P-ISSN: 2808-0467
E-ISSN: 2808-5051
Website URL: https://iss.internationaljournallabs.com/index.php/iss

CULTURAL ADAPTATION OF *SEDULUR SIKEP*: COMMUNITY-BASED DISASTER RISK REDUCTION STRATEGY IN BATUREJO VILLAGE

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PAPER INFO

Received: *July 2023*
Revised: *August 2023*
Approved: *August 2023*

ABSTRACT

Background: Integration of various knowledge in response to various things that interfere with their existence both geographically, economically, socially maintaining livelihood assets, encouraging changes in the context of life of the *Sedulur Sikep* community. The perspective of political ecology in the context of disasters due to development impacts is responded by collaboration built as a network with academics, non-governmental organizations, legal aid institutions and the media.
Aim: This study generally aims to analyze the cultural adaptation carried out by the *Sedulur Sikep* community in Baturejo Village.
Method: This study combines habitus theory and cultural adaptation with the Sustainable Livelihood Framework approach to understand aspects and characteristics of *Sedulur Sikep* life in rural Baturejo. Community-based disaster risk reduction carried out by *Sedulur Sikep* was investigated qualitatively using the *Participatory Rural Appraisal* method to see with various variables, namely: potential and access to resources, vulnerability and capacity, processes and involvement in the Kendeng Care Community network, and see the extent of global/market influence on *Sedulur Sikep*'s vulnerability. Data was obtained through interviews and observations. Inductive writing method that is done descriptively.
Findings: The management of knowledge contained in social values in *Sedulur Sikep* to maintain the balance of living order with nature is the response capacity of *Sedulur Sikep* in maintaining livelihood assets and mainstreaming community-based disaster risk reduction in the nature of prevention and mitigation.

KEYWORDS

Sedulur Sikep, cultural adaptation strategies, knowledge management, disaster risk reduction based on indigenous people, Kendeng

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INTRODUCTION

Java Island is one of Indonesia's food granaries that has the potential to meet food needs independently and even become a supplier of national food needs that must be cared for (Apriyani et al., 2022). Based on data from the Central Statistics Agency, after Grobogan district, Pati is the second largest contributor to agricultural production in Central Java which supports food security not only in Java but also nationally. According to data from the Central Java Agriculture and Plantation Office (Banendro, 2019) rice fields covering an area of 1,022,570.86 hectares in Central Java are managed by 2.88 million farmers and produce grain production up by around 5.8 tons of dry grain per year, making agricultural products a buffer for their lives. Agriculture supported by the nature of Central Java and parts of East Java along

the Kendeng mountains has the character of vast expanses, fertile soil and abundant water sources along the Kendeng mountains as the main support of irrigation in this agricultural area.

However, now, agriculture in Central Java is experiencing various problems, including lack of food diversification and changes in cropping patterns due to climate change and problems of erosion of agricultural land due to land conversion into settlements and industries. This climate change increases air temperatures, seasonal changes where prolonged dry seasons result in extreme droughts so that reservoirs cannot meet water supplies. During the rainy season, rainfall is very high, soaking rice fields so that crop failure continues to loom over farmers. As happened from November 2022 to January 2023 in Pati Regency. In the Press Release of the Kendeng Mountain Care Community Network, it was stated that the floods that hit, had harmed 4,559 houses affected by the flood and destroyed rice fields in seven districts with an area of 3,807 hectares. The calculation of total losses by referring to BPS data in November 2022 uses farmers' grain prices in the range of IDR 5,397/kg and each hectare of productive land produces production of 3 to 6 tons/Ha or an average of 4 tons/Ha (4,000kg), so the total loss reaches IDR 123,278,274 (IDR 123.4 million). The wheels of the economy are cut off by the disruption of public services due to the malfunction of public facilities and infrastructure so that distribution channels are disrupted.

The flash flood disaster in 2022-2023 is suspected in addition to climate change, there is also massive mining. Mining in the Kendeng mountains is carried out not only by large corporations but also small and unlicensed limestone miners. This land use change results in karst as an ecosystem not being able to maximize catchment areas when rainfall is high. The establishment of a cement factory in Pati Regency further threatens and marginalizes the agrarian culture along the foothills of the Kendeng mountains, Central Java to be used as mining land. Productive agricultural lands that lie along Sukolilo sub-district are not spared from the threat of crisis and environmental disaster if mining continues. Three villages affected by flooding in Sukolilo sub-district, namely Kasiyan, Wotan and Gardudero, damaged 152 housing units and 665Ha of rice fields and ponds. One of the affected productive agricultural lands belongs to *Sedulur Sikep* who lives in Baturejo with land ownership spread across Baturejo and Gardudero.

Water needs along the Kendeng Mountains are threatened by drought due to the use of water for the needs of very large cement plant operations. Water is not only taken from surface water but also artosis and water from springs in groundwater basins, which are expected to be drained for the needs of cement plants. This change is due to changes in the regional regulation of Pati Regency No. 5 of 2011 through Regional Regulation No. 2 of 2021 concerning the Spatial and Regional Plan of Pati Regency in 2010-2030. This regional regulation makes all sub-districts in Pati district a mining area, including Tambakromo which is an area with very high vulnerability into an industrial designation area. The area of land used for mining in Pati is around 2,000 Ha, clay mining is 600Ha, and factory area is 18Ha based on Regent Decree No. 660.1/4767 concerning Environmental Permits for the Construction of Cement and Mining Plants RTRW Pati Regency, which has actually been canceled in November 2015 by the Semarang PTUN Legal Assembly.

Deforestation and land use change that cause flash floods are evidence of the neglect of the Kendeng Mountain Strategic Environmental Assessment in 2017, which became the basis for the development of the Pati area with the principle of sustainable development. The

Kendeng Mountain Care Community Network (JMPPK) together with YLBHI, Walhi Nasional, Indonesia Speleology Society (ISS) and the Mining Advocacy Network (JATAM) again voiced a review of changes in spatial planning and the Pati area, including the involvement of farmers and local communities in it. Floods in the rainy season and droughts in the dry season require joint solutions between the Central Government, Regional Governments and affected communities.

Indigenous peoples who call themselves *Sedulur Sikep*, scattered along Kudus, Blora, Rembang and Pati (Rasyidi, 2021), have strong roots in agrarian culture and continue agriculture as a way of life. *Sedulur Sikep* has a complex system of indigenous knowledge gained from empirical experience integrated in the rules of community life to carry out this vocation. Although these values are often considered irrelevant to the times, among others, they isolate the boundaries of their identity with the general public, such as not going to school, not trading, focusing on farming, marriage methods, and various choices of ways of life lived. In the process of adapting to the times and changing environmental conditions, *Sedulur Sikep* seeks new solutions to complex environmental and social problems in their life choices and always finds new ways to develop in challenging conditions. The choice of farming life encourages efforts to sustain livelihood assets to be able to support livelihoods for *Sedulur Sikep*, continue to be carried out.

Knowledge and values of customary systems are tacit, more limited, individual, and stored only in the collective memory of the group (Boamah et al., 2023; Natek & Lesjak, 2021; Sen et al., 2023). Changes in nature, formal knowledge, central and regional policies, technological developments that become new contexts that encourage the co-production of new knowledge and social capital, become important keys in subsequent developments (Moallemi et al., 2023; Norström et al., 2020; Špaček et al., 2022). The collaboration of knowledge creation with various other actors, acceptance and mastery of new technologies both in farming and documentation as well as other supporting factors encourage new adaptation strategies for *Sedulur Sikep* in fighting for its living space and livelihood.

Based on the above background, researchers aim to:

1) Assessing disaster perspectives including types of vulnerabilities, threats and hazards according to *Sedulur Sikep* along with the situation of knowledge management and its application for disaster risk reduction in the local community setting.
2) Analyzing livelihood assets and response capacity through the Sustainable Livelihood Framework approach, especially in agriculture for food security and environmental sustainability for *Sedulur Sikep*.
3) Examine social changes and political ecological contexts that affect the management of knowledge, livelihood assets, and institutional relations for community-based disaster risk reduction.
4) Examining the process and role of cultural adaptation strategies as part of local communities towards disaster risk reduction in building community resilience in *Sedulur Sikep*.

This research is expected to provide insight into the dynamics of *Sedulur Sikep*, bridging a better understanding of the traditions of *Sedulur Sikep* including cultural adaptation strategies that have the potential to contribute to disaster risk reduction efforts both for livelihood assets and broader collective collaboration.

METHOD

To carry out the above research objectives, the research approach used was with an interpretive paradigm with qualitative methods. This type of research is an inductive description research using Participatory Rural Appraisal (PRA) tools as a participatory approach that actively integrates local wisdom to achieve a complete understanding for researchers. The choice of location for this research was based on the existence of *Sedulur Sikep* figures with various perspectives on their respective roles in disaster risk reduction in Baturejo village.

Data collection techniques and approaches in this study was carried out by open, participatory observation techniques and in-depth interviews. Primary data are taken from interviews by purposive sampling, where sampling of data sources is carried out with certain considerations, by determining special characteristics that are in accordance with the research objectives so that it is expected to make it easier for the author to explore the object studied.

The data analysis technique used in this study is an interactive model analysis which according to Miles and Huberman (2014) contains 4 main things, namely data collection, data reduction, data presentation, and conclusions. The four processes take place before data collection, during learning design and planning, during data collection as initial and interim analysis is carried out and during data collection as the finished result is approaching and completed for later triangulation.

RESULTS AND DISCUSSION

Knowledge Production in Identity as *Sedulur Sikep*

There are various explanations that appear in the study of the identity of *Sedulur Sikep* from various literature both through the media, journals and interviews behind this section. *Sedulur Sikep* in Blora can have a different interpretation from that of *Sedulur Sikep* in Pati. This is considered a peculiarity of understanding of self-identity as well as adaptation in adapting to the environment lived both socioculturally and physically to landscape conditions.

Because this research was conducted in Baturejo village, Sukolilo District, Pati Regency, the source of interpretation of the practice and life principles of *Sedulur Sikep* Baturejo observed is according to the practices that are lived which are adjusted to the sociocultural intermingling that occurs in place. This claim is possible if there are differences in daily practices and rituals that may be different from *Sedulur Sikep* in Blora, Rembang or Kudus.

In various basic teachings they remain the same but have interpretations that can be adapted to local situations and conditions. The claim of each is a truth is not a reason for differences because all of them promote respect and respect between *Sedulur Sikep* people.

Adam's religion, which is believed to be a system of practice, is a belief that maintains relationships between humans and the transcendent, existing in them in the lives of Gusti people (Rosyid, 2014). Adam's religion believed Yai to be the sole ruler of God. " *Yeng ngayahi samubarang kebutuhane putu, putu duwe kewajiban, putu njaluke karo Yai kanti ngeningke cipto, roso, lan karso kang supoyo biso kasembadan sejo lan karep kanti neng, neng, lan nep* " (*Yai* means a substance that fulfills the life standards of creatures, creatures also have obligations). If beings invoke Him only with silence. "*Ono iro ono ingsun, iro form ingsun.*

Aku yo kuwe, kuwe yo Aku, wes nyawiji" (The relationship between man and nature the environment becomes the center of life).

Adam's religion by the state is categorized as believers. His teachings were passed down regeneratively with spoken language. Refers to the speech and behavior of human actions, which is to speak the truth and always do good. Adam's religious teachings were meditation, prayer, fasting, and manifested in wise behavior.

What is arranged in this teaching concerns the pronunciation of expressions, behavioral practices, and clothing disturbances, abstinence and rules of life that are binding and uniting as fellow *Sedulur Sikep* such as the teachings of Samin Surosentiko, and dress codes that are agreed and amini. This religion is not a tradition mentioned like other religions but rather means a life that is for individuals and their groups, not to be socialized to the public.

Table 1. Abstinence in the teachings of *Sedulur Sikep*/*Angger-angger Pratikel*

Drengki	Making slander, disrespectful
Srei	Greedy
Panasten	It is easy to offend or hate each other
Dawen	Indicting without evidence
Kemiren	Envy of other people's property
Nyiyo marang sepodo	Doing nista towards fellow inmates of nature
Dagang	Trade
Mbakul	Selling
Blantik	Ticket scalper
Nganakno duit	Loan shark
Mbujuk	Lying for a specific purpose
Kulak	Kulakan
Krenah	Bad advice
Apus	Scheming
Akal	Deceive
Ngampungi pernah	Not returning the favor
Bedok	Accuse
Colong	Steal
Pethil	Miser/take items that are still attached to nature.
Jumput	Take a little/take goods that have become commodities in the market
Nemu wae ora keno	Find items
Gamble	Bet
Casual sex	Having conjugal relations without the permission of both parents, before pasuwitan (termination of the relationship)

Source: Gunarti Interview, 2021 and various sources

Table 2. The Teachings of Kindness *Sedulur Sikep*

Kudu weruh te'e dewe	Must understand the goods he has and not take advantage of other people's property
Demen	Happy for good
Becik	Good, good, contains goodness

Seger waras	Healthy and fit, contains the meaning of praying for blessings
Lugu	From honest behavior as it is. When entering into agreements, transactions or agreements with other parties. If you say you can, if you don't, say no
Mligi	Obey the rules of Sikep which are held as a guide to life
Rukun	With whom should be good, wife/husband/neighbor
Bejok reyot iku dulure, waton menungso tur gelem di ndaku sedulur.	Wasting others must not be, any kind of defect, man is a brother if he wants to be made a brother

Understanding in the disclosure of the term *Sedulur Sikep*, is often replaced with the term Samin or Samin indigenous people. This call became commonly intended to show the identity of the *Sedulur Sikep* community. However this naming of the community was rejected by most members of the community who had to go on to explain that there was no term indigenous Samin. Every time the term Samin indigenous people or Samin community is mentioned, every time *Sedulur Sikep* provides corrections and explanations. This rejection occurred as if so far the previous writers had ignored how to distinguish the naming of indigenous peoples which had different consequences from those experienced by *Sedulur Sikep*. The use of the term wong Samin, Samin people or Samin community, Saminis, Saminism is felt to be stronger in voicing the spirit of resistance that has stood the test of time so that its use in academia has been used in various texts since colonial times, widely accepted, both at national and international levels. The correct mention is *Sedulur Sikep*. This mention in writing honors the choice of *Sedulur Sikep*.

Sedulur Sikep is a group of people who carry out rules according to the teachings of Samin Surosentiko which contain knowledge that regulates human relations with nature. To get the name *Sedulur Sikep*, the descendants of *Sedulur Sikep* also cannot be directly called *Sedulur Sikep* but descend from *Sedulur Sikep* (Kodir & Prabawangi, 2015). The identity of *Sedulur Sikep* has been built for more than 100 years. The strengthening of identity is carried out through the power relations of their elders or elders. Every individual is actually always in a position to experience and exercise power in building his identity as *Sedulur Sikep*. As a community, in the socialization of religious values from elders to its members, the Setunan forum is carried out at the house of elder Icuk Bamban. Srawung is routinely carried out to strengthen the sinau play, to strengthen the processes of practice, carried out by age groups, various ages, young and old. This forum is a means of nggo kandan-kandan, to teach various things about Sikep's teachings and connect the context between teachings and daily problems.

Efforts to maintain and strengthen the identity internally to the descendants of *Sedulur Sikep* are needed in the midst of intermingling life with various other religious groups and responding to changes in the situation that continues to develop. The term Samin arose because of its various meanings. Samin means brother or brother. Sami wonge is the same person which means brothers. Men are the same and are considered so because we are all posterity of Adam. Ono niro mergo ningsun, ana ningsun mergo niro is me because of you and you is because of me. A word that can be interpreted as a group of people prioritizing equality, solidarity as

fellow human children, one fate and one accord. The term Samin feels thick with nuances of populist and justice. Sami-sami amin is also a term that appears in Samin society because it is an expression of agreement if all agree then it is considered valid. The emergence of this term, in the context of pasuwitan, reinforces that the marriage was due to the agreement of two families run by *Sedulur Sikep*. The history of the power of *Sedulur Sikep*'s identity began as a group in the 1850s as a protonational peasant-movement and the Saminism movement emerged in the 1890s according to Anthropologist Amrih Widodo, in the book Samin in the Order The Politics of Encounter and Isolation.

Production management and validation of local knowledge assets

Sedulur Sikep is interesting to discuss because it is a socio-cultural phenomenon that still survives in this modern era in preserving the teachings of their ancestors. Cultural heritage in the form of knowledge, social, community values, faces challenges to its existence. The challenge to preserve, adapt and even develop it further becomes so important considering that the production and governance of new, more contextual knowledge must continue to be carried out so that *Sedulur Sikep* can survive and continue to contribute to balance and harmony in their lives.

The production of *Sedulur Sikep* knowledge is very limited which is derived in the process of social interaction in society. This cultural heritage value is in the form of knowledge, beliefs, and teachings that *Sedulur Sikep* has derived from the advice of Samin Surosentiko's teachings. *Sedulur Sikep*'s meaningful cultural markers are also seen in the way of dressing, the way of speaking and communicating, the way of interacting and treating nature.

The relevant knowledge for *Sedulur Sikep* is that knowledge about nature must be maintained, because nature is the mother of *Sedulur Sikep*. Man lives because his behung gives his life. So is knowledge of land, water and forests. *Sedulur Sikep* indigenous knowledge is inherited knowledge derived from the life process of Mbah Samin when he was still alive where the knowledge is felt to be significant, relevant and has a function in the social life of *Sedulur Sikep* to this day.

Knowledge about gugon tuhon abstinence is inherent in people's daily lives as a cultural value inherited by Mbah Samin so that life continues to run well. *Sedulur Sikep* is very understanding in identifying and recognizing indigenous knowledge as cultural values and fundamental knowledge seen in both social and ritual activities in the community (Utami & Irhandayaningsih, 2016).

Validation of indigenous knowledge is based on aspects that have been stated by the World Bank, 1988 as follows:

1) Significant and relevant significance and relevance to solve existing problems.
2) Reliability is reliable knowledge that is tested, not based on coincidences.
3) Functional functionality of how such knowledge works.
4) Effectiveness and transferability are effective and disseminatable.

In the next stage, the production of tacit knowledge which has a procedural technical dimension of how things happen and cognitive dimensions such as beliefs and values from *Sedulur Sikep* is communicated and realized among parents to children, as well as from Tiyang elders to other communities. In Heisig (2003) theory, it is important to build their knowledge

through creation, preservation, distribution and application to build an organization or community known as the Knowledge Management Process.

With tacit sources of knowledge that are highly subjective and personal and connected according to context, experience and understanding and difficult to share. To articulate tacit knowledge to be explicit must go through a process of externalization using the metaphor of understanding and experiencing something through documenting. So that tacit knowledge in the form of an idea and thought or experience becomes a document and becomes a knowledge asset.

The creation of knowledge assets is driven by new contexts to become explicit knowledge. Internalization, on the other hand, transforms explicit knowledge into tacit knowledge which is an affirmation of traditional learning. Both knowledge assets, both in the form of explicit knowledge and tacit knowledge that are always carried out, are ritualized in everyday life.

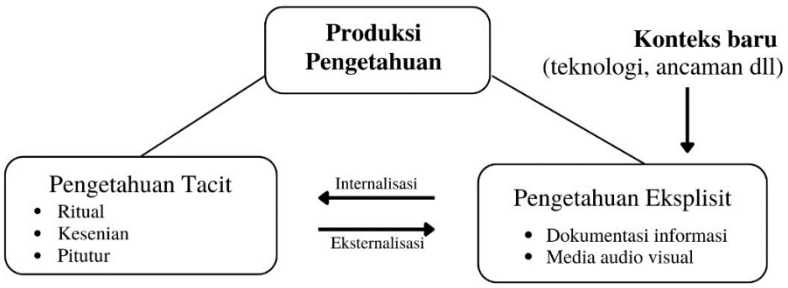

Figure 1. Knowledge Production Process *Sedulur Sikep*

Although the production of knowledge possessed by *Sedulur Sikep* is not in the form of scientific knowledge because there is no legitimacy from the school world, the knowledge experienced by *Sedulur Sikep* is contextual knowledge, which answers the basic needs of surviving and running the social system of its community.

This indigenous knowledge validation activity identifies the relationships, functions and values possessed by *Sedulur Sikep* in everyday life. These teachings and knowledge eventually declined and are attached to *Sedulur Sikep* until now because the values and functions contained in the knowledge are relevant to their daily lives.

Knowledge Preservation for Disaster Risk Reduction

Sedulur Sikep has noble teachings in managing the environment, namely by applying the five sesanti demen, becik, rukun, seger, sanas. Values and teachings for caring for brotherhood, not liking hostile, not rewang kang dudu sak mestine not helping unnecessarily, third not caring other no other, and eling Sing Kuoso always remembers the Power has the same orientation and each is interrelated and mutually continuous.

From these teachings emerged traditions with rituals that meant total surrender to a power that was transcendent, supernatural, a power greater than man. Human awareness that all living things must live in harmony, animals and plants are able to live without humans. But man cannot live by ignoring or exploiting for human needs alone. This in the end will not provide good for either nature or humans themselves.

Prayers that contain surrender to human care for nature, hopes for good behavior that are offered to always remember nature in every decision making to maintain the balance of nature.

Sedulur Sikep believes that the process of transforming natural resources for human needs is based on the principle of equality which contains the same rights and obligations to utilize and maintain the sustainability of life.

To preserve knowledge the most effective for one of them is to carry out rituals. Rituals that are symbolic communication between nature and actors and nature can be considered as an effort to reduce disaster risk that is predicted and anticipated, observed deeply decades by previous generations.

Rituals carried out by *Sedulur Sikep* are also directed to disseminate the message of maintenance, a message of cultural construction that can represent and present shared beliefs that manifest as a means of control in actions between humans and/or humans with nature (Ammerman, 2021; Kádár, 2017). The message conveyed in the ritual is latent hidden, ambiguous double meaning, which is shown in symbols that have been agreed upon for generations based on the traditions prevailing in the culture. Symbolic language is reflected in the form of dances, games, songs, stories and oral speech (Cajete & Williams, 2020; Murray, 2006).

In the perspective of communication for disaster risk reduction carried out collectively, the main function of this communication is to inform, educate, entertain and influence (Fakhruddin et al., 2020; Weyrich et al., 2021). The communication process in a community displays 3 main functions, namely observing the surrounding environment, connecting parts of the community in responding to things that happen in their surrounding environment, and transmitting transferring social heritage and knowledge production from one generation to the next (Lasswell, 1948).

Here are some rituals from the teachings of life that are still carried out and save the environment in various senses.

1) *Brokohan*: In various rituals related to farming and what we can learn from *Sedulur Sikep*, special respect is done by *Sedulur Sikep* to Dewi Sri, which symbolically has spiritual, social, cultural and economic functions. The inspirational character of Dewi Sri is widely adopted as taught by Samin Suronsentiko.

   As a social and cultural function, this veneration of Dewi Sri binds a strong sense of wisdom brotherhood in the rituals of local traditions to end the planting period in the brokohan ceremony. In the grain symbol that physically depicts the nature of women who guard and nurture, Dewi Sri is considered as a mother who cares for and feeds in the form of rice as a means of livelihood for *Sedulur Sikep*. They can live and be nourished through the rice harvest received from the fruits of their hard work and support the needs of the family. Among them are the tradition of alms earth moon ruwah, ndederwiwitan nyemai, all of them are grateful by making sego, whole chicken ingkung, ubai rampai sayur urap, tofu tempeh, bananas, red and white jenang, market snacks. In addition, brokohan is also carried out as a ritual of various thanksgivings, for example seven months, births, proposals or other meetings, for example for the brokohan breed of Mbah Suronggono in 2021.
2) *Kupatan* (*Shawwal* Month): *Sedulur Sikep* in Baturejo does not specifically hold a kupatan ceremony, but joins the Kupatan Kendeng event in Rembang as part of a ritual performed by JMPPK every year for the past eight years. This ritual is performed by sedulurs who reject cement factories, so it is not an agreement of the Government of four surrounding villages.

Kupatan Kendeng is a tribute to mother earth and an acknowledgment of human error in managing the resources that nature has provided. *Kupatan Kendeng* has been carried out for generations in Rembang five days after Eid. The symbolization of the procession carried out by parading four mountains of kupat on foot around Tegaldowo Village involving residents of four villages of Gunem sub-district.

In *Kupatan Kendeng, Sedulur Sikep* as an important part of JMPPK represented by Gunretno gave an important message through an oration to encourage the struggle of residents and encourage concern for the environment of the cement factory rejection above. Not just as a cultural ritual, *Kupatan Kendeng* is a symbol of protecting the earth, clarifying intentions and struggles to care for the earth wholeheartedly as well as efforts to stop the operation of cement factories and mining so as not to disturb water sources and sources of livelihood, namely food-producing agricultural lands in the Kendeng Mountains. The strong message of this ritual is also about the important involvement of women who are very persistent in fighting for environmental sustainability without violence.

In Javanese tradition ketupat kupat is a tradition of worshipping Dewi Sri, the goddess of agriculture and fertility. Dewi Sri is considered the protector of birth, life, wealth, and prosperity. *Sedulur Sikep* women and other Kendeng women unite the struggle through culture, traditions and local wisdom that exist as a legacy for posterity. In the *Kupatan Kendeng* event, various art performances were also displayed such as gamelan music performances, puppets, poetry readings, lion dance performances which showed the high cultural intermingling and tolerance of all parties for this event.

3) *Lamporan* (*Suro* Month): The *Lamporan* ritual is usually carried out in the month of Suro which is a hereditary procession to repel pests during the transition months of planting or the third dynasty. This *lamporan* ritual is carried out at night, starting Friday wage and lasting for seven days. This ritual uses coconut leaves or blarak tied into torches. By burning the torch, the procession circles the forest to the rice fields to scare the lampors, while chanting prayers. In the *Kupatan Kendeng* tradition, lamporan processions are also carried out as part of the ritual. However, in several villages around Baturejo such as Kedumulyo, *lamporan* rituals are carried out specifically (Permana, 2019).

   Now, the *lamporan* procession is not only interpreted as the expulsion of diseases but also as the expulsion of policies with intentions that are not in favor of the preservation of nature and farmers. The transfer of arable land for industrial and mining purposes that destroy biodiversity is also part of the pests that must be eradicated.

By performing rituals they are encouraged again in living spiritual values in the expression of cultural rituals. Although there are various rituals that are no longer carried out routinely, in local wisdom there is a deep meaning in every action. The manifestation of local wisdom is strongly reflected in the *Sedulur Sikep* community who still uphold traditional farming values and procedures. They manage the environment by saying, pertikel, laku stages when doing or utilizing the natural resources they receive.

The rituals carried out by *Sedulur Sikep* are related to nature management, it can be seen that the harmony of spiritual currents in the flow of ritual-actions, is included in the practice of living as a farmer. *Sedulur Sikep* in understanding and living cosmology, symbolically has

applied values, environmental ethics that have manifested in rituals and actual in nature management. The strong resistance of *Sedulur Sikep* in the action to reject cement factories in the Kendeng mountains is included as part of efforts to maintain the sustainability of land and water resources which are their livelihood assets, which must be protected.

Knowledge Collaboration for Disaster Risk Reduction

In addition to carrying out various rituals and myths, mystical stories that become the color of local culture are also part of disaster risk reduction efforts. The story of the Kendeng dragon which is often told by *Sedulur Sikep* in Pati comes from an old story. They assume that Kendeng, it is not a mountain range but a dragon. In many places, there are stories of people meeting dragons with their forms or sounds.

An interview with Mohammad Sobirin 2021, a University of Indonesia researcher who has long been involved with *Sedulur Sikep* in Pati tells the myth of Mbah Bangun. Mbah Bangun lives in a spring in the village of Sinawah, Sebrang District, western Kendeng Mountains. In the village there is a belief that there should be no image, whatever its shape, that resembles the image of a dragon. People will surely be wretched, because it equals the embodiment of Mbah Bangun. Mbah Bangun was a farmer married couple. One day they found two eggs in a rice field. They went home, and cooked the eggs and ate them. Before long, their bodies became itchy. The husband and wife then headed to the river and both turned half snakes half human, like dragons. Mbah Bangun Kakung lives in Senawah, while his wife goes around the north of the mountain which means in the North Kendeng Mountain area. Dragons are an important part of the knowledge of residents around Kendeng to understand Kendeng, there are not just mountain rocks, but with the myth the dragon represents an underwater river.

The dragon is no longer interpreted as a creature but in a scientific perspective proven by Acintyacunyata Speleological Club ASC, Semarang Caver Association SCA, Indonesia Speleological Society ISS which conducts cave mapping and underground river tracing. The haunted elongated dragon is scientifically interpreted as an underground river storing elongated water. The land of the Kendeng mountains is considered worthless, barren land, because the karst mountains that stretch are considered uncultivable and are the target of cement factories to be managed so that they can be more valuable. But in the expanse of karst rock is stored an extraordinary underground water source for the island of Java.

Building Sustainable Livelihood Adaptation Strategies

The definition of disaster risk reduction in the Sustainable Livelihoods paradigm shows disasters as events but also processes of loss or damage to livelihood assets. This framework invites to understand the livelihoods of people who are considered marginal in certain contexts, such as vulnerability due to disasters and social conflicts. DRR Disaster Risk Reduction or DRR Community-Based Disaster Risk Reduction PRBBK is a systematic and sustainable effort in preventing the risk of loss of livelihood assets with emphasis on pre-disaster.

A particular community lives and livelihoods by relying on its various assets. These assets include social capital, human capital, economic financial capital, natural resources and environmental capital, and infrastructure physical capital. It is in this context that communities survive for their survival and livelihood by relying on their livelihood assets. The sustainability of the livelihoods of these communities depends on diversification of activities that are the

result of the transformation of capital resource assets called Pentagon Assets in the Sustainable Livelihood Framework (Saragih et al., 2007).

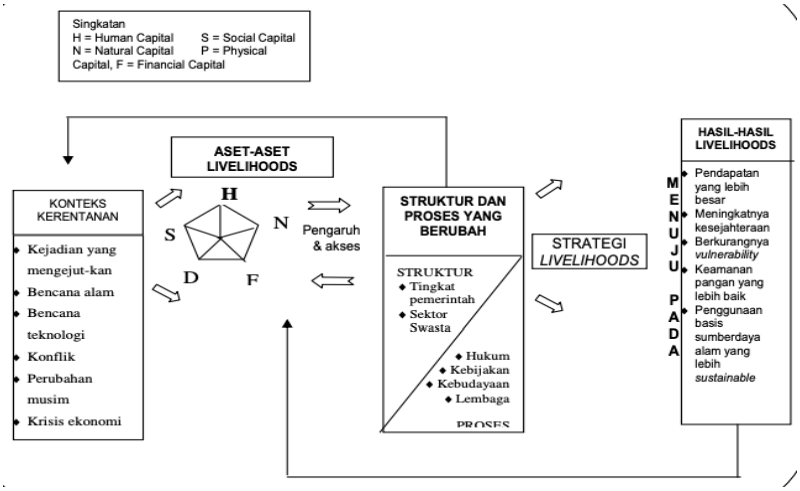

Figure 3. Sustainable Livelihood Framework (Translated from DFID, 1999)

The sustainable livelihood asset approach is flexible in its application, the principles to be explained below give meaning to the overall value of this approach. The first, focusing on people, where the livelihoods approach puts the community at the center of development. This focus on society is just as important at a higher level than development achievement figures. Second, it is holistic or comprehensive in identifying the greatest obstacles faced, opportunities that are open to and by the community itself. The framework encourages ways of thinking about manageable livelihoods and increases the effectiveness of development programs.

Sustainable Livelihoods or sustainable livelihood framework is non-sectoral, and can be applied across geographical areas and social groups, seeing the various influences that affect the community. The process of building a complete understanding of the livelihood strategies taken by communities to secure livelihoods determined and deliberated by communities themselves and their relationships with various stakeholders from the private sector to national ministries, from community-based organizations to growing decentralized government institutions.

Climate Change Impacts on Livelihoods

In Saminism, natural laws cannot be resisted, cannot be rejected, must be accepted. The process of destruction is naturally necessary in order to balance itself to be observed and accepted as such a process as it is to occur, unless the processes of destruction of nature are the result of human intervention which is a manifestation of greed, dissatisfaction and human greed to exploit nature for personal and group interests.

Climate change is part of the laws of nature that must be accepted. While *Sedulur Sikep* has developed and used their cosmology, basic and spiritual foundations and traditional knowledge systems in the community to address the adverse effects of climate change that put them at risk.

If their knowledge systems, which are closely linked to their daily relationships with their landscapes, are undermined, their vulnerability to climate change further increases. The impact

of climate change experienced by *Sedulur Sikep* which requires adaptation and mitigation actions is carried out by *Sedulur Sikep* from the existing level of vulnerability.

Table 3. The Impact of Climate Change on *Sedulur Sikep*'s Vulnerability

Vulnerability Indicators Against Climate Change	**Climate Change Impact for *Sedulur Sikep* in Baturejo**
Physical landforms	1. The bare Kendeng Mountains result in mud flooding because there is no rainwater retention when rainfall is high. 2. Faster and more frequent changes in the rainy season thus changing planting patterns. 3. Agricultural productive land is often flooded. 4. Drying up some water sources in the dry season. 5. Flood overflow from Juwono River and Tus River are sedimented. 6. Changes in habitat and animals indicate seasonal changes and pests that are difficult to control, and trigger changes to viral and bacterial attacks. 7. Agricultural productivity decreased due to crop failure due to flooding.
Sustainable livelihoods, physical and social well-being of communities	1. Agricultural productive land is shrinking, yields are not maximized, income is small, debt is growing. 2. The production costs of farmer groups are getting more expensive. 3. Erratic crop prices for some agricultural commodities. 4. Relying on other livelihoods in times of famine / crop failure (off farm) such as fishing / snails, batik making, working as farm laborers in other places. 5. Continuous crop failure due to crop changes. 6. Declining water quality that has an impact on health. 7. Changes in health levels that decrease due to not immunization.
On human rights, psycho-culture towards traditional knowledge and customary governance systems	1. The forced social assistance card was received by *Sedulur Sikep*. 2. Registration and administrative recognition of population that still does not support identity freedom as *Sedulur Sikep* includes stigmatization and discrimination. For example, in the religion column, ID card, birth certificate.
On gender, different age groups and groups.	Women work harder to provide for their families outside the home in addition to domestic work due to crop failure due to flooding.

CONCLUSION

The management of knowledge contained in social values in *Sedulur Sikep* to maintain the balance of living order with nature is the response capacity of *Sedulur Sikep* in maintaining livelihood assets and mainstreaming community-based disaster risk reduction in the nature of prevention and mitigation. *Sedulur Sikep* has made efforts on sustainable adaptation strategies for agricultural governance which is the only life option. By doing various things in land management for subsistence crops, modernization of agricultural facilities and infrastructure including an organized irrigation system, restoring minimal chemical soil management and granary systems, *Sedulur Sikep*'s efforts in managing food disaster risk have been carried out. Supporting subsistence activities are also carried out by fishing and various on-farm farm activities inside and outside the Baturejo area.

Disasters due to development in the name of economic growth become very real in front of our eyes. Disasters are no longer just a natural phenomenon that occurs in human life. Disasters in the context of climate change are 100% caused by human activities. In this case, extractive corporate activities are responsible for the destruction of natural resources. That development must pay attention to various aspects in which un-intended consequences can occur and affect many people and the environment. This should be taken into consideration in policy making. Both physical and non-physical development agendas should have a positive impact on reducing risk, shrinking vulnerability, and not vice versa.

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