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Guide to using EITI data for traceability

A tool for developing domestic mineral traceability systems

October 2026

This guide, commissioned by the Extractive Industries Transparency Initiative (EITI), was produced by Dr Hany Besada through a co-creation process involving consultations, workshops and in-country pilot studies with members of the EITI Transition Minerals Network. The EITI is grateful to the governments and EITI national secretariats of Indonesia and the Philippines for hosting in-country pilot studies, and to partners at the International Peace Information Service (IPIS) and Organisation for Economic Co-operation and Development (OECD) for their feedback in the development of this guide.

Published October 2026

Table of contents

About this guide 3

Step 1: Laying the groundwork 5

Step 2: Assessing current capacity for traceability 8

Step 3: Developing a domestic traceability system 11

Pathway 1: Foundation 12

Pathway 2: Integration 15

Pathway 3: Optimisation 18

Step 4: Disclosing information on traceability systems 21

Additional resources 24

About this guide

This guide provides practical guidance for governments and EITI multi-stakeholder groups (MSGs) on using EITI data to support the design, implementation and oversight of domestic mineral traceability systems.

Growing demand for low-carbon, digital and defence technologies is reshaping the strategic importance of minerals such as copper, cobalt, lithium, nickel, graphite and rare earth elements. This demand creates opportunities for producing countries to attract investment, increase public revenues and strengthen their participation in global supply chains. At the same time, it can heighten governance risks by increasing incentives for corruption, smuggling, false declarations and other illicit financial flows.

Producer countries therefore face a dual imperative to capture economic opportunities while strengthening domestic oversight of how minerals are produced, traded and taxed. Meanwhile, buyers, regulators and downstream industries are also placing greater emphasis on responsible sourcing, reliable production data and resilient, transparent supply chains.

Traceability systems can help governments improve oversight of mineral flows by increasing visibility over production, trade and payments. They can also support better revenue collection, reduce opportunities for smuggling and strengthen public confidence in the governance of the sector. Credible domestic traceability systems help countries attract responsible investment as well as respond to due diligence and traceability expectations in global commerce, thereby supporting market access.

EITI disclosures can provide an important foundation for traceability efforts. Information on licenses, production, exports, payments to government, contracts and beneficial ownership – among other disclosures – can help governments reconcile information across agencies and strengthen oversight throughout the mineral supply chain. In many cases, countries can build on existing EITI disclosures and related government data systems – such as license cadastres, registers and databases – rather than starting from scratch.

However, the design and implementation of traceability systems involves both technical and governance-related challenges. Effective systems depend on clear institutional roles, coordination across relevant agencies, transparent rules and incentives for participation by different types of operators, including those involved in artisanal and small-scale mining (ASM). Strong and transparent governance arrangements are essential to ensuring technical solutions are effective, credible and sustainable over the long term.

Countries vary in their institutional readiness, digital capacity and policy frameworks, making a phased and context-sensitive approach essential. Many may choose to begin with a priority commodity, a particular segment of the supply chain or a defined group of operators before gradually expanding coverage. This can help manage complexity; build institutional capacity as well as learning; and enable a more effective inclusion of ASM actors and other harder-to-reach parts of the supply chain.

Rather than provide a one-size-fits-all model, this guide outlines three practical pathways for design and implementation of mineral traceability systems for countries at different starting points. The guide also outlines best practices for disclosing information on the structure and operation of traceability systems, which is essential to ensure accountability, public confidence and international credibility.

How to use this guide

This guide provides practical instructions for governments and EITI MSGs on how to use EITI implementation to advance domestic mineral traceability objectives. It sets out three practical pathways to help countries design, strengthen and scale traceability systems at different stages of policy development by making better use of EITI disclosures alongside other data: Foundation, Integration and Optimisation.

Steps



1 Laying the groundwork

HOW TO USE

Understand key concepts and data points. Develop an understanding of what traceability entails, the different types of traceability mechanisms and how EITI data can support traceability efforts.



2 Assessing current traceability capacity

HOW TO USE

Assess the starting point and identify the relevant pathway. Undertake an assessment of legal, institutional, data and transparency arrangements in collaboration with relevant government agencies and stakeholders. Use the findings to select the pathway that best reflects the country context.



3 Developing a domestic traceability system

HOW TO USE

Implement priority actions. Carry out priority actions for the selected pathway, drawing on EITI disclosures. Each pathway also includes actions to support alignment with international due diligence expectations, as well as a country example illustrating how the guidance can be applied in practice.



4 Disclosing information on traceability systems

HOW TO USE

Strengthen transparency and oversight. Disclose how traceability arrangements operate, the key data generated and the results of data reconciliations. Use the EITI MSG to provide continuous oversight and accountability.

Step 1: Laying the groundwork

Defining traceability

For the purposes of this guide, traceability is the ability to track and verify four types of information about minerals as they move through the supply chain:

1. **Origin:** where the minerals were extracted or sourced
2. **Geographical route:** the locations and pathways involved in processing, transport and transit
3. **Chain of custody:** the sequence of entities that have possessed or handled the material
4. **Physical evolution:** how the material changes through the processing and transformation stages

According to the OECD and the International Energy Agency (IEA), a mineral is considered traceable when the four elements above can be verified with a sufficient degree of confidence.[1] This will depend both on the reliability of the information recorded as well as the integrity of the traceability system itself. In practice, traceability mechanisms may capture different types of information depending on their intended purpose. Some systems also incorporate data on environmental, social and regulatory performance. Traceability systems use different methodologies to capture information, commonly divided into physical and documentation-based mechanisms (see Table 1).

It is important to distinguish between domestic traceability systems and supply-chain traceability mechanisms. Domestic systems are generally designed to support government objectives, such as production monitoring, revenue collection and sector oversight. Supply-chain traceability mechanisms are typically used by companies to support responsible sourcing and manage supply-chain risk.

Although they tend to serve different purposes, domestic traceability systems can provide a valuable foundation for meeting the due diligence expectations of companies. Traceability systems that facilitate access to credible licensing, beneficial ownership and payment data can support companies to assess governance risks. While these systems do not replace company-level due diligence responsibilities, they can reduce information gaps for downstream users and strengthen a country's position in international markets.

While focusing on the design of domestic systems, this guide also highlights areas of possible alignment with international due diligence frameworks, such as the OECD Due Diligence Guidance for Responsible Business Conduct (OECD RBC Guidance) and OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD Minerals Guidance).[2]

1 IEA and OECD (2025). *The Role of Traceability in Critical Mineral Supply Chains.* Retrieved from https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/02/the-role-of-traceability-in-critical-mineral-supply-chains_4e5cc44a/edb0a451-en.pdf.

2 OECD (2018). Due Diligence Guidance for Responsible Business Conduct. Retrieved from https://www.oecd.org/en/publications/oecd-due-diligence-guidance-for-responsible-business-conduct_15f5f4b3-en.html. OECD (2016). *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.* Retrieved from https://www.oecd.org/en/publications/oecd-due-diligence-guidance-for-responsible-supply-chains-of-minerals-from-conflict-affected-and-high-risk-areas_9789264252479-en.html.

Table 1: Common traceability methods

APPROACH	WHAT IT INVOLVES	COMMON APPLICATION
Physical traceability	Tracks the material itself, using quantity controls, separate handling or material verification. This includes mass balance (reconciling the quantities entering and leaving a site); segregation and identity preservation (keeping material from specific sources separate); and mineral fingerprinting (geochemical or isotopic material verification).	Used to demonstrate provenance and support for responsible sourcing claims (including for premium markets) and by governments to monitor volumes at defined control points.
Documentation-based traceability	Tracks minerals through records such as production declarations; proof of transactions between supply-chain actors; transport permits; and customs release documents, without verifying the material itself. This includes custody-chain documentation (recording the sequence of entities which have handled the material).	Common in domestic government systems focused on production monitoring, revenue collection and export oversight (for example, Indonesia's SIMBARA). Also widely used by companies to support supply-chain due diligence.

Mapping relevant EITI disclosures

EITI implementing countries already disclose data that provides a strong foundation for traceability system design. These disclosures can help answer key questions, such as who is licensed to produce; how much is produced and exported; who owns or controls operations; and what payments are made. EITI MSG processes can also promote transparency around how a traceability system operates, strengthening public legitimacy and international credibility.

However, EITI data also has limitations for traceability purposes. Much of it is published annually, creating a time lag, and government-generated data may not be independently verifiable. Countries should therefore use EITI data alongside other data sources and cross-check this information. Such sources could include customs records, transport permits, processing data, geological information and registries of ASM cooperatives and trading entities.

Table 2: Using EITI disclosures for traceability

TRACEABILITY FUNCTION	RELEVANT EITI DISCLOSURES	WHAT THIS CAN SHOW	PRACTICAL CONSIDERATIONS
Mapping operators and projects	Licensing and contract data (EITI Requirements 2.2, 2.3 and 2.4), including mining cadastres and license registries	Who holds mining rights, where licenses are located, what is mined, license status and duration; and contracting parties	Countries may wish to link licensing data with beneficial ownership information as well as registries of ASM cooperatives and trading entities to improve operator visibility
Identifying beneficial owners	Beneficial ownership disclosures (EITI Req. 2.5), including company registries where applicable	Who ultimately owns or controls extractive companies and other legal entities, including cooperatives and associations	Machine-readable formats, verification processes and linkages with licensing data improve practical use for screening and risk analysis
Establishing a production baseline	Production data (EITI Req. 3.2)	Reported production volumes and values by commodity, operator and project	Reporting is most useful where commodity form (ore, concentrate, refined product) is clearly specified and reporting formats are standardised
Collecting data on exports	Export data (EITI Req. 3.3)	Reported export volumes, values, destinations and trends in formal mineral trade	Traceability is strengthened by linking export data to production declarations, licensing records and customs reporting where feasible
Improving oversight of ASM production	Production and export data related to the ASM sector (EITI Req. 3.2 and 3.3)	Estimated ASM production and export volumes and values (the share entering recorded trade channels)	ASM visibility can be strengthened through adapted reporting, ASM registries, buying stations, cooperatives or other context-appropriate arrangements
Verifying tax compliance and reconciling revenue data	Payments to government (EITI Req. 4.1, 4.2 and 4.3)	Reported payments by companies, the government entities receiving each payment and corresponding government revenues, disaggregated by company and project	Production and export data can help to identify payment anomalies by indicating instances of under-invoicing or unreported sales
Mapping supply chains and state involvement	Transport (EITI Req. 4.4) and state participation disclosures (EITI Req. 2.6)	Transport arrangements, including payments, routes and the entities involved, as well as the roles of state-owned enterprises in purchasing, transport, processing and export	Although this goes beyond what is outlined in the EITI Standard, countries may expand reporting to processors, smelters, refiners and other intermediate actors in the supply chain to advance traceability
Assessing environmental and social risks	Disclosures on emissions as well as social and environmental payments and impacts (EITI Req. 3.4, 6.1 and 6.4)	Project-level emissions, social and environmental impacts and related company payments	Useful for addressing downstream due diligence expectations related to environmental and social performance

Step 2: Assessing current capacity for traceability

Using this diagnostic

Before designing or strengthening a traceability system, it is helpful to develop a shared understanding of the country's starting point. This diagnostic helps governments, EITI MSGs, national secretariats and other relevant institutions to identify the relevant pathway to follow in Step 3 on system design.

Countries can complete the diagnostic collaboratively, for example, through a workshop involving the EITI MSG as well as the institutions responsible for mineral sector oversight, revenue administration, customs, public financial management and EITI implementation, as relevant data and responsibilities are typically spread across multiple agencies. The exercise is best approached as a structured dialogue on sector governance rather than a technical checklist, helping to clarify roles and responsibilities and build a shared understanding of priorities for action.

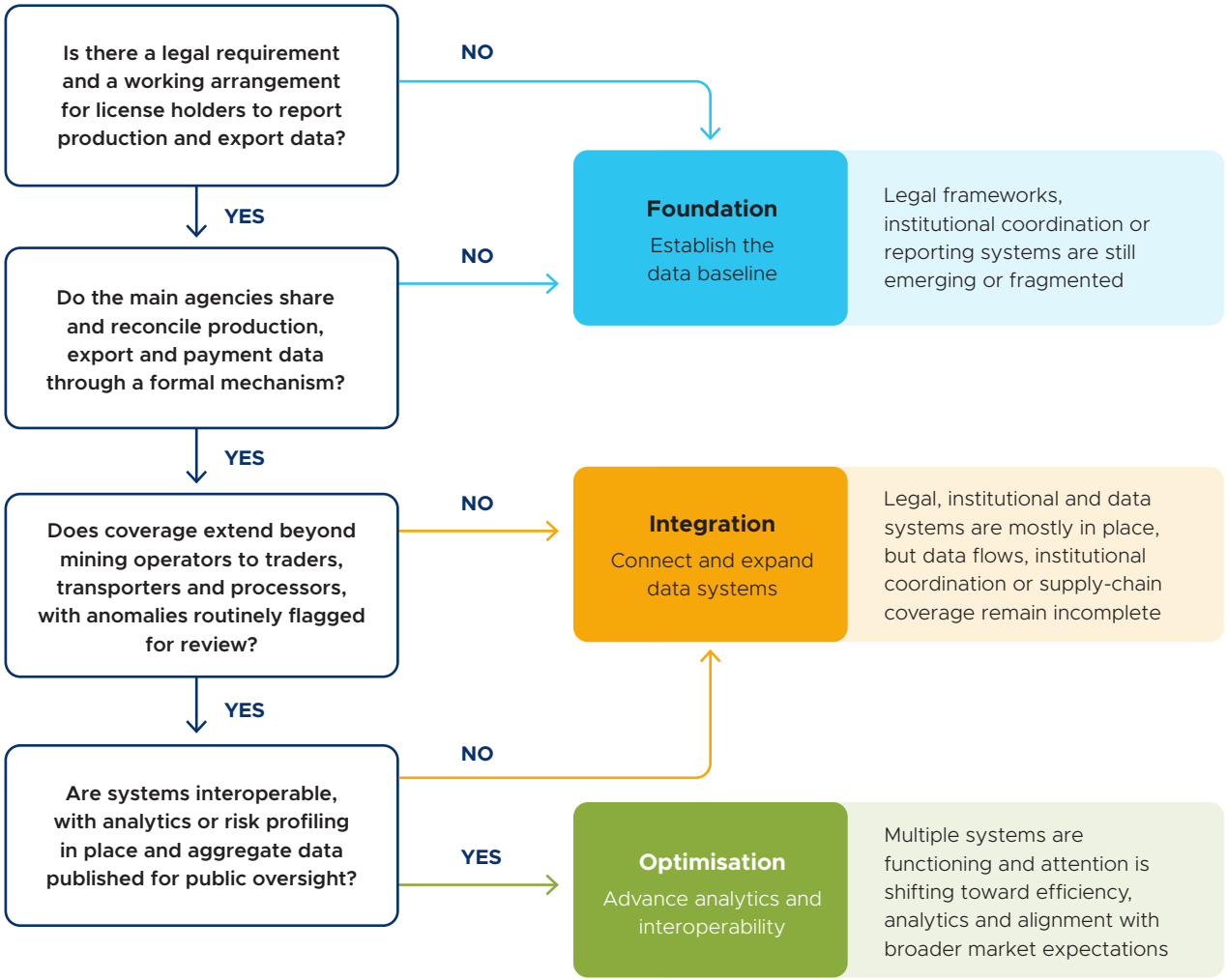
Self-assessment checklist

The diagnostic self-assessment helps countries reflect on their current traceability readiness across four dimensions: legal and regulatory foundations; institutional coordination; data systems and coverage; and transparency and public disclosure.

Identifying your pathway

After reviewing the diagnostic questions, countries can consider which of the following broad pathways most closely reflects their current situation. These pathways are intended as practical reference points rather than fixed categories. Countries may recognise characteristics from more than one pathway across different parts of their mineral governance system. In such cases, it will be useful to focus on the area that presents the most immediate constraint to improving traceability.

Start at the first question and follow the answers. The result is a starting point, not a fixed classification.



PRIORITIES FOR NEXT STEPS

- Strengthen basic reporting arrangements and enhance digitisation
- Clarify institutional roles
- Use existing EITI disclosures to build a data baseline
- Pilot traceability for one priority commodity or reporting function

PRIORITIES FOR NEXT STEPS

- Improve coordination across systems
- Strengthen data sharing
- Extend coverage to additional actors such as traders, transporters, processors or ASM actors, where relevant
- Improve reconciliation and oversight

PRIORITIES FOR NEXT STEPS

- Strengthen analytics and risk management
- Improve interoperability across systems
- Expand commodity coverage where needed
- Enhance transparency and public reporting

LEGAL AND REGULATORY FOUNDATIONS

Key questions to assess:

- Are there legal requirements for companies to report relevant data, and are these effectively enforced? Are relevant EITI requirements complied with?
- Are reporting obligations applied to different types of operators, including ASM actors?
- Are there proportionate compliance mechanisms, including procedures for correcting information? Are there appropriate penalties for non-compliance?
- Is digital information legally recognised, including traceability records, unique mineral or shipment identifiers and electronic submission of traceability data?

Data sources: national mining legislation (EITI Req. 2.1); EITI reporting on production, export and revenue data (EITI Req. 3.2, 3.3 and 4.1); customs records; national electronic transactions and digital signature legislation

INSTITUTIONAL COORDINATION

Key questions to assess:

- Is there a clearly identified institution responsible for coordinating mineral data oversight?
- Are institutional roles and responsibilities clearly understood across agencies?
- Do relevant institutions exchange production, export, revenue or licensing information on a regular basis?
- Does the EITI MSG have sufficient visibility of traceability-relevant data to support public oversight, analysis and recommendations, and to advance inter-agency coordination?

Data sources: EITI reporting on roles and responsibilities in the mining sector (EITI Req. 2.1 and 2.6); EITI MSG work plans; inter-agency data-sharing agreements; records held by the ministry of mines, mining cadastre, revenue authority and customs authority

DATA SYSTEMS AND COVERAGE

Key questions to assess:

- Does the government have effective systems to collect production and export data, including practical reporting options for remote mining areas and ASM operators?
- Do mineral licensing systems contain current, verified and digitally linkable records of each license's holder, operator, geographic boundaries and beneficial ownership information?
- Can data on production, transport, processing and exports be matched and compared across government systems?
- Do existing systems capture any relevant intermediaries, such as traders, suppliers or processors?
- Are data-quality controls and reconciliation procedures in place to identify, correct and investigate duplicate, missing or inconsistent records, as well as any discrepancies between company and government data on production, exports and payments?

Data sources: cadastres and licensing systems (EITI Req. 2.2 and 2.3); beneficial ownership registries (EITI Req. 2.5); ASM registries; EITI reporting on production, export, revenue and transport data (EITI Req. 3.2, 3.3, 4.1 and 4.4); customs records; transport permits; trading registries; business registries

TRANSPARENCY AND PUBLIC DISCLOSURE

Key questions to assess:

- Is licensing, contract, ownership, production, export and fiscal data publicly disclosed?
- Is information on rules, reporting requirements and institutional responsibilities related to oversight of mineral production and exports publicly available?
- Is disclosed data easily accessible and usable for different stakeholder groups?
- Are known weaknesses, barriers and gaps – such as in coverage or data quality – publicly disclosed, along with plans to address them?

Data sources: EITI Validation reports; right to information legislation; national mining legislation (EITI Req. 2.1); mineral licensing systems (EITI Req. 2.3); contract disclosures (EITI Req. 2.4); beneficial ownership registries (EITI Req. 2.5); EITI reporting on production, export and revenue data (Req. 3.2, 3.3 and 4.1); EITI reports and MSG work plans

Step 3: Developing a domestic traceability system

Foundational design principles

Traceability does not require a highly sophisticated end-to-end system from the outset. Rather than follow a one-size-fits-all model, traceability systems should be risk based, incremental and tailored to national circumstances. By building on existing institutional systems and available data sources, countries can strengthen oversight of production, exports and payments. Countries can then progress to integrating complementary data. The aim is to use existing data more strategically, rather than to create entirely new reporting systems.

The design of traceability systems should be guided by the following principles, which are relevant regardless of the pathway a country follows:

FIT-FOR-PURPOSE DESIGN. Traceability systems should be tailored to specific policy goals and data uses. Data should support decision-making, compliance, oversight and market-facing traceability needs. These systems should not exist solely for reporting purposes.

USE OF EXISTING DATA SYSTEMS. Governments should leverage available data sources, including EITI disclosures, to reduce duplication and strengthen transparency.

INTEROPERABILITY. Systems should be designed to connect across agencies and data platforms through common identifiers and broad data-sharing arrangements.

RISK-BASED PRIORITISATION AND SCALABILITY. Focus should be placed on key commodities, regions and supply-chain vulnerabilities where traceability can add the greatest value. Countries can then expand coverage across minerals and supply-chain segments over time.

PRACTICAL USABILITY. Reporting arrangements should be workable for operators in practice, including for smaller producers and ASM actors.

INSTITUTIONAL AND FINANCIAL SUSTAINABILITY. Systems should have clear institutional ownership and realistic long-term arrangements for financing operation, maintenance and upgrades.

Pathway 1: Foundation

Establishing the data baseline

Target profile

Countries in the Foundation pathway often have some mineral-related reporting systems in place, but these may be fragmented, incomplete or poorly connected across institutions. Typically in this pathway digital infrastructure is limited, institutional coordination is still developing and reporting coverage may be uneven, particularly for ASM or remote mining areas. In these contexts, the priority should be to strengthen basic reporting; institutional coordination; and visibility into mineral production and trade, before moving toward more advanced traceability functions. Complex technology is not required from the outset – the most important early steps involve making better use of existing data and establishing reporting arrangements that can be scaled over time.

Priority actions

1. **Define the focus.** Agree what needs to be traced – for example, a priority commodity from specific producing areas – and for what purpose and which users. Identify the agencies and reporting entities that hold the relevant data and confirm who will lead the work.

2. **Strengthen the legal basis for reporting.** Assess gaps and inconsistencies in existing laws and regulations, establishing: who must report information; what information should be provided; how often this must be done; and what compliance mechanisms apply. Prioritise addressing the most significant gaps in relation to the established objectives.

3. **Use existing EITI disclosures and validation findings to identify gaps and establish a data baseline.** Review EITI disclosures on production, exports, payments and licensing. Compare these with information from other sources in order to identify discrepancies and areas requiring further coordination. As part of this, map existing data and reporting arrangements, assessing what data is collected; in which formats; by whom; and to what level of completeness, timeliness and reliability. Validation findings can be used to indicate where gaps exist and systems need improvement. Use this baseline to focus efforts on the areas where improved coordination and reconciliation would add most value.

4. **Strengthen inter-agency coordination and data sharing.** This could be done by designating a permanent coordination mechanism, involving key government institutions and with the EITI's national secretariat as an observer (see Table 3 for suggestions).

5. **Establish clear responsibilities and objectives.** The established coordination mechanism should have clear mandates, such as approving data-sharing protocols, resolving inter-agency discrepancies, reviewing anomaly findings and overseeing progress on ASM reporting. The mechanism should convene regularly – for instance, through quarterly operational meetings and a yearly strategic review – and report annually to the responsible minister and the EITI MSG. Routine data sharing can be complemented by event-driven data sharing, for example, when licenses change or serious anomalies arise.

6. **Pilot a simple reporting approach.** Test reporting arrangements on one commodity or reporting function before scaling up to identify practical issues and build institutional experience. Paper-based, mobile or basic digital reporting may all be appropriate at this stage.

> Continues on page 13

7. **Begin practical approaches for ASM registration and reporting.** Where ASM plays a significant role in the sector, start with basic registration and simplified reporting through cooperatives, buying stations, local reporting intermediaries or mobile-compatible tools. Encourage participation through practical incentives such as market access and formalisation support.

8. **Establish basic transparency arrangements.** Publish key information on the reporting arrangements– including the rules, institutional responsibilities, coverage and known gaps. Disclose available production, export and payment data through EITI reporting or government portals. Transparency is integral from the foundation stage onwards, and early disclosure helps build public trust and improve data quality.

Table 3: Suggested arrangements for inter-agency data sharing

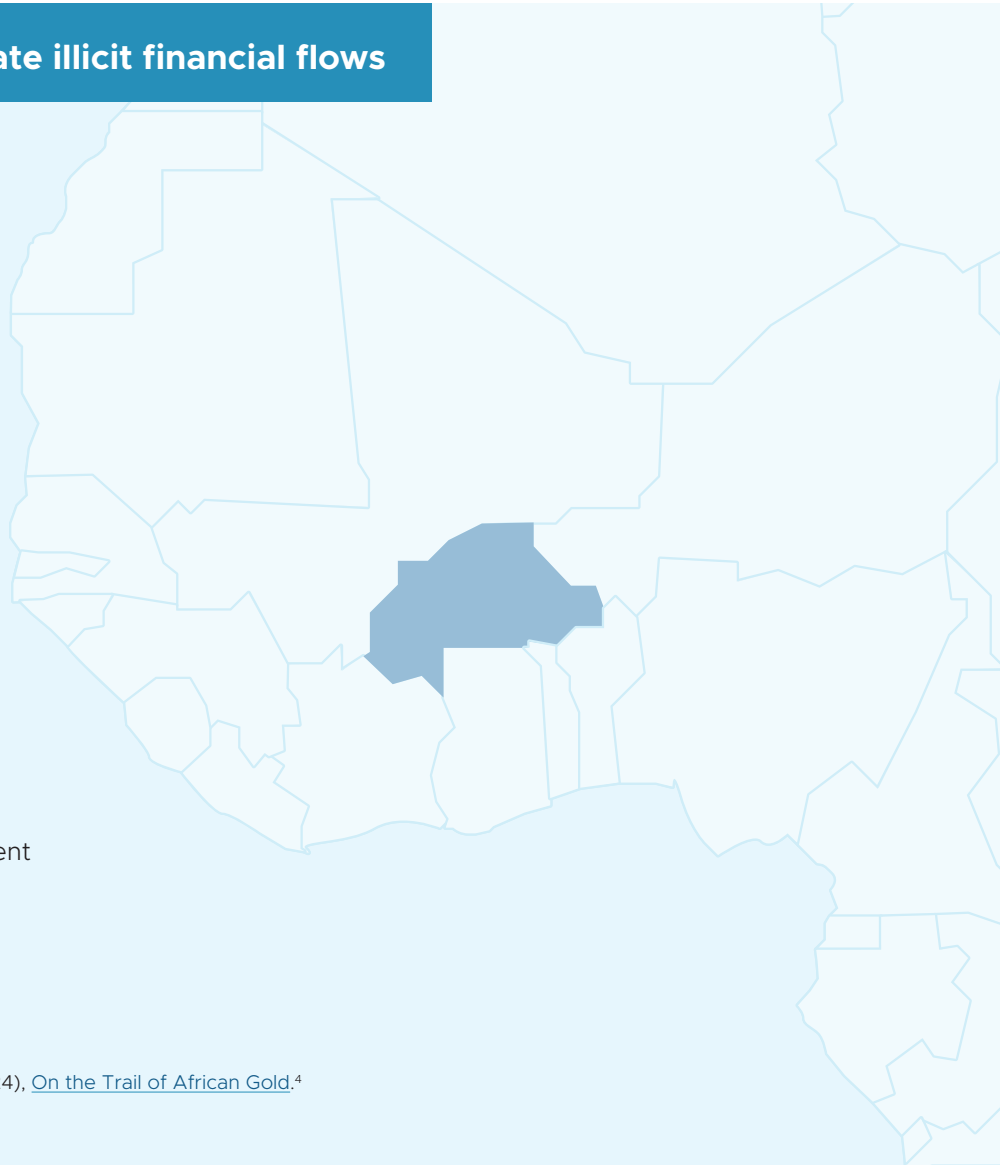
AGENCY	DATA CONTRIBUTION	SUGGESTED FREQUENCY OF SHARING WITH THE COORDINATION MECHANISM
Mines ministry	Licenses issued, renewed or revoked; production reports received; ASM registrations; processing license data	Monthly
Revenue authority	Royalty payments by company and commodity; export tax receipts; transfer pricing flags	Monthly
Customs authority	Export declarations by Harmonised System (HS) code, company, volume, weight and destination; import of processing inputs	Monthly
Central bank	Foreign exchange proceeds from mineral exports; repatriation compliance data	Quarterly
Finance ministry	Fiscal agreements including royalty rates and tax holidays; revenue forecast vs. actual	Semi-annual
EITI MSG and national secretariat	Annual reconciliation findings; anomaly alerts; civil society monitoring reports	Annual

Box 1: Burkina Faso – Using EITI export data to estimate illicit financial flows

Burkina Faso is a major gold producer with a large ASM sector, where EITI reporting provides one of few structured data sources on formal mining activity. To establish how much production escapes formal oversight, a 2024 study commissioned by Burkina Faso EITI, with support from United Nations Trade and Development, applied mirror trade analysis to compare national export declarations for key minerals with the corresponding import statistics reported by partner countries in the United Nations Comtrade database.

The study estimated USD 4.93 billion in illicit financial flows across five key minerals between 2012 and 2021, with gold accounting for 61% of the total. The findings gave the government a quantified baseline and informed recommendations on mapping corruption risks, tracking common fraud schemes through EITI reporting and strengthening regulatory oversight.

Burkina Faso's experience shows how existing data can be used to build a baseline and focus attention on one priority commodity, without new technology or reporting systems. Building on this assessment, the government has taken further steps to strengthen oversight of artisanal gold, including establishing a National Precious Substances Company (Société Nationale des Substances Précieuses) to purchase artisanal and semi-mechanised production through official channels.



Read more: EITI (2025), *Burkina Faso: Quantifying illicit financial flows in mining*;[3] SWISSAID (2024), On the Trail of African Gold.[4]

3 EITI (2025), *Burkina Faso: Quantifying illicit financial flows in mining.* https://eiti.org/data-use-case/burkina-faso-quantifying-illicit-financial-flows-mining.

4 SWISSAID (2024), *On the Trail of African Gold.* https://swissaid.kinsta.cloud/wp-content/uploads/2024/05/swissaid-on-the-trail-of-african-gold-web-ok.pdf.

Pathway 2: Integration

Connecting and expanding

Target profile

The Integration pathway is relevant to countries with existing production-reporting mechanisms; some inter-agency coordination structures; partial digital infrastructure; and emerging or early-stage traceability platforms. The key challenge is where multiple disconnected data systems exist and are not communicating. Other challenges arise where digital and manual systems coexist without effective data exchange. In these cases, significant ASM coverage gaps generally persist.

Priority actions

1. **Connect existing data systems.** Establish the governance arrangements, common identifiers and data-sharing protocols that allow the mining cadastre, revenue management system and customs declaration system to exchange and cross-validate data. Technical approaches can range from periodic structured data exchange to application programming interfaces (APIs) that enable near-real-time integration, depending on capacity and need. To avoid building a new monolithic platform, focus on developing an integration-layer which connects existing systems (see the Indonesia country example in Box 3).

2. **Extend traceability coverage to traders, transporters and processors.** Where larger operators are already covered, the next step is to bring in small and medium-scale producers as well as licensed intermediaries who handle minerals between the mine and exports, such as traders, buying agents, transporters, processors and exporters (see country example from Zambia in Box 2).

3. **Deepen ASM integration.** If basic ASM registration is in place, consider moving toward more regular production and trade reporting. This may include simplified reporting through cooperatives, buying stations, mobile-compatible tools or other arrangements suited to local conditions. At this stage, the focus should be on improving reporting quality, expanding coverage and linking ASM participation to practical formalisation incentives, such as legal market access, better pricing or access to support services.

4. **Introduce automated anomaly detection.** Configure the data system to automatically flag discrepancies. This could include production volumes inconsistent with mine size and grade data; export declarations with no corresponding production reports; payments to government which are inconsistent with declared production and applicable royalty rates; and suspicious grade or pricing data relative to commodity benchmarks. Beyond direct data mismatches, flags should also be configured for circumstances that warrant further scrutiny without presuming wrongdoing, such as entities with records of suspicious transactions appearing in a chain of transactions; commodities originating from areas associated with illegal mining or otherwise environmental or corruption concerns; and shipments routed through border points or ports associated with smuggling. Flags should always trigger review rather than automatic penalties.

(continues on page 16)

5. **Extend commodity coverage systematically.** To guide expansion of the system, consider developing and publishing a commodity scaling roadmap, with priorities established based on fiscal significance (value of production and exports); governance risk (degree of informality, known leakage patterns); and market demand (due diligence requirements of key buyers). Engage industry associations in designing the extension for each new commodity, while incorporating learnings from minerals already covered by the system. A system extension does not need to be driven by new commodities alone, but could also focus on deepening coverage of those already in the system.

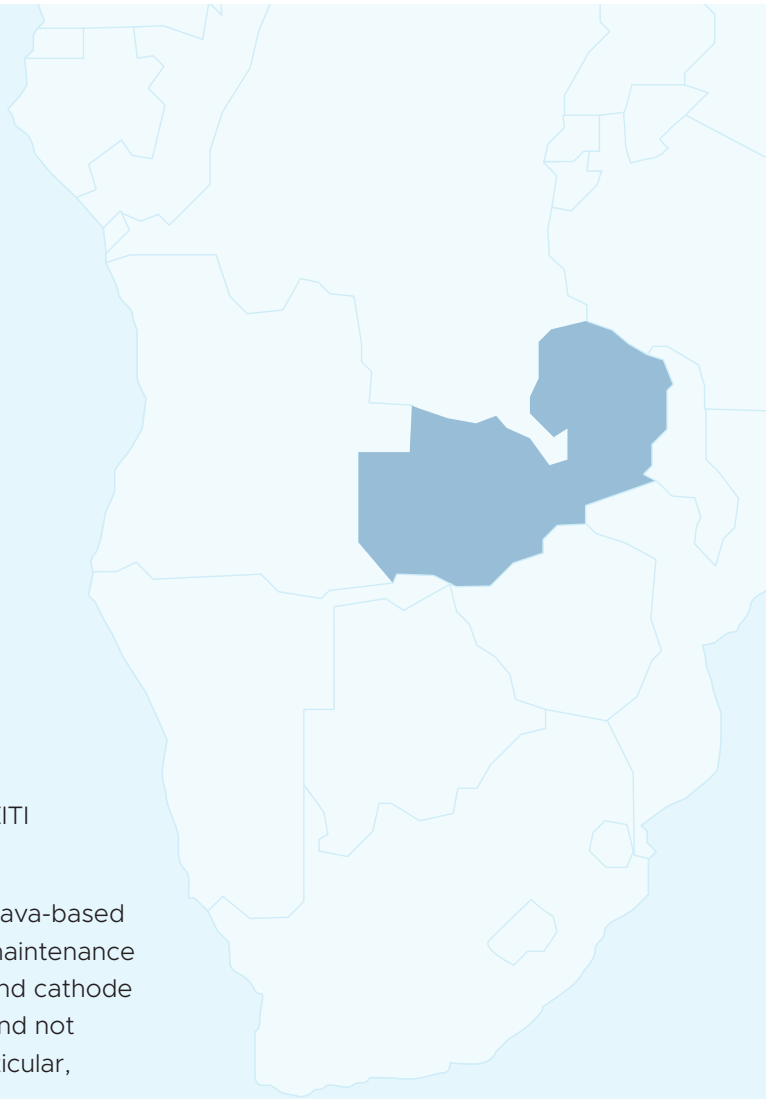
6. **Begin alignment with international due diligence frameworks.** This could include reviewing whether the documentation produced by the system can support company supply-chain controls under Steps 1 and 2 of the OECD RBC and Minerals Guidance, which focus on establishing management systems (including chain of custody documentation) and identifying supply-chain risks.[5] For instance, publishing licensing, ownership and payment data in machine-readable formats – disaggregated to company and project level – can help downstream buyers assess governance risks.[6] Disclosures from traceability systems can also support audits as well as reporting on prevention and mitigation measures under Step 4 and 5 of the OECD due diligence framework.

7. **Address market barriers.** Consider engaging with market institutions and importing jurisdictions whose rules shape demand for traceability data to identify which data gaps are most likely to constrain downstream buyers (for instance, the London Metal Exchange, the London Bullion Market Association and the European Union).

5 OECD (2018), Due Diligence Guidance for Responsible Business Conduct. Accessible at https://www.oecd.org/en/publications/oecd-due-diligence-guidance-for-responsible-business-conduct_15f5f4b3-en.html. OECD (2016), Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. Accessible at https://www.oecd.org/en/publications/oecd-due-diligence-guidance-for-responsible-supply-chains-of-minerals-from-conflict-affected-and-high-risk-areas_9789264252479-en.html.

6 *The Guide to using EITI data for due diligence* provides further information on how EITI disclosures can be used to support due diligence on mineral supply chains.

Box 2: Zambia – Mineral Output Statistical Evaluation System



Zambia is one of Africa's leading copper producers and an EITI implementing country. For several years, government agencies reported conflicting annual production and export figures. To address these discrepancies and create a single, trusted source of information on mineral output, the government developed the Mineral Output Statistical Evaluation System (MOSES), a central reporting and reconciliation platform for mineral production and exports across all license types.

MOSES covers licensed mineral actors, including large-scale miners, ASM operators, processors, traders and exporters. It tracks production, inter-company trade, toll treatment and exports. Initially introduced for copper, the system has since expanded to gemstones and has plans to cover industrial minerals and other mined materials. Automated reconciliation of production and export data allows agencies to identify and resolve mismatches rapidly, while early warnings flag any anomalies in reported figures. The platform enables cross-institutional data sharing between four key government agencies. It has also benefitted from cabinet-level buy-in, helping to enforce inter-agency collaboration.

EITI disclosures support MOSES by providing independent data points for cross-checking production and payment data, while licensing data feeds the registry. EITI beneficial ownership disclosures also support longer-term plans to integrate this information into MOSES. Zambia's EITI MSG has now begun to also use MOSES-generated data to support monitoring and oversight.

However, the system continues to face limitations. MOSES requires technical upgrading, as its Java-based architecture is becoming obsolete and a durable cross-agency governance model for system maintenance has yet to be established. The system also has limited coverage of value-added products beyond cathode and anode, and has gaps for some smelters. Registration is not linked to the mining cadastre, and not all small- and medium-scale license-holders report through the system. ASM compliance, in particular, remains low. This is due in part to concerns about taxation following formalisation.

Zambia's experience highlights several transferable lessons. Political commitment can strengthen long-term stability and inter-agency data sharing, while beginning with priority export commodities and scaling gradually can make implementation more manageable. Rather than creating a monolithic system, linking multiple agency databases may provide a more sustainable long-term approach, provided that system architecture supports future upgrades. Finally, ASM formalisation requires incentives alongside enforcement.

Pathway 3: Optimisation

Advanced analytics and interoperability

Target profile

The Optimisation pathway is relevant to countries with operational, multi-agency traceability platforms; strong digital infrastructure; active efforts to align with international due diligence frameworks; and, where applicable, active ASM engagement. At this stage, the challenge shifts from system building to system improvement: upgrading ageing architecture; extending coverage to value-added products and additional mined materials; deepening analytics; and pursuing interoperability with international due diligence frameworks and data standards.

Priority actions

1. **Build advanced data analytics and risk profiling.** This could include using a compliance model that profiles operators on two dimensions: governance and compliance risk (based on historical reporting quality, anomaly patterns and audit findings); and revenue significance (based on production volume and fiscal contribution). This enables targeted audit and inspection activities rather than blanket enforcement. Depending on the oversight functions served, additional risk dimensions may also be relevant, including environmental and social performance as well as corruption or money-laundering indicators (see country example on Indonesia in Box 3).

2. **Pursue real-time data integration and automated reconciliation.** Work to move from periodic batch reconciliation or near-real-time exchange to live data exchange between agencies, using automated reconciliation algorithms that continuously compare production declarations, export applications and payment records. The system could be configured to generate reports for human review when significant discrepancies are detected. Not all data benefits from continuous exchange – for instance, fiscal and audit data may be better suited to periodic cycles. The frequency of exchange should match the function.

3. **Extend coverage to value-added products.** Where value-addition projects exist, consider extending traceability to cover processing outputs (refined metals, alloys, battery precursors) and link mineral origin data to processed product export records. Many systems lose visibility when minerals are transformed, blended or incorporated into processed products; extending coverage to processing outputs addresses this gap.

4. **Strengthen ASM traceability and market integration.** Strengthen existing ASM reporting systems to improve data quality and connect ASM production to supply-chain traceability and due diligence systems. Depending on the country context and commodity type, this could entail linking ASM supply chains to certified sourcing schemes, market access mechanisms, risk analytics or downstream due diligence requirements.

(continues on page 19)

5. **Design for interoperability with international systems.** As the United Nations Transparency Protocol and other interoperability standards develop, consider designing system updates to accommodate common data formats and shared taxonomies for mineral types and processing stages, using open APIs that enable downstream due diligence actors to query origin and governance data.[7] This could include, for example, integrating beneficial ownership registers with the traceability platform and aligning data with the Beneficial Ownership Data Standard to support interoperability with due diligence screening tools.[8] Since aggregated and anonymised data alone may not meet requirements, a tiered-access model can be used, combining publicly available aggregate data with authenticated access to more granular records for legitimate due diligence purposes.

6. **Upgrade system architecture for sustainability and scalability.** To avoid risks of obsolete technology (a challenge described in the Zambia country example in Box 2), consider developing a technology roadmap that plans for regular system upgrades (for example, on a five-year cycle), ensuring that the system architecture is cloud-compatible and modular. It will also be beneficial to explore options for regional data infrastructure to reduce the maintenance burden for individual countries. Periodic evaluation of system performance and operating costs can guide decisions on further expansion or simplification.

7. **Publish interactive traceability dashboards.** Take steps to make aggregate, non-commercially sensitive traceability data easily accessible to the public. This could be through visual dashboards showing production trends by commodity and operator type; export volumes by form of processing and destination; anomaly rates and their resolution; and ASM coverage rates and formalisation progress. Alongside EITI Validation reports, these dashboards could help to build trust with downstream buyers and investors, while supporting civil society oversight.

7 United Nations (n.d.), UN Transparency Protocol. Accessible at https://untp.unece.org/.

8 Open Ownership (n.d.), Beneficial Ownership Data Standard (v0.4). Accessible at https://standard.openownership.org/en/main/index.html.

Box 3: Indonesia – SIMBARA digital traceability and transparency system



Indonesia is the world's largest nickel producer and a major coal and bauxite exporter. In 2022, the country established SIMBARA to replace fragmented, largely manual monitoring systems across government agencies. These systems had limited end-to-end visibility over commodity flows and created substantial compliance and corruption risks.

SIMBARA integrates ten applications across six ministries and institutions. It links standardised reference numbers to the verification of tax payments and shipments, enabling real-time cross-checks of production declarations, export applications, tax payments and shipping documents. Primarily a documentation-based system, it tracks declarations, permits and payments, rather than physically tracing minerals. Profiling taxpayers and exporters by compliance risk and revenue potential, SIMBARA helps authorities target audits and inspections. In 2024 to 2025, around 45% of royalty payments were verified through SIMBARA within 30 days of the underlying transaction. The system has strengthened compliance monitoring, reduced illegal commodity flows and supported revenue collection.

However, the system also faces challenges. Because transaction-level data must be audited before publication, information from SIMBARA is not publicly available. It does not yet fully link mine-level production to smelter sourcing, track mineral flows between processing sites or integrate beneficial ownership information.

Indonesia's experience offers several key lessons for other countries developing traceability systems. SIMBARA's implementation required sustained political commitment, substantial business-process reform and the harmonisation of data standards across agencies. Validating data at specific control points – such as shipment approvals and tax payments – can be more practical than seeking to verify every transaction centrally, while risk-based profiling can help target scarce audit and inspection resources. There is potential for EITI implementation to complement SIMBARA by enhancing transparency, supporting data reconciliation and providing multi-stakeholder oversight of the system.

Step 4: Disclosing information on traceability systems

Transparency around the functioning of a traceability system as well as the produced data is essential for enabling multi-stakeholder oversight, supporting alignment with international due diligence expectations and building public trust. EITI MSGs are uniquely well suited to support this work.

This section sets out recommended best practice for transparency around traceability systems. While some recommended disclosures align with existing EITI requirements, others go beyond the provisions of the EITI Standard and can be adopted progressively in line with national priorities, context and capacity.

Overview of transparency recommendations



1
Publish system design, scope and legal basis, including coverage gaps and plans to address these.



2
Disclose production and export data in open formats, disaggregated by company and project.



3
Reconcile production, export and payment data across multiple sources annually, and publish results.



4
Empower the MSG to conduct independent oversight of the traceability system performance, and include an assessment by the MSG in the annual EITI report.



5
Disclose how the quality and effectiveness of the traceability system is assessed.



1. Disclose system design

Governments should publicly disclose the governance arrangements and configuration of their traceability system so that downstream supply-chain actors, civil society and the wider public can understand its functioning and scope. Recommended disclosures include:

- The legal basis and institutional mandate of the traceability system, including supporting laws or regulations, responsible agencies and a description of coordination arrangements and the governance model
- The scope of reporting, including which commodities and license types are covered and the current extent of ASM reporting
- The data elements collected and their definitions, including standardised field-level documentation to enable comparison with company declarations and international standards
- The frequency of data updates and the typical lag time between the event (for example, production or export) and system update
- Known gaps and development plans, acknowledging what the system does not yet capture and outlining plans for improvements



2. Publish production and export data

Data should be published in open, machine-readable formats (CSV, JSON) as well as public-facing formats (EITI reports, government portals). Where commercial sensitivity is an obstacle, consider adopting a tiered disclosure model where aggregate data is publicly disclosed, while any particularly sensitive operator-level transaction data – such as price information – is made available to competent authorities and EITI MSGs (subject to appropriate confidentiality safeguards). Data should be disaggregated by company and project, where available, and at minimum include:

- Mineral production by commodity, company, project and operator type (large-scale, small-scale, ASM)
- Export volumes by commodity, company and form of processing (ore, concentrate, blister, cathode, refined metal)
- Export destination countries at the aggregate level
- Year-on-year trends in ASM coverage rates



3. Reconcile government and company data

At minimum, conduct annual reconciliation of project-level production data declared by mining companies with data recorded by government agencies, investigating discrepancies in line with an established anomaly investigation protocol and disclosing findings, for instance, in the EITI report or a dedicated traceability publication. To enhance scrutiny, consider conducting reconciliation across the following levels:

- Company production declarations against the mining ministry's production records
- Production declarations recorded at local or subnational level against national ministry records
- Ministry production records against customs export declarations
- Production and customs export declarations against revenue authority payment records
- Customs export declarations against trade statistics reported by importing countries (mirror analysis)



4. Empower EITI MSGs to provide oversight

The tripartite composition of EITI MSGs – bringing together representatives from government, industry and civil society – enables them to provide independent oversight of traceability systems at the national level. Concrete MSG actions in traceability oversight include:

- Providing input on the institutional design and governance model of the traceability system
- Monitoring ASM coverage rates and flagging under-performance against agreed targets
- Reviewing annual reconciliation findings across the mineral data chain, covering production, transport, export and payment data rather than only the revenue reconciliation in EITI reporting, and requesting explanation of unresolved discrepancies
- Discussing and investigating queries regarding data anomalies, coverage gaps or enforcement failures raised by the public or civil society actors
- Commissioning targeted deep-dive analyses when aggregate data reveals patterns of concern (for example, persistent discrepancies in a particular commodity or region)
- Using beneficial ownership data to investigate governance risks in the chain of custody (for example, the presence of politically exposed persons among license holders or intermediaries)
- Producing an annual assessment of traceability system performance as a component of the EITI Report



5. Disclose how system performance is assessed

Governments should disclose how the quality and effectiveness of the traceability system is internally or externally assessed, including through indicators such as the completeness and timeliness of reporting; commodity and supply-chain coverage; and the number of discrepancies identified, explained and resolved.

Additional resources

- EITI (2023). EITI Standard. https://eiti.org/eiti-standard.
- EITI (2025). *Burkina Faso: Quantifying illicit financial flows in mining.* https://eiti.org/data-use-case/burkina-faso-quantifying-illicit-financial-flows-mining.
- EITI (2025). *Guide to using EITI data for due diligence.* https://eiti.org/guidance-notes/guide-using-eiti-data-due-diligence.
- EITI (2026). *Guide to transparency on government-to-government agreements.* https://eiti.org/guidance-notes/guide-transparency-government-government-agreements.
- EITI (2026). *Guide to using EITI data for value addition.* https://eiti.org/guidance-notes/guide-using-eiti-data-value-addition.
- IEA & OECD (2025). *The Role of Traceability in Critical Mineral Supply Chains.* https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/02/the-role-of-traceability-in-critical-mineral-supply-chains_4e5cc44a/edb0a451-en.pdf.
- OECD (2016). *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas.* https://www.oecd.org/en/publications/oecd-due-diligence-guidance-for-responsible-supply-chains-of-minerals-from-conflict-affected-and-high-risk-areas_9789264252479-en.html.
- OECD (2018). *Due Diligence Guidance for Responsible Business Conduct.* https://www.oecd.org/en/publications/oecd-due-diligence-guidance-for-responsible-business-conduct_15f5f4b3-en.html.
- Open Ownership (n.d.). Beneficial Ownership Data Standard (v0.4). https://standard.openownership.org/en/main/index.html.
- SWISSAID (2024). *On the Trail of African Gold.* https://swissaid.kinsta.cloud/wp-content/uploads/2024/05/swissaid-on-the-trail-of-african-gold-web-ok.pdf.
- United Nations (n.d.). UN Transparency Protocol. https://untp.unece.org/.

We believe that a country's natural resources belong to its citizens. Our mission is to promote understanding of natural resource management, strengthen public and corporate governance and provide the data to inform greater transparency and accountability in the extractives sector.

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