

## Environmental conservation efforts for disaster mitigation based on local wisdom in Colo Dawe

by

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<p><b>Article History</b> Submitted: 16-05-2024 Revised : 04-07-2024 Accepted : 25-07-2024</p> <p><b>Keywords:</b> <i>Environmental Conservation; Disaster Mitigation; Local Wisdom.</i></p>	<p><b>Abstract</b> Geographical conditions may promote a potential for natural disasters in every region. This research aims to investigate: 1) the efforts and implementation of environmental conservation for local wisdom-based disaster mitigation in Colo Dawe Kudus, and 2) the achievements of environmental conservation efforts for local wisdom-based disaster mitigation in Colo Dawe Kudus. This research used a qualitative descriptive approach with an ethnographic design. Data collection was done through observation, interviews, and documentation. The research results showed that Colo Village is located on a plateau that can potentially experience landslides. The cultural approach is the way used by the Colo community for disaster mitigation. The local wisdom of the Colo people is considered capable of preserving the environment through rituals, including the Wiwit Kopi, Sedekah Bumi, Sewu Kupat, and Guyang Cekathak traditions. Disaster mitigation efforts in Colo Village using a cultural approach include not only natural landslide disasters but also other hydrometeorological disasters, such as drought disaster mitigation efforts. This research contributes to the development of social science, especially in the fields of sociology, anthropology, and geography.</p>
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### Introduction

Customs, beliefs, and knowledge systems as part of cultural elements are the basic ingredients for the birth of a tradition. The elements that form these traditions are the source of values that become the identity and pride of certain community groups. Society will try to maintain its traditions as long as these traditions can respond to developing challenges. As a cultural product of society, traditional ceremonies have distinctive characteristics. Nasrudin revealed that the environment is a complex systematization that exists outside the individual which influences the development and growth of organisms. The environment influences human life.

Indonesia is a culture-rich - country. The cultural diversity here is caused by the variety of ethnicities, tribes, religions, and customs, as well as external or foreign cultural influences. This reason is also influenced by Indonesia's strategic geographical location. On one hand,

Indonesia has diversity because of its geostrategic location, while on the other hand, Indonesia often experiences natural disasters. There is an encounter of three large plates, namely the Indo-Australian plate which moved north, the Pacific plate which moved from east to west, and the Eurasian plate which moved south. The Indo-Australian plate pushes the Eurasian plate and the Pacific plate pushes the Eurasian plate, resulting in natural disaster activities such as earthquakes, landslides, volcanic eruptions, and tsunamis. Natural disaster activities can also occur due to Indonesia's tropical climate conditions through changes in wind direction, weather, and extreme temperatures combined with varying rock topography and surface conditions, resulting in hydrometeorological disasters (Adiyoso, 2018, pp. 60–61).

Indonesia's location in the world's Ring of Fire is surrounded by a row of volcanoes, causing Indonesia to frequently experience volcanic eruptions and earthquakes. Based on its geographical location, Indonesia has many natural resources but on the other hand, disasters often occur (Hermon, 2015, p. 2). Head of the National Disaster Management Agency, Lt. Gen. TNI Suharyanto, revealed that during 2023 Indonesia experienced 4,940 disasters, mostly wet hydrometeorological disasters, including floods, extreme weather, and landslides. Details of other activities include 1,802 forest fires, 1,170 floods, 1,155 extreme weather events, 579 landslides, 168 droughts, 31 earthquakes, 31 tidal waves and abrasion, and 4 volcanic eruptions. The impact is loss of material loss and even life (Habibah, 2024). From this disaster, Kudus which is one of the districts in Central Java, Indonesia, also contributed to the natural disaster.

In 2023, 402 disaster phenomena were recorded in Kudus Regency, consisting of forest and land fires (Karhutla ) at 195 point locations, floods 122 times, landslides 36 times, extreme weather 30 times, and drought 19 times. The impact on humans, 6 casualties, 3 injured, and 1,752 people suffered and displaced. Another impact is damage to houses and public facilities (Kudus, 2023). Kudus Regency has 9 sub-districts and 123 villages. Dawe is one of the sub-districts where during 2023, 31-50 disaster events were recorded (Kudus, 2023). Colo is one of the villages in Dawe Sub-district. It administratively borders other areas; Muria Protected Forest on the north, Japan Village on the east, Kuwukan and Dukuhwaringin Village on the south, and Kajar Village on the west. Thus, the topography of Colo is wavy with characteristics of hilly to mountainous areas with a slope of 15-40% and is at an altitude of approximately 700 meters above sea level (*Google Maps Coordinates*, 2023). This makes Colo Village included in the category of highland areas with a tropical climate and moderate temperatures. Therefore, It has the potential for a landslide natural disaster.

Colo Village is a village that has a high risk of landslides (Pradhita et al., 2022, p. 75). History of disasters there were landslides in 1952, 2014, and 2022, and in 2000 was a forest fire. There were no fatalities affected, but the material losses were quite enormous (Mustofa, 2022). In 2023, high rainfall caused water to flood the road to the Sunan Muria religious tourist attraction in Colo (Jateng, 2023). Environmental problems are related to local wisdom. This can be seen from the position of local wisdom which played a role in preserving the environment before environmental care activities were established. Apart from that, local wisdom plays a very important role in harmonizing the ecosystem rather than regulating laws that are caused by rituals, myths, and noble traditions related to nature which can regulate society with the surrounding environmental network.

There are various ways and one of them is by developing attitudes, behaviors, lifestyles, and traditions that have a good connotation towards preserving and maintaining the environment. In this tradition, it is said to be the application of local wisdom. In this way, local wisdom becomes conventional knowledge and perspective that shapes the basis of environmental practices passed down from generation to generation and challenges the life of a community. Each region has its characteristics or local wisdom according to their respective regions. One of them is Colo Village which is located in Kudus Regency. Colo is located approximately 18 km north of the center of Kudus, on the slopes of the Muria Mountains, Colo Village, Dawe Sub-district, Kudus Regency. Here is the grave of the archipelago's leading Islamic scholar figure, Sunan Muria, who was famous for his superior scientific and artistic abilities as well as an attitude of tolerance. Another thing is that tourists can enjoy the cool air and beautiful natural landscape.

Apart from the religious side, the people of Colo are also famous for their tourist village spots. From an economic perspective, the villagers work as coffee farmers, traders in the tomb surrounding, and motorbike taxi drivers. With rich natural resources, village people use it as coffee farmers, because the area is mountainous. Not only that, other traditions are also maintained, such as preserving the *wiwt kopi* (coffee harvest) culture which is carried out by the community as a form of gratitude, or preserving the flora and fauna which are still very well preserved around the mountains. This was the reference for choosing Colo as a place of study and also because of the tomb of the Indonesian Islamic scholar, Sunan Muria who is famous for his excellent scientific capacity as well as works of art and an attitude of tolerance. There are also a lot of local wisdom or traditions that can be explored and provide insight into knowledge and how the community is trying to preserve local wisdom in Colo, to make it remain sustainable.

## **Method**

This research is field research because the researcher obtained the data by going directly into the area. Library research is also done to create collaboration between the two methods while also using a qualitative approach. This qualitative approach does not use calculations, instead, it is natural and cannot be done in the laboratory so ones have to go directly to the field (Arikunto, 2002, p. 107). The design of this research is ethnographic because it describes and investigates the culture or cultural events of the Colo people as they live their lives. Spradley explains that the ethnographic research cycle procedure consists of six steps, namely selecting an ethnographic project, asking ethnographic questions, collecting ethnographic data, taking ethnographic notes, analyzing ethnographic data, and writing the ethnography (Ary et al., 2010, p. 462).

First, choose an ethnographic project. The choice of ethnographic research topic was that the researcher studied the existence of local wisdom or traditions in Colo Dawe Kudus, which had a positive impact on efforts to mitigate landslides and drought disasters. Second, ask ethnographic questions. Researchers have prepared questions to guide researchers in obtaining research data in the field. Third, collect ethnographic data. This research uses technical triangulation in data collection as a credibility test using interview techniques, observation, and documentation studies. Fourth, make ethnographic notes. Research is carried out by taking notes or documents as a means of supporting research. Fifth, analyze ethnographic data. Data analysis was carried out by combining the results of field research with the theories used in the research manuscript. Sixth, write an ethnography. After collecting data, the next step as a researcher is to write down what is found in the field and the results of the analysis to contribute to science, especially in the study of the social sciences, which focus on the branches of sociology, anthropology, and geography. Apart from that, it is hoped that the results of this research will be useful for the community, especially readers.

The subjects in this study were divided into two categories. First, the Colo Village chief is a key informant in providing information related to the research focus. The main informants are the Colo Village chief and the Colo Village community. Sampling in this research used a non-probability sampling technique with purposive sampling technique.

Data collection used obvious observation techniques where the researcher openly said that he conducted research on the data source. Unstructured interview techniques were used so that researchers could easily obtain in-depth data. The documentation techniques in this research

come from agencies or documents in Colo Village as well as research results. The reason for carrying out documentation is so that researchers can draw appropriate conclusions about what is being studied.

Test the validity of the data was done by testing credibility through reference materials and triangulation techniques. The triangulation technique used is source and technique triangulation. Researchers also used dependency tests with equivalence where researchers ask almost similar questions to produce the same data. Equality can be tested through alternative questions which have the same meaning in one interview and can obtain the same data/evaluate the agreement on the results of the observations of two researchers (Afiyanti, 2008, p. 139).

For data analysis, researchers used qualitative analysis combined with the Miles & Huberman and Spradley interactive models. Data analysis used Miles and Huberman's interactive model, which begins with data collection, data reduction, data presentation, and drawing conclusions (Miles & Huberman, 1992). Analysis in ethnographic research consists of four types of analysis, namely domain analysis, analysis, taxonomy, componential analysis, and cultural theme analysis (Sugiyono, 2014, pp. 348–362). Domain analysis is where researchers get a general overview of the research object or social conditions being studied. Researchers' taxonomic analysis describes the domain, general description, or social conditions in a more detailed form. Componential analysis was carried out by collecting data in the form of interviews, observations, and documentation. Cultural theme analysis is carried out by looking for relationships between domains and then translating them into research titles or themes. An analysis of this research data can reveal that the researcher after the data was collected through technical triangulation, reduced the data by sorting and selecting, simplifying, and discarding unused data. This is done because the data collected is large and even spreads out from the research context and must be filtered. Then, the researcher compiles the data into a systematic form and analyzes it by consulting theory and previous research results. Finally, conclusions are drawn based on the results of the analysis.

## **Result and Discussion**

The author should explain the results of research (what was discovered) in detail. The research result and discussion section contain results of the research findings and their ensuing discussions. The findings acquired from the results of the conducted research should be written with the supplementary support of adequate data. The research results and findings should be

able to resolve or provide explanations to the question stated in the introduction and also contains with the author's analysis of the findings by connecting the empirical data with the theory used.

The results of this research answer research problems, including regarding environmental conservation efforts towards local wisdom-based disaster mitigation and environmental conservation achievements towards local wisdom-based disaster mitigation Colo Dawe Kudus. Colo Village is one of the villages in Dawe District, Kudus Regency. This village is quite famous because it is the final resting place of Sunan Muria, which is one of the main pilgrimage destinations for Muslims in Indonesia (Puspasari & Sariffuddin, 2015, p. 225). Colo Village is also famous for its mountainous area, a fairly large mountain range, namely the Muria Mountains. The Muria Mountains pass through three districts, namely Jepara district, Kudus district, and Pati district.

Environmental Conservation Efforts for Disaster Mitigation Based on Local Wisdom Colo Village has chosen a variety of local wisdom that can attract local people and the general public to just watch. First, *Wiwit Kopi*, Colo Village is located on the slopes of Mount Muria, there are many plantations such as coffee plantations covering around 110 hectares. When the rainy season enters, precisely when it rains for the first time, the people of Colo village start planting coffee. The coffee *wiwit* tradition is what the Colo people call a form of local wisdom or tradition in Colo village. Muhammad Destari Andriasmoro (Head of Colo Village) said:

*Wiwit* comes from Javanese which means "wiwit" which is the beginning. aims to maintain the balance of coffee harvests and express the gratitude of the Colo village community for the harvest. It is held in Dukuh Kuncen which is held once a year and is attended by the Regent of Kudus and his staff or the Kudus Regency Tourism Office. Many residents follow the coffee *wiwit* tradition/ritual, and the people of Colo village gather in the coffee plantation area.

(Interview Results with Muhammad Destari Andriasmoro, Head of Colo Village, July 27 2023 at 11.00).

The people of Colo village or coffee farmers bring various dishes consisting of rice complete with vegetables and side dishes. Among them are warehouse, fried chicken, fried tofu, tempeh, eggs, and so on added with various kinds of fruit. The dish is then eaten together after completing the prayer. (Widjanarko and Dian, 36). Not only praying and eating together, but the Colo people also release hundreds of birds which are intended to maintain the balance of nature. The birds released are a type of caterpillar predator that preys on coffee pests

The *Wiwit Coffee* tradition is one of the traditions in protecting the natural environment. Through the *Wiwit Kopi* Tradition, Colo Village has tourism potential as a tourist village with natural tourism objects as well as agricultural tourism. The form of environmental preservation

through Wiwit Kopi has received special attention from the Kudus government in developing the typical robusta coffee of the Muria slopes (Tengah, 2023).

The Wiwit Kopi traditional activity means a sense of solidarity, which means the Colo community has the same mindset in harvesting coffee. So that actions emerge based on a sense of togetherness through thought patterns that are realized in the form of rituals. The procession begins with the prayer of reading manaqib in the evening before the peak of the tradition. The aim is to express gratitude for the abundance of agricultural products in the form of coffee and as a source of reinforcement.

(Interview Results with Muhammad Destari Andriasmoro, Head of Colo Village, July 27 2023 at 11.00).

Implementing the Wiwit Kopi Tradition requires several preparations, one of which is buying rice, which is the main requirement which is a composition of a combination of rice, red chilies, shrimp paste, shallots, and chicken eggs combined in one container. The rice is made into a cone with a skewer on top consisting of red chilies, shrimp paste, and shallots. As for boiled chicken eggs. Then wrapped together in banana leaves. Apart from rice bucong, Colo people bring ricedekem, tempeh, tofu and kluweh vegetables. The procession begins with burning incense to spread fragrance, followed by prayers/tawasulan to the Prophet Muhammad SAW, Sheikh Abdul Qodir Jailani, Raden Umar Said (Sunan Muria), and Colo Village figures who contributed to Colo Village at that time. Next, prayers were read and closed with a group meal in the form of ubarampe and continued with the release of hundreds of birds as predators or coffee pests.

Second, *Sewu Kupat*. The word kupat or ketupat is a term for food made from rice which is then put into a box woven from young coconut leaf fronds or often also called coconut leaves. Sewu kupat is an annual tradition in Colo Village. Muhammad Destari Andriasmoro, Head of Colo Village said:

"Sewu Kupat was initiated by Mr. Falah, who was the Head of Colo Village for the 2007-2012 period. Sewu Kupatan is intended to attract people to be interested and have an interest in visiting Colo Village. This Sewu Kupatan is a routine agenda every year which is held on the Javanese calendar, namely in the month of Shawwal, exactly 1 week after Eid al-Fitr."

(Results of an interview with Mr. Punto Dwi Poyong, as Village Secretary of Colo Village, 27 July 2023 at 09.00 WIB).

In the sewu kupat tradition, each head of the family sends five kupats and five lepets which are then arranged into a mountain. The mountains were taken to Sunan Muria's grave for a group prayer to receive blessings. Next, the people of Colo drink the water and wash their hands and feet with barrel water which is believed to be a legacy of Sunan Muria. The carnival with a procession of 18 mounts of ketupat and harvests from all the villages in Dawe District, which consists of 18 villages, starting from Sunan Muria's grave to Ria Colo Park, the mounts of kupat

and lepet, were fought over by local people who were believed to receive blessings from Allah SWT.

The Sewu Kupat tradition started in 2008. The emergence of this tradition was pioneered by Mr Musthofa Wardoyo as the Regent of Kudus at that time. Musthofa invited the Muria slope community to rethink the history of Sunan Muria's legacy as well as a form of respect for Sunan Muria through an annual celebration in the form of a rite called Sewu Kupat. The idea that resulted in the plan being realized in the form of the Sewu Kupat Tradition was the collaboration of the Colo Village Head, the caretaker of Sunan Muria's grave.

Third, Sedekah Bumi. Sedekah Bumi in Colo Village, wayang performances are considered one of the requirements in the flow of the ceremony. In the earth alms ritual, the first day a buffalo is slaughtered which is then distributed to the local community, then in the evening the community performs penance. On the second day, people performed wasilah at Sunan Muria's grave, and in the afternoon there was a wayang performance until early morning. Sedekah Bumi is an annual tradition in Colo Village. Mr. Punto, as Secretary of Colo Village, said:

The reason for this wayang performance is intended as a preservation effort to maintain local culture inherited from our ancestors. During the day, the theme of the wayang performance is Among the Tani which contains the origins of rice. Earth alms is carried out once a year, where the Javanese calendar is used to determine the implementation of earth alms, namely in the month of Apit or Tekepek, to be precise, on Wage Saturday. Earth almsgiving is a traditional ceremony that aims to give alms to the earth so that future agricultural results will be more satisfying and a sign of gratitude for the harvest. (Results of an interview with Mr. Punto Dwi Poyong, as Village Secretary of Colo Village, 27 July 2023 at 09.00 WIB)

Sedekah Bumi (The Earth Alms) Ritual held by the Colo community is held on Wage Saturday (Javanese market) in the month of Apit. The selection of Saturday Wage was based on the anniversary of Colo Village and the month of Apit was chosen because it is a month with minimal religious activities

The Colo Village Sedekah Bumi (Earth Alms) Ritual is carried out as a form of community interaction with nature, namely a form of gratitude to Allah SWT and gratitude to nature. The role of the Sedekah Bumi ritual in the environment can be seen from the element of meaning, such as in shadow puppet performances with the theme Among Tani. The Earth Alms Ritual is complemented by the values and artistic elements contained in Among Tani through wayang kulit performances containing stories about the lives of farmers with puppet stories of Dewi Sri, Kala Gumarang, and Vishnu. Dewi Sri hopes for a prosperous life and is challenged by Kala Gumarang. Kala Gumarang is a giant figure who wants to marry Dewi Sri and is symbolized as the king of all diseases and pests. Kala Gumarang, with his heirloom, Limpung Surapati, succeeded in killing the Andini Ox, which is symbolized in the story of the origin of the ox which helps the community in agricultural matters. At the end of the story, the figure of Kala Gumarang is killed by Lord Vishnu and his blood turns into grasshoppers, finches, pests, rats, insects, and wild

boars. So it gives the message that if farmers hope for prosperity they must ward off disease and plant pests.

(Results of an interview with Mr. Punto Dwi Poyong, as Village Secretary of Colo Village, 27 July 2023 at 09.00 WIB)

The role of the Earth Alms ritual for the environment can be seen from the purpose of carrying out the ritual, which is an expression of gratitude for being blessed with a land full of fertility. The value of wisdom contained in the Sedekah Bumi ritual includes three elements of prosperity in life, namely the relationship between humans and God which is realized in the reading of manaqib and prayer together by asking that the Alms Earth Tradition run smoothly. Furthermore, the relationship between humans and humans can be seen in the form of unity, cooperation, and solidarity in maintaining, preserving, and implementing the Earth Alms Tradition.

Fifth, Guyang cekatak. Guyang cekatak is one of the routine agendas of the residents of Colo Village, where the guyang cekatak is held in Sendang Rejoso. Muhammad Destari Andriasmoro (Head of Colo Village) said:

Sendang Rejoso was once Sunan Muria's ablution place before performing his prayers. Many pilgrims believe that the water from the spring is able to cure various diseases. Sendang Rejoso is 3 km from the Gunung Muria bus terminal.

In line with the results of an interview with Suparman (60), one of the residents of Colo village said,

"In the past, it rained when the guyang cekatak happened. "This is what makes local people believe in this ritual and preserve the ritual which is considered to be able to preserve the springs in Muria."

(Results of an interview with Suparman as a community leader in Colo village, 27 July 2023 at 13.00 WIB).

Guyang cekatak is a ritual for asking for rain, in this ritual people bathe the horse saddle left by Sunan Muria. Sunan Muria's horse saddle was taken to Sendang Rejoso where it was then washed. Then it continues with a group prayer event and a siege meal or meal together. At the end of the event, a typical Kudus drink was served, namely *dawet*, which is thought to represent the falling rain. Guyang *cekatak* is usually attended by the Village Head and religious figures and the surrounding community. Usually, *guyang cekatek* is held using the Javanese calendar, namely on Friday wage in the dry season.

In the Guyang Cekathak Tradition, the procession uses a horse saddle as an object and condition of the tradition. The existence of horse saddles provides a real picture of the results of creative culture in the form of objects. One of the forms of culture initiated by J.J Honigmann is objects/artifacts created by humans that are very concrete in nature in the form of physical objects or culture that can be seen, touched, or documented.

To bring down rain, the tradition of *guyang cekathak* is carried out when the dry season occurs in Indonesia. The dry season at its peak is known through Javanese calculations where *katiga* prey occurs in September. This tradition is carried out in September on Friday in the weekly cycle of the Javanese calendar and the Wage market in the Pancawara week cycle. If there is no Friday with the Wage market in September, *Guyang Cekathak* will be held in October.

The process of cleaning a horse saddle believed to belong to Sunan Muria took place in Sendang Rejoso. Sendang Rejoso is believed to be the place where Sunan Muria performed his ablutions and bathed his horse. The peak of the tradition which falls on Friday Wage is through various processions that start at around 06.30 WIB, where *tahlil* readings and joint prayers are carried out by cultural figures and residents located in the room in the Sunan Muria grave area. Residents gathered with words. After reading the *tahlil* and praying together, the process of accompanying Sunan Muria's horse saddle covered with white cloth and burning incense was accompanied by reading *salawat* and the art of flying *papat* to Sendang Rejoso to be cleaned. On the other hand, the residents carried the previous words to Sendang Rejoso. The process of cleaning Sunan Muria's horse saddle in Sendang Rejoso by the Management of the Sunan Muria Mosque and Grave Foundation (YM2SM) and the grave caretaker. After the *Guyang Cekathak* ritual in the process of cleaning the horse's saddle is complete, together they pray to Allah for rain. Next, the residents ate together with words as a form of salvation at the Sendang Rejoso complex.

(Results of an interview with Mr. Punto Dwi Poyong, as Village Secretary of Colo Village, 27 July 2023 at 09.00 WIB).

The implementation of the *Guyang Cekathak* Tradition is carried out in September on Friday Wage according to Javanese calculations, which is the peak of the dry season for *katiga* prey. In Java, there is a calendar system related to seasonal changes called the prey system. Institutions are defined as rules and regulations which are interpreted as the time when seasons/periodization of the earth's climate occur due to shifts and changes in the solar calendar or the sun's orbit (Handayani et al., 2018, p. 25). This Javanese calendar system is a seasonal heritage calendar that is believed and recognized by cultural communities in the agricultural sector in Central Java (Retnowati et al., 2014, pp. 787–792).

The prey system in one year is divided into four seasons, namely the first, third season which consists of *kasa*, *karo* and *katelu* prey related to the dry season. Second, the anchoring season consists of the prey of *kapat*, *kalima*, and *kanem*, namely the transition from the dry season to the rainy season (*rendheng*). Third, the *rendheng* season consisting of *kapitu*, *kawolu* and *kasanga* prey is marked as the rainy season. Fourth, the *mareng* or transition season consists of *kasadasha*, *dhesta* and *sadha* as a form of transition from the rainy season to the dry season (Handayani et al., 2018, p. 37).

Based on the prey system, there is a threat of environmental disasters, namely floods and droughts. The flood disaster occurred on 22 December-2 February and 3 February-28

February. The previous rainy season was felt on the anchorage, namely on the Kalima prey from 13 October to November 8 and the *kanem* prey from 9 November to December 21. At this anchorage, it is a transitional season from dry to rainy, where sometimes lightning occurs and landslides occur (Sobirin, 2018, p. 256).

The result of the dry season is that there is a drought disaster for the third prey, namely the *kasa*, *karo* and *katiga* prey. After the third prey ended, there was still a feeling of dryness in the anchored prey, namely in the cotton prey on September 18-October 12, which was marked by minimal spring water (Sobirin, 2018, pp. 256–257).

Indonesia has a tropical climate so it has two seasons, namely rainy and dry. To find out about the rainy season in Indonesia, you can look at the gusts of monsoon winds. The west monsoon occurs from October to March. As for the east monsoon, this wind originates from the Australian continent towards Asia so rainfall becomes low and causes a dry season. The east monsoon occurs from April to September.

The actions encapsulated in a Colo community rite are a form of community awareness of the importance of protecting and preserving the environment to mitigate potential disasters. Local wisdom to protect the environment in the Colo community refers to the concept of environmental ethics by Sonny Keraf, including (Keraf, 2010, pp. 167–182): 1) *Salin Luwur (Buka Luhur)* Salin luwur is a ceremony to replace the luwur or mori cloth used to cover graves. Salin luwur has been a tradition passed down from generation to generation, this tradition is a commemoration of the death of Raden Umar Said or often known as Sunan Muria. The tradition of salin luwur is held according to the Javanese countdown, namely on the 15th of Syuro' or the 15th of Muharram. The people of Colo are very enthusiastic about taking part in this salin luwur procession, both from local residents and outside the city. The sequence of the salin luwur event is very long, starting from the community service until the peak event, namely the salin luwur ceremony. The series of events starts from the 27th of Dzulhijah to the 15th of Muharram. There is something different or distinctive about Sunan Muria's salin luwur, where on the 14th of Muharram, after the public recitation program is finished, it is followed by the distribution of Nasi Pincuk.

Pincuk rice is rice wrapped in leaves that form almost like a cone. In the past, pincuk rice was a contribution from local residents to be distributed, where each resident sent pincuk rice as willingly as possible. The village has made a policy, where local people only collect rice. This is so that the pincuk rice production can be expected to run out and not go stale. (Results of an interview with Mr. Punto Dwi Poyong, as Village Secretary of Colo Village, 27 July 2023 at 09.00 WIB).

The local wisdom in Colo Village contains religious elements. It is believed by the community that the existence of wisdom in Colo Village has existed for a long time, making it a cultural tradition that has been passed down from generation to generation. This tradition is based on history, geographical situation, and conditions as well as the potential of Colo Village, where this tradition exists because the community needs it. J.J Honigmann explains cultural forms including ideas, activities, and artifacts. The form of culture by the Colo people is in the form of rites, so the form of culture is in the form of ideas, values norms, notions, and regulations that are abstract and cannot be depicted in real terms and cannot be touched, seen or documented. Located in the human head or mind. Next, in the form of community activities/actions. Its nature is non-abstract or in other words, it is concrete in that it can be seen, touched, and even documented because it is real in the behavior of people's lives (Koentjaraningrat, 1985, pp. 186–188).

Van Peursen divides cultural development or change into three stages, including the mythic stage, ontological stage, and functional stage. First, the Mythic Stage. Colo people's beliefs related to supernatural matters, beyond human common sense, still exist. In the Earth Alms tradition, Colo people collect various kinds of agricultural products in the dry land agricultural area of Colo Village, including oranges, *parijatha*, avocados, bananas (*gedhang byar*), and others. Such agricultural products are likened to offerings that must be fulfilled. If even one offering is missing, it is believed to cause problems. These problems can take the form of accidents or obstacles during an activity event. The earth alms procession in Colo Village, the Colo community requires puppet performances. This performance will not be replaced by other performances. Van Peursen explains at the mythical stage that humans are aware of supernatural powers (Peursen, 1988, p. 38). The supernatural powers that the Colo people believe in are realized in the local wisdom of Colo Village with all the community's beliefs. This belief seems to be a binding cultural law. So it must be carried out regularly every falling date.

Second, Ontological Stage. In the ontological stage, it is a form of transition from mythical things to logos which makes culture able to be studied through reason (Peursen, 1988, p. 38). In the Wiwit Coffee tradition, the meaning is that the coffee produced is perfect and protected from all kinds of pests and diseases. Earth alms and *sewu kupa*t are carried out as a form of expression of gratitude to Allah for the abundance of agricultural products in Colo Village. *Guyang cekathak* is carried out by the people of Colo in the hope of rain and to express gratitude for the water source that is still gushing. The local wisdom that has existed for a long time has now had a positive impact on the people of Colo, creating solidarity and harmony between Colo residents.

Third, Functional Stage. The rites carried out by the Colo people have no other purpose than can be studied logically. The aim of holding the rite is to build solidarity, unity, mutual cooperation, and joy over the abundance of agricultural products and the prosperity of the community. The Sewu Kupat Tradition is a tradition that started in 2008. The Sewu Kupat Tradition is a form of attention from the Kudus Regency Government directly by the Regent of Kudus at that time, Musthofa Wardoyo, by looking at the historical perspective of Sunan Muria which has not been managed well.

The existence of Colo's local wisdom has had a positive impact on the sustainability of community life which has contributed to its coronation as a tourist village. Colo's local wisdom is able to support the development of the creative economy of Colo Village. This means that Colo's local wisdom attracts the attention of tourists which has an impact on the community's economic income. The rites held to date build solidarity and mutual cooperation as a form of efforts to preserve traditions which are the duty and responsibility of the Colo community and the Sunan Muria Mosque and Grave Foundation (YM2SM) in collaboration with the Kudus Regency Government and the Forest Protector Community Association.

The benefits obtained from holding the Colo Village rites are not only economic. However, commodification is also obtained in the form of social capital and social relations. The implementation of traditions creates repeated interactions that give rise to reciprocal relationships with the government, economic actors, puppeteers, communities and forest protection organizations. From these social relations, social capital has been revived through the concept of togetherness with the common goal of maintaining, preserving and carrying out the traditions that exist in Colo Village. So, through the functional concept of culture, Van Peursen sees that humans have a modern mindset where they no longer prioritize mythical things which are the dominant cultural style, but humans have built new relationships with the environment.

First, Respect for Nature The manifestation of respect for nature in Colo local wisdom is the Earth Alms Ritual through the aims and objectives as well as values and meaning in puppet performances with the theme Among Tani. Apart from that, efforts to preserve the environment by the Colo people are wrapped up in the Wiwit Kopi Tradition. The location of environmental preservation in this tradition is in the purpose of its implementation. The Wiwit Kopi tradition is held with the aim of maintaining the balance of the coffee harvest and as an expression of gratitude for the coffee harvest. Apart from that, caterpillar-eating birds were released which was intended to maintain natural balance.

The Colo people make the Guyang Cekathak Tradition an activity in the form of a rite to preserve the environment, because the procession aims to prevent Colo Village from the potential

for drought through its religious values. The same thing is also realized in the Sewu Kupat Tradition, namely being able to protect and develop agricultural and forest products. So, efforts to preserve the environment can be realized.

Second, Responsibility. Environmental preservation certainly requires awareness based on a sense of collective responsibility. Collective awareness of the importance of preserving the environment is manifested in local wisdom. The local wisdom of Colo Village contains the value of responsibility where the community feels they care about preserving local wisdom. This is proven by the existence of local wisdom which is still maintained with a sense of shared responsibility, namely the Colo community which is supported by the Kudus Regency Government and the Forest Protector Community Association (PMPH).

Third, Cosmic Solidarity. The function of cosmic solidarity is to control human behavior that has the potential to cause damage and pollution to nature (Keraf, 2010, pp. 171–172). Cosmic solidarity is manifested in the local wisdom of Colo Village, which is contained in the purpose of carrying out rites including Sedekah Bumi, Wiwit Kopi, and Sewu Kupat as an expression of gratitude to Allah for the abundance of Colo's agricultural products and praying for better quality and quantity harvests in the future. The mission to save the environment is also contained in the Guyang Cekathak Tradition to prevent drought disasters through religious aspects. Drought disasters have the potential to cause land degradation which causes a decrease in agricultural production.

Fourth, Love and Concern for Nature . The principle of compassion and concern for nature is an important principle where humans have a relationship with nature in order to cherish, love and care for nature. The connection with the local wisdom of Colo Village is that there is a sense of love and care for nature through a lifestyle that is not consumptive, materialistic and exploitative. Because in life, people do not exploit the environment, instead they protect the environment with a cultural approach. The Colo people with a set of local wisdom are able to protect and maintain the natural environment.

Fifth, No Harm Principle. The principle of no harm in local wisdom is clearly visible in its founding as part of a culture shrouded in taboos that forcibly regulate human actions. In Sedekah Bumi, for example, there is a tradition with a set of processions, one of which is holding a shadow puppet performance as a condition and is mandatory with the story entitled Among Tani. Taboo in Earth Alms where it is believed that if it is not carried out, disaster will befall the individual. Likewise, other traditions such as Wiwit Kopi and Sewu Kupat as a form of expression of gratitude contain taboos, if not carried out it will have an impact on reducing agricultural production in

terms of quality and quantity. The existence of mystical beliefs or taboos is considered capable of protecting and preserving the environment.

Sixth, Principles of Living Simple and in Harmony with Nature. Simple principles are contained in the local wisdom of Colo Village where traditions are carried out not with luxury but with simplicity. Local wisdom implemented to preserve the environment can be seen in the Wiwit Kopi Tradition where the Colo people replant coffee that has previously been produced to create a balance that refers to the mutualistic symbiosis that occurs between humans and the natural environment. In this way, exploitation will not occur which will lead to environmental damage.

Seventh, Principles of Justice. The principle of justice in the environmental preservation efforts of the Colo community can be seen when the Colo community protects the Muria protected forest area, even though there is the potential for changes in land use to agricultural land. Concerning the local wisdom of Colo Village, local wisdom does not look at a person's background and social status. This means that everyone can participate in this tradition. They, with their sense of unity, cooperation, and solidarity, have one goal; to protect and preserve their environment and culture.

Eight, Principles of Democracy. Local wisdom in Colo Village does not look at a person's background and social status. For example, in the Wiwit Kopi Tradition, there are no differences in beliefs, Colo people with different beliefs can carry out this tradition together. As for the Sewu Kupat Tradition, this tradition was the result of collaborative thinking between the Regent of Kudus at that time, Musthofa, and the village chief and caretaker of the Sunan Muria Tomb and was supported by the people of Colo with the result that the implementation of the Sewu Kupat Tradition was achieved.

Ninth, Principles of Moral Integrity. The local wisdom of Colo Village coincides with conservation efforts by the Colo community, the village chief, and his staff. The implementation of the existing rites provides a moral message to the people of Colo to respect and appreciate nature and the environment. So, the government's role here is necessary. The government's efforts towards the people of Colo have actually carried out the implementation of the Sewu Kupat Tradition as a form of concern for the Regent of Kudus considering that the history of Raden Umar Said's legacy has not been managed well. In the Wiwit Kopi Tradition, the government is paying more attention to making the potential of Colo Village further developed through aspects of its tourism, cultural and natural potential. Other support came from the Kudus Regency Culture and Tourism Office which proposed the Guyang Cekathak Tradition to the Ministry of Education, Culture, Research and Technology of the Republic of Indonesia so that it could become an

intangible cultural heritage. In this way, local wisdom will remain alive to protect and preserve the environment.

The history of natural disasters that occurred in Colo Village, Dawe District, Kudus Regency, includes the following; First, in 1952 a landslide occurred which resulted in blocked road access. There were no recorded casualties. Second, in 2000 the Muria protected forest fire occurred. There were no recorded casualties. Third, on December 7, 2020, a landslide occurred which resulted in material loss, affecting a prayer room and residents' houses in Dukuh Kombang and Dukuh Pandak. Fourth, on January 19, 2022, landslides occurred in Dukuh Kombang and Dukuh Pandak caused by quite high rainfall. The result is a material loss that impacts residents' homes. There were no recorded fatalities. Fifth, on July 14 2022 there was a landslide due to quite high rainfall which resulted in material losses of residents' houses in RT 5 RW 1. There were no fatalities recorded.

Based on the history of the Colo Village disaster, the landslides that have occurred so far have been caused by the intensity of rainfall. This means that landslides occur due to natural events. In the history of disasters that occurred, there were no fatalities, but the impact referred to material losses. Environmental preservation based on local wisdom in Colo Dawe Kudus Village, consisting of the *Wiwit Kopi*, *Sedekah Bumi*, *Guyang Cekathak*, and *Sewu Kupat* traditions, has meaning for the environment. The existence of the *Wiwit Kopi* Tradition to green the land will reduce the potential for land degradation due to rainfall and reduce the potential for erosion and landslides. Apart from that, the *Wiwit Kopi* Tradition is implemented to develop village potential in the form of tourism and agricultural potential.

In the *Guyang Cekathak* Tradition, environmental conservation efforts towards disaster mitigation are focused on drought disasters. Until now, there are no records in Colo Village stating that a drought has occurred. *Sendang Rejoso* as a spring always emits water to this day.

In the *Sewu Kupat* Tradition and the *Earth Alms* Tradition as an expression of gratitude to Allah SWT for the abundance of the earth's produce. The embodiment of environmental conservation is realized in a shadow puppet performance with the theme *Among Tani* which tells the story of the lives of farmers and contains elements of prosperity. The role of the *Earth Alms* ritual for the environment can also be seen in the purpose of carrying out the ritual, which is an expression of gratitude for being blessed with a land full of fertility.

For example, one of the *Sewu Kupat* traditions. The village government is trying to involve the community to work together in implementing this tradition. *Punto (Sekdes Colo)* said:

“The community was asked by the village government for each family to donate five *ketupat*. Apart from the *sewu kupat* tradition, there is also a series of traditions of breaking fast, namely *nasi pincuk*. The public is also asked to donate several kg of rice.

"But, before it was replaced with rice, people were asked to donate rice, but it was felt that it was wasteful so 5 kg of rice was replaced."

An effort made by the village government to invite local communities to work together hand in hand to preserve existing traditions.

Apart from preserving traditions, the local village community also pays attention to the surrounding environment, such as the endemic flora and fauna of Muria. The effort made is to form an association, namely PMPH, where PMPH is an association of people who care about forests. PMPH was formed because the local community was aware of the importance of preserving nature. PMPH obtains funds through self-help or contributions from each member. The results of this self-help are used for the conservation process. However, PMPH also collaborates in preserving the flora and fauna in Colo.

Apart from that, PMPH or the Association of Forest Concerned Communities also collaborates with PT. Djarum in protecting animals. Also collaborating with TNC or The Nature Conservancy is a world organization that cares about the natural environment which was founded by Scientists in 1951. This organization stands alone without any interference from the government and the number of members has reached more than 1 billion. Meanwhile, Yekan is a national organization that cares about the natural environment. These efforts are being made by the village government to protect the endemic flora and fauna typical of the Muria Mountains. This is one of the local wisdoms that must be protected in addition to local traditions.

## **Conclusion**

Based on geographical conditions, Colo Village, Dawe District, Kudus Regency is included in the highland area, giving rise to potential disasters in the form of landslides. Landslide activity in Colo Village was recorded as occurring in 1952, 2000, 2020 and 2022. The Colo community has a way to mitigate potential disasters, namely with a cultural approach. The local wisdom of the Colo people is considered capable of preserving nature and the environment in the form of rituals, including the Wiwit Kopi Tradition, the Earth Alms Tradition, the Sewu Kupat Tradition, and the Guyang Cekathak Tradition. The local wisdom of Colo Village contains the stages proposed by Van Peursen, namely the mythical, ontological and functional stages. The existing form of tradition has the function of weakening the potential for land degradation, weakening the potential for erosion and landslides and drought.

Efforts to preserve the environment based on local wisdom in Colo Village are viewed from Sonny Keraf's concept of environmental ethics consisting of an attitude of respect for nature, responsibility, cosmic solidarity, love and concern for nature, the principle of no harm, the

principle of living simply and in harmony with nature, the principle justice, democratic principles, and the principle of moral integrity. There is also a tradition of developing village potential in the form of tourism and agriculture. Therefore, the recommendation in this research is that the people of Colo Village remain steadfast in preserving local wisdom as a medium for disaster mitigation, because it is considered capable of reducing the impact of disasters. For society in general, by looking at the many disaster problems that occur in several areas, to regenerate local wisdom which has value in mitigating natural disasters. The government is expected to make local wisdom the main focus in drafting regulations related to community-based disaster risk reduction.

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