Republic of Zambia
Ministry of Health

CIDRZ for a healthy Zambia

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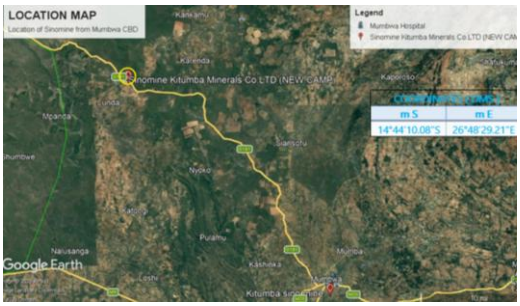
BRIEF

Health Impact Assessment of the Sinomine Kitumba Copper Mine, Mumbwa District, Zambia[1]

October 2026

Key Messages



Kitumba mine location Zambia, Source: Google earth 2026

Health Impact Assessment is an internationally recognised method to assess health impacts and recommend improvements to economic activities and policies. This HIA assessed how Sinomine Kitumba Copper open-pit Mine in Mumbwa district, Zambia, operating since 2025, affects the health of the 2500 workers, over 16000 people in surrounding communities and wildlife in and around the mine. The HIA was implemented in a 2026 regional EQUINET training programme. Three priority impacts emerged: dust exceeding safe Zambia Environmental Management Agency (ZEMA) limits and transport injuries; overwhelmed and poorly equipped and staffed health services servicing 5 times the number of people they were established for, and unsafe water and sanitation in communities near the mine.

The HIA recommends that Sinomine, Ministry of Health, ZEMA and Local Authority:

- Control dust at source by regular water damping activity on roads, speed controls and separation of truck movements at times when children go to school.
- Enforce lined, well-sited tailings facilities and continuous air and water monitoring.
- Open a mine clinic and upgrade the Kitumba Clinic to improve staffing and essential medicines and include basic laboratory and mobile imaging services.
- Provide safe, sex-separated toilets with handwashing facilities for surrounding residents (up to 25 people/toilet), line pit latrines and ensure safe water supplies.
- Engage communities and embed health in local development plans.

The Policy Context

Sinomine Kitumba Copper open-pit mine lies 47 km north-west of Mumbwa town. It operates under a Large-Scale Mining License No. 19820-HQ-LML, issued in 2014 for 25 years, renewable under the Mines and Minerals Development Act No. 11 of 2015. Its Environmental and Social Impact Assessment (ESIA) one off approval granted by ZEMA in 2025 under the Environmental Management Act No. 12 of 2011 did not comprehensively cover population health, motivating this HIA. The HIA assessed the social determinants of health and health / health equity impacts through secondary data, reports, studies, field observation and community voices. Population health impacts are pertinent is evidence with settlements about 200 meters from the mine including 200 miner housing units, a correctional service with 245 prisoners, a school with over 500 children, and three informal settlements with over 1000 people.

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[1] This policy brief was produced by Chamwiba Sikanyiti, Ministry of Health Zambia, Mwenya Mubanga, Centre for Infectious Disease Research in Zambia, Ubaani Zemba, Sustainable Environment Urban Solutions, Henry Zulu, Mumbwa District Health Office with support from Derrick T Bwalya, Southern African Institute for Policy and Research, and mentor review from Dr Rene Loewenson, Training and Research Support Centre (TARSC) in EQUINET, Dr Carlos Dora, Universidad Federal Rio Grande do Sul and Mr Nathan Banda: SATUCC. It was sponsored, in part, by the *African Extractivism and the Green Transition* (AEGT) research partnership and by TARSC in EQUINET. www.equinetafrica.org.

AEGT is funded by a Partnership Grant (File # 895-2023-1011) awarded by the Social Sciences and Humanities Research Council of Canada. For more information about AEGT's research and knowledge mobilization initiatives, please visit https://www.aegt.ca/.

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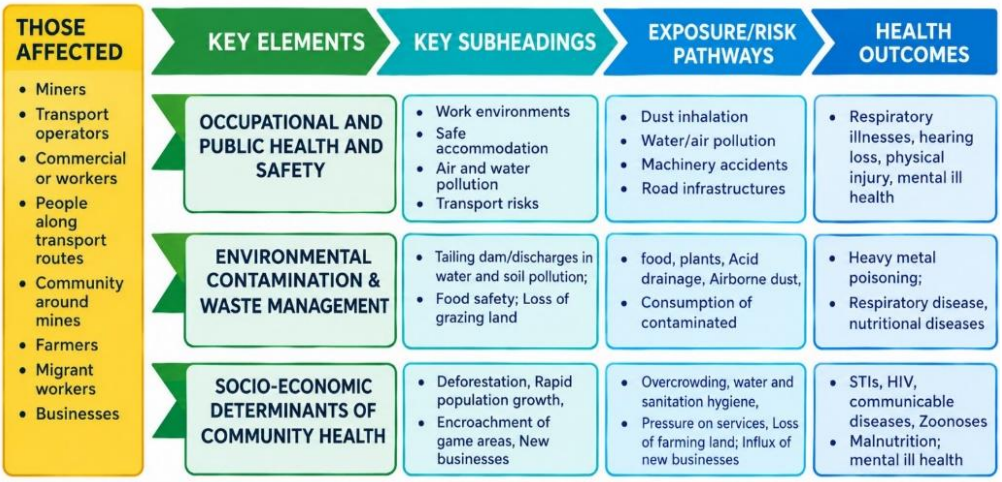
The Health Impact Assessment

With the mine already in process, this concurrent HIA, implemented between July and October 2026 during the 2026 EQUINET regional training programme on HIA, used an internationally recognised five-stage method: screening to identify feasibility, the causal pathways and focus of the HIA; scoping to identify the sources and forms of evidence; a profiling and assessment stage to identify the direction, magnitude, severity, likelihood and on this basis the significance of the health impacts assessed; and the setting of recommendations for significant impacts; and steps to report and communicate the HIA and propose areas for monitoring impacts and of implementation of the recommendations. From the screening and scoping stages, the HIA focused on three key elements:

1. Occupational and public health and safety.
2. Environmental contamination and waste management.
3. The socio-economic determinants of community health.

The assessment drew evidence from a desk review of the national legislation, the ESIA, peer-reviewed reports, journals and government documents, complemented by site observation, key informant interviews and focus group discussions with officials and community members in August 2026. A causal pathway shown in the figure adjacent was developed from background information and used as a framework for data collection. Local data and extrapolating from Zambia and peer reviewed studies. gives reasonable confidence in the findings.

The causal pathway linking the key elements to health impacts in the HIA



Findings of the HIA on health impacts

The HIA pointed to health impacts for the pathways in each of the four areas assessed.



Dust along the D181 road. Source: © Ubaani Zemba, 2026.

Firstly, in relation to **occupational and public health and safety for workers and nearby communities,** the approximate 2,500 mine workers, 1,000 people living next to the mine, including over 500 school children and three makeshift settlements less than 200 meters from the mine are exposed to dust and road traffic accidents along the heavily trafficked D181 haul road. the ESIA showed that the regional ambient particulate matter (PM) 2.5 was 32.5 µg/m³, more than twice the 24-hour exposure threshold of 15 µg/m³ set by the Zambia Environmental Management Agency (ZEMA) and the World Health Organization. The identified health impacts include childhood asthma, silicosis, tuberculosis (TB), and traffic injury. There are also risks of water and food heavy metal poisoning and organ dysfunction from reagents used in copper extraction contaminating soil and water, including in nearby food production.

In relation to **environmental contamination and waste management,** tailings dams, pipeline rupture, wastewater discharge risk contaminating water, including for downstream communities, that can lead to heavy metal poisoning inflammation of stomach linings, neurological disorders and chronic kidney failures. While this has not yet been recorded in this mine area, it has been recorded in other mines in the Central and Copperbelt provinces in Zambia. In addition, the over 1,000

people living in makeshift settlements had no safe sanitation or ablution services. This generates a risk of cholera and other infectious disease outbreaks. The ESIA baseline water pH 5.82 was below the permitted 6.0–9.0 range. Nearby communities voiced concerns about the changing taste and smell of water. These deficits in waste management and possibilities for chemical discharge raise a health concern, particularly as the nearby Kafue tributary carries cumulative upstream mining loads of toxic wet slurry waste from a previous mine tailings disaster.



Makeshift settlements next to the mine. Source: © Ubaani Zemba, 2026

On other socio-economic determinants of community health, element, while no displacement of people is noted from this mine site, the oppositive problem of significant population influx is noted leading to over 16,000 residents, over 1,000 migrants, 2,500 workers. This may bring income possibilities for those in the area, but also raises the risk of communicable diseases in a district with a baseline HIV prevalence of 12.8% in 2025, and rising rates of sexually transmitted infections. The Kitumba clinic, located at the correctional services site about 2 kilometers from the mine entrance, was built for a catchment population of 3,000 people and is now serving about 16,000 with only three health workers, no laboratory or basic imaging (X-ray) services, no inpatient services and a referral District hospital over 60 km away on a bad road. The clinic is unable to provide enough prevention and treatment services. The mine has no on-site clinic and refers all trauma and medical cases to the Kitumba clinic.

The challenges identified did not affect all the residents evenly. Community members consistently prioritized dust suppression, improved sanitation, safe water and stronger health services. Women highlighted HIV/STIs, teenage pregnancy, sexual assault and the need for improved maternal and reproductive health services. The most impacted populations include the informal settlers currently living without sanitation, children on the school route, and mine workers who are working without an adequate on-site health and occupational health service. Pregnant women in the community are likely to also be impacted by the deficits in available health services and the distance to referral services.

Recommendations from the HIA

Based on the findings, various actions are recommended for the impacts identified as most significant due to their direction, magnitude, severity and likelihood and taking the input from local key informants and focus groups into account. These are shown in the Table below.

Recommendations are grouped by priority impact, with responsible actors named by the HIA team.

Recommendations	Responsible
To address occupational health and control dust levels	
Control dust at source and monitor ambient air (particulate matter 2.5) at the mine boundary, settlements and school, reporting against ZEMA limits (PM 2.5 ≤ 15 µg/m³).	Local authorities, Mine management, ZEMA, MGEE
Dampen the D181 road regularly, especially near settlements and the school and at school travel times, until the road is built up. Improve heavy-vehicle routes, enforce speed limits, install signage and use trained flaggers. Provide preventive protective equipment.	Mine management, Roads Development Agency.
Schedule truck and heavy-vehicle peaks to not coincide with school travel times, enforce with traffic police and a police presence in the area.	Local authority, Mine management, traffic police.
Establish an adequate on-site occupational health facility providing miners with Pneumoconiosis Act fitness certificates, active TB case-finding, silicosis, regular HIV counselling and testing, and trauma management.	Mine management, DHMT, Mining Safety Department.
To improve essential community health conditions and strengthen health services	
Inspect water sources regularly across mining and surrounding areas.	Ministry of Water and Sanitation

Recommendations	Responsible
Provide ablution facilities and sewage disposal for the settlements and market, and a reliable supply of clean drinking water, to remove the risk of cholera, typhoid and other enteric outbreaks for community and mine workforce.	Local authorities, Ministry of Water and Sanitation DHMT, ZEMA, MGEE.
Provide HIV, TB, STI prevention, testing and treatment, and condom distribution, especially in the makeshift settlements.	Mine Management, District Health Management team
Strengthen services at the local clinic - renovate building, increase staff, provide basic laboratory and X-ray capacity, essential medicines, and capacity for early identification and treatment of heavy-metal poisoning. Coordinate monthly ART and anti-TB supply for mine workers.	Ministry of Health, DHMT, Correctional services, Mine Management, local authority.
To strengthen waste management, and provision of safe water and sanitation	
Build waste and tailings dams on impervious liners with banded walls, away from settlements and water sources.	Mine Management, ZEMA, MGEE, Mining Safety Department, Local Authority
Monitor water quality continuously in the mine area and surrounding water sources to keep pH within 6.0–9.0 and metals within ZEMA limits (Mercury < 0.005 mg/l; Copper < 2.0 mg/l).	Mine Management, ZEMA, MGEE, Mining Safety Department, Local Authority
Provide safe, sex-separated toilets with handwashing facilities for the settlement area targeting no more than 25 people per toilet. Ensure lined pit latrines are away from water sources and above the seasonal water table to prevent contamination and flooding .	Mine Management, Local Authority, Ministry of Water and Sanitation, Community Leaders

MGEE- Ministry of Green Economy and Environment. DHMT= District Health Management team

An overarching recommendation of the HIA is to establish a multi-stakeholder monitoring team including Mine Management, MGEE, ZEMA, National AIDS Council, the DHMT, Mine Safety Department, Ministry of Water and Sanitation, the Local Authority, Traditional Authority, worker and community leaders to improve and implement the recommended changes and to monitor their implementation, for most on a quarterly basis.

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