

RESPONSIBLE MINING IN THE DEMOCRATIC REPUBLIC OF CONGO - BALANCING INVESTMENT AND SUSTAINABILITY (COPPER - COBALT BELT RURAL REGION)

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Abstract

The Democratic Republic of Congo (DRC) holds over 70% of the world's cobalt reserves and is a major copper producer, making it a critical node in the global energy transition. However, industrial mining in the DRC's Copper-Cobalt Belt has been linked to widespread environmental degradation and adverse health outcomes for communities living near mining effluent discharge points. This study investigates the association between proximity to a polluted waterbody and health outcomes in three rural villages located at varying distances from the Kanamwanfwe River, a river impacted by mining-related pollution.

Using a mixed-methods approach, the research combines structured individual surveys (n=97), key informant interviews and Ordinary Least Square (OLS) regression modeling. A composite health score was developed by integrating self-rated health and a frequency-weighted symptom burden index. The quantitative analysis revealed a statistically significant association between distance from the river and improved health outcomes, with nonlinear patterns also observed for age. While gender did not significantly predict health scores in the regression model, qualitative data suggested that women and children may experience disproportionate exposure due to domestic roles. Key informant interviews and open-ended responses highlighted local perceptions of water quality deterioration, recurring illness, institutional neglect and ineffective environmental governance.