



**HakiRasilimali**

Transparency & Accountability  
for the Extractive Industry

# **Towards Sustainable Mining in Tanzania: An Examination of Policy and Practice Dimensions of Responsible Mining**



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**LIST OF ABBREVIATIONS**

|               |   |
|---------------|---|
| <b>ASM</b>    | Artisanal and Small-Scale Mining                |
| <b>CCRA</b>   | Climate Change Risk Assessment                  |
| <b>CDAs</b>   | Community Development Agreements                |
| <b>CRO</b>    | Community Relations Officer                     |
| <b>CSR</b>    | Corporate Social Responsibility                 |
| <b>DRC</b>    | Democratic Republic of Congo                    |
| <b>EIA</b>    | Environmental Impact Assessment                 |
| <b>EMA</b>    | Environmental Management Act                    |
| <b>ESG</b>    | Environmental, Social, and Governance           |
| <b>FPIC</b>   | Free, Prior, and Informed Consent               |
| <b>GDP</b>    | Gross Domestic Product                          |
| <b>GISTM</b>  | Global Industry Standard on Tailings Management |
| <b>GRI</b>    | Global Reporting Initiative                     |
| <b>ICMM</b>   | International Council on Mining and Metals      |
| <b>KIIs</b>   | Key Informant Interviews                        |
| <b>LGA</b>    | Local Government Authority                      |
| <b>MAC</b>    | Mining Association of Canada                    |
| <b>NEMC</b>   | National Environment Management Council         |
| <b>TSF(s)</b> | Tailings Storage Facility(ies)                  |
| <b>TSM</b>    | Towards Sustainable Mining                      |
| <b>VEO</b>    | Village Executive Officer                       |

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## EXECUTIVE SUMMARY

The mining sector serves as a powerful engine for economic vitality, yet the extraction of mineral wealth often leaves a profound footprint on the environment and the livelihoods it touches. This study examines responsible mining practices in Tanzania using Barrick's Bulyanhulu Gold Mine as the case study and lessons from Towards Sustainable Mining (TSM) standards. Adopting a qualitative case study design, the research integrated perspectives from national regulators, CSOs, and the host communities of Kakola No. 9 and Lwabakanga, alongside an analysis of Barrick's sustainability disclosures.

The research revealed a dual reality. The mining company demonstrated robust contributions to infrastructure, specifically in healthcare, education, and transport, and maintains active biodiversity

programs. However, the study also observed a structural contrast between corporate-level successes and site-level perceptions. While environmental and social protocols are established, the findings indicated a centralized community engagement model. Similarly, while monitoring systems for blasting and water quality are in place, the data suggest that communities' concerns are closely tied to limited transparency of water quality and blasting monitoring results, and the accessibility of the existing grievance mechanism.

Tanzania's legal framework establishes a regulatory baseline on responsible mining, pioneered by the Mining Act 2010 RE 2022 and its regulations, and the Environmental Management Act 2004. While global corporate standards like ICMM and GRI have encouraged progress, their

reliance on self-reporting can result in site-specific accountability gaps. Lessons from the Towards Sustainable Mining (TSM) standards, which utilize mandatory and verified mine-level assessments, provide a structured approach to improving transparency and independent validation at the local level.

To enhance responsible mining practices, this study recommended the decentralization of the community engagement model used by the mining company, conducting community sensitization programs on local content to raise awareness on who is 'local' to manage communities' expectations on local content projects, relocation of the mine's CRO office outside the mine fence, and strengthening biodiversity conservation especially maintaining vegetation and trees.

**1**

**INTRODUCTION**

## 1. INTRODUCTION

The mining sector serves as a powerful engine for economic vitality, yet the extraction of mineral wealth often leaves a profound footprint on the environment and the livelihoods it touches (Farmonaut, 2025). These dual realities, the promise of economic prosperity and the risk of environmental and social disruption, demand a shift toward responsible mining as a core operational imperative (Joseph, 2025; Teku, 2025). By centering sustainability at the heart of extraction, the industry can transcend simple profit to achieve a vital equilibrium between industrial growth and the preservation of environmental and social integrity (ICMM, 2025).

Historically, the expansion of mining activities has been linked to critical challenges such as water contamination and public

health risks, alongside social impacts including the marginalization of local voices in the vicinity of mining operations' decision-making processes (ETC, 2023; BHRRC, 2025). These persistent tensions underscore a global challenge: ensuring that industrial gains do not come at the expense of community well-being or environmental integrity (Oxfam Australia, 2020).

In response to these challenges, global movements to enhance responsible mining emerged to codify higher benchmarks of accountability and sustainability. Leading international frameworks, including the International Council on Mining and Metals (ICMM), the Global Reporting Initiative (GRI), Towards Sustainable Mining (TSM) Standards, and the Initiative for Responsible Mining Assurance (IRMA), have

been instrumental in driving corporate-level progress and defining the metrics of environmental and social risk (IRMA, 2018; MAC, 2023; ICMM, 2025).

On the African continent, the stakes of responsible mining are particularly high. Despite its vast mineral wealth, the region continues to face persistent challenges, including conflict, severe environmental degradation, and the marginalization of host communities (Dairo & Oginni, 2025; Teku, 2025). For instance, the Democratic Republic of Congo (DRC), which produces over 70% of the world's cobalt, remains among the poorest nations globally, a clear example of how mineral abundance does not automatically translate into broad-based social development (OPEC Fund, 2023). Similarly, environmental crises such as deforestation and

toxic water contamination caused by unregulated small-scale gold mining (Galamsey) in Ghana demonstrate how weak governance can undermine public health and sustainable livelihoods (Tambol et al., 2023; Dumashie, 2025).

In Tanzania, responsible mining is gradually taking root through deliberate government efforts aimed at striking a balance between economic growth and social and environmental integrity. The Mining Act 2010 (RE 2019) introduced mandatory local content requirements and Corporate Social Responsibility (CSR) to institutionalize community inclusion and corporate social responsibility. However, the community participation remains limited, with engagement often occurring on an ad hoc basis rather than through proactive frameworks. (Mbilima, 2021; Gillo et al., 2024).

Moreover, communities surrounding major mining operations still endure serious health risks from air and water pollution, as well as damage to property caused by blasting and poor environmental safeguards (Leuenberger et al., 2021; Lyatuu et al., 2021). Incidents such as the 2022 Williamson Diamond Mine tailings dam collapse further reveal gaps in the enforcement and monitoring of environmental and safety standards (IPIS, 2023; Gomezulu, 2025).

Despite notable policy reforms and corporate commitments toward inclusivity, environmental protection, and community development, significant gaps persist in translating these frameworks into consistent, equitable, and enforceable practices. Persistent challenges such as limited community participation, pollution-related health risks, and environmental incidents highlight the disconnect between policy intent and practical outcomes.

Consequently, this study examined responsible mining practices in Tanzania and identified existing implementation gaps resonated from the Towards Sustainable Mining (TSM) standards. The TSM standards are a globally recognized accountability framework consisting of nine protocols centered on community and people, environment, and climate change. Therefore, this study documented key lessons from TSM that can be contextualized in Tanzania to enhance governance, accountability, and sustainability within the mining sector.

## 1.1 Main Objective of the Study

To examine responsible mining practices in Tanzania's mining sector, using lessons from the Towards Sustainable Mining (TSM) Standards.

### 1.1.1 Specific Objectives of the Study

- I. To explore responsible mining practices in Tanzania.
- II. To analyze key implementation gaps for enhancing responsible mining practices in Tanzania.
- III. To document key lessons from TSM that can be contextualized in Tanzania to enhance governance, accountability, and sustainability within the mining sector.



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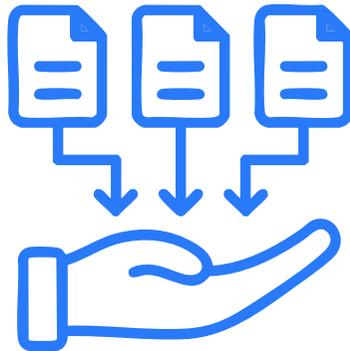
**RESEARCH METHODOLOGY**

## 2. Research Methodology

### 2.1 Case Study

This study employed a qualitative case study approach, centering on Barrick's Bulyanhulu Gold Mine to enable in-depth analysis of responsible mining dimensions. The Towards Sustainable Mining (TSM) standards served as the primary analytical framework. Focusing on the TSM framework, this research examined the protocols for Community Relationships, Tailings Management, Water Stewardship, and Biodiversity Conservation. Other areas, such as climate change, crisis management and communication, safe, healthy, and respectable workplaces, child and forced labour, and equitable, diverse, and inclusive workplaces, were omitted because access to Barrick's operational data in those specific sectors was limited during the data collection phase.

### 2.2 Data Collection



Data for this study were gathered from a combination of primary and secondary sources to enable triangulation and a comprehensive multi-stakeholder perspective.

**Primary Data:** 35 key informant interviews (purposely selected: community leaders and regulatory authorities, randomly selected community members from Kakola No. 9 and Lwabakanga villages) and field observations aligned with TSM protocols.

**Secondary Data:** Policies, laws (e.g., Mining Act R.E. 2019), international frameworks (ICMM, IRMA, GRI, TSM), and Barrick's Bulyanhulu Gold Mine sustainability reports

To ensure the integrity of the findings, the study employed a triangulation of interviews, observations, and documentary analysis. This was further strengthened by a stakeholder validation process to validate the accuracy and credibility of the findings. Ethical standards were strictly upheld throughout, including obtaining informed consent, guaranteeing participant anonymity, and centering community voices.

### 2.3 Limitations

- i. Due to time limitations and a lack of formal response from Barrick's Bulyanhulu Gold Mine, the study shifted from staff interviews to analyzing published sustainability reports, which, while data-rich, reflect self-reported corporate perspectives rather than direct mine company experiences.
- ii. The study is exclusively limited to the Towards Sustainable Mining (TSM) standards and does not account for performance indicators defined by other global mining frameworks.
- iii. Because the research focuses on a single case study at the Bulyanhulu Gold Mine, the findings may not be fully representative of the diverse operational challenges across Tanzania's entire mining sector.

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## OVERVIEW OF GLOBAL RESPONSIBLE MINING STANDARDS

### 3.1 Global Responsible Mining Standards and Responsible Practice in Tanzania

Tanzania's mineral wealth has drawn multinational operators and artisanal miners, intensifying attention on responsible mining practices that integrate environmental protection, human rights, community development, and transparency. To meet global expectations and investor requirements, large-scale companies have aligned with international frameworks. Both Barrick Gold (North Mara, Bulyanhulu) and AngloGold Ashanti (Geita) are members of the International Council on Mining and Metals (ICMM) and therefore bound by its Mining Principles and Performance Expectations, which set standards on tailings governance, water stewardship, biodiversity protection, and mine closure (ICMM, 2024).

In addition, these companies publish GRI-aligned sustainability reports, with Barrick also adhering to ISO 14001 (environmental management) and ISO 45001 (health and safety), while AngloGold also aligns with the UN Guiding Principles on Business and Human Rights (UNGPs) and the Voluntary Principles on Security and Human Rights (VPSHR) (AngloGold Ashanti, 2024; Barrick, 2024).

### 3.1.1 The International Council on Mining and Metals (ICMM)

The International Council on Mining and Metals (ICMM) was founded in 2001 by a group of the world's leading mining and metals companies. It brings together 25 major mining companies and 30 associations to promote sustainable development in mining. Its framework is built on 10 Mining Principles, covering ethics, human rights, risk management, health and safety, environmental stewardship, community engagement, mine closure, and transparency (ICMM, 2024). These principles are implemented through detailed performance expectations and are aligned with the United Nations Sustainable Development Goals. All member companies are required to apply them across their operations, undergo independent third-party verification every three years, and publish sustainability reports in line with global standards such as the Global Reporting Initiative.

ICMM has played a leading role in developing global benchmarks, notably the Global Industry Standard on Tailings Management (GISTM), following Brazil's Brumadinho disaster, which strengthened tailings safety worldwide (ICMM, 2020). In countries such as Chile and Canada, ICMM-aligned operations have improved water stewardship, biodiversity management, and closure planning, reinforcing trust between companies, governments, and communities.

The International Council on Mining and Metals (ICMM), while advancing responsible mining, faces persistent weaknesses. Cases in Tanzania, Brazil, South Africa, and Papua New Guinea on water contamination, dam failures, acid mine drainage, and biodiversity loss pose questions. Critics argue that ICMM's reliance on company data and limited audits weakens its credibility, making enforcement inconsistent and transparency limited. Thus, despite being the leading framework for sustainable mining, its effectiveness remains constrained.

### 3.1.2 The Global Reporting Initiative (GRI)

The Global Reporting Initiative (GRI), founded in 1997, is the world's most widely used framework for sustainability reporting. It provides standards and disclosure guidelines on environmental, social, and governance (ESG) issues through Universal, Sector, and Topic Standards, covering areas such as emissions, waste, biodiversity, labour, human rights, anti-corruption, and community engagement (GRI, 2024). Unlike the sector-specific ICMM, GRI applies across all industries but includes a dedicated Mining and Metals Sector Standard.

The GRI framework is valued for its global applicability, standardized disclosures, and focus on transparency. It is widely used in countries such as Tanzania, Chile, and Australia, where mining companies apply it in investor reporting and regulatory compliance. In Tanzania, GRI-based reporting has allowed greater public access to data on water management, emissions, and community investment.

However, GRI's heavy reliance on company self-reporting raises concerns about data accuracy and completeness, as firms may selectively disclose favorable information while omitting negative impacts (KPMG, 2022). Scholars and practitioners warn that without strong mechanisms for independent verification, GRI reports risk serving as tools for greenwashing rather than instruments of genuine accountability (Boiral & Henri, 2015; Fonseca et al., 2020). While GRI is the most widely recognized framework for environmental, social, and governance reporting, its effectiveness relies on independent assurance, regulatory enforcement, and consistent on-site implementation.

### 3.1.3 The Initiative for Responsible Mining Assurance (IRMA)

The Initiative for Responsible Mining Assurance (IRMA), established in 2006, is a globally recognized assurance system specifically designed for the mining sector. IRMA provides a comprehensive site-level standard and independent verification system for responsible mining. Its Standard for Responsible Mining integrates environmental, social, and governance (ESG) requirements across the full mine lifecycle, covering areas such as human rights, labor and working conditions, occupational health and safety, environmental protection, water and waste management, community impacts, resettlement, grievance mechanisms, and benefit-sharing (IRMA, 2018).

IRMA is built around an independent third-party auditing system, complemented by public disclosure of assessment results. The standard places strong emphasis on meaningful community participation, including clear requirements for Free, Prior, and Informed Consent (FPIC), as well as the establishment of accessible, effective, and transparent grievance mechanisms to address community concerns.

In the Tanzanian context, IRMA is often viewed by civil society organizations as particularly relevant for addressing persistent governance gaps related to community consent, resettlement processes, and environmental accountability at the mine-site level. Its focus on independent verification and public reporting contrasts with self-reported sustainability disclosures and aligns well with calls for greater transparency in large-scale mining operations.

### 3.1.4 Towards Sustainable Mining (TSM)

The Towards Sustainable Mining (TSM) initiative was launched in 2004 by the Mining Association of Canada to promote accountability and sustainability at the mine-site level. Unlike broader frameworks, TSM is sector-specific and requires companies to measure and publicly report performance across critical areas such as tailings management, water stewardship, community engagement, biodiversity conservation, Indigenous relations, and climate change (MAC, 2023). A distinctive feature of TSM is its mandatory site-level performance assessment, where mines conduct annual self-assessments that are verified by independent third-party audits every three years, with results published in a standardized, comparable format (MAC, 2022). This design moves beyond corporate-level reporting, ensuring transparency and accountability directly at the operational level.

TSM has demonstrated tangible success in countries such as Canada, Finland, and Botswana, where public scorecards and community monitoring have improved trust between companies, governments, and stakeholders. In Canada, TSM has strengthened Indigenous engagement and tailings governance, while in Botswana, it has advanced water stewardship in a water-scarce environment (MAC, 2023).

Nevertheless, critics caution that TSM can be resource-intensive, requiring significant institutional capacity and industry commitment for effective implementation.

### 3.2 Comparative Insights on Global Standards and the Role of Towards Sustainable Mining (TSM) Standards for Best Practice

Both ICMM and GRI have advanced responsible mining globally and in Tanzania, but their reliance on self-reporting, company-provided data, and limited third-party assurance weakens enforcement and leaves space for selective disclosure or greenwashing (KPMG, 2022).

These gaps can be addressed by the Towards Sustainable Mining (TSM) Standards. Unlike ICMM or GRI, Towards Sustainable Mining (TSM) Standards requires mandatory, site-level performance measurement across critical areas such as tailings management, water stewardship, community engagement, biodiversity, and climate change.

Each mine is assessed annually, verified independently every three years, and results are made public in a standardized, comparable format (MAC, 2023). Adapting the Towards Sustainable Mining (TSM) Standards could strengthen credibility by ensuring site-specific accountability, transparent disclosure, and community-level monitoring, bridging the enforcement gaps in ICMM and GRI while extending responsible mining practices beyond corporate headquarters to the actual mine sites.

4

**FINDINGS  
AND DISCUSSION**

## 4.1 Community and People

The TSM protocols mandate building meaningful relationships with communities in the mining vicinities while collaborating with them to minimize negative impacts and maximize social benefits. It further ensures operational accountability by requiring formal responses to all community feedback and concerns.



## 4.1 Community and People



The Tanzanian legal framework, anchored by The Mining Act [CAP. 123 R.E. 2019] require mining companies to establish community inclusion through Local content requirements and Corporate Social Responsibility (CSR) plans developed in coordination with local government authorities. While the former is not exclusively referred to communities in the vicinity of mining operations, the latter does. CSR regulations aim to foster a structured relationship between mineral right holders and host communities. However, studies have indicated that while the government has strengthened these requirements, meaningful community participation often remains inadequate and reactive (Mbilima, 2021; Gillo et al., 2024).

Experience from Bulyanhulu Gold Mine reflected a more centralized engagement model, facilitated by the mine's Community Relations Officer (CRO), who serves as the primary bridge between the mine's management and the Kakola No.9 and Lwabakanga villages. Moreover, Communities from these villages perceive that Barrick's engagement strategy heavily prioritizes local government and village leaders as the authoritative points of contact. While this creates a clear formal hierarchy, it suggests the creation of a "bottleneck" effect. By channeling the majority of communication through a small group of intermediaries, left the affected population experiences a perceived distance from the mine's decision-making processes related to their wellbeing.

“  
There’s hardly any direct consultation between the mine and us in the community. As of October 2025, there hasn’t been a single meeting where we, the community members, were directly involved. All meetings are held between the mine and our local leaders, and we’re never told what’s really going on. **Said a respondent.**”

This centralized approach, while administratively efficient for the mine, may inadvertently limit a meaningful engagement framework. Also, the reliance on leadership-level briefings has led to a documented information gap, where host communities feel uninformed regarding mining operations and community impact.



#### 4.1.2 Socio-Economic Contributions and Infrastructure Development

The Tanzanian legal framework, specifically The Mining Act [CAP. 123 R.E. 2019] and its enabling regulations, such as the Mining (Local Content) Regulations (2018) and CSR regulations of 2023, mandate that mining companies contribute to local development through procurement of goods and services, employment opportunities, and Corporate Social Responsibility (CSR).

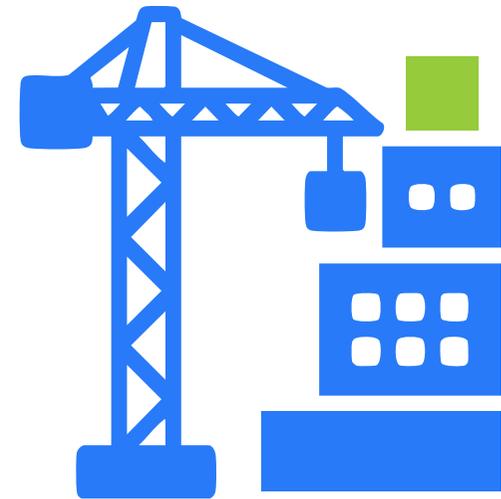
The findings from Bulyanhulu Gold Mine reflected some deliberate commitment to local social-economic benefits contribution through employment creation and community-based social investments. Notably, the establishment of the local security employment through ‘the Sungusungu initiative’. Furthermore, the construction of Lwabakanga Primary School and village dispensaries, and road improvements.

In response to community concerns regarding water contamination, the mine installed a water system in Kakola No. 9 village, representing an important initial intervention aimed at safeguarding public health. However, field experience reveals a

discrepancy between the capacity of the infrastructure provided and the actual needs of the community. At the time of the study, the water system relied on a single distribution point (tap) serving the entire village. As respondents explained:

“  
The mine has provided us with employment, built schools and a dispensary, and improved our roads. The mine has also built a water system for us, but there’s only one tap for the whole village. **Said a respondent.**  
”

This underscores a critical limitation in the design of the water infrastructure. While the intervention appears to have addressed concerns related to water quality, the centralized configuration of the distribution system constrains accessibility for households located farther from the tap. Consequently, the findings suggest that the effectiveness of the water initiative is undermined by insufficient distribution capacity, highlighting the need for further expansion to ensure equitable access across the village.



### 4.1.3 Community Social Protection and Operational Externalities

Community social protection in Tanzania's mining sector is anchored in national laws that seek to mitigate operational externalities and safeguard community welfare. The Environmental Management Act (2004) requires environmental and social impact assessments and community participation, while the Mining Act (2010, as amended) obliges mining companies to provide compensation for adverse impacts, among others.

Together, these laws frame mining as an activity that must balance resource extraction with social protection, although effective outcomes depend on consistent enforcement and meaningful community engagement. While Barrick's Bulyanhulu Gold Mine has established health and safety initiatives, field data suggest that challenges persist in the full mitigation of some externalities, affecting the quality of life in adjacent villages.



### Air Quality and Public Health

Air quality emerged as a significant public health concern for communities surrounding the Bulyanhulu Gold Mine, particularly in relation to dust emissions generated by heavy mining trucks. Community members consistently associated increased airborne dust with adverse respiratory outcomes, especially among children, indicating a perceived link between mining-related activities and everyday health risks. This lived experience points to air pollution as a critical operational externality that directly affects community well-being and strains local health services. Most of the community respondents reporting frequent visits to local dispensaries for respiratory conditions perceived to be attributed to dust exposure. As one participant observed,



We have a big problem with dust from the mine trucks. If you go to the dispensary, you'll see children coming in every day with chest problems.



Such accounts suggest that dust emissions are not merely an environmental nuisance but a sustained public health concern embedded in daily community life.

Within this context, Tanzania's environmental and mining regulations, particularly those mandating dust control, air quality monitoring, and emission limits, provide an important normative benchmark for acceptable operational practice. However, the persistence of dust-related health complaints indicates a gap between regulatory intent and on-the-ground outcomes and community concern.

Consistent with findings in the broader literature (Leuenberger et al., 2021; Lyatuu et al., 2021), illustrates how compliance-oriented environmental management may fall short of adequately protecting community health, underscoring the

need for more responsive and community-centered approaches to air quality management in mining areas.

### Community Risks Perception on Blasting Activity



Blasting activities associated with large-scale mining constitute a significant source of concern for communities in proximity to Bulyanhulu, particularly where local housing is structurally vulnerable. Communities are linking blasting operations to the emergence of cracks in their residential buildings, framing blasting not only as a technical process but as a perceived threat to household safety and property security. These concerns persist despite the mine's use of advanced notification protocols intended to alert communities to

to scheduled blasting events.

Documented during field data collection, a critical factor shaping this experience is the nature of the local housing stock. Many dwellings in surrounding villages are constructed using traditional materials such as mud and poles, which typically lack the structural reinforcement of modern masonry. As a result, these structures may be more susceptible to ground vibrations, even when blasting activities remain within technically permissible limits.

This contextual vulnerability complicates the assessment of blasting impacts, as standardized safety thresholds may not adequately reflect the resilience of local buildings.

Furthermore, although Tanzanian regulations require the monitoring and control of ground vibrations and air blasts to prevent damage to surrounding property, community members reported limited access to information regarding monitoring outcomes. Respondents indicated that a government-led vibration assessment was conducted following repeated complaints, yet the findings were not communicated back to affected residents. As a respondent noted,

“

The blasting from the mine has caused cracks in our houses. After many complaints, the government came to measure the vibrations, but they never shared the results with us, so we still don't know if our homes are safe.

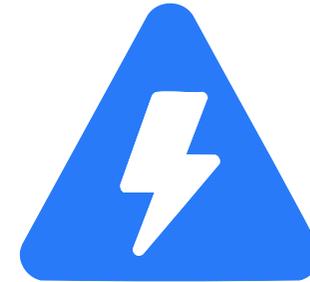
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While this research does not independently verify a causal relationship between blasting and structural damage, it noted that the absence of transparent and accessible data has contributed to ongoing uncertainty and mistrust. The findings suggest that the issue extends beyond technical compliance to encompass communication and accountability.

Improving the disclosure of monitoring results and contextualizing them in relation to local building conditions represents a critical opportunity for both mining operators and regulators to address community concerns and strengthen social trust around blasting-related risks.

## Electrical Safety and Community Mobility

Safety concerns regarding high-voltage electricity infrastructure emerged prominently during data collections. Community members associated the proximity of power lines to residential areas with reported electrical accidents, heightening perceptions of risk, particularly for children. These incidents have contributed to sustained anxiety concerning the safety of installations, particularly for children. As one respondent explained:



“

There have been accidents involving the mine's high-voltage lines. Residents, including children, have sustained injuries, which has created a high level of concern within the community.

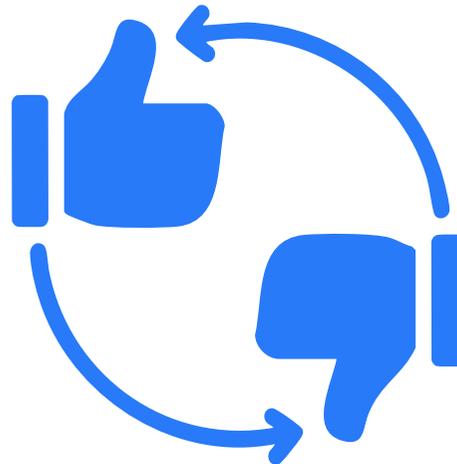
”

Furthermore, the mine's perimeter fencing, while serving a legitimate security function, has altered long-established movement patterns for residents of the surrounding villages. The introduction of this physical barrier has increased the distance required to access basic services, including schools and healthcare facilities, thereby creating everyday logistical burdens for community members. These mobility constraints represent an indirect but persistent operational externality, underscoring the need for collaborative assessment of pedestrian access routes and safety measures in order to balance industrial security requirements with community accessibility.

#### 4.1.4 Grievance Redress Mechanisms and Feedback Loops

Grievances regarding environmental, social, and economic impacts are a common feature of interactions between mining investors and host communities, hence, making effective grievance redress mechanisms key for maintaining constructive relations and a durable social license to operate.

At the Bulyanhulu Gold Mine, a formal grievance mechanism exists and is structured around local governance institutions, with village government offices serving as the initial point of complaint submission before cases are forwarded to the mine's Community Relations Officer. Under this system, community members submit concerns via standardized forms at the village level, which are then forwarded by the Village Executive



Officer (VEO) to the mine's Community Relations Officer (CRO).

Field data, however, suggests that the effectiveness of this mechanism is constrained by weaknesses in follow-up and communication. While the intake process is clearly defined, respondents reported delays in receiving responses and limited access to information regarding

the status or resolution of submitted grievances. The absence of a transparent tracking and feedback system has contributed to perceptions of procedural opacity, potentially undermining community trust in the mechanism's ability to deliver meaningful outcomes.

Additional barriers were identified in relation to accessibility and awareness. The physical location of the CRO's office, situated within the mine's secured perimeter, was identified as a logistical barrier to direct consultation. This placement requires community members to navigate mine security protocols to receive information or discuss grievances, which can discourage spontaneous engagement.

Furthermore, the study found varying levels of awareness regarding the grievance process; several community members were unaware of the formal complaint procedure, suggesting an opportunity for enhanced outreach and community education regarding available recourse channels.

## 4.2 Environment and Climate Change

### 4.2.1 Water Stewardship

Effective management of local water resources constitutes a central pillar of the mine's social license to operate, given water's direct relevance to public health, livelihoods, and environmental integrity. In Tanzania, this responsibility is reinforced by a robust legal framework. Under The Mining Act [CAP. 123 R.E. 2019] and the Environmental Management Act (2004), and the Water Resources Management Act, 2023, which obligate mining license holders to adhere to environmental protection principles and assign liability for pollution-related harm. These laws prohibit the discharge of pollutants into water and mandate the Mining Commission to verify compliance through environmental audits and progress rehabilitation plans.



Despite these formal safeguards, the study reveals a disconnect between reported corporate practices and community-level understanding. While Barrick indicates that participatory water quality monitoring is undertaken by engaging community representatives in sampling and the review of laboratory results (Barrick, 2024), field data suggest that this information does not reach the wider community members/potentially affected community. Respondents reported limited or no access to water quality test results, contributing to uncertainty regarding the safety of both supplied and alternative water sources.

This uncertainty is reinforced by broader environmental concerns articulated by community members. As their livelihood depends on harvesting water during rain seasons, their concern emanates from their observation that harvested rainwater often contains dark particulates, which they associate with dust deposition from mining activities, and they expressed widespread apprehension that groundwater accessed through boreholes may be contaminated. Although this research did not include independent laboratory analysis of rainwater or groundwater samples, and therefore reflects perceptions rather than verified chemical evidence, these perceptions are analytically significant.

Taken together, the combination of observed environmental changes and the reported absence of transparent information sharing has produced undeniable “transparency gap.” This gap undermines confidence in existing monitoring processes and highlights the need for more frequent, accessible, and community-wide communication of water quality data to strengthen trust and address persistent concerns regarding the safety of local water resources.



## 4.2.2 Tailing Dam Facility Management

Tailings management at Bulyanhulu Gold Mine is governed by a rigorous framework including the Mining Regulations (2010), Environmental Management Act, 2004, and a global tailing management standard, the Global Industry Standard on Tailings Management (GISTM). While Barrick reports high water-recycling rates and independent safety reviews to mitigate environmental risks (Barrick, 2024). Field experience revealed a disconnect between these technical controls and local observations. Residents in proximity to the mine have expressed ongoing concerns that tailings facilities may overflow during heavy rains, leading to a perceived link between water leakage from the facility and the degradation of crops in adjacent farms.

This community anxiety is contextualized by a June 2023 to March 2024 Mining Commission audit, which identified a specific operational lapse: the failure to conduct regular inspections on the pipeline transporting water from the tailings storage facility to the treatment plant (Ministry of Minerals, 2025). This finding highlights a discrepancy between the mine's high-level sustainability reporting and the localized monitoring of critical infrastructure. Consequently, while the mine maintains technical compliance, the consistency of its field-level oversight remains a point of regulatory scrutiny and community concern.



### 4.2.3 Biodiversity Management Practices

Biodiversity conservation in the Tanzanian mining sector is governed by the Environmental Management Act (2004) and the Environmental Management (Protected Areas) Regulations, which require developers to minimize ecological footprints and restore disturbed land.

To operationalize these commitments, Bulyanhulu has utilized a Biodiversity Action Plan since 2021, supported by a Risk and Impact Assessment tool that evaluates environmental sensitivities during early-stage planning. However, despite these institutional mechanisms, field observations suggest a significant divergence between reported restoration targets and the current state of the landscape.

Limited vegetative cover was observed, and from nighttime observations, mine buildings were clearly visible due to the absence of surrounding vegetation. While mining necessitates some land disturbance, it is possible to maintain pockets of original flora and trees alongside active infrastructure. The current visibility of the facility suggests an opportunity to better align on-site landscaping and screening practices with the company's broader biodiversity and restoration commitments.



5

## **GAPS AND OPPORTUNITIES FOR IMPROVEMENT**

## 5.1 Community Engagement and Regulatory Procedural Gaps

The Bulyanhulu Gold Mine utilizes a centralized engagement model facilitated by a Community Relations Officer (CRO) as the primary link between management and the host villages of Kakola No. 9 and Lwabakanga. While this strategy adheres to the Tanzanian Mining Act and the Environmental Management Act (2004), which mandate formal consultations during critical phases such as land acquisition and resettlement, the research identifies a significant procedural gap regarding continuous engagement. Current legislation provides clear protocols for initial entry and displacement; however, it lacks specific requirements for ongoing, direct public consultation throughout the life of the mine to maintain a social license to operate. This regulatory silence allows for a "bottleneck" effect, where information is channeled exclusively through local government intermediaries rather than the broader community.

This centralized approach, while administratively efficient, risks creating an information gap and a perceived distance from decision-making processes. By contrast, the Towards Sustainable Mining (TSM) Indigenous and Community Outreach Protocol serves as a benchmark for bridging these gaps. The protocol emphasizes the identification of diverse interest groups and the fostering of meaningful, two-way relationships that go beyond mere compliance with land-acquisition laws. By learning from these international standards, there is an opportunity to strengthen local practice, shifting from a model centered on leadership briefings to one that ensures continuous, inclusive, and direct dialogue with the wider community.



## 5.2 Water Stewardship and Regulatory Dissemination Gaps

Water stewardship is regulated by the Water Resources Management Act (2009) and the Mining (Safety, Occupational Health and Environmental Protection) Regulations (2010), which require mine managers to implement comprehensive monitoring programs and maintain water quality standards defined by the Tanzania Bureau of Standards (TBS). However, a significant procedural gap exists within this framework, as the law mandates reporting to government entities like the Mining Commission and Basin Water Boards but lacks explicit requirements for the direct disclosure of these technical results to host communities. This regulatory silence creates a transparency deficit where, despite a company's reported adherence to legal sampling protocols, the broader population remains uninformed and reliant on observable environmental changes, such as particulates in rainwater or perceived borehole contamination, to assess their own safety.

To address these challenges, the Towards Sustainable Mining (TSM) Water Stewardship Protocol provides a benchmark for moving beyond mere legal compliance by establishing clear internal accountability for water management and committing to public performance reporting. By adopting TSM principles, a mining operation can transition toward more inclusive water-scale planning and governance, ensuring that water-related objectives are not only met but are also communicated transparently to all stakeholders. This proactive approach facilitates the sharing of verifiable data directly with the community, thereby closing the information gap and fostering a more collaborative environment for the shared management of local water resources.



### 5.3 Broken Feedback Loops in Community Complaints

Bulyanhulu Gold Mine utilizes a liaison-based grievance system where complaints are channeled through the Village Executive Officer (VEO) to the Community Relations Officer (CRO). While this structure aligns with the Mining Act [CAP. 123 R.E. 2019] and the Mining (Disputes Resolution) Regulations (2021), the location of the CRO office within the mine's secure perimeter creates a "physical and psychological barrier" that may discourage residents from reporting sensitive issues (Mdanku, 2024). This setup, alongside a legal framework that lacks mandatory requirements for direct feedback at the site level, contributes to a "transparency deficit" and perceived exclusion among the broader community (Poncian, 2021; Moh'd, 2022).

To address these barriers, the Towards Sustainable Mining (TSM) Indigenous and Community Relationships Protocol serves as a benchmark for equitable access. TSM standards mandate that grievance mechanisms be physically accessible, often through off-site engagement hubs, and culturally appropriate.

By implementing transparent tracking systems and committed response timelines, operations can move beyond administrative intake toward a functional feedback loop that fosters community trust and documented outcomes.



6

## **ROLE OF TSM IN STRENGTHENING SUSTAINABILITY**



## 6.1 Institutionalising Best Practices

Integrating TSM protocols into the Tanzanian sector will provide a strategic bridge between the broad requirements of The Mining Act [CAP. 123] and actual site-level execution. While Tanzanian law mandates "environmental protection," it often lacks the granular indicators needed for consistent enforcement.

TSM lessons offer a standardized performance benchmark that turns these general legal requirements into concrete, measurable actions. This ensures that all mines, regardless of their size, operate under a unified "good performance" definition.



## 6.2 External Verification and Public Reporting

The TSM requirement of mandatory public reporting and external verification offers a vital lesson and provides a strategic solution to the "trust deficit" created by corporate self-reporting. While the TEITA Act (2015) has standardized financial transparency in Tanzania, it lacks equivalent requirements for the public disclosure of environmental and social audits.

Moreover, another challenge is the disconnect between mining companies' sustainability reports and the local reality experienced by communities. Learning from TSM will bridge this gap by adding a layer of mandatory public reporting and mine-site-level external verification that is currently missing in the mining legal framework. This lesson is crucial for reducing discrepancies between a mine's stated compliance and community reports of environmental degradation.



### **6.3 Community Engagement and Stakeholder Confidence**

TSM standards emphasize good relationships between the mine and communities in proximity to the mine through adequate community engagement throughout the mine life cycle.

With the missing link in mandatory consultations between the mine and communities in Tanzania's legal framework and the centralized engagement model in practice, Tanzania can learn from the TSM's mandatory requirement to build meaningful relationships with communities in the mining vicinities while collaborating with them to minimize negative impacts and maximize social benefits and ensure operational accountability by requiring formal responses to all community feedback and concerns promptly.

7

**RECOMMENDATIONS  
AND CONCLUSION**

## 7.1 Recommendations

### → 7.1.1 Decentralizing the Community Engagement Model

The mining company should transition from a centralized engagement model focused on local leaders toward a more decentralized framework that facilitates periodic direct engagement with the broader community. Such a shift could help mitigate perceptions of inadequate consultation and maintain the social license.

### → 7.1.2 Community Sensitization on Local Content

The mining company and the Ministry of Minerals should conduct community sensitization programs to raise awareness on who is 'local' in local content to manage communities' expectations on local content projects. Furthermore, the Ministry of Minerals should mandate a specific requirement within Local Content Plans for community capacity building to empower communities in mining areas with the skills required to compete for lucrative opportunities in the provision of goods and services. .

### → 7.1.3 Transparency of Monitoring Results

The mining company, the Office of the Government Chemist Laboratory Authority (GCLA), National Environmental Management Council (NEMC), and the Mining Commission should consider disclosure of water quality monitoring results to the respective communities to dismiss long-standing fears regarding chemical contamination and public health risks.

### → **7.1.4 Community-Accessible Grievance Mechanisms**

The mining company should relocate its Community Relations Officer (CRO) to an office outside the mine's perimeter to make it easier for community members to visit and follow up on issues without site-entry restrictions. In tandem, the company must proactively sensitize the public on how the grievance mechanism works so people know exactly how to report concerns and get feedback.

### → **7.1.5 Ensuring Long-Term Sustainability and Capacity of CSR Projects**

The mining company should make sure that the services and infrastructures from Social Corporate Responsibility (CSR) projects are sustainable and ensure that infrastructure is built to a scale that truly meets community needs.

## **7.2 Conclusion**

Tanzania stands at a pivotal moment in its mining journey. Rich mineral resources offer substantial economic growth, but persistent challenges to environmental and social integrity undermine long-term sustainability.

This study, through the lens of Barrick's Bulyanhulu Gold Mine and the Towards Sustainable Mining (TSM) standards, uncovered responsible mining practices in Tanzania, existing gaps in implementation, and documented lessons from the Towards Sustainable Mining (TSM) Standards that can enhance responsible mining practices in Tanzania through adequate community engagement, provision of socio-economic benefits, protection of communities from negative mining impacts, tailings management, water stewardship and biodiversity conservation.

The path forward for Tanzania's mining sector lies not in the mere adoption of external benchmarks, but in the strategic translation of TSM lessons into localized action. Ultimately, learning from these standards will empower Tanzania to harness its mineral wealth without sacrificing its social or environmental integrity, ensuring that the lessons of today become the foundational best practices for a sustainable Tanzanian mining legacy.

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