

The Urgency of Standardizing National Disaster Parameters: A Critical Study of the Mechanism for Determining the Scale of Disasters by the Government Post-Disaster in Sumatra

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ABSTRACT

Indonesia lacks standardized and measurable parameters for determining national disaster status, as reflected in the government's response to disasters in Sumatra (Aceh, North Sumatra, and West Sumatra). The absence of clear indicators—such as casualty thresholds, infrastructure damage, regional response capacity, socio-economic impacts, and the urgency of central intervention—has led to inconsistent status determinations and legal uncertainty. This study examines the urgency of standardizing national disaster parameters through a critical analysis of the disaster scale determination mechanism under Law No. 24 of 2007 on Disaster Management and its implementing regulations. Using a socio-legal approach, the study analyzes gaps between legal norms and empirical practices following the late-2026 Sumatra disaster and identifies weaknesses in coordination among the National Disaster Management Agency (BNPB), regional governments, and related ministries. The findings indicate that disaster status determination remains highly subjective and politically influenced due to the absence of standardized benchmarks. Therefore, this study recommends reformulating national disaster parameters by integrating impact indicators, regional capacity assessment, and rapid assessment mechanisms to strengthen legal certainty and disaster governance.

Keyword: parameters; disaster; national; sumatra

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1. INTRODUCTION

Declaring a national disaster is a strategic decision that influences resource mobilization mechanisms, emergency budget allocation, inter-agency coordination, and the involvement of the military and international aid. In Indonesia, the normative framework for disaster management is regulated by Law No. 24 of 2007 concerning Disaster Management and a number of implementing regulations, which position the National Disaster Management Agency (BNPB) as the national coordinator in emergency situations. However, implementation in the field shows that determining the scale or status of a disaster is often based on *ad hoc* assessments—both quantitative and qualitative—that are prone to inconsistencies and political considerations.

This phenomenon became very apparent after the major hydrometeorological disaster that hit the Sumatra region (Aceh, North Sumatra, and West Sumatra Provinces) in late November–early December 2025. The official BNPB recapitulation showed a huge surge in victims: BNPB dashboard data reported hundreds to thousands of affected victims, with the death toll constantly updated (reported figures fluctuated, e.g., 303 people on November 30, 2025; then increased to hundreds more in subsequent updates and reached hundreds to eight hundreds in early December 2025). BNPB situation reports and disaster management dashboards recorded deaths, missing, injured, and displaced victims spread across the three provinces (BNPB, 2025).

Provincial data also underscore the magnitude of the impact. The Aceh Regional Disaster Management Agency (BPBD) reported thousands of displaced persons (IDPs) in many districts/cities, while the National Disaster Management Agency (BNPB) released detailed recaps for North Sumatra and West Sumatra, showing hundreds of fatalities and thousands of displaced persons, as well as significant infrastructure damage in several districts/cities. The development of casualty figures between November 25 and December

5, 2025, demonstrates rapid data collection dynamics. For example, on November 30, 2025, the BNPB recorded a total of 303 deaths, a figure that subsequently increased in the December 2–5, 2025 update, with national and provincial recaps published on the BNPB dashboard. This fluctuating situation reflects the challenges of rapid assessment and data harmonization across levels of government (BNPB, 2025).

The absence of standardized parameters governing when a disaster event qualifies as a “national disaster” raises several practical and legal issues. First, inconsistent status determinations impede legal certainty for affected regions in accessing state financial facilities, resource allocation, and compensation mechanisms. Second, slow or inconsistent status determinations have the potential to delay emergency and rescue responses, ultimately impacting the number of casualties and socio-economic losses. Third, without clear quantitative and qualitative indicators—such as thresholds for fatalities, levels of critical infrastructure damage, the extent of impacted areas, regional response capacity, or projected economic losses—the decision to activate a national response is easily politicized or influenced by administrative lobbying. This was evident in the differences in the timing and intensity of interventions between provinces during the 2025 Sumatra crisis, as reflected in updated BNPB data and regional reports.

2. RESEARCH METHOD

The type of research relevant to be studied using the *Socio-Legal* research methodology is the same as the topics in empirical legal research. The approach used in this research is the *socio-legal* research method, influenced by social sciences to enrich the purity of legal science. *Socio-Legal* research methodology is a type of legal methodology that uses social sciences in general, and sociology in particular, to conceptualize and explain the legal problems being studied. Although using social sciences, *Socio-Legal* research methodology is not intended for the interests of social sciences but for the interests of legal science (Kornelius Benuf et al. in Sihombing & Hadita, 2022).

Empirical legal research focuses on behavior that develops in society, or the operation of law in society. Therefore, law is conceptualized as actual behavior, which includes actions and their consequences in social relationships. Therefore, the approaches that are often used in empirical legal research include: the legal sociology approach, the legal anthropology approach, and the legal psychology approach (Sihombing & Hadita, 2022).

3. RESULTS AND DISCUSSION

A. *The Phenomenon of Disasters in Sumatra and Comparison with National Disaster Declarations in Other Countries*

The disasters that struck the Sumatra region in late 2025—covering Aceh, North Sumatra, and West Sumatra—demonstrate that Indonesia still faces significant challenges in its disaster management system, particularly regarding the determination of national disaster status. The high number of victims, infrastructure damage, and the need for mobilization of personnel and logistics across provinces demonstrate that local government capacity is often inadequate when large-scale disasters occur. The National Disaster Management Agency (BNPB) recorded a significant increase in the number of victims and refugees within a short period of time, reflecting the increasingly extreme nature of hydrometeorological disasters due to climate change and the socio-economic vulnerability of local communities (Badan Nasional Penanggulangan Bencana, 2025). However, there are currently no standard parameters regarding quantitative or qualitative limits that form the basis for determining national disaster status, so government decisions often rely on subjective interpretations of regional capacity to manage the impact of disasters.

Compared with other countries, many jurisdictions have established more standardized parameters for declaring national disasters. In Japan, for example, the “major disaster” status is regulated through the *Disaster Countermeasures Basic Act*, which establishes formal indicators such as the extent of economic losses, the number of damaged homes, and the number of victims as the basis for providing the highest level of national assistance (Government of Japan, *Disaster Countermeasures Basic Act*, Tokyo, 1961).

In the United States, the Presidential Disaster Declaration mechanism under the *Robert T. Stafford Disaster Relief and Emergency Assistance Act* uses a quantitative formula that assesses per capita damage, state fiscal capacity, and the scale of damage to public infrastructure (United States Congress, 1988).

Meanwhile, the Philippines, through the *Philippine Disaster Risk Reduction and Management Act* 2010, stipulates a calamity declaration based on an integrated rapid assessment involving local governments, the military, and national institutions (Republic of the Philippines, 2010).

This comparison shows that international standards tend to use more systematic, measurable, and data-driven instruments. Meanwhile, in Indonesia, the determination of national disaster status is still heavily

influenced by administrative and political factors, without standard indicators such as thresholds for the number of casualties, total economic losses, or regional capacity indexes. The disaster in Sumatra serves as an important point of reflection, highlighting the need for Indonesia to develop more operational standards—both in terms of rapid data collection, disaster level classification, and thresholds for determining national disaster status—so that the response process can be faster, more precise, and in accordance with the principles of protecting citizens' rights.

Update on the impact of the Sumatra floods as of December 6, 2025 (BNPB, 2025).

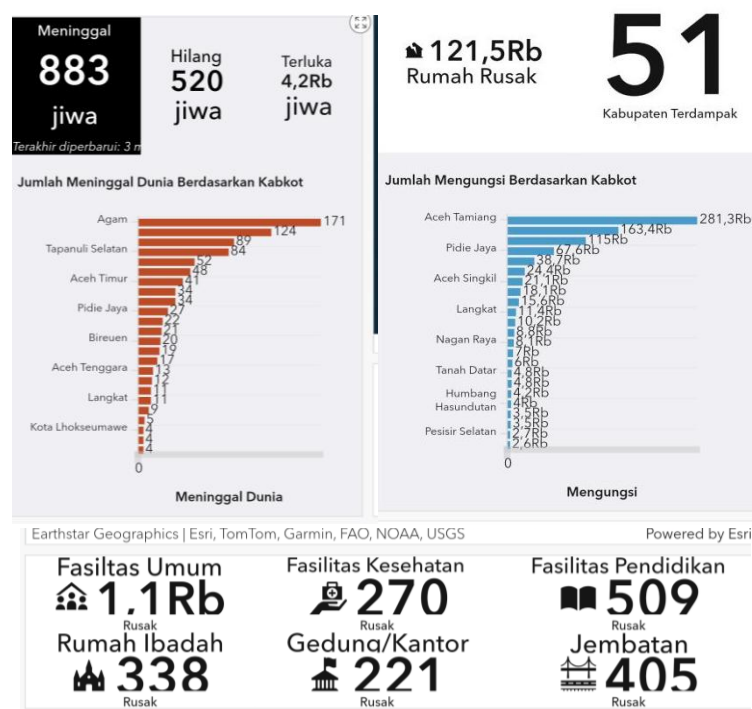


Figure 1. Impact of the Sumatra floods

Academically and policy-wise, there is a significant research gap. Studies linking empirical evidence (verified victim and damage data), legal regulations, and administrative practices for determining disaster status are still relatively limited. Most analyses are normative or descriptive, without integrating rapid assessments of operational data and comparative studies of thresholds for status determination in other countries. However, standardizing parameters can strengthen good disaster governance, ensure a more rapid, measurable, and accountable response, and reduce the risk of inter-regional discrimination in access to aid.

Based on the empirical conditions post-disaster in Sumatra and the current legal framework, this study starts from the assumption that the formalization of parameters for determining national disaster status—a combination of quantitative and qualitative indicators and rapid verification procedures—needs to be formulated and integrated into the legal and operational instruments of the BNPB–BPBD.

Government capability is highly demanded in this case. Capability is a form of ability that the government must have in facing challenges and problems (Hani Syarifah et al., 2020).

Based on the empirical conditions post-disaster in Sumatra and the current legal framework, this study starts from the assumption that the formalization of parameters for determining national disaster status—a combination of quantitative and qualitative indicators and rapid verification procedures—needs to be formulated and integrated into the legal and operational instruments of the BNPB–BPBD. Therefore, this study aims to conduct a critical review of the disaster scale determination mechanisms in place during the Sumatra crisis, identify gaps between norms and practices, test the reliability of the rapid data collection system, and formulate recommendations for operational, data-driven, and constitutional parameters. These recommendations are expected to not only strengthen legal certainty but also improve the effectiveness of responses and the protection of the rights of affected citizens during national emergencies.

B. The Urgency of Standardizing National Disaster Parameters

The parameters used to determine national disaster status in Indonesia raise both conceptual and practical issues in disaster management. Law No. 24 of 2007 does categorize disasters based on their source and scale, but it does not provide standardized quantitative or qualitative indicators as a basis for determining national disaster status.

The constitutional basis that the President has the authority to declare a state of emergency is regulated as stipulated in Article 12 of the 1945 Constitution of the Republic of Indonesia: “The President declares a state of emergency. The conditions and consequences of a state of emergency are determined by law.” Furthermore, in the Disaster Management Law, such determination can be made by Presidential Regulation. For example, when COVID-19 occurred, the President issued Presidential Decree (*Keppres*) Number 12 of 2020 concerning the Determination of the Non-Natural Disaster of the Spread of Corona Virus Disease 2019 (COVID-19) as a National Disaster. There was even a regulation on recovery strategies called *budget refocusing* for the next few years allocated for handling and overcoming COVID-19. However, for the disasters experienced by three provinces, namely Aceh, North Sumatra, and West Sumatra, there was no visible will from the President to declare the status of a “national disaster,” and there was no visible recovery strategy for the affected victims, such as future designs for housing, infrastructure, road reconstruction, schools, and other facilities.

Carl J. Frederick, quoted by Leo Agustino, defines policy as a series of actions or activities proposed by an individual, group, or government in a particular environment where there are obstacles (difficulties) and opportunities for implementing the proposed policy in order to achieve certain goals. Furthermore, public policy is a series of activities carried out by individuals or groups in a coordinated and conscious manner related to a particular problem that is to be addressed (Agustino, 2008).

As a result, the decision-making process is often subjective and heavily dependent on the central government’s interpretive capacity regarding regional conditions. This phenomenon was evident after the 2025 hydro-meteorological disaster in Sumatra, which claimed hundreds of lives, displaced thousands, and damaged critical infrastructure in Aceh, North Sumatra, and West Sumatra (BNPB, 2025). Although most of the substantive parameters—a large number of victims, extensive damage, and limited regional capacity—were met, the mechanism for determining national disaster status was not immediately implemented due to the lack of a standard threshold.

From the perspective of protecting community rights, the lack of standard parameters has the potential to create inequality between regions. Regions with stronger administrative lobbying capabilities may obtain aid allocations more quickly than others that may have more pressing needs but are less able to communicate the escalation of conditions. Yet, modern disaster governance principles emphasize that the state is obliged to guarantee citizens’ access to safety, emergency assistance, and recovery, regardless of differences in regional political and administrative capacity (Government of Japan, 1988). Therefore, standardizing parameters is not only a technocratic necessity but also part of fulfilling human rights, particularly the right to security, protection, and the sustainability of life.

Furthermore, standardizing parameters will strengthen the integration of the rapid assessment system, a mechanism for rapid assessment that is a crucial prerequisite in any emergency situation. The 2025 Sumatra crisis demonstrated that significant discrepancies in victim data between the National Disaster Management Agency (BNPB), the Regional Disaster Management Agency (BPBD), and local governments occurred in the first few days, affecting the accuracy of disaster scale analysis (Wisner et al., 2025).

Institutionally, Indonesia already has the National Disaster Management Agency (BNPB). However, the ineffectiveness of BNPB’s role in carrying out its authority—to provide guidelines and direction for disaster management (prevention, emergency response, rehabilitation, reconstruction), establish standardization, coordinate activities, report to the President, manage aid, prepare BPBD guidelines, carry out emergency commands, and ensure synchronization of disaster policies, as quoted from the official BNPB website and related regulations—is clearly visible in the disaster management process in Aceh, North Sumatra, and West Sumatra.

The Disaster Management Law was enacted to reduce disaster risk and mitigate the impact of existing disasters. Because this law is closely linked to other laws governing natural resources, overlaps and inconsistencies arise. Therefore, harmonization of the disaster management law with sectoral laws is necessary (Bayu Dwi Anggono, 2010).

In fact, the parameters of national disasters are strictly regulated in Article 7 paragraph (2) of Law Number 24 of 2007 concerning Disaster Management, which states that the status and level of national and

regional disasters contain indicators including the number of victims; loss of property; damage to infrastructure and facilities; the extent of the area affected by the disaster; and the resulting socio-economic impacts. Furthermore, considering the disasters in Aceh, North Sumatra, and West Sumatra, the number of victims reached nearly 1,000 people, in addition to extensive property loss and damage to infrastructure and facilities. The affected area reached three provinces, and the socio-economic impacts were strongly felt by victims, especially amid property loss, cut-off road access, and the potential for subsequent disasters, such as in Tukka District, Central Tapanuli Regency, which experienced flash floods twice within a one-week period.

In addition, the government tended to be less responsive in addressing the logistical needs of victims, especially those in remote areas that are difficult to reach by land and must be accessed by air. Furthermore, the government has yet to announce a recovery strategy for victims in Aceh, North Sumatra, and West Sumatra, whose areas were nearly destroyed. Moreover, several state officials made inappropriate public statements regarding the disaster, such as the prominent and viral statement by the Head of BNPB that “disasters only scare people on social media,” which deeply hurt the victims.

Paragraph (3) further states that provisions regarding the determination of disaster status and level, as referred to in paragraph (2), are regulated by Presidential Regulation (*Perpres*). Article 3 paragraph (1) of Presidential Regulation Number 17 of 2018 concerning the Implementation of Disaster Management in Certain Circumstances states: “In certain circumstances, the Head of the National Disaster Management Agency can implement disaster management, including ease of access in handling disaster emergencies until a certain time limit, after obtaining a decision in a coordination meeting between ministries or institutions coordinated by the Coordinating Minister in charge of disaster management.”

Eyestone states that public policy is the ongoing relationship between government units and their environment (Eyestone, 1971). Policies designed to improve public welfare or quality of life are defined as public policy (Midgley, 2009). Public policy regulates what the government does and does not do to solve public problems. Public policy is also defined as policies that can be developed by government agencies and officials (Anderson, 1994).

Through Law No. 24 of 2007 concerning Disaster Management and Government Regulation No. 21 of 2008 concerning the Implementation of Disaster Management, disaster management activities—especially disaster emergencies—are regulated and must be implemented immediately and cannot be postponed. In disaster emergencies, urgent needs must be addressed without delay. To meet these needs, procurement of goods and services is carried out by the government. Procurement activities in disaster situations cannot be equated with normal circumstances due to their emergency nature, which requires immediate action (R. Julio Prasetyo, 2019).

The concept of responsibility for the disasters that occurred in Aceh, North Sumatra, and West Sumatra is also important, especially given indications of illegal logging, as evidenced by the large number of logs carried by flash floods, the presence of dead animals, and numerous casualties. Therefore, there must be outputs from police investigations to identify the masterminds behind these disasters, not only in terms of criminal sanctions but also compensation for recovery from the disaster impacts.

In addition, disaster mitigation is crucial, such as the provision of early warning systems by BMKG in regions prone to flash floods and other hazards, which can serve as alerts for communities to reduce widespread impacts.

With standardized parameters—such as thresholds for the number of casualties, damage to vital infrastructure, economic losses, the extent of affected areas, and regional response capacity—rapid assessments can serve as an objective basis for determining whether a disaster should be escalated to the national level or handled by regional governments. These parameters also facilitate digital disaster management systems that automatically issue alerts to the central government. Therefore, the urgency of standardizing national disaster parameters relates not only to administrative efficiency but also to the state’s legitimacy in protecting its citizens. Standardization enables more predictive response protocols, fairer resource allocation, stronger multi-level government coordination, increased government accountability, strengthened public trust, and reduced risks of politicization in handling major disasters in the future.

4. CONCLUSION

The absence of standard parameters for determining national disaster status in Indonesia has created policy uncertainty, inconsistent government responses, and the potential for unfair aid distribution, as reflected in various major disasters in Sumatra, such as the 2004 Aceh earthquake, the 2010 Mentawai tsunami, and the

eruption of Mount Sinabung since 2013. The current mechanism for determining the scale of a disaster relies heavily on subjective judgment from the central government, without clear quantitative measures regarding the number of victims, physical damage, socio-economic impacts, regional capacity, and the level of emergency across regions. This situation not only slows the process of resource mobilization but also weakens the principles of accountability, transparency, and predictability in disaster governance. Compared to other countries, such as Japan and the Philippines, which have implemented objective indicators based on risk indices and levels of damage, Indonesia is still at a normative stage without measurable operational standards. Therefore, the urgency of standardizing national disaster parameters is increasingly evident in order to strengthen national resilience and ensure optimal protection for citizens.

The government needs to formulate standard parameters that are quantitative, multidimensional, and aligned with international practices, such as the number of casualties, categories of infrastructure damage, the magnitude of economic losses, the extent of the affected area, disruption to public services, and local government coping capacity. These parameters must be regulated through binding regulations—ideally Government Regulations—and reinforced with technical instruments in the form of a national risk index and a real-time disaster information system. Furthermore, systematic coordination is needed between the National Disaster Management Agency (BNPB), the Meteorology, Climatology, and Geophysics Agency (BMKG), sectoral ministries, and local governments to ensure that each disaster can be measured based on valid and verifiable data. The government also needs to benchmark against other countries that have successfully implemented objective standards in determining levels of emergency, while expanding the participation of the public, academics, and international institutions in the standard-setting process. With these steps, Indonesia will have a disaster management framework that is more accountable, responsive, and adaptive to the increasing risk of disasters in the future.

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