The Disaster Preparedness and Mitigation in Indonesia During the Covid-19 Pandemic in Indonesia: A Narrative Overview

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Abstract

This paper presents the results of literature reviews on disaster mitigation preparation during the Pandemic Covid-19 since 2019. Of the 780 articles selected 6 articles on this topic published in national and international journals between Mei 2019 and June 2021 were included in the review. These articles are written in different disaster contexts, including events related to weather (floods and storms), natural disasters (earthquakes and tsunamis), and other events (such as pandemics and terrorist attacks). The main themes that arise include lack of communication between stakeholders, media sensationalism, the importance of choosing the most effective marketing messages, lack of disaster management plans, image damage, and goal reputation, and changes in tourist behavior after a crisis and disaster. This review identifies ways to increase the speed and effectiveness of responses to disasters, the importance of marketing relationships with loyal customers, and the need to quickly improve the image of the goal. Suggestions for future research arising from this review include the urgent need to encourage tourism operators to be involved with crisis readiness and disaster management strategies and the importance of getting a better understanding of consumer responses to disaster events.

Keywords: Disaster; Mitigation; Covid-19.

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1. Introduction

Indonesia is a country located in an area with tectonic activity at the meeting point of three large plates: the Indo-Australian plate, the Eurasian plate, and the Pacific plate. From a geological perspective, Indonesia is surrounded by continents, mountains, and oceans. Indonesia is also located in the world's main volcanic belt area, and several mountain trails in the folds of the world meet each other in Indonesia. The tectonic activity of these plates makes Indonesia a disaster-prone area. Based on Indonesian disaster information data, the trend of disaster events has increased in the last decade. As many as 5,421 disasters occurred in Indonesia in 2021, and this requires optimal management so that Indonesia has good preparedness to deal with disasters (Suharini et al., 2020).

The Covid-19 pandemic is currently tormenting the world. The high rate of spread of the Covid-19 virus makes the existence of this virus challenging to avoid, so it is called a pandemic period. The rapid spread of the Covid-19 virus is complex for developed countries to stop. With a large area and still remote residents, Indonesia has difficulties mitigating this Covid-19 pandemic. But even though they still have residents living in remote areas, these areas are still protected from the spread of Covid-19 because some areas still have good attention to disaster mitigation and disaster management (Akhtar et al., 2021). According to the Indonesian Disaster Information Data, the trend of natural disasters in Indonesia has fluctuated over the past four years, as seen in Figure 1.
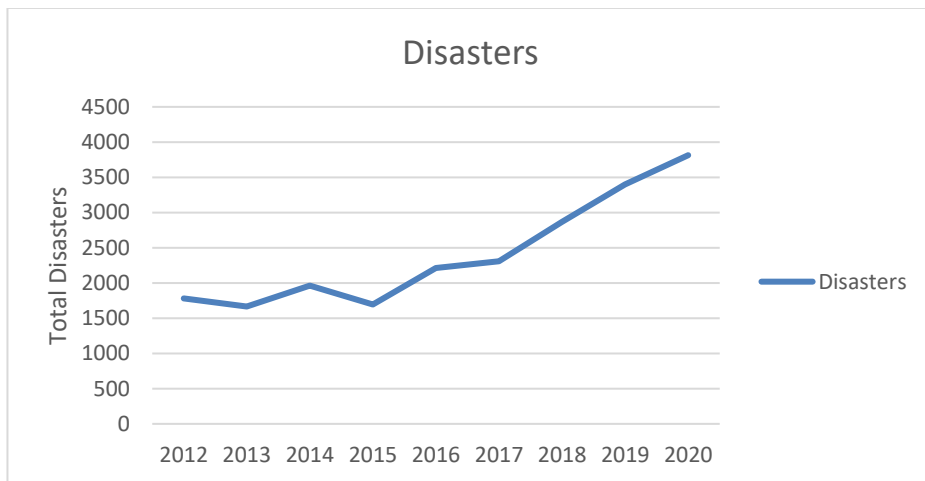

Figure 1. Redrawing the boundary map of Kisaran District.

According to Figure 1 above, 3,814 disasters occurred in 2020, with 478 people dead, 111 missings, 3,421 injured, and 6.1 million people becoming disaster victims who lost their homes or fled. Regarding disasters in Indonesia, several problems often occur, namely the low performance of disaster management, lack of attention to disaster mitigation, and lack of socialization of disaster mitigation in the formal education sector. Disaster mitigation is a pre-disaster stage that needs to be prepared before a disaster. One of the UN agencies engaged in disaster management criticized the handling of disaster mitigation in Indonesia. Who stated that Indonesia's protection policy against natural disasters is still weak in terms of establishing communication with disaster management agencies in Indonesia. Then the second criticism is seen in the budget; in Indonesia, especially during the pandemic period,

the budget for disaster management has only reached 0.699% of the APBN. The budget that must be spent must reach 1.00% of the APBN and must be evenly distributed in all regions in Indonesia. This is coupled with the country's weak ability to analyze disaster risk due to inadequate information technology (Baidhawy, 2015).

Responding to these criticisms, the Indonesian government has begun preparing for better disaster management since the Great Tsunami in Aceh in 2004. First, the government began to issue. This law serves as a reliable and comprehensive legal framework for Pre-Disaster. Then, disaster risk management policies in Indonesia to better manage disaster risk by anticipating and preventing disaster risk worse outcomes from a disaster. Then to manage disasters during the pandemic, the government has also tried to increase the budget for disaster management by 5% higher than before (Pribadi et al., 2021).

In general, there is no answer it is clear whether natural disasters have a significant negative impact on economic growth or not. Several studies explain that in the short term, natural disasters on a large scale hurt economic growth. Natural disasters on a large scale have a damaging impact too. Damage to physical capital and or humans due to natural disasters lowers growth which results in deviations from the previous growth rate (Hamidi et al., 2020).

Law Number 24 of 2007 contains a set of provisions and regulations that summarize the responsibilities of central and local governments, the rights and obligations of the community, and the role of business and international institutions. Sustainable development requires disaster risk management policies to be integrated into disaster risk management practices. Mitigation as part of disaster risk management activities involves strengthening structures and infrastructure. In contrast, preparedness activities involve increasing stakeholders' awareness, knowledge, and capacity in disaster-prone areas. This framework provides the basis for developing structures, rights, and responsibilities for integrating disaster risk management into the pre-disaster sector in Indonesia.

The lack of DRM synergy in Indonesia, especially in improving disaster mitigation an preparedness, is a crucial evaluation finding. This relates to political commitment, the legal and institutional framework for disasters, and financial support for disaster issues For this reason, the President of the Republic of Indonesia stated that it was appropriate for the government and the DPR to allocate a larger budget for improving disaster mitigation and related education in the community (Hamidi & Adrianto, 2022). President Jokowi also asked relevant ministries and institutions to improve community preparedness for disasters during the pandemic. A visible and innovative pre-disaster system is essential in increasing public awareness of the potential for natural disasters in the area. In addition, a collaboration between the government and the community can create good synergies in management. We aim to examine the extent to which disaster preparedness and mitigation are implemented, especially after the Covid-19 pandemic on islands, coasts, and remote areas in Indonesia

2. Research Methods

The method used in this study is a narrative review. The author collects 6 articles by searching for data sources from 2019–2021 using Google Scholar- a scientific article search website. The next step is to classify the articles based on various criteria such as research themes that have similar focuses to disaster management in Indonesia since the pandemic Covid-19. All data is public, meaning that any party can access this data. Content analysis of

all information to obtain the thematic phenomena of this study complements the methodological approach (Chandrasekar et al., 2018).

3. Research Result

There are about 780 scientific articles found through keyword searches on disaster management and mitigation. Then, the whole article was re-selected by applying the exclusion criteria and eliminating several highly similar articles. From the results of the election, six articles were obtained that have a research focus on disaster mitigation in all regions in Indonesia. The research included in the analysis was conducted in several locations in Indonesia, such as East Java, West Sumatra, Aceh, South Sulawesi, and Central Java) and this research includes case studies, survey studies, and experimental studies.

The first article discusses the role and formation of information and social capital in community resilience in dealing with disasters. The article looks for solutions so that people can understand disaster response. The study results found that for the community to respond to disasters. Cooperation between various parties such as the government, government agencies, disaster researchers, and most importantly, community members are needed. One of the critical pre-disaster factors is clarity in the provision of information. This research reveals that clarity of information is the key to acting appropriately in times of crisis. This article also analyzes the impact of information technology on disaster resilience, especially information technology which plays an essential role in social mobilization. However, although the element of clarity of information is essential, it does not guarantee the successful implementation of action in disaster management. In Implementing disaster management, there must be an accumulation of capital for taking collective action in response to an emergency. In addition, factors such as social interaction, public trust, and values shape perceptions about the level of risk and decision-making in dealing with disasters. Therefore, the power of collective action and community participation is needed to develop disaster preparedness programs.

The following Table 1 clearly describes the results of a review of several related studies:

Table 1. Descriptive Statistic

No	Title	Author/ Year	Research Design	Summary
1	Disaster Education Integration Strategy in Optimizing Resilience People Facing Disasters During the Covid 19 Pandemic	Zela Septikasari, 2019	Case study	Studies show that capital disaster education is important when a disaster suddenly occurs. Increased access to information in the integration of disaster education, especially in remote

No				
				areas, can be utilized to organize information action collective in handling crisis emergencies by effective
2	Community Resilience Capacity in Facing the Covid-19 Pandemic Disaster in Urban Areas (Case Study: Krasak Village RT 16, RW 04, Kotabaru Village, Gondokusuman District, Yogyakarta City	Ika Afianita, 2021	Case study	This study concludes the level of community preparedness in dealing with flood disasters. in the Gondokusuman District, attitudes and knowledge are still not ready because there is an influence on community preparedness in dealing with disasters, that steps and strategies are needed to increase knowledge and change positive attitudes of the community sustainably. This system is designed as a test field in the field, Indonesia to help public officials design a risk map for the spread of a pandemic and the right direction for handling it
3	Implementation of the Collaborative Governance Model in Resolving the Covid-19 Pandemic	Anang Sugeng, 2021	Case study	as a disaster-prone area. So far, disaster management policies are less effective and acceptable to the public, especially people in disaster-prone areas. So far, disaster management policies tend to be "top-down", and are instructions in nature so that they are not acceptable to the

				public. Local cultural wisdom in the community of disaster-prone areas needs to be lifted and strengthened so that synergy is established with existing disaster management policies in the community of the disaster-prone area. Thus, a harmonious relationship will be established between the government and the community to reduce disaster risk in disaster-prone areas.
4	Analysis of the Decision-Making Process of the Standby Mitigation Team Covid-19 Universitas Muhammadiyah Yogyakarta Dalam Dealing with the Covid-19 Pandemic	Sofia, 2021	Experimental Studies	This study concludes that the system used to evacuate the community when a disaster occurs requires a system. That includes dynamic disaster risk analysis, timely dissemination of evacuation strategies to the entire community, and a sound environmental risk detection system. This system will be piloted in the city of Yogyakarta to assist stakeholders in making policies related to managing influential disasters in the city of Padang affected by the Covid 19 Pandemic disaster.
5	Disaster risk management with a community-based approach	Hanifa, 2019	Survey Study	DRM community increase community capacity in South Sulawesi through the knowledge component about disaster natural,

				preparedness Public, and responsive emergency. All components are needed to strengthen the role and commitment Public in reaching a destination
6	Household disaster management capacity in of the disaster-prone area of Mount Slamet	Nugroho, 2019	Survey Study	This study discloses influence direct and no direct characteristics and capacity house ladder to capacity PB, specifically in Thing mitigation and preparation

The first study dealt with the 2019 Mount Merapi eruption disaster in Central Java. Researchers analyzed the presence of responses to disasters that occurred in several community groups in the Yogyakarta area. This study also analyzes how to advance the provision of information so that resource mobilization occurs for disaster mitigation. Through this information, social role capital indirectly emerges from the community that plays an essential role in post-disaster recovery. Then reciprocal interactions occur in an information system designed for disaster management (Septikasari & Ayriza, 2018). The study concluded that people living under Mount Merapi showed good resistance to disasters. This resilience is due to the excellent information capital obtained by the community. The provision of information is provided using a different and innovative information system so that it can realize a low-risk potential for disasters.

The second study aims to assess the knowledge and preparedness of the community against flood disasters. A descriptive survey was conducted in several villages in three significant districts in Aceh. From the results of the survey, it was found that the community was used to dealing with floods because it was caused by the following factors: (1) good community knowledge in dealing with disasters, (2) good disaster preparedness, and (3) support from the government in socializing pre-disaster. This study concludes that knowledge about disasters alone will not be enough if it is not supported by a sound health system and information system (Fitriyani et al., 2020).

The third study analyses the benefits and challenges of local wisdom in Probolinggo City in its pre-disaster management activities. This study concludes that local wisdom needs to be developed because some cultures imply the importance of interacting with nature. Knowledge like this can help the community be alert and quick in choosing the best mitigation measures. In addition, the Probolinggo area has a local tradition that becomes a step to deal with disasters. Namely by giving disaster signals through sounds so these voices

can be heard far away. This Voice is what was done when a volcanic disaster erupted some time ago. This system will constantly be developed so that Probolinggo can become a city that is resilient to disasters (Cahyono, 2020).

The fourth study examines how important it is to evacuate coastal communities to safe areas before the tsunami occurs. However, in practice, this is not easy to do because of the limited information media and lack of means of transportation. In answering these problems, this study tries to find a solution by finding a dynamic decision-support information system based on geographic information and social networks as a model for tsunami risk mitigation in Padang City (Suherningtyas et al., 2021).

The fifth study explains the importance of public understanding of the characteristics of disasters in the region as an effort to build disaster resilience. This study also discusses the importance of the role of stakeholders in dealing with disaster issues. Several cities in Indonesia already have disaster risk maps, hazard maps, and vulnerability maps as a form of government efforts when disasters occur. However, it is felt that the role of the disaster emergency response approach is still lacking in all cities in Indonesia. This response is what the Indonesian government should pay attention to in the future so that disaster management in Indonesia can be very well distributed (Oktari et al., 2021).

The sixth study discusses the level of community preparedness in the context of households in the Probolinggo area, precisely around the Mount Slamet area. People living in these areas need a solid infrastructure to help them deal with disasters (Nugroho, 2018). This study also discusses the importance of the role of stakeholders in dealing with disaster issues. Several cities in Indonesia already have disaster risk maps, hazard maps, and vulnerability maps as a form of government efforts when disasters occur. However, it is felt that the role of the disaster emergency response approach is still lacking in all cities in Indonesia.

4. Conclusion and Recommendation

Disaster emergency management needs to involve all stakeholders, including the community, who need to get treatment after a disaster. Bad experiences in dealing with disasters do not necessarily increase community preparedness for disasters in the future. Therefore, the development of information and social media is also needed to increase community resilience during disasters. Disaster response capability requires good synergy between the government, community, institutions, and academics so that all villages have strong resilience in dealing with disasters (Higuchi, 2021).

In summarizing the results of the research discussed in this article, several strategic recommendations are essential to improve the implementation of disaster mitigation, namely:

1) It is necessary to establish a regional government regulation related to disaster evacuation and transportation that is always on standby to be used when a disaster will or is happening.

2) The education and training provided to evacuation officers strengthen their capacity and ability to assist during disasters.

3) Developing an integrated BNPB Information System with complete disaster

reporting data collection is necessary.

5. Acknowledgements

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