

Lapindo Brantas

Lapindo Brantas Social Impact Report

Sidoarjo Mud Volcano

Updated April 2014

Introduction

Natural disasters, particularly those which occur in populated areas, nearly always carry the potential to wreak varying degrees of social calamity along with the inevitable physical destruction. Indonesia is a country that has been uniquely prone to natural disasters over the many millennia of the archipelago's geological existence. Situated within the infamous "Ring of Fire", the islands of the archipelago have been subject to an endless string of powerful earthquakes, violent volcanic eruptions and devastating tsunamis, all of which have caused an enormous loss of life and property. And, without exception, such events leave in their wake a swath of social disruption as populations are evacuated and relocated, economic resources destroyed and communities' livelihoods interrupted.

In this report we look at a very unique event in the long history of Indonesia's natural disasters, the eruption of a mud volcano in a highly populated area, which, contrary to the pattern of most cataclysmic events, created more social havoc than loss of human life. While the physical emanations of this disaster have been well-documented, it is the social impact which has caused long-lasting disruption of a once-cohesive, albeit economically depressed, community.

On May 29, 2006 in a field near the town of Sidoarjo, East Java, there suddenly erupted a flow of hot mud, water and gases that spouted high into the air and had the appearance of geysers such as seen in Yellowstone National Park in the USA. The flow of mud continued for many months to eject watery mud and clay, accompanied by methane gas, sometimes reaching levels of 150,000 cubic meters per day.

Mud volcanoes are also known as sedimentary volcanoes and are close relatives to the more commonly known magmatic volcanoes, which spew flames and molten lava from mountain peaks during their dramatic eruptions. However, mud volcanoes are geological phenomena caused by subsurface over-pressurised mud layers. These types of volcanoes are also commonly related to fracture lines, faulting, or sharp folding and are often associated with tectonic subduction, the movement of tectonic plates. Mud volcanoes commonly tend to build up a solid mud or clay deposit with a conical or volcano-like shape. The sources of mud volcanoes, which are quite common in hydrocarbon-rich areas of the earth, are generally traced to a substantial subsurface layer and under compacted, mud or shale. They are most always present in earthquake prone zone and along fault lines.

The eruption of the mud volcano called "LUSI" (A contraction of the Indonesian word for mud, "lumpur" and Sidoarjo, the town where the eruption occurred) has been linked by many local and international scientists with a powerful 6.3 earthquake which struck 250 kilometers away in Jogjakarta, Central Java, two days previously, and killing over 6,000 people and destroying thousands of homes, buildings and infrastructure. The tremor was noted by a German university research team as one of the most powerful ever to rock island of Java, which is firmly situated within the "Ring of Fire".

In its wake, the LUSI eruption has displaced tens of thousands of residents of the area, whose homes were inundated by the mud. It also destroyed a large portion of the local infrastructure, including a main highway to Surabaya, capital of East Java. A number of people lost their lives when a gas pipe ruptured and exploded as a result of LUSI. Most notably, however, the long-running eruption has created an ever-widening social disaster which quickly became a situation that was clearly well beyond the ability of local authorities to contain.

The lack of emergency response capability by local government authorities led to a singularly unique scenario in the history of cataclysmic natural disasters; Lapindo Brantas operating a gas exploration well several hundred meters from the LUSI eruption, was thrust in to fill the vacuum in emergency response and in the process became a major contributor to the rebuilding of the area's social fabric.

The Bakrie Group controlled upstream Oil & Gas unit Energi Mega Persada formed Lapindo Brantas Inc. in 1996 with the purchase of American owned Huffington Corporations interest and operator-ship of the Brantas Block in East Java, Indonesia. The ownership of Lapindo Brantas Inc. was later shared between Santos (18%) and Medco (32%). The 15,000 km² Brantas Block was awarded by regulator BP Migas (formerly known as Pertamina) in 1990. After two mandatory relinquishments, the current area of the PSC is 3,050 km². The Brantas PSC (Production Sharing Contract) has drilled (8) exploratory wells from 1993 through to 2001, which led to the discovery of the Wunut gas field, 30 km south of Surabaya. The Wunut field is commercial and was put on production in January 1999. At the time a large number of promising prospects were identified including Banjarpanji-1, the well being explored at the time of the eruption.

Sidoarjo and the Mud Volcano Area

Sidoarjo is a regency (*kabupaten*) the level of government just below provincial of East Java, Indonesia, bordered by Surabaya and Gresik regency to the north, by Pasuruan regency to the south, by Mojokerto regency to the west and by the Madura Strait to the east.

It has an area of 634.89 km², making it the smallest regency in East Java. As of 2008, Sidoarjo had a population of 1,801,187. It is one of the more densely populated areas of the world's most densely populated island- -Java. The average population per square kilometer is listed as 2,522.

The regency has one of the lowest regional GDPs in Indonesia, with the latest figure 2008 standing at around Rp44.159 billion per annum. It is an area where most of the GDP (47.5%) comes from the Industrial sector, while the Commercial sector contributes 27.14%, the Transportation sector 10.02% and the Services sector 5.23%. It also has quite low educational levels, with around 60-70% of the population possessing a junior high school education or below. Those with high school diplomas make up around 25% and a small percentage hold higher education degrees. Of the industries operating in the Regency of Sidoarjo, there were at the most recent survey 361 large scale industries (employing 100 or more), 3,718 medium scale industries (employing 20-99), 8,443 small scale industries (15-19 employed) and an indeterminate number of cottage industries, which were classified as employing 1-4 people, according to statistical data from the Regency.

While there are a few high tech industries in Sidoarjo, such as electronics, the majority of industry is made up of food processing plants, such as those making soy bean cakes (tempe), leather products and shoes, prawn crackers and handicrafts.

While agriculture still represents at the top of the regency's economic source, industry has been rising over the past number of years while farming has declined. The proximity to Surabaya has attracted many residents who commute to work in Surabaya daily and has invited investment from Surabaya into industry in Sidoarjo. As land prices increase, the economics of farming become less attractive, especially since most of the farmers in the area are small holders.

The area inundated by the LUSI mud volcano occupies a small corner of this large regency and, while the economic losses to the victims did not severely affect the overall economy of the Regency, those in the affected areas were certainly afflicted and in need of a massive

social program to restore economic stability to the families and make efforts to keep together a community comprised now of many refugees and relocated families.

Disaster and Response

On May 27, two days prior to the LUSI eruption, drilling technicians working on the Banjarpanji-1 gas exploration well, noted severe underground tremors at the exact same time as the powerful earthquake which had struck Yogyakarta, some 250 kilometers away. Concurrently, the technicians also noted a sudden and complete loss of pressure in the well, indicating that an event of substantial magnitude had occurred beneath the earth in the area. The technicians took standard operating procedural measures to shut down drilling and prevent damage to the well.

While not known at the time, these events were the precursor to the sudden eruption two days later of the LUSI mud volcano some 300 meters from the well, an eruption that scientists have since linked to a shifting of tectonic plates under the earth that had precipitated a sudden rearrangement of the entire subsurface geological formations in the area. One consequence, according to the scientists, was the rupturing of two long-existent channels from the deep subsurface allowing the volcanic mud to breach the surface and begin spewing its seemingly unlimited reservoir of material across the local landscape.

Drilling technicians from the Banjarpanji-1 well, upon first observing the geyser of mud that had suddenly begun spewing from the earth in an adjacent field, were at a loss to identify the exact nature of the occurrence. They immediately contacted local government officials as well as Lapindo Brantas officials from Surabaya and the company's headquarter in Jakarta. While there was no conclusive opinion on what the officials were witnessing, it soon became clear that if the volume of ejected mud material continued unabated, it would soon engulf a large part of the adjacent area, including several nearby villages.

It was at this time that alarmed local residents and district leaders requested assistance from Lapindo Brantas whom in consultation with the Central Government oil and gas authority, BPMIGAS, launched an investigation into the source of the mud eruption and to find ways to stop it. Due to the escalating hazard to nearby villages and the unavailability of quick access to public funds, public infrastructure and businesses Lapindo Brantas management agreed to provide emergency funding. It is important to note that at this time, the central government was trying desperately to cope with the catastrophic effects of the recent Yogyakarta earthquake, which had taken over 6,000 lives and left hundreds of thousands homeless and destitute. The potentially enormous financial aid consequences from the LUSI eruption were not within the central government's ability to immediately address.

Lapindo Brantas mobilized its considerable resources to quickly build temporary levees and to provide logistical services to evacuate villages and businesses that were in immediate danger. Over the following hours and days Lapindo Brantas provided 4,000 breathing masks, clean water to 5,000 residents, food supplies and cooking facilities and temporary school facilities to two primary schools that were evacuated to a safe distance away from the hazard.

Within 2 days of the eruption the evacuation of 735 residents was required from Renokenongo Village to village halls and houses of relatives. At this stage Lapindo Brantas provided emergency financial aid amounting to Rp 200,000 per family in the village of Siring and Renokenongo and further assistance was provided in the form of a rental assistance packages and home and life insurance. Within 2 weeks an official emergency task force (SATLAK) was established that consisting of technical experts from Lapindo Brantas, local

government officials, police and army personal whom would assist in further evacuation of villagers and to secure areas and public infrastructure were relocated to a newly completed facility (Pasar Baru Porong) where basic necessities were provided such as meals, medical and sanitary services. A public communications team was established to provide real time information to displaced residents and surrounding villagers whom were growing concerned at the rate of expanding mud.

Over the following weeks 2,590 individuals were relocated utilising the emergency facilities at Pasar Baru Porong, Many of the displaced residents moved into newly built, vacant shops and kiosks that were meant to be occupied by commercial tenants of the new market.



Residents relocating



Emergency Shelter - Pasar Baru Porong



Medical services



Monitoring hazardous gases (H₂S and hydrocarbon)

Long Term Relief

After 3 weeks of continuous eruptions, the expanded destruction of property and infrastructure and the displacement of 7000 residents, Lapindo Brantas in consultation with the Government agreed to expand its commitment with a comprehensive long term financial package. This commitment was announced by the Indonesian Vice President whom said "Bakrie must be seen to be standing up front, as a national company they must be seen to set a good example."

In the early days of the eruption, there was considerable debate over the cause as it was not yet identified as a mud volcano and scientists from around the world flocked to Sidoarjo to study the phenomenon. During that uncertain period, there was some question as to whether the drilling some 200 meters from the LUSI site might have had an effect. At that time, Lapindo Brantas and Bakrie executives maintained that as long as the cause of the eruption was uncertain they would continue to work with the Government in providing emergency finance and support to the victims while at the same time supplying manpower, expertise and finance to finding a solution to the rapidly growing disaster.

At that time, Lapindo Brantas took responsibility for managing;

- Social issues within the affected area
- Land and building purchases from communities affected by the mudflow
- The provision of funding to farmers for mud affected crop failure
- Funding to the farmers whose rice fields were used for mud ponds
- Funding to workers affected by factory layoffs
- Funding to small businesses and factories
- Assisting in relocations for factories to be able to continue their activities
- Funding for affected housing
- Providing amenities and facilities at shelter locations
- Providing medical services & facilities for displaced villagers
- Cost of life assurance and assistance to affected communities.
- Provide monitoring of hazardous gases (H₂S and hydrocarbon)
- Providing safety assistance for workers constructing the levees and relief well operations

Company officials immediately set about finding life-rescuing solutions for the victims as quickly as possible, so as to reduce the growing social impact from the expanding lake of mud. Some of the first recipients were 42 residents from Besuki village who jointly agreed to a financial package receiving Rp 252,097,920 for 2 years housing rental. In addition Rp 13,893,153,115 was paid to 1,866 farmers for the use of their land for mud containment ponds.

Factory workers from 15 companies were provided financial assistance for lost income, which provided a monthly salary to 1,879 workers. Some 12,000 residents received medical treatment for respiratory problems at a medical centre funded by Lapindo Brantas. By August 2006, as the disaster spread, some 11,000 residents had already been displaced while 9 factories had been relocated at a cost of Rp 310.000.000.

After delays in distributing funding due to disagreements amongst residents Lapindo Brantas announced a financial package, consisting of;

- Rp 1 million per square metre for land.
- Rp 1.5 million per square metre for buildings.
- Rp 120,000 per square metre for rice farms.

This agreement encompassed the 4 villages of Siring, Renokenongo, Kedungbendo and Jatirejo. The financial package paid an initial instalment of 20% of the total and the remaining 80% within 2 years, a plan that was later confirmed by Presidential Decree. Payment for the purchase of affected land and buildings was structured in stages and based on the claimant providing supporting evidence of ownership.

The evidence required included;

- The property land title.
- Deed of sale- purchase of land.
- Proof of legitimate ownership of land including the area of land and location approved by the Government.

This verification was a huge task for Lapindo Brantas whom employed over 100 personal for verification purposes. The price paid for property lost was determined by a standard calculation of the size of the property in square metres (m²). Because of this standard value for financial aid the values proposed needed to reflect the highest common denominator.

Lapindo Brantas social team made rapid progress in paying the first 20% payment of the scheme- - then hit some significant hurdles. One of the biggest problems was the verification process. The remaining 80% payment was due in 2008 in the midst of the global financial crisis. Lapindo Brantas parent, the Bakrie Group was severely impacted by this crisis, and as a consequence had overstretched its financial resources; as a consequence two alternative schemes were proposed.

Resettlement

First was a scheme to provide resettlement in new homes at the Kahuripan Nirvana Village housing estate established by Lapindo Brantas plus provisions for funding of property lost (less the value of the new home) paid in instalments of Rp 15 million per month. The second scheme was provisions for funding for property lost paid in instalments of Rp 15 million per month without resettlement to new homes.

Kahuripan Nirvana Village (KNV)



The housing financial scheme is referred to '*cash and carry*' and '*cash and resettlement*'. An agreement that outlined these alternatives was signed by the victim's representatives and Lapindo Brantas on the 3rd December 2008.

In addition, Lapindo Brantas also provided ancillary social assistance payments to the affected families and individuals. This included:

- Monthly salary to unemployed labourers of Rp 700,000 per month per person;
- 2-year house lease assistance of Rp 5,000,000 per family;
- Monthly living assistance of Rp 300,000 per month per person for 9 months;
- Evacuation cost of Rp 500,000 per family;
- Funding to villagers due to bad odours, dust and noise, Rp 300,000 per person;
- Provision of food (3 times/day) at shelter locations at a cost of Rp 15,000 –20,000 per person;
- Assistance with the transportation costs for school children within the area.

Complexities providing financial assistance

As of March 2007 Lapindo Brantas had purchased 110,752 square metres of rice fields from farmers.

The payment to the victims was complex due to:

- The enormous scale of the aid required both in terms of numbers of properties inundated and in terms of the amount of money involved which was compounded by the 2008 global financial crisis.
- Land ownership records were in many cases inadequate, incorrect or lost.
- Corruption was present and contributed to the verification of land and building claims being more complex and time consuming.
- Different needs and interests amongst the people.

The longevity and escalation of this disaster was also a contributing factor to the complexity of this financial assistance process. A good example of this is the gradual inclusion of new villages and properties into the process as either the mudflow engulfed them or the land was needed for management of the mudflow.

In order to establish an agreement there were discussions and negotiations in November of 2006 between community leaders, Lapindo Brantas and the government which led to a consensus agreement of "Cash and Carry" on 4 December 2006.

This original "Cash and Carry" agreement was defined in the Presidential Regulation No. 14 of 2007 dated 8 April 2007.

The main points of this agreement were:

- It was a cash payment for physical loss or damage of property
- There was a 20% down payment upon proof of ownership
- The value of the property was determined by one formula. The values were; buildings @ Rp 1,500,000 per m², land @ Rp 1,000,000 per m² and rice fields @ Rp 120,000 per m².
- The remaining 80% was to be distributed one month before the end of a two-year period after June 2006 (i.e. to begin May 2008).

- There were some other elements to this financial package such as a payment of Rp 5,000,000 over the initial 2 year period to cover the rental of a property (whether the victim rented a house or lived with family), moving cost of 500,000 Rp per family and monthly living assistance of 300,000 Rp per month per person for 9 months

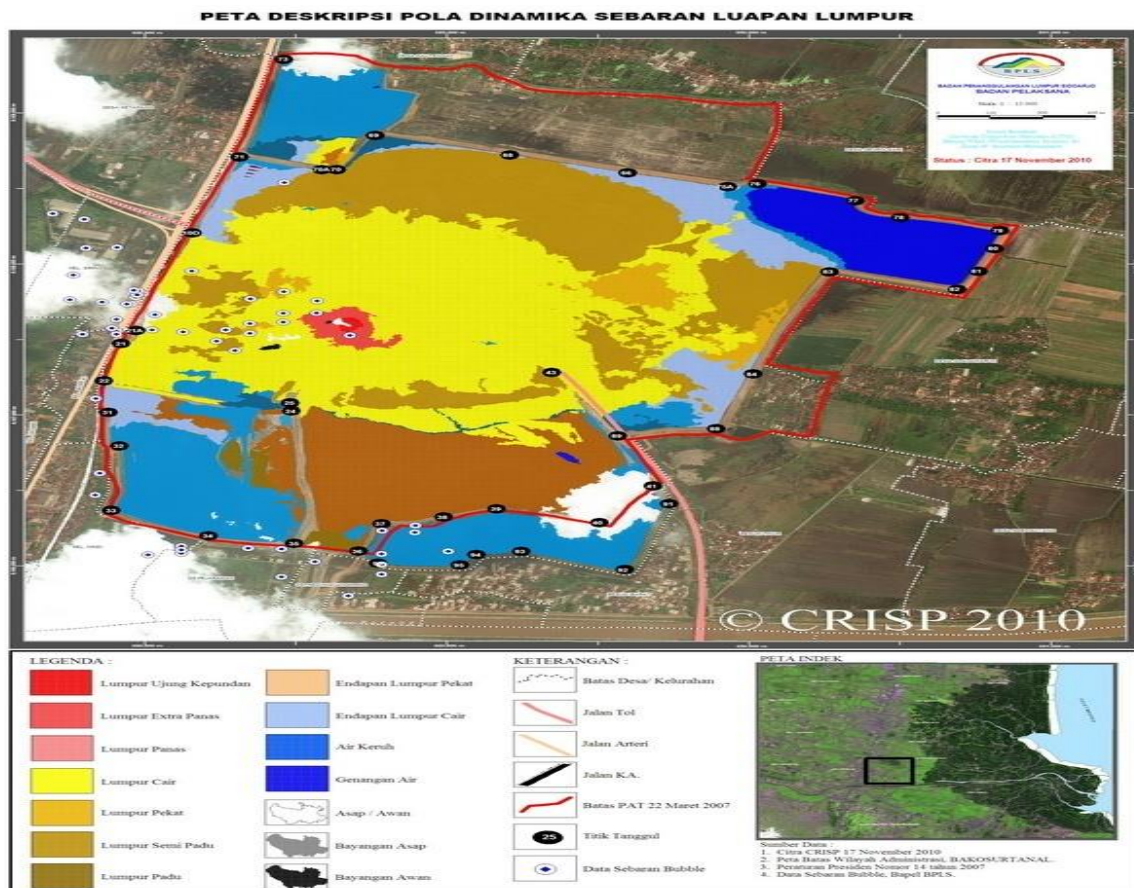
Presidential Decrees

The Presidential Decrees form the basis of the agreements between Lapindo Brantas and the Government relating to social funding.

The first Decree 13 / 2006 does not go into specifics due to the timing of just 4 months after the first eruption. The second - decree number 14 / 2007, handed down on the 8th April 2007, forms the basis of subsequent agreements.

First a 20% advance payment based on the total value of the property lost. The remaining 80% was to be distributed one month before the end of a two-year period. During this time a housing allowance was to be provided by the company.

The eligibility for this scheme was determined by loss or damage suffered within a defined map area dated 4th December 2006 and 22nd March 2007. The regulation used the agreement already proposed in a letter from Lapindo No. 1098/P/AAY/L06, dated December 4, 2006.



Lapindo Brantas agreement covered areas with red line

Land and Buildings Scheme

The Land and Buildings scheme consists of buying and selling contract. The initial agreement stated that payments for all claims are divided into two schemes:

- Payment 1: down payment of 20%
- Payment 2: balance of payment of 80%.

Due to some instances, the second scheme will be paid in several installments. These also included a relocation scheme to the newly built Nirvana village housing complex, progress payments of the 80% and a combination of cash and resettlement.

Currently, there are 13,194 financial aid request documents which had been submitted and paid. The documents consist of 8,184 land ownership documentation and 5,010 non land ownership documents. Bakrie undertook a due diligence process to correctly identify and approve residents with no documentation.

There were 8,175 land title owners who had been elected to accept the direct payment of 20% down payments while the rest will be paid in several installments. In addition, Bakrie provided intermediate relief via the payment of monthly living allowances and temporary accommodation.

Of the 13,237 documents, 150 were not eligible for the land and building scheme until disputes are resolved;

- 19 land function dispute
- 10 land area dispute
- 5 ownership dispute
- 28 dispute over building area
- 19 incomplete documents
- 2 business to business scheme (not residential)
- 2 blocked by the bank
- 1 double submission
- 64 failed to attend the administration meetings

13,152 documents have been paid a 20% down payment with 80% payments in progress.

General Assistance Payments

- Farming aid for rice fields totalling Rp 5,536,018,698
- Medical services were provided at a total cost of Rp 2.654,605,613

The financial package also included:

- Payment for rental assistance and monthly living assistance totalling Rp.31,517,692,000
- Business Assistance; Presidential Regulation 14/2007 did not stipulate financial relief for companies however Bakrie agreed to provide financial assistance to:
 - Re-location for factories: Rp 6,956,740,302
 - Evacuation support: Rp 463,290,000
 - Financial support for Small Businesses: Rp 6,892,435,000
 - 21 companies claims settlements Rp 159,527,327,544

- Salary assistance for workers: Rp 6.184.600.000
- School Services: Rp. 246,898,600
- Re Burial Assistance (/per person): Rp. 1,000,000

Other assistance included the financial provision to provide meals and drinking water at the evacuation centre.

Total Cost to Date (update April 2014)

Financial Aid Assistance	TOTAL (IDR)
Social Assistance	866,653,148,187
Eruption and Mudflow Management	3,329,393,900,451
House & Land Purchased	3,829,424,227,654
Business to Business	49,633,198,263
Operational	524,866,905,678
TOTAL	8,599,971,380,233

Media Enquiries:

Lapindo Brantas, Inc.
Bakrie Tower 20th Floor, Rasuna Epicentrum
Jl. HR. Rasuna Said, Jakarta 12960, Indonesia
p. +6221.5610.0001, +6221.2994.1777
f. +6221.2994.1701

media.relations@lapindo-brantas.com