

Landslide Disaster Mitigation Based on Community Local Wisdom Values in Lebong Regency

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Abstract

The local wisdom instrument is urgent as an alternative solution for mitigating landslide-prone catastrophes in Lebong Regency, Bengkulu Province. This research uses an empirical-sociological-anthropological juridical approach. Data collection, processing, and analysis are conducted by identifying, classifying, verifying, interpreting, and describing qualitatively. The study findings demonstrate that the forms as well as the values of local wisdom The Lebong people, for instance, Kedurai, Sakea, Jamai, Jamai Imbo, Grover, Imbo Bujang and Tebo, which are explicitly illustrated in the sort of wise advice, have governed human relations with nature and the surrounding environment, have regulated relationships that It is divine and supernatural. The community's local wisdom can be applied as a mitigation instrument for landslide disasters because the local wisdom contains meaningful values concerning to the awareness level of the environment, safety, and life sustainability from one generation to another.

Keywords: *Landslide Disaster, Local Wisdom, Mitigation*

INTRODUCTION

The area of Lebong Regency is 192,424 Ha, of which 134,834.55 Ha is a Conservation Area designated as the Kerinci Sebelat National Park (TNKS) 111,035.00 Ha, Protected Forest 20,777.40 Ha and Nature Reserve 3,022.15 Ha. Of the total area of Lebong Regency, which is 192,424 Ha, around 76% or around 166,527 Ha is an area that falls into the high hazard category for landslides. In efforts to overcome landslides, the Lebong Regency Government has developed regional spatial planning (Regional Regulation, 2012) and disaster management policies (Lebong Regency Regulation, 2017) which have been stipulated in the form of regional regulations (Perda). The establishment of this provision is intended as an instrument for setting mitigation policies in the event of a disaster in Lebong Regency.

Factors causing landslides in Lebong Regency are high rainfall, denuded forest areas due to various reasons, agricultural land on slopes and on hills (protected forest area, Nature Reserve/Kerinci Sebelat National Park/TNKS) (Iskandar, 2021: 5). In order to avoid or at least minimize the impact if a landslide disaster occurs, apart from legal instruments in the form of regional regulations regarding spatial planning and disaster management, as well as technical structural mitigation policies that are not yet optimal, it is necessary to make other efforts as an alternative solution, because if not, the community will be worried just waiting for the landslide to come. This study analyzes the local wisdom values of the people of Lebong Regency as an alternative mitigation solution (Raden Cecep Eka Permana, 2011: 68) for areas prone to landslides.

The ability of the society to always be alert and prepared to face the threat of landslides can actually be derived from the local wisdom of the local community. Studies on local wisdom and disaster mitigation in traditional communities in Indonesia in general will be closely related to natural resources and human resources. In traditional (local) society, humans and nature are one unit, because both are created by Almighty God. Nature and humans are believed to both have spirits. Nature can be friendly if humans treat it wisely and conversely will be angry if it is damaged. If nature is angry so that natural disasters arise in the form of floods, landslides, volcanic eruptions and so on, then traditional communities generally also have local knowledge and ecological wisdom in predicting and mitigating natural disasters in their area (Raden Cecep Eka Permana, 2011: 68; Eko Setiawan, 2021).

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Local wisdom in the form of life views, beliefs and knowledge as well as various life strategy steps in the form of activities that can be carried out, if managed, well understood and implemented on the basis of their own needs and awareness, will become an important instrument for efforts to prevent, overcome and overcome cases if landslide occurred in residential area (Ramdan, 2017: 136).

The central theme of this article examines landslide disaster mitigation through the values of local wisdom of the people of Lebong Regency, Bengkulu Province. The legal issues discussed and analyzed are the form and values of local wisdom of the people of Lebong Regency which regulate human relationships with nature and the environment, and whether the values of local wisdom of the community can be an instrument for mitigating landslides in Lebong Regency, Bengkulu Province.

RESEARCH METHODS

This study is juridical-empirical-sociological-anthropological, namely by processing and analyzing primary data, secondary data and legal documents. Processing and analysis of legal data and documents is carried out by identifying, verifying, classifying and describing qualitatively based on sociological/anthropological, norms and customs and customs/local wisdom which are always carried out by the community related to the problems faced, including in terms of landslide disaster mitigation. Besides, FGDs were also conducted, in order to obtain valid information from the community directly regarding efforts to overcome landslide disasters. The results of the analysis are described qualitatively and conclusions are drawn as answers to the legal issues studied.

RESULT AND DISCUSSION

Forms and Values of Local Wisdom in the Community of Lebong Regency, Bengkulu Province

In Bengkulu Province, there are quite a lot of ethnic groups that have their own cultural characteristics. Each ethnic group has a language and customs that are different from one another. The ethnic groups that have lived for generations in Bengkulu Province include the Rejang ethnic group, the Serawai ethnic group, the Bengkulu Malay ethnic group, the Pasemah ethnic group, the Lembak ethnic group, the Muko-Muko ethnic group, the Enggano ethnic group, the Kaur ethnic group and the etc (Aprianto Soni, 2021: 144-145; Imam Mahdi, 2019: 155).

The Rejang ethnic group stays in several districts within the Bengkulu Province (Aprianto Soni, 2021: 161), namely in Rejang Lebong Regency, Kepahiang Regency, North Bengkulu Regency, Central Bengkulu Regency, and Lebong Regency. There are several local wisdoms of the Rejang tribe, namely: Simbur Cahayo Law, Taneak Tanai, Utan or Imbo Pidan, Rian Cao Custom, Keduruai Mengeges, Ali bilai, Bo or Silo, Sakea, Jamai, Meniken, and Sorongan. Most of the local wisdom is still adhered to by the Rejang people, including the Rejang people who live in Lebong Regency.

Local wisdom is often associated with local societies with various meanings. Local wisdom is local (local) ideas that are wise, full of wisdom, of good value that are embedded and followed by community members (Sartini, 2014: 111). Local wisdom is defined as a way of life and knowledge as well as various life strategies in the form of activities carried out by local communities in responding to various problems in meeting their needs, which include all elements of life, religion, science, economy, technology, social organization, language and communication. Local wisdom is defined as a view of life and knowledge as well as various life strategies in the form of activities carried out by local communities in responding to various problems in meeting their needs, which include all elements of life, religion, science, economy, technology, social organization, language. and communication, as well as the arts (Raden Cecep, 2011: 67). Thus, local wisdom is a traditional view and knowledge that becomes a reference in behavior and has been practiced from generation to generation to meet the needs and challenges in the life of a society. Local wisdom functions and is meaningful in society both in preserving natural and human resources, preserving customs and culture, as well as being useful for life (Raden Cecep, 2011: 68). Based on the search from several references and information from the FGD, information was obtained about local wisdom from the Rejang people who live in Lebong Regency, namely regarding aspects of agricultural land management, forest management, residential land, social interactions and religious rituals. Some local wisdom is referred to in the following matrix (FGD, 2022; Imam Mahdi, 2024: 155):

Table 1. Local wisdom from the Rejang people who live in Lebong Regency, regarding agricultural land management, forest management, residential land, social interactions and religious rituals.

The Term	The Meaning
<i>Adat Rian Cao</i>	Custom procedures or local terms to mention local wisdom. This customary procedure develops according to the needs and development of the community members.
<i>Kedurai</i>	<p>One of the traditions that is believed to be a place of communication between humans and supernatural powers.</p> <p>Kedurai Apem can literally be interpreted as a cake/banquet party, in a deeper study it aims to ask for protection and prosperity in life. This ceremony is closely related to the customs and beliefs of the community. The Kedurai Apem tradition is a ritual that contains historical religious values in the Rejang tribal community and as a form of ritual requesting rejection of balance and as a form of gratitude for the abundance of harvests and an opportunity to stay in touch with fellow citizens. This tradition is carried out before the people plant rice every October starting with collecting the residents' apem cakes, special apem cakes along with a number of other conditions and diwo children as a form of offering to the spirits of their ancestors. Then the cake magemente said greetings and answered the ancestral spirits that this tradition had been carried out. After that Kutai read a prayer asking for safety then followed by the action of fighting over the apem cake which is believed by the residents that will bring blessings.</p> <p><i>Kedurai</i> is one of the traditions that is believed to be a forum for communication between humans and supernatural powers, there are several types of <i>kedurai</i> that are often carried out by the Jurukalang tribal community, the <i>kedurai</i> to open plantation land in certain forests is the process of requesting permission and safety for those who manage it.</p> <p>The <i>kedurai agung</i> is usually done when there is a warning by the supernatural in the form of <i>Bumai Panes</i>, the <i>kedurai</i> process is carried out by a shaman called the handler, other means that must be prepared also in this process is woven bamboo to be made randomly, namely a container for offerings. The offerings for the ritual include the blood of a hen (<i>daleak monok bae</i>) stored in a bowl, cooking oil, sweet oil, ripe betel, raw betel, 99 limes, 99 cigarettes, and three types of flowers (rose, cempaka ivory, and cepiring). Other materials used for the ritual include 198 grains of turmeric rice, rice flour cake (<i>sabai</i>), three colored threads (white, red, and black).</p>
<i>Cuci kampung</i>	It is a ritual of rejection of balance that aims to protect all villagers from disaster. In everyday life the village washing ceremony is often found when one of the residents is caught committing a disgrace in the form of adultery in a village. Washing the village is a ritual of rejection of balance that aims to prevent all villagers from disaster.
<i>Ali bilai</i>	The mention of mutual cooperation in completing one of the residents' jobs in turns.
<i>Meniken</i>	Ritual activity or <i>kenduri</i> for the clearing of land to be opened to be used as fields or arable land.
<i>Sorongan</i>	Leasing land that is uncultivated land to other people, with the rent of the results of the agricultural land.
<i>Taneak Tanai</i>	The term for the expanse of land within the scope of the customary community which is communally owned and is part of the community's management area, there are consequences for individual ownership in the <i>taneak tanai</i> area where each party who manages a certain area within the <i>taneak tanai</i> is obliged to plant hard plants of conservation and economic value. such as <i>petai</i> , <i>jengkol</i> , <i>durian</i> , as a sign that the area has been owned by a certain person and family.
<i>Utan atau Imbo Pidadan</i>	Term or mention for the forest trusted to have magic watcher until there are some requirements to open this area. Not many people dare to open this forbidden forest. The area of Serdang Hill is an area belived to have magic power, <i>Jurukalang</i> who looks after the area.
<i>Mengeges</i>	It is customary for the community to clean their arable land by burning it at the edge of the land to be cultivated, so that the fire does not spread and burn the surrounding area. This <i>Mengeges</i> is actually to prevent the fire from spreading everywhere. In the process of land burning is usually done in mutual cooperation.
<i>Bo atau Silo</i>	<p>A kind of cross is a bamboo stick that is stuck into the ground, the top part is split in half and another bamboo stick is squeezed between the shards. Generally, when the marking process is carried out, a feast is carried out led by a shaman who mentions certain spells containing a request to a supernatural ruler so that when the land is opened it avoids various dangers.</p> <p>This ritual is intended to win the hearts of spirits who rule the land, by giving offerings in the form of black rice, black pudding and black chicken. Usually after this process is carried out, the land owner will have certain dreams as a sign of being allowed or not allowed. After obtaining an official permit, they started clearing the land by making <i>pato-pato</i> (temporary resting places), then proceeded to cut down small size logs. Large logs are usually cut in the rainy season, after the large trees are cut down, the planting activity begins.</p>
<i>Sakea atau gilir balik</i>	Cultivated land that has re-established forest, usually the people in <i>Jurukalang</i> return to <i>Sakea</i> when their cultivated land is not fertile, this is often referred to as shifting and outsiders who stigmatize indigenous peoples often call this shifting cultivators. <i>Jurukalang</i> is one of the <i>petulai</i> in the Rejang tribal community.
<i>Jamai Imbo</i>	The land condition left after the harvest or the land condition afforded or intentionally left so that it becomes forest again.
<i>Belukar</i>	The forest had been managed beforehand, but left or abandoned for more than 7 years.
<i>Imbo</i>	Rejang Tribe has local wisdom by knowing the forest zonation, they have determined <i>imbo lem</i> (deep forest), <i>imbo u'ai</i> (young forest), and <i>pinggeo imbo</i> (remote forest). With the zonation they

	made, then there are regulations about planing and cutting the wood. Imbo bujang is the forest managed but then left or abandoned for more than 15 years. While Tebo is the forest with slope 40 degrees and residing under the hill.
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The condition of the land left after harvest or the condition of the land that has been cultivated and deliberately abandoned so that it becomes forest again. Forests that have been managed, but abandoned or neglected for more than 7 years. The Rejang tribe has the wisdom to know the forest zoning, they have determined the *imbo lem* (deep forest), *imbo u'ai* (young forest) and *pinggea imbo* (peripheral forest). With the zoning they created, there are regulations regarding planting and logging. *Imbo bujang* is a forest that has been managed, but has been abandoned or neglected for more than 15 years. While Tebo is a forest with a slope of 40 degrees and is under a hill.

Based on the matrix above, the forest for the Rejang indigenous people is a space for economic, social, cultural, legal and environmental life. So closely related to the forest, they have various names related to the forest. Such as *sakea*, *jamai*, *jamai imbo*, *shrubs*, *imbo bujang* and *tebo*. Likewise, the use of land to be used as a place of settlement will be closely related to the use of forests. If the procedures for using forests for various purposes are not in accordance with the ethics and values of local wisdom that lived and were carried out by the previous community, then the negative impact that will occur is that there will be a disaster or landslide disaster, and vice versa.

As described earlier, the factors that cause landslides in residential areas in Lebong Regency, apart from residential areas located on steep hillside areas, denuded forest areas, high rainfall, and agricultural land on the slopes and on a hill (protected forest area, Nature Reserve/Kerinci Sebelat National Park/TNKS).

In relation to this local wisdom, if it is studied and understood the explicit and implied meaning of the local wisdom values, it is still very relevant when applied to current conditions, where when faced with the facts on the ground, that the condition of the community's residential land located on the slopes of a hill steep, limited flat land that can be used for settlements, relocation efforts are constrained by the availability of land and budget, limited financing for structural mitigation programs, and most people are reluctant to relocate their settlements if the government cannot guarantee their daily lives and livelihoods.

Therefore, a positive paradigm or perspective on the values of local wisdom of the Rejang Tribe in Lebong Regency must be revived, especially among the current and future generations of society, so that it is expected to have implications for the level of awareness of the environment, safety, and security. and sustainability of life from generation to generation (Yuliana, 2017). Through the revitalization of local wisdom, it is expected to be able to respond and provide solutions to the conditions of community settlements that are prone to or potential landslides.

The following topics describe several models of local wisdom that can be implemented as alternative non-structural mitigation solutions (Iskandar, 2021: 337-338) to landslide prone residential areas.

Application of Local Community Wisdom Values as an Instrument for Landslide Disaster Mitigation in Lebong Regency

The sustainable use of forest resources requires the existence of economic, ecological and social functions that are interconnected with each other. To improve the ecological function, the efforts made are by focusing on the preservation of forest resource areas. Economic and environmental functions in the use of forest resources must be directed at sustainable use, both in terms of production systems, conservation and protection efforts. Likewise, the socio-cultural function is strived to increasingly involve the participation and support of local wisdom values that live in the community, especially the people living around the forest resource area. Local wisdom of the community can be implemented as an instrument of disaster mitigation, so that farming communities living in areas prone to landslides can adapt to their living environment safely, comfortably and prosperously, avoiding landslide disasters. Local wisdom as an instrument of disaster mitigation can be grouped as follows:

1) Mitigation of landslides through certain rituals as a condition for opening garden land

Implementing the local wisdom of “Kedurai/Kedurai apem”, which is one of the traditions that is believed to be a forum for communication between humans and supernatural powers. Kedurai Apem can literally be interpreted as a cake/banquet party, in a deeper study it aims to ask for protection and prosperity in life. This ceremony is closely related to the customs and beliefs of the community. The Kedurai Apem tradition is a ritual that contains historical religious values in the Rejang tribal community and as a form of ritual requesting rejection of balance and as a form of gratitude for the abundance of harvests and an opportunity to stay in touch with fellow citizens. This tradition is carried out before the people plant rice every October starting with collecting the residents' apem cakes, special apem cakes along with a number of other conditions and diwo children as a form of offering to the spirits of their ancestors. Then the *Cake Caretaker* said greetings and answered the ancestral spirits that this tradition had been carried out. After that Kutai read a prayer asking for safety then followed by the action of fighting over the apem cake which is believed by the residents that will bring blessings. The ritual of kedurai or kedurai apem, implicitly contains a religious meaning, meaning that a business or activity of clearing land for gardening before it starts will always make a request for safety to the creator, so that the gardening business or activity can be successful and safe. To be successful and safe, definitely, the society gives priority the values or taboos or prohibitions on clearing land, so that the community avoids disasters.

The *kedurai agung* is usually done when there is a warning by the supernatural in the form of *Bumai Panes*, the *kedurai* process is carried out by a shaman called a handler, other means that must also be prepared in this process are woven bamboo to be randomly generated, as a container for offerings. The offerings for the ritual include the blood of a hen (*daleak monok bae*) stored in a bowl, cooking oil, cooked betel, raw betel, 99 limes, 99 cigarettes, and three types of flowers (rose, cempaka ivory, and cepiring). Other materials used for the ritual include 198 grains of turmeric rice, rice flour cake (*sabai*), three colored threads (white, red, and black). By implementing the kedurai ritual, the forest clearing for gardening activities can be avoided without being noticed by the chief of the *Jurukalang* tribe. The *kedurai* ritual becomes a "supervisory instrument" for every community member who will clear land for gardening. If it is found that people are clearing land without the knowledge of the chief of the Jurukalang tribe, then the community can be subject to customary sanctions. In addition to the kedurai ritual, other local wisdom that can be implemented is "*meniken*". *Meniken* is a ritual activity or feast for the clearing of land that will be opened to be used as fields or arable land. It is hoped that by holding a feast before the opening of the garden land, various kinds of disasters or disasters, including landslides that will hit the residential areas of the people who are below or on the slopes of the hills, are expected to be avoided. Likewise, local wisdom called "bo" or "silo" is making a cross, namely a bamboo stick that is inserted into the ground, the top of which is split in two and between the shards another bamboo stick is narrowed. Generally, when the marking process is carried out, a feast is carried out led by a shaman who mentions certain spells containing a request to a supernatural ruler so that when the land is opened it avoids various dangers.

2) Mitigation of landslides through farming patterns with mixed crop systems

To utilize forest resource areas, it begins with a survey. After finding a stretch of forest that has not been managed, the prospective manager will illuminate or cut shrubs with a size of 2-4 square meters in the corner of the expanse of land to be cleared. After that, a stake is installed with three woods tied together with roots and in the middle of which a wood is hung or called *balai-balai* on illuminated land. The installation of the halls took about three months. If there is no residents who protest, the prospective manager performs a *tabeus* to convey a request for permission to the forest rangers' ancestors by leaving offerings and taking a piece of land to take home and place under the pillow. If the forest management plan is not approved, the prospective manager will have a nightmare. If it hasn't had nightmares for three months, the prospective manager asks permission from the Pesirah through the harvest kuteui. If there is no violation of customary law, the permit request is fulfilled.

Armed with a permit, the manager cut down the roots of trees and shrubs, which was followed by cutting down trees. Usually, logging is done towards the end of the dry season (Dedek Hendry, 2016).

After being left for some time, tree wood is burned or *neme'un* before the rainy season. Before *neme'un*, the manager will *menggeges* or clean the edge of the land so that the fire does not spread outside the land. When *neme'un*, the manager oversees the fire. If the fire spreads outside the land and burns shrubs or trees outside the land, the manager will be penalized. The wood from the fire is collected and burned again or *ngepoa*. The land that is tilled to *ngepoa* is called *sakea* which is left to wet by rainwater. While waiting for the rain to fall, the manager made a shower and a veil or resting place. When *sakea* has been raining, the next activity is *beto'o*, making a small hole in the ground using a pointed stick, sprinkling rice seeds into the hole, and covering it with soil. After 5-6 months, when the rice bears fruit, the hut is made. After the harvest, a thanksgiving event or *meket poi* is held. The fields that have produced this are called *jamai*. The fields planted with rice are slowly being planted with annual and annual crops as well, so that they turn into mixed gardens. In ecological studies, these mixed plants are in line with conservation efforts or efforts to protect ecological stability, maintain microclimate stability, strengthen soil structure, maintain soil fertility, reduce water runoff rates so as to reduce the potential for erosion of surface soil, help regulate groundwater and maintain biodiversity, and this means rebuilding the forest. This mixed crop pattern can also be applied to coffee plants. Coffee plants need other plants as protection for maximum growth and productivity. Jengkol plants, kabau, petai, durian, lamtoro, dadap, and other plants can be a protector, or even a combination of a number of plants. The community's choice of jengkol, kabau, or petai trees in coffee plantations is also appropriate from scientific studies. This is because the three plants include *Leguminosae* which have the ability to capture nitrogen in the air and distribute it to the soil through the roots, so that it can fertilize the soil. From the economic aspect, mixed crops reduce the risk of crop failure from the plantation business. Cumulatively, the income earned is greater than just growing coffee.

3) Mitigation of landslides through vegetative conservation efforts on garden land

Vegetative soil conservation is one way of soil conservation by utilizing plants or plant remains to reduce erosion. Erosion is the main cause of landslides and rain is the main factor causing landslides. In the context of the local wisdom of the Lebong community, conservation of land can apply the local wisdom model of "*jamai imbo*" and "*belukar*" which is to land or land that is left after harvest or the condition of the land that has been cultivated, by planting various perennials, then left in the period of 7-15 years to become a forest again.

4) Mitigation of landslides by complying with certain prohibitions in clearing land

Besides some of the local wisdom above, there are several other prohibitions that are still related to the environment or forests around community settlements. For example, if there is wood which when cut down then forms a bridge on two sides of a spring, it is forbidden to work on both sides, there is a local belief that if it is cultivated it will cause danger and disaster for the owner, in the modern conservation system both sides are known as the river border. . Likewise, land which when the logs are cut will slide far away due to the steep slopes. It is also forbidden to cultivate the Telun areas or waterfalls, because it is believed that there are supernatural influences around the area. It is forbidden to work on steep slopes or around waterfalls if we really examine them because these areas are water catchment areas and if cultivated and planted with crops such as secondary crops, it will trigger landslides (M. Fikri Ansori, 2017).

It is forbidden to cut the *sialang* tree, if it is cut down, it will be charged a fine of half the fine for killing people, as well as cutting down the trees around the Silang tree is also considered a customary taboo. *Sialang* is considered a communal right and when harvested it is usually known by the whole community and there is a certain part of the harvest that should not be taken and left to live around the tree, because it is considered the right of the magical guardian of the tree, the harvesting process is accompanied by singing, praise both the praise of the wood and the praise of the watcher.

CONCLUSION

Forms of local community wisdom such as kedurai, sakea, jamai, jamai imbo, grover, imbo bujang and tebo which are expressed in the form of advices have regulated human relationships with nature and the surrounding residential environment, regulating relationships that are divine and supernatural. Local wisdom is community wisdom that is based on philosophical, ethical, moral values, norms and behavior that are traditionally institutionalized to manage various resources and social culture in a sustainable manner. Local wisdom does not appear suddenly, but through a long process along with the existence of the local community.

Local wisdom values as an instrument for mitigating landslides are implemented through certain rituals, farming/gardening patterns with a mixed crop system, vegetative conservation efforts, and complying with certain prohibitions, which, if implemented properly, will keep the environment sustainable and prevent landslides. This local wisdom contains goodness for people's lives and can have implications for the level of awareness of the environment, safety and sustainability of life from generation to generation.

RECOMMENDATION

Landslide disaster mitigation that can be done is by implementing local wisdom values in farming/gardening activities, making swales or terraces on steep slopes if you want to build buildings or cultivating gardens, not making ponds or plantations on slopes close to residential areas, not doing cutting cliffs so that they are perpendicular, not cutting down trees near slopes, trees becoming soil support and water catchment, not building settlements on river banks, making a drainage channels (SPA) which can automatically become a groundwater storage channel (SPAT) to plant hard and light plants, which have deep roots in steep areas.

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