



This database could save lives

Dominic Ali



including institutional investors, regulators, owners and mine operators.”

says [Elaine Baker](#), a senior expert at GRID-Arendal and geosciences professor with the University of Sydney in Australia.

Portal users can download data on more than 1,700 tailings dams around the world, or sort and view it by location, company, dam type, height, tailings volume, and risk classification, among other variables.

Ultimately, GRID-Arendal and its partners hope the portal inspires innovations and improvements in the mining industry’s tailings-storage practices. They also want governments to be able to use the data to make science-based decisions to better regulate the industry and improve public safety. Baker explains,

“This is the world’s first standardized database of mining operations. Although it’s not complete, it’s a start and makes some sense of the numbers involved in the global mining industry.”



The Stava memorial in Italy commemorates those killed by a mine tailings



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“Most of this information has never before been publicly available”,

says [Kristina Thygesen](#), GRID-Arendal’s programme leader for geological resources. She has worked alongside Baker on the project, as has GIS developer [Debhashish Bhakta](#).

The team hopes that as the project continues, more mining companies will disclose information that can be added to the portal, and public pressure will build for companies to be increasingly transparent about their waste production and management.

This portal project grew out of shareholder activism in response to the 2019 deadly dam collapse in Brumadinho, Brazil. After the disaster, a group of institutional investors led by the Church of England Pensions Board asked 726 of the world’s largest mining companies to disclose detailed information about their tailings dams, and 332 responded, representing almost half of those surveyed. The



initiative is now backed by funds with more than US\$13 trillion under management.

After the mining companies sent the data to the Church of England, GRID-Arendal's team stepped in to analyze the information and create the online portal where it can be easily viewed and compared.

The [portal project](#) builds on GRID-Arendal's past work on mine tailing dams, which includes the 2017 report "[Mine Tailings Storage: Safety Is No Accident](#)". That report, co-published by GRID and the UN Environment Programme, called for the creation of an accessible public-interest database of tailings storage facilities.

Currently, there are many different kinds of tailings dam designs, and no established global industry standards for them. The most common tailings storage facilities are dams made from dirt and the tailings themselves. Institutional investors are now working with UNEP and a mining industry group to set global standards for tailings dam design and maintenance, which are expected to be released this year.

Tailings vary depending on the mineral being mined, but typically include waste rock often saturated with water that produces a slurry containing toxic material. When dams fail, the toxic waste that is released can kill aquatic life and humans, and in extreme cases the sheer volume of waste can smother everything in its path.

While the overall number of annual dam failures has generally declined, the amount of serious failures has increased. In addition, the number and the size of dams continue to rise, with many located near towns and cities where a failure could cause human casualties.

The portal comes at a time when the mining industry is due for innovation. Baker explains,

"Dams are getting bigger and bigger. Mining companies have found most of the highest-grade ores, and are now mining lower-grade ones, which create more waste. With this information, the entire industry can work towards reducing dam failures in the future."

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