

Global Essay Competition 2026

Title: The ASM-to-Prosperty Pact: Turning Battery Passports into Youth Jobs on the Kolwezi-Dar es Salaam Corridor

Essay:

Introduction

From 18 February 2027, EV and rechargeable industrial batteries (>2 kWh) placed on the EU market will require a digital battery passport (European Union, 2023). For cobalt, many passports start in Kolwezi, in the Democratic Republic of Congo (DRC). The green transition depends on Congolese cobalt, yet downstream buyers often treat young ASM¹ miners as a compliance risk rather than a workforce to invest in.

In this corridor, technology, geopolitics and demography collide. Battery passports and traceability tools aim to map supply chains, while the EU, the US and China race for “green” minerals. The DRC accounts for about 76% of global mined cobalt (USGS, 2025). With roughly 66% of the population under 25 (UNFPA, 2024) and a median age of 16.9 (CIA World Factbook, 2025 est.), cobalt policy is, in practice, youth policy. Whether the clean-energy transition deepens inequalities or helps close them will be decided in places like Kolwezi.

This essay focuses on the Kolwezi-to-Dar es Salaam corridor for EU buyers, a choke point where documentation, payments, and compliance are enforced². It proposes an ASM-to-Prosperty Pact; an offtake and governance deal that uses digital traceability to ensure safer working conditions, fund verified youth exits, and support income diversification. I argue compliance regimes will fail unless they also function as labour-market policy for ASM youth. I outline an 18-month pilot, required signatories, and metrics for traceability, safety and youth livelihoods.

¹ Artisanal and small-scale mining (ASM)

² Shorthand for the DRC-Tanzania export route linking Kolwezi (Lualaba) to Dar es Salaam port via the SADC/North-South transport corridors.

Why compliance fails without incentives

As the EU pushes batteries toward verifiable sustainability, the battery passport shifts governance toward data-driven compliance: Origin becomes verifiable and must remain traceable throughout a product's life cycle. At the same time, critical minerals are increasingly treated as a security concern, pushing buyers to secure cobalt quickly and at scale. The result is a “corridor logic”: from the EU Critical Raw Materials Act³ to EU/US-backed transport initiatives such as the Lobito Corridor⁴, policymakers prioritise trusted routes and documentation before local enforcement capacity is fully in place. Along that corridor, in a labour market where 97% of jobs are informal (ILOSTAT, 2020), ASM remains one of the fastest entry points for young Congolese, with copper-cobalt miners averaging about \$7.65/day, even as incomes fluctuate and risks remain high (World Bank, 2023). Yet, in a 2019 study, 40% earned less than the then-legal minimum wage (BGR, 2019)⁵. With the statutory minimum wage rising to CDF 21,500/day from January 2026, any compliance model that ignores incomes will predictably push youth further into informal extraction. It also ignores the labour conditions this work entails: in Katanga, 72% of small-scale miners reported an accident in the prior year (Elenge et al., 2013). That is the compliance paradox: as scrutiny rises, incentives shift buyers toward avoidance rather than upgrading sites, unless compliance is redesigned as labour-market intervention.

Mechanism 1: Swing supply turns price shocks into youth labour shocks

Security-driven demand and price shocks transmit quickly to the DRC Copperbelt, where entry barriers are low, and payments are immediate, making ASM an elastic swing supply. CRU estimates that DRC artisanal cobalt output rose from 10 kt in 2020 to 14.5 kt in 2021 (approximately 45%) as prices strengthened, although exact volumes remain uncertain (Cobalt Institute, 2022)⁶. With about 31% of youth NEET⁷ and only 5.2% of the population covered by at least one social protection benefit⁸, cash-in-hand work becomes the default, and

³ EU Critical Raw Materials Act (CRMA): framework to secure and scale critical raw material supply chains (mining, processing, recycling)

⁴ Lobito Corridor: Angola-DRC-Zambia logistics corridor linking the Copperbelt to the Atlantic via Lobito port.

⁵ BGR (2019, p. 36); The then-legal minimum wage was \$4.2/day

⁶ CRU Group: commodities market intelligence; “kt” denotes kilotonnes

⁷ NEET (youth not in education, employment, or training)

⁸ UN SDG 1.3.1: social protection coverage (disaggregated)

the marginal miner is disproportionately young (ILOSTAT, 2020). Thus, downstream security and price shocks rapidly become youth labour-market shocks in Kolwezi.

Mechanism 2: De-risking pushes cobalt into less legible channels

As battery passports and due diligence pressures increase, documentation requirements increase liability and reputational risk for downstream buyers. In the Copperbelt, exposure to scandal is salient even without direct sourcing: in a 2023 U.S. Department of Labour (USDOL) survey, about two-thirds of ASM workers reported that children work at their worksites⁹. The lowest-cost risk response is often disengagement, shifting toward industrial mines or “approved” suppliers rather than upgrading ASM. But ASM does not disappear; when legal channels narrow, incentives rise to re-route material and game paperwork, making flows less legible to audits and traceability tools. In December 2025, the DRC temporarily halted artisanal copper/cobalt processing until a traceable origin could be certified, illustrating how paper compliance can freeze formal channels while incentives for extraction persist (Reuters, 2025). In this opacity, coercion becomes easier, and pay falls: the USDOL estimates median daily earnings are about 41% lower for workers experiencing forced-labour conditions (2023). If compliance acts as a cut-off rule rather than an upgrade pathway, it produces exit, displacement, and less verifiable supply.

Mechanism 3: Weak accountability triggers progressively tighter compliance requirements

The binding constraint is not data, but local accountability. Youth have little leverage over how mining rules are enforced, so abuses are weakly sanctioned, and remedies rarely stick. In the DRC National Assembly, only 2.6% of MPs are aged 30 or younger, and there is no youth quota (IPU, n.d.). Around Kolwezi, forced evictions and serious abuses linked to cobalt/copper expansion, including the destruction of Mukumbi in 2016¹⁰, show how high the stakes are when affected communities lack credible channels to contest decisions (Amnesty, 2023). When local enforcement is unreliable, downstream firms respond by tightening traceability and “approved supplier” gates, but scandals and litigation continue to recur, prompting a further tightening of compliance requirements. A stable equilibrium, therefore, requires institutionalised voice plus enforceable incentives, not better paperwork alone.

⁹ a self-reported signal, not a prevalence estimate

¹⁰ an informal settlement near Kolwezi (Lualaba) cleared during mine expansion

ASM-to-Prosperty Pact: the Kolwezi-Dar es Salaam Corridor Compact

I propose an ASM-to-Prosperty Pact for the Kolwezi to Dar es Salaam corridor supplying the EU: a corridor-level offtake and governance agreement that turns battery-passport compliance into verified upgrading of ASM and youth exits¹¹. Its goal is to keep cobalt flowing while ensuring compliance reduces harm rather than displacing it into opaque channels. The mechanism is based on enforceable incentives: a parametric premium is paid into escrow and released only upon verified traceability, safety, and youth outcomes, with clawbacks and suspensions for noncompliance. The sections below specify signatories, rules, an 18-month pilot, metrics and safeguards.

Signatories of the Pact¹²

These actors are required for implementation, and each has a rational incentive to sign.

- **EU importers and OEMs:** secure corridor supply under tightening due diligence obligations; escrow, clawbacks and third-party verification cap downside risk from fraud while financing upgrades that stabilise throughput.
- **Aggregators and traders:** gain a defensible compliance posture (auditable chain of custody, standardised data, verified lots) and a first-mover advantage as demand concentrates in “trusted” corridors.
- **ASM cooperatives and site committees:** receive a predictable buyer premium, income stability backed by premiums, funded safety upgrades, and protection against sudden exclusion through grievance channels and clear suspension rules.
- **DRC ASM authority and local enforcement partners** (e.g., SAEMAPE¹³, Mine Division, provincial mining administration): gain enforceable operating rules tied to

¹¹ “Corridor-level” means that the Pact governs the route as a single chain of custody from mine gate to port to EU buyer, so incentives and sanctions attach to the corridor rather than to individual sites.

¹² Aggregators and traders (consolidate ASM output); cooperatives/site committees (site governance); independent verifier (third-party audit); convenor (neutral coordinator/secretariat).

¹³ SAEMAPE (DRC ASM assistance/service agency)

funding, data visibility at the corridor level, and reduced incentives for informal re-routing; helps translate paper standards into day-to-day supervision.

- **Independent verifier:** receives a repeatable mandate with clearer liability boundaries because KPIs, audit triggers, and clawback conditions are pre-specified.
- **Convenor:** manages escrow governance, commissions audits, resolves disputes, publishes KPI dashboards, and converts the pilot into a replicable corridor model.

Premium and escrow logic

Buyers commit to a corridor premium band of 0-5% relative to a transparent benchmark price, recalibrated every 90 days to avoid guessing the “right” level upfront. The premium is paid monthly into escrow, held by the convenor, and released quarterly only if an independent verifier confirms threshold performance on three KPIs: (1) traceability integrity (chain-of-custody completion and anomaly resolution), (2) safety (severe-incident prevention and remediation), and (3) livelihood progress¹⁴. If verification fails, disbursements freeze, and a corrective plan is triggered. Repeated failure results in clawbacks to a ring-fenced remediation pool and, if unresolved, corridor suspension.

Parametric triggers and anti-gaming

To make enforcement automatic rather than discretionary, escrow release is governed by three parametric triggers: (1) any unresolved chain-of-custody anomaly beyond 72 hours or before the next custody transfer, whichever comes first; (2) any verified under-18 presence in hazardous extraction or haulage, or any fatality or major collapse; and (3) breach of the Youth Panel grievance threshold. Thresholds are set using a 90-day baseline and tightened over time. When signals conflict, the system fails safely by freezing escrow rather than paying out. Payments remain frozen until corrective action is verified, with a fast appeals window for documented verifier error. Anti-gaming safeguards combine audit rotation, random spot checks, and anomaly detection to reduce capture and document manipulation.

¹⁴ Verified youth exit milestones (placement + retention)

Passport Compliance

Passport compliance should prioritise auditability over perfect surveillance. Existing pilots often struggle with fragmented data systems, disclosure constraints, and high overhead, and corridor power and connectivity are intermittent. The Pact therefore uses an offline-first chain-of-custody registry: each cobalt lot receives a unique, tamper-evident ID, and custody events are recorded at key handover points (mine gate/cooperative purchase, consolidation, border or port) and synchronised at designated hubs. The registry, maintained by the convenor and audited by an independent verifier, records only required fields (timestamp, actor, location, weight and grade) and automatically flags anomalies (duplicate IDs, implausible timestamps, weight jumps, missing links). Where smartphones fail, a paper lot sheet with a QR code provides a low-tech fallback; signatures and stamps are photographed and uploaded at the next hub. The output is exportable as a standardised dataset for battery passport reporting.

Youth Bonus and Youth Panel

In addition to the base premium, the Pact pays a 0-2% youth-outcomes bonus into a Transition Fund, released only when exits from hazardous ASM are verified. An “exit” is defined by two indicators. First, income continuity: the participant sustains a verifiable non-ASM income stream (apprenticeship stipend, payroll, or micro-enterprise receipts, including mobile-money transactions) that meets a pre-specified share of baseline ASM earnings over a defined period. Second, retention: non-return to hazardous ASM is assessed at six months using rosters where available, plus randomised verifier spot checks; a partial milestone payment may be released at three months, with the remainder released at six months.

To institutionalise local voice, a Youth Panel operates an accessible grievance channel and logs cases into the corridor registry. Complaints can be filed anonymously and are triaged, then substantiated through basic corroboration plus verifier sampling. If the Panel records at least 10 substantiated grievances per quarter or at least 3 severe cases, escrow releases pause automatically until corrective actions are verified. Because households may rely on child income, any verified under-18 presence in hazardous work triggers a family support pathway

funded by the Transition Fund: immediate removal, time-limited income replacement, and school re-entry support, with payments remaining frozen until remediation is verified.

18-month pilot (2027 aligned)

Pilot the Pact on a small set of ASM sites and one consolidation chain along Kolwezi to Dar es Salaam to establish baselines and test enforceability for the 2027 deadline. Months 0-3: rulebook executed; lot IDs live at custody points; escrow, verifier and Youth Panel in place. Months 4-9: first verification and escrow release; triggers tested; Transition Fund launches safety upgrades and youth exits. Months 10-18: expand within the corridor; tighten thresholds; publish results and scale, redesign or suspend.

Success metrics

The Pact is evaluated on three auditable KPIs: (1) Traceability integrity: share of lots with complete chain-of-custody events, plus median anomaly-resolution time; (2) Safety: severe-incident trend versus baseline, plus an independently scored PPE and site-safety checklist; (3) Youth exits: verified non-ASM income continuity and non-return to hazardous ASM at 3- and 6-month milestones, linked to staged bonus payouts. Thresholds are set using a 90-day baseline and tightened over time; results are published quarterly in a corridor dashboard.

Risks and safeguards

The Pact faces four predictable failure modes: lot laundering, elite capture of premiums, displacement into less visible sites as compliance tightens, and retaliation against whistleblowers. These are not hypotheticals. Traceability schemes in the Great Lakes have repeatedly been accused of laundering¹⁵. The Pact therefore hard-wires safeguards: (1) anomaly detection with quarantine rules and clawbacks for falsified data; (2) verifier rotation, random spot checks, and public aggregate KPI reporting to reduce collusion; (3) protected grievance channels with non-retaliation clauses and automatic eligibility suspension; and (4) “shape, don’t ban” incentives, where premiums reward verified safety and youth exits so compliance does not simply push mining underground.

¹⁵ See, for instance, allegations concerning iTSCi in Global Witness (2022) and iTSCi’s response (2022).

Conclusion

Leading in a disrupted age means aligning compliance technology with supply security and a youth-dominated labour market. Without funded exits and enforceable incentives, traceability will displace risk rather than reduce it. An 18-month pilot on the Kolwezi to Dar es Salaam corridor tests whether escrow, clawbacks and a youth bonus can deliver auditable supply, safer sites and durable transitions. If it works, the model scales corridor by corridor.

Word Count (essay text only): (2095/2100)

Reference List / Bibliography / Sources:

Amnesty International. (2023, September 12). *Democratic Republic of the Congo: Industrial mining of cobalt and copper for rechargeable batteries is leading to grievous human rights abuses.*

<https://www.amnesty.org/en/latest/news/2023/09/drc-cobalt-and-copper-mining-for-batteries-leading-to-grievous-human-rights-abuses/>

Bundesanstalt für Geowissenschaften und Rohstoffe. (2019, October). *Mapping of the artisanal copper-cobalt mining sector in the provinces of Haut-Katanga and Lualaba in the Democratic Republic of the Congo.*

https://www.delvedatabase.org/uploads/resources/BGR_Cobalt_Congo_2019_en.pdf

Central Intelligence Agency. (n.d.). *Congo, Democratic Republic of the: Median age (2025 est.).* In *The World Factbook*. Retrieved February 2, 2026, from

<https://www.cia.gov/the-world-factbook/field/median-age/country-comparison/>

Cobalt Institute. (2022, May). *Cobalt market report 2021.*

https://www.cobaltinstitute.org/wp-content/uploads/2025/02/FINAL_Cobalt-Market-Report-2021_Cobalt-Institute-3.pdf

Elenge, M., Leveque, A., & De Brouwer, C. (2013). Occupational accidents in artisanal mining in Katanga, D.R.C. *International Journal of Occupational Medicine and Environmental Health*, 26(2), 265-274. <https://doi.org/10.2478/s13382-013-0096-0>

European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs. (n.d.). *Critical Raw Materials Act*. Retrieved February 2, 2026, from

https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials/critical-raw-materials-act_en

European Parliament, & Council of the European Union. (2023, July 12). *Regulation (EU) 2023/1542 of the European Parliament and of the Council concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC*. *Official Journal of the European Union*, L 191. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1542>

International Labour Organization. (n.d.). *Congo, Democratic Republic of the: Country profile*. ILOSTAT. Retrieved February 2, 2026, from <https://ilostat ilo.org/data/country-profiles/cod/>

Inter-Parliamentary Union. (n.d.). *Democratic Republic of the Congo: National Assembly*. IPU Parline: Global data on national parliaments. Retrieved February 2, 2026, from <https://data.ipu.org/parliament/CD/CD-LC01/>

Reuters. (2025, December 23). Congo halts artisanal copper and cobalt processing amid corruption crackdown. <https://www.reuters.com/sustainability/boards-policy-regulation/congo-halts-artisanal-copper-cobalt-processing-amid-corruption-crackdown-2025-12-23/>

U.S. Geological Survey. (2025). *Cobalt*. In *Mineral commodity summaries 2025*. <https://pubs.usgs.gov/periodicals/mcs2025/mcs2025-cobalt.pdf>

United Nations Population Fund. (2024, July 1). *Country programme document for Democratic Republic of the Congo (DP/FPA/CPD/COD/6)*. https://www.unfpa.org/sites/default/files/board-documents/main-document/DP.FPA_CPD_COD_6%20-DRC%20CPD%20-%20Final%20-%201July24.pdf

United States Department of Labor, Bureau of International Labor Affairs, Office of Child Labor, Forced Labor, and Human Trafficking. (2023, May 30). *Forced labor in cobalt mining*

in the Democratic Republic of the Congo: Final report.

<https://www.dol.gov/sites/dolgov/files/ILAB/DRC-FL-Cobalt-Report-508.pdf>

WageIndicator Foundation. (2026, January 1). *Minimum wage increased in Congo (DRC) from 01 January 2026.*

<https://wageindicator.org/salary/minimum-wage/minimum-wages-news/2026/minimum-wage-increased-in-congo-drc-from-01-january-2026-january-01-2026>

World Bank. (2023). *Case study 1: Mining (EV battery) value chains* (Country economic memorandum—Case studies).

<https://documents1.worldbank.org/curated/en/099101723140622516/pdf/P17516105e95da0de0a34c0dd670e6f75cf.pdf>

Auxiliary Aids Directory

Aid	Usage	Affected parts
Private proofreading	Spell check (Grammarly)	Complete paper
ChatGPT	Language editing of self-written text (clarity, concision, academic tone; light rewriting). Feedback on structure/flow (transitions, coherence). Reference-format consistency checks (APA), with all citations and statistics verified by me in the original sources.	Throughout (language/formatting only)
Scribbr	Citation generator	Bibliography
Citethisforme	Citation generator	Bibliography

