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ICGMV-PP08-0012

Possibilities, Impacts and Mitigation Efforts as Preventive Way From Disaster of Slamet Volcano, Central Java

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ABSTRACT

Gunung Slamet is one of the volcanoes in Central Java that located in the border of districts Banyumas, Brebes, Purbalingga, Tegal and Pemalang. In 2014, Gunung Slamet has a large eruption and it still active until now by showing some symptoms. Based on tomographic studies can be noted that the potential hazards of movement of an active volcano threatens southern and western regions of the central part of Mount Slamet. There is uncertainty about the cycle volcanic eruption until now. However, the impact that could result from a disaster of this volcano can be expected to threaten the life of the surrounding community, especially in the social and economic community. Eruption will disrupt the economic aspects of society, because most of the population in areas potentially affected by volcanic eruption engaged in agriculture and trade. In addition, the development in this area will also be hampered because of the potential disasters that could damage the infrastructure and facilities around it. Based on the potential and impact of disasters caused by active volcanoes, this article will describe the disaster mitigation efforts to minimize the losses incurred. Coupled with the uncertainty of the condition of this volcano, then preventive measures against disasters must be made. Disaster mitigation efforts as pre-disaster preventive measures that can be done is by changing the spatial development of the area around Mount Slamet. The purpose of this policy is to keep infrastructure development away from the disaster zone so that the continuity of social and economic life of society could also be away from the effects of volcanic eruptions. Thus, it will reduce the likelihood of casualties and economic loss if a volcanic eruption experience.

PRELIMINARY

Implementation of mitigation in Central Java are still having some problems that disaster management is still focused on emergency response activities only, still rests on the role and capabilities of regional governments and the lack of effective coordination among the institutions of the Central Government, between the Provincial Government and District / City Government, and coordination among other stakeholders such as private enterprises, NGOs, universities, community organizations, mass media and society. Disaster management process should be involves various aspects like aspects of the pre-disaster (pre-disaster), in the event of a disaster and after disaster. All of the aspect must continuous and involves various sectors at various levels starting from village level to the international (Renstra Sekretariat BPBD Jateng, 2008-2013).

Slamet volcano is located in Central Java province exactly in $7^{\circ}14'30''$ S and $109^{\circ}12'30''$ E, it is located into five districts, that are Brebes, Tegal, Pemalang, Banyumas and Purbalingga (Maryanto et al 2012). On April 30th in 2014 the status of Mount Slamet increase from level II to level III (BNPB, 2014). The increase status of Slamet give a social and economical effect to the community around Slamet. Almost of the community is a farmer and one of the areas near Mount Slamet still included in the category of fall behind village (Renstra Sekretariat BPBD Jateng, 2008-2013).

One of the problems service of the Department of Energy and Mineral Resources (ESDM) related to the study of the spatial plan is the spatial overlap between the ESDM and other agencies (Resntra Dinas ESDM Provinsi Jawa Tengah 2013-2018). Good spatial planning should be considering factors of disaster-prone areas so that the resulting layout can be maximized.

DISCUSSION

This study attempts to formulate policy recommendations spatial around Mount Slamet based on geophysical analysis especially the potential dangers of volcanic eruptions. In addition, the socio-economic conditions data of the people living around Mount Slamet also consideration in formulating recommendations on policy formation in the vicinity of Mount Slamet.

Based on the study of the characteristics and potential dangers of eruption, the eruption of Mount Slamet has several types of potential hazards that magma eruption, heavy ash rains can cause water pollution, glowing lava dome or Javanese people call it "wedus trash" and a flood of lava. All of disaster potential can be seen in Figure 1



Figure 1. Disaster prone zone of Slamet by Abdurrahman et al (2007) published by PVMBG-ESDM (Maryanto et al, 2012)

Figure 1 showing disaster level in Mount Slamet, the red showing very dangerous areas, pink showing the dangerous areas, both of them can be effect by the lava and yellow showing the area that effect by cold lava the eruption (not very dangerous areas).

In Figure 1, we can see that the areas in the east of Slamet is more dangerous than the others. This is also showed by the result of geophysical analysis especially the earthquake data analysis that showed in Figure 2

Figure 2 show to us that there are many hypocenter (the depth of earthquake) around

Slamet. And also we can see there are red zone that associated with hot fluid as the source of magma that dominant in the east area of Slamet like Purbalingga and Banjarnegara.

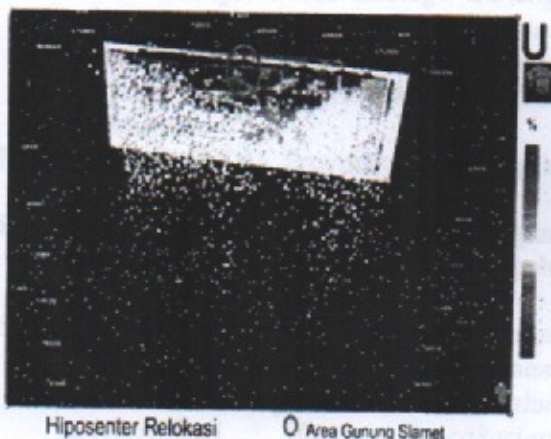


Figure 2. Subsurface Image around Slamet and the distribution of hypocenters

For example, Purbalingga is an agrotourism areas, but there are a lot of the the community in Purbalingga is poor and behind fall of almost aspect of life, like education, because they don't have much money to pay the education bill. The average age of the poor community is 25 till 55, they are can be a productive persons, but they can't develop their salaries because they can't get the education (Santosa, 2012). The agrotourism can bring the social and economical aspect of the community to a better condition, so the comuniti's salaries can be better and they can get the education. The agrotourism is very important, so it must be save from the eruption of Slamet.

The eruption is not just make a damage to the facilities but also to human. In Renstra BPBD Jateng Tahun 2008-2013, there are purpose of BPBD is to make the community who care of the disaster. But in reality the way to make the purpose is not easy because of the knowledge of the community not maximal yet.

To make the purpose of BPBD be real, it is important to make formulation of public policy which can develop knowledge to the community about the disaster (Renstra BPBD Jateng, 2008-2013). One way, it can be done by make preventive of disaster mitigation, like the disaster zone map of eruption.

CONCLUSION

Slamet is an active volcano in Central Java Province, Indonesia. It is located into five district. Based on geophysical analysis, areas in the east of Slamet is more dangerous because of the disaster, they are Purbalingga and Banjarnegara. Purbalingga is potential with agrotourism, but there are of the community which are poor and not get the education yet, so the agrotourism is very important to make their salaries better. But the agrotourism is prone by the eruption of Slamet. Keep the agrotourism from the effect of the eruption is the way that must to do.

Besides that, the education is very important too to develop the community knowledge about the disaster. Formulation of the public policy based on geophysical analysis is very important to keep the social-economical aspect of the community

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PENDAHULUAN

Daerah Banjarnegara merupakan daerah yang mempunyai potensi yang cukup baik, karena berada pada wilayah yang berada pada jalur tektonik pada daerah busur magmatik Samudera Hindia yang berada pada zona tektonik Indonesia bagian Barat. Terbentuknya gunung Slamet sebagai wilayah Bengkalis merupakan akibat terbentuknya sumber panas magma di permukaan sejar besar Samudra Hindia yang jalur atau daerah busur magmatik ini memiliki rekahan yang sangat banyak sehingga sebagai pembentukan gunung Slamet yang cukup tinggi di daerah Samudra juga berperan dalam pembentukan sepsi fluida ke dalam reservoir.

GEOMORFOLOGI

Daerah Slamet yang terbentuk di daerah pedesaan merupakan hasil dari proses erosi berupa pembentukan pegunungan yang kemudian mengalami proses erosi

berupa proses deformasi dan erosi. Morfologi di daerah penyelidikan dapat dikelompokkan menjadi beberapa bagian berdasarkan morfologi di daerah vulkanik yang terdiri dari produk Gunung Slamet, Gunung Matimang dan Gunung Taba Peranting. Sifat geomorfologi daerah Kepahiang utamanya diukur oleh bentuk vulkanik dengan jenis lava andesi - basalt dan aliran piroklastik yang tertutupi oleh jatuhan piroklastik.

Gambar 1. Foto tekas daerah penyelidikan Kepahiang, Bengkalis

Daerah penyelidikan dikelompokkan menjadi empat satuan geomorfologi, terdiri

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