AUDITING THE HOTMUD ERUPTION IN SIDOARJO, EAST JAVA, INDONESIA WITH ENVIRONMENTAL PERSPECTIVES

SIDOARJO DISASTER

A Case Of State's Failure to Control Corporate Greed

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Introduction

Mud started gushing from the ground on May 29, 2006 at a rate of five thousands cubic meter (currently 170 thousands cubic meter) at an exploration well owned by PT Lapindo Brantas Inc. (LBI). The catastrophe and its handling indicates a number of issues:

- The disaster caused by LBI's negligence as in drilling the well, it uses the un-reputable company (most likely its own subsidiary) to do the drilling, with inadequate and used equipments and inexperience technicians;
- Slow and inadequate response of the government in handling the impact of the disaster to help the victims and to build alternative economic infrastructures and relocate them to safe places;
- Little progress in the prosecution of those responsible for the disaster;
- The absence of protection of property rights for the victims who have lost more than 11 thousands homes and two dozen businesses that have been buried in more than 6 sq km under 20m deep covering nine villages in Sidoardjo area. The choked off of transportation to the main seaport of Tanjung Perak and Juanda Airport, near Surabaya, have also negatively affected the economy of hinterland in the Southern part of East Java;
- The absence of effective, low cost of enforcement of contract. Implementation of the company commitment to takeover the victims' destroyed properties and to pay some of the clear cost is negligible.
- The slow response of the government to address the mishap is probably partly because the LBI is owned by the family of Mr. Aburizal Bakrie, the current Coordinating Minister for Social Affairs and a prominent member of the leading political party. The Bakrie group is a local business conglomerate who has interest in many business sectors, mainly trading and plantations. LBI is the first interest of the group in oil exploration and exploitation.

Introduction

- Location of the eruption
  - In Sub District of Porong, Regency of Sidoarjo, 30 km of Surabaya, the capital city of East Java Province. Home to 34 million people, East Java is the second largest province in Indonesia. Surabaya area is the second industrial zone of the country and its seaport of Tanjung Perak is also the second largest in Indonesia. Juanda Airport in Surabaya is the major airport in the province.
  - The volcano is located 150 meters away from Banjarpanji-1 well and few meters away from major economic and social infrastructures linking Surabaya and hinterland (Exhibit 1)
- The Significant of Sidoarjo Regency
  - Population density of Sidoarjo area is very high at 2,843 persons/sq.km.
  - The disaster area is passed by various important economic infrastructures such as roadway and the only toll road in the province, railways, electric grid, telephone lines, and gas pipe (exhibit 2)
  - The economic structures of Sidoarjo are mainly:
    - Manufacturing industry and small scale farming

Exhibit 1. The Location of the eruption

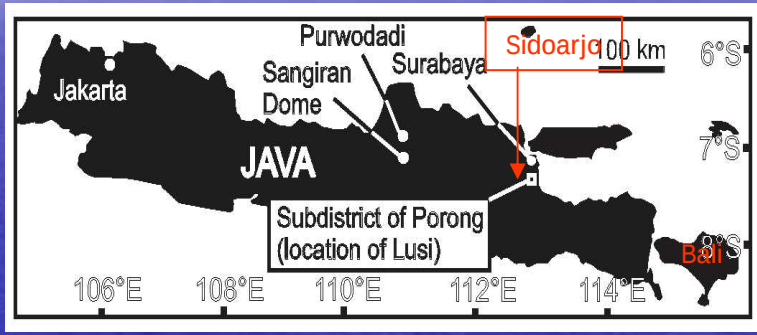
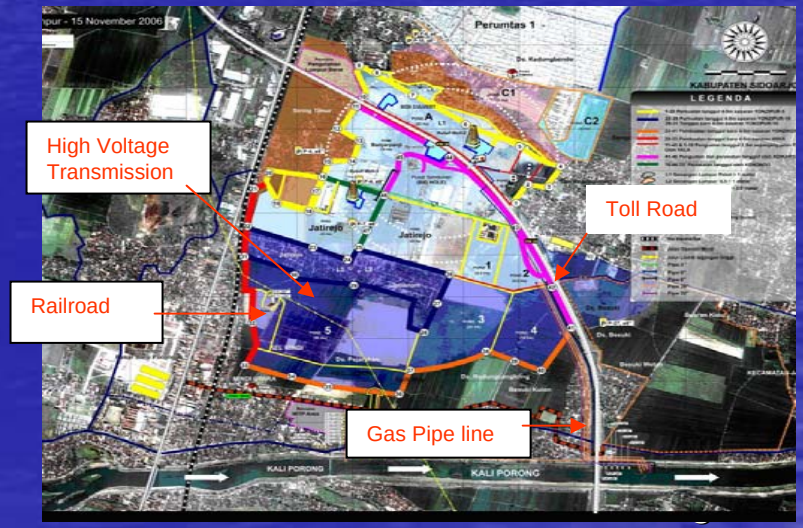


Exhibit 2 The vital infrastructures map



Key Events Leading to the Eruption

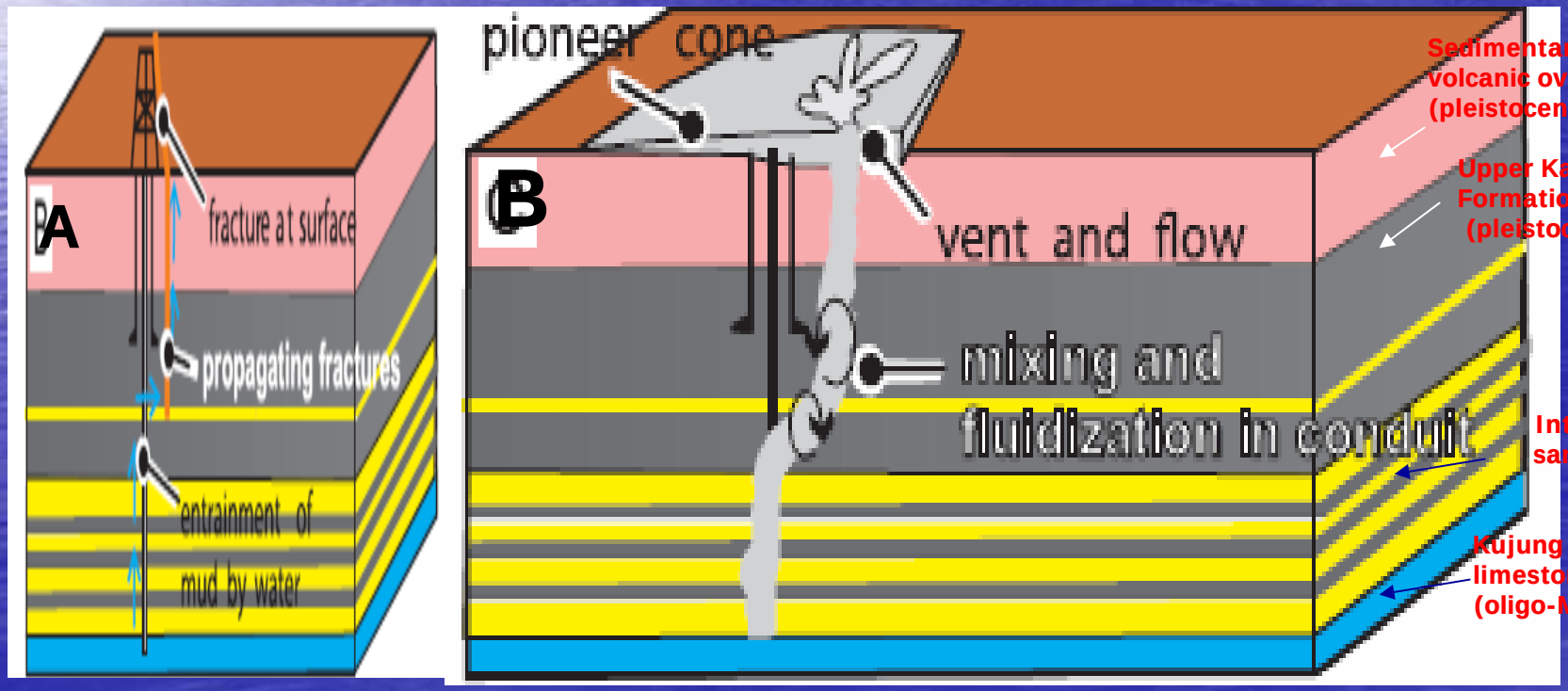
- Exhibit 3 displays the location of the mud volcano in the concession area (Brantas Block) owned by Lapindo Brantas Inc (LBI).

- LBI together with PT. Medco Brantas E&P and Santos Brantas Pty Ltd has interest and right to the Brantas Block.
- LBI started to drill (spud in) Banjarpanji-1 well, on March 8, 2006 and reached the depth of 9.297 feet on May 27, 2006.
- At this depth, the exploration of the Banjarpanji-1 well has continuously had well problems such as well kicks (fluid from the formation penetrated into the bore hole) and losses (fluid or mud from the bore hole went out to the formation). Eventually, on May 29, 2006, the mud eruption took place near the exploration site.

Exhibit 3 The eruption Location

The cause of the mud eruption

LBI insufficiently handled the well problem in the Banjarpanji-1 well that cracked the formation and created channels for the mud in the clay/shale stone formation flowing to the surface.



Strategies to Stop the Mud Flows

- The company and the National Team have adopted four strategies to stop the mudflows, namely:
  1. to cap the wellhead from above;
  2. to snub the well from the sides;
  3. to dig three relief wells and again tried to plug the mudflow from the side.
  4. to drop concrete balls linked by chains into the mud volcano.
  5. As the first four strategies have failed, the government is now considering to use a new but untested strategy, namely, to plug the mud by building a dam around the crater. The amassing mud will be used to counterweight against the out flowing mud from the mouth of the volcano. Many experts, however, believe the flow is unstoppable.

THE IMPACTS OF SIDOARJO DISASTER (as of February 2007)

LAPINDO BRANTAS Inc.
- **CORPORATE GREED**
- **INCOMPETENCE**
- **INADEQUATE EQUIPMENT: BOREHOLE WAS NOT PROTECTED BY STEEL CASING → PRESSURE CONNECTION → FRACTURING → PROPAGATE TO THE SURFACE**

UNABATED FLOWS OF HOTMUD

FLOOD-ING

UNCERTAIN END!

The volume keeps on increasing from 5,000 cubic meter/day at the start to reach 170,000 cubic meter/day in February 2007. Now, the flood has been inundating 470 Ha of land, and burying 9 (nine) villages.

Destruction of structures, facilities, installations

- Loss of properties: residential, governmental, educational, religious and economic buildings
- Power grid damages → 70-150 Kilo Volt
- Gas pipeline damages
- Toll road damages
- Railway track damages

- 10,462 houses
- 23 schools
- 2 Gov't. offices
- 23 manuf. facilities
- 15 mosques

Refugees:
- **7,248** house-holds;
- **26,317** victims

Destruction of vegetation crops, livestock

- 306.2 Ha of paddy fields
- 64 Ha of sugar cane crops

Sedimentation of Porong estuaries → Bigger risks of floods

Contamination of soil → Reduced soil fertility

Contamination of underground water tables & surface water →
- Unsafe domestic water
- Affecting aquatic & marine eco-system

Land subsidence

- **DISRUPTIONS TO ECONOMIC ACTIVITIES**
- **REDUCTION OF ECONOMIC CAPACITIES**
- **ECONOMIC LOSSES BOTH IN THE SHORT- & LONG-TERM :**

TotalEconomic Cost : US$3,46 B
Total Financial Cost : US$0,52 B
The Gap : US$2,94 Billion

Lowered life-supporting & carrying capacity

Government Initiatives

- In the beginning, the central government gave the initiatives to handle the disaster to both the company and local (provincial and district) governments. Because of the lack of power, expertise and resources; local governments could not do much;
- Aid from central government has been limited as, again, the company is expected to fully compensate the victims and bear some of the clear cost. But, on the other hand, there is no enforcement mechanism to implement the company's financial responsibility;
- In spite of the magnitude of the destruction the government has not declared the mudflow as a disaster;
- Few months after the eruption occurred, in September 2006, the central government set up the National Team for Handling the Mud Flow in Sidoarjo (The Team). The Team was given eight months to address three issues, namely: 1) to stop the mudflow, 2) to mitigate the impacts of the mudflow, and 3) to minimize the social, economic, and environmental impacts. The achievement of the Team is also negligible because of the lack of coordination with the company and local governments;
- On March 31, 2007, one year after the mudflow started, a new team was established by the central government. The new team, again, is not well equipped with sufficient authority, expertise, and resources.

The Roles of BPK

- BPK audited the hot mud flow in Sidoarjo with the assistance of the consultants in the fields of environment, geology and the economy of East Java;
- The objectives of the audit are:

(1) To asses the compliance of:

(a) the company with the law and regulations on oil exploration and exploitation;

(b) the three layers (central, provincial and district) of government in handling the disaster: help the victims and force the responsible parties to adhere to the law and regulations on oil exploration and exploitation;

(2) To evaluate the impact of the National Team activities in mitigating the impacts of the eruption such as building the mud embankments, efforts to terminate eruption, and efforts to dispose of the mud into the river, and more importantly minimizing the social impacts as well as economic and environment impacts.

Audit Results

- Some regulations related to the exploration of gas or oil wells have not sufficiently protected the people and the environment;
- There are weaknesses in government monitoring system on oil and gas exploration and exploitation to enforce the rules and regulations and contracts;
- The government responses to address the mudflow disaster have been very slow. This has exacerbated the negative impacts of the mishap to the society, environment and economy;
- The government has never conducted a thorough risk assessment in order to develop action plan or activities;
- There is no consistent result from the researchers about toxic sludge and water of the mud. People in nearby villages complained that toxic sludge and water have invaded their drinking wells, river, agriculture fields, fish ponds, marine ecosystem and homes.

Recommendations

- The government should thoroughly investigate the causes of the disaster and prosecute those responsible for causing it;
- The government should officially declare the mudflow as a disaster and take over the disaster management to handle the mishap and mitigate its social and environmental impacts;
- The government should immediately help the victims of the disasters, restore their livelihood and restore economic activities of the province by rebuilding and relocating the damaged infrastructures. The slow response of the government has exacerbated the negative impacts of the disaster on human live, environment and economy;
- The government should conduct a comprehensive research to ensure the toxicity of the sludge and water;
- The government should revise and upgrade the policy implementation and monitoring system of the oil and gas exploration and exploitation to protect the people's life, the environment and the economy;
- Based on Indonesia's experiences on previous natural disasters and this man-made mishap, the government should develop a comprehensive disaster policy and build its institutional capability to cope with those unexpected problems.