

SOCIO-CULTURAL LIFE OF KELUD PEOPLE IN CONNECTING WITH TRADITIONAL MITIGATION EFFORT BASED ON LOCAL WISDOM

Sri Herminingrum¹, Esti Junining²

^{1,2}Faculty of Cultural Studies, Universitas Brawijaya
Email: ¹hermien_18@ub.ac.id, ²esti@ub.ac.id

Abstract

Kelud is one of the 13 active volcanoes located in Java Island. The sequence of eruptions becomes a natural phenomenon which constructs the culture of the people who live around it. Therefore, this local wisdom-based research tries to investigate the relationship between the socio-cultural life of people inhabiting at the foot of Kelud Volcano and the disaster mitigation. The inhabitants of Sugihwaras Village who live within 10 km radius from the peak of Kelud are assumed as a “disaster-aware” community that becomes a valuable source of the local wisdom. The ethnography approach was stressed on the cultural tradition of the people of Sugihwaras that was observed directly from participation during traditional events, especially rituals. The rediscovery of the local wisdom in a traditional effort of disaster mitigation as the main goal of the research is expected to give contributions to good governance. This is highly possible because it is shown in most of the findings that the local wisdom of Kelud people teaches moral ethics which not only guides the relationship between human being and The Almighty, the way to respect each other among social human being, but also the harmonious life between human and nature.

Keywords: *Socio-cultural life, traditional mitigation, Kelud people, local wisdom*

1. INTRODUCTION

More than 30% from 147 active volcanoes in Indonesia spread across the Java Island. Kelud Volcano is one of the 13 most active volcanoes in East Java Province. The character of Kelud gives a lesson to the people living around this volcano to reduce the devastating impact of the eruption disaster. Some of the efforts were done by the people together with the government, through the expeditions and vulcanology observations, supported by non-technical effort done by the Kelud people, especially from Sugihwaras Village through the local traditional activities as a manifestation of local wisdom.

In essence, the local wisdom assists an early detection effort towards the natural signs connected to Kelud eruption. In 2007, for example, there are a lot of people within 10 km radius from the summit who refused to be evacuated because of their belief towards the natural signs. Among those signs are the birds were still chirping, none of the wild animals especially snakes descended from the volcano, and no dead trees yet around the summit. Other than that, they had not received any orders from

the elders of the village – spiritual traditional leaders to whom the local people call as *Sesepuh*. As it was documented, Tempo, April 2014, these villagers were, in general, those who experienced the eruptions on 1951, 1966, or 1990.

The last eruption on 13 February 2014, on 22:55 Indonesia Western Standard Time (UTC+07:00), Kelud Volcano sent its volcanic materials which covers some parts of Java Island. All of the airports in Java were closed and many flight schedules were cancelled for days due to the volcanic ash rain. NASA recorded that this lowest volcano in Java spewed volcanic material as high as 20 km which reached 700 km away from Kelud. The volcano spectacularly emitted approximately 125 million m³ of pyroclastic flow and a stream of very thick and acid lava which contains high silica. This type of lava quickly cools off and hardens, once it gets off from the bowels of the earth. The mineral contents, then, becomes the source of natural fertilizer for soil and plants.

As the people who live within the disaster-prone area, it is expected that Kelud inhabitants grow as a community with disaster awareness. This sort of awareness must not be relied upon a certain *Sesepuh*, but all individuals should

possess it. Nowadays, evacuation effort during eruption is made easier by the development of media and also the existence of BMKG = *Badan Meteorologi, Klimatologi, dan Geofisika* (Department of Meteorology, Climatology, and Geophysics), which is a Governmental non-department unit in Indonesia. Some of its tasks are on conducting observation, data collection, spread, analysis, and processing, as well as services in the field of meteorology, climatology, air quality, and geophysics. The news from BMKG, which in Kelud area is more well-known as *Badan Vulkanologi dan Geofisika* (Department of Vulcanology and Geophysics), usually are received by Kelud people around the point when the volcano is in the status of “aware”, meaning that the volcano already goes through the change of magma, tectonic, and hydrothermal activities. Therefore, the mitigation effort on the eruption of Kelud Volcano will be more efficient if the people could combine both the observation by *Badan Vulkanologi dan Geofisika* with the local wisdom which is not only handed down through generations but also being learned.

For this reason, the existence of local wisdom that is rich in traditional moral-ethics as the guidance for life cannot be separated from the role of *Sesepuh* who is the spiritual-traditional leader. As commonly found in other volcanic areas in Java, in Kelud area there are 6, out of the listed 42, *Sesepuh* who are considered to have tremendous spiritual connection with Kelud Volcano.

Today, local wisdom, which indirectly resurrects the collective memory and folklore, tends to be disappeared and forgotten. Accordingly, the local wisdom-based research is necessary to do because in Kelud area local wisdom is believed as a basis for the traditional mitigation effort. It purposes to explore thoroughly all the cultural folk traditions in Sugihwaras Village which then represents an attempt to look for the connection between socio-cultural life and disaster mitigation, and how local wisdom can empower disaster-aware community. On this account, the result of this research can contribute to the local Government on the management of disaster mitigation based on local wisdom.

2. LITERARY REVIEW AND RESEARCH METHOD

Spradley (2012, p.6) emphasized that field research with ethnography approach is an activity of “participating in activities, asking questions, learning ..., watching ceremonies, taking field notes, ... tracing out genealogies, observing play, interviewing informants, and a hundreds of other things”. Research on traditional effort of disaster mitigation in Kelud Volcano, Sugihwaras Village, Ngancar District, Kediri Regency, must directly be involved to observe all social-cultural activities. As a result, to observe socio-cultural activities of local people which become the source of local wisdom in its connection with disaster mitigation, means to look for an answer about Kelud people’s knowledge on life in the volcanic area and how they apply the knowledge in their daily life.

In disaster mitigation, people cannot rely on other parties to give information or wait for the commands to evacuate during disaster. By doing early evacuation, the people will be readier; therefore they will not easily get panicked. As a series of attempts to decrease the risk of disaster, mitigation is an activity which serves as the action to reduce the number of victims or material loss. Subiyantoro (2010, p. 45) said that disaster mitigation is related with the cycle of disaster to serve as the treatment before the disaster. The mitigation activity can be one important thing that has to be known and understood by the people who lived in the disaster-prone before it happens. Therefore, mitigation has to be done continuously even in normal days without the threat of the disaster. Referring to the meaning of mitigation above, the coverage of disaster mitigation encompasses all the activities aimed to reduce the impact of the disaster. These activities, of course, can be done with many ways, using media and modern equipment, or by rediscovery of local wisdom which is more known by the people before they know technology like nowadays.

Local wisdom can commonly be interpreted to describe the knowledge which is owned and applied by people to fulfill their daily needs in connection with the local problems. As the local ideas which can be utilized as a tool to answer many problems in the fulfilment of their needs, the people concerned embrace the

principles of local wisdom in their interaction with their environment.

Local wisdom is an idea or local knowledge which is handed down through generations as a strategy to face various problems in life. Because it is a heritage which has to be studied to achieve a peaceful, secure, and prosperous life, and therefore the moral ethics embodied in the local wisdom becomes the guidance for living. In the context of Javanese traditional people, the aim of living is to be a complete human being, “reaching on qualified human being” (Herminingrum, 2015). To reach this objective, people must learn about wisdom from the elders, live in harmony between human and the nature, and trust the force of the nature as the creation of God and interpret that in daily life through the habits and traditions including the ritual is an unavoidable unity. As a strategy to face the problems of life, it is certain that local wisdom of the people of Kelud contains knowledge on how deal with the eruption of Kelud Volcano. Because of that, local wisdom becomes one of the traditional mitigation efforts which can be combined with the mitigation based on modern technology.

Study on disaster mitigation based on local wisdom which was done by Permana, Nasution, and Gunawijaya (2011) showed that the local wisdom on the ethnic group of Inner Baduy, *BaduyTangtu*, and Outer Baduy, *BaduyPanamping*, is effective to be used as a disaster mitigation during natural disasters; such as earthquakes, flooding, and landslide.

Meanwhile, the research done by Hiryanto and Fathiyah (2013) also depicted how local wisdom is used by old people in Yogyakarta as an early detection if the Merapi Volcano will erupt. These elders see natural signs which appear before the eruption, such as descend of the animals from the peak of the mountain, the increasing temperature, and the change of colors in streams. As an addition, the local wisdom of Merapi people in handling the occurrence of volcano eruption has been used by BNPB to establish a disaster-aware community.

The local wisdom-based research which exists in a certain community within a certain area is intimately connected with human, history, and geography. Therefore, Dundes (in Bronner, 2007) emphasized the importance of an integrated approach based on historical and geographical facts that is the historical-geographical approach. In context of the

research on local wisdom in Sugihwaras Village, Ngancar District, Kediri Regency, this approach is used to trace the socio-cultural life which becomes the basis to investigate the local wisdom of the inhabitants of Sugihwaras Village who lived in Kelud volcanic area. This research involves participating in community’s activity, holding interviews with the informants and respondents to uncover their knowledge about local wisdom. Following communal activities as the source of local wisdom is not limited to the daily activities that mirrors the connection between human and the natural condition which is prone to disaster but also understanding the implicit meaning behind traditional ceremony or ritual, and how the inhabitants of Kelud Volcano learns, comprehends, and applied the principles in their daily life.

3. RESULTS AND DISCUSSION

Sugihwaras Village (Figure 1) is the closest area to Kelud Volcano, with the northern border of Sepawon Village of Plosoklaten District, PDP Margomulyo - Kelud Volcano to its east, Sempu Village of Ngancar District to its south, and Ngancar Village - Babadan Village to its west. Sugihwaras Village is inhabited 3296 people and almost all are Javanese ethnic group.



Figure 1: The area of the research executed (source: google map)

Geographically, the people of Kelud, especially Sugihwaras inhabitants, cannot avoid the impacts of eruption, and history records the eruption of Kelud and its fluctuating outcomes; started from the largest, extraordinary death toll on 1919 that reached 5,160 lives. The eruption on 1951 killed 7 people and another 157 were wounded, whereas the eruption on 1966 killed 210 people. On 1990, 32 people were killed, and 500 houses were damaged. On 2007, there was no casualties and natural damaged caused by the effusion. The last eruption happened on 13 February 2014, which did not cost any

casualties, but paralyzed the social-economic life.

3.1 The Socio-cultural Life of Kelud people

The Sugihwaras Village is the representation of Kelud community because this village is located on the slope of the volcano and is the most prone to the impact of eruption, within the radius of 10 km from the peak of Kelud Volcano. Experiences in dealing with the disaster since the existence of the volcano caused the people of Sugihwaras Village constructs a culture which is connected with the attempt from the people itself. In terms of this, Erikson (1993) stated that culture is a basic concept of a community. Because of that, Spradley and McCurdy (2012) saw culture as the core of cultural anthropology study and therefore culture cannot be separated from ethnicity of a certain area, "learning from people", which strongly related from the aspects of human experiences. The analogy is: the culture of people of Sugihwaras Village always undergoes a process and constructed by geographical condition and their history after experiencing Kelud eruption for many times.

The mitigation effort based on local wisdom is done by the inhabitants of Kelud Volcano, and of course is connected with their experiences as the people who lived in a disaster-prone situation. Hence, they have knowledge about the strategy to reduce the risk of the disaster. The knowledge is integrated, understood, and applied by the people, and the expressed in the socio-cultural activity which is called local wisdom (Sartini, 2004; Zulkarnaen and Febriansyah, 2008). Therefore, the daily attitude of the people is the mirror of culture; and culture is a knowledge which is learned and shared by people in one community to interpret their experience. How the inhabitants of Sugihwaras Village to share the knowledge based on their experiences; here the function of the village elders, Javanese: *Sesepuh*, to teach and spread the knowledge becomes important.

In Sugihwaras Village, there are 42 people who are noted as *Sesepuh*. However, based on leadership roles, only 6 people have the important role in the activities related to local wisdom of Kelud inhabitants. They are *Mbah Suparlan* and *Mbah Zaman* (deceased) from the Hamlet, in Javanese language named "Dusun", of Sugihwaras, *Mbah Misni* and *Mbah Ronggo* from Dusun Mulyorejo, and *Mbah Sinto* and

Mbah Paidi from Dusun Rejomulyo. All the *Sesepuh* in Kelud area are called *Mbah*, an attribute for respected particular elders. They are chosen people because of their extraordinary attainment in supranatural knowledge.

Based on geological records of volcanoes in the world, since 1000 AD, Kelud Volcano has experienced 30 times eruption. But, the modern culture, the reading and writing habits, have just known during the Dutch colonial era, hence the first record of the eruption was just started to be documented on 1901 until the eruption on 2014. Modern science put forward the reason why the latter eruption did not cause victims, that is because the eruption at that time was not accompanied by lava (Kompas, 28 Nov. 2014). On the other hand, the people place more faith on the local wisdom in the mitigation effort to avoid casualties. The daily habits such as nurturing the surrounding nature by not cutting the trees especially the big ones, taking care of plants, not polluting the water sources, and learning the character of Kelud are how they appreciate the nature as God's creation. The earth gives the blessings for their life as farmers. In interview with the informants, the village's *Sesepuh*, the word "learn" always said repeatedly, along with the word "school". The way to teach that Kelud Volcano is a part of their life and life is to try to understand the meaning of Javanese expression "*cokro-panggilingan*": the circle which connects happiness and sorrow without endpoints. Eruption is viewed as the privilege of the volcano to give fertility to the land. Eruption is not a disaster but a blessing to the people who mostly are farmers. This wise view of life is spread by the *Sesepuh* with the saying "*susah bingah meniko intinipun tiyang gesang*". It is the embodiment of the understanding that life is like two sides of a coin, sadness and happiness, darkness and brightness, will come and go alternately.

The examples on the everyday cultural practices in connecting with nature can be found out from how they serve offerings. The gratitude manifested by giving offerings in the area of water springs (Figure 2) is the symbol that people cannot without water. The wisdom which prohibits the cutting of big trees (Figure 3) which is labeled as "sacred" is also regarded as the highest achievement on the awareness of ecosystem. The trees and plants always absorb

CO₂ and produce O₂ as the natural duty in preserving human life. As such, they deserve respect by conducting offering rituals (Javanese: *Ritual Sesaji*) on a certain time.



Figure 2:
water springs at the
foot of Kelud Volcano



Figure 3:
the huge sacred
Banyan tree

The people of Sugihwaras Village have been acting wisely towards the nature that blesses them with life. With local wisdom, the person of Sugihwaras Village forms the living habits in harmony with nature. This proves that ecology is not only being a scientific concern, because through local wisdom, the concern about ecology transforms to be a cultural strength, a phenomenon which is paradoxical with opinion from Garrard (2004, p. 5), “it may seem obvious that ecological problems are scientific problems rather than objects of cultural analysis.”

The socio-cultural life of Sugihwaras people which is guided by moral ethics teaching embodied in local wisdom is proven to withstand modernization. The examples of interviews with the locals show their concern about local wisdom from ritual ceremonies because it is considered as (1) the manifestation for life safety, and (2) the effort to preserve Javanese culture. The local wisdom in form of *Ritual Sesaji* must be preserved as the gesture of gratitude of Kelud inhabitants. That live side-by-side with Kelud is a danger which gives blessings to farms and cattle. This illustrates that there is awareness on the danger of Kelud eruption; however, the respondents believe that the local wisdom has a predominant role in the mitigation effort. Through the eruption, God, with His power and compassion, gives a better life towards the people in form of land fertility which produces crops like tomatoes, dragon fruit, coffee, chocolate, pineapples, and cloves.

3.2 Mitigation Effort and Traditional Astrology

There are some efforts of mitigation done by Kelud inhabitants based on their own local wisdom. If *Badan Vulkanologi dan Geofisika* of Kelud Volcano relies on disaster forecast based on modern technology, the people of Sugihwaras has their unique prediction based on traditional astrology, which is, by Javanese, called *Primbon*.

The calculation referring to *Primbon* frequently labeled as a method of “*otak-atik-gathuk*”, or continuous arranging until the suitable reasoning is found, like a puzzle set. This method is actually a main principle in local wisdom, which is the trait of carefulness. It can even said as the core achievement of science because the calculation of days based on the system of *Pasaran* and *Wuku*, both are the systems unique to Javanese culture, is based on the effect of cosmic light towards the Earth. In Physics, it is known that cosmic light changes each day, hour, and minute may cause either good or bad impact towards the components of the universe, including human.

One of the informants, the late *Mbah Zaman*, gives example about the cycle of Kelud eruption which in calculation based on *Primbon* always has the total of 6. Because when he studies at “school” to understand about the character of Kelud Volcano since his teens, he therefore was not as sure about the eruption on 1901 and 1919 as recorded in the *Museum Gunung Kelud*. The calculation based on *Primbon* was started from the eruption on 1951 and 1966, 15 years apart. The numbers 1 and 5 from 1951, when added results in total of 6. Then, after the eruption on 1966, the next eruption happened 24 years later on 1990. The numbers 2 and 4, when added, results in 6. In connection to that, on 2007 when *Badan Vulkanologi dan Geofisika Gunung Kelud* gives an early warning to the inhabitants of Sugihwaras Village to evacuate, the villagers refused because according to the *Sesepuh*, the sum of the numbers were not 6. Additionally, between 1990 and 2007, there is a gap of 17 years which adds up to be 8. However, this is different from the prediction of the eruption by *Badan Vulkanologi dan Geofisika Gunung Kelud* on 2014. The mitigation effort is fully supported by the *Sesepuh* of the village because the gap from 1990 to 2014 is 24 years, which therefore adds up as 6. The great eruption which sent volcanic dust to the whole island of

Java did not cause any casualties. This shows the local wisdom of the people of Sugihwaras Village in the effort of mitigation.

This example of eruption calculation based on local wisdom is in positive synergy with the cycle of the gap between eruptions based on scientific methods which predicts that Kelud will erupt once in about 20 years, or, more precisely between 15 to 25 years (Kompas: Nov. 2014; Tempo: May 2015). The function of simple information technology is also synchronized with the local culture, for example the use of local FM radio to broadcast information about volcanic eruption and the importance of people awareness. This mitigation effort based on *Primbon* is, by the local people, also done together with noticing the signs shown by the nature before eruption happen.

3.3 Mitigation Effort and Natural Signs

For Javanese traditional society, living side by side with nature is conducting the core of one of spiritual teachings. Nature always gives life; therefore, people have to realize that they cannot live without nature. They have to preserve nature as God's creation including identify the signs of nature even in undesirable situation.

Kelud people have bonds with the volcano because, aside from the fact that the volcano is their birth land, the volcano also serves as a source of living. This bond is related to the local wisdom upheld by the Sugihwaras Village inhabitants who occupy of the most harmful area when the volcano erupts. This local wisdom, which is connected with the supernatural myths, is considerably helpful for the people to recognize the signs of eruption.

The inhabitants of Sugihwaras Village learn how to recognize natural signs as the mitigation effort goes continuously because of their experiences. The signals on the eruption, around a month before, are the extreme increase of temperature which cause people feel very uncomfortable due to the heat. Then, many trees shed their leaves and dried up, and the animals descend from the volcano to people's residence areas. The birds cannot settle, they do not chirp and fly to and fro, and last but not least there are many monkeys scratching their bodies that becomes itchy due to the heat. Even cattle like goats, chicken, ducks and cows are seem to be stressed.

The *Ulu-ulu*, whose duties are to regulate the water flow from rivers or springs, can predict eruption from the water quality which becomes murky with sands and mud; and even the rumbling sounds from the earth center. These signs are the ways of nature to communicate with the people of Sugihwaras Village. The other signs when eruption is approaching are the increasing intensity of "*Wedus Gembel*", pyroclastic flow, and the continuous lightning and thunder.

3.4 The Ritual Tradition and Javanese Teachings

The ritual dimension encompasses its role in the connection with human who lives in social integration and community dynamics. Bell classified ritual as "a form of cultural communication that transmits the cognitive categories and dispositions that provide people with important aspects of their sense of reality" (1997, p.2). For the people in Sugihwaras Village, ritual is done because of the reality which always has to be faced: the eruption of Kelud Volcano. For this reason, the aim of the ritual is more to beseech for safety and protection from God, gives respect and gratitude towards the nature given by God to them.

Ritual tradition is usually held on the evening of *Jumat Legi*, literally means 'Sweet Friday', which of course has its special meaning according to *Primbon*, and with all kinds of offerings or "*Ubo-rampe Sesaji*" having cultural symbols. Ritual for people of Sugihwaras Village is their way to communicate with Kelud Volcano to increase their understanding towards the volcano which has the right to erupt. This communication function is also emphasized by the Head of Department Geology of Ministry of Energy and Mineral Resources, Surono, "if I were not communicating with the volcano, how can I read its signal?" (Tempo, 2015, p.149). The places for the ritual are chosen based on their experiences as people who cannot be separated from the nature. The prayer of ritual is in Javanese language, or "*Ujub Jawa*". Although being pluralists, in the context of religion, Javanese language used in prayers represents their unity as Javanese. *Ujub Jawa* is not only about the wish for protection and safety from God, but also to give thanks to the nature, as well as to apologize because people often forget

how to utilize nature's gifts. These prayers which are filled with wisdom are led by the senior *Sesepuh*, *Mbah Ronggo*.

The offerings which symbolized how the wisdom of people and how they go through life which is full of challenge. "*Sego Golong*", which is a handful of rice shaped into a solid round shape, is a symbol of harmony. All the inhabitants of the village must unite, having one strong aim, or "*gilig*" like a *Sego Golong*. This is a manifestation of Javanese teaching about the ethics of harmony and working together (Herminingrum 2014). Mental strength is also shown by the other offering, "*Buceng-kuat*". The Javanese who live in society have to have integrity towards their social environment, "*memayu hayuning sesomo*" (Endraswara, 2013; Sumodiningrat and Wulandari, 2014). They have to be in harmony with others, appreciating and accepting without conflict. That is also happen with the offerings which show how to human has to connect with the nature. Knowing how to be thankful because of the nature's gifts, not damaging, or even exploiting, with the proverbs "*memayu hayuning bawono*" (Endraswara, 2013; Sumodiningrat and Wulandari, 2014). Human has to be concerned about ecology, and the beauty of the nature given by God has to be guarded to make it stay beautiful or "*ayu*", or even to make it more beautiful, which in terms of offerings is represented by "*pisang-ayus sekar-konyoh*" (Figure 4).



Figure 4: Sekar-konyoh; Figure 5: Buceng

All of the Ubo-rampe used in the offerings have meaning for the spiritual lives of people in Kelud Volcano. The way to execute the ritual, for the people of Sugihwaras Village, is highly upholding the humanity values, such as the right to contemplate, the inter-religious understanding, or the right for social integration.

In life, ultimately people have to reach balance: the harmony with the society as well as the nature given by God. To reach the goal as qualified human, a complete version of human

being, the Javanese philosophy guides Javanese people like shown in the Buceng Kendit offering (Figure 5). From birth, -- the white color, bottom part, to learn how to live as human with good attitude and spirit represented the yellow color to reach "Suwung", the peak of life without ambition as pure as the white color. The inhabitants of Sugihwaras Village are grateful towards all blessings of God, despite the occurrence of disaster, and having no pretension as expressed in their culture.

4. CONCLUSION

Local wisdom has an important role in mitigation for Kelud Volcano eruption. The result of field observation in the Sugihwaras Village: *Dusun* Sugihwaras, *Dusun* Mulyorejo, and *Dusun* Rejomulyo, explicitly proved that local wisdom which mostly connected strongly with the function of *Sesepuh* of the village as spiritual leader synergized with the advancement of technology and science which represented by the local *Badan Vulkanologi dan Geofisika*.

Based on their knowledge and experience, the *Sesepuh* could predict when Kelud Volcano will erupt. First, with the calculation based on Javanese astrology, *Primbon*, they estimated the time of eruption, even in details from the hour, the day, the date and year. Second, the natural signs such as dramatic increase of temperature, the condition of plants and big trees, the animal's behavior, the change in the springs, etc. According to the informants, this predictions based on local wisdom becomes a topic of discussion with *Badan Vulkanolog idan Geofisika* in Kelud Volcano. When the estimation based on modern science and technology shows a similar tendency with the prediction based on local wisdom, hence the early warning about the upcoming eruption is spread to the village inhabitants, be it formally as in through the responsible departments, or informally like using FM radio, walkie-talkie, and loudspeaker, also operated traditionally.

The local wisdom is more effective in giving philosophical values teaching about the connection between nature and human, in this case Kelud Volcano and the people living in the radius which is prone to Kelud eruption. The moral-ethics teaching guides the traditional people of Kelud Volcano to always integrate with The Almighty God and the universe which He created. By the people of Kelud, this

guidance is expressed in daily life, a socio-cultural life which can be traced by the way they work as farmers, socializing, being grateful towards God, and preserving the nature.

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6. REFERENCES

- Bell, Catherine, (2009). *Ritual: Perspectives and Dimensions*, London: Oxford University Press.
- Bronner, Simon J., (2007). *The Meaning of Folklore: The Analytical Essay of Alan Dundes*, Utah State University Press, Logan, Utah.
- Endaswara, Suwardi, (2013). *Folklore Nusantara: Hakikat, Bentuk, dan Fungsi*. Yogyakarta: Penerbit Ombak.
- , (2015). *Etnologi Jawa Penelitian, Perbandingan, dan Pemaknaan Budaya*, Yogyakarta: CAPS (Center for Academic Publishing Service).
- Eriksen, Thomas Hylland, (1993), *Ethnicity and Nationalism: Anthropological Perspectives*, Pluto Press.
- Gerrard, Greg, 2004. *Ecocriticism, the New Critical Idiom*, London: Routledge.
- Herminingrum, Sri, (2014). *Identifying Two Basic Concepts Of Javanese Ideology In Local Tradition Rituals*, Proceeding: ICOAH, ISSN 234-278, pp 47-54 TIIKM Sri Lanka-University of Northern Colorado.
- , (2015). *Javanese Communal Ceremony in Urban Area: Crossing Border and Coming to an End*. Official Conference Proceedings ISSN 2186-229X, on Arts and Humanities. pp. 455 – 466. IAFOR: The International Academic Forum, Osaka – Japan.
- Hiryanto & Fathiyah, (2013). *Identifikasi Kearifan Lokal dalam Memahami Tanda-tanda Bencana Alam pada Insan di Daerah Istimewa Yogyakarta*, Jurnal Media Informasi Penelitian Kesejahteraan Sosial, Volume 31 Nomor 1, Maret 2013, hal 453-462.
- Jorgensen, Danny L, (1989). *Participant Observation*, London: Sage Publications.
- Koentjaraningrat, (1999). *Manusia dan Kebudayaan Indonesia, "Kebudayaan Jawa"*, pp. 329-352. Jakarta: Penerbit Djambatan.
- Laporan Mitigasi Bencana, (2014). Koran KOMPAS, 24 November 2014, pp. 48, (bdk. Sumber Pratomo, 1992, dan Bourdier, et.al., 1997).
- Mulder, Niels, (2001). *Mysticism in Java: Ideology in Indonesia*, Yogyakarta: Penerbit Kanisius.
- Nayati, Widya.ed, (2012). *Kekuatan Jiwa Orang Jawa*, Yogyakarta: Penerbit Ombak.
- Pelaksana Harian Badan Koordinasi Nasional Penanganan Bencana (2007). *Pengenalan Karakteristik Bencana dan Upaya Mitigasinya Di Indonesia, Edisi II*, Direktorat Mitigasi, LakharBakornas.
- Permana, C.E., Nasution, Isman Permana, dan Jajang Gunawijaya. (2011). *Kearifan Lokal Tentang Mitigasi Bencana pada Masyarakat Baduy*, Jurnal Makara, Sosial Humaniora. Volume 15 Nomor 1, Juli 2011, hal 67-76.
- Sartini, (2004). *Menggali Kearifan Lokal Nusantara: Sebuah Kajian Filsafati*, Jurnal Filsafat - UGM, Vol 37, pp. 111-120.
- Spradley, James, and David W. Mc.Curdy, (2012). *Conformity and Conflict Readings in Cultural Anthropology, 14th edition*, Pearson Education, Inc.
- Subiyantoro, (2010). *Selayang Pandang tentang Bencana*, Jurnal Dialog Penanggulangan Bencana. Vol. 1, hal 43-46.
- Sumodiningrat, Gunawan, dan Ari Wulandari. (2014). *Pitutur Luhur Budaya Jawa*, Penerbit Narasi, Jogjakarta.

Surono, (2015) *Penuhi Hak Gunung Merapi: Wacana (Kepala Badan Geologi Kementrian Energi dan Sumber Daya Mineral)*, Tempo 31 Mei 2015, hal 147-149.

Suseno, Franz Magnis, (1993). *Etika Jawa: Sebuah Analisa Falsafah tentang*

Kebikjaksanaan Hidup Orang Jawa, Jakarta: PT. Gramedia Pustaka Utama.

Zamroni, M. Imam.(2011). *Islam dan Kearifan Lokal dalam Penanggulangan Bencana di Jawa*, Jurnal Penanggulangan Bencana. Volume 2 Nomor 1, Tahun 2011, hal 1-10.