



Out of Mines, Out of Site

KEY POLICY MESSAGES

- Mining always disturbs water as well as earth. It also has social impacts. To anticipate, address and redress these impacts, governments and mining concerns need to look beyond short-term interests and work with affected populations and landscapes, not on them.
- In the past, it was all too easy for firms, governments, consumers, and people outside the mine area to look the other way. Now it is necessary to recognize social and environmental damages and rights of marginalized peoples.
- Meaningful engagement with affected communities requires addressing asymmetries in power and focusing on causes rather than symptoms. This is still rarely done.

■ Acidic Water, Maqui Maqui Gold Mine
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Mining has delivered untold wealth to people, communities, and nations around the world. However, the impacts on water of conventional mining for minerals, metals, coal, and even precious stones are not potential, but appear in the scars they leave on landscapes, communities, and all too often, politics. Mines require and, in turn, dispose of vast amounts of water. They not only have significant impacts on the water while operating but also continue to affect water resources even after they have ceased operation. Despite growing recognition of the need to address these legacies and prevent them from occurring in the future, governance structures and information systems remain sorely inadequate. The long-standing era of 'out of mines, out of site' is over. We must move beyond times where, except in catastrophe, politically and economically marginal communities, ecologies and future generations bore the brunt of the depleted and ruined water of mines without attracting the concern of outsiders. Mining firms and governments alike have adopted measures and coordinated efforts to improve their record and overcome the 'water legacies of conventional mining' (see 'For Further Information' sidebar). Yet, as shown in the special issue highlighted here, challenges remain. An inadequate understanding of hydrological, ecological and social conditions and a reluctance to truly empower local communities and non-governmental groups delay the move into a new era.

MINE WATER IS POLITICAL

With current attention firmly fixed on the impact of hydraulic fracturing on the water-mining nexus, it is imperative not to overlook the more widespread effects of conventional mining, and the damaging legacy of abandoned sites. Such impacts are not revealed in statistics on mining water use because of a singular focus on withdrawal of water for operations. Widespread use of this data hides the hydrological, social and environmental effects of mining water that often extend well beyond the mine site. Since mines are typically in water-short areas, these impacts can have a major impact on the health and livelihoods of local populations.

In the absence of good governance and corporate diligence, mining can poison politics as well as land and water. In many countries, mining corporations obtain permission to operate in a certain area and appropriate portions of its land and water from governments that have little or no knowledge of, or sympathy for, local people or local conditions.

In the special issue, Turton shows how revenues from gold mining sustained the apartheid regime in South Africa in the face of international sanctions. Post-apartheid South Africa was left with depleted mines and expensive clean-up costs. It was only when senior-level, science-based policy reform was introduced into governance that recovery began.

Peru's underground wealth attracted the conquistadors and has been a source of exploitation of local populations ever since. In recent years, governments have tried to improve water governance. However, Sosa and Zwarteveen question whether recent reforms in water governance in the mining industry really succeed beyond neutralizing conflicts. Those reforms do not fully address the political dimensions necessary to resolve environmental and social conflicts around mining operations.

■ Overlooking the Chaquicocha Mine, Peru
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■ Winze Decant at the Witwatersand Goldfields,
Western Basin, South Africa
©Anthony Turton

At the opposite scale are the rivers and aquifers that cross borders. Kinna asks whether acid mine drainage flowing through the Olifants/Limpopo River system from South Africa into Mozambique establishes grounds for claiming liability. He concludes that forces on each side are strong enough to ensure that issues of liability and compensation concerning the pollution of transboundary water resources are not going away anytime soon.

INFORMATION IS POWER, AS IS ITS ABSENCE

Gathering information requires commitment of resources. With the profits of mining going to international stakeholders and distant national governments, there has been little

incentive on the part of those who benefit to explore local or even regional consequences of mine water use. This ignorance has led to social unrest, depleted water sources and innumerable catastrophic accidents.

Vela-Almeida et al. show that corporate imperatives to bring a mine into operation as quickly as possible have created conflict with local populations in Peru, even after mediation by the central government. They question whether it makes sense to assign water rights without hydrological planning of the catchment and knowledge of the availability of water resources.

That ignorance is neither necessary nor tolerable. Timms and Holley demonstrate that improvements in hydrological measurement and water reporting can enable mine water issues to be evaluated at watershed scales in

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extraordinary detail. Such analysis results in greater security of supply for all users, even in developed economies such as Australia. However, knowing the hydrology is only the first, and sometimes easiest, step. Another lesson is the importance of making the link to impacts on local communities. Danoucuras and her colleagues show the effectiveness of a 'Social Water Assessment Protocol', with questions on 14 themes, providing a community-level perspective on water use in a mining region in Ghana. Recognition that mining will always affect a local communities underlines that social assessments like this should be a standard practice for mining initiatives anywhere.



WHEN COMPANIES AND GOVERNMENTS GET IN THE WAY

Information is not enough. Incentives, rights and governance also matter. Stoltenborg and Boelens review the history of a dispute over land and water rights near an open-pit gold and silver mine in Mexico. They show that changes in land and water rights result from a complex interplay among different actors, where the court systems, administrative officials, and politicians at diverse levels play a double and deeply troublesome role. The centuries-old lessons of conventional ore mining should provide warning lights and guidance to the unconventional exploitation of oil and gas resources emerging through

new technologies such as hydraulic fracturing. Unfortunately, as Esterhuyse and her colleagues show, governments such as that of South Africa give little consideration to water-related impacts that could compromise social and economic development when they consider promoting 'fracking'. Hydrological and social assessments are clearly required, but so too is multi-tiered governance across administrative boundaries that allow exploitation of a valuable resource without threatening water resources or nearby and downstream populations and ecologies. Integrated Water Resource Management (IWRM), as urged by Patrick and Bharadwaj, would also help to encourage company and campesino (farmer) engagement in mining projects in Peru.

These days, there is no such thing as free water. We can identify the historical pitfalls of going for the gold – or silver, coal, metals, or precious stones – while ignoring the implications on water for the communities that rely on the same source. Even 'enlightened' governance reforms commonly fail to fully address a balance of power and desire for revenue that is heavily weighted against local people and the environment. This is not sustainable. Governments cannot solve the problem alone, nor can affected communities, much less nature. The knowledge base and implementation capacity needed to find sustainable solutions to these problems must arise largely from within the mining sector itself. The mining sector traditionally externalised as many costs as possible to the environment and society. In today's world, with stricter standards of corporate responsibility, finding ways to internalise those costs is not just economically advisable; it is politically essential.

Not so long ago, mines could rely on government-granted licences for a formal right to operate. In some circumstances the government may have even operated the mine itself. In an interconnected and informed world, with potentially huge compensation and reputation costs, corporations must seek a less formal social license to operate.

■ Copper leachate from the old Spektakel copper mine, Namaqualand, South Africa © Surina Esterhuyse

FOR FURTHER INFORMATION

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