Strategy and Formulation of Disaster Management Policies in Indonesia

Dede Saputra¹, Agus Wibowo², Christine S. Marnani³, Pujo Widodo⁴, Herlina Juni. R. Saragih⁵, Kusuma⁶

Faculty of National Security, Disaster Manajemen Study Program Republic of Indonesia Defense University
³University of Pertamina, Indonesia
dsdedesaputra@gmail.com

Abstract — The purpose of this study is to formulate the concept of strategy and formulation of disaster management policies in Indonesia, especially faced with the challenge of increasing trends in natural and non-natural disasters and the emergence of the Covid-19 pandemic. This study uses a descriptive qualitative approach with an emphasis on literature studies to examine several methods and experiences (lessons learned) in various implementations of disaster management policies in Indonesia. The result of the research is the need for strategies and policy formulation in each phase of a disaster (pre-disaster, emergency response, post-disaster) from various aspects of the disaster management system, namely legislation, planning, institutions, and funding. The proposed disaster management strategy and policy formulation refers to the mandate of the 1945 Constitution, namely (1) to protect the entire Indonesian nation and the entire homeland of Indonesia (reformulating adequate funding policies for each stage of disaster management); (2) promoting public welfare (reforming post-disaster policies with the principle of build back better, safer and sustainable); (3) educating the nation’s life (reformulating the policy of mainstreaming or mainstreaming disaster risk reduction to all levels of society, through communication, education, and information as well as dedication); (4) participate in implementing world order based on freedom, eternal peace, and social justice (reformulating policies for cooperation, both domestically and internationally for disasters).

Keywords — Strategy; Formulation; Disaster Management Policies; Disaster Management System

I. INTRODUCTION

The first Pledge of Independence of the Republic of Indonesia was "Protect the entire Indonesian nation and all of Indonesia's broodshed". This thought is stated in Law No. 24 of 2007 concerning Disaster Management. In line with the momentum of the time, Indonesia was relatively late in preparing a comprehensive disaster management system regulatory framework. If you look at the geographical conditions of the country of Indonesia, which is an area with the threat of geological and hydrometeorological disasters (Kristian, 2018), (Hayaturrahmi and Husna, 2018), (Hartono, 2021).

The regulatory framework seeks to respond to various disaster events in Indonesia by building a disaster management system in terms of legislation, institutions, administration (pre, emergency response, and post-disaster), as well as budgeting. Law No. 24 of 2007 concerning Disaster Management was stipulated jointly by the government and the DPR to build a resilient disaster management system in Indonesia. Subsequently, derivative regulations were stipulated, including in the form of : Government Regulation No. 21 of 2008 concerning Implementation of Disaster Management; Government Regulation no. 22 of 2008 concerning Funding and Aid Management; Government Regulation no. 23 of 2008 concerning the Participation of International Institutions and Foreign Non-Governmental Organizations in Disaster Management.
From an institutional perspective, the National Disaster Management Agency (BNPB) was formed in 2008 and has the function of coordinating the implementation of disaster management activities in a planned, integrated, and comprehensive manner with the enactment of Presidential Regulation No. 8 of 2008 concerning the National Disaster Management Agency. However, the policy framework still requires improvement and strengthening. There are several issues currently being faced both in Indonesia and in the world. This issue, namely the trend of natural and non-natural disasters which are increasing from time to time and cannot be predicted precisely and accurately, resulting in a high impact of each disaster that occurs, especially those on a massive to global scale such as the Covid-19 pandemic. Non-natural disasters such as the Covid-19 Pandemic are not clear when they will end and have a wide impact on various sectors and affect national development goals and of course the global constellation. Until now, Indonesia is one of the epicenter countries of the Covid-19 pandemic when viewed from the perspective of the exposed soul (Hadi, 2020).

This research is important in terms of studying and understanding the process of policy change, where policies change from time to time to gain more insight into how to measure a nation's civilization. The momentum of change and policy dynamics, can also be seen in whether there has been a change in the policy paradigm. Thus, investigating the complexity and nuances of policy ideas can hopefully give us a window into our own society, how it attempts to solve problems, and how the solutions it generates (Hogan and Howlett, 2015).

In line with this, every policy needs to be evaluated to bring up new strategies and reformulate a better policy (Kelly and Booth, 2013). From the very beginning, the disaster management policies model has not only focused on the government's role. This is in line with concepts such as government having shifted from a command and control model to a collaborative, interactive governance and network model of collaborative governance (Craft and Howlett, 2012).

Taking into account the above background, it is necessary to have disaster management policies in Indonesia that are resilient and reliable amidst the increasing trend of natural and non-natural disaster threats and in the framework of moving towards a Resilient Indonesia 2045 by the Master Plan for Disaster Management which has been stipulated through a Presidential Regulation. The purpose of this article is to formulate a strategic conception and policy formulation for disaster management in Indonesia.

## II. LITERATURE REVIEW

### A. Strategy

In the organizational context, David (2004) suggests that strategy is a unified, broad, and integrated plan that links the company's strategic advantages with environmental challenges, designed to ensure that the main goals of the company can be achieved through proper implementation by the organization. Wibisono, in Lynch (2006) adds that organizational strategy is a pattern or plan that integrates the main objectives or organizational policies with a series of actions in a mutually binding statement relating to general principles to achieve the organization's mission (Wibisono, in Lynch, 2006). Further elaboration of the general principles to achieve the mission of the organization consists of: (1) Clear vision and mission: Every organization must have a clear vision and mission to provide direction and focus on organizational activities; (2) Appropriate strategy: After establishing the vision and mission, the organization must formulate the right strategy to achieve its goals. This strategy must be implemented effectively and efficiently; (3) Focus on goals: Organizations should always focus on goals and understand their needs and expectations. This will help the organization to provide better ideas and services; (4) Strong leadership: Strong leadership is essential in inspiring and leading an organization toward achieving its goals; (5) Qualified team: The organization should have a qualified team to develop the strategy and implementation of the organization's activities. A solid and well-trained team can contribute significantly to the achievement of organizational goals; (6) Strong organizational culture: Organizations must have a strong and positive culture, with a focus on espoused ethics and values.

### B. Policy Formulation

In the context of formulating public policy, Nugroho (2014) suggests several models that can be used, namely: the institutional model, process model, group model, elite model, rational model, incremental model, game model, public choice model, system model, democratic model, model strategic, and deliberative models (Nugroho, 2014), (Jachock, 2016). Pearson (2013) adds that formulating public policy at least includes the following: identification of policy problems; formulation of policy proposals; legitimation of public policies; public policy implementation; and evaluation public policies (Pearson, 2013).
The formulation of public policy is the essence of public policy itself, in which policy limitations are made to intervene in public life. In the end, policy formulation is an attempt by the government to intervene in problems that exist in the public domain. In terms of process, policy formulation consists of several stages, including (1) determining current and future problems or issues; (2) performing policy analysis; and (3) making decisions.

While the evaluation of public policy formulations is closely related to whether these formulations have been implemented: (1) Using an appropriate approach to the problem to be solved, (2) Leading to the core problem, (3) Following optimally accepted procedures, and (4) Utilizing existing resources optimally.

One of the policy evaluation techniques can refer to the policy content that is relevant to the problem to be solved with the basic criteria, namely the suitability of the content with the problem, strategic problem, and goal to be achieved (Nugroho, 2015). In the context of the public policy reformulation process, it is important to formulate the problem. Several processes in the formulation of the problem, among others: are our search for problems; problem definition, problem specification, and problem recognition (Dunn, 1994). Furthermore, Patton and Sawicki propose 7 (seven) stages in formulating a problem, including: (1) Thinking of a problem; (2) Describing the boundaries or limitations of the problem; (3) Developing facts; (4) Sort goals (goals) and targets (objectives); (5) Identify the size of the problem; (6) Show potential costs and benefits; (7) Discussing the problem statement (Patton and Sawicki, 1993).

C. Disaster Management System

The disaster management system is built based on the basic framework of legislation related to Law No. 24 of 2007 concerning Disaster Management and its derivatives (Government Regulations, Presidential Regulations, Head of BNPB Regulations, etc.) (Maarif, 2012). Judging from its nature, disaster management must also be comprehensive. This means that disaster management is not partial by paying attention to all aspects of life. Within the disaster management policy framework, it has been explained that disaster is the business of all parties (multi-stakeholders).

In its development, disasters as the affairs of all parties are currently known as the pentahelix approach model, which involves the Government, Academics, the Business Institutions, Society, and the Media. The pentahelix or multiplehelix approach models are currently considered very appropriate to accommodate the participation of all parties with coordination and collaboration mechanisms. However, as mandated by the legislation in question, the main responsibility still rests on the Government, both at the Central, Provincial, Regency, or City level to the Village level. In terms of phasing, the implementation of disaster management starts from the pre-disaster, emergency response, and post-disaster stages. In general, the disaster management system is a conceptual framework that is integrated with several aspects, namely: legislative framework, planning, institutional, funding, capacity building, and disaster management implementation (Maarif, 2012).

The disaster management system stipulated in Law No. 24 of 2007 concerning Disaster Management should be implemented in all regions of Indonesia considering that Indonesia is at high risk of disasters (Kristian, 2018). Even though the national disaster management system has been prepared within a conceptual framework, the implementation of the disaster management system is also very local or sectoral (Maarif et al., 2012).

Various countries in Asia, America, and Africa have shown that the success of disaster risk reduction programs is based on community participation and contribution. Local communities are the main actors in disaster management. Participatory approaches, skills, and local knowledge (local wisdom) are part of an integrated disaster management system and play a major role in efforts to reduce disaster risk (Maarif, 2013).

In line with this, within the framework of disaster management legislation, namely Law No. 24 of 2007 concerning Disaster Management, it has also been emphasized that the importance of community participation in disaster management "that every citizen has the right to participate in decision-making in disaster management", where participation includes "decision making, providing information, monitoring, planning, implementation, and program maintenance" (Hadi, 2020).

With aspects that are local in nature, each individual is expected to maintain and maintain the preservation of nature. This effort must be carried out by every individual in all their activities to ensure the quality of human life (we take care of nature, and nature takes care of us). Conceptually, this is in line with building basic efforts against disasters (Ambo and Sulandari, 2008). Every development plan is expected to give alignment to harmony with nature. Development planning based on an ecological approach is expected to be able to maintain the balance of nature (Kodar, 2020).
III. RESEARCH METHODS

This research uses a qualitative-descriptive approach. Research with a qualitative approach aims to interpret a phenomenon to find an answer to a problem formulation. Qualitative research is in-depth, natural, and generates or "reconstructs" new theories or knowledge. Furthermore, qualitative research is not obtained from statistical procedures, but through disclosure and understanding of an unknown social phenomenon by building a holistic and complex picture, expressed in statements, reporting in detail the views of informants, and carried out in natural situations (Strauss and Corbin J, 2003), (Creswell, 2013).

This research is included in the descriptive evaluation research. In the context of this study, the emphasis is placed on describing and understanding the complex phenomena that influence current disaster management policies. The author also conducts an in-depth exploration of programs, process events, and activities in program implementation, especially related to disaster management in Indonesia.

Data and information are obtained based on literature studies so that it's hoped that they can cover each other's weaknesses and complement the required data or information as well as capture the reality of the problem so that it becomes more reliable (data and information triangulation). Several literature studies were conducted to review several methods or experiences in various implementations of disaster management policies in Indonesia. This experience is used as a lesson learned in disaster management policies in Indonesia. The data analysis technique uses a descriptive qualitative approach which is designed based on the conceptual framework of the disaster management system in Indonesia, then produces useful conclusions to answer the problem formulation in this research, which is related to the reformulation of disaster management policies in Indonesia.

IV. DISCUSSION

Disaster management includes pre-disaster, emergency response, and post-disaster stages. The following is an overview of disaster management policy reformulation at each stage or phase. The summary can be seen in attachment 1.

A. Strategy and Policy Formulation at the Pre-Disaster Stage

In Law No. 24 of 2007 concerning disaster management, the implementation of disaster management in a situation where a disaster does not occur includes (1) disaster management planning; (2) disaster risk reduction; (3) prevention; (4) integration in development planning; (5) disaster risk analysis requirements; (6) enforcement of spatial plans; (7) education and training; and (8) disaster management technical standard requirements. Meanwhile, in terms of situations where there is a potential for a disaster to occur, the implementation of disaster management includes (1) preparedness; (b) early warning; and (c) disaster mitigation. Based on policy evaluation at the pre-disaster stage, not all existing legislation or regulations have been drafted adaptively with disaster risk reduction efforts (sensitive to disaster aspects). Various studies suggest that economic activities such as mining do not pay attention to aspects of disaster risk (Wijayanto et al., 2020). The importance of applying sanctions (disincentives), as well as rewards (incentives) to regulations and legislation that has been prepared (Luh et al., 2021).

The author also proposes to strategy and policy formulation for mainstreaming disaster risk reduction into drafted legislation or regulations, mainly related to development at the central and regional levels (RPJMN/D, RKP/D, RTR/RTRW/RDTR, and so on). Meanwhile for the planning aspect at the pre-disaster stage, that is, development planning in the regions has not fully included disaster aspects. Not all regions have Disaster Risk Assessment (KRB) and Disaster Management Plan (RPB). These two documents are primarily used as the basis for sectoral planning. This is also in line with research conducted by Sutrisna (2020) which suggests that sectoral planning for health does not pay attention to disaster aspects because there is no disaster risk study and disaster management plan in the area (Sutrisna, 2020). Proposed policy formulation for planning aspects at the pre-disaster stage, namely to strategy and policy formulation disaster risk reduction mainstreaming policies into development plans at the center down to the regions.

The Disaster Management Plan (RPB) along with more detailed management plans and Disaster Risk Assessment (KRB) are used as the basis for other sectoral plans. Meanwhile, institutions in the pre-disaster stage still need strategy and policy formulation for disaster risk reduction. Disaster risk reduction must become mainstream in everyday life. All levels of society must understand the concept and its implementation in life (Cempaka et al., 2021). In terms of mitigation efforts to reduce disaster risks that are likely to occur in the future, the culture of living in harmony with disaster risk must be instilled in the community through local wisdom in the area. This step needs to be prepared so that material and non-material losses can be minimized (Hartono et al., 2021), (Samad et al., 2020). The reformulation of disaster management policies, especially during the pre-disaster
period for institutional aspects, namely strengthening mainstreaming policies for disaster risk reduction to all levels of society, through communication, information, and education (IEC) as well as the participation and collaboration of all parties. Collaboration between various parties has been proven to streamline disaster management efforts (Suartini et al., 2015), (Munir, 2017), (Hakam, 2018), (Tyas et al., 2020).

**Funding (budgeting)** at the pre-disaster stage is still a major undertaking. Contingency funds that are spread across Ministries/Institutions as well as in various stakeholders are still not optimal in terms of outcomes and impacts. Lessons from major disasters such as the Aceh Tsunami and Yogyakarta Earthquake have an impact on Gross Domestic Product (GDP). At the time of the Aceh Tsunami (2004), 3% of the national GDP disappeared, while the Yogyakarta Earthquake (2006) lost 30% of GPD from DIY Province (Samad et al., 2020). This is of course a concern in terms of the lack of funding for investment in disaster risk reduction. In the future, the proposed reformulation of funding policies for the pre-disaster stage is to strengthen funding policies that are risk-based pro-investment (such as contingency funds and disaster insurance). Disaster risk reduction investment for development funding that is preparedness, mitigation (structural and non-structural) as well as other investments that are disaster risk reduction in nature.

**B. Strategy and Policy Formulation at the Emergency Response Stage**

In Law No. 24 of 2007 concerning disaster management, the implementation of disaster management during an emergency response includes: (1) quick and accurate assessment of the location, damage, and resources; (2) determining the status of a disaster emergency; (3) rescue and evacuation of disaster-affected communities; (4) fulfillment of basic needs; (5) protection for vulnerable groups; and (6) immediate restoration of vital infrastructure and facilities. One of the challenges of the current regulatory framework is that there are still gaps, legislation that has not been drafted as mandated by Law 24 of 2007 on disaster management, namely derivative regulations in the form of Presidential Regulations regarding the Status and Levels of Disasters that have not been realized. This is important considering the challenges of Indonesia's vast territory which is at high risk of disasters and limited resources, so management is needed more effectively and efficiently. Proposed strategies and policy formulations related to regulatory or legislative frameworks, namely the need to develop derivative regulations related to the status and level of disaster, as well as roles and responsibilities during emergency response.

**Planning** during an emergency response is still very minimal. Until now, there has been no planning or need assessment for Disaster Emergency Management (PDB) whose function is to facilitate emergency operations (such as an assessment of logistical needs for survivors, data on logistics facilities that can be used, modes of transportation, access information, and so on which are the scope of disaster emergency management). In line with this, a study conducted in East Java, such as in Kediri Regency, was carried out by Fitrianto (2020) which stated that there was no contingency plan for the Mount Kelud eruption at the local BPBD, and there were no Standard Operating Procedures (SOPs) for Providing Assistance Disaster Victims caused by Construction failure disasters; SOP Control of assistance; SOP regarding domestic and foreign volunteers (Fitrianto, 2020). Strategy and formulation of planning policies during an emergency response, namely preparing contingency plans and operational plans (which can be immediately activated) and can be immediately used operationally in an emergency, especially in areas with a high risk of disaster.

In terms of disaster management institutions during the emergency response, based on the results of the evaluation, there are still multiple interpretations of the activities of post-disaster emergency management, especially the division of roles between the central, provincial, and district levels. Obstacles and challenges to the postal institution during the emergency response, namely the lack of clarity on personnel so that the guidelines (blueprint) and standard operating procedures (SOP) were not clear during the emergency response (Suarjat, 2017). Institutional penetration is also important by involving the community during a disaster emergency (Nasution, 2021). Strategies and Formulations for strengthening disaster management policies during emergency response, especially for the proposed institutions, namely strengthening the capacity of Human Resources (HR) and the Institution of the Disaster Emergency Management Command System (SKPDB) for all parties (stakeholders) involved in the phase or phase of the emergency response, Pentahelix elements, namely government, academia, the business institutions, media, and society collaborate according to their respective roles.

The issue of **funding** during the emergency response stage is one of the issues that often arise in various regions. This was also conveyed by (Nugraha et al., 2020), namely conveying that funding conditions at the time of forest and land fires were minimal so the handling of emergency disasters was hampered and not optimal (Nugraha et al., 2020). The lack of budgetary
politics and the partiality of the Regional Government (Pemda) in the allocation of Unexpected Expenditures (BTT) are also obstacles in various regions (Silmi, Nur, and Purwanti, 2019). On the other hand, funding through BTT is considered inflexible and prone to irregularities. Proposed strategies and formulation of funding policies during the emergency response, namely in the form of strengthening funding policies, one of which is the BTT scheme with the Permendagri and operational and flexible rules, so that the Regional Government is safe or not afraid when implementing the budget.

C. Strategy and Policy Formulation at the Post-Disaster Stage

In Law No. 24 of 2007 concerning disaster management, the implementation of disaster management in the aftermath of a disaster includes rehabilitation and reconstruction. The rehabilitation includes (1) environmental improvement in the disaster area; (2) improvement of public infrastructure and facilities; (3) providing community housing repair assistance; (4) psychological social recovery; (5) health services; (6) reconciliation and conflict resolution; (7) socio-economic cultural recovery; (8) restoration of security and order; (9) restoration of government functions; and (10) restoration of public service functions. While the reconstruction includes: (1) rebuilding infrastructure and facilities; (2) rebuilding community social facilities; (3) revival of the socio-cultural life of the community; (4) application of proper design and use of better and disaster-resistant equipment; (5) participation and role as well as social institutions and organizations, the business institutions, and the community; (6) improvement of social, economic and cultural conditions; (7) increasing the function of public services; and (8) improvement of main services in the community.

Various legislation or regulations at the post-disaster stage from the Government Regulation (PP) level to BNPB Regulations already exist, but have not regulated the role of multi-stakeholders at the post-disaster stage in detail. Legislatively, there is BNPB Regulation Number 5 of 2017 regarding the Post-Disaster Rehabilitation and Reconstruction Plan (R3P). However, the legislation has not yet regulated the detailed roles of multi-stakeholders and tends to be BNPB as the main executor of post-disaster rehabilitation and reconstruction. So that in the future, it is necessary to strengthen the strategy and formulate policies in the form of regulations that regulate the roles of multiple parties in detail at the post-disaster stage. BNPB and BPBD in this case act as coordinators, while implementation is left to each sector.

Based on the evaluation, planning aspects at the post-disaster stage still need to be optimized. The planning document in the form of a Post-Disaster Rehabilitation and Reconstruction Plan (R3P) is still indicative of post-disaster needs but is not yet ready to be implemented directly in the form of activities. This was conveyed in Sutrisna's research (2020), that not all sectors are committed to implementing post-disaster policies that are contained in the post-disaster rehabilitation and reconstruction plan document (Sutrisna, 2020). As for the proposed strategy and formulation of disaster management policies for the planning aspect at the post-disaster stage, namely the need for a more operational recovery plan (not indicative of a program), but an action plan with a spatial planning-based approach and with the principle of build back better, safer and sustainable.

Based on the evaluation, the institutional aspect is in the post-disaster stage, namely not all sectors are committed in terms of policy implementation during the post-disaster period. This is generally due to limited resources (funding, time, and human resources) (Sutrisna, 2020). As for the proposed policy reformulation, it is necessary to strengthen the institutions of BNPB and BPBD as the main coordinators during post-disaster rehabilitation and reconstruction.

In the post-disaster stage, the funding aspect (budgeting) plays a very important role, which is a key factor in the successful rebuilding of disaster-affected areas (Cempaka et al., 2021). The same is true for the aftermath of the disaster in Trenggalek Regency, East Java. Adequate funding allocations and the Bank of East Java's Corporate Social Responsibility (CSR) support process accelerated the post-disaster rehabilitation and reconstruction process (Wijayanto et al., 2020). As for strategy proposals and funding policy formulations at the post-disaster stage, namely the need for alternative funding for post-disaster rehabilitation and reconstruction, including in the form of pooling funds; disaster insurance; Corporate Social Responsibility (CSR), and other disaster risk financing instruments.

V. CONCLUSION

From the discussion above, Law No. 24 of 2007 concerning Disaster Management has described a Disaster Management System that is National in nature and constitutes a unified system for implementing disaster management that is integrated covering aspects of legislation- regulation, planning, institutions, and funding, as well as the implementation of disaster management. The strategies and policy formulations for disaster management that need to be strengthened for the
disaster management system are as follows: (1) Pre-disaster, (2) Emergency Response, and (3) Post-disaster. The strategy and formulation of the proposed disaster management policy must fully: (1) protect the entire Indonesian nation and all of Indonesia's bloodshed (such as a policy proposal for adequate funding for each stage starting from pre, during, and post); (2) promoting public welfare (such as proposing post-disaster policy reformulations with the principles of building back better, safer and sustainable); (3) educating the life of the nation (such as proposing policy reformulations to strengthen mainstreaming policies or mainstreaming disaster risk reduction to all levels of society, through communication, education, and information); (4) participating in carrying out world order based on independence, eternal peace, and social justice (such as proposing policy reformulations for cooperation, both domestic and foreign for disaster, where disaster is a shared affair). The proposed strategy and policy formulation for disaster management is in line with the Indonesian state constitution, namely the 1945 Constitution.

REFERENCES


Table 1. Evaluation and Strategy Formulation Policy Countermeasures Disaster in Indonesia

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Source: Results Analysis, 2023