Risk assessment of dieng volcano, central java, indonesia: one of efforts in mitigation of volcanic hazards

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Dieng volcano is an active volcano located in Central Java, Indonesia. Geographic position of the volcano is 07°10,5' S and 109°49,5' E, with the elevation of 2222 meter above sea level.

It is estimated that more than 39,000 people live under the threat of toxic gas posed by Dieng volcano, Central Java, Indonesia. The potential therefore exist for major loss of life, especially where large urban areas occur in proximity to dangerous volcano. With increasing of population growth, hazardous areas are likely to become increasingly developed, so raising the level of risk.

This volcano has erupted explosively at least twelve times since historical observation began in 1825. The most recent eruption occurred in 1979, 1990 and 2002, eruption characterized by phreatic eruptions followed by emission of toxic gas which caused more than 200 casualties.

Volcanic risk assessment is the examination of the risk posed to the human, natural, or built environments as a result of damaging volcanic activity. Human have a long and often tragic history of building large civilizations in close proximity to dangerous volcanoes, partly due to the vast amounts of fertile arable land that typically surround them. Volcanoes are not inherently hazardous unless people choose to live and build their societies in harm's way. As long as humans continue to settle in the shadow of volcanoes, we should continue to develop technological tools to aid us in understanding the volcanic risks we face and advance our ability to mitigate them.

Risk assessment is based on the threat of hazard, vulnerability and capacity elements. The formula for calculating the risk is: R= H x C/V.

Risk map is considered essential tools in the communication of volcanic risk between scientists, the local authorities, and the public. This research method uses both quantitative and qualitative research techniques.

A hundred and fifty people representative respondents of mixed backgrounds, sex, education, occupation, and location were interviewed and asked for vulnerability analysis.

Fatalities can be reduced if, associated with a well monitoring system, including Early Warning and land use planning, a culture of prevention is socialized within all levels of the society.

Keyword: volcanic hazards, risk assessment, mitigation

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