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# RSIS COMMENTARIES

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## **Mudflow Management: Lessons for Southeast Asia**

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### **Synopsis**

*Hungary's Toxic Red Mud Spill in early October has important lessons for Southeast Asia. Key amongst them is the need for greater precaution for similar projects in Southeast Asia in future.*

### **Commentary**

THE 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. Moreover, the long-term effects of the toxic mud include adverse health and environmental consequences, such as respiratory problems and polluted water supply.

This incident provides an important comparison for similar incidents in Southeast Asia such as responses to the 2006 mud flood in Sidoarjo, Indonesia (locally known as Lumpur Sidoarjo or LUSI) and the need for precautionary measures for future development projects in Vietnam.

### **Disaster responses**

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, displaced more than 50,000 people living and working over an area of 1200 hectares. 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 – given the mud flow's caustic characteristic. Also, the mud flow could easily turn into a cross-border issue along the Danube River, 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. This is despite the alumina company insisting that the incident could have been due to natural causes. The company, nonetheless, did not hesitate to take action to address the incident.

For 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 mud flow began. This has been confirmed by a new report from the Russian Institute of Geological Studies in early October 2010. It concluded that LUSI was a natural phenomenon as it is an "inevitable volcanic event in an area where large mudflows had occurred 100-150 years

previously". Nevertheless, the gas exploratory company involved has paid eight trillion rupiahs in compensation to the victims of the mud flood after presidential decree was issued in 2008. Needless to say, difficulties persisted as compensation was reported not to be enough, and the mud flow has continued.

There is another difference in the response in Hungary and that in Indonesia: The problem in Hungary had transnational implications; the one in Indonesia did not. As such, there is a more urgent need to address the Hungarian mudflow so as to avoid tensions with its neighbouring countries. Conversely, the mud flow in Indonesia remains a localised incident, albeit spilling over to neighbouring districts thereby increasing the number of victims.

### **Prevention and precautionary measures**

The incidents, nevertheless, set a good precedent for South East Asian countries when 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. There have recently been concerns about the implications of such projects, despite various safety precautions having 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 (EU) 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 said to be relatively more secure than in Hungary as it is located in the valley and therefore protected by the 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 for independent scientific analyses of the feasibility of the projects, which should then be tabled for the public's consideration.

### **On the road to better planning in Southeast Asia**

As seen from the cases in Hungary and Indonesia, responding to such industrial accidents is not only highly costly but also tedious. Growing concerns for environmental impacts, while praiseworthy, also mean more care with how projects are handled. As seen in the case of Vietnam, there is a growing realisation of the need for solid preventive measures as well as the long term implications of industrial projects. While it has yet to be seen whether the letter sent to the Vietnamese National Assembly would have any effect, it nevertheless reflects the increasing consciousness for a safe and sustainable environment in Southeast Asia.

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