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## SWOT assesment of the community potency to determine the strategic planning for volcano eruption disaster management (Case study in Cangkringan, Yogyakarta province)

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### Abstract

Disaster is an event that cause people loss their life, properties, resources and also give a phycological impact. Disaster is divided into two types. The first type is natural disaster and the second type is man-made disater. One of the natural disaster in Indonesia is volcano eruption. Indonesia has a lot of active volcano and one of the most active is Merapi Volcano which located in Yogyakarta Province. In the late of October 2010, Merapi Volcano has a fairly large eruption continued with the emerge of lava flow. This disaster left at least 165 people dead and there are 225.000 people have to be evacuated.

Merapi eruption disaster shows the importance of disaster management in saving people's life. Disaster management is not only a government's obligation but it is also the obligation of the community. Community-based disaster management in the region of Merapi Volcano becomes the most important tool that have to be developed. Community has a good local knowledge of the region so that the disaster management conducted by the local community will be more efective and efficient.

This research's aim is to analyze the SWOT factors (Strengths – Weakness – Opportunities – Threats) of the local community to determine the internal and external factors that exist in the community. These internal and external factors can be analyzed and developed to provide a strategic planning of disaster management system in accordance with the conditions of the surrounding community in Merapi Volcano region.

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*Keywords* : Volcanic eruption, SWOT , local community, strategic planning , disaster mitigation, Cangkringan

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## **1. Merapi Volcano**

Merapi Volcano is one of the world's most active volcanoes. It contains an active lava dome which regularly produces pyroclastic flows and it has produced more pyroclastic flows than any other volcano in the world so it will be very dangerous for the people who live in Merapi Slope when the eruption occurs. Eruptions occur at interval of 1-5 years. Volcanoes deal out overwhelming doses of energy that no human can survive. Mount Merapi is one of the active volcanoes. Direction of the eruption of Mount Merapi always changing. Since 1961 eruption of Merapi direction leads to the southwest toward the headwaters and streams Kali Senowo. The next eruption occurred in 1986,1992,1994,1997,2001 and 2006. After the activity of Merapi eruption in 2006, the opening crater turns to the southeast and east so that the flow of hot lava and hot clouds toward Kali Gendol and Kali Opak in Sleman. Sediment yield eruption upstream Gendol and opaque 3.5 million m<sup>3</sup> and Gendol river basins in radius 6 km from the summit largely been filled with volcanic deposits cause cold lava flood threat increases. Avalanche of the lava dome at the summit with heavy rains would trigger a flood of cold lava that has high destructive power.

The existence of communities living and residing in the slopes of Merapi, such as in Cangkringan is a distinct danger to the people itself. The area is a dangerous zone and often become the worst affected zone when Merapi eruption occurs. Cangkringan is one of the most dangerous zone of Merapi eruption, so it is not surprising that the highest number of Merapi eruption victims comes from this area.

Based on the observation, there are five village in Cangkringan that affected the direct impact of Merapi eruption. Those village are Kepuharjo, Umbulharjo, Wukirsari, Agromulyo dan Glagaharjo. The number of victims affected by the eruption of Merapi in Cangkringan district caused by an inaccuracies in the data about peta KRB-Kawasan Rawan Bencana (disaster-prone-area-map) which made by the government. The existing KRB map is no longer considered within the condition of Cangkringan territory today, in addition to the intensity of the larger eruptions also affect the level of inaccuracies of the existing KRB map. Merapi eruption in 2010 occurred at night, making people difficult to save themselves. Most of the people were home and asleep when the eruption occurred despite the fact that evacuation routes have been provided by the government but because of the eruption happened so quickly so it makes people panic. When Merapi eruption occurs, the cold lava flood participate out of peak trim and flowing in the rivers around Mount Merapi and caused 3023 houses have to be relocated. The victims whose houses were destroyed by the impact of the eruption are given temporary shelters made by the government in the safer location and outside the hazardous zone of Merapi.

## **2. Community Based Disaster Management**

Disaster management is a process which implemented in any type of catastrophic event to save people from the disaster impact. Sometimes, it referred to as disaster recovery management, the process may be initiated when anything threatens to disrupt normal operations or puts the lives of human being at risk. Government on all levels as well as the local community can create a disaster mitigation planning to overcome the disaster and return to the normal function as quickly as possible. Local community is a group of interacting people sharing an environment. In human communities, intent, belief, resources, preferences, needs, risks and a number of other conditions may be affecting the identity of the participants and their degree of cohesiveness. This local community will take an important role in a disaster management system.

This Research uses the qualitative descriptive method with the approach of observational by RRA (Rapid Rural Appraisal) and interviews to collect the data. Research subjects are locals, head of the region and community figures as an informant triangulation by using the SWOT (Strengths – Weakness – Opportunities – Threats) matrix analysis. SWOT analysis will generate internal factors (strengths and weakness) and external factors (opportunities and threats). The result of internal and external factors will be used as an analysis tools and parameter to determine the strategic planning of the community-based disaster management.

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