

WATER POLLUTION IN MINING

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The supply and quality of water depend on the healthy balance of the environment, primarily damaged by extractive companies' actions that harm public health and threaten to increase along with the energy transition by demanding more significant quantities of minerals for their systems. In the following, we develop water pollution by mining activity and add examples of this activity, which lack adequate management and compensation for damages.

Latin America has based much of its economy on exploiting natural resources, including large mineral deposits that attract foreign investment with industrial interest. Most mining companies in Latin America are run by foreign private companies, mainly Canadian, British and Chinese. Mexico is the leading producer of silver, Chile of copper, Bolivia of lithium, Brazil is the third-largest producer of iron ore, and Peru is among the top producers of silver, copper, and gold. These countries account for 85% of the region's mineral exports.

Mining generates significant export revenues, indirect employment and has a very high elasticity with output growth. However, it contributes almost nothing fiscally, there is no direct contribution from mining to the state, and the economic gains end up purely with the companies. Social and environmental costs are universal, and the cost-benefit ratio is individual for the firm.

The mining sector faces an increasingly severe water scarcity scenario and social and institutional demand with social and environmental commitment. It is an activity that inevitably affects the environment and pollutes water, soil, and air. It generates a large discharge of toxic material ([Acid Mine Drainage](#)), fine particles, and polluting gases, degrades the soil, and risks the survival of the biota that maintain the balance of ecosystems. The most [prominent social risks](#) relate to health and human capital.

Mining exploration, exploitation, concentration, and leaching processes require water (Brantes and Olivares, 2008). It is lost through evaporation, infiltration, and increased consumption, given the quality of the deposits decreases in those processes. Some [mining chemicals that pollute water](#) and [affect life](#) are:

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1. Cyanide and sulphuric acid. These chemicals acidify the water and cause weakness, hemorrhaging, and death to intoxicated organisms.

2. Arsenic. The consumption of contaminated food and water can cause cancer, skin lesions, and neurotoxicity.

3. Lead and mercury. These can be absorbed by aquatic life, causing anemia, hypertension, kidney dysfunction, and neurological disorders. These same effects occur in humans who ingest contaminated food.

In Mexico, Newgold Co., a Canadian firm, operates the San Xavier mine, partially owned by US capital. It acts through land appropriation and dispossession despite social resistance since 1995. Open-pit mining, mainly gold and silver, is extracted after a sodium cyanide leaching process because it reduces labour costs. Large land areas are removed with highly polluting explosives and one million cubic metres of water annually to purify the rock. That water is neither for human consumption nor irrigation, [leading to the overexploitation of the region's aquifers](#) and a reduced supply for local consumption (Reygadas, 2008).

In Peru, alluvial gold mining in Madre de Dios severely damages the health of the population. There are two reasons: Miners who work in high-risk conditions due to direct exposure to gaseous mercury and the discharge into primary water sources used by villages throughout the Madre de Dios river basin. Massive destruction of the delicate Amazonian soil and [disorderly migration due to disease and social violence](#) is reported.

The National Assembly of Environmentally Affected People mentions that the mining industry in Mexico invests between 0.5 and 1.5% of its sales' annual value in compensating for environmental damage. In comparison, Europe spends between 3 and 5%, and the USA and Canada banned cyanide in mining. We believe that the economic valuation of the environment and its resources based on the benefits and costs derived from its protection is too complex and impossible for extractive companies to cover. These firms abuse the non-existence of this valuation and even show absurd hypocrisy when referring to themselves as pro-environmental by taking care of the land at home. At the same time, they uncontrollably degrade the ground of developing countries.