

## Risk assessment of abandoned mine sites in Namibia

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Early mining activities in Namibia, and subsequent beneficiation processes have been conducted with little to no regards for the environment, thus leaving the land with un-rehabilitated abandoned mines. The abandoned mine sites pose environmental problems such as collapse of structures, contamination of groundwater and soil and subsequently effects to livestock and human health.

An inventory with 157 abandoned mines has been compiled through the BGR-GSN project of technical cooperation. Of the 157 mines, detailed environmental monitoring has only been carried out at few of these abandoned mines by soil, stream sediment, water sampling and partly radiation monitoring.

In 2010, a "Risk Assessment Manual" developed for the Chilean government was adapted and customized into the Namibian situation, taking into account specifics of the minerals mined in the past in Namibia, beneficiation processes, as well as the environmental and the legal situation. The manual includes guidelines for assessing safety and contamination risks, with further detail of classifying the risk according to

the geological and physical situation on the ground. In addition, it prioritizes the risk potentials. Accordingly, the Namibian government can start with mitigation of the most severe hazardous risks.

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