

An environmental disaster in Brazil raises highly problematic risk and regulation issues

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The bursting of the dam in Mariana in the Brazilian state of Minas Gerais on 5 November 2015 has generated considerable headlines. The dam containing the tailings of the Fundão iron-ore mine caused at least 16 fatalities, displaced hundreds, disrupted water supplies and caused considerable environmental and ecological damage. It also had potential devastating economic and social impacts on local populations. In addition, concerns were raised about the potential cost implications faced by the operating company Samarco, a joint venture between the well-known (Brazilian) Vale and the (Anglo-Australian) BHP Billiton.

The aftermath of this tragedy followed the standard script: local and state-level rescue efforts were shown to be ineffectual, the company was accused of only sluggishly supporting the rescue effort, federal ministries squabbled and sought to shuffle responsibilities elsewhere, UN environmental experts (and local research institutes) disagreed with the company's view that the sludge was non-toxic, and the federal government rushed into condemning the company, filing a civil suit demanding a \$2.5bn remedy over a ten-year period.

In the meantime, Samarco agreed to support cleaning-up efforts and displaced families. Other dams were inspected, revealing further dams 'at risk'. This in turn put the spotlight on the federal regulator, the National Department of Minerals Research (DNPM), that was widely accused of being weak and captured by the mining industry. Accusations were made about the low number of inspections of dams and the poor resourcing of the regulator more generally. This also highlighted past attempts at updating the regulatory regime that had been frustrated in the political process.

The disaster highlights many of the highly problematic issues that affect the regulation of mining and of dams. Mining remains an important economic sector in Brazil, with considerable political clout. At the level of the individual mine, local populations depend on the mine. Environmental groups are not usually paying high attention to dams. Furthermore, the disaster highlights the problematic nature of a regulatory regime where the parent companies are seen as generally responsible, whereas the federal regulator is seen as generally weak.

Why the dam burst has, as yet, remained unresolved. Some, including the company, point to seismic activity, others to poor inspections. Uncertainty about the cause of this tragedy is not surprising – whereas dams are an ancient technology, their construction continues to be characterised by degrees of uncertainties regarding effects on eco-systems.

Dams (thankfully) do not break very often, and if they do, they are more likely to do so early in their operational life. Even if inspections were to discover problems, it is more likely that such 'warning signs' would be explained away. And what might look like a robust safety culture at the level of the overall company might look very different at the level of the individual mine, where resentment of 'dictates' from headquarters might be widespread.

While it is therefore easy to blame 'the irresponsible action of one company' (as Brazilian President Dilma Rousseff did in late November), the issues relating to the regulation of dams go much further. Criticism regarding the lack of actual enforcement of regulation, especially in terms of collecting fines, has been a long-standing issue in debates about Brazilian regulators in general. These concerns about enforcement capacity have been particularly prominent in environment regulation. Hoping for a radical change in the practice of enforcement in Brazil might be highly idealistic given entrenched economic and political power and the lack of resources of regulators.

Beyond Brazil, the disaster in Minas Gerais points to further long-standing debates in the regulation of technologies whose failure leads to considerable social and economic consequences. It calls for a design of regulatory regimes

that will encourage external engagement and continuous challenge. It requires greater focus on the way in which companies control their own safety aspects. It calls for greater attention to understanding the causes of rare failure and the role of inspections in preventing such catastrophic failure. Finally, it also calls for greater attention to the environmental, social and economic impacts of (rare) failure.



Notes:

- *This post gives the views of its author, not the position of LSE Business Review or the London School of Economics.*
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