

ENGAGING AFFECTED COMMUNITIES OF THE LEMBANG FAULT IN DISASTER RISK REDUCTION EFFORTS

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Abstract

Lembang Fault is a tourist area that offers a lot of natural beauty but has the potential for earthquakes. This encourages the role of various stakeholders from the government, private sector, academia, community, and media. Penta-helix collaboration does not seem to be maximized to promote disaster risk reduction efforts in tourist areas. The development of the penta-helix model is sought to promote disaster risk reduction. The hexa-helix model which is the development of penta-helix is a consideration in disaster risk reduction efforts in the Lembang Fault tourism area. This research provides an overview and understanding of the importance of the role of the tourism sector in disaster risk reduction efforts in the Lembang Fault tourist destination. The research results show a need for more comprehensive collaboration related to disaster risk reduction on the Lembang Fault involving affected communities. The hexa-helix model emphasizes that affected communities are not seen as objects but as subjects participating in disaster risk reduction efforts. The results show that the tourism sector plays an important role in disaster risk reduction efforts in the Lembang Fault area. The affected community is a new element in the Hexa-helix model that refers to tourism actors including local tourism managers.

Keywords: Affected communities, Hexa-helix, Disaster, Tourism, Lembang Fault.

A. INTRODUCTION

Tourism is a rapidly growing sector, and the tourism industry is a driving force behind worldwide economic development. The expansion of tourism in Indonesia displays a positive side, as evidenced by the increased number of tourists and the development of tourist spots. The safety and comfort of tourists visiting these places encourage the development of tourism destinations, making it a priority in Indonesia's tourism sector development (Kemenparekraf, 2022). Tourism is an essential component of life for the people in areas of tourism since it affects the community's social and economic activities. The tourism business is highly vulnerable to numerous catastrophes. Tourism is one of the industries that is extremely sensitive to external changes. Tourism locations that undergo crises influence mankind, causing environmental and economic damage and significantly impacting local community rehabilitation from disasters (Varghese & Chennattuserry, 2022). The environment has contributed to human civilization. The broad landscape has aided the development of tourism activities. Environmental traits and phenomena provide tourism

opportunities. Although tourism is frequently connected with pleasure, it is also associated with risk. Several large-scale disasters have happened in the past 20 years, causing significant losses to Indonesian tourist destinations (Kemenparekraf, 2021). The tourism sector appears to require extra attention in catastrophe crisis management because it affects a large number of people, including tourists, local communities, and tourist destination operators.

Indonesia is known as the ring of fire because many locations are surrounded by active mountains. This makes Indonesia a disaster-prone country. The tectonic conditions in Indonesia are also influenced by the meeting point of major plates, notably the Eurasian Plate, the Indo-Australian Plate, and the Pacific Plate. Plate collisions can generate faults on land or in the ocean, as seen on various Indonesian islands and oceans (Tim Pusat Studi Gempa Nasional, 2017). Furthermore, Indonesia is positioned on the Pacific Ring of Fire, which has several active faults distributed around the region. Many active faults also run across the Java area, particularly West Java. One of the most significant is the Lembang Fault. The Lembang Fault region is renowned as an earthquake-prone location due to the fault's movement.

The Eurasian, Indian Australian, and Pacific tectonic plates surround the Indonesian terrain. The tectonic activity of these plates has the potential to cause faulting or catastrophic faulting. Active faults may be found across Indonesia, and the number is increasing. The Lembang fault is one of the active faults with significant effect. The blame line inside the Lembang range, which runs east-west for 22 kilometers, is not stable; seismic shocks occurred in 1834, 1879, 1910, 2003, and 2011. Even if the magnitude of previous earthquake shocks was less than 6 on the Richter scale, the consequences were severe for the surrounding region. The final sizeable earthquake happened on August 28, 2011, in the Cisarua area. A few 301 homes were harmed and nine were gravely harmed, despite the reality that the seismic tremor was as it were of greatness 3.3 and kept going less than three second (Kurnianto et al., 2019). Research Daryono, (2016) splits the Lembang Fault into six parts: Cimeta, Cipogor, Cihideung, Gunung Batu, Cikapundung, and Batu Lonceng, the bulk of which are tourist destinations with numerous tourist attractions. Population growth rate, density, gender, and age are the most important factors in determining susceptibility to earthquakes, as data shows that women, children under the age of five, and the elderly are the most susceptible population. Lembang has a highly dense population, a medium female population, a low old and under-five population, and a fast-growing population (Kurnianto et al., 2019).

Earthquakes are classified as natural hazards or natural catastrophes based on their consequences on human life. Earthquakes caused by fault changes are one example of a natural hazard. Meanwhile, the Lembang fault zone events are reminiscent of a natural calamity. This is due to the susceptibility induced by earthquakes generated by the Lembang fault's movement. Physical or environmental circumstances, as well as social, economic, political, and institutional issues, and a lack of sustainable behavior, all contribute to vulnerability. Furthermore, the Lembang Fault area is highly populated and a popular tourist destination for tourists looking to appreciate nature and explore interesting places. Furthermore, the dangers encountered include subsequent events such as earthquakes and landslides. People who live near the Lembang Fault appear to be at risk from earthquakes, erosion, and rock mass movements.

The Bandung basin, a locale in West Java, Indonesia, incorporates a tall populace thickness and a tall level of financial action. Most commerce divisions are spoken to in the region counting the mechanical, instruction, commerce and exchange, and tourism sectors. The event of an expansive seismic tremor within the locale caused by subduction along the Lembang fault would be a catastrophe, its effect antagonistically influences all exercises within the Bandung basin and surrounding area (Kurnianto et al., 2019). Each region or delineation offers a wide range of prospective tourism attractions. Mount Batu, Tebing Keraton, Menara Pandang Sesar Lembang, Kabuyutan Batu Loceng Site, and Mount Palasari are among the tourist destinations at risk from the Lembang Fault Earthquake (Wulung, 2022). Mount Batu which is a natural wall in the shape of a hill with large rock components, provides spectacular natural views, particularly at the mountain's summit, as well as information on Mount Batu's formation. Camping is popular among tourists to

this location. The arrangement of tall boulders forming an extended cliff landform, the ambiance of the mountain top, the cold air, and the rows of trees all contribute to the Lembang Fault becoming a popular tourism site. A certain location generally has several possible tourist attractions. The location under consideration may also be prone to threats such as natural catastrophes. Despite the risk, the Lembang Fault Area has a certain allure that attracts travelers. Tebing Keraton, Mount Tangkuban Perahu, Bukit Bintang, Noah's Park, Lodge Maribaya, and Boscha Observatory are examples of tourist spots in the Lembang Fault Area that provide natural beauty as well as a rich history. Various environmental phenomena can generate situations that impact all areas of human existence while ignoring the dimensions of space and time that cover all life (Rosyidie, 2004). Natural hazards are one of the environmental situations that affect several elements of human existence. Ignoring spatial features can exacerbate the destructive consequences of natural catastrophes in places with unique characteristics, such as tourism sites frequently referred to as tourist destinations. Meanwhile, catastrophe circumstances are unconcerned with timing, making it impossible to forecast when disasters may strike. This influences the tourism industry, especially during peak tourist seasons.

Disaster Risk Reduction (DRR) plays an important role in disaster management since disasters cannot be avoided, but the potential for disaster may be identified early on, reducing risks and consequences. Disaster risk management is used to reduce the effect of catastrophes by directed efforts or activities. DRR is used not just to decrease current risks, but also to prevent new ones from emerging (Nugroho, 2019). DRR is used to lessen disaster-causing elements, namely natural and human susceptibility. Disaster risk reduction is one component of planning that aims to reduce the effect before the problem happens. DRR practices include lowering the chance of hazard exposure, minimizing vulnerability, controlling the environment, and strengthening disaster preparation models. Disaster risk reduction is an essential component of sustainable development. A sustainable development activity must mitigate catastrophe risk.

According to Law No. 9 of 1990, tourist destinations are also known as tourist areas, which are locations with a specific area created and designated for tourism activity. According to Law No. 10 of 2009, tourist destinations are areas that include tourist attractions as well as components such as amenities and accessibility. A tourist destination may be defined as a geographical area entity that includes tourism services and goods as well as supporting aspects. The supporting factors in question may include tourism industry players, communities, and development communities that collaborate to provide motivation and experience for tourist visits. A tourist destination can also be described as an area created to provide amenities and services. Tourism products available at tourist destinations are also divided into three categories: attractiveness, facility ownership, and ease of access to the tourist destination

The Hexa-helix model is an extension of the Penta Helix model used in stakeholder research. Disaster studies and tourist studies have largely adopted the Penta Helix idea of stakeholder cooperation, which unites government, industry (public or private), academia, community, and media. According to (Rachim et al., 2020) research, the impacted community is one of the most essential instruments and has a major effect on disaster management that may be included in a stakeholder model. Affected communities, according to the Hexa-helix idea, should be viewed as subjects rather than objects in disaster management collaboration. Stakeholder mapping in the Penta Helix model does not appear to offer a complete picture of stakeholder engagement in disaster management. The Hexa-helix idea in figure 1 calls for collaboration among six stakeholders: the government, the commercial sector, non-governmental organizations (NGOs), universities, the media, and affected communities.

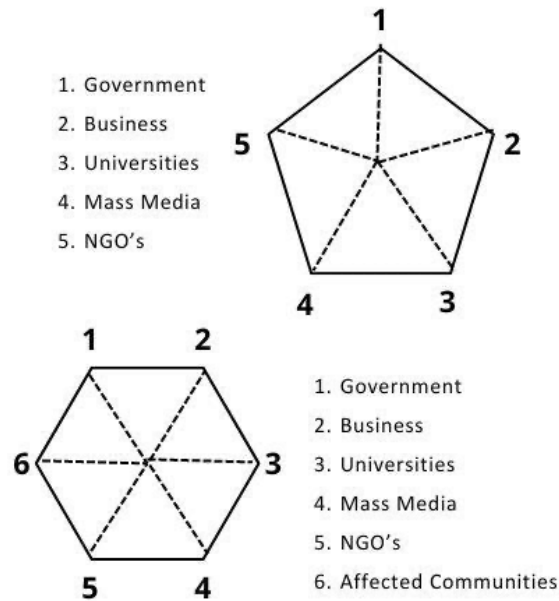


Figure 1. The Hexa-helix Model Concept

Source: Rachim et al. (2020)

Based on the current circumstances in the Lembang Fault area, the authors are curious about highlighting and addressing deficiencies regarding the involvement of affected communities in the tourism sector around the Lembang Fault line. There are few studies on the engagement of stakeholders other than Penta-helix stakeholders in disaster risk reduction in tourism zones. Furthermore, little research has been conducted to investigate the role and potential of the tourist sector in catastrophe risk reduction initiatives. This study introduces the concept of Hexa-helix in disaster-prone tourist destinations, namely tourism actors as impacted communities who must participate in disaster risk reduction. Affected populations at risk of catastrophe must be included in the solution to disaster concerns in tourism destinations.

B. RESEARCH METHOD

This study employed a method based on qualitative data using secondary data collection. A more thorough search was undertaken, which contained references to pertinent papers. The process involved identifying, selecting, appraising, and synthesizing evidence from peer-reviewed articles published between 2020 and 2024 to address key research questions. The appraisal of evidence included evaluating methodological rigor, relevance to the research questions, and consistency in findings across studies. Articles were assessed for quality using predefined criteria such as clarity of objectives, robustness of data collection methods, and soundness of analysis. A literature review includes two fundamental components. To begin, outline previous study findings or assertions on the topic. A literature review should assess the accuracy and completeness of existing knowledge and provide judgments on what is correct, incorrect, inconclusive, or missing. Unlike an annotated bibliography, a literature review is a synthesis of information. This method was chosen because the literature to date has focused almost entirely on disaster risk reduction in disaster-prone areas, which uses the penta-helix concept to map the stakeholders who play a role in disaster risk reduction. The few studies that focus specifically on disaster risk reduction in tourist destinations located in disaster-prone areas are not yet suitable for narrative reviews. The literature study aimed to synthesize the current state of knowledge in these areas and generate a

comprehensive understanding of the relationship between tourism and disaster risk reduction initiatives. We also attempted to identify research gaps for disaster risk reduction in tourism areas by including local tourism actors. Finally, the identified articles were reviewed and elaborated upon, which served as the foundation for this literature review. This study aimed to synthesize the current state of knowledge and provide a comprehensive understanding of the intersection between tourism and DRR, focusing on 1) identifying key stakeholders in DRR efforts, 2) evaluating the inclusion of tourism actors as stakeholders in DRR initiatives, 3) analyzing the contribution of the tourism sector to reducing disaster risks in vulnerable tourist destinations. The search engines Web of Science, ScienceDirect, and Google Scholar were used to find phrases related to disaster risk reduction in tourism regions; the full list of search terms is available in Supplementary Information. Abstracts and entire articles were then assessed for eligibility and relevance to the questions. The entire list of search phrases was chosen if they were 1) peer-reviewed articles or government and non-government reports on the topic with a significant mention of disaster risk reduction in tourism areas; 2) sources containing relevant information about at least two of the key themes (i.e. risk, vulnerability, natural disaster, tourist destination, affected communities, hexa-helix, tourism actor); 3) Written in English; and 4) Published between 2020 and 2024. The material gathered was qualitatively synthesized to inform the literature review. The themes were chosen based on the extent to which they were discussed. Before analyzing complete texts, resources were filtered using abstracts (where available), and references were chosen based on their relevance to the purpose of this study. The reference section of each analyzed article was also examined to identify potential research.

C. FINDINGS AND DISCUSSION

The studies converge on the critical role of stakeholder engagement in enhancing resilience and effective crisis management within tourism and disaster-prone areas. Eckert et al. (2023) emphasize that resilience in tourism destinations hinges on systemic coordination among stakeholders, given the interconnected risks in the tourism sector. Similarly, Varghese & Chennattuserry (2022) underscore the need for an integrated approach to disaster risk reduction, highlighting economic and reputational stakes that demand cohesive crisis planning. Chan et al. (2020) explored the role of tourism in disaster management during the Kumamoto earthquake, highlighting its contributions to preparedness, emergency response, and long-term recovery. The study emphasized tourism's potential to enhance resilience through knowledge sharing, emergency support, and sustainable development, positioning it as a key driver in comprehensive disaster recovery efforts. Rachim et al. (2020) focus on the active participation of affected communities as central to successful floodplain management. Wahyuningtyas et al. (2020) point to the necessity of disaster mitigation awareness and infrastructure to ensure tourists' safety at Senggigi Beach. Ismail & Kastolani (2024) suggest a participatory disaster mitigation paradigm incorporating tourism managers, local communities, and government agencies. The concept combines structural measures such as evacuation routes with non-structural initiatives such as training and awareness campaigns. Using the 4-D Development Model (Define, Design, Develop, Disseminate), the study focuses on collaboration, local knowledge, and hazard mapping to improve preparedness, ensure tourist safety, and sustain economic activity in disaster-prone areas.

Table 1. Review of relevant articles		
No	Title	Result

1	Resilience Analysis in Tourism Destinations: Reflections From a Development Cooperation Project (Eckert et al., 2023)	The systemic characteristics and intricate linkages between risk and the tourist sector complicate risk management in tourism destinations. A tourist destination is a system that includes several actors. Stakeholder participation is critical for addressing risk management challenges in tourism destinations and increasing destination resilience.
2	Community Resilience and Crisis Management: Stakeholders Perspective of The Tourism Industry (Varghese & Chennatuserry., 2022)	Disaster crisis management in tourist regions requires an integrated approach. The involvement of stakeholders in disaster risk reduction is critical in tackling crisis management through an integrated approach that includes catastrophe planning and response systems. It is a community resilience model that emphasizes goal development and resilience building. Economic instability and loss of brand image in catastrophe-affected areas make destination crisis planning and disaster management critical.
3	Tourism and natural disaster management process: perception of tourism stakeholders in the case of Kumamoto earthquake in Japan (Chan et al., 2020)	The Kumamoto earthquake case study demonstrates tourism's diverse involvement in disaster management at all stages. Pre-event and prodromal phases highlighted the industry's involvement in sharing disaster knowledge, developing evacuation plans, and raising public awareness. Tourism gave critical support during the disaster phase by providing emergency lodgings and correct communication to help prevent misinformation from spreading. In the intermediate phase, tourism operators focused on reopening attractions and resuming operations, aided by recovery marketing to regain tourist confidence.
3	Hexa Helix: Stakeholder Model in The Management of Floodplain of Lake Tempe (Rachim et al., 2020)	Other stakeholders play a significant role, such as impacted communities that are catastrophe victims. Affected communities have a crucial role since they are at the center of every step of disaster management. Affected communities must be part of the solution to flood-related challenges.
4	Management of Tourism Areas Based on Disaster Mitigation: Case Study of Senggigi Beach (Wahyuningtyas et al., 2020).	Disaster survivors on Senggigi Beach lack an understanding of disaster mitigation. Sufficient mitigating support facilities and infrastructure are required. Senggigi Beach Area. The efforts aim to provide travelers with a sense of security and comfort.
5	Framework to Development of Disaster Mitigation Model in Mountain Tourism Destination (Ismail & Kastolani, 2024)	The principal concerns are volcanic eruptions and landslides, with hot clouds, lava flows, pyroclastic falls, poisonous gasses, and slope instability aggravated by human activity such as deforestation. Current mitigation initiatives are limited, necessitating collaboration among tourism managers, local communities, and government entities. The study creates a participatory disaster mitigation model that incorporates both structural (e.g., disaster-ready infrastructure such as evacuation routes) and non-structural measures (e.g., training and awareness campaigns). It stresses the use of hazard maps and stakeholder

collaboration to promote resilience. The suggested strategy encourages collaboration between tourist managers and local communities, using local knowledge and offering economic opportunities to improve catastrophe preparedness while maintaining tourism activity. The framework uses the 4-D Development Model (Define, Design, Develop, and Disseminate) and includes iterative testing and expert validation. This strategy emphasizes the significance of preparedness, education, and stakeholder collaboration in ensuring sustainable and safe tourism in disaster-prone mountain areas.

Disaster Affected Parties in The Lembang Fault Tourism Area

Affected communities are persons or groups who reside in disaster-prone tourism regions and are directly affected by catastrophes, such as home damage, loss of livelihood, and psychological stress. They are the most vulnerable and require quick help and support. Affected communities are on-site and immediately affected by the disaster event. An affected community is a collection of people who share a common interest, identity, or purpose in a disaster-prone tourism area. This community might arise due to various causes, including geographic location, profession, or ethnicity. Affected communities have the capacity to act as change agents in disaster preparedness and resilience initiatives. Affected communities typically share features, are affected by catastrophes, can participate directly in disaster risk reduction activities, and can include both affected and non-affected communities. The fundamental distinction between impacted individuals and affected communities is the amount of organization and emphasis. Individuals or groups who are directly affected by catastrophes are referred to be affected communities. In contrast, affected communities have a more organized structure and focus on collaborative efforts to enhance resilience. Communities are basic social structure units that are at the forefront of natural catastrophe response. Tourism communities have the highest and most nuanced understanding of hazard risk. In addition to growing opportunities, tourism communities are facing increased pressures, resulting in significant changes in the connections between people and resources. The rapid expansion of the Lembang Fault Area, which has become a popular tourist destination, necessitates efforts to minimize future calamities in the area. Previous research on disaster risk mapping in the Lembang Fault tourism area demonstrates that tourism-based mitigation initiatives have been ineffective. Aside from potential, the tourist industry has vulnerabilities regarding the comfort and safety of tourists (Wahyuningtyas et al., 2020). In the disaster-prone tourism region of the Lembang Fault, the impacted parties include both the people who reside around the location and the community as local tourist management.

Stakeholder Collaboration in Disaster Risk Reduction Efforts in The Lembang Fault Tourism Area

The effect and vulnerability of numerous disasters in the tourism region highlight the importance of stakeholder collaboration in disaster risk reductions in the Lembang Fault tourist area. The government plays a crucial role in lowering disaster risk in Lembang. Each community's pre-disaster organizational style, as well as the existence of a strong village leader, are both critical for the success of a rehabilitation program. If the government does not implement the appropriate policies, the community will suffer in the aftermath of a disaster. The reported quality of life decreased post-disaster due to the loss of social networks and belongingness, rather than a diminishment in perceived instrumental support. Governments such as the BNPB and the West Bandung Regency BPBD are working on policies and regulations, such as releasing Regional

Regulations for regional spatial planning and compiling disaster management protocols. Academics can play a part in efforts to enhance disaster literacy by anticipating potential dangers and taking preventative measures. Universities such as ITB, Unpad, and UPI conduct relevant studies to provide new inventions and discoveries to reduce disaster risk. This is also done by research and assessment institutes including the Meteorological, Climatological, and Geophysical Agency and the National Research and Innovation Agency, which create shaking scenario maps and construct seismometers and seismographs, as well as add local sensors. Disaster literacy efforts, for example, undoubtedly require the cooperation of the mass media. This is significant since the globe is currently in a period of upheaval, with a lot of disinformation or fake news causing public anger and fear. Evacuation plans must be adopted in both public and private sectors to raise public awareness and readiness for earthquakes (Kurnianto et al., 2019). The private sector, or business, is an entity that provides everything that can aid in disaster risk reduction initiatives, including the implementation of monitoring and early warning systems in the corporate environment. Businesses can also contribute to the Corporate Social Responsibility plan.

Disaster risk mitigation through an integrated strategy for disasters and stakeholder collaboration is also stressed to assist the tourism industry's governance and financial resilience (Varghese & Chennattuserry, 2022). Multistakeholder collaboration is required in the disaster-prone tourism area of the Lembang Fault to create a resilient destination that supports the management of various risks in tourism destinations and engages various tourism actors from the private and public sectors to improve overall destination resilience.

The findings indicate that managing hazards in tourism destinations is difficult due to the systemic nature of the risks and the intricate interactions between them and the tourism industry. The findings also emphasize the importance of (a) involving multiple stakeholders to overcome difficulties such as data availability or a lack of sense of responsibility; (b) treating tourism destinations as a system with multiple actors; (c) Using standardized terminology across industries and countries; and (d) proactively addressing vulnerabilities in tourist destinations (Eckert et al., 2023).

The Tourism Sector as An Accelerator in Disaster Risk Reduction on the Lembang Fault

If not adequately managed, the tourism industry is susceptible to disasters. The resulting impact could have an impact on the tourism ecosystem. Safety and comfort are critical considerations in the tourism industry. Natural disasters can have an impact on tourism demand. To address difficulties such as data scarcity and a lack of shared responsibility, stakeholders from both the private and governmental sectors must be engaged (Varghese & Chennattuserry, 2022). Disaster management can be improved by focusing on disaster risk reduction measures in tourism areas. Natural disasters' unpredictable nature might result in enormous losses and even casualties. This can occur if an area or region fails to implement disaster risk reduction measures such as early warning systems, disaster education, and other disaster risk reduction measures.

The high level of tourism activity in the Lembang Fault-prone area creates opportunities for disaster risk reduction through disaster education on tourist routes. The creation of geo-tourism trails in the Lembang Fault Area is a new way for tourist attraction operators to help reduce catastrophe risk. The potential for mitigation through disaster-based geo-tourism trails is projected to assist disaster management in the Lembang Fault tourist area (Kurnianto et al., 2019). The necessity for information centers in disaster-prone locations demonstrates the relevance of the tourism industry in catastrophe risk reduction, one of which is the supply of disaster information.

The Lembang Fault's potential as a tourism destination must be coupled with catastrophe risk mitigation initiatives. This is because the area's tourist attractions are along the Lembang Fault line. Collaboration with tourist actors, such as local tourism managers, is important in reducing catastrophe risk in tourism zones. The availability of catastrophe signage, disaster mitigation education, and the selection of evacuation locations are crucial in tourist regions located in disaster-prone areas. Disaster risk mitigation on the Lembang Fault must be thorough and tailored to the area's potential. The Lembang Fault Area, as a tourism destination, can aid in catastrophe risk

reduction initiatives. Tourism managers from communities like Pokdarwis can work with other stakeholders to maximize disaster risk reduction initiatives in the Lembang Fault tourism area.

D. CONCLUSION

To mitigate catastrophe risk in the Lembang Fault tourism region, comprehensive coordination with impacted people is required. The Hexa-helix concept offers opportunities for the tourism sector to participate in disaster risk reduction in the Lembang Fault tourism area. The tourism sector, especially local tourism managers, as affected communities, should be viewed as subjects rather than objects and should be included in disaster risk reduction initiatives in the Lembang Fault tourism region. Further research can be undertaken by understanding the role of vulnerable groups and their involvement in lowering larger hazards as a type of disaster risk reduction in tourism destinations. Disaster risk reduction should also be emphasized in the strategic design of tourism tourist destinations. Efforts must be made to incorporate components of disaster management into tourism destination strategic planning through disaster risk reduction initiatives.

REFERENCES

- Chan, C. S., Nozu, K., & Cheung, T. O. L. (2020). Tourism and natural disaster management process: perception of tourism stakeholders in the case of Kumamoto earthquake in Japan. *Current Issues in Tourism*, 23(15), 1864–1885.
<https://doi.org/10.1080/13683500.2019.1666809>
- Daryono, M. R. (2016). *Paleoseismology Tropis Indonesia (Dengan Studi Kasus di Sesar Sumatra, Sesar Palukoro-Matano, dan Sesar Lembang)* [Disertasi]. Institut Teknologi Bandung.
- Eckert, E., Posch, E., & Thiebes, B. (2023). Resilience analysis in tourism destinations: Reflections from a development cooperation project. *EGUGA*, EGU-15855.
<https://doi.org/10.5194/EGUSPHERE-EGU23-15855>
- Ismail, J. R., & Kastolani, W. (2024). Framework to Development of Disaster Mitigation Model in Mountain Tourism Destination. *Jurnal Wilayah Dan Lingkungan*, 12(1), 94–106.
<https://doi.org/10.14710/JWL.12.1.94-106>
- Kemenparekraf. (2021). *Mewaspadaai Bencana di Destinasi Wisata*.
- Kemenparekraf. (2022). *Siaran Pers: Kemenparekraf Penyusunan Pedoman Pengembangan Destinasi Pariwisata Aman Bencana*.
- Kurnianto, F. A., Ikhsan, F. A., Apriyanto, B., Nurdin, E. A., Kurnianto, F. A., Ikhsan, F. A., Apriyanto, B., & Nurdin, E. A. (2019). Earthquake vulnerability disaster in the Lembang district of West Bandung Regency, Indonesia. *Earthquake Science*, 2019, Vol. 32, Issue 1, Pages: 40-46, 32(1), 40–46. <https://doi.org/10.29382/EQS-2019-0040-5>
- Nugroho, S. P. (2019). *Rentannya Pariwisata Dari Bencana*.

- RACHIM, Abd., WARELLA, Y., ASTUTI, R. S., & SUHARYANTO, S. (2020). Hexa Helix: Stakeholder Model in the Management of Floodplain of Lake Tempe. *PRIZREN SOCIAL SCIENCE JOURNAL*, 4(1), 20–27. <https://doi.org/10.32936/PSSJ.V4I1.141>
- Rosyidie, A. (2004). Aspek Kebencanaan Pada Kawasan Wisata. *Journal of Regional and City Planning Institut Teknologi Bandung*, 15(2).
- Tim Pusat Studi Gempa Nasional. (2017). *Peta Sumber dan Bahaya Gempa Indonesia Tahun 2017*.
- Varghese, B., & Chennattuserry, J. C. (2022). Community Resilience and Crisis Management: Stakeholders Perspective of the Tourism Industry. *Tourism and Hospitality in Asia: Crisis, Resilience and Recovery*, 21–33. https://doi.org/10.1007/978-981-19-5763-5_2
- Wahyuningtyas, N., Tanjung, A., Kodir, A., & Wijanarko, H. (2020). Management of Tourism Areas Based on Disaster Mitigation (Case Study of Senggigi Beach). *IOP Conference Series: Earth and Environmental Science*, 412(1), 012015. <https://doi.org/10.1088/1755-1315/412/1/012015>
- Wulung, S. R. P. (2022). Disaster mitigation based geotourism trails. *Jurnal Pariwisata Pesona*, 7(2), 189–197. <https://doi.org/10.26905/JPP.V7I2.7649>