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Marianna Lunardini and Emmanuel Vaslin

Beyond Mineral Traceability along the Lobito Corridor: Harnessing Digital Tools for Social Traceability in Congolese Mining

- While tracking minerals digitally helps curb illicit trade, true sustainability requires 'social traceability': digital tools and territorial data can be used to monitor community needs, school retention and child protection in mining regions.
- Infrastructure initiatives such as the Lobito corridor must go hand-in-hand with local socio-economic safeguards: this is to ensure that economic growth and connectivity actively benefit local communities rather than intensifying regional pressures.
- Early data-mapping frameworks in greenfield mining sites (such as the EGC Tombolo project) could help identify educational vulnerabilities and child labour risks before mining expands, ensuring accountability and long-term protection.

The Democratic Republic of the Congo (DRC) sits at the heart of the global green transition. It is the world's leading provider of cobalt and ranks among the top producers of copper and other critical raw materials (CRMs). As global demand accelerates, international infrastructure initiatives like the Lobito Corridor are being backed by international partners such as the EU and the US, as part of their strategy to diversify partnerships for strategic goods. Both international actors have signed specific CRM agreements with DRC, and – through the Lobito Corridor project – they aim to integrate regional supply chains and streamline mineral transport from Southern Africa to global markets. The Lobito Corridor is presented as a catalyst for regional development in DRC, Zambia and Angola. However, the new CRM agreements will be implemented in a socio-economic context where mines place significant pressure on local communities. Child labour, informal mine employment and high school dropout rates are obstacles to socio-economic development in the country.[1]

The EU and EU member states, such as Italy, link their participation in the Lobito Corridor initiative to the promotion of sustainability and socio-economic growth in the region, alongside strict adherence to environmental, social and

1 AFP, "Congolese Children Trade Life as Miners for Chance at School", in *Africa Defense Forum*, 12 August 2022, https://adf-magazine.com/?p=35036; Vaslin, Emmanuel, "Educational Data: The Raw Material for Accountability in the Congolese Mining Regions", in *IIEP-UNESCO Blog*, 6 July 2026, https://etico.iiep.unesco.org/en/node/9023.

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Marianna Lunardini is Research Fellow on development cooperation in the 'Geoeconomics and global governance' programme at IAI. ✉ m.lunardini@iai.it

Emmanuel Vaslin is an international education expert. He served for four years as education policy adviser to the Minister of Education of the DRC (Expertise France, AFD) and is currently a consultant to the Entreprise Générale du Cobalt (EGC) on its socio-educational initiative. ✉ emmanuelvaslin@yahoo.fr

governance (ESG) standards. To achieve these goals, digital tools can play an important role. The DRC is actively deploying digital governance tools, aiming to ensure responsible sourcing and curb illegal mining. In 2026, it launched the E-trace platform, a digital mineral traceability system to track minerals from the extraction stage through to export.[2]

But digital tools – such as mineral traceability platforms, mobile applications for local data collection, digital maps of schools and essential services, and databases and dashboards for monitoring community needs, interventions and outcomes – can do much more than tracing minerals. For instance, they could support a complementary form of "social traceability": tracking community needs, public and private commitments, actions taken and their impact over time. This would extend the focus beyond child labour to encompass access to education, school retention, early childhood care and child protection in mining communities. Linking territorial data with concrete action and regular reporting could help public and private stakeholders identify gaps, coordinate responses and assess whether commitments translate into improvements in local communities, especially in children's lives. Digital tools could be used alongside infrastructure projects to support social accountability and child protection, track local social impacts and enhance a rights-based approach to strategic infrastructure.

The strategic imperative: Critical minerals, governance reforms and the Lobito Corridor

» The DRC is home to vast reserves of copper and cobalt

The DRC is home to vast reserves of copper and cobalt, supplying approximately 75 per cent of the world's cobalt alongside substantial reserves of other critical raw materials.[3] The country produces considerable amounts of diamonds, gold, manganese and tantalum, making it a key partner in the green transition at the global level. As global demand for CRMs accelerates, the DRC is collaborating with regional and international partners to advance its mining industry while driving sustainable development in the country's primary mining region. International infrastructure initiatives such as the Lobito Corridor are central in its national strategy. The Lobito Corridor is supported by the European Union and the United States and involves cooperation between the DRC, Angola and Zambia to improve the integration of regional supply chains and streamline mineral transport from Zambia and DRC to Lobito. From the Angolan port, minerals can reach global markets.

The DRC's mineral wealth is estimated at over 24 US trillion dollars, making it one of the world's most resource-rich countries.[4] CRMs present in the country are indispensable for renewable technologies, electric vehicles and battery storage. Together with other African countries, the DRC is making efforts to move beyond the traditional "pit-to-port" raw export model and maximize domestic value capture.[5] This new strategy entails structural regulatory and

2 African Mining Week, *DRC's CEEC Unveils New Digital Mineral Traceability Platform*, 2 October 2025, https://african-miningweek.com/news/drcs-ceec-unveils-new-digital-mineral-traceability-platform.

3 Cobalt Institute website: *Responsible Sourcing*, https://www.cobaltinstitute.org/?p=1405.

4 AfriCapital Review, "Inside the DRC's $24 Trillion Mineral Vault", in *AfriCapital Review*, 5 July 2026, https://africapitalreview.com/drc-24-trillion-mineral-wealth.

5 Bianchi, Margherita, "Can South Africa's G20 Moment Consolidate Efforts on Just Mineral

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policy reforms, with amendments to the DRC Mining Code that raised state participation in mining projects, imposed stricter requirements for mineral processing to be undertaken locally, introduced a 50 per cent "super-profits" tax when commodity prices rise 25 per cent above feasibility estimates.[6]

The DRC's mining sector operates under a dual structure: large-scale industrial mining on the one hand, and a widespread artisanal and small-scale mining (ASM) economy on the other. ASM accounts for an estimated 6-9 per cent for the copper production, and 5 per cent of the cobalt sector, serving as a vital source of livelihood for communities living around regional mines.[7] While at the national level, the informal sector accounts for about 90 per cent of employment, the mining sector as a whole employs only 2.5 per cent of the workforce,[8] with large-scale industrial mining providing jobs for around 80,000 workers, approximately 40 per cent of whom are hired through subcontracting arrangements.[9] Working conditions vary widely depending on the company and the scale of the operation.

International partnerships with actors such as the US and EU are important for improving socio-economic conditions in the region through joint investments in infrastructure like the Lobito Corridor. Italy has supported the initiative with 320 US million dollars.[10] By connecting the Lualaba mining zone to Angola's Atlantic port of Lobito, the corridor offers a key trade route to diversify supply chains and attract international capital.[11]

» The Lobito Corridor's contribution to social development will depend on investment in surrounding communities

Social vulnerabilities and child labour

The Lobito Corridor's contribution to social development will depend on how investment responds to the circumstances of surrounding communities. While mining provides essential livelihoods, its development can also intensify existing pressures on households, schools and local services. These dynamics vary across territories and require locally grounded responses. The initial assessment of communities surrounding Tombolo, a greenfield site of the Entreprise Générale du Cobalt (EGC),[12] identified educational vulnerabilities even before mining operations began, highlighting the importance of

Supply Chains?", in *IAI Commentaries*, No. 25|50 (July 2025), https://www.iai.it/en/node/20431.

6 Logan, Sarah, "Mining in DRC and Ghana: A Legal Overview", in *IAI Papers*, No. 26|11 (July 2026), https://www.iai.it/en/node/22710.

7 Ombeni, Alain et al., *Artisanal and Small-scale Mining of Copper and Cobalt in 2025. Mapping of Artisanal Mine Sites in the Provinces of Haut-Katanga and Lualaba, DR Congo*, Hannover, Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), July 2026, p. 3-4, https://doi.org/10.25928/qkye-9y38.

8 World Bank, *Democratic Republic of Congo Economic Update, October 2026: The Missing Link: When Firms Thrive, Jobs Follow*, Washington, World Bank, October 2026, p. 4, https://doi.org/10.1596/45804.

9 Mufungizi, Innocent, "A Review of Circular Economy Approaches in the Mining Sector of the Democratic Republic of Congo for Responsible Resource Exploitation and Sustainable Development", in *Discover Geoscience*, Vol. 4 (2026), article 207, https://doi.org/10.1007/s44288-026-00589-0.

10 Miriri, Duncan, "Africa Finance Corp. to Sign $320 million Deal with Italy to Bolster Lobito Funding", in *Reuters*, 5 June 2025, https://www.reuters.com/world/africa/africa-finance-corp-sign-320-million-deal-with-italy-bolster-lobito-funding-2025-06-05.

11 Lunardini, Marianna and Filippo Simonelli, "What Role for Italy's Infrastructure Diplomacy? Lessons from the Lobito Corridor", in *IAI Briefs*, No. 26|02 (February 2026), https://www.iai.it/en/node/21523.

12 A Congolese state-owned company mandated to purchase, process and market artisanally mined cobalt. See the official website: https://egcobalt.cd.

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prevention. Addressing child labour requires attention to household economic constraints, the costs and accessibility of schooling, school capacity, early childhood care and adolescents' prospects. Transparency frameworks such as the Extractive Industries Transparency Initiative can support stronger governance, while effective education and child protection also require coordination among public authorities, companies, schools and communities, backed by adequate resources.[13] Within this framework, digital tools could support social traceability by making needs, commitments, interventions and their outcomes visible over time. Their value would lie in helping these actors translate information into coordinated action and assess whether the development associated with the corridor improves children's lives.

» *The scale and characteristics of child labour in mining remain difficult to establish precisely*

The scale and characteristics of child labour in mining remain difficult to establish precisely. A widely cited UNICEF estimate put the number of children working in the DRC's mines at around 40,000 in 2014, a figure covering all minerals and now more than a decade old.[14] In a publication dated November 2024, the International Labour Organization (ILO) reported that over 6,200 children had been identified as working in mines in Haut-Katanga and Lualaba.[15] These figures are not directly comparable. Available estimates need to be assessed against their dates, geographical coverage, definitions and methods. Which sites and minerals do they cover? Which activities are children engaged in, at what ages and under what conditions? How do patterns differ by sex, location and type of work? These questions underline the need for robust primary data, collected through locally grounded information systems with clear definitions, appropriate safeguards and regular updates. Such systems could support efforts to formalise the mining sector by identifying risks, coordinating educational and protection interventions, and monitoring their outcomes.

Different mining settings also require different approaches. Greenfield projects, where a new mining operation is being developed, offer an opportunity to act before production begins and associated risks become established. Tombolo was approached in this way during the initial socio-educational assessment. Although the planned operation had not yet started, surrounding villages, families and schools were already present. The priority was therefore to identify existing vulnerabilities and anticipate additional pressures, including possible population movements and increased demand for education and other services.

A territorial approach also challenges a binary distinction between children 'inside' and 'outside' the mine. The boundary can be porous: children may participate in petty trading, carrying goods or other informal activities around mining sites. This can expose them to unsafe conditions and disrupt their schooling, even without entering an extraction area. Girls' activities and vulnerabilities can be particularly difficult to capture when data collection focuses solely on visible mining tasks. Domestic work, sibling care and

13 Mufungizi, Innocent and Yann Waku Mpaka, "Transforming Resource Wealth into Sustainable Futures: ESG Integration in the Democratic Republic of Congo's Mining Sector", in *The Extractive Industries and Society*, Vol. 24 (2025), article 101719, https://doi.org/10.1016/j.exis.2025.101719.

14 Amnesty International, *"This Is What We Die For": Human Rights Abuses in the Democratic Republic of the Congo Power the Global Trade in Cobalt*, January 2016, https://www.amnesty.org/en/documents/afr62/3183/2016/en.

15 ILO, *ILO Launches GALAB Project in Democratic Republic of the Congo to Address Child Labour in Cobalt Mining Sector*, 20 November 2024, https://www.ilo.org/resource/news/ilo-launches-galab-project-democratic-republic-congo-address-child-labour.

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informal services should therefore be examined alongside activities directly associated with extraction.

Removing children from dangerous mining work and preventing their involvement remain essential objectives. Lasting protection also requires expanding their opportunities beyond the mining economy. Access to education, safe spaces, cultural and sporting activities, and credible training pathways can help children imagine and pursue different futures. The ambition is both to keep children away from hazardous mining activities and to ensure that mining does not define the limits of their aspirations. Social traceability should support this broader understanding of children's circumstances and prospects.

According to the Organisation for Economic Co-operation and Development (OECD), international and national stakeholders should work to avoid the risk that the Lobito Corridor could "exacerbate labor rights violations if oversight remains inadequate". This effort requires effective governance by all the actors involved alongside a solid regulatory framework.[16] The Lobito Atlantic Railway, the joint venture responsible for implementing the project,[17] has a policy that prohibits the employment of people under sixteen and is collaborating with the World Bank to implement specific requirements to protect people under eighteen from being employed in hazardous work, and without appropriate risk assessment and regular monitoring of health, working conditions and hours of work.[18]

Digitalisation as a tool for mineral traceability and educational accountability

» To clean up supply chains and eliminate illegal practices, the DRC and its partners are turning to digital solutions

To clean up supply chains and eliminate illegal practices, the DRC and its partners are turning to digital solutions.[19] In 2026, the Congolese certification agency CEEC (Centre d'Expertise, d'Evaluation et de Certification) launched the E-trace platform, to track minerals digitally from the mine site to the export point while curbing illicit trade and financial flows.[20] The platform is also intended to support the formalisation of artisanal mining by verifying responsible sourcing and compliance with international ESG standards. This approach could also be applied along the Lobito Corridor, supporting broader social development in the region beyond mining.

The EGC's mandate is to structure a responsible artisanal cobalt supply chain that meets social, environmental and traceability standards. Its socio-educational initiative extends this logic to the territories where mining takes place. Around its Tombolo site in Lualaba, EGC has developed an initial mobile mapping tool that brings together information on surrounding villages,

16 OECD, "The Lobito Corridor (draft)", in *OECD Background Notes*, April 2025, p. 10, https://www.oecd.org/content/dam/oecd/en/events/2025/04/oecd-emerging-markets-forum/Panel%202_OECD%20EMF%20Background%20Note%20-%20The%20Lobito%20Corridor.pdf.

17 A joint venture between three European companies, Trafigura, Mota-Engil and Vecturis.

18 Multilateral Investment Guarantee Agency (MIGA), *Lobito-Luau Railway Corridor Project: Environmental and Social Review Summary*, November 2024, https://www.miga.org/node/3096.

19 African Mining Week, *DRC's CEEC Unveils New Digital Mineral Traceability Platform*, cit.; Clynch, Harry, "DRC Plans Mining Reform as Critical Minerals Take Centre Stage", in *African Business*, 15 June 2026, https://african.business/2026/06/resources/drc-plans-mining-reform-as-critical-minerals-take-centre-stage.

20 Vandome, Christopher and Romane Dideberg, "The Lobito Corridor Shows How Digitization Is Shaping Critical Minerals Competition", in *Chatham House Expert Comments*, 20 July 2026, https://www.chathamhouse.org/node/38830.

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schools and essential services. Combined with locally collected data on school enrolment, teaching capacity and early childhood needs, this approach provides a basis for identifying vulnerabilities and prioritising interventions. The approach highlights how educational data can provide a foundation for accountability in Congolese mining regions.[21] The further development of the project aims to connect regularly updated information with decisions on school facilities, learning materials, teaching support and child protection, in coordination with public authorities and communities. The objective is to make social traceability a practical component of mining formalisation: documenting needs, assigning responsibilities, tracking commitments and assessing whether interventions improve children's access to education and protection.

Conclusions

» Infrastructure projects like the Lobito Corridor offer vital pathways for economic integration and trade

As the global green transition accelerates demand for critical raw materials, infrastructure projects like the Lobito Corridor offer vital pathways for economic integration and trade. However, without forward-thinking governance, resource extraction risks intensifying socio-economic pressures on local communities, particularly regarding child labour and access to education. Mineral traceability alone is insufficient to address these deep-seated challenges. To ensure that strategic investments translate into genuine local development, international partners and local authorities must embrace social traceability. By leveraging digital governance tools, such as mobile mapping and territorial data collection, stakeholders can transparently track community needs, monitor school retention and coordinate targeted interventions from the earliest greenfield stages. Combining infrastructure development with a digital, rights-based approach could help the DRC's mineral wealth support sustainable development for local communities far beyond the mine.

Building on this analysis, international partners supporting the Lobito Corridor, including the EU, Italy and the US, should:

- Include social and educational indicators (school enrolment and retention, early childhood care, child protection) in the monitoring frameworks attached to corridor financing;
- Support locally grounded data systems developed with Congolese education and social authorities, so that information collected around mining sites feeds public planning rather than parallel reporting;
- Require an ex-ante socio-educational baseline for greenfield mining and infrastructure sites, before production or construction begins;
- Ensure that data are disaggregated by sex and age, and capture activities around mining sites as well as within them;
- Apply strict safeguards for children's data, including consent, data minimisation and controlled access.

Tracing minerals is only the first step. Truly responsible supply chains must also account for their impact on the communities and children whose lives are shaped by mining.

21 Vaslin, Emmanuel, "Educational Data", cit.

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Via dei Montecatini, 17
I-00186 Rome, Italy
T +39 06 6976831
www.iai.it

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