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## The Model of Non-Structural Mitigation Policy to the Landslide Prone Residential Areas in Lebong, Bengkulu

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### Abstract

This study aims to find a model of non-structural disaster mitigation policies for landslide-prone settlements in Lebong Regency. The study is a sociological juridical (sociological). Processing and analysis of primary data, secondary data, information from the focus group discussion and legal documents were carried out in a descriptive qualitative manner. The results of the study show that the implementation of non-structural mitigation policies for residential areas prone to landslides has not been implemented optimally. There are internal and external obstacles to implementing such non-structural mitigation policies. The Lebong Regency government needs to formulate and determine community-based policy steps that include: identifying and mapping potential landslide residential areas, increasing community preparedness, increasing community knowledge and capacity, monitoring continuity towards landslide-prone settlements, implementing control/enforcement, maintaining the environmental balance, paying attention to the carrying capacity and amperage of the environment, compiling planning and budgeting, integrating disaster education in primary and secondary school curricula, strengthening regulatory frameworks and establishing mitigation standard operating procedures.

**Keywords:** Model; Mitigation; Non-structural; Settlements; Landslides.

### Introduction

Indonesia is in a disaster-prone location with many natural disasters. Earthquakes, tsunamis, volcanos, floods, landslides, droughts and wildfires often happen. From January to April 2020, there were 1,115 natural disasters. The predominant disasters are floods, followed by tornadoes and landslides. The disasters affected and displaced 1,818,738 people, of which 156 died or disappeared, and 229 were

injured.<sup>1</sup> Prevention and mitigation of disasters can help reduce or minimise the impact of the loss or damage by the disasters.<sup>2</sup>

An area in Indonesia that often experiences disasters, especially landslides, is Lebong Regency. Landslide is a type of mass movement of soil or rock (or both) down or out of the slope due to unsettled soil or rock of the slope. The triggers of landslides are high rainfall and cliffs.<sup>3</sup> In 2016, five landslides resulted in four deaths, seven injuries and three missing people.<sup>4</sup> In 2018, there were seven landslides in South Lebong. The people in Lebong Selatan Subdistrict live in their homes even though landslides can threaten their safety and property at any time. In 2019 and 2020, landslides occurred in Rimbo Pengadang Village and Talang Ratu Village, Rimbo Pengadang District, which caused limited access from Rejang Lebong to Lebong.

The danger of soil erosion in Lebong on 126,230 hectares is a high-risk category of hazard.<sup>5</sup> This condition is very concerning. Based on the Central Bureau of Statistics, Lebong has 166,527 hectares; about 76% of the area of Lebong Regency falls into the high hazard category of landslides. The high potential for landslides in Lebong, apart from natural factors such as rain, floods and earthquakes, is also due to human activities, specifically the clearing of agricultural/plantation land or settlements on hills, steep slopes or the edge of cliffs.

Based on data from the Strategic Plan of the regional disaster management agencies (BPBDs) of Lebong, in 2016–2021, the area districts prone to landslides are:

- Rimbo Pengadang: Tik Kuto, Rimbo Pengadang, Talang Donok, Tapus and Suka Negeri.

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<sup>1</sup> Badan Nasional Penanggulangan Bencana, 'Data Informasi Bencana Indonesia' (*Badan Nasional Penanggulangan Bencana*) <<https://bnpb.go.id/infografis/infografis-data-bencana-tgl-18-april-2020>> accessed 11 September 2020.

<sup>2</sup> Himpunan Pemerhati Lingkungan Indonesia, 'Potensi Bencana' <[www.hpli.org/bencana.php](http://www.hpli.org/bencana.php)> accessed 11 September 2020.

<sup>3</sup> *Lampiran Peraturan Kepala Badan Nasional Penanggulangan Bencana Nomor 4 Tahun 2008 tentang Pedoman Penyusunan Rencana Penanggulangan Bencana.*

<sup>4</sup> 'Dokumen Rencana Penanggulangan Bencana Kabupaten Lebong' (2016).

<sup>5</sup> *ibid.*

- Lebong Selatan Subdistrict: Talang Leak, Bungi, Talang Ratu, Sukasari, Donok, Mangkurajo and Tes.
- North Lebong Subdistrict: Selebat Ulu, Ketenong, Tunggang, Muara Aman, Talang Bunut, Ladang Palembang, Lebong Tambang, Lokasari, Pasar Muara Aman, Talang Ulu, Kampung Dalam and Kampung Gandum.
- Lebong Atas Subdistrict: Tanjung Agung and Danau.

The Lebong Regency government, through the Settlement Service and BPBD of Lebong Regency, has taken mitigation measures to reduce disaster risk, both through physical development and awareness and improved capacity to face disaster threats. Yet, the empirical facts show no significant change, which means that settlement residents in the villages prone to landslides did not wane or tend to improve. People do not seem worried or care about landslides. They are reluctant to leave their homes even though they have been urged to move to a better and safer place. This condition is concerning because it raises questions about the implementation of many policies and enforcement of related regulatory laws.

Mitigation is divided into structural mitigation and non-structural mitigation. Structural mitigation is the effort to reduce vulnerability to disasters by technical engineering retrofitting. Disaster-resistant buildings have structures planned so that the building can survive or incur less damage from a disaster. Technical engineering involves designing a building structure that considers disaster characteristics.<sup>6</sup>

Non-structural mitigation is the effort to reduce the impact of a disaster apart from efforts that include structural mitigation. For example, policy-making efforts in regulations, preparation of spatial good (Spatial/RDTR), and community capacity building (eg turning on a variety of useful activities for strengthening community capacity) in residential areas prone to landslides.<sup>7</sup> Other programmes or activities for non-structural mitigation include providing an evacuation route

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<sup>6</sup> Ayusari Wahyuni and others, 'Mitigasi Bencana Geologi (Gempabumi Dan Tanah Longsor Di Kabupaten Toraja Utara Dan Tana Toraja Dalam Mengurangi Risiko Bencana' (2018) 1 *Neutrino - Jurnal Pendidikan Fisika*. [37].

<sup>7</sup> *ibid.*

in disaster, creating an area to accommodate disaster victims equipped with adequate facilities, improving community disaster preparedness, organising regular disaster response training, forming a disaster preparedness association, forming an association for natural disaster volunteers, training for evacuation when a disaster occurs, conducting first aid training for victims of natural disasters and conducting simulations of natural disasters.

This study aims to know more about implementing non-structural mitigation policies for disaster-prone settlements in Lebong to find a more implementable model. The assessment model of non-structural mitigation policy is important, considering that to reduce the risk of unpredictable disasters, policies should be based in the community. The main preventive motivation and innovation must emerge from the community.

To formulate a model of non-structural mitigation, the issues are implementing non-structural mitigation policies in residential areas prone to landslides in Lebong, the barriers to implementing such policies, and the policy model for non-structural mitigation against settlements prone to landslides that can be implemented and accepted by the community (implementative). This study is sociolegal, processing and analysing primary data, secondary data and legal documents. Data and legal documents are managed and analysed by identifying, verifying, classifying and describing based on the theory of the sociology of law and legal norms concerning disaster, housing, spatial plans and detailed spatial planning (RTRW/RDTR), and the regulation of environmental protection and management. Moreover, the primary data analysis is based on local wisdom and local community characteristics. The information is obtained by conducting a focus group discussion (FGD). The analysis results are described qualitatively and conclusions as to the response to the legal issue of the non-structural mitigation policy.

### **Implementing Non-Structural Mitigation Policy in Landslide-Prone Residences in Lebong**

Non-structural mitigation policy places more emphasis on community capacity building. Mitigation can be measured by the dissemination of information,

such as giving the unitters and leaflets to people who live in regions prone to landslides procedures for recognising, preventing and handling disasters landslides. Based on the data research and FGD, the non-structural mitigation policies against settlements prone to landslides formed and done by BPBDs District Lebong can be described as follows:

- 1. Sharing Information.** Sharing information from the district BPBDs Lebong, such as sharing unitters and marking areas prone to landslides, helps make people aware of landslides that can occur at any time. Providing information in the form of unitters or signs helps increase awareness of the importance of disaster mitigation efforts. These unitters and signs need to be produced and maintained so that people who live in landslide-prone areas will be aware of and understand the dangers of landslides. Associated with the provision of this information has also been compiled BPBDs Profile Books in disaster prone of Lebong and Regional Action Plan (RAD) Disaster Prone.
- 2. Conducting Socialisation Activities.** BPBD Lebong has actively conducted socialisation in some locations, such as disaster-prone areas and 25 schools. It aims to provide early awareness to the public about the importance of understanding landslides. The socialisation materials included an introduction to disasters, disaster mitigation efforts, and what the community did before, during or after a disaster. Socialisation activities are conducted in disaster-prone areas and non-disaster-prone areas. The socialisation involves some stakeholders, including the Office of National Unity, Politics and Community Protection, the Social Service, Employment and Transmigration, the Regional Secretariat's People's Welfare Section, and is assisted by the TNI and Polri.
- 3. Conducting Training Activities.** Training activities can be conducted for civil servants to improve their capacity related to early prevention and repetition of landslide victims. Meanwhile, community training has not been implemented due to limited budgets. Training for the community and volunteers is important, so they understand what to do when a disaster occurs. Activities rehearsing evacuation and evacuation drills have been planned but have not begun. Evacuation rehearsals and disaster simulations are important to better prepare the community in the event of a real landslide disaster. Landslide disaster simulations are conducted to prepare the community for facing disasters and reduce panic situations, which can improve the survival numbers.<sup>8</sup>
- 4. Developing a Strategy and Policy Direction.** In the future, BPBD Lebong will set directions and policies to ensure maximum results and integration from the implementation of disaster management. The strategy is to develop not only a partial strategy but also an integrated strategy that involves the support and commitment of all *stakeholders* from BPBDs and related units, entrepreneurs,

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<sup>8</sup> Amni Zarkasyi Rahman, 'Kajian Mitigasi Bencana Tanah Longsor Di Kabupaten Banjarnegara' (2015) 1 Gema Publica Jurnal Manajemen dan Kebijakan Publik.[7].

volunteers and the community. One part of this policy has been to establish a Disaster Resilient Village; there have been two villages as a result.

Non-structural mitigation policies have established the basis for the choice of action implemented by all stakeholders to reduce risk, especially in residential areas prone to catastrophic landslides. Therefore, regional development policies must generally be synchronous and correlated with the non-structural mitigation policies that have been planned and will be implemented. Every regional development policy must always pay attention to the provisions related to areas that are potentially disaster-prone, including the elements of a disaster management plan in the regional development plan, as regulated in article 21 letter d and article 25 of Lebong Regency Regional Regulation Number 3 of 2017 concerning Disaster Management.

### **The Barriers of Non-structural Mitigation Policy Implementation on Community Who Live in Landslide-Prone Areas in Lebong**

Based on identifying and verifying the primary data and information from the FGD, the barriers the Lebong government has experienced in implementing non-structural mitigation policies in landslide-prone areas in Lebong can be divided into two: internal and external barriers.

Ten internal barriers can be identified and described as follows:

- (1) The capacity of civil servants and relative quantity of BPBDs are not supporting all the tasks and functions BPBDs;
- (2) Limited information and communication networks effectively disseminate disaster information to the public;
- (3) No integrated disaster risk reduction in development planning in an effective and comprehensive manner;
- (4) No regulation of standard operating procedure (SOP) associated with a disaster management plan that includes assessment of disaster risk, disaster management plans, contingency plans, evacuation plans, operating plans, and plans for rehabilitation and reconstruction;
- (5) No maximum in implementing Lebong Regulation No 3 of 2017 on Handling Disasters due to many factors, such as no implementing regulations, limited budget, and the funds and facilities infrastructure operational support is not known as a definite amount;
- (6) The map of disaster-prone areas is not comprehensive, covers all types of

- threats and has not been socialised to all subdistricts;
- (7) Fewer efforts of disaster risk reduction, so disaster risk management is not as expected;
  - (8) The potential for new threats cannot yet be well mapped;
  - (9) No institution can guarantee the existence of cross-sector participation as well because the forum of handling disaster and quick reaction team has not been formed. The coordination between and among sectors is important for the successful implementation of disaster mitigation policies;
  - (10) There is no disaster security unit in each landslide-prone area.

Five external barriers can be identified and described as follows:

- (1) Lack of public knowledge and societal apathy about landslides cause indifferent and wayward attitudes. The community argues that non-structural landslide mitigation activities, such as socialisation, training and simulation, are not important and a waste of time;
- (2) The level of public awareness is low. The concern of some people who are still low on environmental sustainability;
- (3) Deforestation, high rainfall and erratic weather require more preparation for disaster management planning;
- (4) There is a limited number of disaster volunteer groups and inadequate distribution due to low community participation and awareness;
- (5) In residential areas included in the red zone prone to landslides, such as Sukasari and Talang Ratu and South Lebong, the results of the FGD showed that the community did not want to be relocated, even though the danger of landslides threatened their safety. In the FGD, the community conveyed that they had lived in these settlements for generations since 1925, long before Indonesia's independence. If the relocation policy is to be implemented, the Lebong government will have trouble finding new land because Lebong has mostly hills with steep cliffs.

### **The Model of Non-Structural Mitigation Policies for Landslide-Prone Areas in Lebong**

The mitigation policies are non-structural with respect to policies, awareness, knowledge development, public commitment, and methods and operating practices, including adequate mechanisms for participation and information provision, which can reduce the associated risks and impacts. Non-structural mitigation includes land zoning, land use planning, and the arrangement and determination of residential area planning. It also includes reducing the likelihood or consequence of risk through modification of processes of human or natural behaviour without requiring the use

of the designed structure. Non-structural mitigation is associated with regulatory steps, educational programmes and public awareness, physical modification of non-structural, behavioural modification and environmental control.<sup>9</sup>

A landslide disaster is a type of disaster that has the risk of harming and threatening human life. The efforts to reduce risks and their impacts need to be prioritised. Disaster management efforts require further study of areas vulnerable to landslide hazards.<sup>10</sup> Non-structural mitigation can be done to improve the ability of people to face landslides and understand the need to undertake active measures to prevent the danger of landslides. This is important because landslides are unpredictable and can happen anytime.

The following describes a non-structural mitigation policy model as a policy step that can be developed with the hope that it can be more effective in mitigating residential areas prone to landslides in Lebong. The policy steps that need to be formulated and stipulated by the Lebong government are as follows:

- 1. Identifying and Mapping.** Identifying and mapping the potential landslide areas comprehensively is important to determine the level of vulnerability of the residential area to landslide susceptibility so that early anticipatory decisions can be taken. The landslide hazard map is divided into three classes of hazard: high hazard, medium hazard and low hazard. In addition to mapping, landslide-prone areas should also map points of landslides that have already happened in Lebong's subdistricts.
- 2. Community Awareness.** The awareness of the people living in residential areas prone to landslides needs to be improved to prevent and overcome the impact of the resulting disaster. The government must be proactive in creating community preparedness in the face of landslides. Community awareness is related to the distribution of information, in this case, procedures for identifying and preventing landslides and disseminating disaster relief to the public. This information can be disseminated by using print media and electronic media, such as the provision of a unitter, or through television or radio in residential areas prone to landslides in Lebong and ways to prevent early landslide disaster management. Disseminating information about landslides to the public also requires coordination of relevant local government officials.

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<sup>9</sup> Kusumasari Bevaola, *Manajemen Bencana Dan Kapabilitas Pemerintah Lokal* (Gava Media 2014).[23].

<sup>10</sup> Rizkyah Isnaini, 'Analisis Bencana Tanah Longsor Di Wilayah Jawa Tengah' (2019) 1 *Islamic Management and Empowerment Journal*. [149].



3. **Community Knowledge and Capacity.** Community knowledge and capacity for handling landslides should be a concern. The more the community is prepared to face disasters, the greater the likelihood that the risk and impact of disasters can be handled well. Community knowledge and capacity can be improved through training or educating the community on procedures for evacuation and rescue in the event of a landslide disaster. Moreover, to improve community knowledge and capacity, socialisation or counselling can be conducted on all aspects related to landslides, such as procedures for preventing and handling disasters and saving oneself before, during and after the disaster.
4. **Monitoring in Landslide-Prone Residential Areas.** Monitoring in landslide-prone residential areas must be conducted continuously to determine the level of landslide vulnerability and early anticipation. Therefore, we need supporting facilities, namely a monitoring UNIT in each landslide-prone residential area. These UNITS can also provide an early warning about landslides to the community. An early warning is made to inform the observations regularly in landslide-prone areas. An early warning is disseminated to the community so that early preparation can be made in anticipation of landslides at any time. Early preparation can include providing evacuation paths in landslide-prone areas and evacuation shelters that serve as a refuge or relocating the victims of landslides.
5. **Mitigation Based on Local Wisdom.** Local wisdom can be understood as a collective understanding, knowledge and wisdom that influences a decision to resolve or overcome life problems.<sup>11</sup> Local wisdom is personable, community cultural identity in the form of values, norms, ethics, beliefs, customs and specific rules accepted by the community and proven capabilities.<sup>12</sup> Local knowledge contains values, beliefs and religious systems adhered to by the local community. Local knowledge and wisdom protect and conserve natural resources and the environment.<sup>13</sup> The local wisdom of the Rejang tribe, for example, in the management of forests and the environment, is manifested in the form of prohibitions such as not cutting down trees carelessly, not cutting trees on the banks or the edge of the river, not building in the springs areas, not building on steep lands, not building near waterfalls and not cutting trees upstream of rivers. The local knowledge of the community as an accumulation of collective experiences from generation to generation needs to be preserved and developed to manage agricultural land/plantations and the environment. Therefore, the regulation of customary institutions and traditional leaders in the area becomes urgent to assist in managing and preserving natural resources and the environment using local wisdom.
6. **Disciplinary Action and Law Enforcement.** The Lebong government

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<sup>11</sup> Muh Aris Marfai, *Pengantar Etika Lingkungan Dan Kearifan Lokal* (Gadjah Mada U Press 2012).[33].

<sup>12</sup> Sartini, *Mutiara Kearifan Lokal Nusantara* (Kepel 2009).[11].

<sup>13</sup> Agus Purwoko and others, 'Kajian Pengetahuan Lokal Masyarakat Petani Dalam Pengelolaan Daerah Aliran Sungai (DAS) Ketahun Di Kabupaten Lebong' (2017) 16 AGRISEP.[202].

conducted disciplinary action and law enforcement over the construction of housing or settlements in locations prone to landslides and/or inconsistent with spatial planning. Meanwhile, areas that have been built for a long time (prior to the determination of the RT/RW) in landslide-prone areas must be equipped soon with slope/cliff retaining structures. For settlements that enter the red lane, for example, in the flash flood lanes, the local government must firmly urge the community to immediately relocate to a better and safer place, even though this is a tough policy decision. The public must be informed about landslides and their impacts so they can decide on alternative solutions. It is not easy to relocate residents who have lived in the area since the beginning. The villagers lived in the village long before Indonesia's independence. Relocation that is relatively acceptable is usually supported by three conditions. First, general knowledge states that an area affected by a natural disaster cannot be used as a settlement anymore. Second, guarantee the certainty of land/land ownership in the event of a swap. Third, guarantee livelihoods commensurate with livelihood in their homeland. If these three conditions are not met, the relocation policy will certainly not be accepted by the community. Importantly, if the relocation solution is taken, it must be based on the participation and willingness of the community. For buildings that violate spatial planning provisions and are in the red zone, repressive enforcement of administrative laws must be conducted, meaning orders of forced demolition.

7. **Environmental Balance and Space Utilisation.** The Lebong government must consider the environmental balance factor in all aspects of development policies, including providing access to the community over spatial planning policies, both in the planning process and in control of the implementation of the policy. Managing and implementing the provisions of spatial planning set out in the provisions of articles 22 and 29 of Regional Regulation No 14 Year 2012 on Spatial Planning (Perda RT/RW) in the field consistently is key to overcoming landslides. The Lebong government must regulate and enforce the provisions of regional spatial planning and make spatial planning with a disaster perspective a priority issue. Revisions to Regulation of RT/RW in Lebong, which has been under judicial review since 2019, should be able to map the disaster-prone locations, establish evacuation paths in green lines, and control settlements in the area of the dangerous zone of flood and landslides. RT/RW that has been determined must be implemented consistently and responsibly. Lebong Regency must also prepare a detailed spatial plan (RDTR/Zoning) soon.
8. **Carrying and Capacity of Environment.** The policy of planning and implementation of development in Lebong must consider the carrying capacity of the environment (DDDT-LH). The Lebong government must realise that the development policies implemented will determine the future fate of Lebong; therefore, a strategic environmental assessment (KLHS) must be conducted on any development policies that will utilise space with a powerful impact on the environment. Moreover, the utilisation of natural resources must be done related to the management plan and environmental protection (RPPLH) as set by articles 9 and 10 of Law No 32 of 2009 concerning PPLH. The development policies

in Lebong must be able to improve the standard of living and economy of the community, create a prosperous society and conserve DDDT-LH regularly.

- 9. Mitigation Planning and Budgeting.** The Disaster Management Master Plan (RIPB) in 2015-2045 by Bappenas and BNPB should become a reference for the Lebong government to prepare the medium-term development plan (RPJMD), regional government work plans (RKPD), and regional development budget plans (RAPBD). The provision of a mitigation budget to anticipate the potential threat of landslides must be seen as an important investment for the safety and welfare of people, not the burden for the region.
- 10. Disaster Education for Students.** Disaster education materials should be integrated into the primary and secondary school curriculum. It should be made subjects of local content and or at least be integrated into geography or other relevant subjects. So far, geography subjects have only been given to high school students majoring in social studies and not to science majors, even though material about disasters is urgent for students in all majors, especially schools in landslide-prone areas. Students should learn about disasters starting from elementary, junior high and high school education levels in all majors.
- 11. Strengthening the Regulatory Framework.** SOP relates to legal documents for non-structural disaster mitigation both in planning and in implementing policies, which include SOP for disaster risk studies, SOP for disaster management plans and SOP for simulation/rehearsals, SOP for contingency plans, SOP for evacuation plans and SOP for simulation/rehearsals, SOP operating plan, SOP rehabilitation plan and SOP reconstruction.

The point of indicator on model non-structural mitigation policies on landslides prone in Lebong can be described

**The Matrix of Non-Structural Mitigation Policy on Landslide-Prone Residential Areas in Lebong**

No	Policy	Action
1	Identifying and mapping settlements of potential landslides comprehensively	➤ Landslide mapping is divided into three classes of vulnerability: high, mediocre, and low.
2	Improving awareness of people living in residential areas prone to landslides	➤ Disseminating information through print and electronic media, namely unitter or providing information on television or radio about residential areas prone to landslides.
3	Improving community knowledge and capacity	<ul style="list-style-type: none"> <li>➤ Training or educating the public about the evacuation and rescue procedure should landslides occur.</li> <li>➤ Socialisation on all aspects related to the landslide.</li> </ul>

4	Monitoring of landslide-prone residential areas regularly.		<ul style="list-style-type: none"> <li>➤ Constructing supporting facilities, such as a monitoring UNIT in each residential area prone to landslides.</li> <li>➤ Informing landslide warning earlier to public.</li> <li>➤ Providing evacuation paths in areas prone to landslides.</li> <li>➤ Providing evacuation shelters that served as a refuge or relocating to the victims of landslides.</li> </ul>
5	Mitigation based on local wisdom		<ul style="list-style-type: none"> <li>➤ Playing the role of institutions customary in the village about the management of the environment based on local wisdom.</li> <li>➤ Encouraging traditional leaders, hamlet elders to be actively involved in preserving the environment.</li> </ul>
6	Disciplinary / law enforcement against the construction of residential housing or at a location that is prone to landslides.		<ul style="list-style-type: none"> <li>➤ Building a gutter / cliff barrier / steep slope.</li> <li>➤ Conducting a relocation policy for residents' settlements in the red zone.</li> <li>➤ Conducting forced measures, such as demolition of buildings as sanctions.</li> </ul>
7	Prioritising environmental balance in spatial use and all aspects of development policies		<ul style="list-style-type: none"> <li>➤ Implementing the spatial field consistently.</li> <li>➤ Revising spatial planning and preparation mapping RDTR disaster-prone locations, establishing evacuation paths in the corridors of green lanes and evacuation, and controlling settlements in areas prone to danger zones of flood and landslide.</li> </ul>
8	Considering carrying capacity and carrying capacity of the environment (DDDT-LH).		<ul style="list-style-type: none"> <li>➤ Conducting strategic environmental studies (KLHS) of any development policies that will utilise space.</li> <li>➤ Utilising natural resources in accordance with the environmental protection and management plan (RPPLH).</li> </ul>
9	Planning and budgeting, policy referring to the Master Plan for Disaster Management (RIPB) National 2015–2045.		<ul style="list-style-type: none"> <li>➤ Integrating the non-structural disaster mitigation policies into RPJMD and RKPD.</li> <li>➤ Integrating the budget for anticipating landslides in the RAPBD.</li> <li>➤ Mitigation financing as an investment for the safety and welfare of the people.</li> </ul>
10	Disaster education in the primary and secondary school curriculum.		<ul style="list-style-type: none"> <li>➤ Integrating disaster education in primary, secondary and high schools in Lebong.</li> </ul>

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| 11 | Strengthening the regulatory framework by formulating SOP as a non-structural mitigation policy legality instrument. | Arranging: <ul style="list-style-type: none"> <li>➤ SOP for disaster risk assessment;</li> <li>➤ SOP for disaster management plan and simulation;</li> <li>➤ SOP for contingency plans;</li> <li>➤ SOP for evacuation plans and evacuation rehearsals;</li> <li>➤ Operating SOP;</li> <li>➤ Rehabilitation SOP; and</li> <li>➤ SOP for reconstruction.</li> </ul> |
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**Source:** The results of data processing and analysis, September 2020

## Conclusion

Based on the analysis of the legal issues above, the conclusion is as follows: generally, the implementation of non-structural mitigation policies by the Lebong government through BPBDs in landslide-prone residential areas has been done, such as information provision, dissemination, training, strategy and policy. However, some indicators of non-structural mitigation policies have not been implemented to the fullest extent because they experience many barriers.

There are internal and external barriers to implementing non-structural mitigation policies. Internal barriers relate to the capacity and quantity of civil servant BPBDs, limited information and communication network, non-integration of mitigation policies, no regulation of SOP, implementation of regulations related to disaster management is not maximised, the mapping of disaster-prone areas are not comprehensive and not informing to the public, the effort of reducing the risk of disaster is not relevant with the duties, the potential of new threats does not map properly, no forum for handling the risk of disaster and a quick reaction team, and no security unit in each landslide-prone area. Meanwhile, the external barriers are lack of knowledge and apathy, low public awareness, the condition of the cleared forest, high frequency of rainfall and weather anomalies, limited volunteers of disaster and inadequate distribution, red zone of landslide-prone residential, and the community members against relocation.

The model for non-structural mitigation policy in landslide-prone residential areas of Lebong identifies and maps the settlements of potential landslides comprehensively, improves awareness of people living in landslide-prone areas, improves knowledge and capacities, observes landslide-prone residential continuously, disciplines the construction or location of building prone to landslides, prioritises the capacity of DDDT-LH, prepares policy planning and budgeting mitigation related to RIPB National 2015-2045, integrates disaster education in all levels of education, and strengthens the regulatory framework by preparing the SOPs as instruments for the legality of non-structural mitigation policies.

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