

M E S D A



The Sino-Metals Tailings Dam Collapse in Zambia: Timeline, Impacts and Developments

*A Report on the 2025 Environmental Disaster Affecting the Kafue River System prepared by
the Movement for Economic and Social Development in Zambia*

Table of Contents

1.	<u>INTRODUCTION</u>	<u>3</u>
2.	<u>BACKGROUND OF THE MINING FACILITY.....</u>	<u>3</u>
3.	<u>SUMMARY OF THE DISASTER.....</u>	<u>4</u>
4.	<u>GOVERNMENT RESPONSE</u>	<u>4</u>
5.	<u>COMPANY RESPONSE</u>	<u>6</u>
6.	<u>INTERNATIONAL RESPONSE</u>	<u>7</u>
7.	<u>ENVIRONMENTAL AND HEALTH CONCERNS</u>	<u>8</u>
8.	<u>LEGAL ACTION BY AFFECTED COMMUNITIES</u>	<u>8</u>
9.	<u>RECOMMENDATIONS</u>	<u>10</u>
10.	<u>CONCLUSION</u>	<u>11</u>

1. Introduction

Mining is a critical sector in the Zambian economy, contributing to almost 70% of its export earnings. Zambia is the world's ninth largest copper producer, a major source of emeralds and supplier of other minerals including gold, cobalt, manganese and nickel. Mining activities result in mining waste which are massive volumes of leftover rocks, water and tailings which often contain heavy metal contamination and acid drainage.

In February 2025, a major accident occurred at the Sino-Metals Leach Zambia Limited mining facility near Chambishi, Kitwe, Copperbelt province. A tailings dam storing highly acidic mining waste collapsed, releasing more than 50 million liters of acidic effluent into the Mwambashi river, a tributary of the Kafue River. The spill quickly spread into the Kafue River ecosystem, one of Zambia's most important water systems.

The disaster immediately raised serious environmental, economic and public health concerns which are yet to be completely addressed or resolved. Communities that rely on the river for drinking water, fishing and agriculture have been directly affected, while environmental experts warned of additional long-term ecological consequences.

The Chambishi region lies within the Kafue River basin. The Kafue River is one of Zambia's most important rivers and plays a vital role in supplying water to communities, farms and industries across the country. It is estimated that about sixty percent of Zambia's population relies on water from the Kafue River system either directly or indirectly.

Because of the importance of the river basin, any contamination affecting it has potentially widespread consequences for both the environment and the national economy.

This report examines the beginning of the disaster, the major events that followed, the environmental and social impacts, the response of the Zambian government and the mining company, and the most recent developments surrounding the incident.

2. Background of the Mining Facility

Sino-Metals Leach Zambia Limited is a subsidiary of China Nonferrous Metal Mining Group, which is owned by the Chinese government. It operates as a subsidiary of China Nonferrous Metal Mining (Group) Co., Ltd. (CNMC) and is based in the Zambia China Economic and Trade Cooperation Zone in Kalulushi District, of the Copperbelt

Province in the Republic of Zambia. The company holds mining licenses covering approximately 33, 000 hectares of land.

The company uses tailings dams as a means to manage mining waste known as tailings. Tailings often contain residual chemicals, acids and heavy metals used during the mineral extraction process. Due to the hazardous nature of these materials to both humans and the environment, they are usually stored in specially designed these containment structures.

3. Summary of the Disaster

The disaster began on 18 February 2025 when a tailings dam at the Sino-Metals facility collapsed releasing approximately 50 million litres of acidic and toxic waste. The waste rapidly flowed into nearby waterways, eventually entering the Mwambashi River and spreading toward the larger Kafue River system. Within hours, visible environmental damage began to appear along the river.

Residents living near the affected waterways reported that the river changed color and emitted unusual chemical smells. Fish were seen dying in large numbers, and birds that normally depended on the river ecosystem suddenly disappeared from the area. It was also reported that crocodiles and hippos were found melted and dead in areas close to the riverbanks.

In addition to the destruction of aquatic life, agricultural crops located along the riverbanks were also damaged. Toxic waste seeped into the soil and affected farmland and groundwater, destroying crops and limiting the ability of farmers to grow crops on the land to date.

While no loss of human life has been reported as a direct consequence, farmers and fishermen interacting with the contaminated water have reported irritated skin and lesions appearing on their skin.

4. Government Response

Following the incident, the Zambian government deployed the following interventions:

- i. The Zambia Airforce dropped tones of lime into the contaminated water to neutralize the acidity of the water
- ii. They issued public warnings to the public advising them not to drink water or consume water from affected waterways

- iii. On 24th February 2025 Sino Metals was ordered to cease operations and pay for all environmental clean-up operations.

On January 6 2026, ZEMA held a public disclosure meeting at Mukuba secondary school in Kitwe on the [report](#) Environmental Incident Impact Assessment report on the Sino Metal Leach Zambia Limited. Key findings of the report were as follows:

- i. Soil Conditions-Soil was found to contain heavy metals particularly in Chambishi and Mwambashi. Contamination hotspots were identified, with high concentrations of aluminum, cadmium, cobalt, and lead present in both topsoil and subsoil. Based on these findings, various recommendations including relocation, compensation, and alternative skills development have been proposed for affected communities.
- ii. Water Quality- Mwambashi and Chambishi streams remain contaminated upstream. Elevated manganese levels were found, particularly in the Mwambashi stream. Kafue River surface water shows improving conditions and is approaching normal levels, though continued monitoring is ongoing. Despite improvements in surface water, river sediments in the Mwambashi, Chambishi, and Kafue rivers remain heavily contaminated.
- iii. Fish and Aquatic Life - All fish exposed directly to acidic conditions died and fish populations upstream remain significantly reduced. Increased fish presence was observed downstream in the Kafue River; however, most fish are underage and emaciated. Testing revealed acute levels of heavy metals in fish tissue raising concerns regarding consumption from select sources.
- iv. Ecological Survey- Extensive plant scorching and high phytotoxicity were observed in Chambishi. Partial toxicity was noted in the Mwambashi. The Kafue River ecosystem showed comparatively healthier ecological conditions.
- v. Radiation Assessment - No radiation levels above accepted standards were recorded. Testing covered soil, water, sediments, and biodiversity, all of which fell within normal radiation thresholds.
- vi. Key Heavy Metals of Concern- Aluminum (Al), Iron (Fe), Cobalt (Co), Manganese (Mn), Nickel (Ni), Chromium (Cr), Copper (Cu), Zinc (Zn), Cadmium (Cd), Arsenic.

Following months of investigations and environmental assessments after the February 2025 tailings dam disaster, the Zambian government later allowed Sino-Metals Leach Zambia Limited to resume operations at its mining facility.

The decision came after the company was required to implement several corrective measures aimed at improving environmental safety and preventing another accident. Authorities required the company to strengthen the damaged tailings dam infrastructure, improve waste management systems and cooperate with environmental monitoring programs.

Government officials stated that the reopening of the mine was conditional on the company complying with strict environmental requirements and continuing to support cleanup operations along the affected river systems.

Despite the decision to allow operations to resume, the disaster continues to have lasting consequences. Environmental restoration efforts are still ongoing in parts of the Kafue River basin, and affected communities are continuing to pursue compensation through legal channels for the damage caused to agriculture and livelihoods.

The reopening of the facility has therefore generated mixed reactions. While some stakeholders argue that restarting operations is important for economic activity and employment in the Copperbelt region, environmental advocates and community groups have expressed concerns about the long-term safety of the mining operations.

The incident has also intensified discussions within Zambia about strengthening environmental regulation, improving monitoring of tailings dams and ensuring that mining companies are held accountable for environmental damage.

5. Company Response

Following the disaster, the company has responded in the following ways:

- i. **Initial Action and Admission:** Zhang Peiwen, the chairman of Sino-Metals Leach Zambia, met with Zambian government officials to discuss the incident. During the meeting, he issued a public apology for the spill and acknowledged the seriousness of the disaster.

He stated that the incident had served as a major warning for the company and the mining industry as a whole. The chairman also promised that Sino-Metals would make every effort to protect and restore the affected river environment. The company pledged to cooperate with the Zambian government and environmental authorities in cleanup efforts and environmental restoration initiatives.

- ii. **Compensation Strategy:** The company offered compensation to affected communities and families, reported to be around £800 (approx. \$1,000) per person, but required recipients to sign a "gagging deal" (non-disclosure agreement) preventing future legal action.
- iii. **Refutation of Damages:** Sino Metals refuted allegations about the severity of the spill, labelling them as lacking "factual and legal basis". They challenged reports that estimated the spill to be 30 times worse than their initial assessment.
- iv. **Contractor Termination:** The company terminated its contract with Drizit Environmental—a firm they initially hired to conduct an independent assessment—just before a final report was due, citing "contractual breaches". The company has however accepted the findings the report issued by the government of Zambia through ZEMA.
- v. **PR Initiatives:** Sino Metals released promotional videos claiming the water was safe and provided food handouts in affected areas.
- vi. **Legal Position:** Facing lawsuits demanding \$50 million and \$220 million in damages, the company has, along with the Chinese embassy, defended its actions as responsible and warned against "extortionate" legal

6. International Response

The scale of the disaster has attracted significant international attention from both foreign governments and civil society. Six months after the disaster, in August 2025, the United States Embassy ordered government personnel to evacuate affected areas. This decision followed new findings indicating that hazardous substances such as arsenic, cyanide and uranium had been detected in the Kafue River system and could potentially contaminate the surrounding environment.

The Finish government also warned that water samples near the mining site contained 24 heavy metals including arsenic, uranium and lead which exceeded the World Health Organization safety standards.

Several international organisations have similarly expressed and intensified concerns about the long-term environmental consequences of the spill and raised questions about the safety of communities living near the contaminated waterways.

7. Environmental and Health Concerns

The incident affected approximately 449 farmers, and about 300, 000 households who in Kalusale area, Chambishi area¹, Mpongwe area, Itezhi Tezhi area. People in these affected communities depend on agriculture, fisheries and river systems for food and income.

The tailings dam collapse led to widespread contamination of rivers, soil, and farmland, directly threatening the health, livelihoods, access to water, food security, and housing of local communities. Compounding this harm, inadequate government oversight and significant delays in remediation and compensation prevented affected people from obtaining timely and effective access to justice. Together, these failures resulted in multiple serious violations of both internationally recognized human rights and constitutional rights of the communities impacted by the disaster.

Government officials and environmental experts expressed serious concerns about the long-term environmental and health consequences of the disaster. The Ministry of Water Development and Sanitation acknowledged the devastating consequences of the spill and warned that toxic materials could seep into soil and groundwater.

Environmental engineers and specialists involved in disaster response meetings raised concerns about environmental management practices within the mining sector. Some experts argued that the incident demonstrated the need for stronger environmental oversight and stricter enforcement of mining safety standards.

The contamination of soil and groundwater raised fears that communities living near the river could face long-term health risks if pollutants continue to enter drinking water supplies.

8. Legal Action by Affected Communities

The activities of Sino-Metals Leach Zambia Ltd related resulted into negative impact of people, communities resulting in human rights violations. The following are the key human rights violations;

- i. *Environmental Pollution:* The 2025 tailings dam collapse released acidic mine waste and heavy metals into the Mwambashi and Kafue Rivers, contaminating drinking water, soil, crops, and fisheries. This environmental disaster directly threatened the availability of healthy food, access to clean water and destroyed biodiversity and ecosystem.

- ii. *Destruction and loss of land and livelihoods:* Polluted land and waterways destroyed crops, killed livestock, and decimated fish stocks, severely undermining the communities' ability to sustain themselves. These impacts undermined the ability of the affected communities to have food and nutrition for their households,
- iii. *Right to Food:* Communities in Kalusale had their land destroyed and contaminated with heavy metals. They can no longer use the land for agriculture purposes. Fishing communities in Mpongwe and Itezhi Tezhi were banned from fishing in the affected rivers, this resulting into loss of income for them and their families.
- iv. *Health Impacts:* Exposure to toxic chemicals from the contaminated rivers and land for some people caused a range of health problems, including skin conditions, gastrointestinal illnesses, and potential heavy metal poisoning. Vulnerable groups such as children, pregnant women, and the elderly were disproportionately affected, facing heightened risks due to their age and physiological sensitivity. The absence of adequate medical screening, ongoing health monitoring, and access to treatment for those exposed further compounds the harm, constituting a clear violation of the right to health, as recognized under both national law and international human rights standards.
- v. *Neglect of community participation and rights:* Communities affected by Sino Metals Leach Zambia's operations were largely excluded from meaningful consultation regarding both the planning and ongoing management of mining activities, as well as the emergency response measures and compensation schemes implemented after the 2025 tailings dam collapse. This limited involvement in decision-making violated key principles of participation, transparency, and accountability, which are essential for protecting community interests and ensuring that their voices are considered in matters directly affecting their lives. Furthermore, the lack of recognition of customary land rights compounded the harm, as traditional land users were sidelined in decisions about land acquisition and remediation.

The consequences of this exclusion were far-reaching: without adequate consultation, communities were left unprepared for environmental hazards, unable to secure timely compensation or remediation, and exposed to indirect threats to life, health, and safety. This failure to involve affected

populations not only undermines their human rights but also erodes trust and the ability of communities to protect themselves from ongoing and future risks associated with mining operations.

On the 12th day of September 2025, In the High Court for Zambia, over 176 residents from the Kalusale and Chambishi communities filed a petition against Sino Metals Leach Zambia Ltd and NFC Africa Mining, challenging violations of their constitutional and environmental rights stemming from the tailings dam collapse and subsequent toxic spill. Affected communities, together with civil society organizations (CSO's) are actively challenging what they describe as insufficient and unfair compensation practices by the company. They argue that Sino Metals Leach Zambia Ltd has not fully met its responsibilities to address the serious consequences of the tailings dam collapse, including restoring the health of affected residents, rehabilitating the damaged environment, and rebuilding the livelihoods that were destroyed by the toxic spill. These groups insist that meaningful action is still required to ensure that the communities can recover and that justice is served.

9. Recommendations

The Sino-Metals tailings dam disaster highlights the need for stronger environmental governance and improved mining safety practices in Zambia. Several important recommendations can be made to prevent similar incidents in the future;

- i. *Strengthening Environmental Regulations* - The Zambian government should strengthen the legal framework governing mining operations and waste management, particularly those relating to the construction and monitoring of tailings dams. Mining companies should be required to comply with strict engineering and safety standards. Zambia does not currently have a law that regulates tailings dams.
- ii. *Regular Inspections of Tailings Dams* - Regulatory authorities such as the Zambia Environmental Management Agency should conduct regular inspections and independent safety audits of all tailings storage facilities. Early detection of structural weaknesses could prevent future dam failures.
- iii. *Improved Emergency Response Systems* - Mining companies should be required to establish clear emergency response plans in the event of environmental accidents. These plans should include early warning systems to alert nearby communities if contamination occurs.

- iv. *Environmental Restoration Programs* - Long-term environmental restoration programs should be implemented to rehabilitate affected ecosystems within the Kafue River basin. This may include water treatment, soil remediation and wildlife recovery programs.
- v. *Fair and Transparent Compensation* - Affected communities should receive fair, transparent and timely compensation for losses caused by environmental disasters. Compensation mechanisms should be monitored by government agencies to ensure that victims are treated fairly.
- vi. *Community Participation* - Local communities should be involved in environmental monitoring and decision-making processes. This participation can improve transparency and help ensure that mining companies remain accountable for their environmental responsibilities.

10. Conclusion

The Sino-Metals tailings dam collapse of February 2025 represents one of the most serious environmental disasters in Zambia's recent history. The release of millions of litres of toxic mining waste into the Kafue River ecosystem caused widespread environmental damage and disrupted the livelihoods of many communities.

Although emergency response measures helped reduce some of the immediate environmental impacts, the long-term consequences of the contamination remain uncertain. The disaster has raised important questions about environmental regulation, mining safety standards and corporate accountability within the mining sector.

As investigations, legal proceedings and environmental restoration efforts continue, the incident serves as a reminder of the importance of strong environmental management practices in industries that have the potential to cause large-scale ecological harm.

M E S D A



**MOVEMENT FOR ECONOMIC AND
SOCIAL DEVELOPMENT IN
AFRICA**

“Building the Africa of tomorrow, today.”