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Local Wisdom of Stablean Hamlet Community as a Form of Preparedness in Facing Volcanic Eruption Disasters

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Abstract: *Mount Merapi, Indonesia's most active volcano, poses significant threats to the Stabelan Hamlet situated nearby. This study delves into the community's indigenous knowledge, residing about 3 km from Mount Merapi's summit, in confronting volcanic eruption disasters. Employing qualitative methods, the research elucidates local customs and ancestral beliefs crucial for disaster readiness. Interviews provide primary data, complemented by secondary sources like journals and news. Employing purposive sampling, data analysis follows the Miles and Huberman model. Findings reveal the Stabelan Hamlet's adeptness in employing local wisdom like creating bonfires, maintaining calm during eruptions, and interpreting dreams as disaster coping mechanisms. This indigenous wisdom not only shapes preparedness but also preserves cultural heritage local wisdom, The community's receptiveness ensures the integration of traditional practices alongside contemporary disaster management strategies mandated by the government.*

Keywords: *Bonfire, Local Wisdom, Mount Merapi, Premonition, Preparedness.*

1. INTRODUCTION

Mount Merapi is one of the most active volcanoes in Indonesia. It is located in the central part of Java Island with an elevation of 2,968 meters above sea level. Administratively, Mount Merapi lies within Sleman Regency, Special Region of Yogyakarta, and partially within the Central Java Province, encompassing Magelang Regency to the west, Boyolali Regency to the north and east, and Klaten Regency to the southeast. Merapi holds a unique significance for the residents who continue to live on its slopes. As an active volcano, Merapi poses potential dangers such as eruptions, yet it also provides fertile soil for the surrounding population. This duality explains why local residents remain loyal to their birthplace, valuing its historical memories, despite the risks associated with living in a hazardous area.

A significant eruption of Mount Merapi occurred in November 2010. The disaster claimed 223 lives, injured 236 individuals, and displaced 374,202 people who were accommodated in 314 evacuation points. This event was one of the largest natural disasters in Indonesia (Soekardi et al., 2020). Given the persistent threat to the local population, disaster preparedness is crucial to mitigate risks. Preparedness involves organizing and implementing appropriate measures (Utami et al., 2021). Among the preparedness efforts practiced by the community is adherence to their traditional beliefs. Generations of residents living on Mount

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Merapi's slopes have coexisted with nature, fostering traditional intelligence that enables them to manage their environment and maintain ecological balance (Tyas et al., 2021). This traditional intelligence, often referred to as local wisdom, represents a set of local ideas imbued with wisdom, virtue, and practical insights upheld by the community (Ragil et al., 2020). Another definition of local wisdom includes elements that define a region's identity, such as traditional foods, folk songs, customs, and ceremonies (Rummar, 2022). According to Diem (2012), local wisdom can be categorized into three types: local knowledge, local wisdom, and local genius. These categories form a vital part of the knowledge system that supports peaceful coexistence within the community.

Local wisdom is regarded as sacred by the community, which is why it is preserved and passed down through generations. In Indonesia, much of this wisdom is influenced by mystical elements, yet it remains deeply respected by the people, who dare not violate its principles. Local wisdom also impacts various aspects of life, including disaster management. It can enhance community resilience and capacity in facing disasters. One community that still honors and preserves such local wisdom is located on the slopes of Mount Merapi, specifically in Stabelan Hamlet, Tlogolele Village, Selo District, Boyolali Regency. Based on the 2010 Hazard Map for Mount Merapi, issued by the Ministry of Energy and Mineral Resources, Geological Agency, and the Geological Disaster Technology Research and Development Center (BPPTK), Stabelan Hamlet is the closest settlement to Mount Merapi’s summit, situated approximately 3 kilometers away and classified within Hazard Zone III. The hamlet is also near the Apu River, a primary lahar path, and faces the threat of pyroclastic flows.

Despite these risks, residents of Stabelan Hamlet are reluctant to relocate, citing their attachment to their ancestral land, the historical memories it holds, and concerns over adapting to new environments. They continue to feel safe due to the local wisdom that has been passed down through generations. One such tradition involves lighting bonfires as a form of preparedness for Mount Merapi's eruptions. This practice is rooted in their belief in their ancestors. The community informs their spiritual figure, Mbah Petruk, that they remain in Stabelan and have not evacuated. According to local beliefs, Mbah Petruk is a mystical guardian of Mount Merapi, whose presence is often symbolized by pyroclastic clouds resembling the wayang character Petruk. Every night, residents gather in front of their homes to light bonfires made of bamboo along the roads. Additionally, the residents of Stabelan Hamlet maintain silence during eruptions, avoiding sounds from tools such as kentongan, loudspeakers, or sirens to minimize panic. They also believe that before an eruption, one of the villagers might receive a dream or premonition (wangsit) as a warning. The individual

receiving this premonition could be anyone, regardless of their social standing or physical condition, including those with intellectual disabilities. For instance, in 1954, an intellectually disabled person warned the villagers with the phrase, “Pakdhe minggiro, mbah buyut arep lewat,” which translates to “Step aside, uncle, the ancestor is passing through.” Shortly after, an eruption occurred, and lahar flows swept through the village.

Based on this background, this study aims to analyze the local wisdom practiced by the residents of Stabelan Hamlet as a form of disaster preparedness in facing volcanic eruptions.

2. LITERATURE REVIEW

The Local Wisdom

Local wisdom is an effort to address issues based on local knowledge. Ratmono (2021) and Yusuf, Hadrawi, and Agus (2023) define local wisdom as a part of culture deeply rooted in society and passed down orally, ultimately becoming a valuable ancestral legacy. This wisdom forms knowledge derived from experiences integrated with the culture and natural conditions of a particular place. In the socio-cultural context, local wisdom represents a treasure that must be preserved within Indonesia's social and cultural systems. According to Rummar, M. (2022), local wisdom reflects attitudes and actions in response to unique changes in the physical and cultural environment, including disaster management. The value of local wisdom encompasses awareness of a nation's identity, including its geography, geology, and social characteristics (Permana et al., 2017). Indonesia, as a country prone to natural disasters such as floods, earthquakes, and volcanic eruptions, has developed specific regional characteristics that compel its people to adapt. These adaptations give rise to beliefs, knowledge, and experiences that shape cultural practices in the form of local wisdom. Culture, religion, and traditional ceremonies often communicate the experiences of previous generations regarding hazards and risks, including threats from natural disasters (Troll et al., 2021). In various regions of Indonesia, numerous forms of local wisdom have emerged as part of disaster mitigation efforts.

Permana et al. (2017) note that Mount Merapi has shaped unique perceptions among communities living on its slopes. For these communities, respecting and preserving the natural environment of Mount Merapi ensures safety and comfort, even during eruptions. This perception goes beyond mere belief; it signifies a transcendental faith fostering dynamic interactions between humans and other living beings. Asriati (2012) and Rummar, M. (2021) explain that local wisdom takes the form of values, norms, ethics, beliefs, customary laws, traditions, and specific rules established within society. Local wisdom can

also manifest as sacred or magical messages, songs, or chants passed down orally, such as the Smong wisdom of Aceh or Hoyak Tabuik in Pariaman, both used for tsunami disaster mitigation. Rahman, A., and Sutton, A. S. (2018) reported on theconversation.com that in 2005, the United Nations International Strategy for Disaster Reduction (UNISDR) awarded the UN Sasakawa Award to the Simeulue community in Aceh for their efforts to integrate local culture into disaster prevention through the Smong tradition. This local wisdom has cultivated knowledge enabling the Simeulue community to take swift and accurate actions when interpreting natural disaster signs, such as earthquakes and tsunamis. The success of Smong in integrating local culture with disaster mitigation has drawn international researchers' attention and proven the effectiveness of local wisdom in improving disaster mitigation efforts.

Preparedness

According to Law Number 24 of 2007 on Disaster Management, preparedness refers to a series of activities conducted to anticipate disasters through proper and effective organization and actions. Preparedness is a crucial aspect of disaster management aimed at anticipating potential disasters to prevent or minimize loss of life, property damage, and disruptions to social order. Preparedness efforts include activating disaster alert posts, conducting disaster response training or simulations, inventorying emergency resources, preparing logistics mobilization support, establishing rapid, accurate, and integrated information and communication systems, installing early warning system instruments, developing contingency plans, and mobilizing resources, facilities, and infrastructure. Knowledge is a key factor in preparedness, as the knowledge possessed by individuals or communities often influences their attitudes and awareness toward disaster readiness. Enhancing community preparedness is not only a responsibility at the government level but also at the local community level, where disasters are directly experienced. Therefore, local community preparedness in anticipating disasters is vital, as a lack of understanding or information about potential local hazards increases the likelihood of casualties and significant losses during disasters.

Long-term planning and mitigation perspectives are essential to ensuring volcanic hazards are appropriately considered as part of a multihazard approach. Authorities must ensure community safety and sustainable, risk-sensitive economic development. This approach involves not only addressing frequent hazards but also exploring how planning and mitigation decisions might alter future risks (Miller et al., 2022). Key factors for fostering community preparedness include knowledge and attitudes toward disaster risks,

policies and guidelines, emergency disaster plans, disaster warning systems, and the ability to mobilize resources.

3. METHODS

This research employs a qualitative approach with a descriptive qualitative research type, systematically, factually, and accurately describing or illustrating the investigated facts, characteristics, and relationships. The data collected includes primary and secondary data. Primary data collection techniques in this research involve interviews and observations, while secondary data is gathered through literature studies from journals.

The qualitative data analysis technique for processing interview data on the local wisdom of the campfire tradition in Stabelan Hamlet utilizes data validity techniques through the member check model, where the researcher verifies the data with the informants. The qualitative data analysis follows four stages based on the Miles & Huberman model (1984): 1) Data Collection: In this research, interviews and documentation techniques are used to obtain data related to the local wisdom of the campfire tradition as a form of community preparedness in Stabelan Hamlet in facing volcanic eruptions. Observations are also conducted to understand the physical conditions of Stabelan Hamlet. 2) Data Reduction: At this initial stage, data is selected, focused, simplified, and transformed according to the research focus. 3) Data Display: In this stage, the reduced data is presented in the form of written reports from the collected data. 4) Conclusion Drawing (Conclusions/Verifying): After data reduction and display are completed, conclusions are drawn from the presented data, answering the research questions (Sugiyono, 2018).

4. RESULTS

General Overview of the Research Location

Mount Merapi is astronomically located at 7º32’57” South Latitude and 110º26’05” East Longitude. Administratively, it is situated on the border between Central Java Province and the Special Region of Yogyakarta, spanning four regencies: Sleman, Magelang, Boyolali, and Klaten (Hayati, 2019). This study focuses on Tlogolele Village, specifically Stabelan Hamlet in Selo District, Boyolali Regency, as the research location to examine local wisdom developed within the community to face volcanic disasters. Based on field observations and interviews with the head of RT (neighborhood unit) Stabelan IV as the primary informant, Stabelan Hamlet is the highest hamlet in Tlogolele Village and the closest to Mount Merapi’s peak. It is located on the northwest slope of the volcano,

approximately 3–5 km from the summit. This proximity places Stabelan Hamlet within Disaster-Prone Area (KRB) III in Boyolali Regency.

The name "Stabelan," according to local folklore, originates from two words: staf, meaning a group of troops, and belan, derived from the word Belanda (Dutch). Over time, these words were merged by the community into "Stabelan." Historically, this area was a gathering place for Dutch soldiers during the Diponegoro War. Another version of the story suggests that "Stabelan" means a coffee storage area from the Dutch colonial era. Stabelan Hamlet is well-known for its coffee plantations, which remain one of the region's distinctive commodities.

Figure 2. Stabelan Hamlet
(Source: Researcher documentation, 2023)

Mount Merapi remains one of the most active volcanoes in Indonesia to this day. According to the Center for Volcanology and Geological Hazard Mitigation, Mount Merapi has erupted more than 80 times since the 1600s (Khuzaimah et al., 2023). The last major eruption occurred in 2010, while historical records indicate the largest eruptions took place in 1872, 1873, and 2010 (Widodo & Hastuti, 2019). The 2010 eruption resulted in approximately 367 fatalities, including Mbah Maridjan, the guardian of Mount Merapi. In 2018, the volcano erupted again, causing ash rain that affected the Merapi Observation Posts in Jrakah and Selo, reaching as far as Salatiga and Semarang Regency (Yudistira et al., 2020). According to the Center for Volcanology and Geological Hazard Mitigation's activity-level evaluation report, published on the official website of the Ministry of Energy and Mineral Resources, Mount Merapi's activity status has been at Alert Level 3 since November 5, 2020. As of late 2023, the volcano continues to show significant activity (Ministry of Energy and Mineral Resources, 2023). In November 2023, effusive eruptions were recorded, followed by pyroclastic flows extending 2,000 meters southwest toward Kali Bebeng-Krasak in December 2023. Volcanic ash rain was also reported at the Babadan Observation Post, moving southward toward Kali Boyong, lightly dusting several villages in Boyolali and Magelang regencies (Ministry of Energy and Mineral Resources, 2023).

Local Wisdom as Disaster Preparedness

According to Rajid (2011, as cited in Zulfadrim et al., 2018), local wisdom can be categorized into two aspects: technology and belief systems. Local wisdom has been demonstrated as a valuable tool for mitigating hazards and disasters in various communities. Zulfadrim et al. (2023) emphasize that local knowledge often surpasses governmental understanding of disaster risks in specific environments. Therefore, integrating local wisdom into disaster mitigation efforts can strengthen community preparedness, enhance response capacity, and create a synergy between local traditions and scientific knowledge for effective disaster management (Syuryansyah & Habibi, 2024). Javanese society, deeply rooted in harmony, prioritizes respect and unity, which are upheld through norms passed down via history, tradition, and religion (Permana et al., 2017). This respect for tradition is evident among the traditional communities near Mount Merapi, including in Stabelan Hamlet, located in Selo Sub-district, Boyolali Regency. Interviews with key informants reveal that local knowledge in Stabelan Hamlet has developed from interactions with their environment, fostering unique disaster preparedness measures. As a region within Disaster-Prone Area III, the community has learned to coexist with nature, forming practices such as building bonfires, observing silence during eruptions (Tapa Bisu), and interpreting prophetic dreams as warnings (November 19, 2023).

In the disaster management cycle, preparedness is critical for reducing the risks and impacts of disasters. Enhancing community capacity through local wisdom has proven effective, as local practices emerge from daily interactions with the environment, generating knowledge that helps communities face potential hazards. However, a lack of disaster knowledge can adversely affect preparedness behaviors, as attitudes are shaped by a community's understanding of potential threats (Suryadi et al., 2021). Local wisdom in Stabelan Hamlet serves as a form of disaster preparedness for volcanic eruptions. Interviews with key informants underscore that while local wisdom may be perceived as less effective in disaster mitigation, the community continues to uphold traditions to honor ancestral customs. As part of their cultural heritage, these practices demonstrate adaptive traits developed over generations in response to Mount Merapi’s activity. However, local wisdom is rarely passed on systematically to younger generations, highlighting the need for collaboration with government policies to improve disaster response efforts (Widodo & Hastuti, 2019).

Research on local wisdom in disaster contexts often reveals it in forms such as traditional ceremonies, activities, and norms (Maryani & Yani, 2014). This aligns with findings from Stabelan Hamlet, where disaster preparedness practices are expressed through adherence to specific rituals and prohibitions. The following section outlines the local wisdom identified in Stabelan Hamlet as a form of community preparedness.

Bonfires and Torches

The creation of bonfires and torches is a local wisdom tradition practiced by the residents of Stabelan Hamlet whenever Mount Merapi erupts. This practice has been carried out since ancient times, symbolizing prayers or hopes addressed to the guardian spirit of Mount Merapi. In interviews about the background of this tradition, key informants explained that "the bonfire is made as a sign that descendants are asking for protection so that their area is spared from the effects of Mount Merapi's eruption" (Sunday, 11/19/2023). Residents of Stabelan Hamlet build several bonfires every night in front of their homes, using wood as the main material, which has been prepared in advance. It is prohibited to use materials other than wood, such as old tires, rubber, or plastic. Once the bonfires are lit, both men and women gather around them. The men usually stand guard every night when Mount Merapi shows signs of erupting. According to Afik et al. (2021), the role of men is crucial for communities living in disaster-prone areas, especially in making decisions that ensure their families' safety and comfort. The purpose of building bonfires is not without reason. Key informants stated that the primary goal is to remain vigilant in case Mount Merapi erupts. The gathered residents stay alert, ready to wake others and evacuate to safer areas. Additionally, the bonfires serve to keep people warm, as Stabelan Hamlet is located in a mountainous region with cold temperatures. They also provide light along pathways, especially since adequate roads did not exist in the past (Sunday, 11/19/2023).

During an eruption, residents also make torches. According to key informants, torches are used to illuminate pathways during evacuation. The torches also help repel volcanic ash by causing it to rise due to the heat of the flames. This reduces the risk of ash affecting the eyes, entering the mouth or nose, or irritating the skin, which could otherwise lead to health issues. Volcanic ash consists of fine rock fragments, minerals, and glass that are abrasive, corrosive, and insoluble in water, causing adverse health effects such as asthma, bronchitis, and, chronically, silicosis (Yuarsa, 2019). The silica content in volcanic ash poses a significant respiratory hazard, highlighting the importance of wearing masks during eruptions (Schwartz-Marin et al., 2020). However, according to Widodo & Hastuti (2019), residents are prohibited from wearing masks during eruptions out of respect for

"Simbah Merapi," the guardian spirit of the mountain. While the creation of bonfires and torches in the past was deemed effective, helping residents safely navigate and providing security through nightly guards, it may be less effective in modern times. With advancements in technology and disaster management training, there have been modifications to traditional practices. Nevertheless, as a form of local wisdom, this tradition must continue to be respected and preserved, even as it adapts to the present day.

Silence During Mount Merapi Eruption

According to key informants, maintaining silence during a Mount Merapi eruption is a local wisdom strictly observed by the residents of Stabelan Hamlet. This practice involves abstaining from making any noise during an eruption. Silence, in this context, means refraining from sounding alarms, sirens, whistles, or any other loud objects. Additionally, speaking or shouting during the eruption has been prohibited since ancient times. According to the key informant, this tradition aims to prevent panic among residents during volcanic disasters. Supporting this, Widodo and Hastuti (2019) explained that loud sounds can incite panic, disrupting evacuation processes. Communication among residents is carried out using non-verbal codes. This is corroborated by interviews with key informants who stated that during an eruption, residents rely solely on gestures to communicate with one another. Based on interviews, the origin of this tradition traces back to the 1956 Mount Merapi eruption. At that time, a local leader sounded an alarm in Stabelan Hamlet to warn the community of an imminent eruption. However, the lava flow, initially descending, reversed its course and grew more intense. Since then, the community has embraced the belief that silence must be maintained during Mount Merapi eruptions.

Wangsit in Dreams

When asked about the local wisdom of Stabelan Hamlet in dealing with volcanic disasters, the key informant mentioned that in addition to lighting bonfires, carrying torches, and maintaining silence, the community also believes in premonitions, known as wangsit, often conveyed through dreams by the ancestors of Mount Merapi to an elder of the hamlet. These warnings are believed to predict imminent disasters. When asked about the characteristics of those who receive these premonitions, the informant stated that such individuals have always been elders who are trusted by the community for their honesty, integrity, and virtuous behavior. These individuals are deemed capable of receiving messages in their dreams about Mount Merapi's activity. Herniti (2012) supports this, suggesting that only selected individuals who dedicate themselves to seeking spiritual and existential truths can receive such premonitions. In this context, elders play the role of

disaster forecasters, effectively communicating risks to the community in a way that is serious, comprehensible, and adhered to. This phenomenon reinforces the community's belief in wangsit, strengthening their resolve to follow preventive safety measures or disaster mitigation efforts. The belief in wangsit by Stabelan Hamlet residents represents a transcendental faith that surpasses conventional understanding and scientific explanations, extending beyond the material world. According to Cuaton et al. (2020), the role of local knowledge lies not in its scientific certainty but in its ability to firmly convince the community to prepare for hazards and mitigate risks. This perspective highlights the importance of early warnings in educating communities about environmental knowledge, disaster vulnerabilities, and survival techniques specific to their environment.

When asked about the role of government agencies in disaster mitigation, the informant noted that despite adhering to ancestral traditions, the community remains open to innovations in disaster management. Widodo and Hastuti (2019) stated that local wisdom in dealing with Merapi eruptions has evolved with advances in science and technology, such as in communities around Merapi-Merbabu. Today, residents obtain information about Mount Merapi's activity through a single source: the Geological Disaster Technology Research and Development Center (BPPTKG). The BPPTKG provides updated information to village leaders via WhatsApp, although not all information is shared with the public to avoid causing panic. In addition to local wisdom, the community of Stabelan Hamlet actively participates in disaster mitigation drills organized by local community groups and disaster management agencies. Sopha et al. (2019) suggest that local governments can facilitate early evacuation training, independent evacuation plans, and provide information on evacuation routes and shelters to regional leaders. Stabelan Hamlet already has designated evacuation routes and plans, with shelters now relocated to Tlogolele and Sawitan instead of Mertoyudan, Magelang Regency. The belief in premonitions conveyed through dreams as warnings of volcanic activity is not unique to Stabelan Hamlet. For instance, the Mamanwa tribe in the Philippines practices disaster mitigation by relying on ancestral warnings, relocating to safer areas, and fostering communal cooperation during calamities such as Typhoon Haiyan (Cuaton et al., 2020). Similarly, residents of Wonolelo Village, who share the same vulnerability due to their proximity to Mount Merapi, also believe in premonitions through dreams (Widodo & Hastuti, 2019). Hence, the local wisdom of wangsit in Stabelan Hamlet should not be dismissed by scientific experts, as it serves as a valuable tool for disaster prevention, mitigation, preparedness, and recovery.

5. DISCUSSION

This research aims to analyze the local wisdom of the Stabelan Hamlet community as a form of preparedness in facing the eruption of Mount Merapi. The main objective of this study is to gain a deeper understanding of local practices that have been passed down from generation to generation as part of disaster mitigation efforts. By highlighting the uniqueness of traditions such as making campfires, remaining silent during eruptions, and believing in divine revelations, this study makes an important contribution to expanding the understanding of disaster risk management based on local wisdom. The results of the study indicate that local traditions in Stabelan Hamlet not only have cultural value, but also provide practical benefits in minimizing disaster risks. Practices such as making fires at the peak help maintain communication and evacuation preparation, and remaining silent temporarily reduces people's fear when facing an eruption. Belief in divine revelations also creates early warning that is difficult to explain scientifically but is very effective in building community preparedness. These findings are in line with previous studies by Permana et al. (2017) which state that local wisdom can build dynamic interactions between humans and their environment, as well as by Cuaton et al. (2020) which highlights the importance of local knowledge in disaster risk reduction.

However, this study also found that some local wisdom, such as the prohibition of wearing masks during an eruption, has limitations from a modern health perspective. This practice can increase health risks due to exposure to hazardous volcanic ash. This suggests the need for collaboration between local knowledge and scientific approaches to create a more holistic disaster mitigation strategy. In addition, these findings underline the importance of strengthening education for the younger generation regarding local wisdom so that this tradition is not lost and can be integrated with modern innovations. Practical implications of this study include the development of local wisdom-based disaster mitigation training programs that actively involve communities. Local governments and disaster management agencies can utilize these findings to design a more contextual mitigation approach, combining local traditions with modern technology, as BPPTKG does in providing information on Mount Merapi activity. This study also provides an opportunity to explore how local wisdom can be applied in other communities with similar geographical and cultural characteristics.The main limitation of this study lies in the qualitative approach that uses key informants as the main data source. This may affect the validity of external findings because the informant's perspective does not always represent the entire community. In addition, this study has not explored how the younger generation accepts and instills local wisdom. Future research is

recommended to explore the intergenerational impact of local wisdom and how the integration of modern technology can enhance the effectiveness of this tradition in disaster mitigation.

6. CONCLUSION

As a country with high potential for natural disasters, Indonesian people need to be prepared and make efforts to reduce the risk of disasters. The attitude of preparedness in responding to disasters can be formed from local wisdom in the form of behavior or belief systems that have been maintained from generation to generation. Local wisdom can shape the adaptive character of people living in disaster-prone areas. The form of preparedness based on local wisdom of the Stabelan Hamlet community, Boyolali Regency in dealing with the Volcanic Eruption Disaster is still thick with mystical things that come from hereditary beliefs from ancestors, including making fire specifications and torches, being silent when Mount Merapi erupts, and wangsit in dreams. In addition to these hereditary beliefs, local people remain open to accepting disaster management innovations from the government, one of which is carrying out organized preparedness activities such as through disaster mitigation training with the local disaster management agency and finding out information on Mount Merapi's activities through the Geological Disaster Technology Research and Development Center (BPPTKG) so that local wisdom can be combined into a modern method in disaster mitigation management. Some suggestions submitted by this study related to efforts to preserve local wisdom by the Stabelan Hamlet community should also be introduced to the younger generation, because based on the results of interviews, local wisdom in the local hamlet is mostly still understood by elders or the older generation only. So it is hoped that the local wisdom that has been formed can be maintained as a cultural heritage and can be more integrated with disaster management efforts that have been designed by the disaster management agency.

LIMITATION

Every research study inevitably faces certain limitations, and this research is no exception. While efforts were made to minimize the scope of these limitations during the research process, it is essential to acknowledge them to provide a transparent account of the study’s boundaries. This section discusses the key limitations of this research and their potential impacts on the findings. Firstly, the study relied heavily on qualitative methods, including interviews and observations, which, while effective in capturing in-depth insights into the local wisdom of Stabelan Hamlet, are inherently subjective. The findings are deeply

rooted in the perspectives and experiences of a specific group of informants. This limitation may affect the generalizability of the results to other communities facing similar volcanic threats. Efforts were made to mitigate this issue by cross-checking data through secondary sources, but the inherent subjectivity remains a constraint.

Secondly, the scope of the study was confined to the Stabelan Hamlet community. This narrow focus allowed for a detailed exploration of the local wisdom specific to this community but limited the ability to compare these practices with other regions around Mount Merapi. As a result, the findings may not fully capture the diversity of local wisdom employed in disaster preparedness across different communities. Another limitation pertains to the reliance on historical narratives and oral traditions as primary data sources. While these sources are invaluable in understanding local wisdom, they are susceptible to inaccuracies or variations due to the passage of time and differences in individual recollections. This reliance may have introduced some degree of bias into the research findings. Lastly, the study's timeline posed challenges, particularly in collecting real-time data during volcanic eruptions. Since the research was conducted outside active eruption periods, it relied on retrospective accounts from community members. Although these accounts are valuable, they may not fully capture the dynamic nature of disaster responses in real-time scenarios. Despite these limitations, the research offers valuable insights into the role of local wisdom in disaster preparedness in Stabelan Hamlet. By acknowledging these constraints, future studies can build upon this work to explore broader and more comparative perspectives, potentially integrating quantitative approaches to complement the qualitative findings and enhance generalizability.

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