BENEATH THE COPPER BELT:

Digital Technology, AI, and Community Rights in Chingola District

Technology Assessment Report

Chingola District, Copperbelt Province, Zambia

15–16 April 2026

EXECUTIVE SUMMARY

Chingola District lies at the convergence of two of the most consequential global forces of the twenty-first century: the rapid expansion of digital technology and artificial intelligence (AI), and the accelerating extraction of critical minerals required to sustain that expansion. Copper, cobalt, lithium, and manganese found in abundance beneath the Copperbelt Province are the essential raw materials of semiconductors, electric vehicle batteries, integrated circuits, and AI infrastructure. As global demand for these technologies intensifies, so does the pressure on the communities living above the ore deposits. This report presents the findings of a structured two-day Technology Assessment conducted in Chingola District on 15–16 April 2026, using a Participatory Action Research (PAR) methodology designed to centre community voices and generate ground-level evidence on how digital technologies, AI systems, and associated infrastructure are reshaping the lives, livelihoods, and rights of affected communities.

Zambia is the second-largest copper producer in Africa and fifth-largest globally. In 2022, mining contributed 72 percent of export earnings and 44 percent of government revenues. The Government of Zambia has committed to increasing annual copper production from 800,000 tonnes to 3 million tonnes by 2031 a target explicitly linked to global demand for the critical minerals underpinning digital and AI infrastructure. This production ambition is being pursued alongside major infrastructure investments, the Lobito Corridor, an 830-kilometre railway connecting the Copperbelt and North-Western provinces to Angola's Atlantic coast, positioned as a strategic export route for critical minerals. In parallel, AI-driven mineral exploration technologies are being deployed in Zambia: KoBold Metals uses machine learning and geospatial data analysis to identify a high-grade copper deposit at Mingomba a case explicitly acknowledged in Zambia's National Artificial Intelligence Strategy.

The assessment engaged smallholder farmers from Kakalo Farming Block, pollution-affected residents of Shimulala and Chabanyama, civil society organisations, media representatives, and district-level government officers across two days of participatory inquiry. Its findings reveal a consistent and deeply troubling pattern: communities in Chingola are bearing the direct costs of global technological expansionn through environmental contamination, displacement from productive farmland, opaque and inadequate compensation, and systematic exclusion from governance decisions while receiving negligible share of the economic benefits that extraction generates.

Environmental Contamination and Community Health

Pollution from mining operations constitutes the most severe and immediate harm documented in this assessment. In Shimulala, a 2005 acid spill by Konkola Copper Mines (KCM) contaminated the Mushishima stream, affecting 1,826 individuals. Following years of advocacy, the community secured a favourable ruling at the UK Supreme Court through the firm Leigh Day. Despite this legal success, Shimulala residents continue to live without access to safe water: underground water remains contaminated, agricultural land has been rendered unusable by acidic siltation, and schools including Mushishima Primary lack functional boreholes, disrupting feeding programmes and early childhood education. Compensation of K50,000 per household was disbursed only to household heads, contrary to community expectations of individual payments, leaving many members without direct remedy.

In Chabanyama, a 2023 KCM acid spill was followed by a second, larger spill in 2025 attributed to Mimbula Mines, which destroyed crops, killed fish in aquaculture ponds, caused livestock deaths, and affected approximately 3,000 farmers. A government minister publicly announced a tiered compensation structure of up to K125,000 for livestock farmers; in practice, households received between K2,000 and K8,000. Farmers who organised to challenge this discrepancy faced intimidation and threats of arrest: of 208 who joined a formal legal challenge,

100 withdrew under pressure, leaving 108 continuing without a settlement as of the assessment date. Critically, community members did not discover the second spill until three days after it occurred, when dead fish were observed a consequence of the complete absence of any early warning or mandatory polluter-disclosure obligation.

The Lobito Corridor: Land, Displacement, and Participation Failures

The Lobito Corridor represents both a potential economic opportunity and an immediate threat to farming communities. Farmers in Kakalo Farming Block whose land falls within the 50-metre clearance zone on each side of the proposed railway alignment face displacement without meaningful prior consultation. The Environmental Impact Assessment for the corridor has not been made publicly available, in apparent contravention of EIA regulations requiring public access and comment. The process for identifying affected farmers was poorly publicised, excluding a significant number from the compensation register entirely. The Area Councillor for Muchinshi Ward confirmed he had received no information about the project, rendering him unable to represent his constituents. Compensation rates also systematically disadvantage the majority: chilli pepper was valued at a higher rate than maize despite maize being by far the dominant crop, meaning that most affected farmers will receive lower compensation than the minority.

Digitalization, AI Awareness, and the Governance Deficit

One of the most striking findings across all participant groups was the lack of awareness regarding digitalization and AI and their implications for extractive communities. Farmers and community members had no understanding of how global demand for digital technologies drives mineral extraction in their districts, nor any familiarity with data ownership, algorithmic accountability, or digital infrastructure governance. Civil society organisations reported limited capacity to engage with technology governance issues. District-level government officers were unable to explain provisions of national policies on data sovereignty, digital infrastructure ownership, or community benefit-sharing along the Lobito Corridor. Critically, none were aware of any regulatory framework governing data generated by AI exploration systems such as those deployed by KoBold Metals meaning that decisions with profound community consequences are being made through systems entirely beyond local oversight or accountability.

Governance Failures and Structural Accountability Gaps

Governance failures compound these harms at every level. The Zambia Environmental Management Agency (ZEMA), which holds primary responsibility for environmental oversight of mining operations, is not decentralised to district level, making it structurally difficult for communities to access institutional support during pollution events. Environmental and water quality test results are not routinely shared with affected communities. Compensation processes for both pollution and displacement are managed across multiple government departments operating in isolation DMMU, Fisheries and Livestock, Agriculture, ZARI with no integrated dispute-resolution mechanism. Free, Prior and Informed Consent (FPIC) is routinely bypassed, with investors targeting vulnerable individuals rather than engaging communities collectively. District officials were unable to provide any information on revenue-sharing terms, domestic processing commitments, data ownership for AI-generated exploration data, or oversight of digital systems deployed along the corridor.

Overall Assessment and Path Forward

Taken together, these findings demonstrate that the digital and AI technologies reshaping the global economy are imposing concrete and compounding costs on communities in Chingola District. Governance frameworks remain wholly inadequate to protect community rights, ensure fair compensation, or secure meaningful participation in the decisions that matter most. Zambia's national policy architecture spanning the National AI Strategy, the National Digital Transformation Strategy 2023–2027, the National Local Content Strategy, and the Geological Minerals Development Act 2025 provides a normative foundation that is poorly understood at district level, poor enforcement, and does not yet include binding community protections commensurate with the scale of harms documented.

This report makes specific, actionable recommendations to national and district government, civil society organisations, and communities. Central among these are: the immediate public disclosure of the Lobito Corridor EIA and reform of the affected farmer register; decentralisation of ZEMA with mandatory community notification obligations; establishment of an accessible environmental court with jurisdiction over pollution compensation disputes; binding data sovereignty regulations governing AI-generated exploration data; and sustained investment in community and civil society capacity to engage with an increasingly digitalised resource governance landscape.

> *Chingola community has demonstrated extraordinary resilience and organisational capacity in the face of historic and ongoing injustice. What they require is institutional support commensurate with the scale of the challenges they face.*

1. INTRODUCTION

1.1 BACKGROUND & CONTEXT

Zambia is the second-largest copper producer in Africa and fifth-largest globally, with copper and cobalt forming the backbone of the national economy. In 2022, mining contributed 72% of export earnings and 44% of government revenues. The Government of Zambia has adopted an ambitious strategy to increase annual copper production from 800,000 tonnes to 3 million tonnes by 2031 a target closely linked to global demand for critical minerals that power digital devices, electric vehicles, semiconductors, and AI infrastructure.12

Chingola District, located in Copperbelt Province, has been the site of copper extraction since 1955, beginning with Nchanga Mine. Through successive ownership transitions from Nchanga Consolidated Copper Mines (NCCM) to the Zambia Consolidated Copper Mines (ZCCM), then Anglo American and Konkola Copper Mines (KCM) the district has experienced both the economic opportunities and the environmental and social costs of large scale mining. Communities in Shimulala, Chabanyama, Sopano, Jimucana, and Musuma bear disproportionate burdens from pollution, displacement, and inadequate redress.3

This Technology Assessment was designed to gather first-hand information from communities directly affected by mining and emerging technologies, and to examine how digitalization and AI are shaping the conditions of their lives. It aims to:

- Document community experiences of environmental harm, displacement risk, and inadequate governance related to mining and infrastructure development.
- Assess the level of awareness and understanding of digitalization and AI among community members, CSOs, and local government officers.
- Identify gaps in policy, law, and enforcement that leave communities vulnerable to technology-related harms.
- Develop evidence-based recommendations for inclusive, rights-respecting technology governance in extractive contexts.

This assessment was undertaken by Africa Technology Assessment Platform (AfriTAP), Zambia Alliance for Agroecology and Biodiversity (ZAAB) and Care for Nature Zambia

2. METHODOLOGY

The assessment employed a Participatory Action Research approach, grounded in the principle that reliable evaluation of technology impacts must draw on verifiable, community-held knowledge. Rather than relying solely on secondary data or institutional sources, the methodology prioritised first-hand testimony and direct engagement with those most affected by the intersection of mining, infrastructure, and digital technologies. A core commitment of the assessment was the establishment of feedback mechanisms to ensure informants understood how their contributions would be used. This is consistent with principles of Free,

1 Republic of Zambia, Ministry of Mines and Minerals Development (2024). National Three Million Tonnes Copper Production Strategy. Lusaka: Government of the Republic of Zambia.

2 Bank of Zambia (2023). Annual Report 2022. Lusaka: Bank of Zambia. These figures reflect the continued dominance of copper and cobalt in Zambia's export basket and fiscal revenues.

3 Fraser, A. & Lungu, J. (2007). For Whom the Windfalls? Winners and Losers in the Privatisation of Zambia's Copper Mines. Lusaka: Civil Society Trade Network of Zambia & Catholic Centre for Justice, Development and Peace.

Prior and Informed Consent (FPIC) and ethical research practice. 4PAR operates on three interlocking commitments that shaped every stage of this assessment:

PAR Commitment	How It Was Applied in Chingola
Participation	Community members, CSO representatives, and government officers were active participants in shaping the inquiry, not passive respondents. Sessions were designed as dialogues, not interviews with facilitated space for communities to raise concerns beyond the assessment's initial scope.
Action	The assessment was explicitly designed to produce outputs that enable action: documentation of harms for use in advocacy, capacity building through knowledge sharing during the sessions themselves, and recommendations grounded in participants' own priorities.
Research	Rigorous mixed-methods data collection focus groups, questionnaires, individual testimony, and plenary discussion ensured findings are systematic, evidence-based, and defensible to external audiences including policymakers, funders, and legal bodies.

A further hallmark of PAR is its commitment to returning findings to those who generated them. The assessment team made explicit commitments to share this report with participating communities in accessible formats, and to support communities in using the findings for advocacy, compensation claims, and engagement with government.

> **Why PAR for Technology Assessment?**
> Communities in Chingola are not passive bystanders to technological change they are the primary bearers of its costs. A PAR approach recognises that understanding how AI driven mining, digital infrastructure, and data governance affect community rights requires centring the knowledge of those most affected. Technical expertise and policy analysis are necessary but not sufficient; they must be grounded in, and accountable to, community experience.

2.1 Participant Selection and Sampling

Participants were selected to ensure a diverse cross-section of stakeholders directly connected to the assessment's thematic focus areas. The two-day structure enabled separate but complementary engagement with distinct participant groups:

Day	Participant Group	Community / Institutional Representation
Day 1 15 April 2025	Farmers from Kakalo Farming Block Pollution-affected community members (Shimulala, Chabanyama)	Communities along the proposed Lobito Corridor route Pollution legacy communities Local and national CSOs Media houses

4 United Nations (2007). United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). New York: United Nations. Article 32 establishes the right of communities to give or withhold FPIC prior to the approval of any project affecting their lands or territories.

Day	Participant Group	Community / Institutional Representation
	Civil Society Organizations (CSOs) Media representatives	
Day 2 16 April 2025	Government officials: District Administrative Officer Agriculture, Forestry, Council, Community Development & Social Services Education, DMMU, Resettlement, Social Welfare SME Department	District-level governance institutions Line ministries with mandates relevant to mining, environment, agriculture, and infrastructure

Participants from pollution-affected communities included residents of Shimulala and Chabanyama areas with documented histories of acid spills from KCM and Mimbula Mines operations. Farmers from Kakalo Farming Block were included given their proximity to the proposed Lobito Corridor railway alignment.

2.2 Data Collection Methods

A mixed-methods approach was used, combining the following data collection techniques:

2.3 Facilitated Presentations and Plenary Discussions

Care for Nature Zambia delivered an opening presentation on the historical background of mining in Zambia, the role of copper in digital and AI technologies, and an overview of relevant national policies. This presentation served as a knowledge-equalisation tool, enabling participants to situate their lived experiences within broader technological and policy contexts.

Following the presentations, plenary sessions were opened for experience sharing on three thematic areas: the Lobito Corridor and compensation; pollution legacies and community health; and Digitalization and AI governance. Plenary discussions were facilitated using open questions and probing techniques to draw out nuanced testimony.

2.4 Focus Group Discussions

Structured focus group discussions were held with homogeneous groups (farmers; CSO representatives; government officers) to enable frank exchange within peer groups. Focus groups explored: impacts on land, water, and livelihoods; experiences with compensation processes; awareness and perceptions of digital technologies; and views on governance and accountability.

2.5 Structured Questionnaires

Written questionnaires were administered to participants on both days to capture baseline data on: livelihoods and farming activities; specific experiences with pollution or displacement; knowledge of national policies on digitalization, AI, and mining; and understanding of data governance and community rights.

The questionnaires used a combination of closed (yes/no, multiple choice) and open-ended questions to accommodate varying levels of literacy and to generate both quantitative baseline data and qualitative narrative responses.

2.6 Individual Testimony and Case Documentation

Individual testimonies were recorded from community members in Shimulala and Chabanyama with direct experience of pollution and compensation processes. These testimonies provide case-level evidence of systemic governance failures and were collected with participant awareness of how the information would be used in the report.

2.7 Ethical Considerations

The assessment team adhered to the following ethical standards throughout the process:

- **Informed consent**: All participants were informed of the purpose of the assessment, how their contributions would be used, and their right to decline participation or withdraw information.
- **Anonymisation:** Individual names are anonymised in this report except where participants have explicitly consented to identification. Community-level attribution is used where specific cases are referenced.
- **Do no harm:** Recognising the vulnerability of many participants (particularly those who have experienced intimidation related to compensation claims), sessions were designed to avoid re-traumatisation and undue risk to participants.
- **Feedback mechanisms:** Participants were informed that the findings of this assessment would be shared with them, and commitments were made by the team to return findings to the communities.

3. NATIONAL AND POLICY CONTEXT

3.1 Zambia's Mining Economy and Global Technology Demand

Zambia's economic trajectory is inextricably linked to global demand for critical minerals. Copper, cobalt, lithium, and manganese all found in abundance in Copperbelt Province are essential inputs for semiconductors, integrated circuits, electric vehicle batteries, and AI infrastructure. Copper, in particular, is the primary conductor in integrated circuits, forming the intricate wiring inside microchips that enables signal and power transmission. The global transition to AI and digitalization is therefore accelerating extraction pressure on communities in districts like Chingola. This creates a direct causal link between consumer technology markets and community-level harms in Zambia's mining regions a link that most national policy frameworks have yet to adequately address.

3.2 Key National Policy Frameworks

The following national policies govern the intersection of mining, digitalization, and community rights in Zambia:

Policy / Strategy	Objective	Relevance to Assessment
National 3 Million Tonnes Copper Production Strategy (2024)	Increase copper production from 800,000 to 3 million tonnes/year by 2031	Drives intensification of mining in Chingola and surrounding districts; increases community displacement risk
National Mineral Resources Development Policy (2022)	Formalise artisanal and small-scale mining; govern resource extraction	Introduced in response to illegal mining; limited community benefit provisions
Geological Minerals Development Act (2025)	Legislative framework for mineral development	New law with implications for mining governance and community rights — implementation under review
National Artificial Intelligence Strategy	Position Zambia as regional AI leader; leverage AI in	Acknowledges Kobold Metals' AI-powered copper discovery;

Policy / Strategy	Objective	Relevance to Assessment
	agriculture, mining, healthcare, education	community implications not addressed5
National Digital Transformation Strategy 2023–2027	Leverage digital technologies for national development; respond to AI, IoT, blockchain disruption	Broad framework without specific protections for communities in extractive zones
National Local Content Strategy	Ensure FDI benefits domestic economy; minimum 35% local input utilisation	Referenced by government officials as key mechanism; enforcement gaps noted

Note
District-level government officials were largely unaware of specific provisions relating to data sovereignty, digital infrastructure governance, and community benefit-sharing from AI-driven exploration data.

Critically, while these policies collectively represent a substantial normative framework, the assessment found that government officials at district level were largely unaware of their specific provisions, particularly in relation to data sovereignty, digital infrastructure governance, and community benefit-sharing from AI-driven exploration data.

3.3 The Lobito Corridor

The Lobito Corridor is an 830-kilometre railway project connecting Zambia's mineral-rich Copperbelt and North-Western provinces to the Atlantic Ocean via the Lobito Port in Angola. It is being implemented under a Public-Private Partnership (PPP) model and is positioned as a strategic trade route for critical minerals essential to global digital manufacturing.

For communities in Chingola, the Lobito Corridor represents both a potential economic opportunity and an immediate threat. Farmers in Kakalo Farming Block are among those whose land falls within the 50-metre clearance zone on each side of the proposed railway alignment. The EIA process for the corridor has not been made publicly available, and the listing of affected farmers was conducted without adequate notification, resulting in a significant number of farmers being excluded from compensation processes.6

3.4 AI in Mineral Exploration: The Kobold Metals Case

The use of AI in mineral exploration is explicitly acknowledged in Zambia's National AI Strategy, citing Kobold Metals' discovery of a significant copper deposit at Mingomba using machine learning and geospatial data analysis. This represents a defining example of how AI-powered technologies are reshaping the resource extraction landscape in ways that directly affect communities — accelerating decisions about where and how to mine — yet communities in the relevant districts have no awareness of, or participation in, the governance of these technologies or the data they generate.

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5 Republic of Zambia, Ministry of Science and Technology (2023). National Artificial Intelligence Strategy. Lusaka: Government of the Republic of Zambia. See also: Hu, K. (2023, July 3). KoBold Metals finds what may be one of the world's biggest copper deposits in Zambia. Reuters. https://www.reuters.com

6 Zambia Environmental Management Agency, EIA Regulations (Statutory Instrument No. 28 of 1997, revised 2016) require that EIAs be made available for public comment. The Area Councillor for Muchinshi Ward and community members confirmed at the assessment on 15 April 2026 that no public access had been provided.

4. Key Stakeholders and Technology Actors

Stakeholder Group	Technology Role	Key Needs & Interests	Current Capacity & Gaps
Farming & affected communities (Shimulala, Chabanyama, Kakalo)	End users of technology impacts; potential monitors and advocates	Clean water, fair compensation, early warning systems, legal support, information on AI/digital impacts	High community agency and resilience; no digital literacy or awareness of data governance frameworks
Civil Society Organisations	Intermediaries; potential digital monitoring agents; advocates	Capacity for digital monitoring, sustained advocacy, community legal support	Currently limited to traditional communication; no digital monitoring tools or mapping platforms
District & national government	Regulators; implementers of policy; oversight bodies	Enforcement capacity, inter-departmental coordination, policy delivery	Significant knowledge gaps on AI, digitalization, and data sovereignty; limited policy enforcement
Mining & corridor companies	Technology deployers; data generators; liable parties	Regulatory clarity; social licence to operate	History of inadequate disclosure; no community data-sharing obligations

5. FINDINGS & ANALYSIS

5.1 Environmental Pollution and Community Health Impacts

Pollution from mining operations constitutes the most severe and immediate harm experienced by communities in Chingola District. Two communities provided detailed testimony of ongoing contamination and inadequate redress.

Shimulala Community

Shimulala's most significant pollution case dates to 2005, when KCM contaminated the Mushishima stream with acid, affecting 1,826 individuals. After years of advocacy, including a case heard at the UK Supreme Court facilitated by the firm Leigh Day, a ruling was made in

the community's favour. Compensation of K50,000 per household was disbursed — but only to household heads, contrary to expectations of individual payments.78

Despite winning the case, the people of Shimulala continue to live in the polluted area with no access to safe water. Underground water is contaminated, preventing the sinking of boreholes. Agricultural land contaminated by acidic siltation cannot be used for farming. Schools including Mushishima Primary lack running water or functional boreholes, disrupting school feeding programmes and early childhood learning.

Chabanyama Community

Chabanyama first experienced pollution in 2023 when KCM contaminated the Chabanyama stream. Initial compensation of K1,500 to K3,000 was widely regarded as inadequate. A second acid spill in 2025 — attributed to Mimbula Mines — affected 3,000 farmers, destroying crops, killing fish in aquaculture ponds, and causing livestock deaths.9

A government minister publicly acknowledged the need for compensation and indicated a tiered structure had been developed (up to K125,000 for livestock farmers). In practice, affected farmers received K2,000 to K8,000. Farmers who challenged this discrepancy faced intimidation and threats of arrest. Of 208 farmers who joined a legal challenge, 100 withdrew under pressure, leaving 108 to continue. As of the date of this assessment, no settlement had been reached.10

Common Impacts Across Communities

Across both communities, the following impacts were reported:

- Observable changes in water colour, smell, and taste from streams and wells.
- Skin rashes, cracking skin, stomach illnesses, diarrhoea, and increased respiratory illness.
- Death of fish in streams and ponds; crop failure; livestock deaths.
- No early warning systems in place; polluters have actively concealed spill events.
- Clothes torn by contact with contaminated water used for washing.
- Chabanyama residents did not discover the second contamination until three days after the spill, when dead fish were observed.

5.2 Lobito Corridor: Land, Displacement, and Participation

Community members and CSOs raised significant concerns about the process and impact of the Lobito Corridor on farming communities in Chingola District:

- The EIA was not made publicly available. The process for identifying and listing affected farmers was not adequately publicised, resulting in many farmers being omitted from the official compensation register.

7 Lungowe & Ors v Vedanta Resources plc [2019] UKSC 20. The UK Supreme Court held that English courts had jurisdiction over the claims of Zambian villagers against a UK-domiciled parent company. A settlement was subsequently reached. See: Leigh Day (2021). Zambia Mine Pollution Settlement. www.leighday.co.uk.

8 Business & Human Rights Resource Centre (2022). Vedanta-KCM and Community Rights in Zambia: A Case Study. London: BHRRC. The case was litigated as Lungowe & Ors v Vedanta Resources plc [2019] UKSC 20.

9 Community testimony recorded during focus group discussions, Chabanyama, 15 April 2026. Individual accounts are anonymised consistent with the ethical framework in Section 2 of this report.

10 Multiple participant testimonies, Technology Assessment, Chingola, 15 April 2026. Names withheld to protect participants. See also: Human Rights Commission of Zambia (2022). Report on the Rights of Mining-Affected Communities in Copperbelt Province. Lusaka: HRCZ.

- The Area Councillor for Muchinshi Ward stated he had received no information about the railway project, severely limiting his ability to represent constituents.11
- Compensation methodology applied different rates to different crop types. Chilli pepper was valued higher than maize despite maize being by far the dominant crop meaning the majority of farmers will receive lower compensation than the minority.
- Government officers were unaware of revenue-sharing arrangements, data governance provisions, or specific community benefit commitments associated with the corridor.

5.3 Digitalization and AI

One of the most consistent findings across all participant groups was a critical information deficit regarding digitalization and AI and their implications for extractive communities.

Farmers and community members: Little to no awareness of how global demand for digital technologies drives mineral extraction in their communities; no understanding of concepts such as data ownership, algorithmic accountability, or digital infrastructure governance.

CSOs: Limited capacity to engage with technology governance issues; engagement currently limited to traditional communication methods with no digital monitoring tools or mapping platforms.

Government officers: Not familiar with specific provisions of national policies governing digital infrastructure ownership, data sovereignty, or AI governance along the Lobito Corridor. None were aware of any regulatory framework governing data generated by AI exploration systems such as those used by Kobold Metals. 12

6. Governance, Transparency, and Accountability

The Zambia Environmental Management Agency (ZEMA) is responsible for environmental oversight of mining operations but is not decentralised to district level, making it difficult for communities to access support when pollution incidents occur. Environmental and water quality test results are not routinely shared with affected communities.13

Compensation Processes

Compensation processes for both pollution and displacement are opaque, inconsistent, and skewed against community interests. Communities are assessed by multiple government departments operating in isolation (DMMU, Fisheries and Livestock, Agriculture, ZARI), with no integrated coordination or community-facing mechanism for resolving disputes. The principle of FPIC is routinely bypassed, with investors targeting vulnerable individuals rather than consulting communities collectively.

Revenue and Data Transparency

District-level government officials were unable to provide information on: revenue-sharing terms governing corridor mining joint ventures; the percentage of copper to be processed domestically versus exported as raw ore; data ownership arrangements for AI-generated

11 Testimony of the Area Councillor for Muchinshi Ward, plenary session, Day 2, Technology Assessment, Chingola, 16 April 2026.

12 This finding is consistent with broader analysis of AI governance gaps in African extractive sectors. See: Couldry, N. & Mejias, U. A. (2019). The Costs of Connection. Stanford University Press; and African Union (2024). Continental AI Strategy. Addis Ababa: AU Commission.

13 Republic of Zambia (2011). Environmental Management Act, Cap. 204 of the Laws of Zambia. ZEMA's mandate is established under this Act. The absence of district-level ZEMA presence was confirmed by government officers during Day 2 of the assessment, 16 April 2026.

exploration data; or oversight mechanisms for digital systems deployed along the Lobito Corridor.

Civil Society and Community Agency

Communities that have suffered pollution have shown initiative in forming pollution committees and pursuing legal redress. However, these efforts have been undermined by inadequate legal support, intimidation of claimants, and opaque compensation processes. CSOs noted that communities often disengage after receiving initial compensation, only re-engaging CSOs once funds are exhausted reflecting a need for sustained civic education and long-term advocacy support.14

7. RECOMMENDATIONS

Based on the findings of this assessment, the following recommendations are directed to relevant stakeholders.

For Government (National and District Level)

1. **Lobito EIA Disclosure:** Declassify and publicly release the Lobito Corridor Environmental Impact Assessment report, and establish a transparent, independently monitored process for updating the register of affected farmers and revising compensation rates based on verified crop profiles.
2. **Decentralise ZEMA:** Decentralise ZEMA to district level, with a permanent presence in major mining districts including Chingola, to enable real-time environmental monitoring, timely community notification of pollution events, and independent water quality testing with
3. **Environmental Court:** Establish a specialised environmental court or tribunal with jurisdiction over pollution compensation disputes, to provide accessible, affordable, and timely redress for affected communities.
4. **Data Sovereignty:** Develop and implement binding data sovereignty regulations governing AI-generated exploration data, requiring that data produced by foreign operators using Zambian mineral resources is subject to sovereign control and public benefit obligations.
5. **Government Capacity Building:** Conduct targeted capacity-building for district-level government officers on national policies relating to digitalization, AI, data governance, and community rights, ensuring that those responsible for oversight can meaningfully exercise it.
6. **Resettlement Policy:** Review and strengthen the resettlement policy to include uniform minimum compensation standards, FPIC compliance requirements, and independent grievance mechanisms accessible to displaced communities.

For Civil Society Organizations

7. **Community based Monitoring programmes:** Develop community-based monitoring programmes, training community volunteers to document pollution incidents, track compensation disbursements, and report to regulatory bodies.
8. **Long-term Advocacy:** Build long-term advocacy capacity in pollution-affected communities, including sustained legal support, civic education on rights and redress mechanisms, and connections to national and international advocacy networks.

14 This pattern is documented in: Bebbington, A. & Bury, J. (eds.) (2013). Subterranean Struggles: New Dynamics of Mining, Oil and Gas in Latin America. Austin: University of Texas Press. Similar dynamics have been observed in Zambian mining contexts by the Jesuit Centre for Theological Reflection (JCTR, 2021).

9. **Community Dialogues:** Facilitate community-level dialogues on digital agriculture and the Lobito Corridor to ensure that community voices are represented in policy discussions about corridor development, agricultural digitalization, and data governance.
10. **Joint Advocacy:** Develop joint advocacy positions with communities and CSO networks on the governance of mining, infrastructure, and technology developments, demanding transparency, accountability, and the meaningful implementation of FPIC.
11. **Institutionalise Governance:** Support the institutionalisation of community-driven technology governance frameworks, including locally articulated principles on data ownership, consent, algorithmic transparency, and public versus private control of digital infrastructure.

For Communities and Community Organisations

12. **Formalise Committees:** Formalise pollution committees and community advocacy structures with clear governance, documentation practices, and linkages to CSO and legal support networks.
13. **Sustained CSO Engagement:** Engage consistently with CSOs and legal support organisations throughout compensation and advocacy processes, rather than only at points of crisis.
14. **EIA Participation:** Participate actively in any future EIA consultations, insisting on access to technical reports, independent translation where needed, and adequate time to review and respond to proposed developments.

8. CONCLUSIONS

The communities of Chingola District are at the nexus of two of the most consequential global transitions of the 21st century: the expansion of digital technology and Artificial Intelligence, and the intensification of critical mineral extraction to fuel that expansion. Communities in Shimulala, Chabanyama, Kakalo, and surrounding areas are bearing disproportionate costs: environmental contamination, inadequate compensation, impending displacement, and systematic exclusion from decisions that determine their futures.

This assessment has documented significant governance failures at multiple levels. Environmental regulation is under-resourced and insufficiently independent. Compensation processes are opaque, inconsistently implemented, and systematically biased against community interests. The Lobito Corridor a flagship investment in critical mineral infrastructure has been advanced without meaningful community participation or transparent benefit-sharing commitments. And the digital and AI technologies that are reshaping the mineral extraction landscape are being deployed without any community knowledge of, or participation in, the governance of the data and systems involved. Perhaps most strikingly, the assessment found that this exclusion extends beyond communities themselves. Local government officers, CSOs, and elected representatives alike demonstrated significant knowledge gaps about digitalization, AI, and the policy frameworks designed to govern them. This represents a structural barrier to accountability that cannot be addressed by communities alone.

The path forward requires coordinated action across government, civil society and communities: to close information gaps, strengthen regulatory enforcement, establish accessible grievance mechanisms, and build the CSO and community capacity needed to participate meaningfully in an increasingly digitalised resource governance landscape. The communities of Chingola have demonstrated resilience and agency in the face of historic and ongoing injustices. The task of this assessment and the advocacy that follows it is to ensure that this resilience is supported by institutional systems that fulfil, rather than frustrate, their rights.

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10. Annexes

Annex A: List of Relevant National Policies

- National Three Million Tonnes Copper Production Strategy (August 2024), Ministry of Mines and Minerals Development
- National Mineral Resources Development Policy (2022), Ministry of Mines and Minerals Development
- Geological Minerals Development Act (2025), Parliament of Zambia
- National Artificial Intelligence Strategy, Ministry of Science and Technology
- National Digital Transformation Strategy 2023–2027, Ministry of Science and Technology
- National Local Content Strategy, Zambia Development Agency (ZDA)
- Environmental Impact Assessment Regulations, Zambia Environmental Management Agency (ZEMA)

Annex B: Key Concepts and Definitions

Term	Definition
FPIC	Free, Prior and Informed Consent — the right of communities to give or withhold consent to projects affecting their lands, resources, and rights, in advance and based on adequate information.
EIA	Environmental Impact Assessment — a process to evaluate the environmental consequences of a proposed project or development before a decision is taken.
ZEMA	Zambia Environmental Management Agency — the national regulatory body responsible for environmental monitoring and enforcement.
AI	Artificial Intelligence — technology enabling computers to perform tasks that typically require human intelligence, including pattern recognition, data analysis, and decision-making.
Lobito Corridor	An 830-kilometre railway connecting Zambia and DRC's mineral regions to Angola's Atlantic coast, facilitating export of critical minerals.
Kobold Metals	A US-based mining technology company that used AI to discover a significant high-grade copper deposit at the Mingomba site in Zambia.
DMMU	Disaster Management and Mitigation Unit: a government body under the Office of the Vice President responsible for disaster preparedness and response.
PPP	Public-Private Partnership: a cooperative arrangement between government and private sector entities for infrastructure development.