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## “Titen” as the Culture of the Javanese Society in Dealing with the Eruption of Merapi Volcano

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### Abstract

*Indonesia, which is geologically located in the ring of fire area, is prone to volcanic disasters, especially the Cangkring area which is located on the slopes of Mount Merapi as the most active volcano in the world. The purpose of this study was to analyze the community's wisdom in preparing for the threat of the Merapi eruption and to find the Smart Mitigation concept for the community in dealing with the eruption of Mount Merapi. This study uses a qualitative approach. The informants in this study were the Cangkring community, caretakers of Mount Merapi, officers from the Yogyakarta Regional Disaster Management Agency. Techniques Data collection is done by participant observation and in-depth interviews. The collected data is then analyzed using the culture theme technique, the culture theme as a common thread (Satate Of The Art) to find smart mitigation. Finding smart mitigation based on local wisdom as community preparedness in dealing with the eruption of Mount Merapi. The results of the study show that the community has its own preparedness which the local community calls it (Ilmu Titen). With these smart mitigations, it is hoped that the community will be more prepared to take an independent and spontaneous attitude (leadership) in facing the threat of Merapi eruption. TITEN science is in the form of local (local) ideas that are wise, full of wisdom, of good value, which are embedded in the community to answer various problems.*

**Keywords:** Smart mitigations, local wisdom, disaster preparedness

### Introduction

Asia as a region prone to earthquakes and volcanoes, one of which is often used as the object of research is Indonesia. Geographically, Indonesia's location is less favorable and prone to various disasters. Indonesia's vulnerability to natural disasters has increased in the last two decades. DIY is one of the provinces in Indonesia that is quite prone to natural disasters, because the geographical location of DIY which is at the confluence of 2 plates, namely the Eurasian plate and the Australian plate, has the potential to cause earthquakes. In addition, the location of the southern part of DIY is bordered by the southern sea which has the potential to pose a tsunami threat. Meanwhile, in the northern part of Yogyakarta, there is Mount Merapi, which is active throughout the year and has the potential to cause catastrophic eruptions every year (Rozman & Marhl, 2008).

In his remarks, Ir. Max H. Pohan, CES., MA as Deputy for Regional Development and Regional Autonomy at Bappenas at the seminar series IV with the theme of integrating Disaster Risk Reduction in Disaster Education said that Law no. 24 of 2007, the problem of disaster management activities is not only the responsibility of the government but also requires the involvement and participation of the community, schools, universities, the business world, as well as local and international NGOs. For this reason, each relevant stakeholder is required to be able to play an active role in disaster management activities through the integration of disaster risk reduction.

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The presence of disasters cannot be prevented, but the number of victims can be minimized if the population has early preparedness for disasters. One way to minimize the impact of disasters is to utilize existing community wisdom, community wisdom is a method and practice developed by a group of people who come from a deep understanding of the local environment, which has been formed in that place for generations. There is some important knowledge that comes from the characteristics of this community's wisdom, which comes from within the community itself, is disseminated informally and non-formally, is owned collectively by the community concerned, is developed for generations and is easily adapted, and is embedded in the way of life of the community as a means of to survive.

The benefits of local wisdom in reducing disaster risk were proven in the earthquake and tsunami in the Indian Ocean region at the end of December 2004. The disaster destroyed lives in coastal areas, killing more than 150,000 people. However, such a catastrophic disaster only claimed very minimal casualties in the Simeulue Island area, which is the closest landmass to the epicenter of the earthquake. Meanwhile, in areas that are farther away, tens of thousands of people have been killed (Kolibri, 2012). The low number of victims is due to the application of the view held by the population in the Simeulue area, that if there are sea waves or "smong" which is indicated by the condition of the sea water suddenly receding without the influence of weather and climate, then they must immediately avoid the beach and head for the hills. . The rise of large numbers of fish around the coast of North Maluku is a natural phenomenon that turns out to be a sign of an earthquake. This phenomenon has been believed by the people of Simeulue so that it has saved them from the Tsunami disaster.

Based on the perspective of cultural wisdom, the behavior of nature, including the behavior of animals and plants by traditional communities, is observed as a natural phenomenon that can be used as an indication of an impending natural disaster. Long stories and natural events become a source of inspiration and then generate responses in the form of behavior to overcome natural turmoil. Furthermore, it is told from generation to generation as knowledge in responding to nature and its changes. Indonesia's geographical location, which is in a disaster-prone position, on the other hand, also has its own diverse culture and wisdom in detecting signs of a disaster and protecting the surrounding environment. In this context, it can be said that the ethnic communities living in this area are people who are very prepared for disasters.

The belief of the people of the slopes of Mount Merapi in local wisdom can be seen in some of the rituals performed. Rituals can be in the form of religious ceremonies, harbor ceremonies, and so on. All of these represent the most basic and profound values of wisdom education for the slopes of Merapi community to always protect nature, namely the values of togetherness, harmony, and respect for the environment. The place where they live, live together, in order to achieve inner and outer harmony.

Maintaining the harmony of Mount Merapi was also reflected in the 2010 eruption, whether it occurred in Kinahrejo, Pelemsari Hamlet, Umbulharjo Village, Purwobinangun Village, Turgo Hamlet, Kepulharjo Village, and Kaliadem Hamlet. The attitude of trust in the harmony of nature is seen when they do not want to leave their area, even though it has been destroyed by fire by hot clouds and made a forbidden area and unfit for habitation. This phenomenon can be understood, as an attitude of life to always be modest with the environment and nature they inhabit. they think that this place is the homeland of blood, so that Mount Merapi with its natural processes (mountain activity) that accompanies it is felt as something that has life and soul.

The peak of Mount Merapi may burst, the roar of avalanches and the pressure of magma may also be heard, but residents around the slopes of Mount Merapi such as the hamlets of Turgo, Srumbung or Kinahrejo remain calm. People still carry out daily activities such as grazing or looking for wood in the forest around Merapi. " Kalau Cuma gludug-gludug sih biasa (if it's just a small eruption, the

Cangkringan people already consider it normal as an annual cycle)”.

Communities on the slopes of Mount Merapi who occupy areas affected by the eruption of Mount Merapi until now still have the same opinion that the existence of Mount Merapi is a gift, not a disaster. People do not want to be moved or relocated, this is a clear proof of the wisdom of the people of Mount Merapi to always live modestly with nature. The local wisdom possessed by these people is quite difficult to separate, because even though they are afraid of the Mount Merapi disaster, they also expect the eruption of Mount Merapi as a gift.

This research is considered quite important considering that Mount Merapi has the highest eruption rate with an eruption capacity of every year. The Cangkringan area as a fairly vulnerable area of course also has its own wisdom in disaster preparedness. However, this wisdom is only limited to public knowledge and has not been fully identified. Whereas the various specific practices and strategies contained in this wisdom have proven to be very valuable in preparing for natural disasters and can even be transferred and adapted by other communities facing similar situations.

One of the parties who are seen as playing a very important role in storing and transmitting knowledge that comes from local wisdom from generation to generation is the community. Through public education, it is expected to take the value of education embedded in local wisdom that has been passed down from generation to generation to create a culture of sustainable disaster preparedness.

Efforts to identify various local wisdoms in dealing with natural disasters really need the role of the community as key informants. In fact, although in some aspects the community has decreased, they still play a role in several community groups, including the Cangkringan community who continue to preserve local wisdom to always live modestly with nature. Some of the results of research on the role of society that have been found, among others, research conducted by Suharti (2008) concluded, that society has a role in cultural preservation by instilling values to children and grandchildren related to character and manners.

Research conducted by Swasono (1978) concluded that the community plays a role in cultural preservation, namely in preserving customs, and connecting brotherhood through family breeds. The results of Suwarjo's research (2009) concluded that people in villages and cities play a role in preserving the environment according to their respective conditions. Hiryanto's research (2013) concluded that local wisdom possessed by the community can detect signs of an earthquake that occurred in DIY. The findings of the research prove that the community still plays a role in cultural preservation, including in the preservation of various knowledge sourced from local wisdom, including preparedness in dealing with natural disasters. Therefore, researchers are interested in exploring the local wisdom of the people of the slopes of Mount Merapi in depth which will be identified so that they can be scientifically accounted for in the form of Titen Science and integrated into technological elements so that they can be applied in all areas of Indonesia that are prone to volcanic eruptions.

### **Community Wisdom in Preparedness for the Threat of Merapi Eruption**

The people of the Kinehrej area fully believe in the law of pinasti or destiny. Humans die, get injured, or lose property due to the Merapi Volcano disaster understood as destiny. In 2010 the Merapi Volcano erupted, the lava inundated the river and the rice fields of the residents, but the people still accepted it with a big heart (nrimo lan lilo). The losses to rice fields, livestock and gardens are gratefully acknowledged because the people believe that the Merapi Volcano will replace them with multiples. This is evidenced by the eruption of the Merapi Volcano bringing sand and stone material that can be used as a source of life besides that the ashes of the Merapi Volcano can bring its own fertility for farming or gardening communities.

Tirakat, as is done by the community to ask for safety and blessings from the Almighty from the activities of the Merapi Volcano, is part of the wisdom of the people who always live to draw closer to the Almighty and the natural surroundings. Community tirakat activities in asking for safety from Mount Merapi can be seen in Figure 1.1;



**Gambar. 1.2 The Ritual Process of the Society's Science of Titen**

(Source: Research Documents, 2022)

The people of the Kinehrejo area think that, if the Merapi Volcano is erupting, it can be understood that the Merapi Volcano is *duwe gawe* (hajat). The closeness of the people of the Kinehrejo area which is based on experience and knowledge as well as respect and appreciation for the Merapi Volcano and its nature makes preservation of the environment, nature, and the culture of life of the Merapi Volcano community.

Merapi Volcano has a big role both in microcosm and macrocosm. For the people of the Kinehrejo area, Merapi Volcano is considered the abode of the Gods and is awaited by the spirits of the ancestors. Merapi Volcano occupies an important position in the mythology of the Kinehrejo people, believed to be the center of the kingdom of spirits, as a "swarga karatunan", in the flow of life's journey which is depicted with an imaginary axis and an eternal spiritual line that connects the South Sea, Krapyak Stage, Yogyakarta Palace, Tugu Pal Putih and Mount Merapi. This symbol is filled with meaning about the process of human life from birth to facing the Creator.

Understanding the mythology of Mount Merapi cannot be separated from the philosophy of the city of Yogyakarta with the Kraton Ngayogyakarta Hadiningrat as its foundation. The city is divided by an imaginary axis that connects the South Sea, Parangkusumo, Krapyak Stage, the Palace, Tugu Pal Putih and Mount Merapi. Philosophically this is divided into two aspects, namely Jagat Alit and Jagat Ageng. Jagat Alit, which outlines the process of the beginning and the end of human life and life with all righteous behavior so that the essence of life and human life is understood, is described in the planology of the city of Yogyakarta as the city of Kings at that time. The planology of this city stretches from south to north starting from the Krapyak Stage ending at the Pal Putih Monument. This emphasizes the mutual relationship between the Creator and Man as the Creator.

The connection between the activity of Mount Merapi and the spirits of the South Seas and their ancestors is revealed in their prayers every time they perform the slametan ceremony which is recited by the people or the Juru Kunci of Mount Merapi,

*Sepindah, ingkang wonten sak njawanipun Redi Merapi. Rambah kaping kalih ingkang wonten sak njawanipun Redi Merapi. Pramilo sedaya dipun perteni, kulo sak ahli waris nyuwun wilujeng. Lan sedaya para ahli kubur leluhur kula saking estri, tebih celak, ingkang mboten keruwetan sedayanipun perteni. Kulo nyuwun bakoh kukuh langkep, kiyat slamet sak ahli waris kula sedaya. Rambah kaping tiga, kangge merteni*

*njeng nyai roro kidul, mbokmenawi utusan sak wanci-wanci segede kandheg kanan kirinipun dhusun mriki (first of all to those who I glorify inside the Merapi Volcano. The second, which is outside the Merapi Volcano. I glorify all with offerings, my family and I ask for safety. And to the ancestors, those who have died on the male or female side, far and away on the male or female side, far and near, those who are cared for or those who are not cared for, all are glorified, I beg you to be strong, whole, strong and safe for my family. Third, to glorify Nyai Roro Kidul, if you send an envoy at any time, please stop on either side of this village road).*

The meaning that can be learned in this mythology about Merapi Volcano is that Merapi Volcano is a creation of God that we must protect and respect, just like nature as well as humans who have the desire to be understood and to be respected. There is a reciprocal relationship between nature and humans when nature provides all human needs as humans should want to protect and preserve nature so that nature is not angry with humans and when nature is damaged then nature cannot give signs when an eruption of Mount Merapi will occur. Smart Mitigation for the community in dealing with disasters eruption of Mount Merapi

Nature is the teacher of life and the community has the wisdom to respond to the environment, meaning that the more people are able to take advantage of the existing wisdom, the more aware of disasters the community will be and the more responsive the community will be in taking attitudes independently and spontaneously (leadership), so that efforts to build a culture disaster response can be realized.

In theory, disasters cannot be prevented, but casualties can be minimized if people are prepared for disasters. One way to minimize the impact of a disaster is to utilize community wisdom to be used as a medium for disaster education.

Disaster education is then operationally translated in such a way that disaster education can be accepted by the community with local cultural conditions and moreover then interpreted in providing knowledge to the community that can be used to increase public awareness to be more alert and responsive.

The teachings of Merapi are the ideas of the (local) community that are wise, full of wisdom, of good value, which are embedded and followed by members of the community as well as a way of life and knowledge in the form of activities carried out by local communities in responding to various problems in fulfilling needs. Public.

According to Koentjaraningrat (1991), there is some important knowledge that originates from within the community itself and can be disseminated formally or non-formally, owned collectively by the community concerned, developed for generations and easily adapted, and embedded in the way of life. community life as a means of survival.

According to Keraf (2006), from a philosophical point of view, the basis of advice can be in the form of ideas, thoughts, reasoning that is a message. The advice of this category includes various knowledge, views, values and practices from community experience related to the environment in which the community lives, either obtained from previous generations or from direct observation of changes in the environment in which they live.

Disaster education developed by Illich (1994), is to train and educate the community towards preparedness by utilizing community wisdom, because that community has the wisdom to respond to the environment, meaning that the more people are able to take advantage of local wisdom, then the community will automatically be more aware of disasters. and the community can be more responsive in taking a stand independently and spontaneously (leadership), so that efforts to build a disaster response community can be realized.

Dewantara. K.H. (2004) have ideas in instilling educational values in the community, namely Understand as a cognitive form, Feel as an affective form and Nglakoni as a Psychomotor form. The three basic concepts that the researchers developed into a disaster education model



are; Niteni (understanding what the advice contains), Ngroso (Feeling that you have advice because it comes from the community itself), and Nglakoni (carrying out what the advice contains).

This Smart Mitigation is a Guidance-based disaster education for warning and community preparedness in dealing with Merapi Volcano eruption disasters, namely the Guidance of Merapi. Merapi's advice itself has a philosophical meaning as TITEN science. The first "N" is Niteni as cognitive, the community is expected to be able to understand Merapi Volcano and observe changes in natural phenomena that lead to signs of an impending catastrophic eruption, for example when a large rumbling sound is heard (gludug-gludug), there is ash rain and an atmosphere when it gets dark, hot clouds come "wedus gembel", and the animals immigrate around the mountains.

The second "N" is Nuturi as affective, Nuturi comes from speech or advice, meaning that it is hoped that the community must be able to provide useful advice for good. When there are signs of a catastrophic eruption, it is hoped that the community will be able to give speeches to remind each other so that the community has a waspodo attitude (a careful attitude towards the threat of a Merapi eruption).

The third "N" is Nindaki as psychomotor, the community is expected to carry out what is mandated by the Merapi Instructions. From a non-empirical viewpoint, the mandate of Merapi's advice invites the public to always be aware of God Almighty so that they are given safety. Not only from a non-empirical aspect, from an empirical viewpoint, the community is invited to be able to have skills independently and spontaneously (leadership) to save themselves, namely when there is a sign -a sign of the eruption of Mount Merapi Merapi by itself the community is responsive to the gathering point.

## Conclusion

The success of TITEN science-based smart mitigation can be indicated by the following characteristics;

1. Cognitively, the community is able to understand the signs of a Merapi eruption
2. Affectively, the community is capable of Nuturi, giving speeches to remind each other so that the community is always on alert (careful attitude towards the threat of Merapi eruption)
3. Psychomotorically, the community is capable of Nindaki, carrying out the mandate of the teachings of Merapi.

In theory, from TITEN science-based smart mitigation, it can be explained that the more people are able to Niteni, able to Nurture, and able to Nindaki, then automatically the community is able to save themselves independently and spontaneously (leadership), then automatically a culture of disaster response can be realized).

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