

## **When Technology is Not Enough to Anticipate Natural Disasters**

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### **Recent disasters in Indonesia caused unexpected numbers of victims.**

On the 26<sup>th</sup> of December 2004, the tsunami occurred shortly after a big earthquake measured at approximately 6 on the Richter scale. People who lived near the beach did not know any sign of tsunami which was caused by the earthquake. Many people died because they did not have any kind of information about it. A great earthquake happened again in Jogjakarta on the 27<sup>th</sup> of May 2006 but did not cause a tsunami, but the victims caused by the earthquake are many.

Mount Merapi, an active volcano, lately erupted around April 2006 and stated the highest alert level (level 1). The Indonesian government declared this alert level but many people who lived nearby did not move away from the mountain because they believed more from an elder in one of the tribes near the mountain. That man believed the mount Merapi will not erupt and destroy their villages based on his beliefs from the ancestors, and guarantee the people that the big eruption will not happen. This tells us that many people still believe the source information from their own local traditional elders and beliefs rather than the government.

The avian flu or known as bird flu happened again in the very early of year 2007. The virus outbreak was widely spread from the Jakarta to Central Java and even East Java. It was declared as a national disaster. But many still keep their poultries because of economic reasons, rather than destroying them to assure of stopping the spread of the virus. They have not noticed the danger of the virus even though the government had announced the whole country about the pandemics. Indonesia has the highest rate of mortality, about 60% of all cases found ended up with death.

### **People's awareness of the disaster is very minimum.**

Indonesia is still facing social problems which cause natural disasters with unexpected numbers of victims. People's awareness of the alert is very minimum even though early warnings were given.

The technology Indonesia has as an early warning system is applied to the current communication devices and infrastructures, radios and televisions. Radios and televisions announce the alert based on information from the Bureau of Meteorology and Geophysics that monitors the earth movement of quakes and weather conditions.

For the bird flu (H5N1) outbreak, the Department of Health and WHO's actions of warnings were seen mostly only in clinics and hospitals, rather than any other public media and communication. The information about this virus is very important for the people to prevent the spread.

Landslides happen in many places throughout the country during this rainy season, caused by illegal cut of trees on the higher lands, forests on the mountains. People are still doing this activity without realizing the cause that will happen.

### **Current intentions to prevent disasters**

Natural disasters are the responsibilities of the government. The intentions the government takes to anticipate disasters with technology are broadcasting messages to television stations, radio stations and commercial mobile phone companies/operators. What mobile phone operators can do are broadcasting important alerts through SMS. The reason to do this is that mobile phones

are the most popular communication devices most people have, and all mobile phone operators compete to have the most coverage throughout the country. Currently the technologies available are the GSM 900/1800, CDMA 2000 1x dan 3G (WCDMA and 1x-EVDO). The 3G service in Indonesia started in August 2006 and now becoming more popular. The Internet technology's role plays the integration of the trusted source of alert information like the Department of Health and the Bureau of Meteorology and Geophysics; to the phone operators or the 3G content providers. The problem mentioned earlier about the people in remote areas where communications are unreachable and the environment is far away from wireless technology's reach; is the part where technology cannot be relied upon. It must be done with different kind of approach.

### **Trusted source of information**

The government must approach the local leaders to lead them to rely on the information given by the government or disasters' related departments. Because by that, the rest of the people will follow the right decision that is proven right by technologies.

But actually the government was not perfectly right about giving out information, such as the big flood in Jakarta that happened early February 2007. The government announced that Jakarta would be safe from flood because the rain volume was still normal or below average. There was no enough time for the people to evacuate. So, the rain volume is something that can be measured and anticipate, but the rivers' level throughout the city tell us how much waste had dumped; and caused the flood.

### **Some suggestions**

By technology, people can rely on information based on the facts from the measurements of the Bureau of Meteorology and Geophysics, but above all that, our people need:

- To be more well-informed, especially those who live in the remote areas, skilled workers are desired to educate these people, and
- While mobile phones and SMS are very popular, it is the opportunity to improve the concept of an early warning system by broadcasting the messages. It is very simple and no need to invest on a particular system only for the warning system. A mobile phone can be a two-way communication device where information can be collected from the alerted ones to be shared again with the broadcast.
- More written information on public areas and announcement or tickers on televisions and radios. Strong local content, information of websites and 3G content providers.

The inspection of nature's safety such as illegal lumber chops, garbage on the rivers (one of the causes of Jakarta's flood) is very concerned. It is the hardest part of all, which is to control people.