearly meeting bringing together representatives of companies along the global cobalt supply chain, government and civil society to share updates on responsible sourcing projects aligned with the Guidance, discuss challenges related to the implementation of due diligence practices and potential avenues to overcome them.

These meetings also benefit from the input of industry and multi-stakeholder initiatives, as well as market makers, that are working towards responsibly sourcing cobalt in line with the OECD Guidance. These include the Responsible Cobalt Initiative (RCI), launched by the China Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exporters (CCCME), whose members include Chinese cobalt producers, smelters and refiners, as well as global downstream companies. The CCCME and the Responsible Minerals Initiative (RMI), an industry initiative of 380 members, are also working together to roll out trainings, third-party assessments and audits and raise awareness of the OECD Due Diligence Guidance and the Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains. The London Metal Exchange, the world's largest market in options and futures contracts for base and other metals (including cobalt and copper), has also introduced proposed rules requiring all brands delivering on the Exchange to apply the OECD Due Diligence Guidance. The World Economic Forum’s Global Battery Alliance, a public-private partnership and collaboration platform made up of some 50 member organisations seeking to connect and scale up initiatives to transform the value chain for batteries.

Representatives from the Congolese government both from the central mines ministry and the provincial governments of Haut-Katanga and Lualaba provinces also participate at the meetings. Among a range of civil society organisations, the *Cadre de dialogue pour les Investissements Durables au Katanga* (Dialogue Framework for Sustainable Investment in Katanga [IDAK]), a Congolese multi-stakeholder platform that meets regularly to formulate recommendations to local government, industry and civil society, as well as international NGOs such as Amnesty International, Global Witness, Human Rights Watch, and Resource Matters also take part.

Notes on this study

This report was prepared by the OECD Secretariat through qualitative research methods including a literature review, desk-based research, remote and field-based semi-structured interviews, and site visits to upstream production and processing facilities. 144 key informant interviews spanning all segments of the upstream supply chain, international organisations, academia, and civil society were conducted. Table 2 at the end of the document summarises the interviews undertaken over the course of the study. The field visit took place over two weeks in August 2019 in Haut-Katanga and Lualaba provinces in the Democratic Republic of the Congo. The scope of the study is focused on Annex II risks of the OECD Guidance in the upstream segments of the cobalt and copper supply chains, but also reviews several conditions giving rise to such risks in addition to other parts of the supply chain important for understanding due diligence in the sector.

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Executive summary

Cobalt and copper are critical metals to the growing market for rechargeable batteries, particularly in electric vehicles, in addition to long-term established applications for the metals. There are now more than 300 million electric vehicles on the road, including more than 5 million cars (many of which rely on cobalt chemistries). Consistently comprising over 60% of global production of cobalt, and the fifth largest producer of copper in the world, the Democratic Republic of the Congo (hereafter “DRC”) plays an indispensable role in the upstream supply chain of these metals. The metals are often mined and traded in the same region, known as the “Copperbelt”, and by the same companies, with cobalt mostly a by-product of copper processing and refining. The People’s Republic of China (hereafter “China”) also has a dominant role in the supply chain. Eight of the 14 largest cobalt miners in the DRC are now Chinese-owned, accounting for almost half of the country’s output. Most importantly, China represents 80% of the world’s cobalt chemical refining capacity.

The focus of this report is on the upstream supply chain of copper and cobalt (2C) products produced in the DRC and:

- reviews the **structure of the supply chain** from production through trading to crude processing and refining, the last phase prior to export;
- analyses the **prevalence of risks covered in Annex II** of the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (“the OECD Guidance”); and
- provides **recommendations** for due diligence considerations.

The third edition of the OECD Due Diligence Guidance clarifies its applicability to all minerals, thus including copper and cobalt. The Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains (CCCMC, 2015) are aligned with the OECD Due Diligence Guidance and also apply to copper and cobalt. The Guidance covers both artisanal and small-scale mining (ASM) and large-scale mining (LSM) modes of production and has a global application.

Although the Guidance does not have a dedicated supplement for each mineral, stakeholders may refer to the OECD Supplement on Tin, Tantalum and Tungsten given the relative similarities between these supply chains. An audit of due diligence practices should be carried out at control points in mineral supply chains per Step 4 of the OECD Guidance. In the cobalt supply chain, the control point is the fine refiner after export. However, in-country concentrators and processors also play a key role and require on-the-ground risk assessments by fine refiners.

Key findings

Significant gaps and challenges remain in due diligence and risk mitigation of adverse impacts by companies sourcing 2Cs from the DRC. The research team is aware of both upstream and downstream existing risk assessment efforts but these require much greater consistency and wider uptake, and should be more comprehensive across all risks covered by Annex II of the Due Diligence Guidance, including corruption. The lowest levels of due diligence awareness and capacity can generally be found at the buying centre level where ASM material is traded. Institutional capacity challenges to protect human rights, and provide free education, as well as structural economic weaknesses and volatility may complicate companies' efforts to address risks.

The upstream supply chain of 2Cs is often presented as two distinct types: artisanal and small-scale mining (ASM) and large-scale mining (LSM). However, **there is extensive interaction and interface between ASM and LSM, both commercially and physically, throughout all segments of the upstream supply chain.** Despite the perception of the downstream market, a significant number of the top LSM producers source ASM material in some shape or form due to technical and commercial requirements.

The lack of legal recognition for ASM in viable conditions and locations or a clear regulatory framework for LSM-ASM cooperation leads upstream operators to inaccurately declare the origin of minerals on chain of custody documentation for ASM-produced minerals traded through 'open markets'. With appropriate revisions to the regulatory framework to reset such perverse incentives, existing chain of custody documentation could be used to improve the transparency of open market trading models in conjunction with reforms and reorganisation of open markets already underway by provincial government.

Different forms of child labour have been observed at copper and cobalt ASM mine sites. **A recent mapping observed children present or working at about one in four ASM sites, with the numbers of children varying significantly from site to site.** Most children at mine sites accompany their parents or work independently. However, children working for third party adults have been shown to be more vulnerable to serious abuses.

There are significant weaknesses in existing due diligence practices regarding child labour. These include low levels of disclosure, insufficient efforts to put in place child labour risk mitigation plans, an emphasis on livelihoods programming often insensitive to the place of ASM in the economy, and de-risking strategies prompting premature disengagement from ASM without considering their impact on local livelihoods and potential harm to children. Such strategies have also led to under-investment in formalisation of ASM.

Forced labour has not been widely observed or reported at either ASM or LSM mine sites. The intersection at some sites of public and private security forces, poorly defined employment relationships characterized by high degrees of dependency, and hazardous working conditions, should prompt scrutiny of forced labour risks nonetheless.

The Haut-Katanga and Lualaba provinces are not considered conflict zones. Some reports indicate that the Bakata Katanga non-state armed group is re-emerging in the Copperbelt, though recent activities of the group have not been connected with illegal taxation or control of 2C mining and trade.

Tension related to land use, the ASM-LSM interface, and competing interest groups sometimes results in violence at mine sites, though non-state armed groups have not been reported to be involved.

Involvement of rogue elements of public security forces in mining activities has been widely reported. The Republican Guard (GR) has been reported to have been involved for many years in securing and controlling mine sites and trading centres for politically exposed persons (PEPs). The armed forces of the DRC, the *Forces Armées de la République Démocratique du Congo* (“FARDC”), were deployed in June 2019 to demolish ASM ‘buying centres’ (*dépôts*) and clear ASM workers out of LSM sites. They have been reported in some instances to charge fees to ASM workers to enter the same sites.

The level of training in the Voluntary Principles on Security and Human Rights (VPs) among public and private security forces is low throughout the region. This presents risks regarding the conduct of security forces at mine sites, particularly given the extensive interface between LSM sites with ASM activities and urban areas.

Bribery used to acquire assets in the LSM sector has been widely reported. This has resulted in the sale of DRC mines allegedly at a fraction of their market value, depriving the Congolese State of much-needed budgetary resources. Corrupt transactions expose involved companies to legal liability and dealings with sanctioned individuals. Low or non-existent levels of due diligence are found in the use of subcontracting or consulting firms with beneficial owners who are PEPs. The retention of a large number of mining concessions outside the parameters of the DRC Mining Code by the state-owned *Générale des Carrières et des Mines* (Gécamines) and the opacity regarding the terms of its transactions and joint ventures, present significant challenges to addressing corruption in the sector.

Considering the corruption risks prevalent in the LSM sector, claims that supply chains are ‘clean’, sustainable, or responsible simply because they do not source ASM material, without providing evidence of comprehensive due diligence should be viewed with scepticism by customers, business counterparts and stakeholders.

Several corruption risks are prevalent in the ASM sector, including many cooperatives’ directors and open market owners being PEPs and informal payments collected by regulatory personnel and cooperative management from ASM workers.

The few ASM formalisation projects being piloted in the region show promise in mitigating some risks prevalent in the ASM sector, though competitiveness issues, ASM de-risking and disengagement strategies, and a lack of regulatory clarity or economies of scale pose serious challenges to the model’s viability.

To build more responsible cobalt and copper supply chains, companies and government should take action to render due diligence in the sector more comprehensive and more nuanced, with a greater emphasis on risk mitigation. Furthermore, there should be increased focus on corruption risks, greater efforts to promote constructive ASM engagement and implementation of the VPs, and focus on conducting gender-responsive due diligence. Multi-stakeholder initiatives should operationalise their commitment to concretely changing business practices on the ground and encouraging formalisation, including by putting in place accountability mechanisms for members against the initiatives’ policies, commitments and recommendations.

1. Background and Context

This chapter reviews the main use cases for cobalt and copper and the dominant market position of the DRC for mining and China for processing. The main features of the 2018 revision of the Congolese Mining Code are then presented and analysed. We highlight key issues critical to understanding the structure of the supply chain and outline which issues present challenges to and opportunities for improved due diligence in the sector.

1.1 - Clarifying OECD due diligence expectations in cobalt and copper

Companies, government and civil society have increasingly focused their attention on the cobalt and copper supply chains. As interest in these supply chains has grown, questions often arise related to responsible sourcing and the scope of application of the OECD Due Diligence Guidance, particularly around the below topics:

Application of the Guidance. The third edition of the OECD Due Diligence Guidance clarifies its applicability to all minerals, thus including copper and cobalt. The Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains (CCCMC, 2015) are aligned with the OECD Due Diligence Guidance and also apply to copper and cobalt. The Guidance covers both ASM and LSM modes of production and is not limited to one country or region; it has a global application.

“Conflict minerals”. The **“conflict minerals” label is misleading.** Companies are expected under the Guidance to undertake due diligence on minerals in order to identify and address a wide variety of risks including financing conflict, but also to ensure respect for human rights, avoid bribery, money laundering and tax evasion. As per the OECD Due Diligence Guidance and the Chinese Guidelines, due diligence should cover all risks, not only conflict financing or child labour in ASM.

Cobalt/copper supplement. Although the Guidance does not have a dedicated supplement for each mineral, stakeholders may refer to the OECD Supplement on Tin, Tantalum and Tungsten given the relative similarities between these supply chains.

Control point. Control points under the Guidance are key points of transformation in the supply chain where traceability or chain of custody information may be aggregated or lost, and where the smallest number of actors process or handle the largest amount of inputs, while having a good level of visibility and leverage over the upstream supply chain (OECD, 2018). In the cobalt supply chain, the control point is the fine refiner, which should be audited as per Step 4 of the OECD Due Diligence Guidance. However, concentrators, processors and crude refiners also play an essential role for upstream supply chain due diligence, and so audits of the fine refiners would necessarily involve in-depth checks of concentrators and processors due diligence systems, findings and plans.

Upstream vs. Downstream. Upstream actors include all actors from the mine to the fine refiner (control point). They are responsible for collecting, individually or as part of a collaborative industry effort, chain of custody or traceability information. Downstream actors include all actors after the fine refiner through to consumer facing companies. They are responsible for identifying fine refiners in their supply chain and evaluating, individually or as part of a collaborative industry effort, the control points' upstream due diligence.

Due diligence vs. traceability. Step 1(C) of the Guidance expects companies to establish a system of controls and transparency over the mineral supply chain in order to generate information companies will analyse in the risk assessment. The Guidance is not prescriptive as to what type of system of transparency companies should put in place (varying from a paper trail to a traceability system) which is to be adapted depending on the risk appetite of the company. Expensive and complex traceability systems are not always necessary and should take into account the context for implementation and the resource needs for other critical aspects of the due diligence process, including supporting ASM formalisation, and preventing and mitigating on the ground adverse impacts.

Progressive approach. Due diligence is an ongoing process of gradual improvements. Companies should encourage change by engaging constructively with suppliers, including informal actors. Companies are expected to take reasonable steps and make good faith efforts to carry out due diligence in their supply chains. They are not expected to achieve full implementation of the Guidance overnight. A progressive approach to due diligence should nonetheless entail measurable improvements and annual reporting in order to allow customers, consumers, civil society, investors and others to track progress.

1.2 - Main uses of cobalt and copper

Cobalt has historically been used as a powerful colouring agent, but it found industrial application in electroplating and alloying other metals, including in the aerospace sector. Today, it is increasingly used in battery applications, including in portable devices (mobile phones and laptops), stationary applications (energy storage) and electric mobility (electric or hybrid vehicles and charging stations). Currently, lithium-ion batteries are at the core of the transition to electric mobility, as they outperform other battery types. Although cobalt is not present in all lithium-ion batteries, it is used extensively in batteries installed in electric cars due to its high energy density and good durability as a cathode material. Other elements commonly associated with lithium-ion batteries include nickel, aluminium and manganese (Cobalt Institute, no date).

In recent years, the rise of electric mobility has had a direct effect on cobalt demand. In 2018, the global electric car fleet exceeded 5.1 million units, almost doubling the amount of new registrations in 2017. The number of electric vehicle chargers reached over 5.3 million in 2018, including 157 000 fast chargers for buses (International Energy Agency, 2019).

Figure 1: Cobalt price January 2017 to September 2019 (USD)

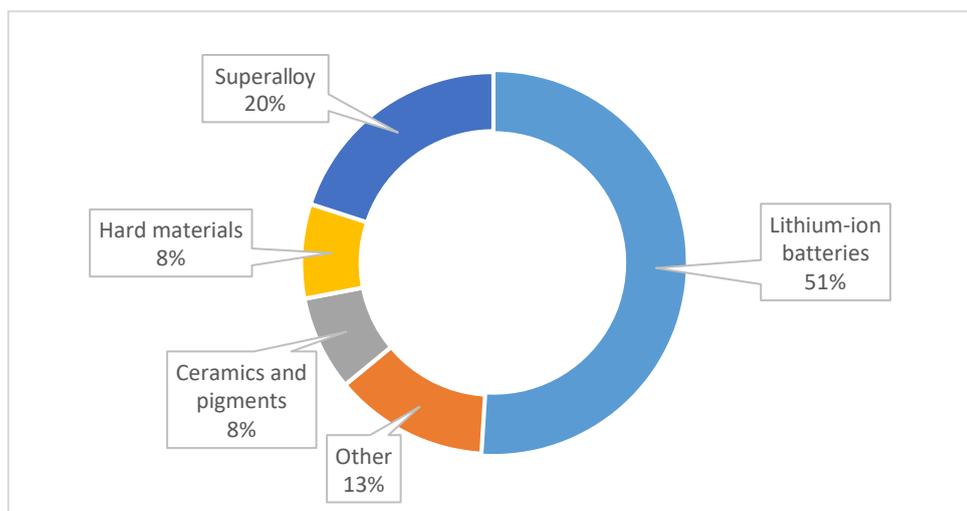


Source: LME, 2019a

Prices soared from around USD 25000/t during most of 2016 to a peak of USD 95000/t in March 2018, with battery manufacturers scrambling to secure cobalt input to cover the expected demand, often through offtake agreements with primary cobalt producers. The price rise prompted production to increase faster than the electric vehicle transition took off with excess supply developing, and prices fell steadily until bottoming out at around USD 25000/t in July 2019.

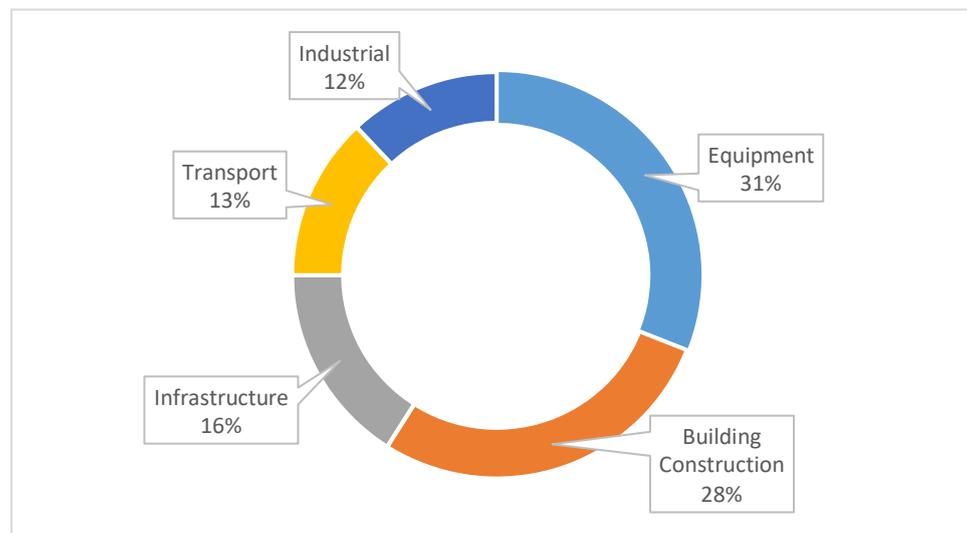
Artisanal mining has played the role of a “swing producer”, stepping up growth to bridge the gap between supply and demand and declining with falling prices. Although the market seems confident to have enough supply in the short-medium term, demand for cobalt is expected to outpace supply in the medium-long term (Reuters, 2019a; CRU, 2018).

Figure 2: Cobalt end uses in 2016



Source: Darton Commodities in Global Energy Metal Corps, no date

Figure 3: Copper end uses



Source: International Copper Study Group, 2019

Copper also has major industrial applications. Because of its properties of malleability, thermal and electrical conductivity, and resistance to corrosion, copper has been widely used in the electronics industry, construction and industrial machinery. In addition, the transition to electric mobility also entails a likely expansion of the role of copper in road transport. Not only is it used in batteries, motors and wiring, but also in charging infrastructure. For example, an electric car contains four times more copper than a comparable internal combustion engine car (respectively 80 kg and 20 kg). In 2018, over 300 million two- and three-wheelers and almost 500 000 electric buses were in use (International Energy Agency, 2019).

The copper price on the London Metal Exchange (LME) fluctuated between USD 6 800/t in February 2018 and USD 5 700/t in September 2019.

Figure 4: Copper price Jan 2017 to Sept 2019 (USD)



Source : LME, 2019b

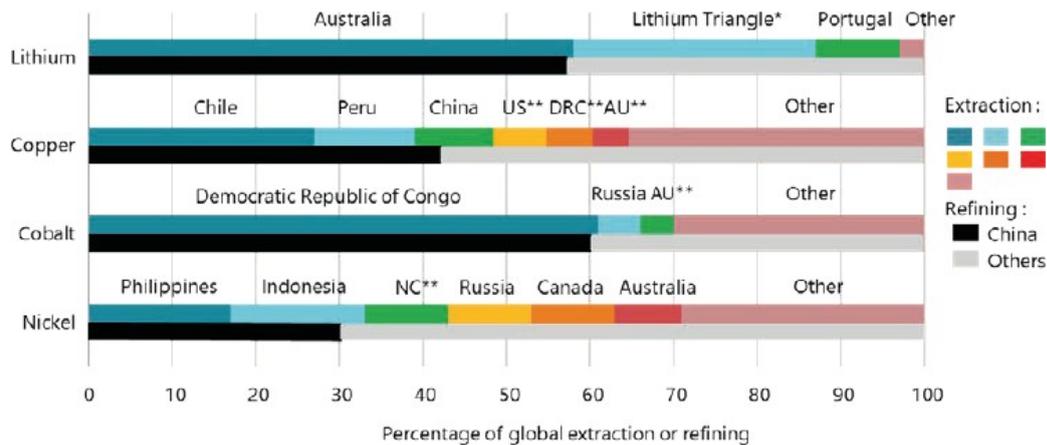
1.3 - Cobalt and copper mining in the Democratic Republic of the Congo

The DRC accounts for most of the world's cobalt production and known reserves. In 2018, 110,000 t of cobalt were produced in the two southern provinces of Lualaba and Haut-Katanga, roughly one third of which was from artisanal mining (Financial Times, 2019c; DRC Ministry of Mines, 2019). Although statistics may vary slightly from year to year, this is consistent with data from previous years: The DRC is considered to be producing an estimated 60-70% of the world's cobalt, 20-30% of which is artisanal production.¹ Chile is the top copper producer, followed by Peru, China and the United States. The DRC produced 1,200,000 t of copper in 2018, which amounts to 6% of world production, making it the biggest producer in Africa. The somewhat greater stability in copper prices made working in the copper sector comparatively more lucrative than cobalt, leading many artisanal miners working in cobalt pits in 2018 to switch their activities to copper as cobalt prices plummeted.

¹ The percentage of artisanal production of cobalt ranges between 18% and 30%. 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.

Cobalt produced through large-scale mining (LSM) is refined as a by-product of either nickel or copper processing, but only of copper mining in the DRC; whereas artisanal mining tends to target deposits with higher concentrations of one mineral or the other. Most of the Congolese cobalt-copper production takes place in a region known as the “Copperbelt”, an area hosting copper and cobalt deposits that extends over a region more than 500 km long, both in southern DRC and northern Zambia.

Figure 5: Main extraction and refining locations of key materials for automotive batteries



Source: International Energy Agency (2019) Global EV Outlook. All rights reserved.

The particular mineral alteration in the DRC, as well as the action of metamorphic processes have led to the formation of particularly enriched oxidized minerals. In the case of cobalt, heterogenite, a mineral specific to this context, makes it possible to achieve natural concentrations of cobalt in ores of 0.4% to 0.8% Co, five times higher than those of lateritic nickel ores. Artisanal mining in the Copperbelt is enabled by the fact that oxidized minerals are carried by relatively soft rocks (Mineralinfo, 2018). Although figures vary due to lack of reliable statistics, price variability and seasonality, between 140,000 and 200,000 artisanal miners are estimated to be currently working in copper and cobalt in Lualaba and Haut-Katanga.

Figure 6: Companies extracting cobalt in the DRC



Source: Darton Commodities as published by Financial Times, 2019c

1.4 - Processing and transport

Metal processing consists of a series of mechanical procedures aimed at elevating the grade of the material to commercial quality, transforming ores into metals or concentrates. Depending on their genesis and structure of ore deposits, copper and cobalt ores can be hydroxides, oxides or sulphides. Typically, (oxy)-hydroxide ores are very superficial and take the form of malachite, crysocola and heterogenite. They are followed by oxidic ores, such as cuprite and tenorite to be found in rather shallow depths (up to approximately 200 metres deep). Lastly, sulphide ores have higher copper content and take the form of chalcopyrite, bornite, carrolite and chalcosine. Mixed zones of these oxide and sulphide ore parageneses occur in most deposits. Hydrometallurgy is used to process oxides and pyrometallurgy is used for sulphide processing.

Most operations in the DRC provinces covered by the study currently use hydrometallurgic processing, but as oxide deposits gradually deplete in the next 10-15 years, companies will likely need to make major investments to perform pyrometallurgy to be able to sustain or increase output capacity.

Box 1 – Clarifying misconceptions about Artisanal and Small-Scale Mining (ASM)

What is ASM? Artisanal and small-scale mining refers to formal or informal mining operations with predominantly simplified forms of exploration, extraction, processing, and transportation. ASM is less capital intensive and more labour intensive compared to large-scale mining. ASM can include men and women working on an individual basis as well as those working in family groups, in partnership, in teams or as members of cooperatives or other types of legal associations and enterprises involving hundreds or even thousands of miners. For example, it is common for work groups of 4-10 individuals, sometimes in family units, to share tasks at one single point of mineral extraction (e.g. excavating one tunnel). At the organisational level, groups of 30-300 miners are common, jointly extracting one mineral deposit or vein (e.g. working in different tunnels but in the same area), and sometimes sharing processing facilities (Hruschka and Echavarría, 2011).

Myth #1 - “ASM is a marginal share of production”. ASM is a source of livelihoods and employment in many regions of the world. It currently employs around 90% of the mining workforce, which corresponds to at least 40 million people worldwide (World Bank, 2019). In cobalt, it represents about 20-30% of the DRC’s production, thus making it an indispensable player in the supply chain, particularly as a swing producer that can be “switched on or off”, or shift between different commodities, as market conditions change.

Myth #2 - “ASM is illegal”. In many countries ASM takes place in a regulatory grey zone, whereby its role is not explicitly recognised by the relevant legislation, but is largely tolerated. The OECD Guidance encourages companies to engage with legitimate ASM (see Box 2 in Chapter 2 “Supply Chain Structure” for more information) and provides a framework for engaging with ASM, presenting measures to create economic and development opportunities for artisanal and small-scale miners in an Appendix.

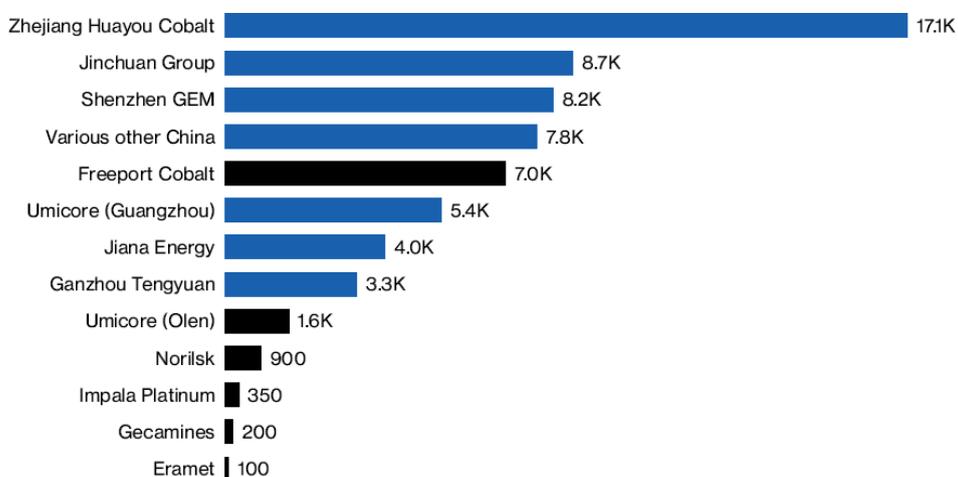
Myth #3 - “ASM is too risky”. As Chapter 3 (“Prevalence of OECD Guidance Annex II Risks and Related Adverse Impacts”) shows, both LSM and ASM can be exposed to risks. While ASM can be more exposed to serious human rights abuses and extortion by security forces, LSM can be linked to corruption, money laundering and tax evasion, which have wide-ranging effects on domestic resource mobilisation. The OECD Guidance expects companies to take a risk-based approach to perform adequate due diligence. It emphasises a progressive approach and expects disengagement only after risk mitigation efforts have failed or if the company deems risk mitigation unfeasible or the risks unacceptable.

Once refined, copper and cobalt concentrates are transported via truck from the DRC to Dar Es Salaam in Tanzania, Beira in Mozambique or Durban in South Africa. The journey takes over two weeks. A project to revive the ailing rail network to transport the ore via train from Lubumbashi via Kolwezi to the Angolan port of Lobito, partially supported by the World Bank’s Multi-Modal Transport Project until 2018, encountered various difficulties, including competing interests from trucking companies and implementation challenges associated with the *Société nationale des chemins de fer du Congo*, the Congolese Railway Company (Investig’action, 2018). The rehabilitation of the 1300-km long Angolan leg of the route was completed in 2015 by a subsidiary of China Railway Construction Corporation (Euronews, 2019), but the Congolese track is not yet ready for regular use. A pilot shipment using the route was nonetheless made in 2018 to transport 800 t of blister copper from Kolwezi to Lobito (International Mining, 2018).

The ore is predominantly shipped to China, which plays a major role in buying and refining cobalt. Largely driven by the demands of battery manufacturers, China increased production of refined cobalt 34 times from 2000 to 2016 (Shedd et al., 2017). Eight of the 14 largest cobalt miners in Congo are now Chinese-owned, accounting for almost half of the country’s output. Most importantly, China represents 80% of the world’s production of cobalt chemicals and the vast majority of refining capacity, with much of the remainder coming from a refinery in Finland acquired by the Belgian recycler and manufacturer Umicore in 2019 (Bloomberg, 2018; Financial Times, 2019a). The OECD Due Diligence Guidance considers the fine refiner the “control point” of the supply chain – more details can be found in Chapter 3 (“Prevalence of OECD Guidance Annex II Risks and Related Adverse Impacts”).

The dominant market position in the refining stage acquired by Chinese companies shows a good capacity to harness the expected rise in battery demand and the increased competitiveness of battery and component manufacturers in China and Korea, in the context of a growing importance of Chinese energy security and the opportunity to leapfrog internal combustion engine vehicles. The European Union has also adopted a number of policies to sustain the transition to electric mobility, including the Strategic Action Plan for Batteries, which consists a set of measures to support national, regional and industrial efforts to build a battery supply chain in Europe and establish Europe as a player in the battery industry (International Energy Agency, 2019).

Figure 7: Largest cobalt refiners by output in 2017 in metric tons (China-based companies are in blue)



Source: Darton Commodities Ltd in Bloomberg, 2018

1.5 - The Congolese Mining Code

The Congolese Mining code was amended in March 2018 after six years of negotiations. Some of the most relevant revisions relate to mining permit terms, royalties and taxes, local development, and transparency.

Mining permits are private concessions for use by large-scale or small-scale mining companies, but not artisanal mining. The largest and most common types include exploration permits (PRs), granted for 5 years and renewable once, and exploitation permits (PEs), granted for 25 years, and renewable for additional periods of up to 15 years. Permits may only be acquired by legal entities, not natural persons (individuals). Mining royalties rates have been set at 3.5% of gross revenues for non-ferrous and base metals, including copper, and at 10% for strategic substances. Cobalt was designated as a strategic substance by the DRC government following passage of the revised Mining Code, increasing its royalty rate to five times that under the previous tax regime (*Décret n.18/042 du 24 novembre 2018*). The mining royalty is then divided among the central government (50%), the province (25%), the decentralised territorial entity² in which the operation is being carried out (15%) and the Mining Fund for Future Generations (10%).

The new code also removed the guarantee of stability of the tax regime, which allowed a mining company to benefit from the stability of a tax and customs regime for a specified period of time. In addition to the mining royalty, Article 285 of the code requires mining companies to establish a fund for community development projects, the minimum amount of which is equal to 0.3 % of companies' annual turnover. The fund is to be managed by a legal entity comprised of 12 representatives of the local community, the company and local government. In parallel, the companies are required to negotiate with the local community a *cahier des charges*, a set of commitments for the implementation of community development projects overseen by a local development committee and a local monitoring committee. The costs of implementing such commitments are to be covered separately by the company's own corporate social responsibility budget, and not by the 0.3% annual turnover fund. A series of transparency measures requiring publication of contracts, information related to beneficial owners and Politically Exposed Persons, and production and export statistics are also planned as part of forthcoming secondary legislation. This legislation could go a long way towards improving the transparency, strengthening independent monitoring, and assisting due diligence efforts in the sector.

The new Mining Code gives more attention to local development to ensure that local residents can benefit from mining activities taking place in or near their communities. Direct payments to sub-national authorities also aim to address the effective lack of redistribution, or *rétrocession*, of mining royalties by the central government back to local authorities as mandated by the 2002 Mining Code. While periodic lump-sum payments were made prior to the reform under this provision, they have been irregular to date (Le Point, 2017; NRG, 2019).

However, the Natural Resource Governance Institute (NRGI) raised concerns about the low absorption capacity of the smallest local authorities, the overlapping responsibility for managing local development funds and the governance of the Mining Fund for Future Generations (NRGI, 2019). Taking into account the maximum variation of cobalt and copper prices, NRG calculated that

² Decentralised territorial entities are local jurisdictions including cities, municipalities, sectors and chiefdoms or customary authority jurisdictions.

the Haut-Katanga and Lualaba provinces could receive between USD 75 and 166 million, while decentralised territorial entities' revenues could amount to between USD 45 and 157 million, annually. Transforming the flow of revenues into real development opportunities will be the biggest challenge. NRGi believes that many subnational governments may not have the adequate technical and institutional capacity to manage significant amounts of revenue, and the financial absorption capacity of many of these entities could be limited. Capacity building and strong oversight mechanisms at the local level would help to ensure that the local population can make the most of increased public revenue from mining royalties.

Contributions to community development projects could amount to between USD 17.5 and 52.7 million. The allocation of the funds is managed by a dedicated multi-stakeholder agency, while the process of developing and then monitoring the implementation of the commitments under the *cahier des charges* involves the local development committee and the local monitoring committee. In parallel, as part of the decentralization process, the Ministry of Planning has also created local development committees attached to the decentralised territorial entities. The plurality of structures and the asymmetry and diffuse nature of their responsibilities may present challenges to avoid duplication of efforts, and ensure coordination, effective interventions and financial accountability. Defining clear collaboration processes and requiring transparency of objectives and results will be paramount for enhancing the positive development impact of the mining sector at the local level (NRGI, 2019). Strong governance of these funds is particularly important considering DRC's economic dependency on the mining sector, as extractive industries make up as much as 18% of the GDP and minerals 98% of Congolese exports (EITI, 2018).

The Mining Code revision has maintained certain constraints on the ability of large-scale miners to work with artisanal miners, though there are regulatory workarounds companies can use (see Sub-Chapter 2.2: Artisanal and small-scale mining with formal features). The lack of clarity, however, creates elevated risks along the interface between these two production types and may reinforce barriers to the growth of artisanal mining that is both legal *and* viable. There is also no sign that the revision will address many of the apparent *de facto* privileges of Gécamines, the state-owned mining enterprise in the region, which enable it to function as a trader of mining permits parallel to the permit acquisition procedures set forth in the Mining Code, despite its ostensible status as a private permit holder like any other (see Chapter 3 ("Prevalence of OECD Guidance Annex II Risks and Related Adverse Impacts")).

The way the Mining Codes shapes the governance of the sector is important because it affects the conditions in which companies undertake due diligence, particularly with regards to payment of due taxes, corruption and the interaction between ASM and LSM. How these features of the governance regime for the sector impact the copper and cobalt supply chain's functioning and the prevalence of OECD Annex II risks is reviewed in detail in the following two chapters.

2. Supply Chain Structure

This chapter reviews the key features of the cobalt-copper supply chain from production through trading to processing and refining, the last phase prior to export. It examines three different modes of production and trade in the 2C upstream supply chain, distinguishing between large-scale mining (LSM), artisanal and small-scale mining (ASM) of varying degrees of formality, and informal ASM, in addition to a section on a typical in-country buying and trading process. Each section, however, frequently references the others due to the high degree of interaction and interface between them. These interactions can entail overt hostility in which working areas are actively contested and confrontation is frequent; passive tolerance by LSM of ASM activities; and various forms of cooperation on the other end of the spectrum. There are also subtle distinctions between different models within each category, forming essentially a continuum across them. Considerations to help orient due diligence approaches are included at the end of each section.

2.1 - Large-scale mining

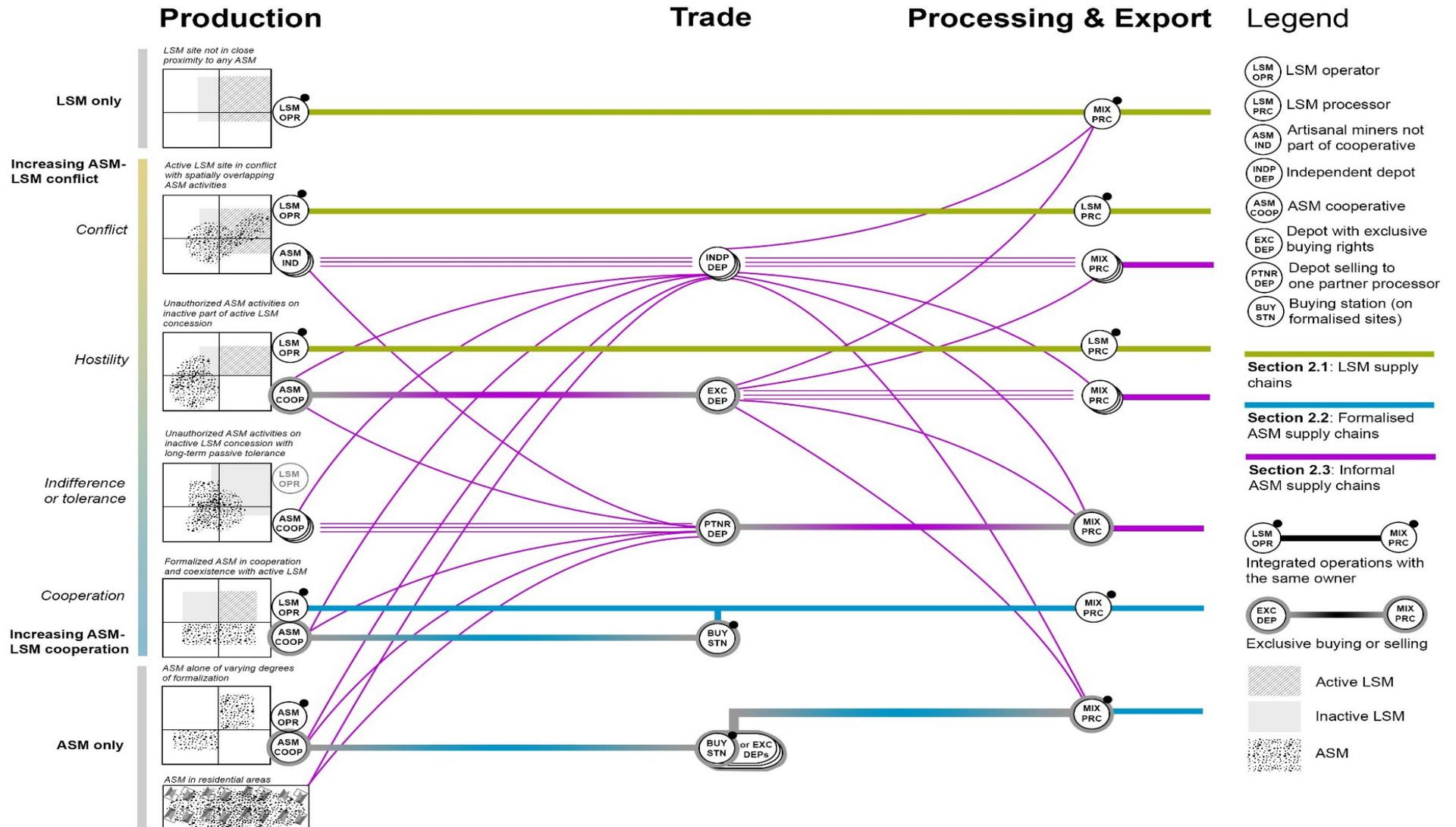
Large-scale mining (LSM) is the main type of copper and cobalt production in the DRC. It comprises 70-80% of cobalt production. However, a significant number of LSM operators, processors, and refiners also source ASM, which may be blended with LSM material at various points in both the copper and cobalt supply chains. While large-scale production and refining processes generally share similar technical approaches, the LSM sector for 2Cs in the DRC is not monolithic. Within this sector, there is a variety of supply chain typologies, operating standards, and interfaces with artisanal and small-scale mining (ASM) activities.

Modern development of the LSM sector

The current state of large-scale mining of copper and cobalt in the DRC has been considerably influenced by the evolving business strategies of *La Générale des Carrières et des Mines*, or Gécamines, a DRC state-owned enterprise. Until the end of the 1990s, Gécamines had a near-monopoly on cobalt and copper production in the country. Although the company was highly productive, a confluence of factors began weighing on its financial health towards the end of the 1980s. Production collapsed during the 1990s and mass layoffs ensued.

The 2002 Mining Code began a process of reform to attract private investment to the sector, but Gécamines was able to retain their most valuable, sought-after permits. The quality and the number of permits owned by Gécamines allowed it to function as a state-owned trader of mining permits parallel to the Mines Cadaster. Today, Gécamines continues to produce copper and cobalt, but more revenue currently comes from signing bonuses, asset sales, royalties, partnership dividends, and leases often related to joint ventures with private mining companies, which have become a defining feature of the LSM sector (Carter Center, 2017).

Figure 8: Supply Chain Overview



Prepared by the OECD Secretariat based on primary research

The successive distinct chapters of boom, bust, and reform in Gécamines' existence also led to the emergence of artisanal and small-scale mining as an important livelihood in the region. For decades, Gécamines had not only been a source of direct employment and generous employee benefits, but had also been among the largest purchasers of goods and services in Katanga and a provider of public goods. Artisanal mining was the most readily available way to substitute lost incomes and services for residents of the Copperbelt (The Carter Center, 2017; NREGI, 2015; DRC-com-j-100819; DRC-com-k-110819). While LSM companies have local social contribution and tax obligations in addition to their own corporate social responsibility (CSR) policies, it is not apparent how the gap in income and services left by Gécamines' transformation can be filled without ASM being part of the employment mix, at least over the short or medium term (CHN-com-p-120819).

The 2002 Mining Code and the 2018 revision recognize ASM and provide for the creation of Artisanal Mining Zones (ZEAs). Gécamines' retention of most of its concessions following the 2002 reform in conjunction with the Code's lack of provisions or incentives for LSM-ASM cohabitation, however, has resulted in a divergence between legislation and reality. Most known deposits are located on LSM concessions that are or were initially owned by Gécamines, whereas ZEAs have less accessible deposits for ASM (NResources, 2018). In practice, this means that the extensive LSM-ASM interface is variously contested, fraught with ambiguity, and managed through a combination of improvisation and regulatory workarounds. Nonetheless, with awareness of such regulatory workarounds, barriers to better cooperation and cohabitation may be overcome in practical ways, a subject further addressed in Sub-Chapter 2.2. The decisions and policies of LSMs regarding ASM on or near their concessions can also have a significant impact on community relations, their social license to operate, ASM working conditions, and human rights risks to which ASM workers are exposed.

Operational context - LSM

Large-scale copper and cobalt mining in the DRC takes place in a variety of contexts and circumstances. Safety, security and due diligence policies vary widely among LSM companies. They also exhibit a range of different beneficial ownership arrangements, management structures, and concession agreement types. One of the most important dimensions across which it varies is the nature of LSM sites' interface with ASM (more information in Sub-Chapters 2.2 and 2.3 below).

Large-scale mining operations in this region also vary in size. Active LSM concessions, or "exploitation permits" (PEs), range from less than a square kilometre to hundreds of square kilometres. Operational areas of such concessions, including contiguous excavation areas and processing facilities, range from less than half a square kilometre to 50 km². Other parts of the concession may include exploration areas with periodic LSM activities such as drilling test bores, or abandoned facilities and extraction areas. Taken together, while PEs occupy a significant portion of the region, LSMs' active operational areas within them constitute a small fraction of their land area. The small footprint occupied by LSM operational areas relative to the overall land area of concessions is also due to the fact that both PEs and exploration permits (PRs) are often acquired without any near-term development plans. In addition, most mine sites are not enclosed fully or, in some cases, at all. This makes them easily accessible and often difficult to identify as mining concessions. (DRC-cso-e-120819)

LSM sites span a range of different settings from remote locations at some distance from even the nearest village to sites situated in the middle of large urban areas. The LSM-urban interface assumes various forms in the Copperbelt. Operators of relatively small, remote sites may focus their community engagement strategy on a limited number of small settlements and their representatives.

An LSM's relationship with surrounding communities near large settlements is typically multi-dimensional, revolving around the community's dependency on both formal and informal mining employment, concession overlap with non-mining land uses such as agriculture, and communities' expectations for local social expenditures. The distribution of mine sites and neighbourhoods in large urban areas like Kolwezi in some ways resembles a chessboard. With more points of contact with people and residential areas, as well as interaction with ASM activities being more likely, the conduct of security providers for mine sites also becomes an increasingly complex issue to manage (see Sub-Chapter 3.2 "Direct or indirect support to non-state armed groups, public and private security forces").

LSM production and processing

Similar to other settings, large-scale mining of copper and cobalt in the DRC is defined by several core features. In the case of sub-surface mineral deposits, LSM operators conduct geological studies to identify ore zones. Operators develop mine plans to optimize the efficiency of extraction and calibrate it to provide suitable feed for refining processes. Excavation proceeds according to the mine plan, with excavated material typically sorted and mixed to obtain a target grade suitable for processing and refining.

Some of the largest LSM companies operating in the DRC have integrated, mainly closed-pipe supply chains in which the mine operator also owns and operates the facilities that process or refine ore into products for export, typically copper cathodes and cobalt hydroxide. Such companies maintain custody of the minerals and mineral products from production through to export, and sometimes beyond. They typically have policies that mandate how ASM material seized on site is to be handled, for example by segregating it in secure locations or waste dumps. Many LSM companies, however, also produce copper concentrates and some copper blister, which sometimes follow more complex chains of custody or are blended with ASM material. While cobalt hydroxide is a form of chemical precursor, it is often transformed into other cobalt chemicals outside the country (CHN-com-a-060819; CHN-com-u-140819; CHE-com-m-120819). Cobalt refiners in the DRC are often referred to as 'crude refiners' and refiners located outside the country and further down the value chain are known as 'fine refiners', which in turn constitutes a control point for due diligence purposes (see Sub-Chapter 1.1: Clarifying OECD due diligence expectations in copper and cobalt for more detail).

The capacity of refining facilities to process feed material mined from different sources and different extraction methods has rendered many parts of the LSM industry operationally flexible and supply chains complex and interconnected. Integrated closed-pipe LSM production and processing supply chains are therefore only one of many models present within the industry. This often takes the form of an LSM operator and refiner that also purchases ASM materials from outside its own assets, for example from *dépôts* (buying centres) for introduction into their refining supply chain. Some LSM operators also operate ASM sites of varying degrees of formalisation through supply agreements with cooperatives and blend material with ore from LSM sites to reach target grades and production volumes. Some LSM operator-refiners sell LSM-mined material from their own mine sites to third-party refiners while purchasing material to refine themselves from open markets due to grade and technical considerations (CHN-com-a-060819; DRC-com-i-100819; IND-com-b-070819). Despite the perception of the downstream market, a significant number of the top LSM producers source ASM material in some shape or form due to technical and commercial requirements.³

³The research for the report did not attempt to corroborate specific companies' claims to source exclusively non-ASM material.

Due diligence considerations for LSM

Within LSM, there is a variety of supply chain typologies, operating standards, and interfaces with artisanal and small-scale mining (ASM) activities. These differences naturally present distinct due diligence challenges and OECD Annex II risks, and influence the sector's overall economic impact and governance.

Sourcing of LSM-mined copper and cobalt from the DRC is sometimes presented as a way to avoid certain human rights risks considered to be more prevalent in artisanal and small-scale mining. Indeed, large-scale mining, like artisanal mining, offers many benefits for the country, specifically with regard to generating revenues for the State, supporting infrastructure development and boosting exports. However, as Chapter 3 ("Prevalence of OECD Guidance Annex II Risks and Related Adverse Impacts") examines in greater detail, LSM is far from immune to OECD Annex II risks or other adverse impacts. The history and operational context of the sector as well as the structure of the LSM supply chain mean that robust due diligence and risk mitigation remain critical. Seven dimensions of the LSM supply chain merit particular attention from a due diligence perspective:

- **Acquisition of assets (e.g. mining permits and shareholdings)** – It is not always clear in practice to what extent objective criteria are applied to evaluate applications for mining permits. The fact that many transactions for mining permits, including joint ventures, leases, and other contracts, involve a single state-owned enterprise means due diligence efforts should focus particular attention to risks of corruption (The Carter Center, 2017; NRG, 2015; Resource Matters, 2019; DRC-cso-d-090819).
- **Multiplicity of company management structures** – LSM companies' diversity in terms of ownership, management, and corporate governance structures and their complexity necessitate robust know-your-counterparty (KYC) due diligence, with a particular scrutiny applied to Politically Exposed Persons (PEPs).
- **Supply chain complexity** – Closed-pipe supply chains are only one of many LSM supply chain configurations. Simply because a company mines or processes LSM material does not necessarily mean that they have a high degree of control or transparency over their supply chain, or that they do not also source ASM material.
- **ASM interface** – LSM companies' policies with regard to ASM on or near their concessions have significant impacts on the working conditions of such ASM activities and the risks ASM workers are exposed to. Related adverse impacts and ways to mitigate them should be considered when conducting due diligence.
- **Security** – LSM sites, particularly large ones, often employ, contract, or request assistance from security personnel, including private security guards as well as public security forces, such as law enforcement and the armed forces. The training, mandate, and conduct of security personnel have important implications for human rights risks associated with LSM operations.
- **LSM-urban interface** – The location and size of mine sites and their proximity to settlements and residential areas shape the operating environment and community engagement needs for LSMs, particularly regarding local social impacts, the diversity of community stakeholders and interests, the ASM interface, and the conduct of contracted security forces.
- **Relocation** – Where residential resettlement has taken place, whether due to transformation of a neighbourhood into a ZEA or expansion of LSM operations, NGO and advocacy groups have reported on extensive problems related to the process, including a lack of informed consent, a lack of fair negotiation of prices for home buyouts, and rushed processes (Initiative Bonne

Gouvernance et Droits Humains, 2019). Parties to other resettlement schemes have complained of agreed buyout terms being reneged on, forcing residents to accept less favourable terms once they had grown desperate (DRC-cso-d-090819). Local civil society organisations are active in research and advocacy on the topic, and may provide detailed and current information on issues related to the governance of the sector, including relocation.

2.2 - Artisanal and small-scale mining with formal features

ASM with formal features represents the smallest share of copper and cobalt production among the three models reviewed in this chapter. There are no more than five active sites of this type, only two of which have been widely reported on.

Box 2: Legitimate ASM production according to the OECD Guidance

While legislation across countries varies, the Due Diligence Guidance encourages buying ASM, provided that ASM activities are legitimate, that adequate due diligence is carried out and risks identified and managed accordingly. The Guidance defines legitimacy of ASM using a number of criteria, including that it must be consistent with applicable national laws, and/or that miners should demonstrate good faith efforts to operate within the applicable legal framework (if it exists) and that they engage in opportunities for formalization.

Most of global ASM production takes place outside of the legal framework but is at the very least tolerated by many governments. Notwithstanding, the ultimate objective of the Due Diligence Guidance is to promote responsible investment and trade in producing countries. In view of this, when dealing with artisanal miners that are not legally registered, companies sourcing ASM are encouraged to:

- Work with artisanal miners that are not associated with the most severe forms of risks as described in Annex II of the OECD Due Diligence Guidance and willing to engage in credible legalisation processes; this in particular implies that artisanal miners need to show genuine commitment to cooperate and engage in such a process. This could be demonstrated by, for example, verbal communication with ASM representatives; attending meetings, willingness to provide information on their activities, and allowing access to mine sites and trading, transport, and processing facilities;
- Use their leverage, jointly with local partners, to engage local authorities and convince them to tolerate and support responsible ASM production and export by allowing for formalization and legalisation. Companies are expected to explain and document their sourcing decisions, particularly as they relate to such grey areas as sourcing from informal ASM sites, and indicate clear timelines and benchmarks for expected improvements.
- Engage with local stakeholders and local partners to advance formalization but also to identify and assess risks and improvements relating to measures implemented to help ASM communities mitigate identified risks.

Notions of legitimacy are highly relevant to the DRC context as ASM activities generally take place outside the framework set forth by the Mining Code, but nonetheless enjoy varying levels of official recognition and tolerance, and are usually regulated by the competent authorities. Buyers willing to work with legitimate ASM production have at their disposals tools such as the Code of Risk-mitigation for ASM engaging in Formal Trade (CRAFT), developed by the Alliance for Responsible Mining. The code is a gateway for buyers to approach ASM and apply due diligence in the sector as per the OECD Due Diligence Guidance, with a focus on a continuous development and improvement in risk identification and mitigation. Although, it was originally conceived for gold, it can be adapted to all minerals – and is freely available (Alliance for Responsible Mining, 2018).

Source: FAQ on Responsible Supply Chains in Artisanal and Small-Scale Gold Mining

Regulatory and business context

In this supply chain configuration, ASM operations have at least some features of formality with, at a minimum, recognition from mining regulatory authorities, and explicit authorisation with the permit holder or operator, which establishes a commercial relationship with ASM. However, levels of

recognition and formalisation vary from site to site. These arrangements rely on reaching an agreed division of on-site responsibilities between a permit holder or operator, and the on-site mining cooperative.

The Mining Code allows permit holders to authorise ASM activities on parts of their concessions (PEs), but this forces the permit holder to relinquish ownership and control of such portions entirely. Although this discourages the recognition of ASM activities on PEs, provisional legal arrangements that do not compel permit holders to cede parts of their concessions, known as *dérogations*, have been negotiated on a case-by-case basis with the Ministry of Mines (DRC-gov-i-100819; CHN-com-n-120819; UAE-com-g-100819).

Permit holders and operators must contract with registered cooperatives to source ASM material since the Mining Code mandates that they alone can market ASM material. Cooperatives, however, vary significantly in form and function. Their registration is not conditioned on criteria related to their organisation, genesis, or real-life relationship with artisanal miners. In conjunction with artisanal miners' high level of mobility, this has effectively resulted in two types of cooperative membership: *cotisant* (or 'contributing'), and *sympathisant* (or 'associate'). Contributing members are comprised mainly of founders, who may or may not be miners from a nearby community themselves, and are the only members with a firm say in management decisions. Associate members may be consulted on decisions regarding prices, working conditions, and on-site policies, though not necessarily. Associate members usually do not pay regular fees to the cooperative, but the cooperative may collect informal fees from certain mineral transactions. Since contributing and associate members' interests do not always align, informal parallel miners' associations often form to represent ASM workers themselves (DRC-com-h-100819; DRC-com-l-110819; DRC-cso-e-120819).

At formalised sites, the supply agreements between the permit holder or operator and the cooperative give exclusive purchasing rights to the former so that the company can recoup its investment in the controls instituted at the site. The permit holder or operator enforces the agreement through both access control to the site as well as ownership, financial control, or management of the on-site buying stations. The permit holder pays cooperative management fees, pre-finances cooperative buying agents in some cases, has a stake in or owns and operates the buying stations located on site and provides trucks to transport the ore from the buying station at the artisanal mining area to the plant.

Controls can take the form of barriers, fences or gates at entry points and employing security personnel, which allows the permit holder to enforce company policies (such as restricting access to children and intoxicated miners), and to reduce smuggling of material into or out of the site. Within this enclosed perimeter, removing overburden at the surface to give artisanal miners better access to deposits also plays a role in enhancing safety. Miners often receive personal protective equipment to wear on the mine and are sensitised on occupational safety typically through weekly briefings and signboards in multiple languages. Other examples of health and safety measures instituted at formalised sites include the provision of on-site medical services, potable water, and trucks that spray water on roads to reduce dust. The consistency of implementation of such measures, however, varies between sites and over time based on factors such as market conditions, the safety culture fostered by operators and regulators, and mine planning. Long-term exposure to mine dust has been found to have harmful health effects for ASM workers (Ngombe et al., 2016), and formalised sites do not appear to have fully tackled this challenge to date. Formalised mine sites appear to be subject to more regulatory inspection visits regarding environment, waste management, and radioactivity. Most ASM

workers involved in extraction are not employees and are paid according to their production, while those working at buying stations have different employment statuses.

Operational dimensions – ASM with formal features

Miners of cobalt-copper ore mostly work in teams of five to eight people for each pit, producing between one and three tonnes of ore per day. The pre-financing of the operations (e.g. for equipment, food and water, transportation of the ore) is either covered by one of the miners themselves, known as the 'sponsor', or by a *négociant*, which, in return, may retain up to 60% of the sale price of mineral lots sold at the buying station (DRC-com-e-070819; DRC-com-q-120819; DRC-com-o-120819).

In the most organised settings, typically after a phase of overburden removal is completed, pits are assigned to miners' teams by the cooperative. Alternatively, the cooperative may recognize a mining team's supervision over a particular pit after they already began digging there. Cooperatives also mediate potential conflicts arising among miners, guard the entrance to working areas in the miners' absence (e.g. at night, on Sundays) and provide safety instructions. They may also collect informal fees, usually a portion of mineral sales, either directly from the miners or through the *négociant* (about USD 18 for 100 bags of ore, for example). Agents of SAEMAPE, the state service supervising ASM production, provide technical assistance to miners, ensure that pits are safe and perform regular checks on the depth and configuration of the pits. Due to the fact that the Mining Code does not make clear provisions for an LSM-ASM cooperation on the same concession, the resulting ambiguity of a derogation sometimes necessitates negotiation between the operator and state agencies to come to an agreement on the precise role and fee structure of the agencies (CHN-com-n-120819; UAE-com-g-100819; CHN-com-p-120819).

Once the material is extracted through digging and initial breaking of the host rock, miners usually hire a transporter to bring from a few to as many as 25 bags of ore weighing between 40 and 70 kg each directly to the buying station or, where the need exists based on the type of deposits, to a washing basin via rudimentary bicycles. At the washing basin, the ore is sifted and washed to increase the copper or cobalt grade. Additional phases of handpicking (i.e. sorting the mineral by hand) and crushing the ore with rudimentary tools can also take place at this time (DRC-com-e-070819; DRC-com-h-100819; DRC-com-q-120819).

Washing and handpicking functions are mostly performed by women, although in this formalised supply chain configuration, women can also be found in digging activities. Remuneration for tasks such as transporting, washing and handpicking are significantly lower than digging. However, women ASM workers can also be involved in other roles, such as pit sponsors or *négociantes*, which are relatively well remunerated.

There can be multiple buying stations on site, but all are pre-financed or owned by the permit holder or operator, which has the ability to set prices with limited negotiation or consultation with the cooperative in this arrangement (DRC-com-l-110819; DRC-com-o-120819; CHN-com-p-120819). Sealed trucks owned by the permit holder or operator transport the ore from the buying stations to the processing plant.

Livelihood and economic dimensions for ASM

ASM workers' incomes fluctuate with international prices of copper and cobalt. Earnings of ASM cobalt

miners have decreased as much as 75-80% between March 2018 at which point cobalt prices peaked, and August 2019, the time of fieldwork for this report. The economic pressure has pushed miners to increase the level of sifting and washing to be able to sell higher grade ore at the buying stations, and some *négociants* have anecdotally been reported to work themselves in the pit they are pre-financing to increase the output. This example highlights the terms of employment for ASM, with workers being treated as individual subcontractors, which makes them highly vulnerable to the volatility of international prices. This is exacerbated by the fact that ASM is a subsistence endeavour for many ASM workers. Lower incomes have had a direct effect on families' financial capability to sustain parallel economic activities and new endeavours or investments undertaken when prices were higher (e.g. constructing a house or investing in an alternative economic activity), as well as schooling for children. ASM workers also leverage their mobility to vote with their feet, as miners migrate towards sites that pay the best prices (or smuggle material out of a formalised site to sell at an off-site depot despite access controls).

Table 1: Average earnings by tasks

Function	Average earning March 2018, per day, USD LME cobalt: USD94,500/tonne LME copper: USD6,745/tonne	Average earning August 2019, per day, USD LME cobalt: USD30,500/tonne LME copper: USD5,600/tonne
Miner – cobalt	80-130	14-30
Miner – copper	80-100	25-35
Transporter	30	10
Washer	18	3

Source: DRC-com-e-070819; DRC-com-o-120819; DRC-com-q-120819

Due diligence considerations

The supply chain for ASM product from sites where formalisation measures have been introduced is characterized by several issues companies should consider to help orient their due diligence process:

- **Variation in formalisation measures:** There is no single set of practices in use at formalised ASM sites in the supply chain. Furthermore, the level of controls instituted often varies among different areas within a single site.
- **Blending with other sources:** Most operators of formalised ASM sites also purchase minerals from informal ASM sites. If minerals from such sources are blended, due diligence should be comprehensive to also encompass informal sites.
- **Appointment of cooperatives:** As indispensable commercial counterparts for operators at formal ASM sites, cooperatives have significant leverage over management of sites. However, a lack of transparency over their registration, as well as their allocation of sites, should draw attention to their beneficial ownership and relationship with their associate members.
- **Regulatory ambiguity:** The types of formal sites discussed in this section appear to represent good faith efforts to adhere to the applicable legal framework for ASM within a framework of legitimacy. Nonetheless, the gaps in the Mining Code regarding ASM-LSM cooperation leave areas of ambiguity. The ad hoc nature of these efforts can expose these kinds of projects to arbitrary directives regarding tax and fee structures and assignment of cooperatives, as regulators and operators attempt to transpose ASM-specific regulations, administrative procedures, onto artisanal mining activities located on LSM concessions.
- **Commercial value and viability of formalisation.** ASM sites with clear features of formality or demonstrating degrees of formalisation are currently the exception rather than the norm (only four sites have been publicly communicated on). Their scarcity as well as volatile international prices present distinct challenges. Formalised sites first face competition from informal sites where investment and costs are lower. The volatility of international prices also makes it difficult to keep levels of investment sufficiently high to meet continuous site maintenance needs. Often, this is reflected in lower prices paid to artisanal miners in formalised sites, as the permit holder or operator seeks to compensate the higher costs of running the site. On the other hand, formalised sites may provide efficiencies for miners by reducing transport costs, reducing the friction of transactions, and reducing risks related to safety, corruption, or extortion, all of which carry the potential for negative financial impacts on ASM workers.

2.3 - Informal ASM operations taking place on LSM concessions

Mining

A very large number of highly informal ASM operations are currently taking place in privately owned mining concessions, whether tolerated or not by the owner of the title (BGR,2019;DRC-cso-a-050819; DRC-gov-a-060819; GBR-com-f-080819). At the mine site level, ASM activities can either take place in parts of the concession where the LSM is actively operating, or on an inactive part of the same concession, as well as sometimes in residential areas. These different arrangements and levels of informality have implications for risk, the posture of regulators, and the ASM-LSM interface, in addition to influencing how mineral production from such sites enters the supply chain. 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. Given the marginal production of 2C ASM sites with formal features, informal ASM as described in this

sub-chapter is the principal form of DRC ASM production, which amounts to 20-30% of the cobalt production or 13-20% of the world production (Financial Times, 2019c). Furthermore, informal artisanally produced cobalt is likely widespread in global supply chains due to the fact that many LSM operators, processors and refiners also source ASM (CHN-com-a-060819; IND-com-b-070819; CHN-com-d-070819; DRC-com-i-100819; DRC-com-s-130819).

ASM production taking place in active parts of an LSM concession (PE). Since in mechanised open pits the operator gradually removes layers of rock and earth to reach economically viable ores, groups of artisanal miners may decide to work in active parts of the concession in order to extract accessible ore, particularly higher-grade minerals (DRC-cso-d-090819). However, unlike in the formalised ASM scenario in which overburden is removed to give ASM workers access to deposits under safer conditions, large open pits that are excavated for LSM extraction use narrow benches on slopes that are unsuitable to ASM extraction.

Together with the fact that the ASM and LSM activities are happening concurrently in the same location without any commercial agreement between the two, this situation leads to elevated safety risks. Uncontrolled horizontal digging can cause deadly landslides and subsidence; confrontation with the permit holder's security personnel or the on-site mining police can result in arrests, physical confrontation, or property damage (CHE-com-m-120819; CHN-com-u-140819).

Interactions between the LSM operator's personnel and ASM workers are generally characterized by confrontation. In the most hostile settings, artisanal miners have been reported harassing or targeting large-scale mine operators' employees or damaging equipment, throwing stones, using edged weapons and metal bars when confronted, and showing good organisation in responding to attempts to evict them (CHE-com-m-120819; CHN-com-u-140819; GER-gov-o-220819). Mining can also take place in active parts of the concession at night, usually with the complicity of private security personnel. The economic incentive to turn a blind eye is high. By demanding USD 12 or one bag of ore to open the gates to motorcycles, security personnel can make up to USD 250 in one night, while their average salary ranges between USD 300 and 500 per month (DRC-com-i-100819). Public and private security forces deployed to secure LSM sites have also been implicated in human rights abuses. For more information, see Sub-Chapters 3.1 ("Serious abuses associated with the extraction, transport or trade of minerals") and 3.2 ("Direct or indirect support to non-state armed groups, public and private security forces")

ASM production taking place in inactive parts of an LSM concession (PE or PR). Permit holders may tolerate artisanal mining on inactive parts of their concession, while not buying any material from them (GBR-com-f-080819). This can be due to multiple reasons. A permit holder may hold several concessions and not have the economic capacity to develop or exploit them all, although the 2018 Mining code requires PR and PE applicants to demonstrate commencement of work in order to renew their permits. In many cases, exploration permit owners have used concentrations of artisanal miners as a proxy for identifying areas with valuable ore bodies, providing a less accurate, but also less expensive alternative to drilling (DRC-cso-d-090819). Allowing artisanal miners to work in an inactive part of the concession may buy social peace and avoid depleting higher-quality assets in the active parts of the mine. Permit holders' difficulty covering security costs for inactive assets also means they are often left unsecured and accessible for informal ASM activities.

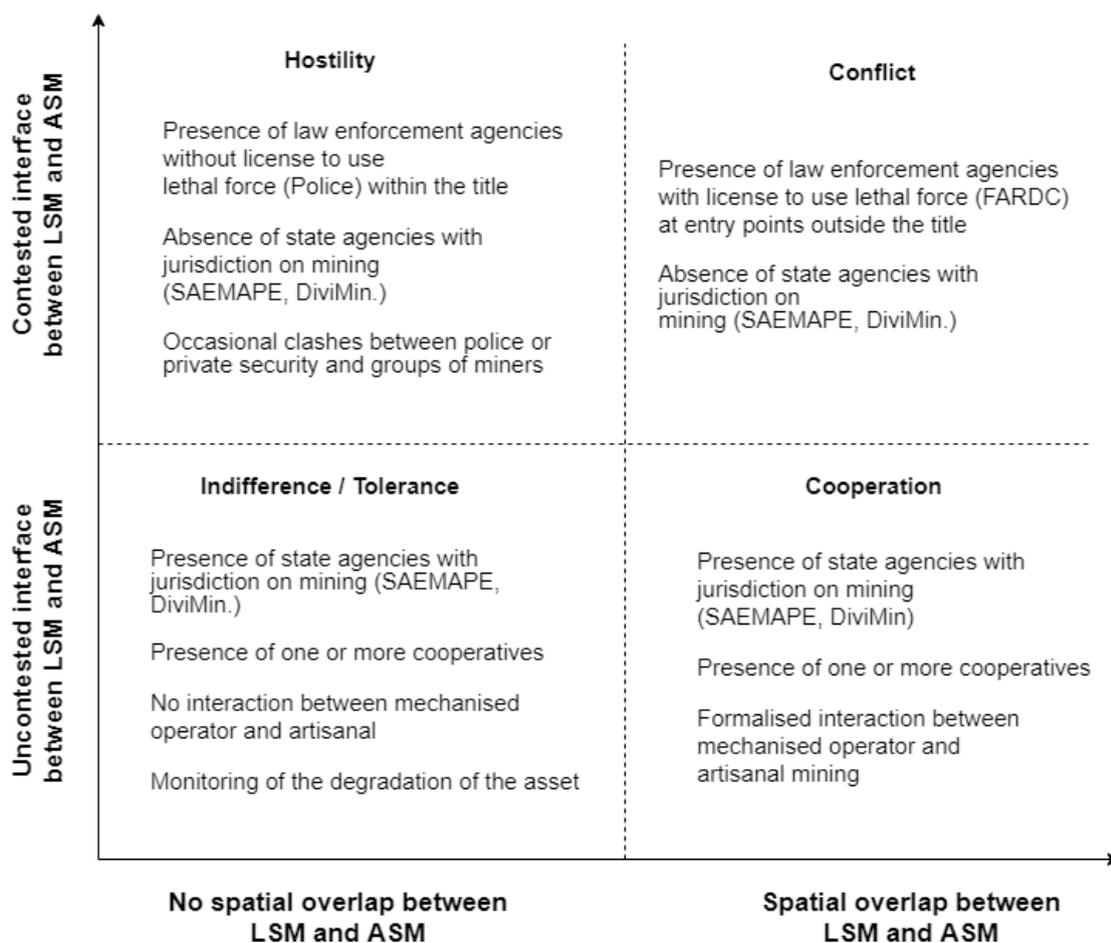
ASM in residential areas. In some cases, artisanal mining can take place in residential areas, including under homes. Sometimes discovered by chance, ore deposits at shallow depth have drawn families to rent out their plot to others or participate themselves in extraction, such as the cases of Kasulo (since transformed into a ZEA) and Kawama near Kolwezi, Sikiyia Mambo and Sikiyia Bintu near Likasi, Musoshi near Kasumbalesa, Kawama (same name) and Kipushi near Lubumbashi (Infocongo, 2017). The phenomenon has also spread in the past several years to Tshipuki and Musonoie in southern Kolwezi (DRC-cso-d-090819). Some of these are former Gécamines planned settlements, where mining is the only livelihood option for the local population. Mineral sorting and storage also occurs in some homes in locations throughout the region, and has become more common since the demolition of many ASM trading centres by the armed forces in June 2019 (DRC-cso-d-090819; DRC-cso-c-060819) (see Sub-Chapter 3.2: Direct or indirect support to non-state armed groups, public or private security forces).

Despite the informal nature of these operations, where ASM production takes place on inactive parts of LSM concessions, state agents from SAEMAPE and the Mining Division are generally present to provide technical assistance to miners, collect fees and provide official documentation (DRC-com-t-130819). Cooperatives are allocated supervision rights at informal ASM sites through the same process as at formal sites (DRC-gov-n-130819). This suggests that, despite the informal nature of the sites and their lying outside the provisions for ASM in the Mining Code, their existence is so widespread that, for local regulatory purposes, they are the de facto norm.

At some informal ASM sites on LSM concessions, the permit holder has consented to or is commercially involved in the activity, but does not establish operating standards or maintain working conditions commensurate with any kind of formalisation process. No personal protection equipment is distributed to miners at these informal sites and overburden removal is rare, which can increase the risk of falling rocks and ground stability problems. For the purposes of this report, these sites are therefore also considered informal (DRC-com-j-100819).

Male miners often do not allow women in or around the pits, as, according to customary beliefs, the presence of women could chase away the mineral vein (DRC-com-l-110819). It has been noted that the emergence of such beliefs seems to coincide with the privatisation of a number of Gécamines concessions beginning in the late 1990s, which progressively reduced the number of viable sites accessible to ASM, increased competition among artisanal miners, and compelled them to work in more illicit- and dangerous-conditions (DRC-com-j-100819). Women *négociantes* are also penalised by this practice, as they are not physically able to check that miners working at the pits they finance sell them the totality of their production, as opposed to selling a portion of their production on the side (DRC-com-l-110819).

Figure 9: Types of ASM-LSM interfaces



Trading

The ore extracted by miners is brought to buying centres (also called *dépôts*), which can be located directly on the mine site, just outside active concessions, or in villages and towns (e.g. Mulungwishi and Kisanfu) or near bigger cities (e.g. Musompo near Kolwezi and in the outskirts of Likasi) (DRC-com-c-070819; DRC-com-i-100819). When there are several in the same location, they are sometimes called open markets. The way minerals are transported depends on the distance from the pit, and includes bicycles, motorcycles, cars, small buses or vans, and small flatbed trucks.

At *dépôts*, the minerals brought by miners or *négociants* are sampled, weighed and bought according to a price list visible to the seller. Fraud is reported to be frequent, and instruments used in the sampling process or the scale to weigh the minerals are often manipulated to obtain a lower price (DRC-com-j-100819; DRC-cso-d-090819).

In June and July 2019, the FARDC razed all the buying centres clustered in Mulungwishi and Kisanfu, and removed a number of *dépôts* along the national route between Lubumbashi and Kolwezi. The intervention of the FARDC has modified the physical configuration of some of the *dépôts*, but the trade of ASM material has continued in other forms. Much of the production has converged towards the existing *dépôts* in Musompo and Likasi, or continues informally on ASM sites on PEs or in private houses in Mulungwishi and Kisanfu (DRC-cso-a-050819; DRC-cso-c-060819).

Figure 10: Simplified production, trading and purchasing model

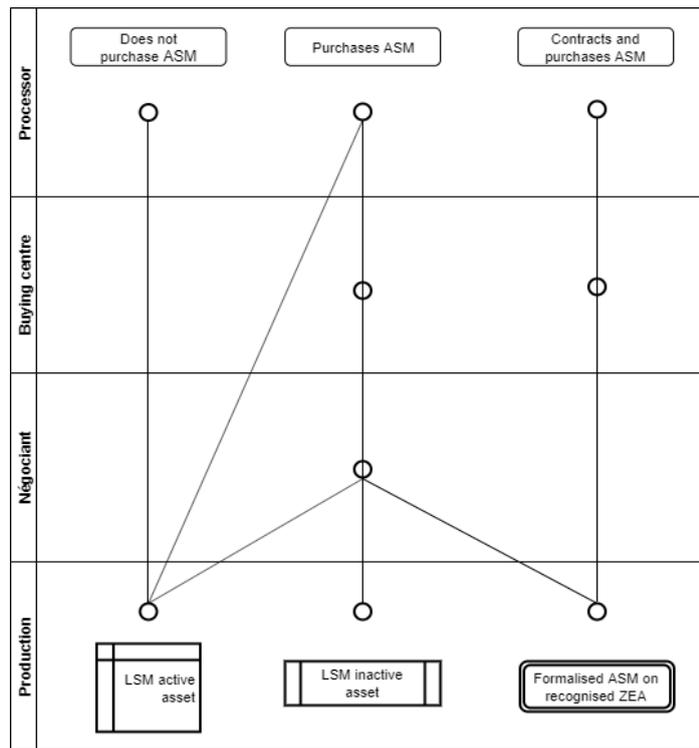
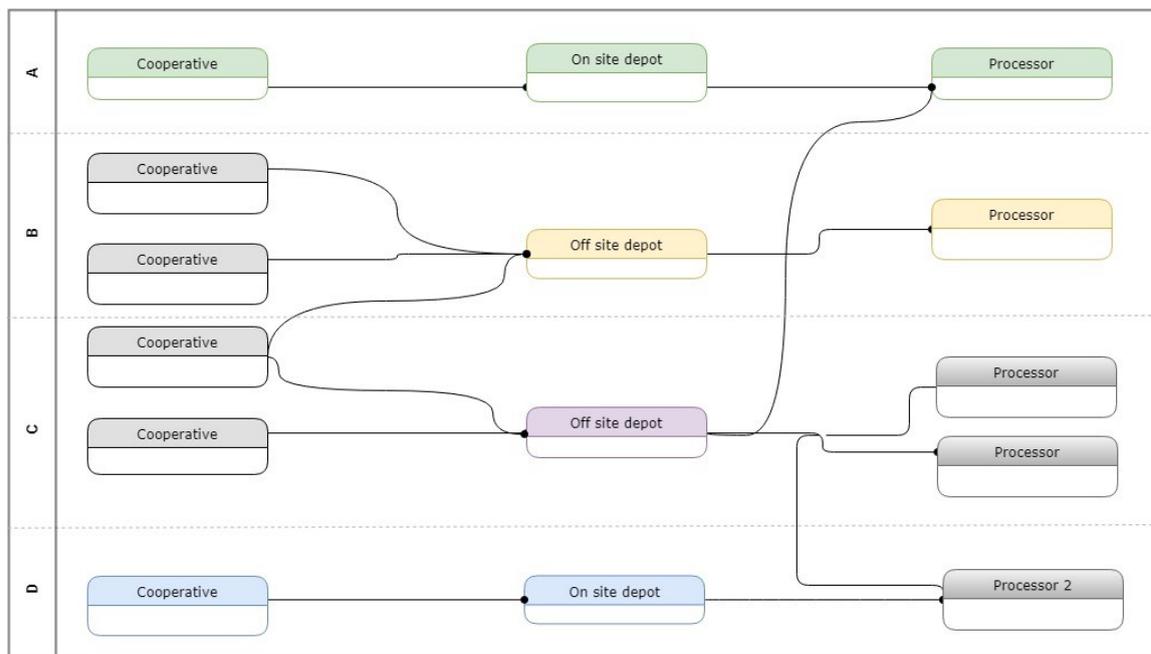


Figure 10 shows different scenarios of mineral production, trading and processing. Material from active parts of LSM concessions can be directly processed by LSM operators – in a closed-pipe model – or can be mined by ASM and sold to *négociants*, mixed buying centres and ultimately to processors willing to purchase ASM material. In contrast, formalised artisanal mining taking place on a recognised ZEA or on a designated artisanal mining area on a PE can be exclusively bought by the concession owner operator, but can also be illegally smuggled or sold through *négociants*, mixed buying centres and ultimately processors. It is important to keep in mind that any of the processor types are not exclusive and can have multiple sourcing strategies (see: Figure 8). Prepared by the OECD Secretariat based on primary research.

Financial ties (i.e. pre-financing, shareholding, direct ownership) between actors has a direct effect on the flow of material and the visibility of the supply chain. According to article 123 of the DRC Mining Code, only Congolese nationals can own *dépôts*, but a foreign partner (primarily Chinese nationals, but also Lebanese and Indian) most often finances *dépôts'* operations. ASM cooperatives finance themselves in various ways, including by demanding a fee directly from the mining teams, which can amount to 20% of the production, and/or by striking a deal with on-site buying centres (DRC-gov-n-130819; DRC-com-t-130819). Cooperatives need *dépôts* to sell minerals they produce; on-site *dépôts* also need the agreement of the cooperative to set up shop on the production site. However, the relationship between a *dépôt* and a cooperative is often complex and asymmetric, as the leverage each actor has largely depends on its political affiliation and backing of local elites (DRC-com-j-100819; DRC-cso-d-090819). As case D in Figure 11 below shows, a cooperative may have an agreement with a *dépôt* to set up on site or to have exclusive purchasing rights on the production in exchange for financing the overburden removal and/or payment of a regular to the cooperative fee (usually around 7% of the sale of the ore) (DRC-com-h-100819). That *depot* can be successively replaced by a different *dépôt* with stronger political ties, which will impose new terms on the cooperative. In another case, a cooperative authorised to supervise all miners working on an artisanal mine site might see its influence diluted if the government gives the same authorisation to other cooperatives to work at the same site, which in turn may invite other *dépôts* to be installed on site.

The buying centre acquires ore from the miners and sells it to a processing plant or a concentrator. This relationship can either be monopsonistic, when the processing plant buys all the production of a *dépôt* (case B in figure 10 below), or oligopsonistic, when more than one concentrator (usually between two and five) buy material from the *dépôt* (case C) (DRC-com-c-070819; DRC-com-i-100819; DRC-com-s-130819). In this supply chain configuration, processors may resort to buying from *dépôts* because they do not have an active exploitation permit or, when they do, in order to supplement their production (CHN-com-a-060819; IND-com-b-070819). Finally, case A in figure 10 shows formalised ASM production, with the processor owning on-site *dépôts* and covering the management expenses of the cooperative. The same processor can also buy from buying centres with which it has no financing relationship to top up production. In any case, while the financial relationships between processors, depots, and cooperatives strongly influence the itineraries and chain of custody of minerals, different prices offered by depots and aggressive marketing by *négociants* also induce artisanal miners to sell outside these established networks to obtain a better price (DRC-com-i- 100819). Many buying centres are not independent supply chain actors, but rather part of the vertically integrated supply chains, often of Chinese fine refiners, through either ownership or exclusive buying relationships with processors.

Figure 11: Financial links and commercial relationships within different trading models



Prepared by the OECD Secretariat based on primary research

Due Diligence Considerations

Informal ASM sites, typically located on LSM concessions, present particular challenges for due diligence, especially with regard to the complexity and opacity of the supply chains.

- **Safety risks.** ASM in residential areas exposes residents, including children, to safety and environmental hazards, for example when children are working in digging or tasks involving heavy loads. ASM taking place in active parts of LSM concessions may also lead to safety risks for ASM miners (e.g. because of landslides or physical confrontation with security forces). Without easy access for regulators or companies seeking to conduct due diligence, these settings also provide heightened opportunities to conceal potential abuses, particularly in situations when children are working with third party adults or miners in unsafe labour conditions. Many independent civil society organisations are present throughout the Copperbelt region. Companies may consult or involve them in their risk identification and gathering up-to-date information on risks, particularly those related to hazardous work and child labour.
- **Unreliable documentation vs. existing resources.** Informal ASM sites lie outside the legal framework for mining in the DRC. This means that incentives are high to make inaccurate declarations of origin at the *depot* level, which are successively used to generate chain of custody documentation through the supply chain. However, many ASM sites in inactive parts of an LSM concession (PE or PR) do exhibit a few features of formality (e.g. presence of state authorities, monitoring of production). This shows that public systems and resources exist to better track production from these sites.
- **Progressive approach.** Robust audits of fine refiners include site visits of crude refiners, which should have visibility and leverage over the upstream supply chain. Only a few processors and refiners seem to have made efforts to increase transparency over their supply chain beyond the *dépôts*. It may therefore be a challenge for companies downstream of processors or, in some cases, *dépôts*, to determine the origins of their minerals. Once they do, however, they may first consider ways to progress source sites into a legitimate ASM framework, in part by leveraging the presence of regulatory authorities, before disengaging entirely.

2.4 - International trading and refining

Cobalt

Upstream cobalt processing and refining produce cobalt concentrates, including most often cobalt hydroxide, for export from the DRC. In 2018, the DRC produced 64% of global cobalt output (USGS, 2019). Other top producers include the Russian Federation (hereafter “Russia”), Philippines, Cuba, and Australia. For clarity, facilities that further refine cobalt into cobalt metal or other cobalt products outside the DRC are referred to as “fine refiners”. Such products include chemical precursor, battery materials, or cobalt metal and alloys used in components for downstream applications. Fine refiners are appropriate points for the Step 4 audits recommended by the OECD Guidance.

The structure of this segment of the supply chain is influenced by several key features. As discussed in Chapter 1 (“Background and Context”), the production of cobalt chemicals and refining capacity are heavily concentrated in China, with 80% of the former based there. Some Chinese fine refiners also maintain mining and refining operations in the DRC through other business units. Many such business units are mixed processors, refining and exporting cobalt concentrates produced through both artisanal and large-scale mining. Such vertically integrated companies, however, do not necessarily source 100% of concentrates for fine refining from their own assets.

Non-integrated refining companies rely on international commodity traders to get cobalt concentrates exported from the DRC to fine refiners outside the country. Based on discussions with a range of refiners in the DRC, a large volume of cobalt exports are handled by relatively few traders, mainly based in Europe.

Some fine refiners have also bypassed traders by establishing direct offtake agreements with exporters from the DRC, particularly with companies that are set up to extract, refine, and internationally market cobalt (Financial Times, 2019d; Financial Times, 2019e). Companies further downstream have also been reported to be exploring ways to invest directly in upstream and refining segments of the cobalt supply chain in order to secure supply (Reuters, 2018a). Sometimes, such approaches can result in vertical partnerships that include commitments to responsible sourcing or material tracking or “traceability” (mining.com, 2019; Fairphone, 2017). Such vertical partnerships can span final product manufacturers, battery component manufacturers, fine refiners, refiners, and even mining operations in the case of vertically integrated fine refiners.

Copper

The DRC mainly exports copper in the form of concentrate (about one third copper content), cathode (99.99% pure) and, to a lesser extent, blister (98.5-99.5%) (Metal Bulletin, 2019a). With both a smaller share of global mined copper production at 6% (USGS, 2019) than cobalt and more diversity in the kind of exports of copper, the trading and refining supply chain for DRC-produced copper is somewhat more complex than for cobalt. The supply chain at the refining level is also not as geographically concentrated as in cobalt. China, while still by far the top copper smelting country, also has a smaller share of global copper refining capacity with 40%. DRC-produced copper is not only exported as ore (often to be refined in China or Zambia), but also as concentrates or refined products (blister and cathodes). The trade of copper concentrates to Zambia, however, is under pressure due to import duties on concentrate, which could reduce DRC-Zambia trade in copper products (Metal Bulletin, 2019b).

Copper cathodes are used directly by fabricators to make semi-finished copper and copper alloy products such as wire rod. Other semi-fabricated copper products include plates, sheets, strips, bars, sections, tubes, foil, and powder (Risopatron, [2013]). Similar to the share of global copper smelting, China has between 41% and 48% of global semi-fabricated copper production capacity and consumption of refined copper (International Copper Study Center [ICSC], 2018; Trafigura, 2018). Other countries therefore also have significant capacity in copper refining (Chile, Japan, the United States, and Russia) and semi-fabricated copper product (United States, Germany and Japan), in which cases they may receive concentrates or cathodes respectively from the DRC or China. However, this is likely the case mainly for countries that are not large copper producer themselves (ICSC, 2018).

Some parts of the copper supply chain originating in the DRC are vertically integrated. Some refiners have strong presences in copper mining, concentrating and refining in the DRC, as well as refining outside the DRC like in cobalt. For example, Jinchuan Group operates one copper and cobalt mine and one copper mine in the DRC (Jinchuan International, 2019) in addition to operating the world’s 2nd and 14th largest copper refineries, both located in China (ICSC, 2018). Notably, Jinchuan was also the world’s 2nd largest refined cobalt producer in 2017 (Darton Commodities, 2017). Other companies like Glencore are involved in mining, refining, and international marketing of copper. Yet other companies maintain cobalt fine refining facilities in China but produce copper cathodes in the DRC.

International commodities traders play an important role in sourcing the full range of different copper products exported from the DRC and delivering them to smelters, refiners, and fabricators for the next stages of value addition. Similar to cobalt, relatively few international traders appear to handle very large volumes of copper products, with Glencore alone handling 4.5 million metric tonnes (mmt) of copper metal and concentrates (Glencore, 2019) and Trafigura being “the market leader” in concentrates trading (Trafigura, 2019). This compares to a total global mining capacity estimated at less than 20 mmt of concentrates for 2017 (ICSC, 2018).

Due diligence considerations

- **Leverage.** The structure of the supply chain gives refiners that have exclusive buying agreements or financing relationships within-country processors, or are vertically integrated, significant leverage over their suppliers to assess and improve, where relevant, due diligence management systems and practices. Downstream companies may be several tiers removed from the fine refiner (i.e. the control point in the supply chain) or represent a small share of the refiner’s customers, but can explore different options to increase leverage on their suppliers, including joining industry initiatives, using standardised templates for requests of due diligence information, and streamlining due diligence expectations.
- **Audits.** Step 4 of the OECD Guidance expects companies identified as “control points” to undergo an annual audit. In the cobalt supply chain, the control point is the fine refiner, which is often situated outside of the producing country. However, in-country concentrators, processors and crude refiners also play an essential role for upstream supply chain due diligence, and audits of fine refiners should therefore involve in-depth on-site checks of concentrators’ and processors’ due diligence systems, findings and risk mitigation plans.
- **Commodity traders.** The significant roles and capacities of international commodity traders should be leveraged for collaboration on upstream risk assessments in the copper and cobalt supply chains. Given their high level of visibility over large parts of the supply chain, the information they can provide to customers may be useful for properly targeting upstream risk assessments and the on-site checks conducted on crude refiners as part of Step 4 Audits of fine refiners.
- **Commercial value and viability of responsible production.** Companies along the supply chain need to factor due diligence costs into price discussions, both upstream and downstream. When implementation of the OECD Due Diligence Guidance is uneven, companies undertaking due diligence face higher costs and competition from both producers and buyers of minerals and metals who do not have robust responsible sourcing practices.

3. Prevalence of OECD Guidance Annex II Risks and Related Adverse Impacts

This Chapter looks at the extent to which the copper and cobalt supply chains are exposed to the categories of risk identified in Annex II of the OECD Due Diligence Guidance, namely serious human rights abuses, conflict financing and other financial crimes. In recent years, much of the due diligence efforts of international operators have been focused on reducing the incidence of child labour in mining. Much less attention has been given to corruption, money laundering, tax evasion and fraud risks, with their wide-ranging negative effects on domestic resource mobilisation and, in turn, spending on social development and protection. This report focuses on cobalt and copper, but the prevalence of risks of adverse impacts as described in this chapter are not confined to these two minerals, or to the geographical scope of the countries covered by the study, and may resemble risks in other parts of the extractive sector, including oil and gas.

The scope of risks in Annex II of the OECD Guidance covers the following:

Serious abuses of human rights associated with the extraction, transport or trade of minerals, such as worst forms of child labour, forced labour, degrading treatment, torture and widespread sexual violence. More detail on the definition of the worst forms of child labour can be found in Box 3. The International Labour Organisation (ILO) defines forced labour as “all work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily” (ILO, 1930).

Direct or indirect support to non-state armed groups, public or private security forces: for example, in cases where such groups control mine sites or transportation routes or points where minerals are traded, illicitly tax or extort money or minerals at points of access to mine sites, along transportation routes or at points where minerals are traded. Public and private security forces should solely maintain the rule of law, including safeguarding human rights and providing security to mine workers, equipment and facilities, and protecting the mine site or transportation routes from interference with legitimate extraction and trade. According to the Guidance, companies are expected to engage security forces in accordance with the Voluntary Principles on Security and Human Rights (VPs), and ensure that individuals or units of security forces that are known to have been responsible for gross human rights abuses are not hired. Companies are also expected to take steps to improve transparency, proportionality and accountability in payments made to public security forces and avoid or minimise the exposure of vulnerable groups, in particular artisanal miners, to adverse impacts associated with the presence of security forces.

Bribery and fraudulent misrepresentation of the origin of minerals: Bribery or fraud occurs when supply chain actors offer, promise, give, or demand a bribe or other undue advantage to obtain or retain business or any other improper advantage, for example to secure mine site concessions, to facilitate smuggling, or to fraudulently misrepresent the origin of a mineral. (OECD, 2011; OECD, 1999) Bribes can take the form of money or other pecuniary advantages (e.g. sub-contracting firms linked to public officials) or non-pecuniary advantages (e.g. favourable publicity).

Money laundering is the process by which criminals disguise the illegal origin of the proceeds of criminal conduct by making such proceeds appear to have derived from a legitimate source.

Tax evasion. Under the Guidance, in addition to paying taxes, fees and royalties due to governments, companies are expected to disclose payments in accordance with the principles set forth under the Extractive Industry Transparency Initiative (EITI).

In the course of reviewing the prevalence of risks under these categories, the baseline report also touches upon several conditions and potential adverse impacts outside the scope of Annex II that may give rise or contribute to such risks, such as loss of ASM livelihoods and residential resettlement. Such additional risks are also addressed by other OECD Responsible Business Conduct instruments, such as the OECD Guidelines for Multinational Enterprises and the OECD Due Diligence Guidance for Responsible Business Conduct.

3.1 - Serious abuses associated with the extraction, transport or trade of minerals

Reports from NGOs and various media outlets have drawn international attention to hazardous working conditions and the presence of children⁴ in mining sites involved in collecting, sorting, washing, crushing and transporting minerals (African Resource Watch and Amnesty International, 2016; Amnesty International 2017; CNN, 2018). These studies highlight the serious challenges in regulating and governing the sector, particularly with regard to enforcing the legal prohibition against child labour in mining, providing critical social services, protecting the rights of adult workers and promoting access to decent work. Yet, the Amnesty International reports also find a lack of meaningful due diligence on the worst forms of child labour, with almost half of surveyed companies reportedly failing to demonstrate even a minimal degree of conformity with international standards, and around a quarter (mostly consumer-facing companies) demonstrating moderate or adequate levels of effort. An analysis of cobalt smelter reporting on worst forms of child labour due diligence also shows very low levels of disclosure on a topic that has elicited intense international scrutiny (Bayer, C., and Cooper, A., 2019).

Box 3 – Definition of worst forms of child labour (WFCL)

The International Labour Organisation Convention 182 defines worst forms of child labour as:

- **Slavery and forced labour.** All forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage, and serfdom, and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict
- **Commercial sexual exploitation.** The use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances
- **Illicit activities.** The use, procuring or offering of a child for illicit activities in particular for the production and trafficking of drugs as defined in the relevant international treaties
- **Hazardous work.** Work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children, including hazardous work.

Source: International Labour Organisation Worst Forms of Child Labour Convention (No. 182).

⁴ A child is any person under 18 years of age.

The OECD Due Diligence Guidance expects companies in mineral supply chains to identify and mitigate the worst forms of child labour, with a view to ultimately addressing all forms of child labour within their supply chain. Not all child labour falls under the internationally recognised definition of worst forms of child labour (see Box 3 for definition).

Prevalence and characteristics of child labour

Research undertaken by the University of California-Berkeley's Center for Effective Global Action (CEGA) focused on a random sample of 150 study areas out of 426 identified cobalt mining communities in the Copperbelt to analyse the prevalence, forms and causes of child labour. The study finds that the majority of children in mining communities (57%) are working, but mostly in domestic chores. Out of the children that work outside of the home, roughly half of them work in agriculture, against slightly less than a quarter in the mining sector. Of the mining labour force living in the mining communities of the Copperbelt, 13% are below the age of 18. Overall, only 15% of girls who work outside the homework in the mining sector, roughly half the percentage of boys. The study finds that around half of the children working in artisanal and small scale mining are between 15-17 years old, 41% are 10-14 years old and 8% are younger than 10 (CEGA, 2017).

A mapping of artisanal mine sites carried out by the German Federal Institute of Geosciences and Natural Resources indicates the presence of children in about one in four artisanal mine sites the surveying team was granted access to. Observations from several primary research exercises have indicated that child labour is concentrated at a relatively small share of ASM sites, with certain sites being particularly problematic (BGR, 2019; ITA-gov-r-021019). In addition to the conduct of security forces, other factors appear to impact the scale of child labour at particular sites, including, for example, the level of vulnerability of communities and children, and mine sites' proximity and accessibility to residential areas. While most children either work alongside their parents or are adolescents working independently, the children most vulnerable to abuse tend to be those working for third-party adults (DRC-gov-e-070819; DRC-com-e-070819). Many of the independent adolescents working in mining are themselves heads of household, and may depend on the activity to support dependent family members.

Other serious abuses

Serious abuses by security forces such as torture, widespread sexual violence, and war crimes have not been widely associated with the sector. However, extortion of children working on ASM sites by public and private security forces has been reported (see sub-chapter below). Children have also reported being chased and beaten by security guards (Amnesty International, 2016; CNN, 2018; DRC-com-k-110819). In the course of the armed forces' demolition of ASM buying centres located near LSM concessions, military personnel allegedly burned down adjacent residential areas, leading to at least one fatality and extensive destruction of homes (DRC-cso-e-120819; DRC-cso-a-050819; DRC-cso-e-120819). The role of military personnel in securing LSM concessions, and the need to contract public security forces only in line with the Voluntary Principles on Security and Human Rights is further discussed in the following sub-chapter.

While forms of forced labour have not been observed during the primary research for this study, relationships between miners and sponsors are complex and often opaque. In most cases, ASM miners are compelled to enter into informal financial relationships with *négociants* or sponsors so they can meet basic livelihood needs prior to the pits producing any minerals. The nature of these relationships is affected to varying degrees by social bonds, the relative level of effort expended by different

members of the team, the level of financial dependency on the sponsor, and the team members' relationships with others on the site, for example with contributing cooperative members (DRC-com-t-130819; DRC-com-h-100819; DRC-com-j-100819). Such factors can influence the terms and amounts of take-home pay for ASM workers.

The intersection at some sites of the presence of public and private security forces, poorly defined employment relationships characterized by high degrees of dependency, and hazardous working conditions, should prompt more scrutiny of forced labour risks by companies sourcing ASM or linked to illicit ASM sites through mining permits or concessions they source from. Therefore, the heightened risk of forced labour presented by the characteristics of the labour market should be closely monitored.

Mitigation strategies and challenges

Informal ASM operations taking place on LSM concessions, both in active and inactive parts, and in residential areas are more exposed to the risks of worst forms of child labour and certain forms of forced labour. In contrast, at more formal ASM sites with official recognition by a mining permit holder and mining regulatory authorities, the permit holder is in a better position to enforce company policies against the presence of child labour and uphold safety protocols and other operating standards. Formalisation may also provide more opportunities for women to participate in lucrative ASM tasks.

Companies can sometimes be confronted with systemic issues and root causes of serious abuses like WFCL that exceed their capacity to directly address them, including through their business counterparts. Such issues may stem from the government's institutional capacity challenges to protect human rights, provide free education, or structural economic weaknesses and volatility. The "Practical actions for companies to identify and address the worst forms of child labour in mineral supply chains" document (OECD, 2017) complements the Due Diligence Guidance on this particular issue, helping companies navigate the sometimes delicate balance between ensuring they are not tolerating or contributing to serious abuses while working with governments and local actors to address the root causes of child labour.

Many LSM actors or those sourcing from them claim to avoid the risk of child labour by excluding ASM material from supply chains. Although the decision whether or not to source from ASM is ultimately a commercial one, the OECD Due Diligence Guidance encourages companies to stay engaged to mitigate risks, instead of avoiding them ("de-risking"). Nonetheless, many LSM operators, as well as processors of both LSM and ASM material, have indicated they are under significant pressure by customers to provide 'ASM-free' material. The decision to terminate a business relationship largely depends on the circumstances and the risk appetite of the supply chain actors, but companies are expected to exhaust other mitigation options before disengaging.

The decision to disengage from or avoid sourcing ASM to mitigate child labour risks should also take into account other potentially adverse consequences, such as harming livelihoods of households in mining communities, which are more vulnerable to external shocks. As the search for additional income is the dominant reported reason for children to work, disengagement strategies from ASM intended to reduce child labour could actually have the opposite effect. It furthermore puts pressure on large-scale miners to avoid constructive engagement with ASM, likely rendering ASM working conditions more hazardous. These outcomes run firmly counter to the recommendations in the OECD Practical Actions as company actions to address child labour should “prevent the child from being pushed into a more precarious situation” (OECD, 2017). Maintaining sourcing from ASM, coupled with support and other forms of incentives could prove to be more effective in reducing child labour without harming local livelihoods (CEGA, 2017).

Box 4 – Due diligence and risk mitigation efforts related to child labour risks to date

The DRC government has issued policy directives and helps lead local platforms with mandates to coordinate interventions targeting child labour, in many cases within the framework of CEGA's recommendations. These include the Inter-Ministerial Commission in charge of the question of child labour at mines and mine sites and the adoption of the Sectoral National Strategy and Operational Plan against child labour in artisanal mining in the DRC. International multi-stakeholder initiatives such as the Global Battery Alliance, Responsible Cobalt Initiative (RCI), and Responsible Minerals Initiative (RMI), are also seeking to coordinate, orient and mobilize action regarding member companies' sourcing and due diligence practices with special attention to child labour in mining. Some action has therefore been taken by individual companies, collective initiatives, and by the DRC government on improving due diligence, risk mitigation, and promoting a supportive environment for such efforts.

A growing number of downstream companies have disclosed information related to child labour due diligence practices related to their cobalt supply chains in the DRC. Almost two years following the publication by Amnesty International of "This is What We Die For", however, the majority of downstream companies assessed by the organisation were reported to have taken minimal action to improve due diligence on this issue (Amnesty International, 2017). Companies' participation in the above multi-stakeholder groups may conceivably lead to higher levels of implementation of the OECD Due Diligence Guidance, but the responsibility rests with individual companies to do so.

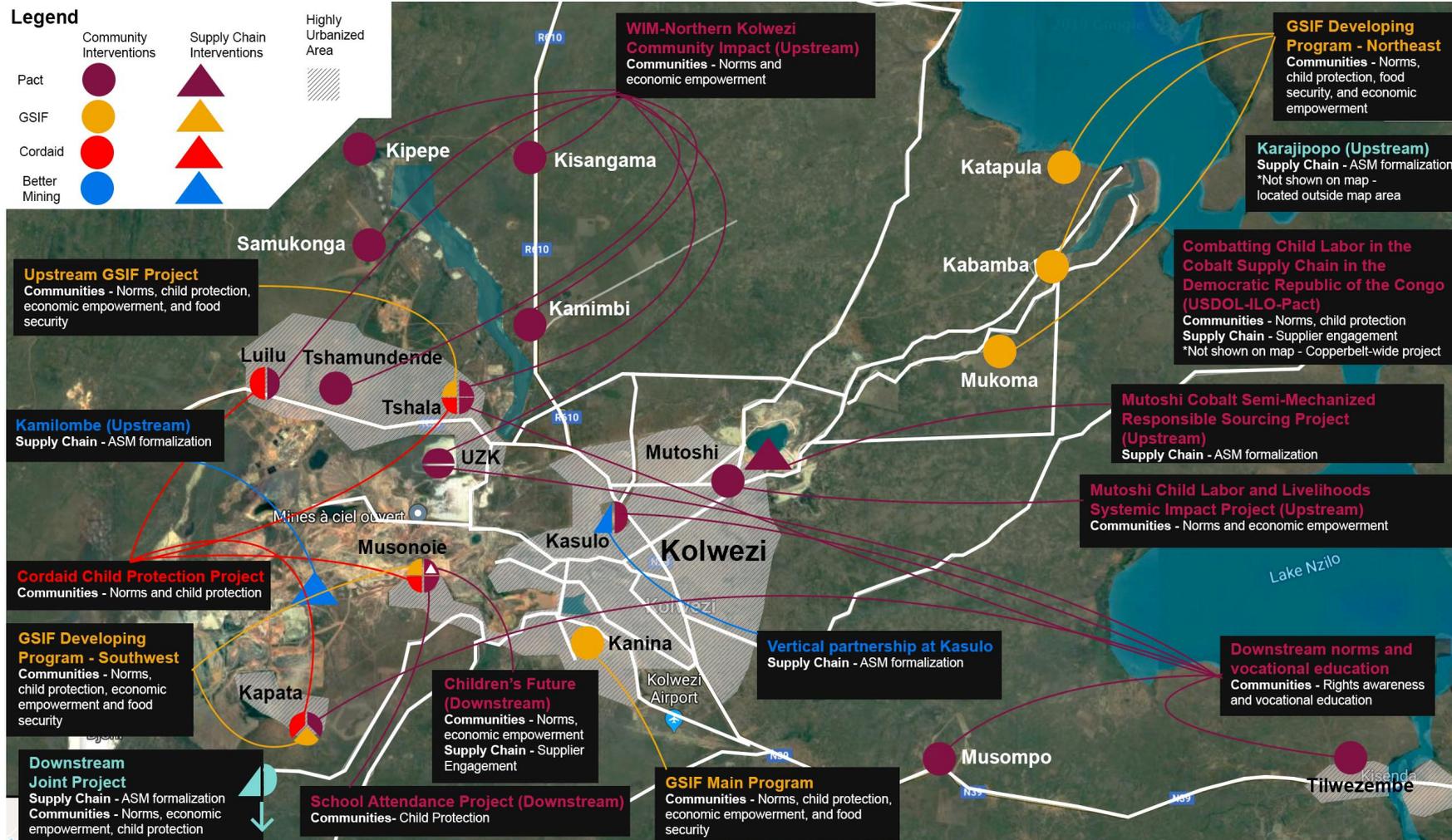
A recent assessment of cobalt refiners found similarly low levels of due diligence disclosure, with none of the 42 companies examined having described the steps taken to manage risks or summarized their risk mitigation strategies related to child labour (Bayer, C., and Cooper, A., 2019). Indeed, downstream companies' public statements to the risk of child labour in their cobalt supply chains have often centred on a mix of disengagement from suppliers or generally unsubstantiated claims they are either not connected to the problematic segments of the supply chain or that they require suppliers to follow relevant guidelines (CBS, 2018). However, RMI and RCI recently announced collaboration on launching audits of cobalt refiners that address child labour risks.

Despite the mixed progress on due diligence, a range of projects to support children and families, particularly through awareness-raising, education, livelihoods and capacity-building interventions has proliferated in the Kolwezi area. Other projects that appear to have grown out of attention to child labour risks relate to improving standards of ASM, particularly through formalisation. Both categories of projects are mapped on the following page based on contributions to the OECD Cobalt Stakeholder Group and interviews. Many of those projects are of significant ambition, working for example to collaborate with and strengthen local institutions. These interventions also incorporate many elements of Steps 2 and 3 of the Due diligence Guidance and the Practical Actions related to identifying and responding to risks. However, the fact that such projects are communicated mainly as discrete site-focused initiatives as opposed to responses to risks identified as part of a comprehensive due diligence process suggests that companies are often approaching the issue mainly from a "Corporate Social Responsibility" (CSR) and philanthropy perspective or by pilot testing responsible sourcing practices only in a small segment of their supply chains.

The extent to which child labour risk mitigation and remediation projects rely on alternative livelihoods approaches also deserves further examination. Alternative livelihoods approaches should be sensitive to the important place of ASM in the economy. Researchers have highlighted both that residents of the Copperbelt are highly economically dependent on ASM (CEGA, 2017) and that it is significantly more lucrative than most alternatives (The Enough Project, 2018). ASM is also already widely practiced in parallel with other livelihoods. It seems unlikely that projects of the scale currently being implemented, or that could be envisaged in the future within the framework of due diligence or CSR practices, could significantly alter the structural features of the regional economy and ASM's place within it.

Specific efforts by companies sourcing copper from the DRC to conduct due diligence and risk mitigation on human rights risks and adverse impacts in the supply chain have been limited to date. The research team is aware of both upstream and downstream existing risk assessment efforts but these require much greater consistency and wider uptake. The lowest levels of due diligence awareness and capacity can generally be found at the buying centre level.

Figure 12: Supply chain and community interventions in the Kolwezi area, 2019



Map prepared by Pact for presentation to the Cobalt Stakeholder Group at the 2019 OECD Forum on responsible mineral supply chains and added to by the OECD Secretariat based on informant interviews. Private sectors actors have been anonymised and categorised as either upstream or downstream. The map is not comprehensive and does not address the ongoing projects and programmes implemented by the DRC Government and local NGOs and civil society.

3.2 - Direct or indirect support to non-state armed groups, public and private security forces

Non-state armed groups

The Haut-Katanga and Lualaba provinces are not considered to be prone to endemic conflict. Non-state armed groups in the greater Katanga region active over the past decade have included the Bakata Katanga and Apa na Pale, sometimes referred to as Maï-Maï groups, as well as several Twa and Luba armed groups engaged in communal violence. Such groups, however, were not active in Haut-Katanga or Lualaba provinces, which comprise the Copperbelt. Recent attacks in Lubumbashi may point to the re-emergence of the Bakata Katanga in the Copperbelt, though recent activities of the group have not been connected with illegal taxation or control of 2C mining and trade (Jeune Afrique, 2019; DRC-cso-b-060819). The DRC government has promoted demobilisation efforts, including by granting access to a ZEA to provide former fighters with an alternative source of livelihoods.

Numerous instances of violence and property damage perpetrated by groups of people with some level of organization have been reported at 2C mine sites, including at formalised ones. Such groups have targeted enclosures, heavy machinery, and other equipment such as weighbridges. In one instance, a group was allegedly directed by a competitor with links to politically exposed persons. In another, a concession owner recruited young men from a nearby community to attack their own site to exert pressure on an ASM cooperative regarding a dispute. On an LSM site where open hostility prevailed between the operator and groups of artisanal miners working on the active LSM area, ASM workers allegedly came armed with knives and chanted in unison. Reports of similar disturbances abound, including when artisanal miners or others attacking a site have been armed with edged weapons or resorted to stone-throwing. Some LSM operators and civil society representatives speculate that certain groups of artisanal miners working illicitly have fled the conflict in the Kasais. Though there is no evidence they were combatants themselves, the influx has reportedly led to tension (DRC-cso-c-060819; GBR-com-f-080819; UAE-com-g-100819; CHN-com-n-120819; CHE-com-m-120819).

The level of organisation among perpetrators of violence in the 2C sector does not appear to correspond to the meaning of non-state armed groups used in the Due Diligence Guidance. Nonetheless, the fluidity and unpredictability of such activities, their contribution to adverse impacts, and their links to politically exposed persons should prompt companies and stakeholders to monitor these dynamics closely.

Direct or indirect support to public and private security forces

The two main state armed actors that are involved in cobalt mineral supply chains are the Republican Guard (*Garde Républicaine*, hereafter GR) and the National Army (*Forces Armées de la République Démocratique du Congo*, hereafter FARDC). Other public security actors who might be present on sites include the Mining Police (*Police des Mines et Hydrocarbures*), the Anti-fraud Brigade, Local Police, Police for Internal Affairs (*Bureau 2*), and National Intelligence Agency (ANR).

The GR is an elite armed force whose mandate is to protect the President of the Republic and his distinguished guests, guard presidential facilities and provide a military escort to the presidency (*Loi organique n° 11-012 portant organisation et fonctionnement des Forces armées*, 2011).

Numerous reports and articles have pointed to interference and involvement by members of the GR in the 2C supply chain. The unit has allegedly developed strong links with a political party and senior politically exposed persons (PEPs), including members of the former president's family. GR personnel (in uniform or in plain clothes) have been observed at various mining sites and at least a dozen buying centres along the road between Lubumbashi and Kolwezi, exerting direct control on miners and trading operations (CEGA, 2017; CNN, 2018; DRC-cso-c-060819). This raises the risk of human rights harm given the alleged role that the GR played in violence against protesters in 2016 and 2017 which led to the United States imposing sanctions against certain GR members (United States Department of the Treasury, 2017). Many of the sites with such a GR presence have been reported to be under the control of close family members of the former president (Congo Research Group, 2017; DRC-com-i-100819; DRC-cso-a-050819).

The power sharing arrangement established following the 2018 presidential election seems to have had a positive effect on the conduct of the GR in the region. GR personnel have been reported leaving the majority of mining sites they had controlled (DRC-com-k-110819; DRC-com-i-100819). Shortly after the reported withdrawal of the GR, the FARDC destroyed all buying centres clustered in Mulungwishi and Kisanfu, some of which had been controlled by the GR. Continued political will is necessary to prevent the GR from resuming alleged significant interference in the cobalt-copper supply chain. The potential of international commercial pressure, applied through effective due diligence to influence positive change, is also important and can have a positive impact (see Box 5 below).

The FARDC were deployed in June 2019 to clear the estimated 5 000-8 000 artisanal miners in active parts of the Tenke Fungurume Mining concession following multiple requests by its owners, China Molybdenum. A cave-in incident that occurred on Glencore's Kamoto Copper Company (KCC)'s concession caused at least 43 deaths among the estimated 2000 artisanal miners on an active part of the LSM site, which was reportedly a factor in the deployment of the army around the concession. Glencore has stated that KCC requested the Congolese armed forces to exercise restraint and operate in accordance with the Voluntary Principles on Security and Human Rights (VPs) (Bloomberg, 2019a). General John Numbi, under United States, Swiss and European sanctions for alleged killings of civilians by forces controlled by him over several years, said artisanal diggers at Tenke Fungurume Mining were evicted without violence (Reuters, 2019b; Reuters, 2018b). As the Mining Police pointed out in a recent forum, however, the armed forces are not a law enforcement agency and are ill equipped to exercise such functions. Notably, there have been several violent incidents and possible abuses reportedly involving rogue elements within the FARDC deployed on this mission, including during the demolition of a combined ASM trading and residential area (DRC-cso-d-090819; DRC-cso-e-120819; DRC-cso-a-050819).

The presence of the FARDC only briefly disrupted ASM production in active parts of the two concessions. Indeed, a large processor of ASM material indicated that disruption to the supply chain was minimal, with production and trading simply shifting and adapting. In September 2019, soldiers were reported to be charging artisanal miners fees to once again gain access to one of the concessions (IND-com-b-070819; DRC-cso-a-050819). The successive seizure of ASM material by local police, which reportedly were not part of the scheme, provoked clashes between miners and security forces. The recent temporary FARDC deployment cannot be considered a long-term solution to issues related to artisanal mining and might expose miners to abuses in the future.

As recognised by local government officials, as well as many civil society actors in the Copperbelt, economically viable ZEAs are needed for artisanal miners to be able to sustain their own livelihoods in safety and security, and to avoid violent removals of ASM miners from LSM concessions. Considered together with the lack of transparency around the requests made by companies to the government that led to the deployment and the discussions of the scope and terms of the deployment between companies and the government, as well as its leadership by a sanctioned individual, the current strategy appears to be fraught with risks and adverse impacts.

The largest LSM operators require private security forces and on-site Mining Police to undergo trainings regarding the VPs. However, medium and smaller players are often not aware of their importance or do not prioritise training for security forces (DRC-cso-b-060819; CHE-com-m-120819; CHN-com-u-140819). Some mining permit holders do not maintain written contracts as required by DRC law with public security forces they have contracted for site protection, and make payments for such services directly to the lead officer for the site, who subsequently distributes the pay among his subordinates. This heightens the risk of diversion of public funds and that bonuses do not reach the other officers on site, harming morale and leaving them more susceptible to corrupt solicitations (DRC-gov-e-070819). *Négociants* have reported paying USD 12 or one bag of ore to security personnel to facilitate the entry of motorcycles into active parts of LSM concessions at night. In at least one case, private security guards were reported to be systematically extorting child miners working on an LSM concession (DRC-com-i-100819; DRC-com-c-070819). In addition, Mining Police generally do not have specialized expertise and skills distinct from police deployed in cities, with personnel simply reassigned between the two bodies. A 2017 CEGA study found that Mining police was only present in half of the analysed mining sites, while 30% were covered by national police (CEGA, 2017).

Box 5 – Due diligence and risk mitigation efforts on direct or indirect support to non-state armed groups, public and private security forces

Many companies throughout the cobalt supply chain have noted that risks under this category are not as prevalent as in tin, tungsten, and tantalum and gold. Efforts to date for companies that produce or source cobalt or copper have mainly been limited to certain upstream operators conducting training of contracted security personnel in the Voluntary Principles on Security and Human Rights or monitoring links to non-contracted public security forces among workers at sites they operate. A multi-stakeholder working group on the VPs formed by industry, civil society and government representatives began meeting regularly again in 2019 in Lubumbashi, but its coverage is currently limited to Haut-Katanga.

The potential of international commercial pressure, applied through effective due diligence, to influence positive change should not be underestimated. Due diligence conducted as part of a formalisation process and a coordinated approach by on-site actors also led to the withdrawal of the GR on at least one mine site. In this case, the operator, cooperative, and on-site regulatory agents worked together to identify the GR personnel involved and miners they were collecting fees from and ensure such personnel were not allowed further access to the site.

Considering the observed risks under this category, particularly related to control of mine sites and trade facilities and routes, more attention to due diligence and risk mitigation is warranted.

3.3 - Corruption, money laundering, tax evasion and fraudulent misrepresentation of origin of minerals

Corruption and money laundering

Corruption diverts funding away from the core services where they are most needed and exacerbates fragility, thus eroding the social contract between the state and its citizens (International Institute for Sustainable Development, 2018). According to Transparency International's Corruption Perceptions Index, the Democratic Republic of the Congo ranked 161 out of 180 countries in 2018 (Transparency International, 2018). Both LSM and ASM operations can be exposed to corruption risks. With regards to LSM, the main risks concern how mining rights were acquired or negotiated, and the role of middlemen and subcontractors. Corruption risks related to ASM concern illegal payments to government officials present at mine sites and beneficial ownership of cooperatives and buying depots.

Award of mineral rights and contract negotiation

Opaque procedures for awarding mining permits and asset acquisition present heightened corruption risks by enabling the trading in influence and political capture or favouritism. Trading in influence is the process or act by which a person who has real or apparent influence on the decision making of a public official exchanges this influence for an undue advantage (OECD, 2008). Political capture and favouritism refers to "private interests significantly influencing decision-making processes of public officials to their own advantage". This may lead to gaining favourable contractual terms in exchange for illegal commissions or gifts, entertainment and job opportunities for public officials influencing the negotiation process (OECD, 2016).

The United States Department of the Treasury Office of Foreign Assets Control (OFAC) press release announcing the imposition of sanctions on Israeli businessman Dan Gertler in 2017 noted that "Gertler has used his close friendship with the [former DRC president] to act as a middleman for mining asset sales in the DRC, requiring some multinational companies to go through Gertler to do business with the Congolese state" (United States Department of the Treasury, 2017b). Fleurette, one of Gertler's companies, has been accused of buying mining assets below market value from Gécamines, and then selling them for a profit with award payments being made to top Congolese officials (United States Department of the Treasury, 2018; Enough Project, 2018). Money is reported to move between Gertler's affiliated companies established in the British Virgin Islands, Gibraltar, the Cayman Islands, Panama and other jurisdictions that allow the identity of beneficial owners to be kept secret (Resource Matters, 2018). As a result, between 2010 and 2012 alone, the DRC reportedly lost over USD 1.36 billion in revenue from the underpricing of mining assets that were sold to offshore companies linked to Gertler (Africa Progress Panel, 2013). Gertler denies any wrongdoing.

In another case, BHP Billiton settled with the US Securities and Exchange Commission over accusations that the company offered expensive favours to a DRC provincial governor who "could be the key to a copper exploration transaction it was negotiating" (Reuters, 2015).

Securing deals via intermediaries

It is common practice for multinational companies to hire intermediaries, who range from well-connected individuals to established firms, to help them navigate unfamiliar markets, provide strategic intelligence on the local political and business environment and ensure a physical presence on the ground. At the same time, intermediaries have also proven to be a major avenue for corruption (Gillies, 2019; NRG, 2017). An OECD report on bribery of foreign public officials found that intermediaries were involved in three out of four foreign bribery cases (OECD, 2014). This appears to have prompted at least three top commodity traders to either reduce significantly or rule out altogether the use of third parties for business development (Bloomberg, 2019; Trafigura, 2019).

The fact that a number of major cobalt and copper producers, as well as other companies such as asset management firms, established business relationships with Gertler raises serious risks and suggests a need for improved due diligence on business counterparts, especially considering that such relationships could expose these companies to liability for allegations related to bribery, concealment and fraud (Wall Street Journal, 2018; Financial Times, 2019b; 2018a; 2018b; The Carter Center, 2017). Furthermore, corruption risks related to mineral asset acquisition in the sector do not only arise in the form of one-off payments but can also be linked to serious, ongoing, and repetitive acts of corruption. Commodity trader Glencore, for example, continues to pay royalties to Gertler, since a shell company linked to the Israeli businessman remains entitled to receive royalties from two joint venture mining projects in which it held stakes, with such transactions reportedly under investigation by the US Department of Justice (Reuters, 2018c; Wall Street Journal, 2018; Glencore, 2018a; Glencore, 2018b). Resource Matters estimates that the royalties due by the commodity trader to Gertler's company for 2018 would amount to at least USD 74 million (Resource Matters, 2019; The Carter Center, 2017).

Eurasian Natural Resources Corporation (ENRC), remains under investigation by the UK's Serious Fraud Office for allegations of fraud, bribery, and corruption around the acquisition of mineral assets in the DRC. Documents filed as part of related litigation have alleged a payment of USD 40 million to Dan Gertler by ENRC (Financial Times, 2018a; Financial Times, 2019f).

In 2016, the United States Department of Justice reached a USD 412 million settlement with a hedge fund Och-Ziff Capital Management LLC (now Sculptor Capital Management, Inc.), which pleaded guilty to criminal charges. One of Och-Ziff's business units worked with an unnamed partner responding to Gertler's description who, according to sources familiar with the case, paid Congolese government officials more than USD 100 million in bribes (Wall Street Journal, 2018).

The use of sub-contractors, customs clearing agencies or consulting firms may also be an avenue for funneling bribes, especially when these companies' beneficial owners are Politically Exposed Persons (PEPs). For example, two companies linked to the former president's family have worked with at least two international companies in copper-cobalt production, Australia-based Nzuri Copper and Sicomin, a DRC-Chinese joint venture (Congo Research Group, 2017). Other Chinese and Indian companies have been reported to have obtained preferential commercial rights at mining concessions via informal arrangements with the provincial government (DRC-cso-e-120819).

Tools and recommendations related to how to identify corruption risks abound (NRG, 2017; OECD, 2016; CMI, 2017). Multinational companies' compliance departments have, in many cases, raised concerns regarding potential corruption risks and reported on them in their Step 5 reports (see for example Umicore, 2018).

However, these companies generally do not disclose any measurable risk mitigation activities taken in response while continuing to engage with third parties or business partners exposed to corruption risks. Due diligence is only meaningful if senior management is committed and mitigation practices are adequate and followed through (Gillies, 2019).

State-owned enterprises

Various reports recognise a heightened risk of corruption associated with state-owned enterprises (SOEs). In an analysis of 224 foreign bribery cases, SOE officials were the bribe recipient in 27% of cases but received 80% of total bribes (OECD, 2014). This is particularly relevant for SOEs in the extractives sector. An analysis of 131 concluded and ongoing corruption cases in the extractives value chain found that SOEs were involved in one out of five of the reported cases. SOEs appear to be particularly exposed to corruption in the awarding of permits, the procurement of goods and services and commodity trading, as well as non-commercial activities such as social expenditures (OECD, 2016).

An investigation by the Carter Center highlighted how Gécamines has acted as the gatekeeper for copper and cobalt assets in Congo, using a clause in the 2002 Mining Code that allowed state-owned mining companies to retain their most valuable permits and sell them to other companies. Gécamines has also been allowed to convert its research permits into exploitation permits. This has resulted in the company acquiring 100 exploitation permits, apparently representing a divergence from the limit of 50 set by the Mining Code. “Gécamines retains de facto power to select private partners for the projects in its portfolio, and contracts are awarded without due process, leading to cases of suboptimal selection of partners and intermediary companies making huge profits by flipping their assets to major international players” (The Carter Center, 2017). A Natural Resource Governance Institute report claimed that stakes in some of Gécamines’ most valuable concessions were sold at eight times less than their market value, and with no tendering process (NRGI, 2015).

Companies should stay alert for unusual circumstances. Transactions of sizes and terms that are atypical for a particular kind of asset should prompt additional scrutiny. Considering the level of opacity and lack of tendering, as well as the sheer number of concessions controlled by Gécamines, it is conceivable that unusual terms for one asset (particularly greenfield sites with few proven deposits) could be used as a backdoor for corruption linked to an apparently legitimate transaction with the same company at another concession.

The corruption risks prevalent in the LSM sector highlight the incompatibility of de-risking strategies through ASM disengagement and avoidance with effective due diligence. Claims that supply chains are ‘clean’, sustainable, or responsible simply because they do not source ASM material, without providing evidence of comprehensive due diligence on risks of corruption, are misleading and should be viewed with scepticism by customers, business counterparts and stakeholders.

Corruption risks in ASM production

Due diligence also appears to be lacking on supply chain actors who supervise ASM production or purchase ASM material. A name check of the SAEMAPE list of authorised cooperatives shows that some PEPs are themselves heads of cooperatives. These include a relative of a governor, other provincial government and mining regulatory agency leadership and their family members, national politicians, and family members of the former president.

As cooperatives are assigned to ZEAs by the government, there is a considerable risk that political affiliation represents the main factor behind the choice of a certain cooperative for a ZEA, and sometimes the existence itself of the cooperative. Notably, companies that might be open to working with artisanal miners need to go through a cooperative to do so and are usually required to pay a fee to the cooperative representative for “cooperative management activities.”

Insufficient background checks by companies buying ore from open markets are performed on buying centre owners and their financiers, who are usually foreigners (mostly Chinese, but also Lebanese and Indian nationals). Insufficient KYC checks on cooperative heads, *dépôts* owners, silent partners and financiers could potentially expose companies to money laundering risks via the trade of minerals. (IND-com-b-070819; DRC-cso-e-120819; DRC-com-i-100819)

At least one mixed processor recently lamented payments they felt compelled to make to a member of the former president’s family to be able to operate smoothly. The presence of the GR has been linked to sites controlled by the former president’s family and likely increases pressure on supply chain actors to engage in such forms of corruption. Another processor purchasing ASM material stated that, while the regulatory framework may be complex, a company can avoid the need to make such informal payments by making all legal payments and retaining documentation of them.

Cooperatives and other state agents are also reported to demand or extort unofficial payments from miners, which can amount to 20% of the pit production. The privileged position given to cooperatives by the Mining Code means that, while they may officially supervise production and mineral sales, they are often not effectively held accountable to provide meaningful services to miners in return, especially to associate members. In one case, a company working with formalised artisanal mining production started using wire transfers to make payments to the provincial branch of the SAEMAPE instead of paying cash to SAEMAPE agents. Noticing a significant increase in the amount of monthly revenues, the provincial branch realised that the site agents had been previously retaining a part of the payments themselves. To sanction the agents for their alleged misconduct, the head of the branch stopped paying salaries to all SAEMAPE agents involved, who subsequently resorted to demanding unofficial fees from miners. While such abuses may occur at both formal and informal sites, more formal settings tend to enable greater visibility over the practices that give rise to them and provide forums for dialogue and resolution (DRC-com-t-130819; DRC-gov-n-130819; DRC-com-h-100819).

Fraudulent misrepresentation of the origin of minerals

Production of ASM material, formal and informal alike, is accompanied by extensive documentation where government agents are present, including the following:

- Report of mineral reception at buying centre (SAEMAPE)
- Inspection of mineral load report (Mining Police)
- Attestation of transport (SAEMAPE, Division des Mines)
- Loading and unloading report (ANR; SAEMAPE)
- Purchase report at buying centre (SAEMAPE)
- Minerals sampling report (Mining Division)
- Certification of quality report (*Centre d’Expertise d’Evaluation et de Certification*)
- Various tax receipts for traceability, transit, administration (Mines Division, local authority, Provincial Revenue Direction, *Centre d’Expertise d’Evaluation et de Certification*)

The cooperatives also co-signs many of the documents needed for the mineral to leave the site (DRC-gov-e-070819; CHN-com-a-060819; DRC-com-i-100819).

Issuing these documents at various stages of production and trade may provide an opportunity for state agents to exert pressure on supply chain actors. The majority of artisanal miners currently work on informal sites and rely on state agents to provide the necessary documentation to introduce their minerals into the formal supply chain. For example, misrepresentation of origin is reported to be frequent in some buying centres, especially for material originating from active parts of LSM concessions arriving in mini buses or motorcycles. The material is declared to originate from the closest ZEA, with state agents signing off on relevant documentation attesting to such origins, while the material actually originates from a different site. Traders and regulators alike would have too much to lose if illicitly produced minerals were seized and set aside. This presents an institutional obstacle to improving the transparency of ASM supply chains that rely on *dépôts*, particularly those that are not part of vertically integrated processors' and refiners' supply chains. The dilemma also demonstrates that if the regulatory framework and commercial incentives were more conducive to formal ASM supply chains, the documentation potentially forming the basis of robust chain of custody systems for minerals traded through the depots already exists.

Non-payment of taxes

Various schemes designed to avoid paying the full amount of legally due taxes have been reported in the Haut-Katanga and Lualaba provinces. Not all government agencies with regulatory mandates for the sector appear to be equipped with the right instruments to perform the necessary controls on the minerals. For example, in the absence of a weighbridge and independent laboratory, regulators suspect widespread fraud on the grade and weight of minerals, with operators being able to declare fraudulently in the absence of adequate verification measures.

There have been allegations that a Lebanese businessman with stakes in various mining and trade operations has been collecting tax payments at certain locations, retaining the tax receipts himself, after making an upfront informal payment to the provincial revenue authority. For instance, he set up a private tax collection point at the edge of Kisanfu and applied a USD 5 000 fee per truck. This raises the prospect of exposure to serious risks of corruption, money laundering and fraud, as well as tax evasion for material taxed at such collection points (IND-com-b-070819; DRC-cso-d-090819).

The OECD Due Diligence Guidance expects companies to disclose payments in accordance with the principles set forth under the Extractive Industry Transparency Initiative (EITI). This is particularly important for the enterprises in which the state retains part of the ownership, such as Gécamines. Its transformation into a commercial enterprise has not led to more transparency, especially regarding the destination of revenue stemming from royalties, bonuses, rents and other contractual fees. The Carter Center estimates that USD 750 million were not properly registered as Gécamines partnership revenue between 2011 and 2014, which represents about two thirds of the total income Gécamines was supposed to collect from joint ventures (Carter Center, 2017). Gécamines rejected the allegations (Gécamines, 2018), but another consortium of NGOs pointed to issues that remained unaddressed in the response (COGEP, 2019), to which Gécamines issued another official reply (Gécamines, 2019).

Additional questions are raised by instances of unusually low tax payments made by some private mining companies in EITI declarations.

Box 6 – Due diligence and risk mitigation efforts on corruption, tax evasion, money-laundering, and fraudulent misrepresentation of minerals

Risks related to corruption, tax evasion, money-laundering, and fraudulent misrepresentation of minerals in the upstream copper and cobalt supply chains in the DRC have not attracted as much attention from companies as child labour and hazardous working conditions, though these have been the sole focus of law enforcement action. Due diligence efforts have mainly focused on supply chain mapping and transparency, though such efforts have to date been incomplete, piecemeal, or not sufficiently followed up on with specific or measurable risk mitigation. Large companies generally have developed compliance regimes and controls focusing on immediate counterparties, with responsibility for preventing bribery clearly assigned to senior management. Nonetheless, while individual companies' counterparty due diligence efforts for corruption risks were not examined in detail in this report, there appear to be significant weaknesses, particularly for companies seeking to prevent or mitigate corruption risks beyond their immediate counterparties, e.g. further up the supply chain.

The Extractive Industry Transparency Initiative (EITI) is a useful tool in the fight against corruption, tax evasion and money laundering. EITI reporting provides valuable context information, supports discussion, monitoring and civil society advocacy and exposes country-specific natural resource management practices that are vulnerable to abuse, suspicious deals and transactions. It requires transparency in the allocation of licenses, contracts, beneficial ownership, payment flows and revenue collection at national and sub-national level, including to and from SOEs (EITI, 2019a).

The DRC is an EITI member. This means that companies in these supply chains are in a better position to support the implementation of the principles and criteria set forth under the EITI and disclose payments to government per the OECD Guidance. The EITI Board recently determined that "the DRC has made meaningful progress overall in implementing the 2016 EITI Standard. While there is anecdotal evidence that EITI implementation has contributed to changing practices and mitigating the risk of corruption, the Board expresses concern that corruption and mismanagement of funds in the extractive sector persist" (EITI, 2019a). On a related note, Gécamines has contributed to increased transparency by publishing some contracts, though only a small share. The company has also resisted disclosure, insisting it is not obligated to disclose since it is a commercial enterprise (Carter Center, 2017). EITI findings and information should be used as a resource for improved due diligence of these risks.

Some companies make claims about their due diligence policies encompassing all OECD Guidance Annex II risks but fail to describe specific actions they take to respond to corruption risks, even when companies they have stated they source from have been widely implicated in related adverse impacts. At least one crude refiner of ASM has collaborated in an endeavour to map its supply chain beyond the buying centre level and identified some risks related to misrepresentation of minerals in the course of its efforts. Preliminary plans to mitigate such risks were developed.

Numerous companies in the cobalt supply chain have reported to be involved in initiatives to track minerals in their supply chain, some based on technologies such as blockchain. Such approaches are reportedly being piloted at LSM and ASM sites with formal features, though not informal ASM supply chains. This could help improve supply chain transparency but is not a substitute for due diligence on the factual circumstances of the production and trade of minerals.

The risks related to corruption and non-payment of taxes in the 2C supply chain in the DRC underline how focus on some risks at the expense of attention to other significant risks compromise the effectiveness of due diligence.

Public revenue lost to undervalued asset transactions and non-payment of taxes makes it more difficult for the DRC State to address the root causes of child labour through the provision of free basic and vocational education and services for vulnerable children and families. Other corruption risks linked to the perverse incentives of the regulatory framework for ASM, and related opportunities to extract or extort informal payments from artisanal miners, result in inefficiencies and lost income for artisanal miners and others adding value in ASM supply chains.

4. Recommendations

This study has identified five areas for action with corresponding recommendations for the government of the Democratic Republic of the Congo (DRC), companies, and other stakeholders to progressively strengthen the integrity and effectiveness of due diligence and sourcing policies, and build responsible copper and cobalt (2C) supply chains, from production, through trading to processing and export from the DRC. These action areas include:

1. Comprehensive, risk-based and context-sensitive implementation of the OECD Due Diligence Guidance
2. Increased focus on corruption, money laundering and tax evasion risks: enhanced know-your-customer, beneficial ownership and political and military affiliation background checks
3. Strengthened engagement with the artisanal and small-scale mining (ASM) sector
4. Voluntary Principles on Security and Human Rights
5. Gender-responsive due diligence

The OECD Due Diligence Guidance is principally directed to companies. They have primary responsibility for conducting due diligence on all Annex II risks of the Guidance for copper and cobalt products from the DRC. The DRC government has the primary responsibility to regulate and govern the sector, including associated environmental and labour impacts. The DRC government also has an indispensable role to play in supporting conditions favourable to improved due diligence. Likewise, international cooperation partners and multi-stakeholder initiatives can help create a better enabling environment for due diligence.

Ways to improve companies' overall due diligence and risk mitigation efforts, including for risks on which there has already been significant attention, are addressed under the first set of recommendations. Several risks for which there are particular due diligence gaps are called out under specific headings in the recommendations. While companies are expected to implement all parts of the OECD Guidance, certain recommendations directly recall parts of the Guidance where there are particularly significant gaps in current due diligence practice.

4.1 - Comprehensive, risk-based and context-sensitive implementation of the OECD Due Diligence Guidance

As Chapter 3 ("Prevalence of OECD Guidance Annex II Risks and Related Adverse Impacts") shows, there is a need to scale up due diligence efforts and set up appropriate management systems to identify, mitigate and report on all risks relevant to Annex II of the OECD Due Diligence Guidance. This is intended first and foremost to promote responsible investment in the production and trading of 2Cs, in light of upcoming regulatory and industry requirements aligned with the OECD Guidance, such as those promoted by the London Metal Exchange and the China Chamber of Commerce of Metals Minerals & Chemicals Importers & Exporters. The uptake of due diligence practices across the board would also contribute to creating a level playing field for companies, thus reversing the current incentives structure in which only more responsible operators bear the costs of due diligence.

The DRC government may consider the following:

- Extend existing legal requirements⁵ to conduct due diligence as per the OECD Due Diligence Guidance in tin, tungsten, tantalum and gold to all operators involved in the extraction, transport, handling, trading, processing, smelting, refining and alloying, or selling of cobalt and copper.
- File and provide access to annual public reports on due diligence activities by companies in the copper and cobalt supply chains in accordance with Step 5 of the OECD Due Diligence Guidance on the website of the Ministry of Mines.
- Encourage the participation of government officials in capacity building and training programmes on the OECD Due Diligence Guidance organised with the OECD Secretariat at provincial level. Regularly carry out internal capacity building activities for officials involved in mining sector governance on the OECD Due Diligence Guidance.
- Leveraging the presence and investing in the capacity of the *Comités Provinciaux de Pilotage* [Provincial Steering Committees] (CPPs) for the mining sector of Haut-Katanga and Lualaba to share information on identified risks and drive the development and implementation of risk mitigation strategies on a regular, ongoing basis.
- Improve the conditions for risk mitigation related to child labour in mining by:
 - Advancing the activities of the Inter-Ministerial Commission in charge of the question of child labour at mines and mine sites with a view to providing more direction and strategic coherence to complementary private sector efforts;
 - Communicating on existing initiatives and services for children identified by companies in their supply chains to promote better access to such services;
 - Following through on policies targeting the elimination of the Worst Forms of Child Labour, including the expansion of free public education;
 - Promoting access to decent work, for example by scaling up technical and vocational training programmes, and advancing national policies aimed at growing the middle class;
 - Promoting companies' support of multi-stakeholder mechanisms and safe engagement with civil society in local jurisdictions in which they operate to build coherent systems for monitoring and addressing of risks, particularly child labour.
- Ensure that mining regulatory agents cooperate when companies visit mine sites and facilities for the transport, trade, and processing of minerals, including in the informal ASM supply chain, as part of due diligence efforts.

⁵ Circular of 6 September 2011 requiring all entities involved in the mining and trading of tin, tantalum, tungsten and gold to implement their due diligence in accordance with the recommendations of the OECD Guidance; Ministerial order no. 0057/CAB.MIN/MINES/01/2012 of 29 February 2012 concerning implementation of the Regional Certification Mechanism of the International Conference on the Great Lakes Region (ICGLR) in DRC; Ministerial order no. 0058/CAB.MIN/MINES/01/2012 of 29 February 2012 defining procedures for the qualification and validation of mine sites (OECD, 2016).

Companies along the 2C supply chain

- Refer to the OECD Due Diligence Guidance Supplement on Tin, Tantalum and Tungsten for conducting due diligence on copper and cobalt given the similarity between the supply chains;
- While certain suppliers may be prioritized in the course of conducting due diligence based on their level of risk, and risk mitigation plans should target specific risks identified in companies' supply chains, companies should not be selective about which Annex II risks they conduct due diligence on. Companies should urgently expand the scope of their due diligence to include all Annex II risks and related adverse impacts;
- Consider all options as part of risk mitigation planning, including continuing or suspending trade in the course of risk mitigation efforts, and disengagement only after risk mitigation efforts have failed or if the company deems risk mitigation unfeasible or the risks unacceptable;
- Carry out and encourage suppliers to participate in capacity building training programmes on the OECD Due Diligence Guidance and the five-step due diligence framework on a regular basis;
- Promote strong links between projects seeking to address child labour and due diligence policies; ensure that child labour risk mitigation policies do not put children in a more precarious situation;
- If sourcing from an LSM-only producer or processor, conduct due diligence on any potential adverse impacts stemming from their policy towards ASM, including, for example, by exacerbating hazardous working conditions or giving rise to conditions that enable child labour in ASM;
- When supporting child labour mitigation and remediation projects, seek to embed them into local institutions and systems and avoid supplanting the latter; and
- Invest in and support DRC public systems where feasible with mandates to protect human rights.

Cobalt fine refiners and copper smelters and refiners (in addition to the above)

- Scale up efforts to map the factual circumstances of red-flagged supply chains by setting up on-the-ground assessment teams to generate and maintain information on the circumstances of extraction, trade, handling, refining, and export of cobalt and copper;
- Participate in third party audits such as the pilot cobalt refiner supply chain due diligence standard developed by the Responsible Minerals Initiative, the Responsible Cobalt Initiative and CCCMC or through an institutionalised mechanism or industry programme, allow access to company sites and relevant documentation and facilitate on-site visits and contacts with suppliers selected by the audit team.

Multi-stakeholder initiatives

- Mandate the implementation of the OECD Guidance for members or relevant companies covered by the initiative, covering all risks contained in Annex II of the OECD Due Diligence Guidance;
- Orient members' projects particularly on child labour to be consistent and connected with the Congolese government strategy for the mitigation of identified risks.
- Ensure members' projects are carried out through meaningful engagement with local civil society and impacted stakeholders.
- Build shared systems and practices to undergird the effectiveness and sustainability of member projects, including ongoing monitoring, mapping of human rights risks, data collection and results measurement.
- In the case of initiatives that pool resources, direct such resources to regional projects exceeding the scope of individual member projects, for example in capacity building for local institutions and systems that address the root causes of child labour.

4.2 - Increased focus on corruption, money laundering and tax evasion risks: enhanced know-your-customer, beneficial ownership and political and military affiliation background checks

As Chapter 3 ("Prevalence of OECD Guidance Annex II Risks and Related Adverse Impacts") shows, corruption, money laundering, tax evasion and fraudulent misrepresentation of the origin of minerals feature prominently among the adverse impacts companies might potentially be causing, contributing or being directly linked. These financial crimes reduce domestic resources that can be allocated for services and hit harder those who are less resilient, thus eroding the social contract between government and society. In their business relationships, companies need to step up efforts to collect and analyse information on ownership (including beneficial ownership), corporate structure, the names of corporate officers and directors, the ownership interests of the company or officers in other organisations, the business, government, political or military affiliations of the company and officers.

The DRC government may consider the following:

- Ensure full compliance by entities in the 2C supply chain, particularly those already participating in the EITI National Action Plan and local exporters, to publish payments of taxes, fees, and royalties related to mineral extraction, trade, and export of copper and cobalt to the DRC government to improve transparency. This could cover exports of ASM material, with requirements to be further defined by the EITI in collaboration with international partners. Reported payments may be included into one streamlined EITI and OECD due diligence annual report.
- In accordance with the October 2019 statement of the EITI Board (EITI, 2019b):
 - Ensure that international civil society organisations are able to contribute to local civil society's efforts on extractives governance;
 - Address identified government oversight weaknesses related to state-owned enterprises' (SOEs) group-level financial relations, off-budget extractive revenues and implementation of regulations related to subnational transfers and companies' social expenditures;

- Disclose the following types of mining agreements, contracts, licenses, and related information:
 - Application and authorisation documents used to assign ZEAs or other areas with artisanal mining activities to cooperatives;
 - Beneficial ownership of registered cooperatives; and
 - Agreements with full terms for private companies authorised to be exclusive buyers at ZEAs;
- Address recommended corrective actions regarding governance and transparency issues related to license allocation, license register, state participation, production data, comprehensiveness, SOE transactions, direct subnational payments, data quality, distribution of revenues, subnational transfers, mandatory social expenditures and SOE quasi-fiscal expenditures; Refer to existing corporate governance and anti-corruption instruments for SOEs when setting performance objectives for Gécamines, for example:
 - OECD Guidelines on Corporate Governance of State-Owned Enterprises;
 - The World Bank’s Corporate Governance of State-Owned Enterprises: a tool-kit; and
 - OECD Guidelines on Anti-Corruption and Integrity in State-Owned Enterprises.
- Report on and periodically audit government spending of mining royalties, with a particular attention to the destination of funds disbursed by all levels of government, including provincial and local authorities.
- Consider building financial management capacity of local authorities, including via international cooperation projects.

Companies along the 2C supply chain

- Strengthen know-your-customer and compliance checks on suppliers and business partners. Collect information on ownership (including beneficial ownership), corporate structure, the names of corporate officers and directors, the ownership interests of the company or officers in other organisations, the business, government, political or military affiliations of the company and officers. Report credible allegations of bribery, tax evasion and money laundering to relevant authorities; and
- Put in place measurable risk mitigation strategies for corruption-related risks. Strategies may rely on a mix of different approaches to be effective. Since the goal of such strategies should be to strengthen systems relevant to business integrity, often of suppliers and other business counterparts, the use of leverage is important. Applying leverage can be done through contractual conditions, into which elements of a risk mitigation strategy can be incorporated. For example, better disclosure of sourcing and payments information can be stipulated to improve monitoring of suppliers. Time-bound performance goals for improving relevant management systems may also be considered. If specific acts of corruption, money-laundering, or tax evasion come to the attention of customers, they may consider conditioning their future commercial relationship on particular remedial actions by suppliers, for example full cooperation with law enforcement, disciplinary or legal action against responsible employees or business counterparts, or restitution.
- Commit to full transparency regarding how assets have been acquired and publish the terms of joint ventures and asset transactions across all types of business counterparts—government entities, SOEs, and private enterprises.

- Engage with local multi-stakeholder groups such as the *Comités Provinciaux de Pilotage* to reach consensus on risk mitigation measures regarding informal fees and payments to regulatory services and ASM cooperatives.
- Orient due diligence related to the involvement of politically exposed persons (PEPs) in ASM supply chains to focus on potential adverse impacts for miners and mining communities. Risk management plans should prioritise addressing such impacts through the use of leverage to encourage more equitable relationships between artisanal miners and entities they depend on to market their minerals. This may entail, for example, stipulating in supply agreements basic terms of cooperatives' relationships with artisanal miners, recognizing the place for independent ASM workers' associations and mandating disclosure of fees charged to artisanal miners by such entities.

International cooperation partners

- Assist the DRC government efforts to increase transparency and domestic resource mobilisation from natural resources through capacity building and technical assistance for improved public financial management to promote the extractive sector contribution to inclusive economic growth.
- Better integrate strategic priorities for improved governance and transparency of the extractive sector into existing capacity building programmes for civil society.

4.3 - Strengthened engagement with the artisanal and small-scale mining (ASM) sector

As shown in Chapter 1 (“Background and context”) and Chapter 2 (“Supply Chain Structure“), ASM plays a fundamental role in the region’s economy and global 2C supply chains at large. The projected global demand for cobalt is set to outpace supply in the medium term, thus making ASM, currently at around 30% of DRC cobalt production, an essential element in the material supply mix. Efforts to improve working conditions, reduce vulnerability of ASM populations and protect human rights of miners are mitigation strategies for risks covered in Annex II, including the worst forms of child labour, and defuse social conflicts that are harmful to local communities, undermine regional development, and present serious risks for LSM operators and their employees.

The DRC government may consider the following:

- Apply the full provision of the Mining Code to all companies, with a particular attention to state-owned enterprises, and specifically enforce the requirements to hold a maximum of 50 exploitation permits; pay surface rents; comply with all operational, social and environmental requirements; demonstrate actual commencement of work for renewal of exploration permits; and public tendering. Consider how concessions that do not fulfil the requirements can be used to create Artisanal Exploitation Zones (ZEAs).

- Create economically viable ZEAs. This includes providing official legal recognition to new ZEAs in areas that are already known to possess deposits that are favourable for artisanal extraction and are close enough to towns and population centres 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 SAEMAPE and the Mining Division should be equipped with or have access to reliable sampling and weighing instruments.
- Clarify specific avenues and/or further institutionalize regulatory approaches that promote LSM-ASM cooperation on industrial concessions in order 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,.
- 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 site(s) under their supervision, authorisation 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.
- In the context of mapping, data gathering and risk assessments, draw on lessons learned from implementation of regional initiatives such as the International Conference on the Great Lakes Region and consider adapting it to the context of 2Cs in Haut-Katanga and Lualaba where relevant. Specifically, the DRC government may wish to consider expanding its mine site validation and mapping programmes to cover 2C sites.

Companies along the 2C supply chain

- 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.
- Step up site visits, collection of documentation, 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 formalisation efforts at origin sites.
- Pursue cross-industry collaboration among different segments of the supply chain, including downstream companies, in order to invest in and scale up ASM formalisation projects to the critical mass needed to overcome competitiveness challenges with respect to informal ASM.
- For **downstream companies**, avoid pursuing ASM-free sourcing strategies as a form of risk mitigation.
- 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 formalisation process.

Multi-stakeholder and industry associations' initiatives in responsible sourcing (*Investissement durable au Katanga*, Responsible Cobalt Initiative, Global Battery Alliance)

- Ensure coordination among different multi-stakeholder and working groups on responsible sourcing of cobalt and copper to avoid duplication of projects;
- Operationalise these organisations' respective commitments with a strong focus on concretely changing business practices and facilitating due diligence on the ground, including by putting in place accountability mechanisms for members against the initiatives' policies, commitments and recommendations.
- Promote projects in collaboration with the DRC government that build capacity, norms, and regional systems for cooperatives related to health insurance for miners, livelihoods strengthening and economic resilience, and access to finance and the formal financial system for members.
- Invest in the development of viable and scalable operating standards for ASM formalisation that are aligned with OECD Guidance, address decent work deficits in the sector and incorporate internationally recognized best practices for formalisation; build consensus among members to accept ASM material produced to such standards within the framework of ongoing due diligence practices.

International cooperation partners

- Prioritise funding for projects aimed at formalisation of legitimate ASM production and use the OECD Due Diligence Guidance as benchmark for ASM cooperatives and small-scale miners to demonstrate gradual improvements in due diligence and responsible production within set timeframes.
- Move away from risk-triggering language and adopt terminology that emphasizes the benefits of greater engagement with the ASM sector, all the while recognising the importance of mitigating risks that are prevalent in the sector.

4.4 - The Voluntary Principles on Security and Human Rights (VPs)

AdherencetotheVoluntaryPrinciplesbyupstreamcompaniesiscriticaltoupholdinghumanrightsin the 2C supply chain. While some companies have made notable efforts to train security personnel, it remains the exception. The issue is also relevant due to the recent deployment of the armed forces to mining areas.

DRC Government

- Ensure that law enforcement personnel deployed to mining areas receive specialized training, including in the VPs; ensure that law enforcement personnel deployed to mining areas are properly trained and equipped to maintain the rule of law, including safeguarding human rights, providing security to mine workers, equipment and facilities, and protecting the mine site or transportation routes from interference with legitimate extraction and trade.
- Ensure there are enough law enforcement officers in the Copperbelt to maintain a consistent presence of officers in both mining and urban areas commensurate with law enforcement needs.

- Avoid contracting out an excessive number of public security or law enforcement personnel to private facilities to avoid compromising their public mandate.
- Avoid the deployment of armed forces without a mandate for civilian law enforcement to mining areas.
- Actively promote the implementation of the VPs among companies and stakeholders throughout the Copperbelt and related multi-stakeholder initiatives.

Mining operators

- Ensure all employed and contracted security personnel in mineral production, trade, and transportation facilities receive specialized training, including in the VPs and are thoroughly vetted.
- Maintain written contracts with all employed and contracted security personnel, including public security forces that conform with relevant DRC laws.
- Clarify rules of engagement and put in place security protocols that privilege de-escalation strategies. Privilege bank-based or wire-transfer payments for all state agents and private security forces personnel present at each stage of the supply chain.
- Maintain a high level of transparency regarding any special requests to government or public security forces, particularly with regard to agreed terms of deployment and related payments.

Companies along the 2C supply chain

- Increase the level of scrutiny of LSM producers in companies' supply chains to ensure that contracted security forces are engaged in accordance with the VPs at LSM sites.

4.5 - Gender-responsive due diligence

There are several ways the DRC Government and upstream companies in particular can contribute to gender-responsive due diligence and equitable opportunity for women to participate in and benefit from the sector, also building on the Stakeholder Statement on Implementing Gender-Responsive Due Diligence and ensuring the human rights of women in Mineral Supply Chains (OECD,2019).

DRC Government

- Ensure that the personnel of regulators, law enforcement, and other government institutions, including sub-national ones, are trained and familiar with women's legal rights to participate in the mining sector and that such personnel are empowered to intervene to prevent or remedy any infringement of such rights.
- Promote the employment of women in law enforcement and regulatory roles in mining areas;
- Promote the inclusion of women miners, associations, and cooperatives in all multi-stakeholder consultation processes in the sector, at local, regional, and national levels.
- Leverage the presence of ASM regulatory officials on formalised mine sites to promote the equitable participation of women in lucrative activities and promote the adoption of supportive policies by the operator.
- Ensure that public services, including those for vulnerable populations, are available and accessible in mining areas, including ones outside of urban centres.

Companies along the 2C supply chain

- Include women miners and community members in consultations related to local impacts, community engagement approaches, and working conditions for women on mine sites.
- Collect gender-disaggregated data as part of formalisation processes to promote women's equitable participation in lucrative tasks.
- Promote and enable networking and collective advocacy among women in the sector.
- Consult women on barriers to accessing decent work and leverage formalisation processes to provide customized solutions regarding, for example, child care, access to credit and the formal financial system, and physical access to pit areas necessary for women traders to effectively do their job.
- Promote access to specialized, gender-responsive health services at mine sites.

International cooperation partners

- Prioritise funding for projects aimed at increasing awareness and capacity of regulators, law enforcement, and other government institutions, as well as female and male miners of women's legal rights in mining activities.

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Table 2 Interviews conducted for the study

Interview code	Interview description
DRC-cso-a-050819	Senior researcher on cobalt-copper sector governance
DRC-cso-b-060819	Senior managers of civil society organisations
DRC-gov-a-060819	Several provincial officials of a mining regulatory service
DRC-gov-b-060819	Senior provincial government officials
DRC-cso-c-060819	Member of academia
CHN-com-a-060819	Senior sourcing manager and staff at operator and processor
IND-com-b-070819	Executive management at operator and processor
DRC-com-c-070819	Site manager and staff at buying centre
DRC-gov-c-070819	Several district-level officials of a mining regulatory service
DRC-gov-d-070819	District-level official of a mining regulatory service
CHN-com-d-070819	Senior sourcing manager and staff at operator and processor
DRC-com-e-070819	Site managers and staff for ASM cooperative and mining teams
DRC-gov-e-070819	Site-level officials for mining regulatory services and law enforcement
GBR-com-f-080819	Sustainability advisor, operations and community relations personnel at operator
DRC-gov-f-090819	Provincial official of state-owned mining enterprise
DRC-gov-g-090819	Senior provincial government officials
DRC-gov-h-090819	Provincial officials of mining regulatory services
DRC-cso-d-090819	Group of nine local and international civil society and non-governmental organisations
UAE-com-g-100819	Senior sourcing manager and staff at operator and processor
DRC-com-h-100819	Site managers and staff for ASM cooperative and mining teams
DRC-gov-i-100819	Site-level officials for mining regulatory services and law enforcement
DRC-gov-j-100819	Mining regulatory service officials assigned to buying centres
DRC-com-i-100819	Owners, financiers, staff and traders at five buying centres
DRC-com-j-100819	Presidents and management staff of five ASM cooperatives
DRC-com-k-110819	Independent ASM workers
DRC-com-l-110819	Presidents of two ASM cooperatives
CHE-com-m-120819	Senior security, community relations, legal, and operations personnel of operator and processor
CHN-com-n-120819	Senior sourcing responsibility manager and staff at operator and processor
DRC-com-o-120819	Site managers and staff for ASM cooperative and mining teams
DRC-gov-l-120819	Site-level officials for mining regulatory services
CHN-com-p-120819	Senior sourcing responsibility manager and staff at operator and processor
DRC-com-q-120819	Site managers and staff for ASM cooperative and mining teams
DRC-gov-m-120819	Site-level officials for mining regulatory services
DRC-cso-e-120819	Monitoring and advocacy civil society organisation
CHN-com-r-120819	Senior sourcing manager for operator and processor
DRC-com-s-130819	Site managers of three buying centres at informal ASM site
DRC-com-t-130819	Miners at informal ASM site
DRC-gov-n-130819	Site-level officials for mining regulatory services and law enforcement agencies at informal ASM site
CHN-com-u-140819	Legal, community relations and communications personnel at operator and processor
CHN-com-v-210819	Senior sourcing manager for operator and refiner
GER-gov-o-220819	Official of German government involved in mining sector governance and development
GER-gov-p-300819	Official of German government involved in mining sector governance and development
USA-jou-a-081019	Journalist covering DRC mining sector
USA-gov-q-060919	Senior mining specialist at intergovernmental organisation
BEL-cso-f-030919	Civil society organisations
ITA-gov-r-021019	Researcher for international organisation

Interconnected supply chains: a comprehensive look at due diligence challenges and opportunities sourcing cobalt and copper from the DRC

This baseline was written by Luca Maiotti and Benjamin Katz under the direction of Tyler Gillard and Hannah Koep-Andrieu (OECD Centre for Responsible Business Conduct) through qualitative research methods including a literature review, desk-based research, remote and field-based semi-structured interviews, and site visits to upstream production and processing facilities in the Democratic Republic of the Congo. The scope of the study is focused on Annex II risks of the OECD Guidance in the upstream segments of the cobalt and copper supply chains, but also reviews several conditions giving rise to such risks in addition to other parts of the supply chain important for understanding due diligence in the sector.

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