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RESEARCH ARTICLE

**STUDY OF LOCAL WISDOM BASED ON DISASTER MITIGATION
IN THE COMMUNITY OF TRADITIONAL VILLAGES IN WEST JAVA AS MATERIALS**

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Abstract

Livestock, and the harmonious relationship between humans/communities and the natural surroundings. This paper examines several local pearls of wisdom related to disaster mitigation in the lives of the people of West Java. Mitigation can build a culture of reaction to a culture of prevention, or from acting after the incident to acting before the incident. The study becomes interesting by searching for local wisdom of disaster mitigation still growing in the community. This study uses a qualitative descriptive method that describes the research subject in the field. Part of the data was obtained by observation before the COVID-19 pandemic and partly from the documentation. Furthermore, it is analyzed through data reduction, verification, and presentation. The results showed that the traditional village communities in West Java, such as Kampung Adat Naga, Kampung Adat Ciptagelar, Kampung Adat Cireundeu, Kampung Adat Polo, and Kampung Adat Kuta, have local wisdom in disaster mitigation which is implemented in the construction of houses, prohibition forests, prohibition of raising animals. The local wisdom of disaster mitigation is reinforced by myths with magical nuances that have strong potential in protecting the surrounding natural environment. Local wisdom can be a form of indirect awareness and has meaning in dealing with disaster threats to reduce disaster risk.

Keywords: Collective memory; disaster education; local wisdom.

INTRODUCTION

A disaster is an event or series of events that threatens, disrupts, and damages the pattern of people's lives and causes tremendous losses to life, property, and the social structure of the community that exceeds the ability of the community affected by the disaster to cope, thus requiring protection and assistance from other parties. Some of the factors that are considered as causes of disasters are poverty, population growth, rapid urbanization, cultural transitions or changes in society, natural processes (geological, geomorphological, and climatological processes), environmental degradation, lack of awareness and information in society, war events, or social unrest.

Indonesia is an archipelagic country with an area located at the confluence of three colliding tectonic plates, located in the ring of fire, located between two continents and two oceans, located at low latitudes in a wet tropical climate, inhabited by various races and ethnicities. With different characters, it can be said to be a country with "a thousand disasters." In 2005, UNESCO placed Indonesia in the order of the seven most vulnerable countries in the world. Indonesia seems never to be separated from the occurrence of disasters. Various disasters come and go and cause casualties and losses that are not small in number.

Every year it is recorded that thousands of people die, are injured, and flee their homes, as well as many other losses caused by disasters. Various public facilities and the results of development carried out for years collapsed and were damaged so that they required quite a lot of repair costs. Several tragic natural disasters that have hit Indonesia over the last few years, such as earthquakes, volcanic eruptions, droughts, floods, landslides, tsunamis, not only bring sadness because of the loss of life and property but leave tremendous trauma on the people affected by a disaster.

Indonesian people must know, understand and realize that the earth where they stand daily is an area that is prone to disasters so that disasters can occur anytime and in any area. Humans cannot predict precisely when and where it will occur. However, it should be realized that disasters can be managed so that their impacts can be controlled.

Management activities related to disasters, both before, during, and after a disaster to avoid the occurrence of a disaster or overcome the impact if a disaster has occurred, are referred to as disaster management. The significant impact of the recent series of disasters in Indonesia shows that there is still much work to be done by various parties, including the government, civil society, local communities, to reduce the risks and

impacts of disasters. One of the essential things that need to be done is to build the Indonesian people "aware of disasters."

Disasters are the result of natural and social processes. The natural condition of an area has the potential for danger, and it can appear as a natural disaster (geo-hazard). In contrast to the social dimension, disaster risk is caused by human actions interacting with nature. Human behavior is an essential factor in increasing vulnerability. As a trigger for disasters. Overexploitation of natural resources can damage the environment and lead to disasters. Efforts to reduce disaster risk can be made by changing human behavior, increasing awareness and concern for preserving the environment. Changing human behavior can be done by changing the mindset and getting used to it from an early age to always care about the environment and be aware of disasters. Through disaster education, it is hoped that it will increase disaster knowledge, change attitudes and behavior, and be aware of disasters (Setyowati, 2019).

Disaster education can learn from the previous patterns of community life recorded in collective memory and local wisdom maintained by some Indonesian people, especially in West Java. However, the existing local wisdom seems to be considered an ordinary thing as part of a simple, traditional, and not the modern lifestyle. Behind all that, local wisdom related to disasters is a teaching material or educational material that can be conveyed to students. For this reason, an inventory of local disaster wisdom in West Java needs to be carried out. This is as expressed by Madiasworo (2009) that local wisdom can be learned through the physical tracing of traditional villages in regional spatial planning, architectural forms, and daily activities. The search results become rich material in understanding and preventing disasters that are very close to people's lives.

Disaster education is closely related to the delivery of knowledge of events that have been experienced by the community in the past and has become a precious lesson for humans. This means that education as a humanizing process plays an essential role in people's lives. The disaster events experienced become human memories conveyed as knowledge from one generation to generation, which will later become the community's collective memory. For this reason, efforts are needed to promote and socialize a culture of prevention and awareness of disasters, including by tracing the collective memory and local wisdom of each region. Misconceptions of disaster as a curse of nature or a divine power must be dispelled. One's mindset must be changed to create a safety culture through customs,

preparedness, and local wisdom of disaster prevention. Through disaster education reform, it will change the mindset of Indonesian people, always be aware of and care about disasters, prioritize disaster safety by always socializing disaster preparedness, conducting disaster simulations, and practicing various disaster prevention efforts. As stated by Kofi Annan, as the former Secretary-General of the United Nations, it is crucial to shift the culture of reaction to a culture of prevention.

“We must, above all, shift from a culture of reaction to a culture of prevention. Prevention is not only more humane than cure; it is also much cheaper.... Above all, let us not forget that disaster prevention is a moral imperative, no less than reducing the risks of war” (Kofi Annan, Geneva, July 9, 1999).

METHOD

This local wisdom research is a qualitative descriptive study that describes the condition or state of the research subject in the field. The data collected through observation, interviews, and documents are local wisdom still growing by indigenous peoples in West Java, namely the Naga Traditional Village, Ciptagelar Traditional Village, Cirendeu Traditional Village, and Pulo Village, and Kuta Traditional Village. The focus of observation is directed at local wisdom that still lives in the beliefs of the indigenous peoples there, and the natural environment of each traditional village is maintained, such as the existing infrastructure, especially traditional houses and forbidden forests, and the lives of their inhabitants. The research data was obtained from observations and interviews with traditional leaders and the community (especially before the pandemic) and documentation obtained by the author when he went to the field and other sources. Observations, interviews, and documentation studies are equipped with adequate instruments. Observations are equipped with observation guidelines, interviews are also equipped with guidelines and instruments, and documentation to complete the required data. All incoming data is then analyzed and concluded.

DISCUSSION

Disaster education as an effort to build a disaster-aware community has a reasonably broad dimension. In implementing it, methods, media, and sources are needed for material development that can be carried out. In general, disaster education can be implemented through formal, non-formal, and informal education. Specific sources of material development in formal education can be done by identifying learning materials about disasters and disaster preparedness that can be explicitly made (separate from KI and KD) or hidden in the primary material (according to KI and KD); teachers

can develop. What is clear is that instructional materials contain knowledge, skills, and attitudes that students must master to fulfill the stipulated Core Competencies and Basic Competencies. Max Frisch (German philosopher) once stated, “Only man experiences disasters, to the extent that he survives them. Disasters are unknown in nature”. The idea presented by Frisch explains that all disasters as an event have a place in history because of the impact they have on humankind and not because of the disaster itself. The implications of disasters that bring about radical changes to daily human life make this phenomenon embedded in human memory (Meier 2007).

The impact that is caused is usually stored in the “collective memory” of the community. This collective memory is a historical record of the past and a story that influences self-identity and gives meaning to everyday life. This social process, introduced by the media of the 20th century, to interpret and negotiate the past that gives meaning to life (Seil 2010). There are several purposes for remembering the past, including being a lesson so that an event does not repeat itself. In the historical paradigm, what happens now is a continuation of the past; what happens in the future is determined by today (Darmawan, 2019).

There are also efforts to prevent disasters with local wisdom in a community, and that the community must obey local wisdom. The local wisdom of disaster has been following Law Number 24 of 2007 concerning Disaster Management. It is stated here that disaster prevention activities are activities carried out to eliminate and reduce the threat of disasters. This disaster prevention will have something to do with mitigation, which is a series of efforts to reduce disaster risk, both through physical development and awareness and capacity building in dealing with disaster threats. Preston (2012) also states that local disaster wisdom is part or form of disaster education towards disaster-aware communities. Meanwhile, The Ministry of Education (2003) states that disaster education cannot be separated from the four fundamental concepts of the approach, namely (1) Interdependence, (2) Sustainability, (3) Diversity, (4) Personal responsibility, and social action (Personal and Social Responsibility For Action. Meanwhile, the scope of disaster education material, according to Soetaryono (1999), is awareness, knowledge, skills, and participation of individuals or groups to have awareness, sensitivity, knowledge, values social skills, skills, and develop a sense of responsibility towards environmental problems so that they can take appropriate action to solve them.

Seeing the high level of disaster vulnerability the community faces, it is interesting to study how

the community can adapt to the surrounding natural environment. One of them is adhering to local wisdom. Local wisdom regarding disaster management, especially in preventing disaster, has been built by the community with the aim that the community can avoid disasters. It is just that there are people who do not understand what the meaning behind existing local wisdom is. The following are the results of an inventory that has been collected by researchers related to local wisdom of disasters in West Java.

Table 1 Local Wisdom of West Java Community Disaster Mitigation

Name	Component	Disaster mitigation
Kampung Naga (Dragon Village)	1. Home	<ul style="list-style-type: none"> The footprint of the building from the hallway serves as drainage to prevent water from entering the house, and the building is reinforced with stone and clay to prevent landslides Maintain the condition of sacred forests and forbidden forests which are taboo to maintain water systems and prevent landslides
	2. Forest	
Kampung Ciptagelar	1. Home	<ul style="list-style-type: none"> Wooden stilt houses covered with bamboo booths and roofed with dried palm fronds are intended as earthquake-resistant houses Planting rice once a year without tractors and chemical fertilizers can stop the cycle of planthoppers.
	2. Rice Fields	
Kampung Cirende (Cirende Village)	1. Forest	<ul style="list-style-type: none"> Forests known as Leuweung Larangan, Leuwueng Tutupan, and Leuweung Baladahan have functioned as water catchments, reforestation forests, and agricultural forests Consumption of cassava rice can make people have food security
	2. Rasi (cassava rice)	
Kampung Pulo (Pulo Village)	1. Home	<ul style="list-style-type: none"> The house is limited to six units intended to maintain the integrity of nature Prohibition of raising livestock for the destruction of rice fields, gardens and keeping the environment clean
	2. Livestock	
Kampung Kuta (Kuta Village)	1. Home	<ul style="list-style-type: none"> Stilt houses made of bamboo booths and a ban on permanent construction can prevent the land from sinking Sacred Forests function to maintain the beauty of the forest.
	2. Forest	

Source: Research Document

Based on the table above, it can be explained that the culture of the traditional village community will

not be separated from the teachings of their ancestral heritage, whether it concerns the way of life, religion, or in maintaining the environment where the community itself lives, as seen in the community:

1. Dragon Traditional Village. Local wisdom of disaster mitigation that is still maintained by the people of Kampung Naga, including the house that is used as a place to live, is known as a house on stilts. This house is made of wood and bamboo walls with the assumption that the house on stilts will withstand earthquakes; the footprint of the building from the hallway serves as drainage to prevent water from entering the house. There are also sacred forests and forbidden forests sacred to the community containing messages of kindness to maintain water systems and prevent landslides. The people of Kampung Naga are taboo to cut down their trees, the prohibition is not just a myth, but there is disaster mitigation that can be done. Implanted, namely, the community believes that the maintained forest can function as water storage for the indigenous people of Kampung Naga. The people of Kampung Naga view the environment as an integral part of the environment and other objects in it so that the environment needs to be protected.
2. Ciptagelar Village. Here, local wisdom is still maintained in disaster mitigation, including stilt houses that are still maintained from wood covered with bamboo booths and roofed with dried palm fronds. The search results show that the house on stilts was used to make the building resistant to earthquakes. If traced, indigenous peoples in West Java have long generally recognized the characteristics of earthquakes that are on land surrounding settlements. Their ancestors were able to observe activities. Their ancestors were able to observe the activities of the soil structure, which could have a fatal effect on the buildings inhabited by the people, for the ancestral community to understand that making a wooden building can have a reasonably risky impact when an earthquake occurs, as revealed by Maryani and Ahmad Yani that they have the correct calculation in building a house. Therefore, the concept of Sundanese traditional buildings always applies a building system with lightweight and non-rigid materials, as exemplified by the people of Kampung Ciptagelar. Another exciting thing is that the people of Ciptagelar Village plant rice once a year, cultivate the land without tractors, without chemical fertilizers. All of that in disaster mitigation provides benefits in stopping the cycle of leafhoppers.

3. Cireundeu Village. This village has a forbidden forest still awake. This forbidden forest is known as Leuweung Larangan, Leuwueng Tutupan and Leuweung Baladahan. The “sacred” or the Cireundeu people call it “pamali (abstinence) to enter the forbidden forest. Only a certain time can enter it and even then enter without wearing footwear. Their reason is that humans and nature are fused so that the balance of nature is maintained. Forest is forbidden from the point of view of Disaster mitigation has the meaning of a place for infiltration and storage of water. For this reason, the forbidden forest is nicknamed the ‘barrel of the earth.’ There is no excess water during the rainy season, and there is no shortage of water during the dry season. Furthermore, forest products Coverage may be taken provided that the forest must be re-covered or planted. It is not just changing plants. When tree seedlings come from outside, they have to be quarantined for four days; even those who plant them must have the responsibility of controlling tree seedlings’ growth and development for up to 40 days. For that reason, a lot of wood and bamboo is planted in the forest. Meanwhile, forest/leuweung baladahan is an area for agriculture. For this reason, all forests in Cireundeu Village have functioned as water catchments, reforestation forests, and agricultural forests. Meanwhile, the habit of planting cassava into cassava rice and consuming it to have food security.
4. Pulo traditional village, located on the mainland of Lake Bagendit in which there is the Cangkuang Temple. The house in Kampung Pulo is rectangular with the type of house on stilts. This house is limited to only six units, and it is forbidden to add or reduce the number of houses. This is intended to maintain the integrity of nature. The people there are also prohibited from raising four-legged animals, except cats, because livestock can damage rice fields and gardens. Besides, the absence of livestock can keep the surrounding environment clean.
5. Kuta Village is located in Ciamis Regency. If seen from the map, this village is close to the Indian Ocean, prone to earthquakes. The soil is soft and prone to landslides, which threatens the lives of residents. To fortify from disasters, the people of Kampung Kuta uphold the customs that can protect them. The customs include, among others, that the community is prohibited from building permanent houses, but only houses on stilts. For this prohibition to be obeyed, a myth was issued “if you build from a wall/permanent then the unseen will be visited.”

In a disaster, the ban is actually to avoid sinking because it is loose soil and prone to landslides. Likewise, with sacred forests that myths should not touch, something will happen to those who violate them. For those who will enter the sacred forest with the permission of the local Duncan, it turns out that it is taboo to wear footwear. The prohibition on the use of footwear means that the plants in the sacred forest are not damaged. Another taboo is that it is forbidden to spit and urinate, which aims to maintain the cleanliness and beauty of the sacred forest.

The local wisdom of the disaster in West Java above is a form of awareness of the importance of protecting the environment from the community. Concerning environmental awareness as revealed by Ilttelson (Walmsley and Lewis, 1984: 11) that: (1) the environment is seen as a unified event/experience; (2) humans become an integral part of the environment and other objects in it; (3) all the physical environment is closely related to the social system; (4) the influence of the environment on individuals varies, including on their behavior; (5) the environment often operates below the level of consciousness; (6) there is a significant difference between the “observed and real environment,” (7) the environment is composed of a set of mental images; (8) the environment has symbolic values. Ilttelson’s opinion is proof that specific communities are vital in protecting the environment as a disaster mitigation effort.

Local wisdom in the community that contains disaster mitigation is not only in traditional villages, and the general public also has it through oral traditions from generation to generation. For example, there are words from parents to their children not to cut down the banyan tree because of the inhabitants of supernatural beings in it. When viewed from disaster mitigation, the oral tradition with the banyan tree symbol is one of the reinforcements so that soil movements do not occur, as well as accommodate water absorption and filter water into clean water.

Another local wisdom that stands out in West Java that has a relationship between humans and nature appears in the Sundanese proverb, which reads, “Naon wae nu ditanceubkeun dina taneuh, it will be.” This Sundanese proverb is an interpretation of Pasundan soil fertility and is related to the use of land in the West Java region to grow plants that are beneficial for the survival of the people. Planting bamboo is one of them. Bamboo has the function of mitigating natural disasters such as erosion, other benefits as a groundwater purifier, absorbers of glare and solar heat, wind speed inhibitors, sound absorbers, and others (Rosyadi, 2012:

29). In another study, bamboo tree roots were strong in protecting the soil mass, thereby preventing displacement due to high water volume. Planting bamboo trees around the slopes can minimize the mitigation of these natural disasters (Ramadhan & Mukhsin, 2017: 219). Meanwhile, Koetjaraningrat (1979) has another bamboo function, which is used as a club or kohkol in West Java as social control if something happens in the community. One of the Tenjolaya Villages in Subang Regency explained that the Kohkol aims to provide the community with tools to be used as markers of the emergence of natural disasters or other events.

The Sundanese people also have chapters relating to forest conservation and environmental management such as Leuweung kaian, gawir awian, sampalan kebonan, legok bolangan, meaning that the forest must be planted with wood trees, sloping hills must be planted with bamboo, land made into gardens, and the lower area of the three. It is made into a pool. This is one of the chapters that the community, primarily indigenous peoples collectively trust, in protecting and preserving the environment. Referring to Supriatna's opinion (2017), local wisdom can be ecopedagogy to build ecological intelligence in learning, including history learning. For this reason, the local wisdom that has been discussed above is essential to be conveyed to students through direct teaching or indirect teaching-learning through the material being delivered. In high school, class X material related to the life of prehistoric people can be direct learning by using the concept of the historical education paradigm. The present life is a continuation of the past life, and in the future, what will depend on the present life. For this reason, disaster mitigation is the main thing as historical learning material.

CONCLUSION

Local wisdom in each region has diversity, including in the West Java community. Existing local wisdom is not just a habit, belief, rule without a foundation. In the local wisdom, it turns out that many mysteries need to be solved, including local wisdom, which contains disaster mitigation. Behind the irrationality with the mention of prohibitions, taboos, and pamali, it turns out that there are many community efforts always to maintain the survival of their community. The so-called forbidden forest, the prohibition on building permanent houses, there is a limitation on the number of houses, the prohibition on raising livestock turns out to have value for maintaining the community's survival. All local wisdom needs to be

preserved and conveyed to the younger generation by developing materials in history learning in schools. The material can be combined with the primary material according to what is being discussed.

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