Cobalt
for Development

COBALT FOR DEVELOPMENT

Lessons Learned Paper

IMPLEMENTED BY

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VOLKSWAGEN GROUP

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STIHL

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Executive Summary

Cobalt for Development (C4D) was launched as a cross-industry initiative in 2019 to address human rights and environmental risks in artisanal and small-scale cobalt mining (ASM) in the Democratic Republic of Congo (DRC). The project aims to improve working and living conditions in ASM communities and to integrate responsibly sourced cobalt into global supply chains through formalization and capacity building.

Key Findings

Legal frameworks are the primary bottleneck for artisanal and small-scale mining (ASM) formalization. The main barrier to formalized arisanal cobalt mines is not necessarily technical feasibility but constraints of the mining code and limited political will. Detailed legal assessments and signficant investment in political stakeholder engagement is key already in early stages.

Adaptive project management is essential in challenging governance contexts. The pilot's single-site approach had to be repeatedly revised due to shifting legal, political, and external realities. Flexibility, iterative planning, and scenario-based management are essential in volatile environments.

Market access is the key incentive for sustainable ASM sector transformation. Without formalization and responsible practices being rewarded by e.g. better prices than available on the black market, formalization remains economically unattractive for ASM actors.

Government leadership is essential for systemic change. Sustainable change requires strong government commitment and regulatory support; private and international cooperation initiatives alone are insufficient.

Achievements & Impact

- Established a replicable operationalization approach for ASM mines.
- Built capacity among local cooperatives and authorities through practical training modules and management tools that are publicly available.
- Nurtured improved living conditions in pilot communities via education, income generation, and social programs.
- Established C4D as a credible, neutral facilitator between industry, government, and civil society, advocating for ASM sector transformation.

Main Recommendations

1. **Prioritize political engagement from the start:** political cooperation must be integrated from the outset as an ongoing task.
2. **Private projects can open space for reform but have limits:** structural change depends on state-led regulatory action.
3. **Diplomatic engagement can catalyze political will:** international pressure can help unlock progress that private actors cannot achieve alone.
4. **Align community development with supply chain risk mitigation:** interventions should be clearly linked to project goals to avoid mission drift.
5. **Do not compromise on technical expertise:** Project teams must integrate in-house specialists to conduct credible due diligence and build viable, scalable models for responsible sourcing.
6. **Adapt expertise to structural gaps:** funders need to provide projects the flexibility to adjust skill sets and work plans to needs as they arise.

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Looking Ahead

In the next phase, C4D will focus on consolidating and scaling the pilot approach, expanding its partnership network, and embedding lessons learned into policy and market frameworks. Mitigating human rights risks in ASM is not simply a matter of a checkbox exercise—it requires tangible improvements on the ground. Based on the experience of the last years, C4D proposes the following courses of action for the different stakeholder groups.

Government Institutions: Enforce transparency, anti-corruption, and clarifty on legalization options; invest in geological exploration and ensure the private sector effectively contributes to community development.

International Community: Support good governance through international cooperation, harmonized standards, and clear expectations for responsible sourcing.

Private Sector: Engage in multi-stakeholder initiatives and pilots, and ensure only legal, responsible ASM cobalt is sourced. Large-scale miners should dare to try a new approach to address illegal ASM on their concessions and test collaboration with EGC.

Civil Society: Monitor reforms, advocate for vulnerable groups' rights and request supply chain accountability.

INTRODUCTION

Project Strategy

C4D was launched in 2019 to improve conditions in and around ASM cobalt mining in the Democratic Republic of Congo (DRC) so as to address human rights risks in the cobalt supply chain highlighted by Amnesty International[1] and others. Hence, the project's strategy always aimed at both directly addressing risk and providing market incentives to stimulate broader adoption of responsible practices.

C4D's vision is that the ASM cobalt mines in DRC will be legal, operate responsibly, and be connected to formal markets The initiative aims to improve the working and living conditions of artisanal miners, their families, and communities with a long-term and sustainable perspective. This entails that poor working conditions, child labor, and environmental impacts are prevented and, if they do occur, remediated effectively. Over time, artisanal mining develops towards semi-mechanized small-scale mining while communities surrounding ASM sites benefit from the presence of these mines. Downstream users accept responsible ASM cobalt from Lualaba Province into their supply chains, relying on transparent supply chains, and create incentives for responsible practices. Responsible practices hence spread beyond pilot sites supported by C4D, facilitated by capacity building and tools. In sum, ASM lives up to its full potential to strengthen local development. This long-term vision goes beyond what a single project can achieve on its own. However, C4D seeks to contribute to this broader sector transformation by laying critical foundations for change.

C4D's objective is to identify and develop a legal, responsibly operated ASM site with model character. This pilot site is intended to demonstrate that improvements are not only theoretically possible but also economically and structurally feasible. By doing so, C4D aims to create momentum for a sector-wide transformation. C4D's contribution to this goal is structured along short-, medium-, and long-term objectives that guide the project's implementation. In the short term, C4D aims to support the establishment of a legal pilot site and develop blueprints for its operationalization. These blueprints are intended to inform scaling attempts through other actors. In the medium term, the goal is for this pilot site to operate successfully in accordance with responsible ASM standards and fulfill market requirements for purchasing ASM products. In the long term, the objective is to enable the replication of the pilot model across the sector, thereby contributing to broader, systemic change. The different activities focusing on e.g. geological exploration, mine planning, health and safety, environmental management, and human rights, follow a capacity-building approach. EGC and the Service d'Assistance et d'Encadrement de l'Exploitation Minière Artisanale et à Petite Echelle (SAEMAPE) are key institutional stakeholders while much of capacity building targets cooperatives and individual miners[2].

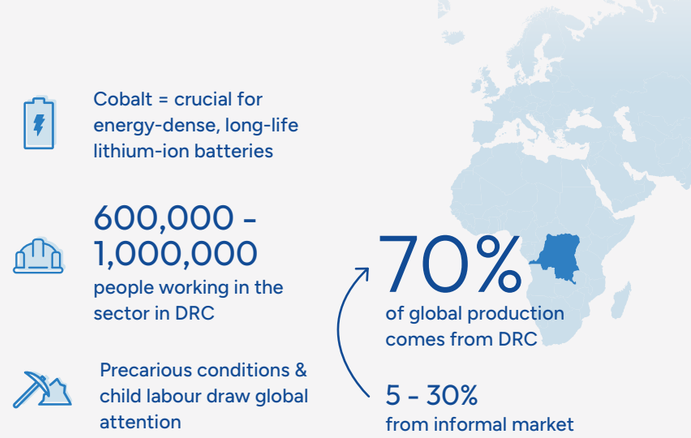
C4D is a cross-industry partnership of companies facing shared challenges in their cobalt supply chains. The project is implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of and with funding from the participating companies. As a development cooperation initiative, C4D pursues no commercial interests. Its sole focus is the improvement of working and living conditions in the ASM sector in the DRC. C4D's governance structure distinguishes between two levels of involvement to cater to different priorities and economic realities. Lead Partners take an active role in shaping strategy, implementation, and communication. Contributing Partners accompany the project in an advisory capacity and contribute perspectives at selected points. The project partners bring diverse perspectives from various stages of the value chain. In the first project phase, partners included BMW Group, Volkswagen AG, Samsung Electronics, Samsung SDI, and BASF. The second project phase involved BMW Group, Volkswagen AG, Samsung SDI, BASF, and Stihl.

[1] Industry giants fail to tackle child labour allegations in cobalt battery supply chains - Amnesty International, November 2017, Amnesty International

[2] Assistance and Support Service for Artisanal and Small-Scale Mining

INTRODUCTION

Reasons for initiating C4D



Cobalt is a crucial raw material for the production of high-performance lithium-ion batteries, enhancing energy density, stability, and lifespan. Thus, the metal plays a vital role in the global energy transition, especially in battery production for electric vehicles and portable electronics.

The DRC is the world's largest producer of cobalt, accounting for about 70% of global production[3]. A significant if varying share of this extraction takes place in the informal ASM sector under precarious conditions. Due to few alternatives, ASM plays a central role in providing income to an ever-growing local population, with an estimated 600,000 to 1 million people working in this sector [4]. However, the data landscape remains inconsistent and claims on ASM's contribution to national production vary widely, from 5% to over 30%, depending on methodological definitions, regional focus, and cobalt price.[5]

Public Scrutiny & Pressure for Change

Civil society organizations and media outlets have repeatedly drawn attention to ASM cobalt mining. The images of children and adults working in hazardous conditions became powerful symbols of the energy transition's social costs. Over the past decade, companies across the battery value chain have thus faced criticism due to the human rights risks linked to ASM cobalt from the DRC, exposing them to growing public pressure and sparking a wider debate on corporate accountability in global supply chains. Companies were increasingly expected to ensure that the materials used in their products were sourced responsibly, even in complex and high-risk regions like the DRC. This resulted in both voluntary industry initiatives and international standards.

Regulatory Expectations & Corporate Due Diligence

The Organisation for Economic Co-operation and Development (OECD) Guidelines for Responsible Business Conduct were revised in 2011 and 2016 and emphasize the importance of companies respecting human rights and adhering to environmental standards throughout their operations and supply chains. National and international frameworks began to be introduced and discussed, including the German Act on Corporate Due Diligence Obligations in Supply Chains (LkSG). The discussion surrounding this law began in earnest around 2019. The LkSG does not mandate withdrawal; instead, it insists on responsible engagement and a duty of effort, requiring businesses to identify, assess, and attempt to mitigate human-rights and environmental risks, even in informal ASM contexts. Thus, while some companies have temporarily paused sourcing from the DRC, the ultimate aim is to strengthen due diligence and risk-management measures so that companies can confidently include Congolese cobalt in their supply chains. Given the well-documented mixing of ASM and industrial cobalt in global supply chains, companies should address ASM-linked risks proactively and transparently even as they attempt to exclude it from their supply chain. On the horizon, the EU Corporate Sustainability Due Diligence Directive (CSDDD) will extend these obligations further, while the EU Battery Regulation will introduce binding responsible-sourcing criteria for the battery sector. Together, they reinforce the imperative for companies to partner with local actors in the DRC to build safer, more sustainable ASM operations; transforming due diligence from a compliance exercise into a catalyst for genuine sector reform.

C4D as a Response to Risk & Responsibility

The real solution lies in improving on-the-ground conditions so that no company feels compelled to avoid Congolese cobalt in future. In 2017, BMW Group — like many companies — faced growing scrutiny over potential human rights and environmental risks in its cobalt supply chain. While not buying ASM material, just as all other C4D partners, a lack of traceability meant that indirect exposure could not be ruled out. To better understand the sector, BMW Group commissioned a feasibility study by GIZ (2018–2019) to analyze ASM in the DRC and identify risks, their root causes, and entry points for responsible engagement. The findings laid the conceptual groundwork for what would become the C4D initiative. Together with BMW Group, additional mid- and downstream partners were successfully approached to join C4D.

C4D was launched in 2019 as a voluntary, cross-industry initiative to develop practical solutions for improving working conditions, addressing root causes of child labor, and strengthening capacities in the ASM sector. Given

[3]World Bank. 2023. 2023 State of the Artisanal and SmallScale Mining Sector. Washington, D.C.: World Bank.
[4]Germany Trade & Invest (GTAI). (2021). Mineralien und Bergbau in der Demokratischen Republik Kongo.
[5]EITI. (2023, March). ASM in the copper-cobalt-zinc sector in the Democratic Republic of the Congo. ITIE-RDC.

the complexity and fragmentation of supply chains, coordinated, cross-sectoral collaboration can open up new opportunities to address risks. The DRC's mining sector is shaped by decades of political instability and poor governance - factors that make responsible sourcing, traceability, and project implementation particularly challenging. By joining forces, participating companies are able to pool resources, align approaches, and support more effective and scalable solutions than they could individually. Against this backdrop, C4D was born as a response to increasing corporate responsibility demands while at the same time preceding most regulatory developments. The initiative thus reflects an early, voluntary commitment by companies to engage with the social and environmental risks linked to cobalt extraction—taking due diligence beyond a purely legal obligation.

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PROJECT IMPLEMENTATION & EVOLUTION

PROJECT IMPLEMENTATION & EVOLUTION

Overview

Chapter 2 outlines the conceptual foundations and the step-by-step implementation of the Cobalt for Development project.

The OECD Due Diligence Guidance served as the strategic framework. C4D's concept development and site selection were guided by a feasibility study which included the analysis that bridged the normative framework of the **OECD Guidelines** and the practical project design on the ground.

The following sections describe the implementation in two project phases: **Phase 1** and **Phase 2**, reflecting the iterative approach of both the OECD Guidance and implementation reality.

Fact-Finding Mission – Artisanal Cobalt

2018

2018

BMW GROUP

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2019 – 2022

2019

BMW GROUP

BASF We create chemistry

VOLKSWAGEN GROUP

SAMSUNG SDI

SAMSUNG

Google

Cobalt for Development II

2023 – 2025

2023

BMW GROUP

BASF We create chemistry

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PROJECT IMPLEMENTATION & EVOLUTION

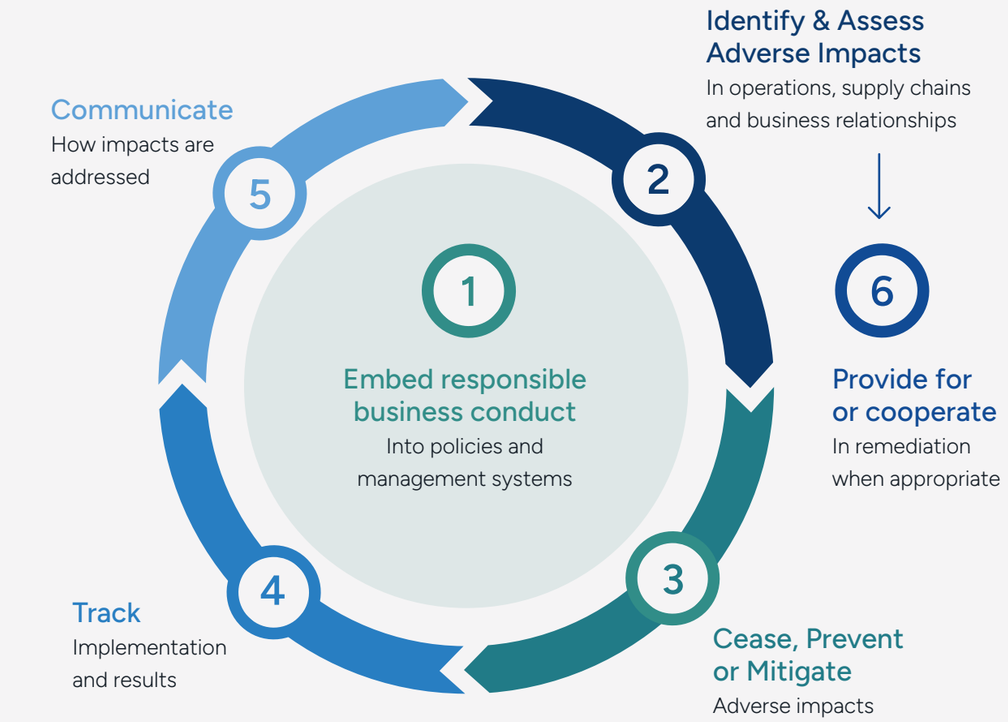
The OECD Due Diligence Guidelines

Due diligence is not a one-off action but a continuous process that requires adaptation to evolving risks, regulatory changes, and new insights from practice. It should follow a structured methodology that enables companies to minimize human rights and environmental risks in global supply chains, achieve sustainable improvements, and comply with regulatory requirements.

Due diligence is therefore a continuous and iterative process in which companies assess risks, implement measures, and monitor their effectiveness. This iterative approach follows a structured methodology. For example, the German automotive industry's sector dialogue guidance for prevention and remediation describes this approach in four steps, while the OECD Guidelines outline six steps.

The C4D project also follows this iterative approach. Originally designed to achieve fundamental improvements in artisanal mining, its mission and objectives have been continuously adapted in response to new insights , on-the-ground constraints, and regulatory developments. .

Iterative 6 Step Approach



Beyond project scope

1 Establish strong company management systems

2 **Identify and assess risk in the supply chain**

3 **Design and implement a strategy to respond to identified risks**

4 **Track implementation and results**

5 **Communication how impacts are addressed**

Beyond project scope

6 Provide for or cooperate in remediation when appropriate

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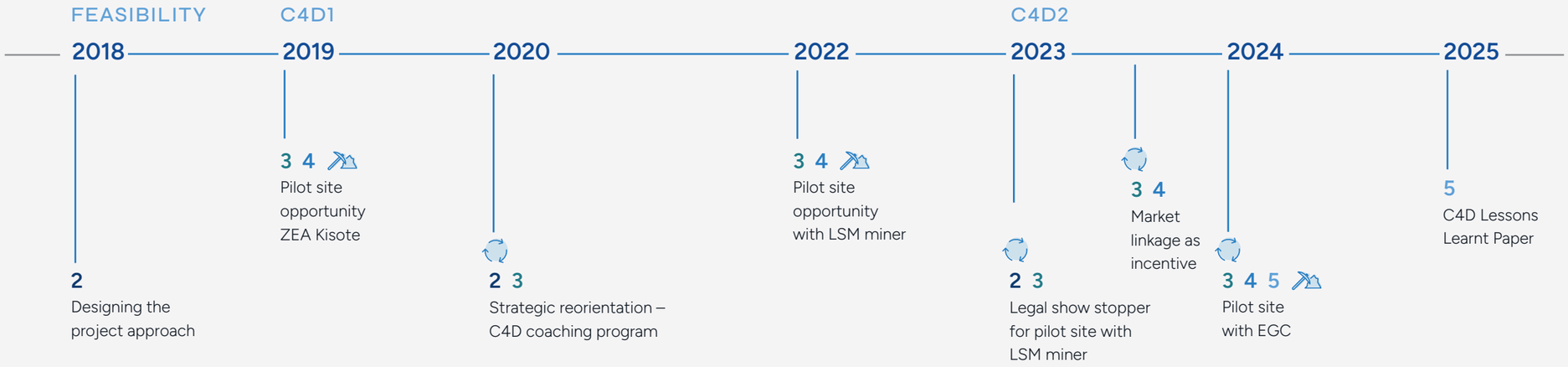
C4D Project Chronology

Potential pilot site *Shift in project strategy*



1

2 Assess risks

Identifying and assessing risks is a key. The aim is to understand where and how human rights and environmental risks may arise—based on both actual impacts and potential risks.

- Map supply chain to understand where and how risks may arise.
- Assess both actual impacts and potential impacts.
- Include risks to people, the environment, and society.

BMW's feasibility study laid the groundwork for this analysis. As the project evolved, C4D's risk assessment and understanding of the local context were revisited at key turning points.

These assessments provided the basis for informed decisions and adjustments throughout implementation.

3 Respond to risks

Based on the risk assessment, this step involves taking action to cease, prevent or mitigate adverse impacts. The approach is guided by the severity and likelihood of risks and aligned company policies and the findings from the risk assessment.

- Take action based on the severity and likelihood of the impact.
- Cease harmful practices directly linked to operations.
- Prevent/mitigate potential adverse impacts.

Through the iterative approach, C4D has continuously reviewed and adjusted its risk response strategies throughout implementation. Measures were:

- Discontinued when no longer relevant or effective.
- Refined or reformulated to better address identified risks.
- Introduced to respond to emerging or previously overlooked issues.

4 Track implementation and results

The defined risk mitigation measures are monitored and assessed for their effectiveness. Lessons learned are used to improve these processes in the future.

This includes:

- Tracking the progress of actions taken.
- Evaluating their outcomes.
- Identifying areas for improvement.

In the C4D project, this step was continuously revisited to ensure that measures remained effective and relevant throughout implementation.

Joint workshops conducted at key intervals throughout the project served to bring together C4D partners, to reflect on what worked, surface challenges and adjust the approach accordingly.

5 Communicate

Communicate externally relevant information on due diligence policies, processes, activities conducted to identify and address actual or potential adverse impacts, including the findings and outcomes of those activities

- Share findings and actions taken.
- Ensure transparency on risks and responses
- Maintain stakeholder dialogue.

C4D regularly updated and communicated with stakeholders throughout the project.

This included, e.g.:

- Participation in OECD partner sessions.
- Publication of the Lessons Learned paper.

6

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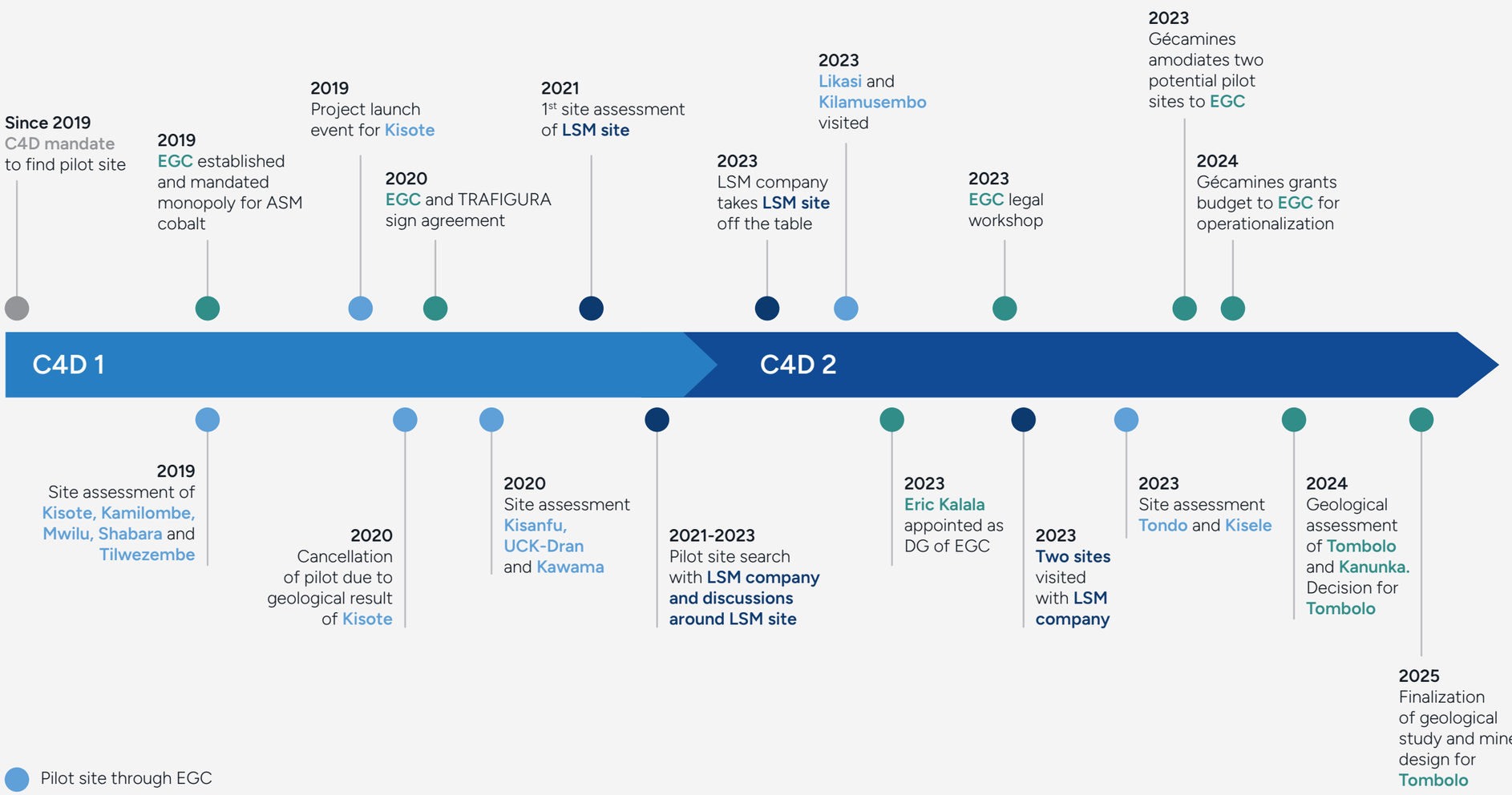
C4D has investigated a multitude of potential pilot sites. The EGC Tombolo site is the best options to date.



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Stakeholder Engagement

The OECD Due Diligence Guidance identifies **stakeholder engagement** as a core element of risk-based due diligence, especially in high-risk sectors like ASM. The same is true for the UN Guiding principles, or regulations such as the German Supply Chain Act, or Corporate Sustainability Reporting Directive (CSRD). Accordingly, stakeholder engagement was integrated as a cross-cutting principle. Stakeholder mapping was first applied in the feasibility phase and reiterated over time. Engagement formats included workshops, bilateral dialogues, and community meetings. Throughout the project, risk consultation, inclusive dialogue formats, and formal and informal feedback loops were used.

A broad set of actors were involved throughout, including[6]:

- Mining cooperatives and artisanal miners
- Gouvernement institutions, e.g., SAEMAPE, EGC, SAEMAPE, CEEC, CTCPM, etc.
- Civil society actors (e.g., Bon Pasteur, etc.)
- Communities (e.g., Kisote and communities surrounding the EGC-pilot mine)
- Large Scale Miners (LSM)

[6] A more comprehensive overview of stakeholders, including additional actors engaged at different levels, is provided in the Annex.

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PROJECT IMPLEMENTATION & EVOLUTION

Feasibility Study

The study combined a literature review with field visits to ASM sites and stakeholder interviews, examining health, safety, and environmental risks, as well as institutional framework conditions. It aimed to understand systemic root causes that prevent responsible practices in the sector, including a lack of incentives for formalization, weak local governance structures and socio-economic dependencies. Three ASM mine sites and their surrounding communities were selected for assessment due to indications that an LSM company was purchasing artisanal material, allowing cobalt to enter the formal supply chain. The analysis identified three core risks in the ASM cobalt sector.

High Health & Safety Risks

- Hazardous working conditions, limited capacity of cooperatives and SAEMAPE on health and safety, and low levels of technical training among miners
- Poor hygiene practices and lack of sanitation infrastructure, e.g. latrines or running water, are major health risks, as are cobalt and heavy metals in dust and water
- Maximum tunnel depth set by mining regulation (30 m) and the EGC (10 m) is exceeded, often reaching up to ~90 m
- Lack of lining: shafts and galleries are often not stabilized by proven lining methods, increasing risks of collapses and landslides
- Pregnant women at times engage in hazardous work, e.g. in washing ponds
- Lack of personal protection equipment (PPE) increases the frequency and entity of accidents and injuries

Environmental Pollution

- Unregulated mining practices leading to soil erosion, water contamination and related health threats
- ASM causes the degradation of soil, water, air, and vegetation cover, including through land-use change
- Cobalt and heavy metals in dust and water, e.g. from washing ponds, can contaminate terrestrial and aquatic ecosystems
- Plastic pollution and poor waste management are common at ASM sites
- Environmental pollution can cause conflicts between the cooperative and adjacent communities

Worst Forms of Child Labor

- Children working in tunnels and washing ponds are engaged in the worst forms of child labor
- Less severe cases of child labor, e.g. in sorting ore, also occur

These risks are enabled by a weak institutional framework in which oversight is lacking, cooperative structures are barely functional and economic incentives for better practices are non-existent. Opaque supply chains lack traceability, resulting in the mixing of legal and illegal material, creating a market for the latter.

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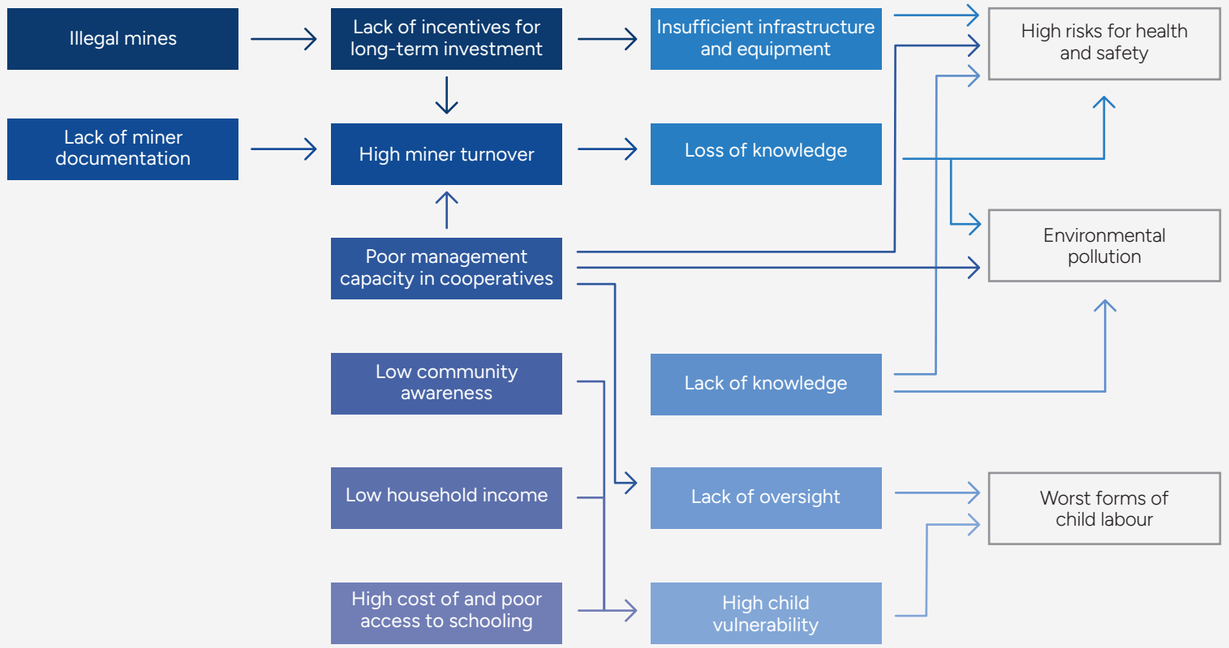

C4D Pilot Site Approach

The study found that ASM miners and cooperatives were unlikely to adopt responsible practices due to high costs, lack of financial returns, and the illegality of most operations. The latter meant that off-takers had no incentive to demand responsible practices or pay a premium, as the cobalt was being clandestinely laundered into supply chains. Beyond the lack of formal market access, cooperatives had limited access to investment or financing without a legal title, leaving them dependent on the informal and often illicit financial flows that dominate the sector.

Based on these findings, C4D chose to pursue a market-based approach to drive sector transformation, generate incentives to transition from informal to formal operations and enable legal cobalt to reach markets openly. To overcome first-mover challenges and lay the foundation for scaling, the project aimed to create a proof-of-concept showcasing that responsibly operated ASM is possible. Technical support and capacity development embedded in the mining component were the key elements of C4D's technical assistance. With a proven concept, additional investment would encounter lower barriers and foster systemic change, supported by a dedicated upscaling component.

The study also highlighted that child labor could not be addressed solely at the mine site. Addressing its root causes required broader community development, so the project included targeted interventions to enhance living conditions. This holistic approach resulted in a project model based on three core components, with a third upscaling component.

C4D's proof-of-concept approach with a pilot site was designed to demonstrate compliance with Congolese law and international standards to ensure decent working and minimizing social and environmental harm. Cooperatives were to receive targeted training, legal support, and a structured partnership with local and national institutions. Access to formal markets was to follow. To identify a viable pilot site, the study followed a three-step process: defining minimum criteria (legal tenure, geological potential, and economic viability), reviewing existing Zones d'Exploitation Artisanale (ZEAs) for legality and cost-effectiveness, and engaging stakeholders to ensure legitimacy.

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Project Concept

Mining Component

Strengthening the cooperatives' capacities and management processes with a specific focus on health and safety as well as environmental management.

- Environmental Management Training and Coaching
- Health and Safety Training and Coaching
- Establishment and training of e.g. safety and environmental management committees, including first aid helpers.
- Advice on risk identification and prioritization as well as the implementation of improvement measures

Community Component

Strengthen a ASM community to address root causes of child labour and improve alternative income opportunities.

- School expansion and improvement
- Farmer Business School improving agricultural production
- Financial Literacy Training and introduction of Savings Groups, providing microcredits to fund small businesses
- Community outreach and awareness raising

Upscaling Component

Identify additional sites and resources to replicate the pilot site; create a conducive environment for scaling.

- Expanding to additional mine sites and communities
- Identification of potential pilot mine site
- Stakeholder relations management
- Upscaling proposal

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Original Scaling Plan

While the approach proposed to address specific challenges on a selected mine site, it was designed with scalability in mind to broadly impact the ASM sector.

Step 1

Identity model mine site and piloting the approach

- Identify model mine site among currently operating ASM sites
- This can either be ZEA or a private concession with valid MoU
- Implement core components to improve working and living conditions

Step 2

Fine-tuning approach and piloting scalability on ZEAs

- During the second phase, the approach will be tested and fine-tuned
- GIZ will identify suitable ZEAs to scale up the approach
- Once these have been identified, the adjusted approach will be replicated on up to two ZEAs to pilot its scalability

Step 3

Scaling the approach on a larger scale

- Once the approach has been piloted and validated at numerous sites, it can be scaled up to a larger number of viable ZEAs
- The project would then affect a significant share of DRC's artisanal cobalt production

Within Project Scope

Additional Phase

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PROJECT IMPLEMENTATION & EVOLUTION

Cobalt for Development 1

In 2019, C4D launched with BMW Group, BASF SE, Samsung SDI, and Samsung Electronics as project partners. In 2020, Volkswagen AG joined the initiative. Over a three-year period, GIZ was to test how the living and working conditions in ASM cobalt and surrounding communities could be improved. GIZ collaborated initially with IMPACT, an international NGO specializing in improving natural resource governance, and then Artisanact, a local NGO, on the mining component. On the community component, it worked with Bon Pasteur, an organization with extensive local experience.

Pilot site attempt ZEA Kisote

C4D applied its three-step selection process to identify legal pilot sites, with ZEA 078 in Kisote emerging as the most promising candidate. While its legal status was confirmed, geological viability still required further assessment. The geological exploration was conducted by the Lualaba Mining Ministry together with local private companies. After positive results were confirmed, the Ministry planned to hand over the site to an ASM cooperative. C4D deliberately remained outside commercial discussions, focusing on facilitating the partnership and preparing health, safety, and environment (HSE) capacity development. Technical support on HSE at the mine was planned to begin once mining operations started. In the meantime, in collaboration with Bundesanstalt für Geowissenschaften (BGR), C4D started the development of cobalt-specific training material for ASM cooperatives and miners. To mitigate the risk of insufficient mineralization, alternative sites such as Kamilombe and Kisanfu were also considered but ultimately lacked legal viability. In Q2 2019, drilling results indicated promising cobalt-bearing deposits which were to be validated by a second drilling campaign. The official launch in September 2019 sparked high hopes for the rapid installation of a legal and viable pilot. First steps were taken to install the community component in the neighboring village of Kisote to mitigate child labor risks and ensure that the community benefitted from the mine development. However, in December, unexpectedly and contradicting previous data, ZEA Kisote's economic viability collapsed as data validation failed and investment decisions by third parties were withdrawn. Final drilling confirmed the deposits were too deep for ASM extraction. With no further investors, work on the Kisote pilot was discontinued, and attention shifted to Tilwezembe, whose legal due diligence ultimately failed.

GIZ and its funding partners decided to maintain the community component at Kisote village given the commitments made in preparation of operations at the ZEA Kisote. C4D resumed its search for pilot sites, engaging industrial miners and traders. While some sites showed promise, geological and legal constraints remained unsurmountable barriers. COVID-19 slowed down work on training modules as well as in the community component.
In parallel to these developments, the Enterprise General du Cobalt (EGC) was established by Albert Yuma, head of the state-owned mining company Gécamines. To this day, Gécamines remains EGC's parent company, holding the majority of shares, with the DRC government owning a smaller stake. By ministerial decree, EGC was granted exclusive rights to purchase strategic minerals, including artisanal cobalt from small-scale miners. This development introduced an important new public sector partner for the C4D project, although EGC initially faced challenges in establishing operational capacity and governance structures.

EGC Governance Oversight

Ministry of Mines

- Defines national mining policies through Mining Code, strategic direction, and overall institutional coordination
- Direct oversight of Gécamines and indirect oversight of EGC

Gécamines (state owned enterprise)

- State-owned enterprise that holds and manages industrial mining assets, particularly in the provinces of Katanga, Haut-Katanga, Lualaba
- Owns EGC and can transfer mining sites to EGC through amodiation

EGC (subsidary company)

- Holds monopoly on the purhcase, processing, and marketing of cobalt from artisanal mining operationss
- Subsidiary of Gécamines
- Strategic budget decisions (e.g. for new project or major investments) must be approed by Gécamines and/or the Ministry of Mines

Coordination needed for ASM formalization

Regulatory & Technical Bodies

- SAEMAPE, ARECOMS, CEEC, CAMI, CTCPM, National Geological Survey (SGN), etc.
- Implement, monitor, and enforce mining regulations on the ground
- Overlapping and unclear mandates related to ASM formalization, combined with limited resources, make coordination essential for effective implementation

Strategic Reorientation – C4D Coaching Program

In response to challenges such as the absence of commercially viable legal pilot sites, delays from the COVID-19 pandemic, and difficulties securing private concession agreements, C4D launched a mobile training and coaching model in October 2020. This model delivered basic training and capacity-development on occupational health and safety as well as environmental management directly at informal ASM sites. Although it did not provide full proof-of-concept for formalization or catalyze broader sector reforms, it enabled short-term improvements and significantly expanded the project's reach. The mobile training program integrated site assessments, classroom instruction, and on-site coaching based on a training-of-trainers approach developed by C4D.

After assessing training needs at 40 ASM locations, C4D designed this tailored training-of-trainers programs for SAEMAPE and cooperatives, refined with input from cooperatives and civil society to ensure practical relevance. These programs strengthened SAEMAPE's capacity to independently conduct risk assessments and deliver effective training for cooperatives and thus fulfill their technical mandate as oversight authority for ASM mining. Cooperatives received focused training on safety, environmental management, and economic practices, supplemented by weekly on-site coaching. They were also supported in setting up and training their own management structures to deliver on-site improvements. Due to C4D's legality-first approach (see chapter 3), the project maintained no permanent site presence and made no significant hardware (e.g. PPE) investments.

Halfway through the project's first phase, C4D had shifted its implementation focus. In addition, it continued to evaluate pilot site opportunities, including a potential pilot site in cooperation with a LSM company and Gécamines. This strategic reorientation from a fixed, single-site pilot model to a flexible, decentralized training framework was a deliberate adaptation to contextual constraints. It aimed to maximize project impact and capacity building across ASM communities, reflecting C4D's commitment to

practical solutions in a complex and evolving operational environment. Nevertheless, the identification of a pilot site remained a strategic prerogative and always remained on the radar. Beyond the C4D initiative, hopes and discussions during this period in the DRC also revolved around a potential collaboration between EGC, Trafigura, and Pact.

Pilot Site Attempt with LSM Miners

By late 2021, close to the end of the 1st phase of C4D, an active ASM operation within an industrial concession emerged as a promising pilot site due to the strong interest from the (other) LSM miner holding the concession. The site had a promising geology based on company data and initial legal opinion indicated that the amodiation of mine squares to a SME could be a solution7. While important details around the concession holder's legal protection and its cooperation model with the SME remained unresolved issues at the start of 2022, the LSM miner's management commitment to the collaboration lead project partners to extend C4D utilizing funds unspent due to changes in project strategy and COVID delays. During 2022, C4D continued the C4D coaching program while working with the LSM miner to clarify questions and barriers to the potential pilot site. Due to the political nature of this undertaking, progress was slow, even though all parties remained fully committed. In October 2022, the C4D partners traveled to the project region, visited project sites and the potential pilot site, and held talks with the communities in Kisote, government representatives, ASM cooperatives, and industrial mining companies. This direct, on-the-ground engagement with stakeholders was informed by the OECD Due Diligence Guidelines, which emphasize the importance of transparent, ongoing dialogue and collaboration across the supply chain as a critical element of responsible mineral sourcing. Congolese stakeholders, including cooperatives, state representatives, and EGC, underlined the lack of a guaranteed buyer as a major obstacle to formalization. C4D's downstream partners echoed concerns that without legal certainty and transparent supply chains, ASM cobalt purchases remain out of scope.

[7] Amodiation is a legally recognized contractual mechanism under the Congolese Mining Code by which a mining concession holder—either an industrial mining company or the state-owned enterprise Gécamines—formally grants exploitation rights over specific mining zones within its concession to a third party, such as an artisanal mining cooperative. This agreement formally transfers exploitation rights for these zones to the third party under defined terms and conditions, thereby legalizing and regulating artisanal mining activities within the industrial concession area.

Exemplary Indicators From the Mining Component

Key Successes of the Mining Component

On-site presence

200+
coaching visits on mine sites for training-of-trainers, risk assessment, and risk mitigation

300+
trained miners directly

Training material

5
internationally benchmarked training modules were developed by C4D in close collaboration with SAEMAPE, GIZ experts, and BGR.

Supplies

C4D supplied the mine sites with signboards, gave out PPE equipment to members of the committees and the first aid team.

Training methods

C4D developed training methods which are directly tailored to on-site circumstances and address topics like use of PPE, tunnel and gallery lining, waste management, prevention of air and water pollution, access control, etc.

Strong network

C4D developed a strong network with Congolese key stakeholders relevant for the ASM cobalt sector.

Proactive requests

Cooperatives are proactively approaching C4D for support.

Impact in Numbers

23 ASM cooperatives trained*

115 PPE kits distributed

5 internationally benchmarked training modules developed

11 environmental assessments conducted

40 ASM cooperative members trained on management systems

70 ASM cooperative members trained* on health and safety

20,000+ miners as indirect beneficiaries on environmental management and OHS

41 ASM cooperative members trained* on environment

312 Artisanal miners trained on health and safety

17 SAEMAPE agents trained* as trainers

200+ coaching* visits conducted

*Training: On-site, practical training within the cooperative's daily operations. Focus on applying the modules in practice and increasing operational ownership over time. **Coaching:** Classroom-based, multi-day introduction to the training modules. Focus on foundational knowledge, concepts, and understanding before practical application.

Cobalt for Development

Spotlight Shabara

While C4D tried to find a legal pilot mine, the methodology to improve working conditions and environmental management were developed, implemented, and refined at three artisanal mine sites: Shabara, Kisanfu and Tilwezembe.

In Shabara, C4D applied and refined its methodology on-site between 2019 and 2023. It is not a legal site and hence C4D was not permanently present nor did the project invest in e.g., PPE or infrastructural measures. Improvement was achieved through intensely coaching cooperative members and selected miners on HSE following the training-of-trainer approach. That way, the participants were empowered to sensitize and train the miners on site themselves, as well as implementing basic risk management. To this end, committees were established to auto-organize the work on-site.

Despite the limited scope of implementation, and despite the lack of economic incentives given its non-legal status, Shabara achieved visible successes. Notably, the mine transitioned from pit to open-pit mining improved slope angles and benching, addressing a significant occupational safety risk. The cooperative also initiated independent investments, including establishing healthcare infrastructure, investing in protective equipment, and implementing initial environmental protection measures. Over time, the cooperative gained insights into risk analysis and management, strengthening interactions between SAEMAPE, the cooperative, and the miners.

Overview of Outcomes

The formalization ecosystem was strengthened by improving capacities and cooperation of SAEMAPE, the cooperative and miners.

The cooperative invested in improved on-site conditions and improved site management. It also invested in a vocational training centre for former child labourers.

The cooperative invested in and improved health and safety conditions for artisanal miners. The awareness of miners towards compliance with safety measures increased.

The cooperative partly adopted good environmental practices and improved sanitary facilities for miners on site.

Impact Measurement Challenges

Transparency	Sensitivity of topics such as legality and accidents limited data collection. C4D prioritized on-site improvement enabled by cooperative trust.
Legal status	Shabara's informal status restricted permanent presence and reduced effectiveness of interventions
Mine set-up	Rapid growth from 1,000 to 22,000 miners complicated consistent monitoring and data gathering
Social context	Presence of adjacent migrant settlements introduced additional socio-economic challenges
Skills exodus	Frequent turnover of trained and PPE-equipped miners undermined sustained behavioral change

Cobalt for Development

Community Component

The Communities were strengthened through 4 pillars

1 Access to education

- Expanding the existing school with a new, much larger building.
- Ensuring that primary education is free, in accordance with Congolese law
- Providing a free school lunch
- Strengthening parents' understanding of the value and importance of education
- Pedagogy training for teachers

2 Vocational training courses and activities

- Alphabetisation classes
- Basic numeracy classes
- Vocational training and technical support for small business development focusing particularly on women and girls.

3 Financial literacy trainings

- Introduce, create, and coach saving groups within the community
- Training on household income management
- Development of microfinance schemes through village saving groups

4 Agriculture trainings

- Technical training on cultivation methods, e.g., crop rotation, agriculture in the dry season
- Farmer business school with economic aspects of farming

Key Successes of the Community Component

Root causes of child labour

The community component successfully worked on the root causes of child labour by increasing income and awareness of children's rights. In addition, school enrolment and attendance increased markedly. Combining free education, provision of meals at school and extracurricular activities is fundamental to prevent children from going to mines or other hazardous workplaces like brick manufacturing.

Training material

Trainings improved vocational skills. Access to microcredits from the Savings Groups allowed investment into business ideas. This enabled female community members to found a bakery and a tailor shop, amongst other things.

Training methods

Project activities strengthened social cohesion to prevent and mitigate conflicts and to promote community-based awareness raising on e.g., civic education, gender, domestic violence and abuse.

Supplies

C4D improved the financial literacy of the surrounding community, e.g., through basic numeric training , the formation of six Saving Groups providing microcredits and generating interest, or training on business planning.

Strong network

C4D supported activities which aimed at improving food security in the community through Farmer Business Schools and teaching Good Agricultural Practices. Some practices in the community changed and yields were good, but progress on this point was slow.

Cobalt for Development

Cobalt for Development

Impact in Numbers

544
persons trained on financial literacy

89
businesses started by savings groups

82%
of households practice saving
baseline = 50%

47%
increase in household savings

36%
increase in household income

40
Cases resolved by the communal conflict committee

95%
of children enrolled in primary school
baseline = 70%

1,359
persons training on positive parenting

PROJECT IMPLEMENTATION & EVOLUTION

Cobalt for Development 2

In 2023, the second project phase of C4D was launched, funded by the existing partners BMW Group, Volkswagen AG, Samsung SDI, BASF as well as a new funding partner: Stihl. The original objectives and the revised concept of phase 1 mostly remained in place. The project focused its efforts on achieving a breakthrough in ASM formalization, ending the community component in Kisote as planned but not replicating it elsewhere to channel resources toward this goal.

Another strategic reorientation was the expansion of stakeholder engagement. Whereas in the first project phase C4D had primarily focused on cooperation with actors at the provincial level, the focus now shifted to the national level. In addition, dialogue with international political partners such as the European Union, USAID, and the US State Department was intensified. The goal was to create new momentum for establishing legal frameworks for responsible ASM mining through political coordination and multilateral support.

Legal barriers for pilot site with LSM miner

Early in the second project phase the initially promising pilot on an LSM concession could not proceed; unresolved legal and political issues made the project stall. C4D subsequently continued consultations with the LSM partner to identify alternative pilot options and to refine technical selection criteria (ore grade, accessibility, logistical feasibility, safety). Ultimately, the DRC mining code proved too large a barrier, as the industrial miner risked losing the mining squares leased to a cooperative. Overcoming this barrier required political decisions beyond C4D's mandate.

In parallel to exploring legal pilot sites, additional cooperatives were evaluated and included in the training

program. The training modules were also expanded. Together with SAEMAPE, a fifth module was created, focusing specifically on safety issues related to deep pits, one of the most dangerous and least researched areas of cobalt ASM. A survey conducted jointly with SAEMAPE on safety practices in deep shafts contributed to expanding the available data and was recognized by stakeholders as an innovative approach.

Shortly after the ultimate failure of the pilot development on the LSM concession, personnel changes in key institutions such as Gécamines and EGC, along with state measures against industrial mining companies, suggested growing political momentum for change in the cobalt sector. However, this political momentum did not yet translate into political decisions on ASM formalization; to address this, C4D intensified engagement by intensifying dialogue at the national level and liaising with international partners, including the European Union (EU) and the United States Agency for International Development (USAID). The EU, negotiating a strategic partnership with the DRC, recognized the political importance of ASM formalization.

Market linkage as a key enabler for formalization

Congolese stakeholders continued to attribute the persistent deadlock in ASM sector formalization to unclear market access for responsibly mined ASM cobalt. At political level, signals were sought that a sector transformation would be rewarded by the market.

In July 2023, thus C4D hosted a second C4D Partner Workshop to analyze market access for ASM cobalt and to define preconditions. Discussions focused on minimum due diligence standards and ongoing continuous improvement processes. A subsequent position paper provided an informal basis for further discussions with Congolese partners and was well received, presenting a shared vision for integrating ASM cobalt into international supply chains and highlighting downstream actors' openness to engage with the Congolese government and market.

Simultaneously, EGC's activity revived. Stakeholders showed interest in a pilot mine with EGC playing a central role. However, ensuring the legality of this option required a ministerial decree to complement existing mining legislation. To advance this discussion, C4D facilitated discussion among relevant Congolese stakeholders on potential pathways for formalizing a pilot mine. In collaboration with USAID, the EU delegation, and other international partners, C4D organized a workshop with key Congolese authorities. The workshop identified two

concrete options for formalizing ASM operations, marking a pivotal milestone in establishing its legal framework:

- The creation of new ZEAs
- Amodiation (sublease) of pilot sites through Gécamines via its subsidiary EGC, who would provide access to potential pilot sites where formalized actors could operate.

A ministerial decree enabled an EGC pilot, with further momentum from the presidential inauguration. Given these developments and the new opportunity, C4D took the decision to pivot working with EGC, focusing on supporting pilot development through strategic advice and technical expertise.

Pilot site operationalization with EGC

In early 2024, EGC reached a major milestone, as two potential pilot sites, Tombolo and Kanunka, were part of a sublease (amodiation) agreement with Gécamines. This created the legal foundation for EGC's pilot project; however, the geological potential was unknown and EGC required support in the operationalization of the pilot project[8]. EGC and C4D signed a collaboration agreement and C4D paused cooperative coaching, partly due to low cobalt prices and limited activity, and partly to free up resources to support EGC. C4D introduced specialized technical advice for geological planning of preliminary geological assessments and to strengthen EGC's exploration capacity. In addition to geological uncertainties, economic and political challenges also surfaced. While the amodiation agreement provided the legal foundation, the successful operationalization of the pilot mine depended on solving technical, economic, and stakeholder challenges.

In 2024, the project partners reassessed C4D as a risk mitigation measure and its effectiveness once more. With progress at EGC, it was decided to continue active support for the operationalization phase. Initial geological studies confirmed the potential of both sites, with Tombolo emerging as the primary focus. These assessments enabled EGC to present a robust, evidence-based case for the project, securing significant funding from its parent company Gécamines for geochemical analysis and drilling. This financial commitment not only reflected political support from Gécamines and the Congolese government, but also EGC's operational ownership and commitment to the transformation of the ASM sector.

From 2024 onward, international stakeholder engagement around C4D intensified, supporting political momentum but also requiring significant resources for stakeholder management. At the OECD Forum, EGC and C4D presented the pilot site project. The EU confirmed its interest in supporting C4D within the framework of its Global Gateway investment initiative. Engagement with Fair Cobalt Alliance (FCA) intensified as they also sought to support EGC's pilot site. Supported by C4D, FCA submitted a successful funding application to USAID, signaling joint US–EU support for ASM formalization. However, severe delays in disbursement and USAID's eventual 2025 no-funding decision, driven by USAID's dismantling, left a gap in engagement.

Encouraged by promising feasibility results and sustained political momentum, the project was approved for continuation in late 2024. BMW Group, BASF and Stihl remained partners, Renault joined, and the European Commission (DG INTPA) gave high-level political backing at the EU Raw Materials Week and finally joined C4D in 2025. Thus, C4D exemplifies a novel coordinated approach where private sector due diligence efforts are complemented by the EU to reach strategic objectives. At the national level, a ministerial decree by President Tshisekedi recognizes the EGC pilot as a priority, reinforces the roles of EGC, SAEMAPE, and ARECOMS, and provides a basis for potential public financing. Furthermore, it creates the possibility of legal EGC operations on LSM concessions. These developments signal growing political momentum within the DRC's evolving landscape; converting this into sustainable investment, however, depends on stable frameworks, clear policy priorities, and operational progress. C4D has, at the time of writing, supported EGC to reach the point of a final investment decision on the Tombolo site, with the final decision pending.

EGC has consolidated its position as the linchpin for the transformation of the cobalt ASM sector. With the removal of legal barriers, C4D's support in pilot site operationalization, and C4D's ability to sustain technical assistance until early 2028, overall success rests on clear strategic leadership by key Congolese stakeholders and EGC's ability to deliver operationally. This should be complemented by a clear signal from the market regarding its expectations for EGC and its operations.

[8] Operationalization of an ASM mine site refers to the process of developing an artisanal mining project in line with the DRC 2018 Mining Code, from initial exploration to the start of regulated production. It involves conducting geological assessments and feasibility studies, designing the mine and operational plans adapted to the ASM context, and building the institutional and technical readiness of cooperatives to legally start operations. Completing this process establishes a precedent for future formalization, enables access to funding, and supports the creation of a viable business case for responsible ASM operations.

3 EVALUATION

EVALUATION

Successes & Achievements

C4D achieved significant milestones in the formalization of the ASM cobalt sector. C4D's interventions addressed structural barriers in ASM cobalt formalization by integrating governance, capacity development, and market engagement. These specific interventions, detailed below, helped address systemic barriers by creating replicable models and fostering multi-level cooperation.

Cobalt for Development

1 Establish a replicable operationalization approach for ASM mines

Output

Brought the first legal ASM pilot site to the final investment decision in compliance with the DRC 2018 Mining Code, including geological assessments, feasibility studies, and mine design, in close collaboration with EGC's technical team.

Developed draft blueprint (incl. Standard Operating Procedures and tools) as a replicable package for ASM operationalization.

Trained cooperative members to prepare for pilot site operations.

Supported EGC in political outreach (e.g., through meetings with government officials) and in presenting the pilot concept at international forums.

Outcome

EGC has the necessary information to decide on the next steps in its formalization strategy

ASM actors have a clear, tested framework to guide further formalization efforts.

EGC's technical capacity is improved, and it can mobilize Congolese public funding to plan and scale ASM formalization in southern DRC.

Impact

Geological knowledge and legal foundation in place to develop proof-of-concept

Replication of formalization at other sites is easier and costs are reduced.

C4D achieved the first operationalization of a legal artisanal cobalt mine aligned with the DRC's 2018 Mining Code, following years of navigating complex regulatory gaps (see chapter 2). The process encompassed geological assessments, feasibility studies, mine design, and capacity building for both cooperatives and regulatory authorities. The project delivered compliance packages, and field-tested training modules and Standard Operating Procedures (SOPs) to be applied after the final investment decision. The experience from the operationalization process has been summarized in "blueprints". The blueprint lays out the step-by-step process, resource needs and SOPs necessary for operationalizing an ASM mine and are meant to facilitate replication elsewhere.

Cobalt for Development

2 C4D developed and tested technical approaches for risk mitigation in ASM to support improved human rights and environmental practices.

Output

Co-developed five practical training modules integrated into SAEMAPE's curriculum.

Created 19 risk management tools for cooperatives' site management

23 ASM cooperatives and 17 SAEMAPE agents trained as trainers

Delivered training and coaching to cooperatives at informal sites, reaching thousands of workers.

Supported the set-up of HSE management structures in cooperatives at three sites.

Outcome

SAEMAPE staff equipped with additional tools and knowledge to regulate ASM more effectively

Cooperatives and their HSE committees empowered to implement concrete site management and worker safety improvements

Miners possess increased awareness of HSE-related risks

Structured, practical training modules publicly available to facilitate ASM capacity development by third parties

Cooperative invested in additional non-mining improvements, including health infrastructure and vocational training for former child workers.

Impact

Public training material increases efficiency of future ASM trainings.

Incremental improvements in risk mitigation on sites

Normative shifts regarding the responsibility of ASM cooperatives

A key achievement of the C4D project was the collaborative development of training modules with cooperatives, miners, and SAEMAPE to strengthen responsible practices and address capacity gaps. SAEMAPE is the Congolese authority responsible for regulating the ASM sector. Institutionalizing these materials within SAEMAPE reinforces governance capacity beyond project timelines. The modules provide a structured approach to identifying, monitoring, and mitigating human rights and environmental risks in ASM operations, while improving operational practices

Piloted at select informal sites, the approach enabled validation and refinement of tools and methods, achieving visible improvements on site. Despite challenging conditions, cooperatives engaged with trust and openness. Early indications suggest normative shifts; notably, one cooperative invested in enhanced site management and developed vocational training for former child workers. This experience demonstrates that, with targeted technical guidance and economic incentives, cooperatives can become active investors in improved and responsible ASM practices.

Cobalt for Development

3 Successful impact in community component

Output

Construction of a new school building accommodating 500 students

Formation of six community savings groups facilitating access to microcredit

Provided financial literacy training to 493 individuals

Provided training in sustainable agriculture practices for 332 farmers

Outcome

25% increase in school attendance in Kisote, from 70% (2019) to 95% (2022)

89 new businesses started, many led by women

544 community members improved their financial literacy and savings behavior (including both direct trainees and indirect beneficiaries)

Improved agricultural productivity for local farmers

1,122 individuals trained in parenting and conflict resolution, with 20 local disputes resolved

Impact

Local awareness sessions and diversified income opportunities were followed by an increase in school attendance, highlighting the potential of interventions to address root causes of child labor.

Improved technical (e.g., agricultural, sewing) and financial skills (e.g., numeracy, and essential business skills) contributed to household income stability.

Empowered women in local economic and social life.

Until the beginning of 2023, over 3,000 residents gained access to education, vocational training, financial literacy, and improved agricultural practices. Through a combination of community-led awareness, livelihood support and skills training, concrete levers for change were activated. Awareness sessions increased demand for schooling and shifted parental decisions; at the same time, six village savings groups and access to microcredit gave households buffers to improve food security and to start or invest in small businesses. Technical agricultural and vocational training—particularly for women—boosted yields and broadened non-mining income options. This combination of activities produced a marked increase in school attendance, which the project interpreted as an indicator of reduced child labor during the intervention period. After 2023, Bon Pasteur has remained present in the villages through its mobile health clinic which was supported by the project, maintaining contact with community leaders and families. This ongoing presence has supported continuity and allowed for informal follow-up after project closure. About one-third of the started businesses remain active, mostly in petty trade, tailoring, and food production. Among these, several women-led initiatives, such as a sewing cooperative and a small bakery, continue to generate income and strengthen household resilience until 2025. School attendance has largely remained stable, according to Bon Pasteur's observation though the number of new enrollments has declined since the end of community mobilization campaigns. Child labor, however, continues to fluctuate seasonally, and sustained improvement will depend on the long-term viability of alternative income sources.

4 Effective stakeholder engagement and facilitation – C4D as an honest broker

Output

Facilitated regular (formal, informal) multi-stakeholder dialogues across government, technical authorities, supply chain, and civil society

Fostered cross-supply chain dialogue between international buyers and local stakeholders at major forums and site visits

Facilitated downstream industry position on expectations towards DRC authorities regarding ASM production that would enable future purchasing

Supported EGC in political outreach and pilot concept presentations

Outcome

Overcame legal and regulatory barriers by developing and piloting context-appropriate regulatory models (e.g., the amodiation model) for ASM formalization

Enabled mobilization of Congolese public funding and strengthened EGC capacity to independently plan and scale formal ASM sites

Built trust and credibility for C4D as an honest broker in a fragmented and politicized ASM sector.

Strengthened multi-level stakeholder collaboration and dialogue on responsible sourcing and risk mitigation.

Impact

Progress toward strengthened Congolese governance of the ASM sector

Improved multi-level coordination for ASM formalization

Demonstrated uptake of project-supported regulatory models by national authorities that could vastly facilitate the transformation of the sector

A key achievement of C4D is the project's effective stakeholder engagement. Operating in a fragmented and informal sector, the project contributed to overcoming key legal and political barriers through sustained, multi-level dialogues. Acting as a trusted, impartial intermediary, Cobalt connected diverse stakeholders while maintaining credibility as a 'honest broker' (i.e. a neutral facilitator accepted by all parties).

By facilitating dialogue and cross-supply chain engagement, C4D helped align expectations on risk mitigation and responsible sourcing. Its support contributed to the piloting of a new regulatory model (amodiation) with Gécamines and EGC, providing a practical pathway for integrating ASM production under formal oversight. Following a less active period after its founding in 2019, EGC's technical and institutional capacity were strengthened by C4D, reinforcing Congolese ownership of ASM formalization.

Cobalt for Development

EVALUATION

Challenges, Project Delays & Key Obstacles

C4D's implementation encountered significant delays—originally planned milestones such as the certification of a pilot site were postponed by multiple years—due to unforeseen legal, geological, and political challenges. These challenges highlight limitations of corporate-led due diligence initiatives in highly informal and politically complex environments like the DRC's ASM cobalt sector.

1. Legal framework challenges

The legal challenges embedded in the Congolese mining code were initially underestimated. The code effectively prevented industrial miners from legalizing ASM operations on their concessions without losing land rights. Many ZEAs proved geologically nonviable, blocking economically feasible piloting. Without legally viable entry points, upstream risk mitigation could not proceed as planned. Sustained political dialogue, international engagement by various actors, and EGC's revival late in the project, enabled a new legal pathway for ASM formalization. Contributing to this breakthrough required substantial resources and widened the project's core focus from creating a proof-of-concept legal mine to include governance facilitation.

2. Weak sector governance and political dynamics

Weak sector governance remains a central barrier to effective corporate due diligence measures and responsible sourcing in DRC. This is due to regulatory institutions being fragmented, under-resourced, and influenced by informal power dynamics that hinder effective oversight. Furthermore, some stakeholders within government and industry benefit economically from maintaining the informality of the status quo, creating resistance to regulatory reforms. For instance, some smelters continue to source cobalt through informal channels, while officials derive personal or political gains from unregulated ASM activities. These vested interests in the status quo and the lack of coordinated regulatory oversight inhibited interest in legalization and market linkage. For C4D, this resulted in a highly sensitive project environment where progress depended not only on technical solutions but on persistent stakeholder engagement. Maintaining a firm "legality-first" approach was critical to safeguard project integrity and ensure that pressure was applied to the key barrier to sector transformation.

3. Underestimated importance of geological due diligence

The project initially underestimated some technical challenges, particularly the need for in-house geological expertise. However, experience at the first potential pilot site in Kisote (see chapter 2) revealed the risks of relying on third party expertise. As geology defines economic viability, C4D had to recalibrate, dedicating additional resources to build its own geological expertise in order to assess site viability.

4. Limitations of outcome-level monitoring in a dynamic context

Another challenge for C4D was the difficulty of implementing structured monitoring and evaluation frameworks amidst a highly dynamic environment. While monitoring and evaluation are central to the OECD Due Diligence Guidance, the C4D project faced limitations that made systematic outcome monitoring difficult. Shifting project approaches caused by legal and geological challenges undermined timelines and baseline data, impeding consistent tracking of outcome-level changes. In addition, cooperatives distrust the large-scale collection of e.g. incident data in informal settings, as they believe it can be used against them. At the same time, for in-depth capacity building to be effective, a high degree of trust needs to be established.

Hence, C4D prioritized coaching effectiveness over monitoring scheme completeness. Otherwise, there might have been few effects to be monitored due to cooperative resistance. In the community component, monitoring was easier. However, due to shifts in the geographic focus of the mining component, the project is not able to evaluate how community development activities interact with active mine sites.

5. Disconnect between community component and the strategic vision of the project

C4D's vision has always gone beyond establishing a legal pilot mine and aims to improve the living conditions of communities affected by ASM. This holistic ambition is rooted in the project's risk analysis, which recognizes that risks extend beyond the mine site to surrounding areas. However, translating this into practice proved challenging. C4D initially focused on community development around Kisote, anticipating it would become the pilot site. When this did not materialize, the project continued its community engagement, recognizing that an abrupt exit would have been socially irresponsible. Although activities provided real local benefits, they no longer directly mitigated supply chain risks, creating a disconnect between social programming and the project's strategic goals. While activities delivered tangible local benefits, some activities supported by the project, including farmer associations and savings groups, were not sustained by the community after project closure, showing the difficulty of sustaining long-term alternative livelihoods.

Cobalt for Development

EVALUATION

Lessons learned for future projects

Drawing on C4D's implementation experience, this section presents lessons learned. These insights aim to provide concrete recommendations for future ASM formalization and responsible sourcing initiatives. While some recommendations are particular to DRC's cobalt ASM sector, others have more global relevance.

1. Stakeholder engagement lays the foundation for effective risk mitigation

C4D's experience demonstrates that sustained, multi-level stakeholder engagement is essential for meaningful risk mitigation in contexts like the DRC's ASM sector. Initially, the project concentrated on technical solutions and local engagement while underestimating political dialogue at the national level. Only after prioritizing stakeholder engagement as a core activity could C4D respond effectively to shifting dynamics and build relationships at the national level. As C4D's experience shows, overcoming entrenched resistance and enabling regulatory progress demands sustained resources and patience.

- → **Prioritize political engagement from the start:** Political cooperation must be integrated from the outset as an ongoing task.
- → **Stakeholder engagement as a tool for risk mitigation:** Regular dialogue is critical to understand informal dynamics and adjust strategies accordingly.
- → **Allocate dedicated resources:** Stakeholder engagement is resource-intensive and must be treated as a core operational function.

2. Private sector efforts can catalyze change, but only governments can drive lasting regulatory reform

In the ASM cobalt sector, improved governance and market incentives for responsible sourcing must advance together. Human Rights and Environmental Due Diligence (HREDD) efforts in high-risk supply chain can only be effective and sustainable if legal frameworks are suitable and enforced while companies create demand for responsibly produced materials, a topic that remains difficult. Accordingly, the project's persistent engagement with Congolese government actors created space for regulatory and technical innovation, including the development of a legal pathway for piloting ASM formalization. However, the decisive breakthrough occurred only after domestic political momentum for reform increased, in part powered by diplomatic efforts from the USA and EU. Companies must maintain a delicate balance, actively manage supply chain risks while refraining from crossing into political interference. For C4D this translated into a strict "legality-first" stance, meaning the project did not endorse or initiate any pilot activities without a clear legal foundation. This principle ensured that state-led reforms remained paramount, emphasizing compliance as a prerequisite for any form of formalization.

- → **Private-sector projects can open space for reform but have limits:** structural change depends on state-led regulatory action.
- → **Government ownership is essential:** Only state actors can institutionalize reform and ensure it is aligned with national priorities.
- → **Diplomatic engagement can catalyze political will:** international public actors can help unlock progress that private actors cannot achieve alone.

Cobalt for Development

3. Active corporate engagement enables a flexible project approach

C4D engaged companies in project implementation by directly involving company representatives and their technical expertise in contextual analysis, strategic decision making and field visits; thereby expanding knowledge on supply chain risks and local context beyond third-party audits or remote compliance checks. C4D fostered a continuous feedback loop by sharing contextual intelligence, operational insights, and risk data with corporate partners. This exchange not only improved decision-making but also built adaptive risk management capacity, allowing strategies to be adjusted as the ground shifted and new challenges emerged. Companies remained committed even during periods of uncertainty, reflecting the resilience inherent in active engagement.

The project became a dynamic learning space, enabling flexible strategy adaptation and adaptive monitoring, key features of the OECD Due Diligence Guidance's emphasis on active, iterative risk management by companies themselves.

- → **Active company engagement builds resilience:** Direct participation in contextual analysis and risk reflection enables flexibility and adaptive project management.
- → **Monitoring supports iterative planning, not just compliance:** Monitoring systems should be designed to inform strategic pivots and continuous learning, especially in informal or high-risk supply chains.
- → **Building expertise supports responsible sourcing:** active participation in initiatives like C4D builds internal expertise and contributes to more robust and credible sourcing strategies.

4. Community development must be strategically aligned with supply chain risk mitigation

Community development is essential for responsible ASM, but only when strategically aligned with supply chain risk mitigation. C4D's experience demonstrates that, without this alignment, community initiatives can become detached from core project objectives, delivering benefits locally but failing to address upstream risk drivers. For instance, many ASM workers are not from surrounding communities but are mobile labor migrants, which needs to be considered in designing community and alternative livelihood interventions.

In high-risk environments, there is a natural tendency to shift from integrated pilot models toward stand-alone social programs with limited positive effects on supply chain due diligence. To contribute to due diligence and not only implement isolated social projects, but community engagement must be linked with mine-site programmes. This directly ties to the governance challenge (see section 3.2): local mining revenues should be used for to support community-level development. Recognizing this, C4D plans to further strengthen synergies with complementary bilateral programmes, including the publicly funded Progerim project, which works to strengthen public management of local tax revenues from the extractive sector for sustainable and inclusive socio-economic development.

- → **Align community development with supply chain risk mitigation:** Interventions should be clearly linked to project goals to avoid mission drift.
- → **Test scalable community interventions:** pilots should test approaches to community development that can be institutionalized, for example via EGC, to strengthen social safeguards at mine-level.
- → **Understand ASM demographics:** many artisanal workers are migrants, not residents, requiring tailored strategies to ensure social protections extend to all rights-holders.

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5. In-house expertise for credible technical support and sustainable project models

Robust technical knowledge is vital for credible site assessments, quality capacity development, and the development of replicable, bankable models. This is particularly true in scenarios with a lack of dependable data. For C4D, adjustments were necessary when evaluating the geological viability of proposed sites and when proposing immediate risk mitigation measures to cooperatives on-site. C4D responded to this gap by strengthening its team with geologists and environmental experts. Building in-project expertise has the advantage of facilitating knowledge management and building trust with partners and stakeholders. This shift enabled the project to better support partner decision-making and contribute to the evaluation of potential pilot sites.

- **Do not compromise on technical expertise:** Project teams must integrate in-house specialists to conduct credible due diligence and build viable, scalable models for responsible sourcing.

- **Adapt expertise to structural gaps:** Projects should maintain flexibility to address and fill existing expertise gaps.

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EVALUATION

Conclusion and Next Steps

The C4D project set out with a fundamental question: how can downstream companies effectively mitigate human rights and environmental risks in the ASM cobalt supply chain and, in doing so, improve the living and working conditions of communities involved in ASM? While progress has been more complex and slower than anticipated, C4D has produced impact and crucial lessons learnt. Together with other initiatives and actors, most importantly Congolese stakeholders themselves, this has created a window of opportunity for a transformation of the sector. Experience from C4D shows that in fragmented and high-risk prone supply chain contexts, outsourcing due diligence alone is insufficient. Instead, the initiative and engagement of downstream companies themselves can become a critical lever for change. Such levers do not provide immediate solutions; rather, it functions as an enabler, whose effectiveness depends on conditions like the willingness of relevant partners, legal clarity, and availability of financing.

Where risks can be managed transparently and credibly, e.g., on an EGC-led pilot mine supported by C4D, companies should remain invested, drive tangible improvements, and avoid business-as-usual practices. But when risks remain unacceptably high or opaque and progress remains elusive, despite reasonable support and due diligence, companies must transparently document their assessments, consider all options, and, if necessary, responsibly disengage, always placing human rights first and communicating actively with affected communities.

Next steps for C4D

The next project phase will focus on consolidating the pilot site after the final investment decision, scale the impact to other sites, and embed tools and insights into broader policy and market frameworks. Building on the tangible outputs created—including legal pilot models, practical tools, and local capacity gains—this phase must consolidate and scale these foundations for broader sector transformation. The following strategic priorities will guide this work:

- Technical assistance on risk management and capacity development to cooperatives and EGC
- Strengthen EGC's operational capacity to scale
- Refine and disseminate blueprints (checklists, SOPs, training modules).
- Facilitate market incentives for legal, responsible ASM cobalt.

However, C4D alone will only be able to do so much. To achieve broad, significant change in the sector, stronger cooperation, increased investment, and greater accountability throughout the cobalt supply chain will be necessary. Mitigating human rights risks in ASM is not simply a matter of a checkbox exercise—it requires tangible improvements on the ground. Based on the experience of the last years, C4D proposes the following priorities for action across stakeholder groups:

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Government Institutions

National

- Promote transparency and enforce measures against cobalt laundering
- Enforce anti-corruption measures around artisanal mining zones
- Strengthen technical and financial capacities of relevant governance authorities (EGC and ARESCOM) and improve sector governance to facilitate ASM legalization and formalization, enhance oversight mechanisms
- Invest in geological explorations of (new) ZEAs and scale up the EGC program
- Strengthen governance structures to ensure transparent and efficient management, allocation, and redistribution of funds dedicated to community development

International

- Complement downstream companies' HREDD through international cooperation, including diplomacy and technical assistance for improved sector governance to help overcome systemic barriers.
- Promote a level playing field for due diligence legislation globally.
- Provide clear guidance to downstream companies on engaging with artisanal mining in their supply chains, including concrete guidance on staying engaged despite high human rights and environmental risks or disengaging when necessary.

Private sector (up- and downstream, national and international)

- Engage in structured dialogue to create viable offtake models, risk-sharing mechanisms, and incentives for responsible ASM cobalt.
- Participate in multi-stakeholder initiatives, such as C4D, aimed at formalizing ASM and mitigating human rights risks across the supply chain, or, for miners, start pilots on own concessions.
- Support scalable pilot projects through knowledge-sharing, technical input, and investment to help build a functioning business case for responsible ASM.
- Midstream actors: double-down on ensuring that only legal, responsible ASM cobalt is sourced and prevent any form of cobalt laundering.
- Upstream actors: proactively improve social and environmental conditions at ASM sites, also considering the new legal options.
- Provide access to finance when conditions are met, adding an incentive for formalizing their operations.

Civil society (national and international)

Critically and constructively monitor governance improvements and technical pilots, advocate for the inclusion and rights of vulnerable groups, and ensure accountability of all supply chain actors.

4 ANNEXES

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Stakeholder overview

Stakeholder engagement was one of the project's core activities. This stakeholder overview focuses on the key stakeholders who were directly involved in or influenced by project activities. It is not exhaustive; many additional actors were engaged at different levels. The table prioritizes clarity and relevance for this report.

EGC: As the central actor mandated to formalize ASM cobalt, EGC holds the pilot site permit and manages its operations through contracted cooperatives. The project supported EGC in strengthening institutional and technical capacities, operationalizing responsible mining practices, and developing a viable business model for scaling formalization across the ASM cobalt sector.

SAEMAPE: The government authority responsible for technical supervision of artisanal miners, cooperative registration, and tax collection at ASM sites. SAEMAPE played a key role on-site, collaborating with the project to enhance monitoring capacities, develop training manuals, and strengthen the technical skills of staff to ensure compliance with ASM standards.

ASM cooperatives: Cooperatives primarily act as organizational structures to manage and coordinate mining activities and should not be perceived as representatives of ASM miners. C4D trained ASM cooperatives on improving governance, health and safety as well as environmental due diligence.

Artisanal and small-scale miners and washers: operate at the individual or small group level and are the primary workforce behind mining activities. Miners extract ore, while washers, often women, process and wash the material on-site depending on local conditions. C4D developed a targeted training approach for miners, aimed at improving safety, promoting more sustainable practices, and reducing the high occupational risks they face.

Local communities: Communities around ASM sites are both directly and indirectly affected by mining activities. Their concerns include environmental protection, health and safety, and economic benefits. C4D helped two communities directly, and it also maintains ongoing communication with the wider set of communities around EGC's pilot mining locations.

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The table below provides an overview of the main stakeholders relevant to the project and its implementation context. It summarizes each actor's role, interest, and touchpoint with the project, highlighting their engagement in ASM formalization and responsible cobalt production.

DRC political stakeholder			
Stakeholder	**Role**	**Interest**	**Project engagement**
Ministry of Mines (National Level)	National authority responsible for steering and regulating the mining sector.	Interested in increasing state revenues, formalizing the ASM sector, and strengthening the DRC's position in value addition and investment attraction.	C4D engaged indirectly through technical agencies; strategic consultation / policy dialogue at national level.
Provincial Ministry of Mines (Lualaba)	Provincial authority responsible for implementing mining policies and supervising operations in the Lualaba province.	Interested in promoting ASM formalization at the provincial level and securing fiscal benefits for local development.	C4D engaged directly: initial focus on engagement with the provincial level. In mid-2023, the focus shifted to the national level.
Gécamines	State-owned mining company managing large-scale mining concessions, both directly and through joint ventures. Parent company of EGC.	Interested in commercially developing its concessions, attracting industrial investors, and benefiting from the amodiation of selected sites to EGC for ASM formalization.	C4D engaged in strategic consultation / policy dialogue, primarily through coordination with EGC. Gécamines was not an initial stakeholder but became increasingly relevant once C4D started collaborating closely with EGC.
Entreprise Générale du Cobalt (EGC)	Subsidiary of Gécamines mandated to formalize the ASM cobalt sector and holding a monopoly on the purchase, processing, and marketing of responsibly mined ASM cobalt.	Interested in fulfilling its mandate through the operationalization of a pilot site, developing a viable business case, and scaling formalization across the ASM cobalt sector.	Key stakeholder for C4D: capacity building, operational support, pilot site management.
CAMI (Mining Cadastre)	Technical authority responsible for cadastral management and legal registration of mining permits, including the amodiation of industrial concessions.	Interested in increasing revenues from permit transactions and ensuring transparent documentation of mining rights	Limited engagement: CAMI played only an indirect role for C4D. It was relevant registering the amodiation of Gécamines' sites to EGC. Contact occurred primarily through EGC's formal applications.
ARECOMS	National authority mandated to set and audit standards for responsible ASM in the DRC.	Interested in regulating ASM practices and ensuring national ownership of responsible sourcing standards.	Limited engagement: ARECOMS was not yet operational during project implementation.
SAEMAPE	Government service responsible for the technical supervision of artisanal miners, cooperative registration, and tax collection at ASM sites.	Interested in improving compliance with ASM standards and increasing tax revenues through stronger monitoring capacities.	Key stakeholder for C4D: technical capacity building, development of training manuals, on-site monitoring support

Responsible Mining Initiatives

Stakeholder	Role	Interest	Project engagement
Fair Cobalt Alliance (FCA)	Multi-stakeholder initiative working to professionalize the artisanal cobalt sector in the DRC. Focuses on improving health and safety, strengthening community development, and enabling responsible market access for ASM cobalt.	Interested in improving working conditions, reducing child labor, and supporting EGC in establishing a viable model for responsible ASM cobalt formalization.	C4D engaged directly: joint coordination at pilot site, weekly alignment meeting between 2024 and early 2025 alongside EGC to align interventions at the two EGC sites..
Responsible Minerals Initiative (RMI)	Global industry platform representing over 400 companies engaged in developing responsible mineral sourcing standards, including for ASM cobalt.	Interested in piloting its ASM cobalt standard through cooperation with EGC to expand responsible sourcing frameworks for cobalt.	Limited engagement: No formal cooperation.

Development Initiative / NGO

Stakeholder	Role	Interest	Project engagement
Good Shepherd International Foundation (Bon Pasteur)	International NGO focused on community development and the elimination of child labor in ASM regions, with a strong local presence in the Lualaba province.	Interested in continuing social and economic development around ASM pilot sites, improving child protection, and strengthening women's livelihoods.	Direct implementation partner: community development and child protection activities.
Artisanact	Local NGO supporting ASM formalization.	Interested in facilitating responsible ASM operations and building local technical capacity.	Direct implementing partner for C4D mining component until 2024.
UNICEF	UN agency protecting children's rights and supporting education, health, and social inclusion.	Interested in improving child protection and education outcomes in mining-affected communities.	Technical / advisory support: information exchange on child labor identification and potential program synergies.
Afrewatch	Congolese civil society organization advocating for transparent and equitable management of natural resources. Monitors government and corporate accountability in the extractive sector.	Interested in promoting transparency, social equity, and fair revenue distribution for artisanal miners.	Exploratory / limited engagement via stakeholder events and advocacy platforms.
Touche pas mon Cobalt	Local journalist-led initiative from Lualaba advocating for transparency and de-politicization of cobalt governance.	Interested in ensuring transparent selection of ASM cooperatives and equitable benefits for communities.	Exploratory / limited engagement via stakeholder events and advocacy platforms.

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Development Initiative / NGO (continued)

Stakeholder	Role	Interest	Project engagement
Congo is Not for Sale (CNPV)	Coalition of 16 Congolese and international NGOs advocating for anti-corruption, transparency, and fair governance in the DRC's extractive industries.	Interested in holding both government and private actors accountable to strengthen transparency and good governance.	Exploratory / limited engagement through transparency networks and stakeholder dialogues.
Save the Children	International NGO specializing in child rights, protection, and education. Involved in remediation and rehabilitation programs for children in mining communities.	Interested in implementing child remediation programs around pilot sites.	Exploratory / limited engagement: part of the FCA consortium in the USAID/ATI application for child protection on EGC's pilot site operations

International government / development partner

Stakeholder	Role	Interest	Project engagement
European Union (EU)	Political and development partner of the DRC under the EU–DRC strategic partnership and Global Gateway framework. Provides policy dialogue and funding to promote governance, value chain development, and responsible sourcing.	Interested in strengthening cooperation with the DRC, promoting responsible cobalt production, and enhancing access to critical minerals for the European market.	**Strategic consultation/ policy dialogue:** C4D maintained regular exchanges with the EU Delegation in Kinshasa. Since 2023, the project increasingly engaged the EU in national-level political advocacy. 2025, the EU formally committed to join the C4D partnership.
United States Agency for International Development (USAID)	U.S. government agency supporting economic development, transparent governance, and responsible investment in the DRC's mining sector.w	Interested in ensuring responsible sourcing of strategic minerals, promoting private-sector engagement, and improving supply chain transparency.	**Strategic consultation/ policy dialogue:** advocacy and alignment on ASM formalization, engagement was discontinued after USAID 2025 program restructuring.
Bilateral GIZ Projects (PROGERIM, DISM, others)	German development cooperation programs working with national and local authorities to strengthen governance, institutional capacity, and socio-economic development in mining regions.	Interested in promoting good governance and efficient use of mining royalties, and in creating synergies with C4D to enhance impact in the ASM sector.	**Technical exchange:** to align interventions and avoid duplication, particularly regarding governance of mining revenues and community development.
ENABEL	Belgian development agency implementing programs on vocational training, local development, and governance in the DRC's mining regions.	Interested in strengthening employment and local economic development through partnerships with mining-related initiatives.	**Technical exchange:** to identify synergies in vocational training and capacity-building around ASM pilot sites.
BGR (German Federal Institute for Geosciences and Natural Resources)	German technical cooperation agency supporting good governance, capacity building of national geological institutes, EITI implementation, and environmental management in the DRC's extractive industries.	Interested in improving environmental and social governance in the ASM sector and contributing to responsible cobalt value chains.	**Technical exchange:** coordination to ensure complementarity and avoid overlap

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Private sector			
Stakeholder	**Role**	**Interest**	**Project engagement**
Downstream Companies	Battery and related supply chain companies with cobalt exposure from the DRC.	Interested in promoting responsible sourcing, reducing due diligence risks, and supporting formalization of ASM cobalt operations.	Direct engagement through project funders; additional exchanges with other companies to share lessons and approaches for ASM formalization.
Large-Scale Mining Companies (LSM)	Operators of large industrial concessions that are often invaded by illegal ASM operations.	Interested in strengthening ASM formalization through capacity building, improving environmental and social governance in artisanal mining, and contributing to responsible cobalt value chains.	**Direct engagement** extensive discussions to explore hosting ASM pilot sites, but legal, operational, and reputational risks too high for formal cooperation.

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List of Abbreviations

ARECOMS	Autorité pour la Régulation et le Contrôle des Marchés des Substances Minérales Stratégiques Ministry of Mines
ASM	Artisanal and small scale mining
BGR	Bundesanstalt für Geowissenschaften und Rohstoffe
C4D	Cobalt for Development
CAMI	Cadastre Minier (Mining Cadastre Authority)
CSDDD	Corporate Sustainability Due Diligence Directive
CSRD	Corporate Sustainability Reporting Directive
DG INTPA	Directorate-General for International Partnerships (European commission)
DRC	Democratic Republic of the Congo
EGC	Entreprise Générale du Cobalt
EU	European Union
FCA	Fair Cobalt Alliance
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HREDD	Human Rights and Environmental Due Diligence
HSE	Health, Safety, and Environment
LkSG	Lieferkettensorgfaltspflichtengesetz/ German Supply Chain Due Diligence Act
LSM	Large-Scale Mining
M&E	Monitoring and Evaluation
OECD	Organisation for Economic Co-operation and Development
PPE	Personal Protective Equipment
SOPs	Standard Operating Procedures
USAID	United States Agency for International Development
ZEAs	Zones d'Exploitation Artisanale

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