dormakaba 🚧

Tracing Cobalt in Fragmented Supply Chains

In collaboration with Kuniversity of St.Gallen



Case Study

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Foreword

Cobalt is a key metal used in lithium batteries, which power our phones, electric vehicles, or windmills. As it is at the heart of technologies that are essential to a renewable energy future, the demand for this finite metal is enormous. 70% of the world's cobalt is sourced in the Democratic Republic of Congo and it is linked to serious human rights violations, including forced and child labor.

At dormakaba we wanted to have a better understanding about tracing cobalt in fragmented supply chains related to electronics components that we use in our products. The topic's complexity required external expertise, therefore we worked together with the Institute for Business Ethics at the University of Saint Gallen, and commissioned a study to gain deeper insight in the topic.

This finalized report is now available to the greater public, putting a spotlight on the key actors and practices involved in the sourcing process of cobalt in the Democratic Republic of Congo. It provides a detailed overview of the upstream part of the cobalt supply chain, as well as the actors that participate in the extraction and handling of this mineral. Readers will, therefore, be able to familiarize themselves with the different actors, steps, and processes involved in the sourcing of cobalt.

Numerous sustainability and supply chain professionals contributed with their expertise to the report. They shared practices and actions they believe would have the potential to improve labor standards and prevent human rights violations in cobalt supply chains. This effort is yet another initiative showing the strong commitment of our company to human rights and the protection of vulnerable groups around the globe. Creating more transparent and responsible mineral supply chains is possible only with the collective action of many parties, and with this publication we are seeking to build partnerships and greater awareness. We hope the insights in this study will help other companies to improve their understanding and management of the human rights risks linked to their cobalt supply chains.

Kind regards,

Jephanie / Issenbach

Stephanie Ossenbach

Group Sustainability Officer at dormakaba

Cell phones, electric cars, and many other products that run on rechargeable batteries, contain cobalt. They are produced, sold, and used all over the globe. Thus, the cobalt supply chain, particularly its extended value chain, is highly internationalized. In comparison, the sourcing of cobalt minerals is limited in large parts to a geographically defined area. The Democratic Republic of Congo (DRC) is by far the largest provider of cobalt worldwide. This in and of itself is a challenge that is accelerated by the often-harrowing conditions under which small scale miners in particular extract cobalt for the world market. However, the fast-increasing global demand has led to growing awareness among consumers, investors, public and not least companies in various sectors about the problematic conditions under which cobalt is often sourced. These features underline the importance and urgency of examining best practices and the challenges associated with implementing responsible business conduct along the cobalt value chain.

We are grateful for the opportunity to collaborate with dormakaba to gain deeper insights into the specific challenges and opportunities related to establishing ethical practices within companies that source and use cobalt. The UN Guiding Principles on Business and Human Rights provide a global standard for conducting business in accordance with the international human rights framework, and it is encouraging to see that a growing number of companies have started to align their practices with these principles. Doing so will be an essential element to build global cobalt supply chains that benefit everyone, from consumers in the global markets all the way to mine workers in the DRC. One specific factor explored in our study are the distinct dynamics between large-scale mining operations and smallscale and artisanal miners. Although they may initially seem separate, in reality, their practices are closely interconnected. The formalization of small-scale mining operations is one of the key challenges in the cobalt supply chain and companies are called on to contribute to finding sustainable solutions to this challenge.

Our study identifies the primary challenges faced by responsible cobalt sourcing in the DRC. Additionally, we highlight key developments in the country that hold promise for facilitating a further push for responsible sourcing in the future. Finally, we outline opportunities for individual companies and business associations in fulfilling their responsibility to respect human rights, as stipulated in the UN Guiding Principles for Business and Human Rights.

Kind regards,

Dr. Florian Wettstein

Kind regards,

Dr. Isabel Ebert

Executive summary

This research maps the cobalt value chain and the current state of research about associated human rights risks in this value chain. It also identifies and maps key actors within the cobalt value chain, along with the relevant legal frameworks. The research assesses typical human rights risks as well as governance and traceability challenges and provides solutions based on desk research and expert interviews with key informants.

The report highlights the significant human rights risks associated with cobalt mining, particularly those associated with artisanal and small-scale mining (ASM). At the same time, the report also shows the inter-connectedness of large-scale mining (LSM) and small-scale mining operations. As a result of this, experts and companies dismiss the feasibility of excluding ASM by solely sourcing LSM cobalt. The report argues that the DRC inhabits a key role in the global cobalt market and that aiming to avoid sourcing cobalt from the DRC is unrealistic as the DRC accounts for twothirds of the world's cobalt production. Sourcing cobalt from the DRC implies having to work with both LSM and ASM solutions as artisanal mining is ubiquitous in the DRC. Child labor risks are a systemic issue in the DRC mining industry, and companies, policy makers and NGOs are increasing their efforts to address these risks, e.g. through local regulatory models or multi-stakeholder alliances as well as collaborative projects between companies and civil society on the ground.

The report underlines the relevance of a business and human rights approach to address systemic issues in cobalt mining. It builds a foundation in soft law, through analysis of the relevant legal frameworks on business and human rights and the OECD Due Diligence Guidance for Responsible Supply Chains. The report shows the fragmented, opaque character of the cobalt supply chain structure, where the intersection between upstream and downstream actors inhibits the densest point in the supply chain as the middle of the hour glass structure. A lot of regulation is therefore connected to this critical juncture. Additionally, while transparency around cobalt supply chains and associated human rights risks remains low in the DRC, the report also demonstrates that due to the sheer abundance of cobalt and the associated dominance in the global cobalt market, it is not advisable or even practicable to aim at circumventing the DRC as a country of origin of cobalt. Moreover, avoiding the DRC does not help to actually solve the problems on the ground.

Recognizing the systemic issues around transparency and human rights risks, which relate to a range of human rights and children's rights, several industry actors are in the process of stepping up and driving change in the DRC. The current picture remains fragmented but efforts to increase transparency and address systemic human rights issues appear to be continuing to grow. The report also shows that companies can connect with existing avenues that are working towards solutions. The insights from expert interviews, policy guidance and academic experts show that despite the major differences between ASM and LSM with regards to human rights impacts and traceability, companies can improve traceability through a range of selected approaches for grasping the situation on the ground.

Contents

Foreword	
Executive summary	4
Introduction	6
The role of cobalt and artisanal miners in the DRC	8
Child labor risks in the DRC mining industry	9
Child labor in international law and the DRC	10
The DRC National Mining Code	10
The relevance of the Business and Human Rights approach to address systemic issues in cobalt mining	11
Relevant legal frameworks on business and human rights	12
Relevant soft law foundations	14
Cobalt supply chain structure	14
Expert insights on the Cobalt Supply Chain	16
Major differences between ASM and LSM with regards to human rights impacts and traceability	17
Key challenges for ensuring traceability along the supply chain	18
Best practices: What should companies do to improve traceability?	18
Working towards solutions	19
Audits	19
Due diligence processes to ensure standards	19
Joining initiatives	20
Mapping of supply chain data	21
Collaborations as a way forward?	21
Contributing to the formalization of ASM	21
Conclusion	23
References	24
Further Material	33
Upstream Actors	34

Introduction

Cobalt production has more than doubled since the early 2000 to meet the rising demand. It is a key ingredient powering today's technology.^{1,2} Globally, the cobalt mine supply is currently quite fragmented from a producer perspective, with the top three players today accounting for just below 40% of global mine supply -Glencore (22%), DRC state miner Gécamines (9%) and China Molybdenum (7%).³

The main country of origin of cobalt is the **Democratic Republic** of Congo (DRC), with a total market share of 70% of today's mined cobalt.4

In terms of mine production in metric tons, the DRC is followed by Russia, Australia and the Philippines (see also figure 6 in the appendix).⁵ Cobalt produced today is primarily a by-product of either nickel or copper production.⁶ In the DRC cobalt is predominantly mined as a by-product of industrial copper mining.⁷ It is worth noting

that DRC is the fifth largest producer of copper worldwide. Furthermore, cobalt and copper are often mined and traded in the same region, known as the Copperbelt, and by the same companies.⁸

The People's Republic of China (China) holds a powerful position in the global cobalt supply chain. Among the fourteen largest cobalt miners in the DRC, eight are Chinese-owned, accounting for approximately half of the country's output.⁹ Furthermore, after the initial sourcing of cobalt, the majority of ore is refined in China.¹⁰ Most of the refining operations for cobalt are situated in China, accounting for 60% of the refined cobalt supply in 2018 and more than 80% of the production of cobalt chemicals in 2017 (see figure 7 in the appendix).¹¹

Of particular relevance with regards to the situation in the DRC – but systemic for cobalt mining as a whole – are allegations of forced labor, labor exploitation, child labour¹² and health and safety issues (hazardous working conditions) at the sourcing stage of the supply chain,¹³ in combination with human rights violations as a result of security concerns – which often occur due to the use of public and private security forces.

g to WEF (2019) co se in

- Desjardins, 2017
- Azevedo et al., 2018, p.12
- Azevedo et al., 2018, p.13; WEF 2019, p.16
- U.S. Geological Survey, 2020, p.51 Keller & Anderson, 2018, p.2
- BGR, 2019, p.2

- OECD, 2019, p.12
- OECD. 2019. p.5 Petavratzi, Gunn & Kresse, 2019, p.35; OECD, 2019, p.14
- WEF, 2019, p.16
- All people under the age of 18 are considered children und

 - s, Resolution der Generalversammlung 44/25, 20 r 1989, Artikel 1)
- 13. Callaway, 2018; AI, 2016; RCS Global, 2016; SOMO, 2016, p.2



Figure 1

Global cobalt reserves and mine production (Sovacoll, 2019, p.917)

As a first step, this report assesses typical human rights risks in the cobalt industry, in particular the DRC, and maps the cobalt value chain and current state of research on the associated human rights risks in this value chain. In the second step, the report describes the relevance of a business and human rights approach to address systemic human rights issues, along with relevant legal frameworks and soft law foundations. The report identifies and maps the key actors within the DRC cobalt value chain. In the third step, traceability challenges and potential management solutions are depicted based on desk research into policy guidance and academic publications, and expert interviews with key informants.

The role of cobalt and artisanal miners in the DRC

Informal work settings and the dominance of ASM aggravate overall human rights concerns.¹⁴ ASM activities are characterized by their low degree of mechanization. Artisanal mines offer a variety of work to individuals and teams collaborating hand-in-hand in a manual system to find, recover, wash, sort and transport the industrial mineral to warehouses, which buy and aggregate cobalt and copper ore before selling it to crude refineries operating in the province.¹⁵ In the DRC, artisanal miners are allowed to mine safely and legally in areas called ZEAs (zones d'exploitation artisanal). However, the authorities have created very few ZEAs and they are often not very productive i.e. as these are often areas that are deemed not feasible for LSM, they have limited mineral deposits.¹⁶ Consequently, Armistead (cit. in Tibbals, 2019), an Amnesty International (AI) business and human rights researcher, explained that "artisanal miners are forced to look for places, to dig and exploit minerals in areas that aren't authorized, or by going on to large-scale mines". The OECD (2019, p.11) estimates that 20-30% of all cobalt production in the country comes from ASM.¹⁷ This equates to about 140,000-200,000 artisanal cobalt miners working in copper and cobalt in the DRC, and UNICEF estimates that up to 40,000 children¹⁸ could be subject to child labor in the sector.¹⁹ Social and environmental risks involving child labor and potentially forms of forced labor in the cobalt supply chain, unsafe working conditions, local air, water and soil pollution, biodiversity loss and corruption are frequently reported in connection with the DRC's cobalt mining.²⁰ Siddharth Kara, a public policy

lecturer and expert on modern slavery at Harvard University who is working on a book about cobalt mining, concludes that as "demand for cobalt skyrockets, conditions are mostly getting worse".²¹

As described, the DRC is by far the leading country producing cobalt. According to McKinsey's base case, the DRC will represent around 75% of the global cobalt supply in 2025.²² Alternative sourcing countries such as Australia and Morocco will not be able to meet the global demand.²³ In the DRC, David Sturmes, the senior director of programs and operations at the Impact Facility, has said it's nearly impossible for a company with a need for cobalt to shake artisanal mining from its supply chain.²⁴ Consequently, companies need to acknowledge that buying cobalt from the DRC, even if it is directly from industrial mining sites, means buying from artisanal mines.²⁵



- 14. RCS Global, 2016
- 15. Carter & Sturmes, 2020
- 16. Tibballs, 2019
- 17. Factors such as informality in ASM as well as mobility of ASM workers make it difficult to determine a precise number (OECD, 2019, p.11).
- As with any illegal or informal activity, the extent of child labor is difficult to measure quantitatively (Carter & Sturmes, 2020, p.52).
- 19. Desjardins, 2017
- 20. WEF, 2019, p.19
- 21. McDonnell, 2020
- 22. Azevedo et al., 2018, p.13 23. Baumann-Pauly, 2020
- 24. McDonnell, 2020
- 25. Baumann-Pauly, 2020; OECD, 2019
- 23. Baamanin raaty, 2020, 0200, 201



Child labor risks in the DRC mining industry

The following activities are carried out by children and are occurring in the mining industry of the DRC: "Mining, including carrying heavy loads, digging, sifting, sorting, transporting, using explosives, washing and working underground in the production of diamonds, copper, cobalt ore (heterogenite), gold, tin ore (cassiterite), tantalum ore (coltan) and tungsten ore (wolframite)."26 Engaging in hazardous work such as mining, carrying heavy loads and working underground violates the rights of children to protection from harmful work. Beside the routine hardships of daily work, ASM can also expose children in other dangerous and damaging ways such as to physical abuse, drug abuse, sexual exploitation and violence along with negative impacts on child health and development caused by pollution.^{27,28}

A report based on an extensive household survey (of 2,635 households in 150 cobalt mining communities) found that over 60% of households are involved in mining work in the Kolwezi region of the DRC.²⁹ It estimated that 11% of children aged 3-17 in these communities work, and of these, 23% work inside the mines and in processing minerals.³⁰ Another noteworthy finding from the CEGA study is its estimation that around 75% of children who work outside their households are employed in non-mining activities, in particular agriculture and domestic settings.³¹ Hence, any effort to address child labor and children's rights in the Kolwezi mining region and in the DRC more generally should look beyond mining and include the broader economy and its root causes such as household poverty.³² In addition, a lawsuit filed in the US in December 2019 against five top tech companies alleged that the existing cobalt supply chain "benefits from child labor for higher profits". It also underlines that child labor extends beyond ASM sites and takes place in privately owned LSM concessions.

U.S. Department of Labor, 2018
Banza et al., 2018
Al, 2016, p.30
CEGA, 2017

^{31.} Carter & Sturmes, 2020, p.54

^{32.} Carter & Sturmes, 2020, p.54

Child labor in international law and the DRC

The international legal framework for child labor is formed in particular by two ILO standards: the Minimum Age Convention (No. 138) and the Worst Forms of Child Labor Convention (No. 182).³³ Both are based on the UN Convention on the Rights of the Child (UNCRC) adopted by the UN General Assembly in 1959. The ILO Convention on Minimum Age defines the age limits for permissible work as follows: all work that endangers health, safety or morals is prohibited before the age of 18 (Art. 3 para. 1). The minimum age for all other work corresponds to the age at which a country's official compulsory education ends, but no younger than 15 years (Art. 2 para. 3). However, in "insufficiently developed countries" this limit may be 14 years (Art. 2para 4). "Light work" that does not hinder school attendance can also be permitted from the age of 13 and in so-called developing countries from 12 (Art. 7). The ILO Convention on the Worst Forms of Child Labor defines certain types of work which are generally prohibited for children (Art. 3).³⁴ It emphasizes the definition from the ILO Convention

on Minimum Age and defines "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" as the worst forms of child labor. It is left to the member states to define this last, conditional form of harmful child labor more precisely (Art. 4). Special priority is to be given to combating the worst forms of child labor (Art. 7).

The DRC has ratified all key international conventions concerning child labor, including the ILO Convention on the Minimum Age as well as the ILO Convention on the Worst Forms of Child Labour. The government of the DRC has also established laws and regulations related to child labor (see table 1 in the appendix). In short, the minimum age for work in the DRC is 16 and for hazardous work it is 18, which meets the international standards.³⁵ Nevertheless, gaps exist in the DRC's legal framework to adequately protect children from the worst forms of child labor, including its compulsory education age.³⁶

The DRC National Mining Code

In March 2018, the President of the DRC signed into law a new mining code (Law No. 18-001 of 9 March 2018 (the New Mining Code)). It notably elevated the level of taxes for companies mining strategic minerals (including cobalt) and placed several additional demands and restrictions on companies, compared to the former 2002 code.³⁷ The code outlaws the use of children in mining and selling ore mined with child labor.³⁸ The mining law also compels industrial mining companies to spend part of their revenue (0.3%) on community development projects and allows them to subcontract work to artisanal mining cooperatives. Despite the major push towards privatization and formalization, the International Crisis Group (2020) stressed in a recent report that the reform has been "less than fully successful". Among other barriers to successful reform, it was noted that not all artisanal mining

cooperatives represent their members' interests. For example, some ASM cooperatives are owned by representatives of the political elite and demand unofficial payments that can amount to up to 20% of members' production.³⁹ Furthermore, according to a 2015 study from the International Peace Information Service (IPIS, 2016) only a minimal fraction of ASM takes place at formal artisanal mining sites. This is not surprising since the DRC government has over the course of time extended industrial mining permits to cover almost all potentially mineral-bearing land, leaving almost no room for ASM zones (International Crisis Group, 2020). Additionally, the new mining code lacks the legislative tools to enhance ASM-LSM cooperation.⁴⁰ Hence, tensions between industrial and artisanal miners remain pervasive in the DRC.

33. ILO, n.d.

- 34. In this context, it refers to all forms of slavery or practices similar to slavery (e.g. child trafficking, debt bondage, serfdom, recruitment of child soldiers, etc.), prostitution and pornography, as well as to the practice of "illicit activities" such as drug trafficking.
- 35. Government of the Democratic Republic of the Congo, 2002b, 2006b, 2009 & 2018.

- Government of the Democratic Republic of the Congo, 2018; International Crisis Group, 2020
- 38. Government of the Democratic Republic of the Congo, 2018
- 39. International Crisis Group, 2020
- 40. WEF, 2020, p.19



The relevance of the Business and Human Rights approach to address systemic issues in cobalt mining

The United Nations Guiding Principles on Business and Human Rights (UNGPs) is an instrument consisting of 31 principles implementing the United Nations' (UN) "Protect, Respect and Remedy" framework on the issue of human rights in relation to transnational corporations and other business enterprises. The UNGPs provide an authoritative global standard for preventing and addressing the risk of adverse human rights impacts linked to business activity⁴¹ and are based on three pillars: the state's duty to protect human rights, corporate responsibility to respect human rights and access to remedy for victims of human rights abuses. As part of corporate responsibility to respect human rights, every company ought to identify, address and mitigate adverse human rights impacts in relation to its business activities. The UNGPs provide an authoritative roadmap and baseline for many of the laws and policies described in the following section. The UNGPs thus set the standard that is to be met by companies irrespective of whether or not they are subject to the relevant legislation below.

Relevant legal frameworks on business and human rights

Several international and national regulatory frameworks address human rights risks incorporate supply chains, including the US Dodd-Frank Act,⁴² the EU Conflict Minerals Regulation, the UK Modern Slavery Act, the Australian Modern Slavery Act, the French Duty of Vigilance Law and the Dutch Child Labor Due Diligence Law. None of these frameworks specifically target cobalt. Nevertheless, there could be synergy effects in duties related to the sourcing of tantalum, wolfram/tungsten, tin and gold, even if cobalt is technically out of scope of the regulation.

Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act in the US. mostly referred as the US Dodd-Frank Act, was passed in July 2010.43 In particular, Section 1502 requires US stock exchange-listed companies that manufacture, or contract to manufacture, products containing conflict minerals in their supply chain to disclose annually whether any of these minerals originated in the Democratic Republic of Congo (DRC) or an adjacent country ("Covered Countries"). If so, the Act requires reporting that includes a description of measures taken to carry out due diligence. It covers four minerals (tin, tantalum, tungsten and gold) and is limited to the sourced minerals' geographic area in Covered Countries. The Dodd-Frank Act does not include cobalt;44 nevertheless, investors' interests might motivate companies to report on cobalt sourcing and associated risks.⁴⁵

In contrast to the Dodd-Frank Act, the EU has introduced import restrictions that apply globally and to all areas affected by conflicts. The EU Conflict Minerals Regulation lists solely tantalum, wolfram/tungsten, tin and gold: it requires EU importers of "3TG" to comply with, and report on, supply chain due diligence obligations if the minerals originate (even potentially) from conflict-affected and high-risk areas.⁴⁶ The EU

Conflict Minerals Regulation applies across the EU from 1 January 2021 onwards⁴⁷ and has been largely inspired by the US Dodd-Frank Act (2010). The regulation targets minerals originating from conflict-affected or high-risk areas without being limited to specific geographical locations. The EU rules apply to EU-established importers of the targeted minerals, while companies from outside the EU will also be impacted as they do business with EU companies (e.g. smelters and refiners). The EU Commission undertook to publish "white lists" of companies fulfilling the requirements of the regulation. Importers that do not reach the volume thresholds set out in the regulation are exempt from due diligence obligations.48

The French Duty of Vigilance Law⁴⁹ (2017) applies to companies incorporated in France with more than 5,000 employees in France or 10,000 worldwide including in the company's subsidiaries, and has three key features. First, the law requires companies to take measures to identify human rights risks within their supply chains, to prevent violations in adequate ways and to ensure effective implementation. These qualifications mean that companies cannot simply pay lip service to the measures listed under the law or interpret the legal requirements as a formal "tick box exercise". Second, companies must publish these measures in a so-called "vigilance plan" to provide transparency. French NGO Sherpa has released detailed Vigilance Plan Reference Guidance to give all stakeholders guidance for understanding the legal requirements. Third, judicial mechanisms are included in the law which allow for providing remedies to victims. Any interested party may appeal to a judge to issue an order for a company to comply with the law. A third party may request compensation under common civil liability law, if a company's failure to comply with the law has caused damage to a third party.

42. US Congress, 2010

43. Paletta, 2010

- 44. Responsible Minerals Initiative [RMI], n.d.g; Davis, 2011
- 45. Deberdt, Jurewicz & Frechette, 2019
- 46. European Commission [EC], 2019 47. European Commission [EC], 2019
- 48. Deloitte 2018
- 49. PricewaterhouseCoopers [PwC], 2019

The UK Modern Slavery Act⁵⁰ (MSA) (2015) aims at preventing, identifying and mitigating modern slavery, including slavery, servitude and forced or compulsory labor as well as human trafficking. In broad terms, the MSA requires commercial organizations to prepare and publish an annual modern slavery statement if they operate a business or any part of a business in the UK, have an annual turnover of £36m or more, and supply goods or services. The statement should describe the measures the company has taken to ensure that there is no modern slavery in its supply chains or its own business. This should ideally consist of a review and a risk assessment of the potential for slavery or human trafficking in the company and its supply chains, including the insertion of anti-slavery clauses in contracts with suppliers and undertaking training of both business personnel and contractors in their supply chains. It should also include putting in place anti-slavery policies and procedures; however it is also theoretically possible for companies to report that they have not taken any particular measures in combating modern slavery.

The Dutch Child Labor Due Diligence Law⁵¹ requires companies based in the Netherlands or companies selling goods on Dutch markets to determine whether child labor occurs in their supply chains. If so, companies must set out a plan of action on how to combat it and issue a due diligence statement on their investigation and plan of action. The Australian Modern Slavery Act⁵² (2018) commenced operation on 1 January 2019, creating reporting obligations for entities that have a consolidated revenue of at least Australian \$100 million for the relevant reporting period (a financial year), and which are Australian entities or undertake business in Australia in that financial year. Modern slavery statements required by the federal act must identify the reporting entity and address the following mandatory criteria: the reporting entity's structure, operations and supply chains, modern slavery risks in the reporting entity's operations and supply chains (including those of subsidiary entities); actions taken (including by subsidiary entities) to assess and address those modern slavery risks, including due diligence and remediation processes; how the reporting entity assesses the effectiveness of actions taken; and the process of consultation with subsidiary entities in preparing the modern slavery statement.53

Without specifically naming cobalt, all human rights harms associated with the sourcing of cobalt can be viewed within the scope of broader laws, like the French Duty of Vigilance Law or the UK Modern Slavery Act. Pressure on the cobalt industry specifically, however, is growing, as evidenced by the launch of a landmark legal case in the US against Apple, Microsoft, Dell, Alphabet (Google) and Tesla.⁵⁴ The US class action civil lawsuit alleges the "extreme abuse" of children in the DRC and claims that the action taken by the companies is not sufficient and/or has not translated into improvements on the ground, although more companies are becoming aware of the problems.

- 50. Turner, 2019
- 51. Business & Human Rights Resource Centre [BHRRC], 2019
- 52. Australian Government, 2018
- 53. PricewaterhouseCoopers [PwC], 2019
- 54. In December 2019, the US-based International Rights Advocates [IRAdvocates] filed suit on behalf of 14 Congolese plaintiffs who are either guardians of children who were killed while mining cobalt or children who were

seriously injured while working in cobalt mines. According to the testimony of plaintiffs this occurred on Glencore and Huayou-owned sites. The case states further that Huayou sells the cobalt to Apple, Dell, and Microsoft. The cobalt from the Glencore-owned mines is sold to Umicore, which then sells battery-grade cobalt to Apple, Alphabet (Google), Samsung SDI, Microsoft and LG Chem (which supplies Dell and Tesla) for use in cobalt-containing batteries.

Relevant soft law foundations

The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas ("OECD Guidance") provides detailed recommendations to help companies respect human rights and avoid contributing to conflict through their mineral purchasing decisions and practices.⁵⁵ It is part of the legal framework in several African countries, notably the DRC, Burundi and Rwanda.⁵⁶ The guidance is also used in binding regulations in the US and served as the basis for the EU regulation on responsible mineral supply chains. The OECD guidance is connected to the UNGPs as it frames the specific human rights due diligence requirements as they apply to the context of mining in conflict-affected areas. Adherence to the UNGPs and using the OECD guidance to structure implementation on the ground can be a conducive starting point for companies wishing to respond to the minimum requirements of responsible business conduct with regards to human rights.

Cobalt supply chain structure

The cobalt and copper supply chain can be divided into the upstream and downstream supply chains (see also figure 1).⁵⁷ The upstream supply chain is presented as two distinct types of mining, namely artisanal and small-scale mining (ASM) and large-scale professional mining (LSM). Still, there is extensive interaction throughout the upstream supply chain between ASM and LSM, both commercially and physically.⁵⁸

Figure 2 demonstrates that the interaction between the two resource streams is evident and happens at different stages and levels in the supply chain. The OECD Secretariat prepared an in-depth supply chain overview differentiating between LSM, formalized ASM and informal ASM supply chains.⁵⁹ ASM activities can take place in privately owned mining concessions, whether tolerated or not by the owner, as well as sometimes in residential areas.⁶⁰ The OECD (2019, p.22) highlights that ASM activities in the DRC usually take place outside the framework set forth by the Congolese Mining Code (see previous section), but nonetheless possess varying levels of official recognition and tolerance.

Companies can be divided into upstream and downstream actors as seen in the hourglass diagrams in figures 3 and 4. Upstream companies include traders and smelters in the country where the mineral is found (e.g. buying houses and international traders, who purchase and process cobalt in the DRC). Downstream companies include all the companies that buy the cobalt or manufacture or sell components or products that contain cobalt, after it has been processed. These include the companies that ultimately sell products to consumers.⁶¹ The smelters occupy the place in the supply chain at which the number of actors is smallest and most condensed, whereas at the initial sourcing stage and at the end user stage the numbers of actors are highest.

56. OECD, 2016, p.3

- 57. AI, 2016, p.43; OECD, 2019, p.6 58. 2019, p.6
- 59. OECD, 2019, p.18
- 60. OECD, 2019, p.26
- 61. Al, 2016, p.43

^{55.} The Guidance, which was adopted in May 2011, is for use by any company potentially sourcing minerals or metals from conflictaffected and high-risk areas. Further, the Guidance is global in scope, and applies to all mineral supply chains (OECD, n.d.b).



Figure 1: Flow chart of generic supply chain (AI, 2016, p.42)

Figure 2:

Supply chain of metals from mines to final OEM products (Young & Dias, 2012, pw.2)

Expert insights on the cobalt supply chain

The following insights are based on explorative expert interviews conducted between August and September 2020, as well as additional document analysis of key policy guidance and expert articles. They represent voices from civil society on the ground, company representatives, diplomatic spokespeople and business initiatives. Rather than disagreeing or demonstrating diversified views on the nature of the cobalt value chain, the views expressed throughout the interviews show agreement on the situation on the ground. Together they amount to a rich pool of information and experience about the key challenges and opportunities. In the following section, the insights are structured based on the guiding questions used in the interviews for clarity, and answers to each question are drawn from the pool of interview participants.

It should be mentioned that banning cobalt tainted by human rights abuse is not seen as a solution, since it would drive the trade underground. Further, as Al Barazi et al. (2017, p.12) explain, the raw materials having an artisanal origin are not in itself problematic, but a targeted boycott of such production by buyers would lead to increasing opacity and a deterioration of the conditions of local ASM mining. Concerns were also expressed by a consortium of 14 NGOs in reaction to the London Metal Exchange (LME) plans to ban ASM.⁶² In order to meet LME's stated commitment to "support the global metals industry in its pathway to compliance with responsible sourcing," the LME must - according to the joint NGO statement - at least ensure that: "1) companies trading listed brands on the Exchange establish and make public an OECD standard responsible sourcing policy and that 2) companies demonstrate through individual public reporting their individual efforts to implement this policy, including evidence of risk identification, mitigation and remediation, and on an annual basis."63

Several multi-stakeholder initiatives and civil society organizations recommend increased engagement with artisanal miners and formalization of ASM. For example, the Global Battery Alliance's [GBA]⁶⁴ vision for 2030 includes the acceptance of ASM in the value chain under certain conditions (e.g. suppliers' management systems should be capable of exercising robust due diligence and contributing to the formalization of ASM within their supply chains).65 In line with GBA's vision, Posner and Baumann-Pauly (2020) recommend that GBA should endorse the "formalization of ASM sites among all its members, as an essential component of cobalt mining and a complement to LSM concessions". According to Armistead (cit. in Tibballs, 2019) the best solution is for miners and governments to "create more zones where artisanal miners can work that are of a high enough quality for them to make a decent living". Hence, Amnesty International (2019a) has also called on Glencore and other LSM operators in the DRC to work with the authorities to create regulated, authorized, safe and viable artisanal mining zones. Overall, the analysis demonstrated that a company cannot create systemic change on its own. Consequently, companies sourcing cobalt from the DRC should embrace a collective responsibility for action. It is advisable to join initiatives and engage in broader alliances to combat problems on the ground. However, there is no easy solution to all the problems linked to ASM and the human rights issues associated with it. What NGOs, companies and governments acknowledge is the importance of formalizing ASM to ensure the sourcing of minerals is done ethically and in compliance with OECD Due Diligence Guidelines on human rights.

 Under the Global Battery Alliance [GBA] several NGOs, foundations and associations work together with industry partners as well as public and international organisations for a sustainable battery value chain (see also p.16-17; WEF, n.d.b)
WEF. 2019, p.35

65. WEF, 2019,

^{62.} Afrewatch et al., 2018

^{63.} Afrewatch et al., 2018

Major differences between ASM and LSM with regards to human rights impacts and traceability

The raw material deposits in the DRC are enormous, with an expert stating in a very illustrative way that "you can simply dig in your living room." The expert also highlighted that quantity dependence and competitive pricing (price dependence) make the DRC very attractive compared to other countries, despite its human rights risks. The grade of cobalt is generally much better in the DRC compared to other reserves globally.

Several experts saw fewer issues with LSM than ASM, which was seen as more problematic due to its informal structures. However, excluding ASM may also result in individuals (creuseurs) entering the LSM mines. Frequently, ASM material is mixed with LSM material, so a clean separation is often not possible. The human rights risks are higher in ASM, due to the lack of regulation. Taking the complex situation in the DRC into account, initiatives and companies are keen to source responsibly from these areas. One expert said that they want to solve the issues on the ground and, hence, do not encourage bans on the DRC as a country of origin. They also aim to collectively drive the market to responsible cobalt mining. However, they all agree that there

is still a lot to do in the DRC. To date, only 5 of the 35-40 cobalt mines in the DRC have a certification and monitoring scheme in place, with actors such as the RMI aiming to scale this up.

All ASM can be risky for human rights as people often make use of rudimentary tools. Some cases and situations mentioned were said to be very dire but others were described as resembling European mines a couple of decades ago. On the other hand, LSM can also present risks, such as human rights violations by security personnel, which can be either private security or military groups. These security personnel are often used to protect the mines and there have been many allegations concerning their use of physical force against intruders. LSM, as the name indicates, is usually guite large in scale, with proper occupational health and safety measures and various protective measures; however, as noted by one expert, it is by no means perfect. Furthermore, big players in the market like Glencore and Vale cannot guarantee perfect conduct either due to e.g. mixed sources in trading houses, buying from multiple smaller producers, etc. Adding to these concerns, there are B2B effects limiting some businesses' willingness to provide information.

Figure 3: Upstream supply chain in detail



Upstream supply chain

Key challenges for ensuring traceability along the supply chain

From a downstream western company perspective

An overarching challenge is that there are a plethora of actors in the mid-tier and the upper stream whose business models benefit from opacity. In order for companies to be able to dive deeper into their supply chains, there needs to be more motivation for traders to provide transparency. Currently their business model relies on their buyers not having traceability and traders occupying the crucial position in the supply chain. It needs to be taken into account that some actors are likely to be opposed to transparency mechanisms, as these mechanisms can affect their profit margins in trading this commodity.

From a general perspective

Data traceability remains an issue throughout the various stages of the supply chain. Ensuring that the mapping of digital data matches the actual physical material can be complex, as can the process of verifying that the digital trace and physical material do not become disconnected: the digital footprint needs to match the actual material. When material is sent to China. several experts perceived this as something similar to a black box with regards to credibility and traceability. In general, cobalt products are mixed and distributed. For instance, small parts are mass-produced, making it difficult to identify which parts go to which manufacturers. ASM minerals are transported from the DRC via Zambia or Tanzania to China, and ASM cannot be prevented. Rather, the state would have to work towards its formalization, in order to improve traceability. All of this makes tracing physical material that goes through various processing steps very difficult, as by the nature of the refining process it will be mixed with other materials. Cobalt is a fungible good – i.e. you cannot differentiate between "pieces" like diamonds there is no defining feature for each individual piece of ore, so it is very difficult to track.

Best practices: What should companies do to improve traceability?

The experts interviewed advise that companies begin by working with their major suppliers, and use a trickle-down approach by requiring information from the main suppliers and their subsidiaries. In combination with that approach, a saliency test should be applied from a risk perspective, addressing the biggest risk first. This implies that a company should start with the company from which it is buying the most cobalt material. Experts agreed that no company can claim that they do not have any cobalt from the DRC in their products. At the same time, experts highlighted the necessity to not expect perfection overnight, but instead to start working and discover areas for improvement step by step, to get to the point where everyone in the new supply scheme needs to include transparency requirements. Most of the respondents agreed that companies have different approaches, creating a patchy approach in practice, e.g. Glencore was said to have a different approach from that of Trafigura. Most companies agreed to some degree that they would support a common public solution.

Working towards solutions

This section describes a non-exhaustive list of emerging best practices to tackle human rights issues in cobalt sourcing. It should be highlighted that the previous sections of this research have shown that avoidance of DRC cobalt is almost impossible and should not be encouraged for a range of reasons, both from a responsibility perspective and economically (grade of purity of the raw material, competitive price).

Audits

Companies tend to invest a lot in audits and audit firms rather than in good local initiatives that would tackle the core of the problem, and this was not seen as helpful by civil society experts on the ground. In particular, business representatives believed that working together drives efficiency and all companies need to be committed so that all mines have monitoring in place. While audits can be an important first step in this process, responsible sourcing of cobalt requires additional measures (some of which are listed in the following).

Due diligence processes to ensure standards

Human rights due diligence processes as required by the UNGPs involve a four to five-step process to identify, address and mitigate adverse human rights impacts from business activities. Due diligence requires stakeholder engagement on the ground with all potentially affected stakeholders and an on-going process with a feedback loop and avenues for remedy. To a certain extent, several of the initiatives and their guidance and tools can assist in finding a company-tailored due diligence approach. There is no one-sizefits-all approach. It entails close collaboration with suppliers, in particular in the first tier.



Figure 5: Overview of RMI's 9 steps process for the responsible sourcing of cobalt (provided by RMI, September, 2020)

Map mineral supply chain Use the CMRT (3TG) CRT (cobalt) Use the Company Information Questionnaire (3TG, cobalt, mica)	Communicate company expectations and requirements Use RMI Smelter database Join Smelter Engagement Team Include in Contractual Requirements	Support independent third-party audits Support RMAP (3TG, Cobalt) Support DRC Crude Refiner Program Donate to Initial Audit Fund, Upstream Due Diligence Fund	4 Identify and address risks that are found Use the Risk Readine Assessment (22 minerals/32 risk area Use the Minerals Grievance Platform	ess as)
5 Publicly report -	6 Support and build capacity	7 Support mine level	8 Support industry	9 Engage industry to develop and share
Use RMI Standard Smelter List -3TG and Cobalt RMI-GRI Public Reporting Toolkit	of supply chain RMI eLearning Academy (free) Donate to support upstream technical assistance Conduct In-Person Visits (Coordinated by RMI)	community projects Support RMI Vocational Training Program (DRC/Pact) Support Cobalt ASM Mine Monitoring (Better Mining) Join a RMI- hosted DRC	transparency Use RMI Blockchain Guidelines	best practices and drive collaboration Join Cobalt Workgroup Join ASM Workgrou Join relevant industry initiative

Delegation Visit

Working together with other stakeholders to amplify activities but also to align and potentially save resources can be an important step for a company to move from being a newcomer in the field of responsible cobalt sourcing to demonstrating more mature handling of cobalt sourcing in line with responsible practices tested previously by peers and improved together over time. Please see the table 2 from the Annex, "Relevant multi-stakeholder initiatives", for more detail on these. It is notable that many standards and initiatives exist, and the initiatives try to work together to ensure coherence.

For example, the Responsible Minerals Initiative (RMI) recommends ten steps for companies for the responsible sourcing of cobalt (see figure 5 on next page).

Among other things, the ten steps include mapping the cobalt supply chain, supporting independent third-party audits, addressing risks, reporting, and conducting impact work. However, not all member companies of the RMI are performing all the steps. To join the RMI, a non-disclosure agreement is required as well as a yearly partner rate of \$7,500 per year (company annual revenue under \$9 billion) or \$15,000 per year (company annual revenue over\$9 billion). Further, the company should meet some basic due diligence criteria and should be within the supply chain. More information on the rates and membership benefits can be found here.

Mapping of supply chain data

In order to improve the situation on the ground, Amnesty International (2019b) recommends that companies identify their cobalt sources and publish their supply chain data, as has been done by several leading companies – including Apple, BMW, Daimler, Renault and the battery manufacturer Samsung SDI – in response to Amnesty's research on Congolese cobalt mines.⁶⁶However, no country yet has laws that would require producers to publicly report on their supply chains.⁶⁷

Collaborations as a way forward?

Trafigura (n.d.) is trying to improve the situation and face up to the challenge of ASM with its pilot project within the Mutoshi concession in Kolwezi, DRC. Concession-holders Trafigura, Chemaf, the cooperative COMIAKOL and the NGO PACT have allowed artisanal miners to operate on part of the Mutoshi mine (the site has LSM with a designated ASM section).⁶⁸ The project also has the support of the DRC authorities.⁶⁹ Between 1,000 and 5,000 miners have participated in the project, where, among other things, controls and safety standards were improved and semi-mechanized small-scale mining activities were arranged. Although there is still room for improvement in the project, according to the initiators it shows that ASM can be achieved responsibly. De Silva, Strauss and Morisho (2019, p.31), authors of the "Mutoshi Pilot Project" report commissioned by Trafigura, make several recommendations, including factoring price volatility into the project design, considering a full-scale project evaluation of the pilot project and establishing exit strategies for all relevant stakeholders.

Contributing to the formalization of ASM

It should be noted that the OECD Due Diligence Guidance mentions cooperation between artisanal and industrial miners merely in an appendix. Hence, the International Crisis Group (2020, p.23) suggests in its recent report that guidelines from organizations such as the OECD, which set and monitor standards for mining companies, should identify cooperation between artisanal and industrial miners as a best practice in addition to the emphasis on due diligence.

LSM operators in the DRC could also actively work with the authorities to create authorized, controlled, safe and viable ASM zones. Some companies have begun to go in this direction. For example, Huayou, together with Signify and Fairphone, is working with local authorities to support an artisanal cobalt mining area at Kasulo in Kolwezi under the Fair Cobalt Alliance (FCA), which is managed by the Impact Facility. FCA supports the professionalization of ASM site management to ensure an increased uptake of responsible mining practices and channel financial investment into mine improvements.⁷⁰ Selected findings and analysis from a review of the state of ASM cobalt mining working conditions, children's rights and economic opportunity in two cobalt mining communities in Lualaba Province in the DRC were also published in the recent report "Digging for Change: Towards a Responsible Cobalt Supply Chain".

The need to help formalize artisanal mining activities to make mining practices safe and fair is also highlighted by a recent WEF white paper written by Baumann-Pauly (2020). The paper underlines that the formalization of ASM will produce a number of social and economic benefits for local communities such as the creation of stable employment, which would help reduce extreme poverty and thus reduce the need for additional income from child labor, safer working conditions and fewer accidents through capacity building and skills training for miners.⁷¹ However, conflicting interests (especially at the political level) may be opposed to the formalization of ASM. There is often a lot of talk about solutions, but nothing happens because it is not in the interest of the parties involved. As one interviewee suggested, in principle, the new government is working in the right direction, but it has been slowed down considerably. Since all important ministries are allegedly in the hands of the ex-president and are preventing solutions, the interviewed experts were skeptical about change in the next five years. Perhaps if all big companies used their leverage to put pressure on the local government, this could lead to change, but this is not happening at the moment. Experts also raised serious concerns about the role of Chinese companies who can easily fill the gap if Western players ask for too much change on the ground.

According to the International Peace Information Service and the Danish Institute for International Studies (2019, p.44) the reason behind the low levels of formalization in the DRC's ASM sector lies in the fact that many legal provisions have never been fully implemented and that many supply chain stakeholders are not keen to work in the formal sector for reasons such as administrative burden or taxation.



Conclusion

The current picture for meaningful traceability of cobalt remains fragmented, yet efforts to increase transparency and address systemic human rights issues appear to be continuing to grow. Many actors along the value chain have a fundamental interest in contributing to solutions, as not only the demand for cobalt is increasing, but also the pressure from NGOs and legislators.

The insights from expert interviews, policy guidance and academic experts show that despite the major differences between ASM and LSM with regards to human rights impacts and traceability, companies can improve traceability through a combination of selected approaches for grasping the situation on the ground. The report also shows that companies that rely on Congolese cobalt can connect to existing avenues that are working towards solutions. Several experts mentioned the synergy effects through working together as seen within the automotive industry, for example, by participating in solutions and business initiatives.

Local initiatives are incredibly important to ensuring success, however, they should not be seen as a panacea or band aid that will solve the range of issues stemming from fragmented, regulation, a lack of enforcement of that very regulation and appropriate governmental legislation.

There is a proliferation of initiatives and it is certainly important to engage and eventually join one of these initiatives after a mindful and targeted decision of who are the important, relevant ones for the respective company position.

References

Afrewatch, Amnesty International, CooperAcción, Enough Project, German Watch, Global Witness, Resource Matters (2018, December 8). The LME Responsible Sourcing position paper: A Joint NGO statement [Position statement]. Retrieved from_ <u>https://www.amnesty.org/download/Documents/EUR4595222018ENGLISH.PDF</u>

Al Barazi, S., Näher, U., Vetter, S., Schütte, P., Liedtke, M., Baier, M. & Franken, G. (2017). Kobalt aus der DR Kongo – Potenziale, Risiken und Bedeutung für den Kobaltmarkt. Commodity Top News, Bd. 53, pp.1–16. Retrieved from <u>https://www.deutsche-rohstoffagentur.de/DE/Gemeinsames/Produkte/Downloads/</u> <u>Commodity_Top_News/Rohstoffwirtscha ft/53_kobalt-aus-der-dr-kongo.pdf?blob=publicationFile&v=2</u>

Alliance for Responsible Mining [ARM]. (n.d.). About the Alliance for Responsible Mining. Retrieved July 27, 2020 from <u>https://www.responsiblemines.org/en/who-we-are/history-2</u>

Amnesty International [AI]. (2019a, July 25). Public Statement – DRC: Crisis in mines requires sustainable solutino. Retrieved from https://www.amnesty.org/download/Documents/AFR6207722019ENGLISH.PDF

Amnesty International [AI]. (2019b, March 21). Electric vehicle companies called on to produce 'ethical battery' within five years. Retrieved from <u>https://www.amnesty.org.uk/press-releases/electric-vehicle-companies-called-produce-ethical-battery-within-five-years</u>

Amnesty International [AI]. (2016). This is what we die for. Retrieved from https://www.amnesty.org/download/Documents/AFR6231832016ENGLISH.PDF

Australian Government (2018). Modern Slavery Act 2018. Retrieved from <u>https://www.legislation.gov.au/Details/C2018A00153</u>

Azevedo, M., Campagnol, N., Hagenbruch, T., Hoffman, K., Lala, A. & Ramsbottom, O. (2018, June). Lithium and cobalt – a tale of two commodities. McKinsey & Company. <u>https://www.mckinsey.com/~/</u> <u>media/mckinsey/industries/metals%20and%20mining/our%20insights/l ithium%20and%20cobalt%20</u> <u>a%20tale%20of%20two%20commodities/lithium-and-cobalt-a-tale-of-two-commodities.pdf</u>

Banza Lubaba Nkulu, C., Casas, L., Haufroid, V., De Putter, T., Saenen, N. D., Kayembe-Kitenge, T., Musa Obadia, P., Kyanika Wa Mukoma, D., Lunda Ilunga, J. M., Nawrot, T. S., Luboya Numbi, O., Smolders, E., & Nemery, B. (2018). Sustainability of artisanal mining of cobalt in DR Congo. Nature sustainability, 1(9), 495–504. <u>https://doi.org/10.1038/s41893-018-0139-4</u>

Baumann-Pauly, D. (2020, September 16). Cobalt can be sourced responsibly, and it's time to act. Retrieved from https://www.swissinfo.ch/eng/cobalt-can-be-sourced-responsibly--and-it-s-time-to-act/46031364

Biesheuvel, T. (2020, September 7). Tesla Joins Cobalt Group That Supports Artisanal Congo Miners. Retrieved from <u>https://www.bloomberg.com/amp/news/articles/2020-09-07/tesla-</u> joins-cobalt-group-that-supports-artisanal-congo-miners?twitter_impression=true&utm_ source=newsletter&utm_medium=email&utm_campaign=n ewsletter_axiosgenerate&stream=top

BMW Group.(2018, January 11). BMW Group and Codelco agree on cooperation to establish the Responsible Copper Initiative. Retrieved from <u>https://www.press.</u> <u>bmwgroup.com/global/article/detail/T0277850EN/bmw-group-and-codelco-agree-on-cooperation-to-establish-the-responsible-copper-initiative</u> Broom, D. (2019, March 27). The dirty secret of electric vehicles. Retrieved from https://www.weforum.org/agenda/2019/03/the-dirty-secret-of-electric-vehicles

Bundesanstalt für Geowissenschaften und Rohstoffe [BGR]. (2019, October 8). Mapping of the Artisanal Copper-Cobalt Mining Sector in the Province of Haut-Katanga and Lualaba in the Democratic Republic of the Congo. Retrieved from <u>https://www.bgr.bund.</u> <u>de/EN/Themen/Min_rohstoffe/Downloads/studie_BGR_kupfer_kobalt_kongo_2019_</u> <u>en.pdf;jsessionid=1F7D24FDB5CC91F85F1D6CA70F409884.2_cid331? blob=publicationFile&v=3</u>

Business & Human Rights Resource Centre [BHRRC]. (2019). Dutch Senate votes to adopt child labor due diligence law. Retrieved from <u>https://www.business-humanrights.org/</u>en/latest-news/dutch-senate-votes-to-adopt-child-labour-due-diligence-law/

Business & Human Rights Resource Centre [BHRRC]. (n.d.). African Resources Watch (AFREWATCH). Retrieved July 27, 2020 from <u>https://www.business-humanrights.org/en/african-resources-watch-afrewatch</u>

Callaway, A. (2018, October). Powering down Corruption. Tackling Transparency and Human Rights Risks from Congo's Cobalt Mines to Global Supply Chains. The Enough Project. Retrieved from https://enoughproject.org/wp-content/uploads/PoweringDownCorruption_Enough_Oct2018-web.pdf

Calma, J. (2020, September 22). Tesla to make EV battery cathodes without cobalt. Retrieved from <u>https://www.theverge.com/2020/9/22/21451670/</u> tesla-cobalt-free-cathodes-mining-battery-nickel-ev-cost

Carter, A. S. & Sturmes, D. (2020, June). Digging for Change. Retrieved from <u>https://impactfacility.com/download/tif-digging-for-change-june-2020</u>

Center for Effective Global Action [CEGA]. (2017). Artisanal Mining, Livelihoods, and Child Labor in the Cobalt Supply Chain of the Democratic Republic of Congo. Retrieved from https://escholarship.org/uc/item/17m994wm

Cobalt Institute [CI]. (2019, January 9). The Cobalt Industry Responsible Assessment Framework (CIRAF). Retrieved from <u>https://www.cobaltinstitute.org/</u> <u>the-cobalt-industry-responsible-assessment-framework-(ciraf).html</u>

Cobalt Institute [CI]. (n.d.a). About Us. Retrieved October 14, 2020 from https://www.cobaltinstitute.org/about.html

Cobalt Institute [CI]. (n.d.b). Responsible Sourcing. Retrieved October 14, 2020 from <u>https://www.cobaltinstitute.org/responsible-sourcing.html</u>

Cobalt Institute [CI]. (n.d.c). Members. Retrieved October 14, 2020 from <u>https://www.cobaltinstitute.org/members-directory.html</u>

Cobalt Institute [CI]. (n.d.d). Conference. Retrieved October 14, 2020 from <u>https://www.cobaltinstitute.org/conference.html</u>

Cossart, S. & Chatelain, L. (2019, June 27). What lessons does France's Duty of Vigilance law have for other national initiatives? Retrieved from <u>https://www.business-humanrights.org/en/blog/what-lessons-does-frances-duty-of-vigilance-law-have-for-other-national-initiatives</u>

Davis, J. (2011, April 26). Cobalt is not a conflict mineral. Retrieved from https://www.metalbulletin.com/Article/2813364/Cobalt-is-not-a-conflict-mineral.html

Deberdt, R., Jurewicz, P. & Frechette, S. (2019). Mining the Disclosures 2019. Retrieved from <u>https://www.sourcingnetwork.org/mining-the-disclosures</u>

Deloitte (2018). New EU Conflict minerals regulation – Implications and lessons learnt from the Dodd-Frank Act in the US. Retrieved from <u>https://www2.deloitte.com/be/en/pages/tax/articles/New-EU-</u> Conflict-minerals-regulation-implications-and-lessons-learnt-from-the-Dodd-Frank-Act-in-the-US.html

De Silva, S.J., Strauss, T. & Morisho, N. (2019). The Mutoshi Pilot Project. Retrieved from <u>https://www.trafigura.com/brochure/the-mutoshi-pilot-project</u>

Desjardins, J. (2017, January 9). Cobalt: A Precarious Supply Chain. Retrieved from https://www.visualcapitalist.com/cobalt-precarious-supply-chain

ESCR-Net. (n.d.). Observatoire de la Société Civile Congolaise pour les Minerais de Paix (OSCMP). Retrieved July 28, 2020 from <u>https://www.escr-net.org/member/</u> <u>observatoire-societe-civile-congolaise-pour-minerais-paix-oscmp</u>

European Commission [EC]. (2019, March 7). In Focus: Combating Conflict Minerals. https://ec.europa.eu/trade/policy/in-focus/conflict-minerals-regulation/index_en.htm

European Partnership for Responsible Minerals [EPRM]. (n.d.a). About EPRM. Retrieved August 10, 2020 from https://europeanpartnership-responsibleminerals.eu/cms/view/53241510/about-eprm

European Partnership for Responsible Minerals [EPRM]. (n.d.b). The EPRM Due Diligence Hub. Retrieved August 10, 2020 from <u>https://europeanpartnership-responsibleminerals.eu/cms/view/53241995/due-diligence-hub</u>

Extractive Industries Transparency Initiative [EITI]. (2020a, August). Fact Sheet. Retrieved from <u>https://eiti.org/files/documents/eiti_factsheet_en_08.2020.pdf</u>

Extractive Industries Transparency Initiative [EITI]. (2020b). EITI Democratic Republic of Congo. Retrieved from https://eiti.org/democratic-republic-of-congo

Extractive Industries Transparency Initiative [EITI]. (n.d.) Supporters. Retrieved October 14, 2020 from <u>https://eiti.org/supporters</u>

Fair Cobalt Alliance [FCA]. (n.d.) Fair Cobalt Alliance (FCA) – Growing the supply of responsibly-mined cobalt from artisanal mines in the DR Congo. Retrieved August 28, 2020 from <u>https://impactfacility.com/commodities/cobalt/fair-cobalt-alliance</u>

Fawthrop, A. (2020, June 26). DRC's state-backed artisanal cobalt venture to go ahead after Covid-19 delays. Retrieved from <u>https://www.nsenergybusiness.com/news/company-news/congo-artisanal-cobalt</u>

Frankel, T. C. (2016, September 30). The cobalt pipeline: Tracing the path from deadly hand-dug mines in Congo to consumers' phones and laptops. The Washington Post. Retrieved from <u>https://www.washingtonpost.com/graphics/business/</u> batteries/congo-cobalt-mining-for-lithium-ion-battery/?noredirect=on

Glencore. (2019, December 17). Glencore statement on child labor allegations. Retrieved from https://www.glencore.com/media-and-insights/news/Glencore-statement-on-child-labour-allegations

Good Shepherd International Foundation (n.d.a). Good Shepherd Kolwezi program. Retrieved October 14, 2020 from <u>https://www.fondazionebuonpastore.org/congo</u> Good Shepherd International Foundation (n.d.b). Our Mission. Retrieved October 14, 2020 from <u>https://www.gsif.it/our-mission</u>

Government of the Democratic Republic of the Congo. (1968). Arrêté Ministériel relatif aux conditions de travail des femmes et enfants, N° 68/13. Enacted: May 17, 1968. Retrieved from <u>http://www.leganet.cd/Legislation/DroitSocial/AM.68.13.17.05.1968.htm</u>

Government of the Democratic Republic of the Congo. (1986). Loi Cadre de l'Enseignement National, N° 86/0005. Enacted: September 22, 1986. Retrieved from <u>http://www.ilo.</u> <u>org/dyn/natlex/docs/ELECTRONIC/9498/111653/F1265273741/COD-9498.pdf</u>

Government of the Democratic Republic of the Congo. (2002a). Law Relating to the Mining Code, N° 007/2002. Enacted: July 11, 2002. Retrieved from http://www.resourcegovernance.org/sites/default/files/Mining Code.pdf

Government of the Democratic Republic of the Congo. (2002b). Code du Travail, N° 015/2002. Enacted: October 16, 2002. Retrieved from http://www.ilo.org/dyn/natlex/docs/SERIAL/62645/52447/F1638018233/COD-62645.pdf

Government of the Democratic Republic of the Congo. (2004). Loi Portant Organisation Generale de la Defense et des Forces Armees, N° 04/023. Enacted: November 12, 2004. Retrieved from http://desc-wondo.org/wp-content/uploads/2013/08/Loi-Organique-sur-les-FARDC.pdf

Government of the Democratic Republic of the Congo. (2006a). Constitution de la Republique Democratique du Congo. Enacted: February 18, 2006. Retrieved from https://www.wipo.int/edocs/lexdocs/laws/fr/cd/cd001fr.pdf

Government of the Democratic Republic of the Congo. (2006b). Code Penal Congolais, N° 06/018. Enacted: July 20, 2006. Retrieved from http://www.leganet.cd/Legislation/DroitPenal/Loi.06.018.20.07.3006.htm

Government of the Democratic Republic of the Congo. (2008). Arrêté Ministériel Fixant les Conditions de Travail des Enfants, N° 12/CAB.MIN/ TPSI/045/08. Enacted:August 8, 2008. Retrieved from https://www.ilo.org/dyn/natlex/docs/SERIAL/84825/94645/F797153391/travail%20des%20enfants.pdf

Government of the Democratic Republic of the Congo. (2009). Portant Protection de L'Enfant, N° 09/001 Enacted: January 2009. Retrieved from <u>http://www.leganet.cd/Legislation/JO/2009/L.09.001.10.01.09.htm</u>

Government of the Democratic Republic of the Congo. (2012). Arrêté Ministériel Fixant les procedures de qualification et de validation des sites miniers des fiueres aurifere et stannifere dans les provinces du Katanga, du Maniema, du Nord Kivu, du Sud Kivu et de la Province Orientale. N°0058/CAB.MIN/MINES/01/2012, enacted February 23, 2012. Retrieved from http://mines-rdc.cd/fr/documents/Arrete_0058_2012.pdf

Government of the Democratic Republic of the Congo. (2013). Loi Portant Statut du Militaire des Forces Armees de la Republique Democratique du Congo, N° 00120/01/2013 Enacted: January 23, 2013. Retrieved from <u>http://desc-wondo.org/wp-content/uploads/2013/08/</u>Loi-portant-statut-du-militaire-des-FARDC-promulguée-le-15012013.pdf

Government of the Democratic Republic of the Congo. (2016). Loi Modifiant et Complétant la Loi N° 015-2002 Portant Code du Travail, N° 16/010. Enacted: July 15, 2016. Retrieved from <u>https://www.investindrc.cd/fr/centre-d-informations/autres-textes-legaux/loi-n-16-010-</u> <u>du-15-juillet-2016-modifiant-et-completant-la-loi-n-015-2002-portant-code-du-travai</u> Government of the Democratic Republic of the Congo. (2018). Loi N°18/001 Modifiant et Completant la Loi N°007/2002 du 11 Juillet 2002 Portant Code Minier, Col. 1. Enacted: March 9, 2018. Retrieved from <u>https://www.mines-rdc.cd/fr/wp-content/uploads/Code%20minier/</u> J.O._n%C2%B0_spe%C3%ACcial_du_28_mars_2018_CODE_MINIER%20DE%20LA%20RDC.PDF

Hellstrom, J. (2019, November 16). Volvo to trace battery cobalt using blockchain. Retrieved from https://europe.autonews.com/automakers/volvo-trace-battery-cobalt-using-blockchain

Heritage Foundation (2020). Index of Economic Freedom – Democratic Republic of the Congo. Retrieved from <u>https://www.heritage.org/index/pdf/2020/countries/democraticrepubliccongo.pdf</u>

International Council on Mining and Minerals [ICMM]. (n.d.). About us. Retrieved July 27, 2020 from <u>https://www.icmm.com/en-gb/about-us</u>

International Crisis Group. (2020, June 30). Mineral Concessions: Avoiding Conflict in DR Congo's Mining Heartland. Retrieved from https://d2071andvip0wj.cloudfront.net/290-drc-mining-heartland%20(1).pdf

International Labor Organization [ILO]. (n.d.). International Labor Standards on Child labor. Retrieved August 27, 2020 from <u>https://www.ilo.org/global/standards/subjects-</u>covered-by-international-labour-standards/child-labour/lang--en/index.htm

International Peace Information Service [IPIS]. (2016). Analysis of the interactive map of artisanal mining areas in Eastern DR Congo: 2015 update. Retrieved from <u>https://ipisresearch.be/wp-content/uploads/2016/10/Analysis-and-map-artisanal-mining-DR-Congo_v005-1.pdf</u>

International Peace Information Service [IPIS] & Danish Institute for International Studies [DIIS]. (2019, April). Mapping artisanal mining areas and mineral supply chains in Eastern DR Congo – Impact of armed interference & responsible sourcing. Retrieved from <u>https://ipisresearch.be/wp-content/uploads/2020/10/1904-IOM-mapping-eastern-DRC.pdf</u>

Keller, P. & Anderson, C. (2018, August). The Production of Critical Materials as By Products. Aspects Min Miner Sci. 2(2). DOI: 10.31031/AMMS.2018.02.000532. Retrieved from https://crimsonpublishers.com/amms/fulltext/AMMS.000532.php

Kelly, A. (2019, December 16). Apple and Google named in US lawsuit over Congolese child cobalt mining deaths. The Guardian. Retrieved from https://www.theguardian.com/global-development/2019/dec/16/apple-and-google-named-in-us-lawsuit-over-congolese-child-cobalt-mining-deaths

McDonnell, T. (2020, September 10). Can Tesla help solve one of the thorniest ethical problems with electric vehicles? Quartz. Retrieved from https://qz.com/1901367/can-tesla-help-solve-electric-vehicles-cobalt-problem

Mining.com. (2020, January 23). 'Battery Passport,' guiding principles on value chain data launched at World Economic Forum. Retrieved from <u>https://www.mining.com/battery-passport-guiding-principles-on-value-chain-data-launched-at-world-economic-forum</u>

OECD. (2016). OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas: Third Edition. OECD Publishing: Paris. <u>http://dx.doi.org/10.1787/9789264252479-en</u>

OECD. (2019). Interconnected supply chains: a comprehensive look at due diligence challenges and opportunities sourcing cobalt and copper from the Democratic Republic of the Congo. Retrieved from https://mneguidelines.oecd.org/Interconnected-supply-chains-a-comprehensive-look-at-due-diligence-challenges-and-opportunities-sourcing-cobalt-and-copper-from-the-DRC.pdf

OECD. (n.d.a). A Global Standard – Towards responsible mineral supply chains. Retrieved August 10, 2020 from http://mneguidelines.oecd.org/Brochure_OECD-Responsible-Mineral-Supply-Chains.pdf

OECD. (n.d.b). OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. Retrieved August 10, 2020 from <u>http://www.oecd.org/corporate/mne/mining.htm</u>

Office of the High Commissioner for Human Rights [OHCHR] (2011). Guiding Principles on Business and Human Rights. Implementung the United Nations "Protect, Respect and Remedy" Framework. Retrieved from https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf

Paletta, D. (2010, June 25). It has a name: The Dodd/Frank Act. Retrieved from https://blogs.wsj.com/washwire/2010/06/25/it-has-a-name-the-doddfrank-act

Parsons, L. (2017, October 27). Responsible mineral supply chain efforts in China: progress and challenges. Retrieved from <u>https://www.globalwitness.org/en/blog/</u>responsible-mineral-supply-chain-efforts-china-progress-and-challenges

Petavratzi, E., Gunn, G. & Kresse, C. (2019). Commodity review: Cobalt. British Geological Survey. Retrieved from <u>https://www.bgs.ac.uk/news/docs/CobaltReport_FINAL_WITH_DATE_201119.pdf</u>

Piennar, A. (2020, Januar 10). The cobalt mining industry is a human rights failure -here's what needs to be done. Retrieved from <u>https://www.weforum.org/agenda/2020/01/how-to-secure-clean-cobalt</u>

Posner, M. & Baumann-Pauly, D. (2020, January). Discussion Paper. Retrieved from https://www.unige.ch/gsem/files/7315/7989/7617/GBA_Discussion_Paper.pdf

PricewaterhouseCoopers [PwC]. (2019). Modern Slavery Reporting in Australia. Retrieved from https://www.pwc.com.au/pdf/modern-slavery-reporting-in-australia_v2.pdf

Pring, C. & Vrushi, J. (2019). Global Corruption Barometer Africa 2019 – Citizens' Views and Experiences of Corruption. Retrieved from <u>https://images.transparencycdn.org/images/2019_GCB_Africa3.pdf</u>

Private Security Governance Observatory. (n.d.). JUSTICIA Asbl. Retrieved October 14, 2020 from <u>http://observatoire-securite-privee.org/en/node/383</u>

RCS Global. (2020, August 14). Better Mining ASM monitoring program successfully scales, announces partnerships. Retrieved from <u>https://www.rcsglobal.com/better-</u>mining-asm-monitoring-program-successfully-scales-announces-partnerships

RCS Global. (2017, December 20). Blockchain for Traceability in Minerals and Metals Supply Chains: Opportunities and Challenges. Retrieved from <u>https://www.rcsglobal.com/wp-content/</u> <u>uploads/2018/09/ICMM-Blockchain-for-Traceability-in-Minerals-and-Metal-Supply-Chains.pdf</u>

RCS Global. (2016, October). The Emerging Cobalt Challenge. Retrieved from <u>https://www.</u> rcsglobal.com/wp-content/uploads/rcs/pdfs/RCS-Global-The-Emerging-Cobalt-Challenge.pdf

RCS Global. (n.d.). Better Mining Industry Program. Retrieved from https://www.rcsglobal.com/bettermining

RESOLVE. (2010, April). Tracing a Path Forward: A Study of the Challenges of the Supply Chain for Target Metals Used in Electronics. Retrieved from <u>http://www.</u> responsiblemineralsinitiative.org/media/docs/CFSI_Report_TracingaPathForward.pdf Responsible Cobalt Initiative [RCI]. (2016, November 14). Responsible Cobalt Initiative (RCI) – Facing challenges, sharing responsibility, joining hands and achieving win-win. Retrieved from <u>http://www.cccmc.org.cn/docs/2016-11/20161121141502674021.pdf</u>

Responsible Minerals Initiative [RMI]. (n.d.a). About the Responsible Minerals Initiative. Retrieved August 10, 2020 from <u>http://www.responsiblemineralsinitiative.org/about/rmi-initiative</u>

Responsible Minerals Initiative [RMI]. (n.d.b). Benefits of Membership in the Responsible Minerals Initiative. Retrieved August 10, 2020 from http://www.responsiblemineralsinitiative.org/membership

Responsible Minerals Initiative [RMI]. (n.d.c). Members. Retrieved August 10, 2020 from http://www.responsiblemineralsinitiative.org/about/members-and-collaborations

Responsible Minerals Initiative [RMI]. (n.d.d). Smelters & Refiners Lists. Retrieved August 10, 2020 from http://www.responsiblemineralsinitiative.org/smelters-refiners-lists

Responsible Minerals Initiative [RMI]. (n.d.e). Cobalt Reporting Template. Retrieved August 10, 2020 from <a href="http://www.responsiblemineralsinitiative.org/reporting-templates/cobalt-reporting-templates/cob

Responsible Minerals Initiative [RMI]. (n.d.f). Active Cobalt Refiners. Retrieved August 10, 2020 from <u>http://www.responsiblemineralsinitiative.org/responsible-minerals-assurance-process/smelter-refiner-lists/cobalt-refiners-list/active-cobalt-refiners</u>

Responsible Minerals Initiative [RMI]. (n.d.g). What is the connection between RMI and US Dodd-Frank Act? Retrieved from <u>https://www.metalbulletin.com/Article/2813364/Cobalt-is-not-a-conflict-mineral.html</u>

Russo, A. (2019, October 25). Seven Mining, Metals Companies Partner on Responsible Sourcing with World Economic Forum. Retrieved from <u>https://www.weforum.org/press/2019/10/seven-mining-metals-companies-partner-on-responsible-sourcing-with-world-economic-forum</u>

Shirouzu, N. & Lienert,P. (2020, May 14). Exclusive: Tesla's secret batteries aim to rework the math for electric cars and the grid. Retrieved from <u>https://www.reuters.</u> <u>com/article/us-autos-tesla-batteries-exclusive/exclusive-teslas-secret-batteries-aim-to-rework-the-math-for-electric-cars-and-the-grid-idUSKBN22Q1WC</u>

Souguel-dit-Picard, D. (2019, December 20). Glencore named in Congo child labor case targeting Big Tech. Retrieved from <u>https://www.swissinfo.ch/eng/glencore-congo-cobalt-mining-lawsuit/45446800</u>

Stichting Onderzoek Multinationale Ondernemingen [SOMO]. (2016, April 18). Community rights widely abused by cobalt mining in Democratic Republic of Congo. Retrieved from <u>https://www.somo.nl/community-rights-widely-abused-by-cobalt-mining-in-democratic-republic-of-congo</u>

Stone, M. (2020, September 21). Russian Indigenous communities are begging Tesla not to get its nickel from this major polluter. Retrieved from <u>https://grist.org/justice/russian-indigenous-communities-are-begging-tesla-not-to-get-its-nickel-from-this-major-polluter</u>

TCO Certified. (n.d.). Conflict minerals used in IT products fund wars and drive human rights abuses. Retrieved July 28, 2020 from <u>https://tcocertified.com/conflict-minerals</u>

The Impact Facility. (n.d.). Spotlight on Cobalt. Retrieved July 27, 2020 from https://impactfacility.com/commodities/cobalt

Tibballs, S. (2019, August 1). Mining for Riches: The Problem(s) with Artisanal Mining. Retrieved from <u>https://investingnews.com/daily/resource-investing/battery-metals-investing/cobalt-investing/mining-riches-problems-artisanal-mining</u>

Transparency International. (2019). Corruption Perceptions Index. Retrieved from https://images.transparencycdn.org/images/2019_CPI_Report_EN_200331_141425.pdf

Transport & Environment [T&E]. (2019, April). Cobalt from Congo: How to Source it Better. Retrieved from <u>https://www.transportenvironment.org/sites/te/files/publications/</u> <u>Cobalt%20from%20Congo_how%2 0to%20source%20it%20better_Final.pdf</u>

Trafigura (n.d.). The Mutoshi Pilot Project. Retrieved from https://www.trafigura.com/responsibility/responsible-sourcing/mutoshi-report

Trejo, C. (2019, November 6). Volvo Cars Joins Responsible Sourcing Blockchain Network, Launched by IBM, Ford, and Volkswagen Group; Advancing Ethical Sourcing of Minerals Continues to Scale With This Network. Retrieved from <u>https://newsroom.ibm.com/2019-11-06-Volvo-Cars-Joins-Responsible-Sourcing-Blockchain-Network-Launched-by-IBM-Ford-and-Volkswagen-Group-Advancing-Ethical-Sourcing-of-Minerals-Continues-to-Scale-With-This-Network</u>

Turner, A. (2019). Obligations under the Modern Slavery Act: compliance update. Retrieved from <u>https://www.farrer.co.uk/news-and-insights/obligations-</u> under-the-modern-slavery-act-compliance-update/#

Umicore. (2020, March 3). Due diligence Compliance Report Cobalt Procurement. Retrieved from https://www.umicore.com/storage/main/compliance-report-2019.pdf

Umicore. (2019, December 17). Umicore confirms its commitment to ethical and sustainable cobalt. Retrieved from https://www.umicore.com/en/newsroom/media/news/umicore-confirms-its-commitment-to-ethical-and-sustainable-cobalt

Umicore. (n.d.). Sustainable Procurement Framework for Cobalt. Retrieved July 26, 2020 from <u>https://www.umicore.com/en/cases/sustainable-procurement-framework-for-cobalt</u>

US Congress (2010), Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376. Retrieved from <u>https://www.sec.gov/answers/about-lawsshtml.html#df2010</u>

U.S. Departement of Labor. (2018). Child Labor and Forced Labor Reports – Congo, Democratic Republic of the (DRC). Retrieved from <u>https://www.dol.gov/agencies/</u> <u>ilab/resources/reports/child-labor/congo-democratic-republic-drc</u>

U.S. Embassy – Kinshasa. (2018). Reporting. February 20, 2018.

U.S. Geological Survey. (2020). Mineral commodity summaries 2020:

U.S. Geological Survey. https://doi.org/10.3133/mcs2020

van Seters, J. & Ashraf, N. (2019, March). Responsibly sourcing minerals from conflictaffected and high-risk areas:lessons from the european partnership for responsible minerals. Retrieved from <u>https://ecdpm.org/wp-content/uploads/BN109.pdf</u>

Walt, V. (2018). Special Report: Blood, Sweat, and Batteries. Fortune, 178(3), 104.

Wolfson, R. (2019, January 16). Ford Motor Company Launches Blockchain Pilot On IBM Platform To Ensure Ethical Sourcing Of Cobalt. Retrieved from <u>https://webcache.</u> googleusercontent.com/search?q=cache:HVSIP0pcAzEJ:https://www.forbes.com/ sit es/rachelwolfson/2019/01/16/ford-motor-company-launches-blockchain-pilot-onibm-platform-to-ensure-ethical-sourcing-of-cobalt/+&cd=1&hl=de&ct=clnk&gl=ch

World Bank Group.(2015, October). Democratic Republic of Congo: Education Sector Public Expenditure Review – An Efficiency, Effectiveness, and Equity Analysis. Retrieved from http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/10/22 /090224b08316094e/1_0/Rendered/PDF/Public0expendi00and0equity0analysis.pdf

World Economic Forum [WEF]. (2020, September). Making Mining Safe and Fair: Artisanal cobalt extraction in the Democratic Republic of the Congo. Retrieved from <u>https://reliefweb.int/sites/reliefweb.int/files/resources/WEF_Making_Mining_Safe_2020-2.pdf</u>

World Economic Forum [WEF]. (2019, September). A Vision for a Sustainable Battery Value Chain in 2030 Unlocking the Full Potential to Power Sustainable Development and Climate Change Mitigation. Retrieved from <u>http://www3.weforum.org/docs/</u> WEF_A_Vision_for_a_Sustainable_Battery_Value_Chain_in_2030_Report.pdf

World Economic Forum [WEF]. (n.d.a). Global Battery Alliance – Our members. Retrieved August 10, 2020 from <u>https://www.weforum.org/global-battery-alliance/our-members</u>

World Economic Forum [WEF]. (n.d.b). Global Battery Alliance – Action. Retrieved July 22, 2020 from https://www.weforum.org/global-battery-alliance/action

Young, S. & Dias, G. (2012, September). Conflict-free minerals supply-chain to electronics. In Electronics Goes Green 2012+(EGG), 2012 (pp. 1–5). Proceedings. ISBN 978-3-8396-0439-7. Retrieved from <u>http://ieeexplore.ieee.org/document/6360416</u>

Further Material

Al Barazi, S. (2018). Rohstoffrisikobewertung – Kobalt. DERA Rohstoffinformationen 36: 120 S. Berlin. Retrieved from <u>https://www.deutsche-rohstoffagentur.de/DE/Gemeinsames/Produkte/</u> <u>Downloads/DERA_Rohstoffinformationen/rohstoffinf ormationen-36.pdf? blob=publicationFile&v=2</u>

Ames, G. & Schurath, B. (2018). Cobalt critical3. INKOTA-Netzwerke e.V. & Ökumenisches Netz Zentralafrika. Berlin. Retrieved from <u>http://www.webshop.inkota.de/produkt/broschuere-download/cobalt-critical3</u>

Amnesty International [AI]. (2016, January 16). Exposed: Child labor behind smart phone and electric car batteries. Retrieved from https://www.amnesty.org/en/latest/news/2016/01/Child-labour-behind-smart-phone-and-electric-car-batteries

European Commission. (2018, November 11). Report on Raw Materials for Battery Applications. Retrieved from https://ec.europa.eu/transport/sites/transport/files/3rd-mobility-pack/swd20180245.pdf

Hastig, G. M. & Sodhi, M.S. (2019). Blockchain for Supply Chain Traceability: Business Requirements and Critical Success Factors. Production and Operations Management. 29: 935-954. <u>https://doi.org/10.1111/poms.13147</u>

Martin, T. (2019, August). NRELC Briefing Note No. 3. Retrieved from https://www.resolve.ngo/docs/nrelc_briefing_note_no._3_-_lift.pdf

Much, L. (2020, January 29). Artisanal and Small-Scale Mining: Addressing Challenges in Global Supply Chains. Retrieved from <u>https://www.responsiblemines.org/</u> en/2020/01/small-scale-mining-adressing-challenges-in-global-supply-chain2

Nkumba, E. (2020). How to Reduce Conflicts Between Mining Companies and Artisanal Miners in the Province of Lualaba: Overcoming the Policy and Systemic Barriers to a Model that Respects Human Rights. Business and Human Rights Journal, 1-7. doi:10.1017/bhj.2020.15

Principles for Responsible Investment [PRI]. (2018). Drilling down into the cobalt supply chain: How investors can promote responsible sourcing practices. Retrieved from <u>https://www.unpri.org/download?ac=4502van den Brink, S., Kleijn, R., Sprecher, B. & Tukker, A. (2020).</u> Identifying supply risks by mapping the cobalt supply chain. Resources, Conservation and Recycling. (156). 104743, ISSN 0921-3449, https://doi.org/10.1016/j.resconrec.2020.104743

Upstream Actors

Large-Scale Professional Mining (LSM) Actors

Large Scale Miners	Large scale mining stands for a large company with many workers, at one or multiple sites with considerable infrastructure provisions. Examples includes Glencore, China Moly, Huayou Cobalt (one of the world's biggest cobalt producers), Congo DongFang International Mining (CDM, a subsidiary of Huayou Cobalt), Shalina, Nanjung Hanrui, Vinmart and ERG
Smelter / Refiners	Smelter = a machine for taking metal out of rock by smelting it (= heating it to a very high temperature), or a factory that uses these machines; Refiner = a company that makes different products from a basic product List of smelters and refiners conformant to Responsible Minerals Assurance Process (RMAP) to be found <u>here</u> . ⁷²

Artisanal and Small-Scale Mining (ASM) Actors

Transport Workers	Transport workers use bicycles or small trucks to transport ore from the pit to stations and depots where the cobalt is traded, in pairs or groups of three to push and handle their bikes, maneuvering the heavily loaded vehicles through difficult terrain; usually paid per bag of ore transported ⁷³
Washers (locally known as Lavages)	Washing, predominantly executed by women, payment per bag of ore washed; step before hand-sorting ore for sale; to clean and identify rocks that contain the most ore, assess purity through visual judgment, increase the cobalt grade for each bag; price–purity relationship, goal: highest grade per bag through hand selection ⁷⁴
Sorters (locally known as Trieurs)	If cobalt are prices low, pit owners are incentivized to have ore washed and sorted, or just sorted if no mud or dirt is in the bags. Sorting increases the total cobalt grade of the bag, achieving maximum economic return by separating and selling low grade and high grade separately. Both cobalt (black) and copper (green) identified by trained eye ⁷⁵
Buyer/Trader (locally known as Négociants)	Traders at depots buy large amounts of cobalt before selling on to crude refineries; Négociants as a designated role overseen by cooperatives: aggregate and sell cobalt ore either to one of the several depots located on site (various ASM projects) or to an 'open market' outside the ASM site (Musompo or Kapata). Traders can be members of pit teams, or independent middlemen offering pit owners and diggers immediate cash, often without measuring purity of bags. Diggers can choose to sell ore directly to on-site depots, but sampling and selling can take a lot of time: higher volumes are needed to sell directly. Depots (often Chinese or Lebanese), take sample of bags that are for sale, assessing batch purity by XRF machine (Metorex), machines need to be carefully calibrated; but no structured system to easily verify accurate calibration; purity and weight assessments made by depots can be arbitrary ⁷⁶
Alliance for Responsible Mining (ARM)	Established in 2004, global expert on ASM. ARM strives to transform the ASM sector into a socially and environmentally responsible activity, while improving the quality of life of artisanal miners, their families and communities. ⁷⁷

73. The Impact Facility, n.d.

74. The Impact Facility, n.d.

- 77. ARM, n.d

Relevant multi-stakeholder initiatives

Initiative	Description
Cobalt Institute (CI), for- merly known as the Cobalt Development Institute (CDI)	CI is a non-profit trade association composed of producers, users, recyclers, and traders of cobalt. It promotes the sustainable and responsible production as well as use of cobalt in all its forms. ⁷⁸ CI is a member of the International Council for Mining and Metals (ICMM).
Extractive Industries Transparency Initiative (EITI)	EITI (2020a) was launched in 2002 and is the global standard to promote the open and accountable management of oil, gas and mineral resources. It is a multi-stakeholder coalition of governments, companies, investors, civil society organizations and partner organizations. ⁷⁹ The EITI Standard (2020) is implemented at the national level, where local multi- stakeholder groups oversee the implementation.
European Partnership for Responsible Minerals (EPRM)	European-based multi-stakeholder initiative created in 2016 accompanying measure to support the EU Conflict Minerals Regulation, which will enter into force in 2021. ⁸⁰ The EPRM's objective is to create better social and economic conditions for mine workers and local mining communities by increasing the number of mines that adopt responsible mining practices in conflict and high-risk areas. It is worth noting that EPRM focuses on tin, tantalum, tungsten and gold (3TG). Today, the EPRM brings together some 25 companies and civil society organizations. ⁸¹
Fair Cobalt Alliance (FCA)	FCA's ambition is to further scale its membership across the supply chain in order to increase its potential for positive impact. Their mission is to reform the conditions for cobalt mining communities by driving improvements at ASM minesites, eradicate child labor and protect children's rights, and build diversified, resilient local mining communities. ⁸²
Global Battery Alliance (GBA)	The GBA is a public-private collaboration platform of 70 public and private sector organizations founded in 2017 that has become the global platform to help establish and collaborate on a sustainable battery value chain.
Mining and Metals Blockchain Initiative / Consortium	In 2019, seven global mining industry leaders have agreed to co-operate on a blockchain-based initiative led by the World Economic Forum (WEF), in an effort to accelerate responsible sourcing and sustainability practices. ⁸³ So far, no roadmap has been released for the initiative.
Responsible Cobalt Initiative (RCI)	The RCI was formed in 2016 under the Chinese Chamber of Commerce of Metals, Minerals and Chemicals Importers & Exporters (CCCMC) with support from the OECD. CCCMC developed guidelines for due diligence, based on the recognized standard of the OECD. ⁸⁴ The RCI includes around 30 members.
Responsible Copper Initiative	In 2018, the BMW Group and the Chilean copper mining company Codelco have signed an agreement to cooperate on a sustainable and transparent supply of copper. The aim of the Responsible Copper Initiative is to achieve a commitment to ecological and social responsibility in the copper industry.
Responsible Minerals Initiative (RMI) ⁸⁵	The RMI was founded in 2008 by members of the Responsible Business Alliance (RBA) and the Global e-Sustainability Initiative. With more than 380 member companies from 10 different industries, the RMI is one of the most used resources for companies from a range of industries addressing responsible mineral sourcing issues in their supply chains.
Electronic Industry Citizenship Coalition (EICC), now: Responsible Business Alliance (RBA)	The Responsible Business Alliance (RBA) is the world's largest industry coalition of companies that are dedicated to corporate social responsibility in global supply chains; a nonprofit comprised of electronics, retail, auto and toy companies committed to supporting the rights and well-being of workers and communities worldwide affected by the global supply chain. ⁸⁶

- 78. Cobalt Institute, n.d.a
- 79. EITI, n.d
- 80. van Seters & Ashraf, 2019, p.2
- 81. EPRM, n.d.a.; TCO Certified, n.d.; van Seters & Ashraf, 2019, p.2
- 82. FCA, n.d.

- 83. Russo, 2019
- 84. RCI, 2016
- 85. Formerly the Conflict-Free Sourcing Initiative (CFSI)
- 86. http://www.responsiblebusiness.org/about/rba/

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