

Myth, logos, and ecology: Local community perception of social signs on the slopes of Semeru Mountain post-disaster

Mitos, logos, dan ekologi: Persepsi masyarakat lokal atas tanda sosial di lereng Gunung Semeru pasca bencana

Radius Setiyawan^{1,2} , Holy Ichda Wahyuni^{3*} , Nur Hidayatullah Romadhon⁴ ,
& Adelin Aprilia Sari⁵ 

¹Department of English Education, Faculty of Teacher Training and Education, Muhammadiyah University of Surabaya

²Doctoral Student at Social Science, Faculty of Social and Political Sciences, Universitas Airlangga

³Primary School Teacher Education, Faculty of Teacher Training and Education, Muhammadiyah University of Surabaya

⁴Biology Education, Faculty of Teacher Training and Education, Muhammadiyah University of Surabaya

⁵Magister Student at Psychology, Faculty of Psychology, Universitas Airlangga

Address: ^{1,3,4}Sutorejo St. No. 59 Surabaya, East Java – 60113, Indonesia

^{2,5}Airlangga 4-6 Surabaya, East Java – 60286, Indonesia

E-mail: holyichdawahyuni@um-surabaya.ac.id

Article History: Received 31 January 2023; Accepted 27 November 2023; Published Online 29 November 2023

Abstract

Seeing a social sign, results in striving to derive the meaning from the sign when it is used. One of the events that appear in various types of social sign is a disaster. It creates various myths that also act as a social sign; one of them is a myth about the relationship between humans and nature. This study aims to explain the perception of the local community in the Sumber Mujur village of Semeru Mountain Slope about social signs made as myth post-disaster eruption in 2022. The myth that is believed by the local community proved to have relevance to ecological sustainability. This research uses qualitative methods through deep interviewing technique. Informants in this study are a local community in the Semeru Mountain area, East Java which is part of the 2021 Semeru eruption survivors. Based on existing findings, most myths grow in line with a scientific view. Although the background or ways of working is different, myth and logos have compatible relevance in the context of ecology sustainability. This study concludes that myths give impact on society's attitude so as to maintain ecological sustainability, as well as a form of cultural adaptation, both in terms of conservation awareness and mitigation.

Keywords: local community perception; Semeru post-disaster; social signs

Abstrak

Melihat tanda sosial adalah mengupayakan kemunculan makna dari tanda ketika tanda tersebut digunakan. Salah satu peristiwa yang memunculkan berbagai jenis tanda sosial adalah bencana. Bencana menciptakan berbagai mitos yang juga berperan sebagai tanda sosial, salah satunya adalah mitos tentang hubungan antara manusia dan alam. Studi ini bertujuan untuk menjelaskan persepsi masyarakat lokal di desa Sumber Mujur Pronojiwo Lereng Gunung Semeru tentang tanda sosial yang dijadikan mitos pasca bencana erupsi di tahun 2022. Mitos yang diyakini masyarakat setempat ternyata memiliki relevansi terhadap keberlangsungan ekologis. Studi ini menggunakan metode kualitatif dengan menggunakan teknik wawancara mendalam. Informan dalam studi ini adalah masyarakat lokal yang berada di kawasan Gunung Semeru, Kabupaten Lumajang, Jawa Timur yang mana sebagian besar adalah penyintas erupsi Semeru 2021. Berdasarkan temuan yang ada, sebagian besar mitos yang berkembang sejalan dengan pandangan ilmu pengetahuan. Meskipun memiliki latar atau cara kerja yang berbeda tetapi mitos dan logos mempunyai relevansi yang selaras dalam konteks keberlangsungan ekologi. Studi ini berkesimpulan bahwa mitos-mitos tersebut memberi pengaruh atas sikap masyarakat yang harus menjaga kelestarian ekologis, serta sebagai bentuk adaptasi kultural, baik yang sifatnya kesadaran konservasi, maupun mitigasi.

Kata kunci: persepsi masyarakat lokal; Semeru pasca bencana; tanda sosial

Introduction

Social sign refers to a draft thinking from people or a group of people using it a sign and reducing it to a certain meaning. Social signs are also interpreted as some existing meaning in a person's mind about object indicated by a sign. The most important thing in social sign is striving to discern the meaning when the sign is used (Sambas 2016). One of the events that appear in various types of social sign is a disaster.

Disasters have a wide and complex spectrum of studies. Therefore, disasters are often associated with human life such as theology, beliefs, and even culture (Indiyanto et al. 2012). It also includes producing various social signs that are part of people's beliefs. This is in line with the statement that the presence of disasters is often seen as a socio-cultural phenomenon that places humans or victims of natural disasters as the central point of studying a disaster. It is called the central point because everything related to humans, both their perspective and actions, is in the spotlight, especially those related to responses to natural disasters, including beliefs related to an event (Ravankhah et al. 2019).

In the case, the Yogyakarta Merapi disaster in 1994 became one of a number of studies about people's response to natural disaster. This study uses a cultural interpretation (interpretive) approach that takes humans as the central point of study. Judith Schlehe found that the giving of meaning by the people of Yogyakarta to natural disasters is very plural and cannot be separated from morality, religious practices and teachings, habits, economic interests, and existing socio-political conditions. The interpretation of the Merapi eruption disaster according to Schlehe, will forever be contested and negotiated (Schlehe 2007). Schlehe's findings come from an explanation of the political significance of nature in Java, an explanation of the history of the volcanic eruptions of Merapi, including the perspectives of residents around Merapi and their ritual activities.

According to existing records, disasters will create various interpretations from various parties. in the case of the Merapi disaster in 1994, Ahimsa-Putra found there was a battle of interpretations of the disaster, between the interpretations of the common people, the interpretations of kings or government authorities and the interpretations of spiritual figures such as Islamic scholars and psychics. In line with this, in the context of the Merapi disaster, Ahimsa-Putra argues that interpretations of disasters tend to be politicized and these interpretations do not reflect a 'scientific' analytical mindset. Ahimsa-Putra's opinion is based on the assumption that humans are beings who always give meaning, a person's presence in a social group plays a role in shaping perceptions or understanding, and human behavior is influenced by his understanding (Ahimsa-Putra 2000). In another study conducted by Hasan Basri (2014) on the Yogyakarta earthquake in 2006, three aspects have been found that influence the process of contesting community meanings in responding to disasters, namely religion, Javanese culture, and scientific explanation (Basri 2014).

The latest research was also carried out by Bukhori Muslim in 2019 which examined the perceptions of the Sasak tribe toward the Lombok earthquake which is associated with the myth of Dewi Anjani. The approach used in this study is descriptive qualitative with the data collection techniques in the form of semi-structured in-depth interviews, observation, and documentation. This research resulted in the finding that the perceptions of the Sasak tribe believe in the glory of Dewi Anjani, so a special ritual is needed when climbing Mount Rinjani as a tribute. The Sasak people also perceive that the Lombok earthquake occurred because of the presence of Dewi Anjani and God's will to give a warning to the Sasak tribe. One of the causes for the appearance of the warning is natural damage that has occurred on Mount Rinjani as a form of violation of the ritual tradition before climbing (Muslim 2019).

This condition certainly occurred in the disaster on Mount Semeru too. At the end of 2021 there was a natural disaster, the eruption of Mount Semeru, which had an impact on various areas around it. The impact was not only physical damage, but also psychological and social. Like other natural disasters, the eruption of Mount Semeru caused various responses from the local community who were victims. From the search, several expressions were born from public trust, some of which appeared as a response after the disaster. One of the beliefs of the people inherited from generation to generation is myth. The

local people of the Mount Semeru area also have various myths that have developed. These are still well preserved and inherited from generation to generation, and most are closely related to the patterns and norms of human relations with the universe, where there are still many places that are believed to be sacred (Su & Tanyag 2020).

Myth itself is defined as a belief that lives and develops in the midst of society, and directly or indirectly has both positive and negative implications for the universe. Myth is a genre of folk prose and is categorized as oral literature. The Great Dictionary of the Indonesian Language defines myth as a story which contains stories of gods and heroes in the past, interpretations of the origins of the universe, humans, and nations, and reveals things that are supernatural or metaphysical. In the Javanese oral tradition, myth is also interpreted as a story that contains Javanese belief in supernatural things (Edraswara 2005)

According to Barthes (2007 cited in Liando 2021), myths reinforce the ideology of capitalist society. The essence of myth is to disguise what is actually a bourgeois representation as a natural and universal fact (Liando 2021). Like ideology, myths are always present, and it is impossible to escape or avoid them at the level of everyday life (Tatipang et al. 2021).

Furthermore, the theory of myth in Jung's study, as quoted from a book by Renos K. Papadopolous entitled *The Handbook of Jungian Psychology, Theory and Practice*, reveals that myths are believed and influenced by the unconscious that exists within a person or also called the collective unconscious: "The collective unconscious consists of 'primordial images' and 'mythological motifs' and Jung concludes that our myths, legends and fairy tales are carriers of a projected unconscious psyche. Jung analogizes this process to the way in which humans have projected meaningful images onto the stars and 'constellated' them in forms which are then named" (Papadopoulos 2006).

In the book, Jung also explains the relationship between myths that occur in society and the unconscious that occurs in humans. So, the existence of unconsciousness in a person who is repressed will cause a belief within, especially if it continues and the belief that occurs will roll and turn into a myth, although in some areas the myth will not always be the same, due to changes in the mindset of society. The myth that Mount Semeru is closely related to mystical things is supported by the perception that nature will be damaged and have a big impact if it is not cared for and preserved. Or nature with its transcendental power shows its anger to anyone who damages it (Permana & Hartanto 2019).

Natural disasters that occur, such as the eruption of Mount Semeru, are interpreted from two views. First, that the eruption disaster is something that has been written as destiny or by the will of God, the second is that the eruption disaster is associated with human behavior, between disaster and grace (Hettige & Haigh 2016). Each disaster provides different perceptions from the community. The implication is as the impact shown at the time of the mountain disaster, both positive and negative impacts. It is accepted by the community as a gift, as is the culture of traditional Javanese society. Unlike the image of a critical society, which in the development of knowledge is able to analyze phenomena according to perception. There are some people who do not question nature, but approach it from the issue of human behavior, which has not been widely studied (Permana & Hartanto 2019).

The symbolization of disaster or natural anger is indeed denied as mystical, but the impact of natural anger can be seen in the case of disasters, such as the eruption of Mount Merapi, which exists because some people still believe that the mountain is a symbol of pakubumi, which is inhabited by supernatural crowns, as guardians. Therefore, some Javanese people still have the belief to sacredize Mount Merapi. For the santri community, beliefs and beliefs about the myth of the Semeru mountain disaster have the same substance, but different orientations, namely disaster is the destiny of God Almighty (Rokib 2013).

Recently, significant conceptual and scholarly efforts have been made to explore the relationship between science and myth (Brenner & Katsikis 2020). While often exaggerating the difference between mythic and scientific behavior, in this case some research places the ontology of this separation at the root of modern anthropocentrism and connects it to disclosures with widely recognized ecological, economic, and political concerns. Defining the Anthropocene as an era distinguished by another human realm

and subsequent human dominance over nature, they have suggested that the global socio-ecological crisis results from a worldview that has failed to see humans as embedded in the natural world and act accordingly (Roncancio et al. 2019). In other words, humans have become the species determining what happens to nature.

The relevant ecological concepts in this research are socio-ecological studies. These studies provide an abstract concept through the separation of both anthropos and nature as a whole totality. In modern studies, society in general has been understood not only as radically separated from nature but also as an abstract force that dominates nature (Ghosh 2020). Socio-ecological systems are made up of biological, geological and physical (bio-geo-physical) components and the various social actors and institutions associated with these components. Socio-ecological systems are complex and adaptive, and are constrained by spatial scopes or functions connected to specific ecosystems and problem contexts (Markaki 2022).

Harton defines local communities as a group of people who have lived together for a relatively long time, inhabit a certain area, have the same culture, and carry out most of the activities within that group of people. According to Government Regulation Number 21 of 2021, local communities are groups of people who carry out their daily life based on accepted customs and generally accepted values but are not fully dependent on certain coastal and small island resources. The presence of myths in a local community also has a function in influencing behavior, styles, and habits and these functions include: (1) as a projection system; (2) the forerunner to the development of a culture; (3) social control or control of social norms; (4) children's educational media; (5) a warning so that people have the awareness that they are not creatures that are more superior to nature (Hutomo 1991).

The novelty value of this research is that it tries to make a positive relationship between myth and the view of logos (science). This positive relationship has implications for human perception in building relationships with the environment. Based on the discussion on the function of myth above, it can be seen that myth also plays as a social sign. Therefore this research aims to reveal; (1) the myths believed by the local people of the Mount Semeru area; (2) how myths are viewed from a logos point of view; and (3) how existing myths relate to ecological sustainability.

Research Method

This research is a qualitative research, referring to Creswell (in Satori & Komariah 2017) which states that the definition of a qualitative research method is a process of inquiry (question/investigation) regarding the understanding of a matter to obtain data, information, and text views of respondents using various methodologies in a social or humanitarian problem or phenomenon.

Table 1.
Data on local community informants in the slope area of Mount Semeru

Informant (initial)	Status	Gender	Age
VER	Local citizen	Man	41 years old
SUM	Head of RT	Man	47 years old
NUL	Emergency Elementary School Teacher	Man	44 years old
MAR	Elders Village	Woman	61 years old
SAF	Local volunteer	Man	44 years old
SUR	Elders Village	Woman	52 years old
NUR	Youth local citizen	Man	27 years old
DAR	Elders Village	Woman	59 years old
YAN	Farmer/resident local	Man	46 years old
ZAH	TPA teacher	Woman	28 years old
ROM	Volunteer local kitchen general	Woman	38 years old
AST	<i>Mlijo</i> / local resident	Woman	39 years old
SOL	Former Secretary of Village	Man	49 years old
SAR	Local citizen in refugee camp	Woman	35 years old

Source: Personal documentation

In this study, the focus of the research is: (1) the myths that are believed by the local people of the Mount Semeru area; (2) how myths are viewed from a logos point of view; and (3) how existing myths relate to ecological sustainability. The data collection method used in this research is in-depth interview method. The in-depth interview method was carried out to collect data directly in the field by conducting interviews with informants. The informants in this study were local people in the Mount Semeru area, Lumajang Regency, East Java, where most of them are survivors of the 2021 Semeru eruption. The criteria for informants in this study are as follows; a local resident who resides in the Mount Semeru area, the resident is a survivor of the Mount Semeru eruption disaster, is a representation of community leaders, village heads, teachers, local volunteers, and housewives. This research was conducted in Sumber Mujur Village, Candipuro District, Lumajang Regency, East Java, after the Semeru eruption disaster occurred in January to February 2022. Some of the people who became informants in the study are presented in Table 1.

Data analysis in this study used data analysis techniques proposed by Miles and Huberman, which is Reduction, Display, and Conclusion/verification. At the Reduction stage, the researcher sorts the data obtained, then at the Display stage, the researcher presents the data, the data presentation can be done descriptively or using tables, and, at the Conclusion stage, the researcher draws conclusions from the research results.

Results and Discussion

Based on the findings in the field, there are various kinds of myths that coexist with volcanic eruptions, or what can be called social signs. The myths believed by the local community are very diverse. Most of the myths are closely related to the relationship between humans and nature.

The results of the interview show that one the myths, is the myth in the bamboo forest area. The location is located in Sumbermujur Village, Candipuro District, Lumajang Regency, East Java. In the bamboo forest area, there is a myth about the Uling fish as guardian of the bamboo forest and springs. Based on the results of interviews with informants who are local people, it is known that the local people believe that if someone takes flora and fauna in the bamboo forest, their family will be affected by disaster. The community also believes that it will be disastrous if they hunt and consume snakehead fish which are considered as guardian animals of the Deling Wellspring. Most of the informants know and justify this and a local citizen said.

“Several years ago, there was someone who came from outside the village of Sumbermujur, this person did not know anything about the myth, so he finally caught several fish that lived in a wellspring pond. The person then gets a rare disease which no cure. Since then, local people believed that the story of the sacred spring in the bamboo forest pond is true.” (Informant VER).

This story was also explained by the village elder, he said that, “Deling Wellspring is a pond which is the source of mountain wellspring. There is a source of all springs that will never run out or dry up at any time in the pond, and it has become a sacred place for the people of Lumajang.” (Informant SUR). This was also confirmed by the statements of other informants, “Because of the myth of Deling, no one contaminates or disturbs the life of the fauna that inhabits the pond, because of fears for the safety of themselves and their families.” (Informant NUR).

The next myth that has developed among the local people of the Semeru area, especially around the bamboo forest, is that the murkiness of Deling wellspring is believed as a sign of advent disaster. “When the flow of the Deling wellspring does not come out, or when the Deling becomes murky, it is a sign that Mount Semeru will erupt and this has already happened in the eruptions in the nineties and in 2021.” (Informant YAN).

Another myth that is quite well-known in the Semeru area is about the figure of Putri Kuning, most of the informants know and justify this, one of whom is a teacher at one of the emergency schools who said that.

“Putri Kuning as a caretaker of Ranukumbolo Lake, Mount Semeru is also no less familiar among the local people of Lumajang Regency. The community believes not to take or fishing in the lakes around Semeru, which is Ranukumbolo Lake, because it is believed to be sacred by its guardian, Putri Kuning. According to local people, not anyone can see the appearance of Putri Kuning, only a *Trah* (traditional elder/caretaker) who can see the appearance of Putri Kuning, the guardian of Ranukumbolo Lake. This belief makes people very careful in protecting the lake as a sacred place.” (Informant NUL).

The eruption of Mount Semeru was not the first time, in historical records, it has occurred several times. Responding to this incident, there is a myth that is believed by the local community that the appearance of a red glow is considered that the condition of Mount Semeru is stable, or has no potential for an eruption. Conversely, if the red glow does not appear, it can be a sign of an impending disaster that needs to be watched out for. This was conveyed by a local volunteer.

“The local community believed that the appearance of a red glow is considered that the condition of Mount Semeru is stable, or has no potential for an eruption. Conversely, if the red glow does not appear, it can be a sign of an impending disaster.” (Informant SAF).

Furthermore, a myth that exists when a disaster occurs is the red plate myth. Some people believe that the presence of public officials or politicians (pronounced: red plate) is often followed by a disaster (one of the statements made by the informant SAF). However, after confirming to other informants, most people doubt this belief; they think that there is no influence of the arrival (visit) of red plates with the occurrence of a disaster. Some of them also do not believe in the influence of the arrival of the red plate or the government causing the eruption of Mount Semeru.

One of the social signs born of public belief is myth. Based on the research, there are several myths that are believed by the people on the Semeru Slopes. Some of the myths have been around for a long time, and most of them emerged after a disaster occurred as part of the response of various people in interpreting a natural event. As is well known, based on BNPB sources for Lumajang Regency, volcanic activity of Mount Semeru has occurred several times, in 1990, 1992, 1994, 2002, 2004, 2005, 2007, 2008, 2020, and 2021. The frequency of these disasters surely forms an experience and a response that ultimately becomes the forerunner to the creation of various social signs, one of which is myth.

Myth in the context of this study is in line with Karen Armstrong’s views. Even though this has been seen as an absurd thing, it is considered a true and effective influencer. Armstrong (2016) said that a myth does not need to provide factual information or logical reasons, because myths are basic guidelines or unwritten rules for people to live their lives, so that between myths and the lives of local people there is a close relationship. Below are some of the myths revealed by the local people on the slopes of Mount Semeru.

Myth in the view of society often clashes with a logos view, or science. Science is considered to have advantages over myth. However, in a new view of myth, as expressed by Morton Klass in one of the sub-chapter titles of his book, *A Myth is as Good*, myth is seen as transcending historical-ahistorical duality, myth actually has a timeless pattern. Not only does it promise factuality, it turns out that myth also manages to provide understanding and meaning, which at a certain point is in line with and integrates with scientific assumptions (Klass 2019).

This is as in the myth of the local community about Uling fish as guardians of the bamboo forest and Deling wellspring. The people believe that it will be disastrous if they hunt snakehead fish which is considered as the guardian animal of the Deling wellspring. Uling fish itself or better known as Sedat fish, belongs to the Anguillidae family. Some regional names of uling fish are such as masapi fish, moa, sidat, lumbon, larak, lubang, gateng, denong, mengaling, lara, luncah, sigili and pelus fish (Luthfiana 2021). The results of tracing the protection status of sidat (uling), the Ministry of Maritime Affairs and Fisheries (KKP) through the Directorate General of Marine Spatial Planning (Ditjen PRL) confirmed that there was a National Action Plan (RAN) for snakebite (sidat) conservation in the 2016-2020 period.

The evaluation aims to update the National Action Plan for sidat conservation for the next period, from 2021 to 2025. In 2020, the MMAF has designated sidat as a limited protected fish species through a Decree of the Minister of Maritime Affairs and Fisheries (Kepmen KP). Number 80 of 2020 concerning Limited Protection of Eels (Luthfiana 2021).

In line with this, the myth of Putri Kuning as the guardian of Lake Ranu Kumbolo Semeru also has a correlation with the ecosystem around the lake. After being believed to be sacred, no one dared to fish or throw garbage in the lake. This sacredness also makes it prohibited to bathe or swim in Ranu Kumbolo. The ban is aimed at climbers or anyone who comes to the lake area. Apart from that, visitors to Ranu Kumbolo are also prohibited from washing, let alone defecating in this lake. If viewed from the point of view of ecosystem quality, Lake Ranu Kumbolo is included in the lentic water category or also known as calm waters. The tapering waters have slow flow characteristics and result in a rapid accumulation of water mass, making it vulnerable to accumulation of pollution. Apart from being vulnerable to pollution, the ban on swimming in Lake Ranu Kumbolo is also related to safety. It is known that Lake Ranu Kumbolo has extreme temperatures and a depth of 28 meters (Harlina 2021).

Myth in the midst of society is also considered as a code for the occurrence of a natural event. Such as the belief that the Deling wellspring will dry up and/or become murky, which is considered a sign of the coming disaster of Mount Semeru's eruption. This code is associated with eruptions in the nineties and in 2021. If we look at the volcanology science released by several Regional Disaster Management Agencies such as Buleleng Regency and Kendal Regency, it is stated that scientifically one of the signs of volcanic activity that has the potential to erupt is a dry spring. This is due to a drastic increase in temperature in the bowels of the earth (Lukyani 2013).

In addition, a myth in the form of a natural code which is also believed by the people of the Mount Semeru area is the red glow myth. The appearance of a red glow is considered that the condition of Mount Semeru is stable, or does not have the potential to erupt. Conversely, if the red glow does not appear, it can be a sign of an impending disaster that needs to be watched out for. However, when examined scientifically, this belief is contradictory. This is because the red glow in the bowels of the mountain that has been visible so far is magma activity which characterizes a volcano with an active status. According to the Kendal Regency Regional Disaster Management Agency, one of the characteristics of a mountain that shows symptoms of an eruption is an increase in temperature inside the mountain, whereas, under normal conditions, magma contains incandescent liquid contained in the layers of the earth with a very high temperature, estimated to be more than 1,000°C. So, the red glow that has been seen by the public is the activity of high-temperature magma. From this phenomenon, it can be seen that not all myths have positive implications for society and the environment. The reason is that there are several myths that actually become local knowledge that is misguided by the community and requires stakeholder education to straighten them out, for example as an educational program for mitigation.

The more actual myth was also revealed by some local people on the slopes of Mount Semeru. In this myth, some local people believe that the presence of a statesman figure (term: red plate) is often followed by a disaster. However, most people doubt this belief, they think that there is no influence of the arrival (visit) of red plates with the occurrence of an eruption. This myth is still reaping the pros and cons. Most people don't really believe in it and believe that pure misfortune is God's will. This myth eventually became a side myth that is only believed by a small portion of society. This belief also proves that myths are also contemporary in nature, which can emerge and develop in the midst of society at any time from the results of associating certain events and can even develop as people's perceptions in the political sector.

Based on the description above, it has been shown that the myth that has been stigmatized as an anti-scientific essay seems to be in line with the logos view. How is the belief rooted in the community in maintaining ecological balance also being pursued by the parties/stakeholders? Levi-Strauss (1958) with his structural anthropological approach, shows how myth works in a society with an organized system structure that is not inferior to science while Armstrong (2016) with a historical approach shows how myths in history are positioned and addressed, especially in relation to science (Deta 2022).

Furthermore, in his book *The Structural Study of Myth*, Levi-Strauss concluded that the distinction between myth and science actually does not refer to differences in quality. Both science and myth have the same well-thought processes and logical flow. The change from myth to science is also not a development of ways of thinking from bad to good. According to Levi-Strauss, myth and science are two different entities that have their respective functions. Both myth and science are driven by a desire to understand the world around them, nature, and their people. The difference is, if the mythical mindset tends to achieve a total understanding of the world, then the scientific mindset emphasizes a specific and limited explanation of a phenomenon through methodological stages. Furthermore, Armstrong (2016) also strengthens her statement that basically myths do not claim an objective fact, but give an idea of new possibilities. Therefore, a myth is considered acceptable not because it is factual, but because it provides insight, meaning in life, and new hope for humans.

Meanwhile, an explanation of contemporary myths is such as the findings of the myths of the local Semeru community, namely the red plate myth. The arrival of a statesman is considered by some people to bring about a natural eruption disaster, although others do not believe this to be the case. Levi-Strauss' statement seems to be able to answer this oddity, that is another problem that is often problematic in understanding myths is the existence of various versions of a myth. Not infrequently, these myth variants contradict each other, which encourages the search for which version is the most valid. The diversity of variations of these myths should not be a problem, the more variants you get, the more visible the unlimited-time pattern of these myths. The existence of various versions of a myth cannot be separated from the workings of myths, especially those rooted in an oral tradition (Levi-Strauss, 1958). This is also reinforced by Ong's statement in *Orality and Literacy* that orality tends to be participatory and situational. It means, orality continuously forms its meaning and structure from the experience of social life so that it is always contextual and relevant (Ong 2002).

Myths and Ecology

Myth is included in the category of literature which has several functions in society including; (1) as a projection system, (2) cultural validation, (3) social control or controlling social norms, (4) a child education tool, (5) giving way to justification for society so that it is not superior, (6) and a tool to protest injustice (Hutomo 1991).

In the context of local communities in the Mount Semeru area, the various myths that have developed mostly have implications for ecological sustainability. Such as the myth regarding the snakehead fish as the caretaker of the bamboo forest and the Deling wellspring, as well as the myth about the Yellow Princess guarding Ranu Kumbolo Lake. Both have the same substance pattern, which refers to past experiences that have been passed down from generation to generation where, if the belief is violated, it is believed that the caretaker of the place will be angry and give disaster to the violator. By rooting this myth indirectly, it can preserve various species, such as sidat fish, bamboo trees, monkeys in the bamboo forest, and various organisms in the lake ecosystem to realize biodiversity conservation behavior there. This also shows that myths can affect human behavior toward norms, such as the harmonization of human relations and the universe.

In line with the research conducted by Rinawati and Puspitasari about the function of the myth of "sedeqah bumi" for the people of Bojonegoro Regency, the results of this study indicate that the myth of almsgiving has its own meaning, one of them is as a coercive and supervisory tool so that community norms will always be obeyed by members of the union (*maintain conformity with accepted behavior patterns as a means of applying social pressure and exercising social control*). The community believes that if the Earth Alms "Nyadranan" is not held, a disaster or unforeseen events will damage Drokilo Village. So that this makes the Drokilo community continue to carry out this tradition as a form of community obedience to nature, which always provides a source of food through crops (Rinawati & Puspitasari 2022).

In other research by Sudiasmo & Muspita (2020) about myth as local wisdom in environment conservation at Bendrong Hamlet, a form of local wisdom is held annually in Bendrong Hamlet, in Suro month, which is Muharram in the Islamic calendar. In this month, there are many essential agendas in Javanese culture,

intended for religious, cultural, and environmental activities. Similarly, village cleaning or *bersih desa* activity is held annually in Suro at Bendrong Hamlet; other activities are building green week activity, cleaning the river, preparing biogas, conservation carnival, and problems raised to be solved.

Other research conducted by Nugraha & Novianto (2022) examined the value of local wisdom in preserving the environment of Telaga Ranjeng, Brebes Regency. This research shows that the local community maintains ethical and moral beliefs that are manifested in environmentally wise behavior, such as one of the norms regarding the prohibition of taking fish in Ranjeng Lake. The myth of a sacred fish is still believed today and functions to preserve the fish in Telaga Ranjeng. Local people also still believe in the myth about the water of Telaga Ranjeng, which is believed to have good luck for agriculture. Indigenous peoples have the titen knowledge of lake water, if the water recedes, it is believed that the community will experience difficulties in doing business, such as farming, and vice versa (Nugraha & Novianto 2022).

The meaning of myths for the sustainability of the universe or in building ecological awareness is expressed by Klass in one of the sub-chapter titles of the book, *A Myth is as Good*. In the ecological context, the myths of indigenous peoples that hint at nature as a subject are actually considered more visionary toward ecological sustainability when compared to modern science with a developmental-extractive style that sees nature as a monetary resource, whose factual consequences are increasingly evident in the global environmental crisis (Klass 2019). This is also reinforced by Armstrong's statement in her book *A Short History of Myth* which states that myths are not just stories that are told for themselves, but rather as instructions about how humans should behave, in this context how myths have a positive influence on human attitudes toward nature. In the midst of an increasingly global ecological crisis, myths that are considered not factual, and in historical lines are often regarded as products of the primitive world, their significance is even more evident in the crisis of modern civilization. As Armstrong said, the myths that have developed have been able to help humans build full awareness of the coexistence of life among fellow creatures and not just humans. On the other hand, modernity with economic pragmatism sees nature as a productive and profitable commodity for human interests and tends to be anthropocentric (Deta 2022).

"(We need myths that) ... glorify the earth as sacred as before, not just use it as a 'resource.' All of this is crucial, because only with a spiritual revolution that can match our technological intelligence can we save our planet." (Armstrong 2016).

This is relevant to contemporary social theories of myth, namely the theory of the collective unconscious. The collective unconscious consists of 'primordial images' and 'mythological motifs' and Jung concludes that our myths, legends and fairy tales are carriers of a projected unconscious psyche. Jung analogizes this process to the way in which humans have projected meaningful images onto the stars and 'constellated' them in forms which are then named (Papadopoulos 2006). Recently, when the global world entered the pandemic period, the presence of myths began to be taken into account, which is a time when humans were faced with questions about the deepest meaning of life, signs of awakening regarding theological beliefs, and beliefs that could be seen clearly. As in Putra's (2020) observation that nowadays the pendulum of philosophy which departs from myth to rationality seems to be returning to the mythology which is marked by the awakening of awareness of language in human life. It is difficult to point to the precise reasons for this shift in views. This happens either because of boredom or stuffiness in rigid subjectivity and rationality, or because it's time to realize something about a part of human life that has been neglected (Putra 2020).

Furthermore, the myths of the people of the Mount Semeru Region also have a function as a code for the occurrence of a natural event. As in the myth of the murky of Deling wellspring, and the myth of red glow. Myths or beliefs about these codes will of course influence people's attitudes and decision-making, such as on mitigation activities. The trusted code does not always require scientific proof, it refers more to empirical experience from time to time. This is reinforced by the statements of Indrayanto et al. (2012) in their research on religion, culture, and disasters which found that in society there are beliefs and knowledge which sometimes cannot be tested by scientific procedures but effectively determine attitudes and steps taken.

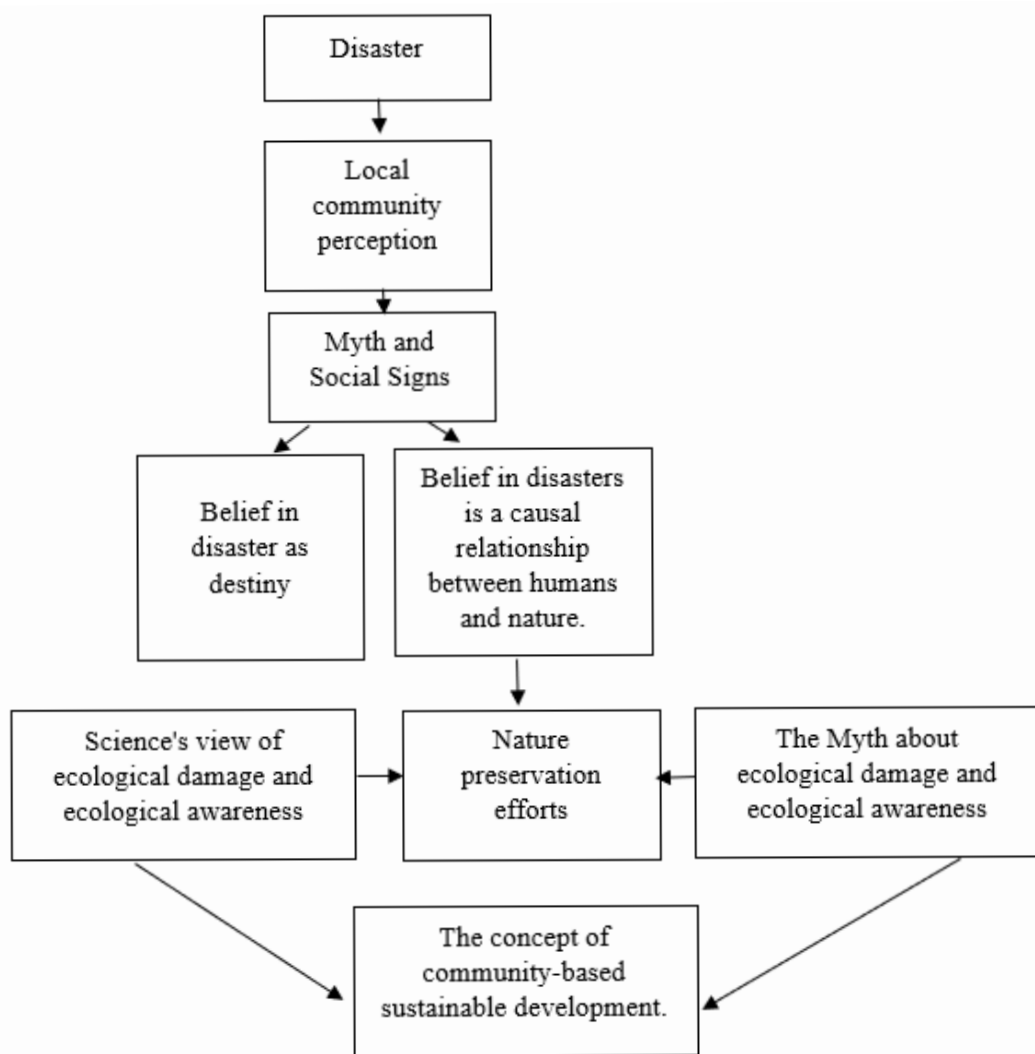


Figure 1.

Conceptual framework of the relationship between myth, logos, and ecology

Source: Personal document

Furthermore, according to Levi-Strauss (1958), people who are oriented toward oral (myth-based) traditions tend to have very thorough knowledge of their environment and resources. They have intellectual tools, just like philosophers and even to a certain extent like scientists, although not completely the same. So, it is not surprising that the local people in the Semeru area have a sensitivity to their belief in the codes indicated by nature, although not all of them are the same methodologically in scientific explanations, for example, in the myth of the red glow in Semeru. Because it doesn't mean that myths always need affirmation, confirmation, or validation from science, myths will always live with society. For example, the agricultural knowledge of the Marapu people, which was also validated by the latest agricultural science.

Nevertheless, the Marapu people have lived with this customary knowledge via myths for a long time. Indigenous knowledge that was born without scientific methods is a form of their understanding that is built from long experience. This shows that myths can also be embedded into a cultural adaptation for people living life, especially about how they behave and treat nature in their way (Figure 1). Talking about cultural adaptation, Marfai (2012) emphasizes that adaptation by humans to their environment including the physical environment and natural processes such as the occurrence of disasters shows an interrelationship between humans and the environment. In this interrelated relationship, changes in one component will cause other changes, and vice versa. In this context, the human ecology approach emphasizes or shows interplay between the environment and the physical processes that take place in it and social/cultural systems (Marfai 2012).

Conclusion

Disasters are often associated with human life, such as theology, beliefs, and even culture, so everything related to humans, both their perspective and actions, is in the spotlight, especially those related to the response to natural disasters, including the developing beliefs that are also in response to an incident. The eruption of Mount Semeru has also elicited various kinds of responses from the local community, especially the survivors. Responses were very diverse, ranging from expressions that lead to theological beliefs, to myths that develop. The function of myths is as a projection, social control, and warning, if it is associated with the context of natural disasters, myths can also be used as a cultural adaptation.

Some of the myths that developed among the people of the Mount Semeru area include; the myth of the uling fish as guardian of the bamboo forest and the Deling wellspring, the myth of Putri Kuning as the guardian of Lake Ranu Kumbolo, the myth of the murky nature code of the Deling wellspring, the myth of the red glow and the myth of the red plate. Most of the myths that develop are in line with the logos view, even though myth and science have their own ways of working. However, myths do not always need scientific validation. Myth works and has its function. Like the myths that develop in the people of the Mount Semeru area, most of the myths have implications for the harmonious relationship between humans and nature. These myths influence the attitude of the people who must maintain ecological sustainability, as well as a form of cultural adaptation, both in terms of conservation awareness and mitigation.

So, the novelty value of this research is that it tries to make a positive relationship between myth and the view of logos (science). This positive relationship has implications for human perception in building relationships with the environment. The implication of this research for science is information that local wisdom that grows in the community, which is often called a myth, if studied in depth can become a social movement in the context of ecological sustainability, through the concept of community-based sustainable development.

References

- Ahimsa P & Heddy S (2000) Peringatan, cobaan dan takdir: Politik tafsir bencana merapi. Masyarakat Indonesia XXVI (1):27-54.
- Basri MH (2014) Contesting the meanings of disaster: An anthropological study on yogyakarta people's responses to the may 27, 2006 earthquake. *Al-Albab* 3 (2):77-79. <https://doi.org/10.24260/alalbab.v3i2.236>.
- Brenner N & Katsikis N (2020) Operational landscapes: Hinterlands of the capitalocene. *Architectural Design* 90 (1):22-31. <https://doi.org/10.1002/ad.2521>.
- Deta KU (2022) A myth is as good: Menuju pemahaman baru tentang mitos. Program Studi Agama Dan Lintas Budaya (CRCS), Sekolah Pascasarjana UGM. <https://crccs.ugm.ac.id/a-myth-is-as-good-menuju-pemahaman-baru-tentang-mitos/>.
- Edraswara S (2005) Tradisi lisan jawa. Narasi.
- Ghosh N (2020) Empire and ecology in the bengal delta. by debjani bhattacharyya. New Delhi: Cambridge University Press. *The Journal of Asian Studies* 79 (4):10420-1043. <https://doi.org/10.1017/s0021911820002764>.
- Harlina (2021) *Limnologi*. Makassar: Gunawana Lestari.
- Hettige S & Haigh R (2016) An integrated social response to disasters: the case of the Indian Ocean tsunami in Sri Lanka. *Disaster Prevention and Management* 25 (5):595-610. <https://doi.org/10.1108/DPM-11-2015-0263>.
- Hutomo SS (1991) Mutiara yang terlupakan pengantar studi sastra lisan. Himpunan Sarjana Kesusastastraan Indonesia Hiski.
- Indiyanto A, Baiquni A, & Kuswanjono A (2012) Agama, budaya dan bencana : Kajian integratif ilmu, agama, dan budaya. Jakarta: Mizan Pustaka.
- Karen A (2016) A short history of myth (the myths series, 7). Brilliance Audio.
- Levi-Strauss C (1958) *Structural anthropology*. New York: Basic Books.
- Liando MR (2021) Religiusitas dan dimensi ekologis di balik mitos burung manguni pada masyarakat minahasa. *Jurnal Interdisiplin Sosiologi Agama (JINSA)* 1 (1):20-38.

- Lukyani L (2013) Tanda tanda gunung akan meletus dan material yang dikeluarkannya. Kompas, 19 March. [Accessed 19 March 2023]. <https://www.kompas.com/sains/read/2022/03/19/140200723/5-tanda-akan-meletusnya-gunung-berapi?page=all>.
- Luthfiana N (2021) KKP Perbarui RAN konservasi sidat yang dilindungi secara terbatas. Dinas Ketahanan Pangan Dan Perikanan.
- Marfai MA (2012) Pengantar etika lingkungan dan kearifan lokal. Yogyakarta: Gadjah Mada University Press.
- Markaki M (2022) Kentos: socio-ecologies of care. *Frontiers of Architectural Research* 11 (6):1047-1061. <https://doi.org/10.1016/j.foar.2022.04.009>.
- Morton K (2019) *Ordered universes approaches to the anthropology of religion*. New York: Routledge.
- Muslim B (2019) Persepsi masyarakat suku sasak terhadap gempa bumi lombok. Nahdlatul Wathan International Conference on Education, Culture, and Religious Movement, April.
- Nugraha AHA & Novianto VF (2022) Nilai kearifan lokal pada pelestarian lingkungan telaga ranjeng kabupaten brebes. *Jurnal Sosialita* 17 (1):111-126.
- Ong WJ (2002) *Orality and literacy the technologizing of the word*. New York: Routledge.
- Papadopoulos RK (2006) *The handbook of jungian psychology, theory and practice*. New York: Routledge.
- Permana SA & Hartanto S (2019) Mitologi sebagai pendidikan kebencanaan dalam memahami erupsi gunung merapi. *Refleksi Edukatika : Jurnal Ilmiah Kependidikan* 9 (2). <https://doi.org/10.24176/re.v9i2.3277>.
- Putra AWP (2020) Bahasa mitik-simbolik dari antroposentris ke kosmosentris. *Focus, I*(2), 58–64. <https://doi.org/10.26593/focus.v1i2.4529>.
- Ravankhah M, de Wit R, Argyriou AV, Chliaoutakis A, Revez, MJ, Birkmann J, Žuvela-Aloise M, Sarris A, Tzigounaki A, & Giapitsoglou K (2019) Integrated assessment of natural hazards, including climate change's influences, for cultural heritage sites: the case of the historic centre of rethymno in greece. *International Journal of Disaster Risk Science* 10 (3):343-361. <https://doi.org/10.1007/s13753-019-00235-z>.
- Rinawati & Puspitasari I (2022) Fungsi mitos “Sedekah Bumi” Teori William. R. Bascom. *Jurnal Bastra (Bahasa dan Sastra)* 7 (3):472-480.
- Rokib M (2013) *Teologi bencana: Studi santri tanggap bencana*. Yogyakarta: Pital.
- Roncancio IV, Temper L, Sterlin J, Smolyar NL, Sellers S, Moore M, Melgar-Melgar R, Larson J, Horner C, Erickson JD, Egler M, Brown PG, Boulot E, Beigi T, & Babcock M (2019) From the anthropocene to mutual thriving: An agenda for higher education in the ecozoic. *Sustainability (Switzerland)* 11 (12):1-19. <https://doi.org/10.3390/SU11123312>.
- Sambas S (2016) *Antropologi komunikasi*. Bandung: CV Pustaka Setia.
- Satori D & Komariah A (2017) *Metodologi penelitian kualitatif*. Bandung: Alfabeta.
- Schlehe J (2007) Cultural politics of natural disasters: Siscourses on volcanic eruptions in Indonesia. In: Casimir MJ (ed). *Culture and The Changing Environment: Uncertainty, Cognition, and risk Management in Cross-Cultural Perspective*. New York: Berghahn.
- Su Y & Tanyag M (2020) Globalising myths of survival: Post-disaster households after Typhoon Haiyan. *Gender, Place and Culture* 27 (11):1513-1535. <https://doi.org/10.1080/0966369X.2019.1635997>.
- Sudiasmo F & Muspita NC (2020) Local wisdom in environment conservation: A study on a conservation and energy self-sufficient village. *Masyarakat, Kebudayaan dan Politik* 33 (4):405-412. <https://doi.org/10.20473/mkp.v33i42020.405-412>.
- Tatipang DP, Oroh EZ & Liando NVF (2021) The application of mind mapping technique to increase students' reading comprehension at the seventh grade of SMP. *Kompetensi* 389-397.

Author Biographies

Radius Setiyawan is a lecturer in the Department of English Education, Faculty of Teacher Training and Education, University of Muhammadiyah Surabaya, as well as a doctoral student at the Faculty of Social and Political Sciences, Universitas Airlangga, Surabaya.

Holy Ichda Wahyuni is a lecturer in the Primary School Teacher Education, Faculty of Teacher Training and Education, University of Muhammadiyah Surabaya.

Setiyawan et al.: "Myth, logos, and ecology: Local community perception of social signs"

Nurhidayatullah Romadhon is a lecturer in the Biology Education, Faculty of Teacher Training and Education, Muhammadiyah University of Surabaya.

Adelin Aprilia Sari is a student of Psychology Master Programme, Faculty of Psychology, Universitas Airlangga.