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POLICY BRIEF

Protecting the Health of Miners and Communities in Migori County's Artisanal and Small-Scale Gold Mining Sector

Accompanying the MHN Field Observations Report on Occupational and Environmental Health Risks in Osiri-Matanda ASGM Operations

Prepared by: Madini Health Network (MHN) | Revised August 2026

Executive Summary

Artisanal and small-scale gold mining (ASGM) is an important source of livelihoods in Migori County, but miners and nearby communities face preventable occupational and environmental health risks. Madini Health Network's June 2026 field observations documented intense visible dust during drilling, crushing, milling, blasting and ore handling; limited engineering controls; substantial occupational noise; poor management of tailings and process water; and mining activities close to homes and community infrastructure. The observations also identified processing conditions in which mercury-related exposure may occur, although the field assessment did not undertake laboratory or biomonitoring confirmation.

The health consequences of major ASGM hazards such as respirable crystalline silica and mercury are already well established. The immediate policy need is therefore not to repeatedly demonstrate that these hazards are harmful, but to translate existing evidence into practical prevention, safer work practices, worker education, and stronger local systems. Where site-specific measurements are necessary for regulatory decisions, control evaluation, or surveillance, they should be targeted and coordinated with competent government, academic or technical partners.

This brief recommends four priorities for Migori County: (1) reduce silica dust and noise exposure through practical controls and worker education; (2) strengthen tailings, wastewater and chemical-risk management; (3) protect nearby communities and vulnerable populations; and (4) establish a coordinated county ASGM occupational and environmental health programme built around prevention, implementation and surveillance.

Four Priority Policy Actions

1. Prioritize Silica Dust and Noise Prevention

Visible dust was widespread during high-exposure tasks, with limited wet methods, containment, and respiratory protection. Silica exposure is a recognized cause of silicosis and other serious respiratory diseases and is also associated with increased

tuberculosis risk. Crushing, milling, drilling, and blasting also create substantial noise hazards. These risks justify preventive action without waiting for additional studies to establish that they are harmful.

County Actions

- i. Promote wet drilling, wet crushing, wet milling, and water-based dust suppression wherever technically feasible.
- ii. Encourage low-cost engineering and work-practice controls before relying on personal protective equipment alone.
- iii. Strengthen practical occupational health education on silica, noise, dust control and correct respiratory protection.
- iv. Use mining cooperatives as delivery platforms for peer-led awareness and Train-the-Trainers programmes.
- v. Where measurements are needed to evaluate controls or support regulatory action, prioritize targeted respirable silica and noise assessment in collaboration with qualified occupational hygiene partners.

2. Strengthen Tailings, Wastewater and Chemical-Risk Management

Open settling ponds uncovered mine waste, and processing residues were observed near work and residential areas. These conditions warrant improved containment and safer management. Where mercury or other processing chemicals are used, the priority should be reducing exposure and preventing environmental release. The need for repeated broad environmental characterization should be considered carefully in light of existing evidence and available resources.

County Actions

- i. Establish and enforce practical minimum standards for tailings storage, process-water containment, runoff control and housekeeping.
- ii. Promote safer mercury handling, recovery and exposure-prevention practices where mercury is used.
- iii. Support cooperative-level environmental management and pollution prevention measures.
- iv. Undertake targeted site-specific sampling only where it will answer a defined management, regulatory or exposure question, rather than a routine first response.
- v. Engage universities, graduate researchers, and technical institutions where additional environmental characterization is justified.

3. Protect Communities and Vulnerable Populations

Mining and mineral processing were observed adjacent to residential areas and near community infrastructure, including a primary school. This creates plausible pathways for community exposure to dust, noise, contaminated runoff and, where applicable, mercury emissions. Protection of children and other non-workers should therefore be incorporated into ASGM occupational and environmental health planning.

County Actions

- i. Map mining and processing operations in relation to homes, schools and other sensitive community facilities.
- ii. Delineate hazardous processing areas and restrict children's access to active mining and processing sites.
- iii. Establish appropriate separation or buffer measures where feasible, particularly around dust- and noise-generating operations.
- iv. Integrate relevant ASGM exposure concerns into routine community and public-health surveillance.
- v. Prioritize immediate risk reduction when observable hazards are present rather than delaying action pending comprehensive environmental testing.

4. Build a County ASGM Occupational and Environmental Health Programme

The risks identified are interconnected and require sustained coordination rather than isolated studies or one-off interventions. A county programme should emphasize prevention, implementation, workforce education and surveillance, while using targeted research to address genuine evidence gaps. Particular attention should be given to under-addressed occupational hazards such as silica dust and noise and to evaluating whether practical interventions improve working conditions.

County Actions

- i. Establish a multi-sectoral ASGM Occupational and Environmental Health Technical Working Group.
- ii. Integrate occupational and environmental health prevention into county mining and public-health programmes.
- iii. Develop cooperative-led occupational health education, beginning with small demonstrable pilots that can be evaluated and scaled.
- iv. Coordinate targeted occupational and environmental monitoring according to defined public-health, regulatory or control-evaluation needs.
- v. Strengthen collaboration among County Departments of Health and Mining, DOSHS, NEMA, national ministries, mining cooperatives, universities, occupational hygiene specialists and development partners.
- vi. Use implementation data - including training reach, knowledge, trainer competency and adoption of practical controls - to guide scale-up and resource allocation.

Recommended Immediate Next Step

As a practical entry point, Migori County should support a small cooperative-based occupational health pilot focused on awareness and prevention. A small number of cooperative members can be prepared as peer trainers through a structured Train-the-Trainers programme and supported to deliver standardized occupational health sessions to miners. The pilot should measure reach, knowledge improvement, trainer performance, and adoption of feasible controls. This approach can generate an implementation track record and a locally tested model before wider county expansion.

Expected Benefits

1. Earlier reduction of preventable occupational exposures through practical controls.
2. Improved miner understanding of silica, noise, mercury, and other workplace hazards.
3. Stronger local capacity for sustained occupational health education through mining cooperatives.
4. Better protection of nearby communities and children from mining-related hazards.
5. More efficient use of limited resources by directing research and monitoring toward defined evidence gaps and management decisions.
6. A practical foundation for a coordinated and scalable county ASGM occupational and environmental health programme.

Call to Action

The June 2026 field observations provide sufficient grounds for preventive action on several clearly observable hazards. Madini Health Network respectfully urges the County Government of Migori and its partners to prioritize practical exposure reduction, worker education, community protection and coordinated implementation. Research and monitoring remain important where they address specific unanswered questions, evaluate controls or support regulatory decisions, but they should complement - not delay - interventions based on established occupational health evidence.

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