

Behind the Glitter: Occupational, Environmental, and Public Health Impacts of India's Mica Supply Chain: Reg No: 300

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ABSTRACT

Introduction: Mica, a naturally reflective mineral, gives shimmer and glow to many cosmetic products such as lipsticks, eyeshadows, and highlighters. India remains one of the largest global producers of mica, particularly in Jharkhand and Bihar, where extraction is largely informal. This unregulated nature of mica mining exposes workers—including women and children—to unsafe occupational conditions, resulting in respiratory diseases, musculoskeletal disorders, and psychological stress. Beyond human health, the mining process contributes to environmental degradation and contamination of local ecosystems. Despite its economic significance, the broader public health and environmental implications of mica's supply chain remain underexplored in India.

Methodology: A scoping review was undertaken across PubMed, Scopus, Web of Science, ScienceDirect, and Google Scholar, supplemented with NGO and investigative reports. Studies and reports focusing on occupational hazards, environmental exposure, and community health outcomes related to mica mining and processing were included. Data were extracted on exposure type, affected populations, outcomes, and policy relevance, and were synthesized descriptively. **Results:** Evidence highlights serious occupational and environmental health challenges, including chronic respiratory illness, ergonomic strain, and child labour. Environmental assessments show heavy metal contamination of soil and water around mining regions. Broader community-level effects include malnutrition, poor sanitation, and limited healthcare access, contributing to an ongoing public health burden. **Conclusion:** India's mica supply chain presents intertwined occupational, environmental, and ethical challenges. Addressing these requires stricter enforcement of safety standards, sustainable sourcing policies, and public health interventions to safeguard workers and mining-affected communities.

KEYWORDS