

# Mudflow management: Lessons for S-E Asia

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**T**HE Hungarian toxic red mud spill in early October was a calamity for the people in the town of Ajka.

Due to the bursting of an alumina plant's waste disposal reservoir, the toxic red mud - a by-product of bauxite refining containing lead and arsenic - flooded six villages, displaced more than 100 people, killed four and left three people missing. The long-term effects of the toxic mud could cause respiratory problems in people and pollute water supply.

This incident provides an important comparison with similar incidents in South-east Asia such as responses to the 2006 mud flood in Sidoarjo, Indonesia (known locally as Lumpur Sidoarjo or

Lusi) and the need for precautionary measures in future development projects in Vietnam.

While the cause of Lusi differs from that in Hungary, the impact is similar.

Stemming partly from gas exploration activities, it has caused 100,000 tonnes of mud a day to flow up from under the earth's surface till today. In four years, Lusi has killed 15 people, and displaced more than 50,000 people living and working over an area of 1,200ha. The release of hydrogen sulphide gas has also caused respiratory problems.

In terms of crisis response, Hungary was proactive in declaring a state of emergency immediately after the incident. Also, the mud flow could easily turn into a cross-border issue along the Danube, the second largest river in Europe that flows through six countries downstream. Prime Minister Victor Orban even called for a

criminal investigation should there be human error.

In the Lusi case, the response was initially slow. There were assertions that the source of the disaster was an earthquake that occurred two days before the mudflow began. This has been confirmed by a new report from the Russian Institute of Geological Studies in early October. It concluded that Lusi was a natural phenomenon as it is an "inevitable volcanic event in an area where large mudflows had occurred 100 to 150 years previously". Nevertheless, the gas exploratory company involved has paid eight trillion rupiah (\$\$1.2 billion) in compensation to the victims of the mud flood after a presidential decree was issued in 2008. Compensation was reported not to be enough, and the mudflow has continued.

Another difference is that the problem in Hungary had transnational implica-

tions; the one in Indonesia did not. Hungary faced urgency to address the mudflow to avoid tensions with its neighbours. The mudflow in Indonesia is localised, spilling at most to neighbouring districts where it affected many.

The incidents serve as good learning points for South-east Asian countries considering industrial projects. One example is Vietnam which has two bauxite mining projects under construction in its Central Highlands region, such as the Tan Rai alumina plant.

Concerns have arisen over such projects. However, safety precautions have been taken. While the main contractor for the plant is China's Chalico, equipment has been imported from diverse sources such as the European Union and Japan. The red mud disposal reservoir is also said to be designed by one of

China's leading design institutes in its aluminium industry, while the location of the reservoir is considered more secure than in Hungary as it is located in the valley, protected by surrounding hills.

Former vice-president Nguyen Thi Binh and several leading Vietnamese intellectuals have sent a letter to the Vietnamese National Assembly, strongly calling for a reconsideration of the bauxite projects in the country's Central Highlands. The letter urges independent scientific analyses of the feasibility of the projects, which should then be tabled for public consideration.

It remains to be seen if the letter sent to the National Assembly has any effect. Nevertheless, the three cases above reflect growing consciousness of the need for environmentally safe and sustainable industrial practices in South-east Asia.

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