



Implementation of Disaster Management Policy in West Sumatra Province

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ABSTRACT

West Sumatra is one of the provinces prone to natural disasters. West Sumatra's geographical conditions and topography, which contain many mountains, cause this disaster proneness. Natural disasters that constantly threaten West Sumatra include hydrometeorological phenomena, earthquakes, and even tsunamis. Disaster management policies are an urgent need for West Sumatra. This paper critically examines the implementation of disaster management policy in West Sumatra Province, focusing on Provincial Regulation Number 4 of 2023 and its practical application during the 2024 Galodo disaster. This study uses the Van Meter and Van Horn policy implementation framework to identify and analyze the persistent gap between regulatory intentions and on-the-ground realities. Findings indicate that while emergency response and post-disaster recovery have been relatively well-coordinated, the pre-disaster phase continues to suffer from weak inter-agency coordination, insufficient resources, and minimal community involvement. The study highlights that the dominance of reactive disaster management undermines risk reduction efforts and increases vulnerability. Concrete recommendations are provided for strengthening pre-disaster risk reduction, enhancing stakeholder communication, and fostering active community participation. This analysis offers insights for West Sumatra and other disaster-prone regions facing similar implementation challenges.

Keyword:

Disaster mitigation; Emergency response; Policy implementation; Pre-disaster phase

INTRODUCTION

Indonesia finds itself highly vulnerable to various natural disasters, including earthquakes, tsunamis, volcanic eruptions, landslides, floods, and tornadoes (Arif et al., 2020). Approximately

13 percent of the globe's volcanic formations within the Indonesian archipelago can instigate natural disasters characterized by diverse intensities and magnitudes (Williamson et al., 2020).

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In February 2024, 173 disasters hit the territory of Indonesia. In February, 99.42% of the disasters that occurred were hydrometeorological disasters, both wet and dry hydrometeorology, with details of 91.28% of the incidents that occurred were wet hydrometeorological disasters and 8.72% were dry hydrometeorology. Floods were the most frequent disaster with 109 incidents, followed by extreme weather with 35 incidents, forest and land fires with 15 incidents, landslides with 13 incidents, and earthquakes with one incident.

The National Disaster Management Agency (BNPB) reported that 4,940 natural disasters occurred in Indonesia in 2023. This number has increased by 39.39% compared to the previous year, which was 3,544 incidents. Based on its type, forest and land fires (*karhutla*) were the most frequent natural disasters throughout 2023. There were 1,802 *karhutla* incidents recorded in the country. Then, some floods reached 1,170 incidents in 2023. Indonesia was also hit by extreme weather and landslides, with 1,155 incidents and 579 incidents. Furthermore, 168 drought incidents occurred domestically. Then, earthquakes and tidal waves/abrasion occurred as many as 31 incidents in 2023. In addition, Indonesia experienced four volcanic eruptions last year.

Reflecting on the frequency of disasters that continue to occur in several regions in Indonesia, regulations regarding disaster management are an absolute obligation. In response to disasters whose frequency continues to increase every year, thoughts on disaster management must be understood and implemented by all parties. Disasters are everyone's business.

Periodically, Indonesia builds a national disaster management system. This national system includes several aspects, including the legislative side, where the Indonesian Government has ratified Law Number 24 of 2007 concerning Disaster Management. The next aspect is

the institution, which can be reviewed formally and non-formally. The National Disaster Management Agency (BNPB) is the focal point of government institutions at the central level. Meanwhile, the focal point of disaster management at the provincial and district/city levels is the Regional Disaster Management Agency (BPBD). From the non-formal side, forums at both the national and local levels are formed to strengthen the implementation of disaster management in Indonesia.

While the last aspect is funding, currently, disasters are not only local or national issues, but involve the international (Trias & Cook, 2021). The international community supports the Indonesian Government in building better disaster management. On the other hand, the concern and seriousness of the Indonesian Government towards disaster issues is very high as evidenced by significant budgeting, especially for mainstreaming disaster risk reduction in development (Thorburn, 2009).

Some funding related to disaster management in Indonesia includes DIPA funds (APBN/APBD), Contingency funds, On-call funds, Grant-Patterned Social Assistance funds, funds sourced from the community, to international community support funds. Related to disaster management, each region has a very diverse potential for disasters. One of the areas prone to natural and non-natural disasters is the Province of West Sumatra (Sumbar). Sumbar is a province located in the Bukit Barisan mountain range on the island of Sumatra. This province has a land area of 42,297.30 km². The area of the sea waters is ±186,500 km², with a coastline of 2,420,357 km, and has 375 large and small islands. It has five active volcanoes (Merapi, Talamau, Talang, Tandikek, and Kerinci). It has abundant water resources with 254 rivers flowing into the east and west coasts of Sumatra Island. It is divided into nine river basin units (SWS): four

intact SWS within the province and 5 SWS across provinces. It has four large lakes (Singkarak, Maninjau, Diateh, and Dibawah).

The physical description of West Sumatra can generally be divided into four groups, namely 1) Front Arc/Mentawai Islands or Mentawai Megathrust; 2) Mentawai Basin and West Coast Mainland of Sumatra; 3) Volcanic Arc and Bukit Barisan with moderate to steep and very steep topography; 4) Back arc in the form of undulating to flat hills, to the east of Bukit Barisan. The existence of the Megathrust plate line, faults, and active volcanoes makes West Sumatra vulnerable to symptoms of Volcanic Activity (Volcanic) and Earthquake Symptoms and Tsunami Waves. In addition, seeing the contour and topography of West Sumatra, which has many hills and mountains, has implications for Hydrometeorological symptoms. Symptoms include flash floods (Galodo), landslides, erosion/abrasion, tornadoes, etc.

The consequences of the physical and topographical description make West Sumatra very prone to natural and non-natural disasters. Based on data from the Disaster Management Operations Control Center (Pusdalops PB), there were 555 disaster events recorded in West Sumatra throughout 2023. The details were 209 strong winds, 102 landslides, 84 floods, 123 eruptions, one landslide, one flood, five coastal abrasions, 20 forest and land fires, and five flash floods. During 2014-2022, there were 6,274 natural disasters divided into six types of natural disasters (excluding earthquakes and tsunamis). In detail, there were 3,505 strong winds (55.9 percent), 1,161 landslides (19.5 percent), 853 floods (13.6 percent), 609 forest and land fires (9.7 percent), 107 flash floods (1.7 percent), and 39 coastal abrasions (0.6 percent).

At the end of 2023, Mount Merapi suddenly erupted. Seventy-five climbers

were killed, with 24 of them declared dead. The most recent was the phenomenon of cold lava from Mount Merapi or a large-capacity water overflow called Galodo, which occurred in Agam Regency and Tanah Datar Regency and other areas on Saturday, May 11, 2024. A total of 62 victims were declared dead, and 20 victims were declared missing (still in the search process). The estimated loss was 108.38 billion. The complexity of this potential disaster has implications for the need for policies and regulations that specifically regulate disaster management in West Sumatra.

Despite regulations and institutional arrangements, the effectiveness of disaster management policy in West Sumatra remains in question, particularly regarding implementing proactive measures in the pre-disaster phase. Previous disasters have repeatedly exposed the lack of coordination, limited resource allocation, and low community participation in risk reduction efforts. Addressing these shortcomings requires strong regulations and consistent and integrated implementation at the local level.

Therefore, this article aims to critically analyze the implementation of West Sumatra's disaster management policy, specifically Provincial Regulation (Perda) Number 4 of 2023, by examining its practical application during the Galodo disaster of May 2024. The study seeks to identify the main obstacles in policy implementation, focusing on why pre-disaster management remains underdeveloped, and to provide evidence-based recommendations for strengthening disaster risk reduction in the province.

LITERATURE REVIEW AND ANALYTICAL FRAMEWORK

Research on implementing disaster management, especially in the regions, has been widely conducted, such as the research of Siswanto & Puspaningtyas

(2023) regarding implementing disaster management and flood mitigation in Gresik Regency. This study aimed to determine the function of the Gresik Regency Regional Disaster Management Agency. This agency is implemented to respond to flood emergencies. The results of the survey show that, according to Edward III's theory, the implementation of the function of the Gresik Regency Regional Disaster Management Agency in disaster emergency response has been carried out well and is also guided by Regional Regulation Number 7 of 2012 concerning Disaster Management.

Next is research by Febi (2013) on implementing earthquake and tsunami disaster management policies in Padang City. The study results can be described as follows: the disaster management policy in Padang City began with the follow-up to Law No. 24 of 2007, with Regional Regulation No. 03 of 2008 issuance concerning Disaster Management. As the organizer of the disaster management, the Mayor of Padang formed an agency through the policy of Perwako No. 18 of 2008. In implementing the policy, it can be seen that the communication between BPBD and other agencies is still low. The human resources owned by BPBD are also low in quantity and quality. This is influenced by finance, where the low budget was obtained by BPBD when implementing the policy. The BPBD work program is directly related to disaster management (PB), earthquakes, tsunamis, the Early Prevention Program, and handling natural disaster victims. The activities are: 1. Formation/development of organizations, 2. Socialization, 3. Signs, maps, evacuation routes, and shelters, 4. Simulation, 5. Making disaster preparedness procedures, 6. Early warning system, 7. Disaster preparedness facilities and infrastructure, 8. Rehabilitation and reconstruction. Keywords: Disaster management, earthquake, tsunami, policy implementation.

Next is research by Setyawan et al. (2019) regarding the implementation of disaster management policies through the innovative program in Sisir Village, Batu City. The study's results on implementing Disaster Management Policies through the SMART Program in Sisir Village can be said to be effective, seen from the George C Edward III Policy Implementation Model, which includes communication, resources, disposition or attitude, and bureaucratic structure. The supporting factors are support from the community and BPBD, as well as cooperation with related agencies. The Inhibiting Factors are the lack of synergy between the government and the community, and the lack of volunteers and supporting equipment during evacuation in the field.

Lastly, Dirga & Djafar (2023) regarding implementing disaster management in the Disaster Alert Village (Nagasia) in Ganggo Hilia Village, Bonjol District, Pasaman Regency. The results of this study show that the communication built by Nagasina with related parties is good but not optimal in coordinating with related Ministries and Institutions. Nagasina has not been able to utilize IT to manage information and convey it to the public. Nagasina Ganggo Hilia already has a quantity of human resources, but still needs optimization regarding the quality of human resources, facility resources, and budget resources. The disposition of Nagasina Ganggo Hilia has been implemented well because the disposition is carried out according to commitment and has measurable targets. Nagasina's organizational structure is ideal because it has quantifiable SOPs, is implemented with commitment, and has a short activity licensing flow.

Despite the growing body of research on disaster management policy implementation in Indonesia, previous studies have primarily provided descriptive accounts of the challenges faced by local

agencies, such as limited resources, poor coordination, and a lack of community engagement. Few studies have offered a critical analysis using established policy implementation frameworks to understand the gap between regulation and practice, particularly at the provincial level. In addition, most research has focused on the emergency response and post-disaster phases, with less attention given to the systemic barriers in the pre-disaster phase, such as risk reduction, early warning, and preparedness.

This paper seeks to address these gaps by critically analyzing the implementation of Provincial Regulation Number 4 of 2023 concerning Disaster Management in West Sumatra through the lens of the Van Meter and Van Horn policy implementation framework. By reflecting on the Galodo disaster that occurred on May 11, 2024, this study aims to identify the obstacles that have hindered the translation of regulatory intent into effective pre-disaster management.

According to Van Meter and Van Horn, implementation is actions taken by individuals/officials, the government, or private groups to achieve the goals outlined in policy decisions (Arfita et al., 2021). According to Sabatier & Mazmanian (1980), the main essence of policy implementation is understanding what should happen after a program is declared valid or formulated. This understanding includes efforts to administer it and have a tangible impact on society. Based on several definitions presented by the experts above, it is concluded that implementation is an activity or effort carried out by policy implementers to obtain results aligned with a policy's goals or objectives.

METHODS

The method used in this study is a qualitative desk-based approach, focusing on a systematic literature review and secondary data analysis related to disaster management policy implementation in

West Sumatra. Unlike previous approaches that may digress to unrelated topics, this research is anchored explicitly in the policy context of Provincial Regulation Number 4 of 2023 and the Galodo disaster of 2024. Library research has steps that must be taken, including (Mulia et al., 2022):

- a. Determine and have ideas about the research topic;
- b. Look for supporting information about the research topic;
- c. Have and emphasize the focus of the research;
- d. Find and read materials or literature sources on the research topic and classify the reading materials or literature sources;
- e. Read and make research notes;
- f. Review and enrich the reading materials or literature sources again
- g. Re-classify the reading materials or literature sources and start writing.

Data collection relied on document analysis and extraction of information using a structured checklist to ensure relevance and consistency with the study's objectives. Data were then analyzed using content analysis, with findings organized and interpreted through the Van Meter and Van Horn policy implementation framework. This framework allowed the study to systematically assess the gap between policy and practice, with particular attention to policy standards and objectives, available resources, inter-organizational communication, enforcement disposition, characteristics of implementing agencies, and the broader socio-political environment (Saputra et al., 2024). The main limitation of this method is its reliance on secondary data and absence of primary fieldwork or direct stakeholder interviews. As a result, the findings may not fully capture nuanced local perspectives or recent on-the-ground developments. Future research should address these gaps by incorporating primary data collection and broader stakeholder engagement.

RESULTS AND DISCUSSION

West Sumatra Disaster Management Policy

West Sumatra has a Provincial Regulation Number 4 of 2023 concerning Disaster Management. This regulation is a derivative regulation of the National Disaster Management Law. As a legal instrument that implements the objectives and norms of the constitution, the formation of laws and regulations is a must in a state of law. The fourth paragraph of the Preamble to the 1945 Constitution of the Republic of Indonesia states that the Republic of Indonesia is obliged to protect all the people and all of Indonesia's territory, advance public welfare, and so on. In terms of protecting life and livelihood, including protection against the dangers or risks of disasters for the community, it is necessary to form a Regional Regulation on Disaster Management as mandated by Law Number 24 of 2007 concerning Disaster Management (Regional Regulation No. 4/2023).

West Sumatra Province is a region that is geographically prone to natural disasters and all possible non-natural disasters, so it is appropriate for the Regional Government to prepare anticipatory steps that have become necessary. This is intended as a concrete step to dynamize or mobilize community concern for the threat of disasters that can hit their residential areas at any time. Implementing disaster management is still considered something that can be anticipated when a disaster occurs (Saputra et al., 2023). Hence, the ability of the regional government to overcome the problem of implementing disaster management is not optimal, and it does not show maximum results. The implementation of disaster management is not only reactive when a disaster occurs, but must also be proactive with coordinated steps so that the

implementation of disaster management is carried out comprehensively and in a planned manner from the pre-disaster phase, emergency response phase, or when a disaster occurs, and the post-disaster phase (Chacko et al., 2019; Crozier et al., 2017; Tay et al., 2022). With proactive and programmed implementation, it is hoped that the impact of disaster risk can be minimized as much as possible. Moreover, in the current era of regional autonomy, the implementation of disaster management is also the authority of the Regional Government, so its implementation can involve the community's participation in the Region in disaster management efforts (Regional Regulation No. 4/2023).

In this Draft Regional Regulation, it is mandated that there is a need for a design for accelerated regulation in the implementation of planned and measurable disaster management. This is because the Regional Government is the main person responsible for implementing disaster management, which in this case is carried out by an institution, the Regional Disaster Management Agency (BPBD). Disaster management that is carried out in a targeted manner is intended to start from the pre-disaster, emergency response, and post-disaster stages. Good disaster management must be supported by sound, transparent, and accountable budgeting, disbursement, and use of funds from the central government, local government, and the community (Regional Regulation No. 4/2023).

In addition to funding issues, the determination of the status of a disaster situation in an area that is under the authority of the Governor in the province must also be a concern for the parties, so that the determination of the disaster emergency status can be measured proportionally and rationally, because the determination of the disaster status and its magnitude is essential. After all, it has

implications for the mobilization of existing resources. All of the above ideas are outlined in this Regional Regulation with the following systematics: I. General Provisions; II. Responsibilities and Authorities of the Regional Government; III. Implementation of Disaster Management; IV. Implementing Non-Natural Disaster Management and Social Disasters; V. Regional Disaster Management Agency; VI. Rights, Obligations, Participation and Role of the Community; VII. The Role of the Mass Media, Community Organizations, Business Institutions, International Institutions, and Foreign Non-Governmental Institutions; VIII. Cooperation; IX. Funding and Management of Disaster Assistance; X. Supervision and Accountability Reports; XI. Dispute Resolution; XII. Closing Provisions (Regional Regulation No. 4/2023).

Implementation of Regional Regulation No. 4 of 2023 concerning Disaster Management

Policy implementation is a way for a policy to achieve its objectives, no more and no less (Hakim & Hayat, 2024). In Regional Regulation No. 4 of 2023, Disaster Management is a series of efforts that include determining development policies at risk of disasters, disaster prevention activities, emergency response, and rehabilitation. To see the extent of the effectiveness and efficiency of implementing this Regional Regulation, it can be reviewed when the Galodo disaster occurred in several areas in West Sumatra on Saturday, May 11, 2024. It affected several places on the slopes of Mount Marapi, namely Agam Regency, Tanah Datar Regency, Padang City, Padang Pariaman Regency, and Padang Panjang City. The four severely affected districts were Agam Regency, Tanah Datar Regency, Padang Panjang City, and Padang Pariaman Regency (Kompas.com, 05/30/2024).

Pre-disaster

Regional Regulation No. 4 of 2023, Part Two regulates Pre-Disaster. There are two stages in pre-disaster when viewed from the situation: a situation where there is no disaster, and a situation where there is potential for a disaster. If viewed from the Galodo incident, the situation has the potential for a disaster. Previously, a statement from the Head of the Meteorology, Climatology, and Geophysics Agency (BMKG), Dwikorita Karnawati revealed that the rain lava incident in rivers that originate from the upper slopes of Mount Marapi occurred due to deposits of material from the eruption of Mount Marapi that were deposited on the slopes, then swept away by moderate to heavy rain (Kompas.Com, 05/13/24). Flash floods occur when rainwater is trapped by volcanic deposits in the river's upper reaches, so it does not flow downstream. Too much rainwater accumulates through the deposits, then carries volcanic material in the form of a mixture of sand, rocks, and gravel. In addition to the rain lava flood, he said several West Sumatra areas also experienced landslides. This disaster occurred due to the collapse of volcanic rocks and was triggered by heavy rain. Moderate to heavy rain, he continued, hit the province due to cyclonic circulation or wind vortexes that carried water vapor that formed rain clouds intensively on May 8, 2024. The findings made BMKG issue an early weather warning in the form of moderate to heavy rain in the Agam, Tanah Datar, and Padang Panjang areas on May 11, 2024. The above phenomenon was also influenced by vibrations from small earthquakes that cracked and collapsed aid in various places in West Sumatra. This condition caused material deposits in upstream areas (Kompas.com, 05/13/24).

In addition to the statement from BMKG regarding the Galodo incident above, there is also a statement from the Andalas University (Unand) Disaster Study

Center (PSB), together with the Unand Emergency Response Center, suspecting that the cause of the Galodo incident was due to the accumulation of fallen tree material in the upper reaches of the Batang Anai River. Over time, the pile of fallen tree material in the river's upper reaches formed a natural dam. Then the natural dam collapsed, allegedly due to the impact of volcanic earthquake vibrations from Mount Marapi, accompanied by high rainfall. The collapsed natural dam then slid down rapidly into a flash flood or Galodo (Kompas.com, 05/13/2024). Article 10 of Regional Regulation No. 4 of 2023 states that implementing disaster management in a situation where there is no disaster includes: a. disaster management planning; b. disaster risk reduction; c. prevention; d. Integration in development planning; e. disaster risk analysis requirements; f. implementation and enforcement of spatial planning; g. disaster management technical standard requirements; and h. education and training. To support the implementation of disaster management in situations where a disaster does not occur, this can be done through research and development in disaster management.

This finding indicates that there are weaknesses in the disaster mitigation aspect. The disaster mitigation aspect, especially during the pre-disaster period, should be a very crucial thing to emphasize. The lack of preparation and anticipation in the pre-disaster aspect provides a reality for disaster management in West Sumatra. Referring to Law No. 24 of 2007 and Regional Regulation No. 4 of 2023, disaster management in Indonesia should include pre-disaster and post-disaster efforts. The pre-disaster stage, which provides for prevention, mitigation, preparedness, and early warning, is the key to reducing disaster risk, especially in minimizing victims (Kompas, id, 05/13/2024). Prevention is interpreted as

an effort to prevent disasters, if possible, by eliminating the threat of danger.

Regarding the threat of volcanic rain and lava floods, disaster prevention can include protecting forests, preventing mining on slopes, and strengthening infrastructure at landslide-prone points. Mitigation can be interpreted as an effort to reduce disaster risks through physical development or awareness and capacity building to face the threat of danger (Khanm et al., 2024). This form of mitigation includes, among others, spatial planning, building layout, and disaster education.

In the case of Marapi, one of the efforts that can be done is to move residential areas away from Disaster Prone Areas (KRB) I-III. Referring to KRB I Marapi, which the Center for Volcanology and Geological Disaster Mitigation (PVMBG) compiled, the Marapi lava flood hazard area includes all river basins that originate from this volcano. KRB I Mount Marapi includes more than 20 rivers, and those at high risk are especially on river bends with low cliffs. Several areas included in KRB I include, among others, Batang Air Sungai Rimbo Piatu, Batang Air Bonjol, Batang Air Gadang, Batang Air Sitapu, Batang Air Sereh Silintak, Batang Air Jabur, Batang Air Anau, Batang Air Mandailing, Batang Air Bangkahan, Batang Air Sigarunggung, Batang Air Sungai Jambu, Batang Air Sabu, Batang Air Gadis, and Sungai Talang. Historically, after the 1979 Galodo disaster, some affected villages have been relocated. However, these hazard-prone areas have been re-inhabited over time, as with many volcanoes in Indonesia. Preparedness is a series of efforts to anticipate disasters through organization and practical steps. Efforts that can be made include routine training to anticipate Marapi lava floods that can strike at any time. Early warning is a series of activities that warn the community as soon as possible about the

possibility of a disaster. It should be understood that early warning must be end-to-end, from authorized institutions to the community at the disaster site (Kompas.id, 05/13/2024).

From the Galodo phenomenon, it can be seen that it is necessary to integrate rain warnings from BMKG into the river flow monitoring system in the Marapi hazard area. Next, a communication network is needed in settlements along this river, especially to build community preparedness to respond to danger and carry out early evacuation. Meanwhile, regarding disaster management efforts, we can also learn from the community living in the upper reaches of the river on Mount Merapi. For example, Deles Village, Klaten, Central Java, has an independent lava flood hazard monitoring system. They use a handy talkie-based communication system to inform each other if there is heavy rain on the mountaintop and when signs of lava floods are seen. Community involvement is the key to building disaster resilience. Disaster management efforts in Indonesia, which currently tend to be structural and more focused on the post-disaster phase, need to be encouraged to involve the community more by focusing on disaster prevention and mitigation. This Galodo incident provides a kind of understanding regarding disaster management in West Sumatra, which still uses a responsive paradigm. This means that stakeholders involved in disaster management are considered to be minimal in pre-disaster preparation.

Emergency response

In the emergency response phase or when a disaster occurs, referring to articles 28 and 29 of Regional Regulation No. 4 of 2023, when the emergency response is determined, the Implementation of Disaster Management is under the control of the Head of BPBD by his authority. In certain circumstances, the Governor can take over command or appoint an official as

the commander of emergency disaster management according to the nature and status of the disaster. The Disaster Emergency Management Commander controls operational disaster management activities and is responsible to the Governor. The Disaster Emergency Management Commander controls operational disaster management activities by mobilizing all available resources. Efforts to overcome the Galodo disaster in West Sumatra during the disaster phase can be seen from the activities of all related stakeholders. Efforts to deal with emergency floods, rain, lava, and landslides in the West Sumatra region continue to be maximized by the government. One of them is through the Weather Modification Technology (TMC) operation. This TMC operation was carried out based on considerations of the weather forecast for the West Sumatra region, which still has the potential for moderate to heavy rain. The National Disaster Management Agency (BNPB) has prepared one PK-SNN caravan aircraft as an operational vehicle for TMC, which is placed at Minangkabau International Airport (BIM). TMC operations can only be carried out in one sortie. This is because there is a low-pressure center in the Indian Ocean west of West Sumatra, which causes cloudy conditions in West Sumatra to tend not to have the potential for seeding until noon. Seeding is carried out in the afternoon to anticipate moderate intensity rain threatening the northeastern part of West Sumatra in the afternoon towards evening. The weather conditions observed after the TMC operation include the western side of West Sumatra tending to receive light rain. West Sumatra's northern, eastern, and southern areas tend not to experience rain (BPBD Sumbar, 2024).

Article 30 of Regional Regulation No. 4 of 2023 states that implementing Disaster Management during the Disaster

Emergency Response includes: a. rapid assessment of the location, damage, and resources; b. determination of the emergency status; c. rescue and evacuation of disaster-affected communities; d. fulfillment of basic needs; e. protection of Vulnerable Groups; and f. immediate restoration of vital facilities. The conditions that occurred in West Sumatra during the disaster had a significant impact on the areas around the slopes of Mount Merapi. Evacuation of victims and selection of alternative routes have been carried out by all levels of local government, both provincial and district/city governments. The affected districts/cities generally include Tanah Datar Regency, Agam Regency, Padang Pariaman Regency, and Padang Panjang City (riaupos.jawapos.com 05/15/2024).

Based on the incidents that hit several areas in West Sumatra, they have received excellent handling from the collaboration between stakeholders in disaster management. Teams from BPBD, SAR Team, Police, TNI, and all related SKPDs have worked together with the community to be able to evacuate victims of the impacts caused by the disaster.

Post Disaster

In the post-disaster stage, several analyses can be carried out regarding implementing the Regional Regulation No. 4 policy of 2023. Based on data from the West Sumatra Disaster Management Agency (BNPB), the number of victims of the Galodo disaster in West Sumatra was 63 people (bnpb.go.id, 05/23/2024). West Sumatra Province entered a transitional period for the Galodo disaster emergency after the end of the emergency response period, which lasted for about a month. The total number of fatalities in this disaster was 63 people, and 10 others have not been found (Kompas.id, 6/9/2024). The Galodo disaster in West Sumatra caused 228 houses to be severely damaged, 149 houses to be moderately damaged, and

144 homes to be lightly damaged. In addition, the disaster in West Sumatra also damaged 30 places of worship, 36 bridges, 11 educational facilities, 70 irrigation channels, one health facility, 49 shops, three stalls, and 24 roads. Then, 411.5 hectares of rice fields and 31,985.5 hectares of land were affected by the disaster, which occurred in several areas of West Sumatra on May 11-12, resulting in 63 fatalities. The details are, in Tanah Datar 32 people, in Agam 24 people, in Padang Panjang 2 people, and in Padang 2 people, and three others died with body parts that have not been identified. Meanwhile, 10 more people in Tanah Datar have not been found. The search and rescue efforts by the joint SAR team that have been going on since May 11 have been stopped (Kompas.id, 6/9/2024).

President Joko Widodo ordered the PUPR Ministry to immediately build a sabo dam on the river from Mount Marapi, West Sumatra. The building is needed to control sand and volcanic material to mitigate rain, lava, and flash flood disasters. A sabo dam is a structure that prevents sand and volcanic material carried by rain and lava floods from an erupting mountain. Sabo comes from Japanese, namely sa, which means sand, and bo, which means control. The Sabo dam building has many holes that hold sand and keep water flowing. Jokowi continued, based on calculations by the PUPR Ministry, that 56 sabo dams are needed on the river, which originates from Mount Marapi. There are only two Sabo dams (kemenkopmk.go.id, 05/22/2024). Galodo Marapi caused 4,064 people to be displaced, which resulted in 1,110 houses being severely damaged. The flash flood also affected 1,210 homes, 15 educational facilities, two health facilities, and 28 houses of worship. Including two other buildings, 227 trade facilities, 1,202 irrigation units, 23 PDAM/pamsimas units, 55 bridges, and 54 highway points. The flood also killed 27,320 livestock of

various types and destroyed approximately 908,003 hectares of agricultural land. "The total temporary loss figure is estimated to reach IDR 516,825,216,036. The 3.6-hectare land that the West Sumatra Provincial Government has donated to the Tanah Datar Regency Government (Pemkab) is planned to be built with around 170 knock-down houses (harianhaluan.id, 08/06/2024).

CONCLUSION

The conclusion that can be drawn in implementing disaster management policies in West Sumatra still emphasizes the emergency response and post-disaster stages. Effectiveness in emergency response and post-disaster has generally been carried out well and accommodated by all relevant stakeholders. Of course, this is by the duties and authorities that are assigned. This also refers to Regional Regulation Number 4 of 2023 concerning Disaster Management. The paradigm still being carried out still emphasizes emergency response, so the essential aspect or phase, namely, pre-disaster, has not been given much emphasis. The large number of losses and the large number of victims show shortcomings in the pre-disaster phase. This study finds that the gap between regulatory intentions and actual disaster management practice in West Sumatra is most evident in the pre-disaster phase, which suffers from weak coordination, insufficient resource allocation, and minimal community involvement. Addressing these shortcomings requires the West Sumatra government to shift from a predominantly reactive paradigm to a more proactive, risk-reduction approach. Key recommendations include developing clear operational guidelines and measurable targets for pre-disaster actions, ensuring sustainable funding for local disaster risk reduction, and institutionalizing multi-stakeholder coordination and community-based preparedness initiatives. Strengthening

pre-disaster management reduces the human and material losses from future disasters and enhances the overall resilience of West Sumatra's society. Further research and evaluation are essential to monitor policy implementation progress and encourage continuous improvement.

LIMITATION

This study has several limitations that need to be acknowledged. First, the research relied primarily on literature review and secondary data sources, such as official reports, news articles, and previous studies. As a result, the analysis might not capture the most recent on-the-ground developments or the nuanced perspectives of local stakeholders involved in disaster management in West Sumatra. Second, the study did not conduct direct field observations or interviews with key actors, such as government officials, disaster management agencies (BPBD, BNPB), community leaders, or affected residents. This lack of primary data may limit the depth of understanding regarding implementation challenges, local wisdom, and community-based responses to disaster management policy. Third, the discussion mainly focused on implementing Provincial Regulation Number 4 of 2023 in the context of the Galodo disaster. Other types of disasters and regions within West Sumatra may present challenges or experiences not addressed in this paper. Lastly, this research does not provide a comprehensive evaluation of the effectiveness of disaster management interventions before and after the Galodo incident, nor does it quantitatively measure the outcomes of policy implementation. Further research using fieldwork, stakeholder interviews, and empirical data analysis is needed to gain a more holistic understanding of disaster management practices and policy effectiveness in West Sumatra Province.

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