

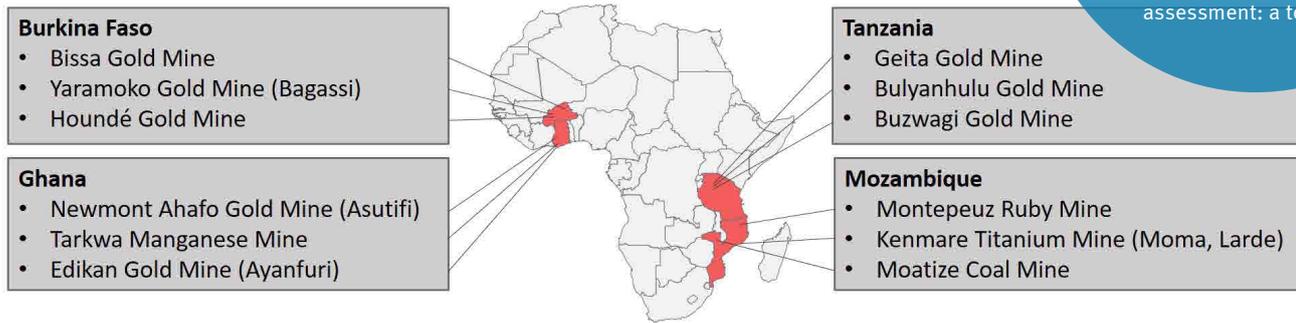
Health impacts of industrial mining in Ghana and sub-Saharan Africa

Many countries in sub-Saharan Africa, including Ghana, have mineral deposits in commercial quantities. While industrial mining is expected to contribute to economic development and improve life, the process of mining can have negative impacts on local communities. New evidence from the Health Impact Assessment for Sustainable Development (HIA4SD) project illuminates the interaction between industrial mining and public health, health care delivery and other health determinants.

Photo: Community near a large industrial mining site in Ghana. © Andrea Leuenberger

KEY MESSAGES

- In Ghana and elsewhere in sub-Saharan Africa, mineral extraction has a wide range of environmental, economic and social impacts that affect the health and well-being of local communities.
- Many negative impacts on environmental health and other risk factors are identified.
- Health equity is a major concern, with women and the poorer households being disproportionately affected.
- Diverse impacts on health were identified, including increases in sexually transmitted, diarrheal and chronic diseases.
- Strengthening health impact assessment (HIA) practice for industrial mining projects could improve the health of local communities.



What is the HIA4SD project?

The Health Impact Assessment for Sustainable Development project (HIA4SD; www.hia4sd.net), is a multi-country, multi-focus and multi-methods research initiative between partner institutions in Ghana, Burkina Faso, Mozambique, Tanzania and Switzerland. The project has generated a sound evidence-base at the local, national and supra-national levels on the strengths and limitations of current impact assessment practice in engaging industrial mining projects to work towards health-related targets of the 2030 Agenda for Sustainable Development. It employs its findings to facilitate a policy dialogue to strengthen the application of health impact assessment (HIA) as a regulatory mechanism to avoid the negative effects of industrial mining on public health. The project aims to actively engage mining projects and other development partners in the 2030 Agenda for Sustainable Development.

In Ghana, the project conducted focus group discussions and interviews in local communities near three major gold mining projects in the Upper Denkyira West district, the Tarkwa-Nsuaem Municipal district and the Asutifi North Municipal. A wide range of local stakeholders, including representatives from the mines, the health care sector and community members were consulted to understand local perceptions of health impacts. Additionally, District Health Information System 2 (DHIS2) data, Demographic and Health Surveillance (DHS) data and World Bank Development Indicators (WDI) data were analyzed.

Health impacts of industrial mining projects

Mining projects have positive and negative impacts on environmental, social and economic factors that consequently affect the health of local communities.

Environmental risk factors

In the study, local residents in the four research countries expressed concerns over housing safety, as well as water, air and soil pollution caused by the mines which negatively affects their health. In some contexts, issues related to water quality, quantity and reliability prevailed, despite investments in water infrastructures by the mines. Community members reported safety concerns over blasting activities which are conducted during mining operations and cause cracks in their houses. An additional risk to respiratory health is environmental pollutants attributed to the blasting of rocks. At the individual level, life style behaviors, such as tobacco smoking, is common - a risk factor for the development of non-communicable diseases (NCDs) among miners and community dwellers.

Social development

Mining projects were found to both directly and indirectly contribute to community development. Using data from mining areas in many sub-Saharan African countries, improvements in living conditions were found, including access to essential services, such as clean water, improved sanitation and clean cooking fuels. Contrary to these regional trends, reduced access to improved water infrastructures was observed near Ghanaian mining sites. Nevertheless, some mines invested in community infrastructures that positively affect health and well-being, such as schools, roads or health facilities. However, mining projects changed social dynamics and cultural health aspects among communities. For example, sexual transactions with mine employees and increasing numbers of teenage pregnancies were reported.

Economic development

Despite these health hazards, mining projects contribute to socio-economic development and the transformation of nearby communities. One benefit is the direct employment offered to community members while others provide services to the mines directly and indirectly. Discussions with local residents in HIA4SD project countries, however, revealed that benefits were often limited to small groups of the population, particularly to those who are employed in the mining sector. Others, such as farmers, were negatively affected by more restricted access to land and by the pollution of soil and crops.



Focus group discussion with affected mining communities.
© Andrea Leuenberger

Health equity aspects

Governed by changes in the environmental, social, and economic systems, local communities perceived increased inequities related to a wide range of factors, based on place of residence, gender, and age. The amount of migration to the local area increased, putting pressure on public infrastructure, while land use conflicts were also more common. There was also a negative impact on governance aspects, such as the role of the government and national regulations. In contrast, positive impacts, such as job opportunities at the mine, remained scarce for local communities and were not equally distributed among community members. Women tended to be affected disproportionately by negative impacts, while men were more likely to benefit from the job opportunities provided by mining companies. Furthermore, improvements in community infrastructures were of greatest benefit to wealthier households.

Health outcomes

Mining activities can also act on the population health outcomes. This may include changes in disease patterns, accompanied by changes to associated morbidity and mortality outcomes. Local communities considered that negative health outcomes prevailed, including a perceived increase in HIV infections and HIV-related mortality. Indeed, our analysis shows that in sub-Saharan Africa, HIV prevalence increases around 80% more over time when a mine is opened, at the same time, the knowledge about the transmission and prevention of HIV is lower.

Investments in community development by some mining companies were, however, likely to promote community health. Consistent with the perceived improved maternal and child health in affected communities, data from mining sites across sub-Saharan Africa showed an overall reduced neonatal mortality rate and lower stunting and underweight prevalence among children living in mining regions.

	NEGATIVE IMPACTS	HEALTH EQUITY	POSITIVE IMPACTS
ENVIRONMENTAL IMPACTS	<ul style="list-style-type: none"> Air pollution Water quality Soil pollution 	<ul style="list-style-type: none"> Exposure and adaptive capacity depending on, place of residence, gender and socioeconomic factors 	<ul style="list-style-type: none"> Construction of wells or taps with drinking water
SOCIAL IMPACTS	<ul style="list-style-type: none"> Social disruption Loss of local customs and culture 	<ul style="list-style-type: none"> Women disproportionately affected by negative impacts Greatest improvements in infrastructures among wealthier households 	<ul style="list-style-type: none"> Improved community infrastructures (e.g., schools, health facilities) Improved household infrastructures (e.g., sanitation, housing)
ECONOMIC IMPACTS	<ul style="list-style-type: none"> Loss of farmland Restricted fishing activities 	<ul style="list-style-type: none"> Men are more likely to benefit from job opportunities Subsistence farmers disproportionately affected by land loss and soil pollution 	<ul style="list-style-type: none"> Direct employment Indirect employment and business opportunities Wealth gains for local communities
HEALTH OUTCOMES	<ul style="list-style-type: none"> Sexually transmitted diseases (e.g. HIV) Respiratory diseases Diarrheal diseases Chronic diseases Mental health and substance abuse 	<p>GAP IN HEALTH EQUITY</p>	<ul style="list-style-type: none"> Reduction in neonatal mortality Perceived improvement of maternal and child health care Child development and nutrition

Positive and negative impacts on health determinants and health outcomes identified in the HIA4SD research project.

Addressing health impacts of industrial mining projects in Ghana

Adequate policy frameworks can help to minimize negative health impacts of industrial mining projects while maximizing the potential for local development. Ghana's mining regime requires mining companies to prepare an environmental impact assessment (EIA) statement that presents a clear assessment of the impacts on the environment and local communities. Stakeholders, however, noted that EIA have not addressed gaps in mitigating the health impacts of mining activities. Low capacity for undertaking HIA was recognized by all stakeholders as limiting factor. Stakeholders underscored the need for primary data collection and use to support HIA evidence in addition to secondary data from health facility records. To ensure stakeholder support for HIA, there is need to actively involve health sector actors, and experts from the academic community involved in HIA research and advocacy. Furthermore, capacity building for HIA practitioners and decision makers is necessary to improve the quality of the assessment of health impacts.

WHAT IS HEALTH IMPACT ASSESSMENT?

Impact assessment is an established approach to minimize adverse environmental, social and health impacts of projects, policies and programs, while fostering opportunities for equitable and sustainable development. In the context of industrial mining projects, impact assessments are conducted before their implementation in order to address potential impacts through adaptations in the project design or implementation of a mitigation and management plan.

Health impacts can either be assessed in a stand-alone health impact assessment (HIA), considered as part of widely established environmental impact assessments (EIA) or through integrated approaches, such as environmental, social and health impact assessments (ESHIA).

Research by the HIA4SD project has shown that, currently, health and social issues are often only marginally addressed in EIA with limited public participation. Under the current approach, the health impacts considered in EIA are predominantly interconnected with the environment, such as air pollution, while the scope of other health considerations, including social impacts and impacts on specific health outcomes, remain narrow. Stand-alone HIA or integrated environmental, social and health impact assessments (ESHIA) have been found to more comprehensively consider health issues.

Conclusions

Despite the economic gains mining bears substantial health risks for local communities and the country at large, including changing disease patterns, high morbidity, and perceived low health-related quality of life among local communities. Other common health conditions such as malaria, pneumonia, diarrhea, and HIV infections are more frequently reported in the vicinity of mines.

There is an urgent need for stakeholders, including the government, to play an active role in the assessment and management of the health impacts of industrial mining projects. For this, institutional capacity within the health sector (Ministry of Health, Ghana Health Services) to conduct HIA needs to be strengthened. In addition, effective guidelines on HIA processes and requirements must be prioritized. A law that requires companies to undertake a HIA report, in addition to EIA, will ensure that the health impacts of their activities are adequately considered.

LESSONS LEARNED

- **Industrial mining projects impact health through various pathways**
The establishment of a mine comes with a series of environmental, social and economic changes that affect the health and well-being of local communities. Poorer households and women are particularly affected by the negative impacts of mines. To address these health impacts, factors that determine health need to be systematically addressed. HIA is an approach to identify potential positive and negative effects of mining projects on health prior to project implementation. Engagement of local communities, particularly of marginalized population groups, can help address these health inequities.
- **There are gaps in impact assessment policy in Ghana**
HIA guidelines require further specificity related to mining. Furthermore, local human resource capacity to conduct HIA is lacking. Policy considerations to strengthen capacity of Government and other stakeholders within the industry is urgently required. Further gaps in the implementation of HIA under the current EIA guidelines are highlighted in our separate governance policy brief.
- **Different policy responses exist to promote sustainable development in industrial mining areas**
For mitigating adverse health impacts, a standalone HIA for mining projects should be required in addition to the EIA. The Ministry of Health should have the oversight responsibility of the HIA process with mining companies required to undertake it. Further potential policy responses were discussed with a broad set of stakeholders from the government, the mining sector and civil society organizations in Ghana. The results from this study helped identifying policy options for engaging mining companies to address health and well-being more systematically (see Q study report).

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FURTHER INFORMATION



www.hia4sd.net
Digital storytelling video clip about the HIA4SD project set up: [here](#)

CONTACT

Prof. Philip Adongo

Co-Investigator, HIA4SD Project, School of Public Health, University of Ghana, Accra, Ghana
adongophilip@yahoo.com



AUTHORS

Prof. Fred Binka

Co-Investigator, HIA4SD Project, University of Health and Allied Sciences, Ho, Ghana
fbinka@uhas.edu.gh



Dr. Martin Ayanore

Policy brief team member, University of Health and Allied Sciences, Ho, Ghana.
mayanore@uhas.edu.gh



Dr. Belinda Nimako

PhD candidate, University of Health and Allied Sciences, Ho, Ghana.
belindanimako@gmail.com



Dr. Dominik Dietler

Scientific collaborator, Swiss Tropical and Public Health Institute
dominik.dietler@swisstph.ch



Dr. Andrea Leuenberger

Scientific collaborator, Swiss Tropical and Public Health Institute
andrea.leuenberger@swisstph.ch



Dr. Mirko Winkler, PD, DTM&H

Principal investigator, Swiss Tropical and Public Health Institute
mirko.winkler@swisstph.ch



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