

Understanding Local Budget Actors Behavior: Lessons Learned From Disaster Budgeting in Indonesia

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Abstract

This study examines the phenomenon of natural disaster budgeting by local budget actors in Regional Disaster Management Agencies (RDMA). Specifically, it addresses two key aspects: first, how local budget actors allocate funds for natural disasters in their regions, and second, how their perceptions influence their behavior in natural disaster budgeting. Employing a phenomenological approach with an interpretive perspective, this study describes how local budget actors allocate natural disaster budget. In-depth interviews were conducted with 15 local budget actors, ensuring reliability, validity, and credibility through adherence to the principle of saturation. The findings reveal that local budget actors tend to allocate budgets based on their perceptions. Positive perceptions of natural disasters lead to proactive behavior, whereas negative perceptions result in reactive behavior. This study highlights its originality by discussing the unique variations in the behavior of local budget actors in allocating natural disaster budgets based on their individual perceptions.

Keywords: dynamics, inconsistency, disaster, expenditure

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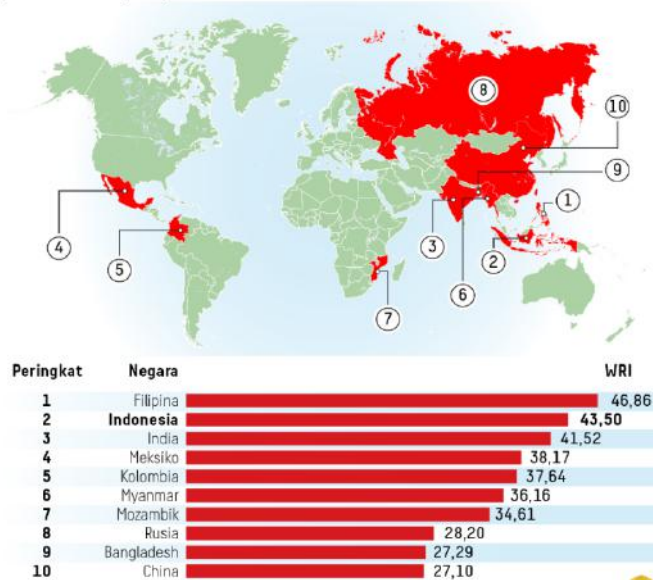
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Introduction

Indonesia is known not only for its rich natural resources (Sabir & Phil, 2016) but also for its high level of vulnerability to natural disasters (Astutik & Apriliana, 2022; Herqutanto et al., 2022). This is due to Indonesia's location in a subduction zone and its position within the Ring of Fire, a zone of active tectonic plate boundaries that triggers high volcanic and seismic activity (Damayanti et al., 2019). These conditions make volcanic eruptions and earthquakes frequent occurrences, causing significant damage and loss of life (Bachri et al., 2024; Meral et al., 2024; Purba et al., 2022). History records major disasters such as the 2006 Yogyakarta earthquake, which claimed 5,716 lives and caused US\$3.1 billion in damages (Amri et al., 2024), and the 2010 Mount Merapi eruption, which resulted in 367 deaths and damages up to US\$781 million (Hermawan et al., 2024). The World Risk Report 2023 ranks Indonesia as the second-highest disaster-prone country globally, with a risk index of 43.50.

Figure 1

Countries Most Prone to Disasters in the World



Source: World Risk Report (2023)

The high risk of natural disasters in Indonesia necessitates a planned, integrated, coordinated, and comprehensive disaster management system (Andreastuti et al., 2023; Fitriani et al., 2021), as stipulated in Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 tentang Penanggulangan bencana. This law emphasizes that the responsibility for disaster management lies with the central and local governments, with support from stakeholders. To support the effectiveness of disaster management, adequate budgetary support is required (Shalih & Koestoer, 2019), with an ideal allocation of at least 1% of the total local government budget, as recommended by UNISDR 2014. However, field studies indicate that coordination, attention, and commitment from the government in prioritising disaster management as part of regional development remain weak (Hartati et al., 2024).

Government awareness and perception of disaster risk influence disaster management policies and implementation. Positive perceptions and high awareness encourage proactive behavior, such as allocating an adequate budget for mitigation and preparedness (Aitsi-Selmi et al., 2016; AlQahtany & Abubakar, 2020). Conversely, negative perceptions and low awareness lead to reactive policies that focus on emergency response without proper planning

(Shaw et al., 2015). The paradigm shift from responsive to preventive measures is reflected in mitigation efforts, which are now the primary focus of disaster management (Napirah et al., 2023; Taufan Maulana & Andriansyah, 2024). The success of disaster management systems also depends on the government's commitment to prioritising disaster risk reduction in regional development (Hartati et al., 2024) and providing adequate budgetary support (Shalih & Koestoer, 2019). UNISDR (2014) recommends that disaster management budgets should be allocated at least 1% of the total regional government budget. Additionally, the attitudes of budget actors at the local level play a crucial role in determining the magnitude of disaster funding allocations. Supportive attitudes and high levels of attention facilitate more effective budget allocations, whereas weak attitudes and low priorities can hinder the effectiveness of disaster response (Darmin et al., 2024).

In practice, the RDMA, as the spearhead of disaster management in the region, faces various challenges, ranging from overlapping regulations (Gailmard & Patty, 2019), slow bureaucracy (Mardalaila et al., 2022), weak political support (Apriyana et al., 2020; Hartati et al., 2024), to limited resources (Handoyo et al., 2024). The vertical and horizontal synergy between RDMAs, as well as capacity building and collaboration among various actors, are crucial for enhancing the effectiveness of disaster management (Putra & Matsuyuki, 2019; Sopha, 2022).

Literature Review

Natural Disaster Management

Disaster management in Indonesia is a form of community protection from disaster risks (Dewantoro, 2021) and is regulated by Undang-Undang Nomor 24 Tahun 2007. This law emphasises the responsibilities of central and regional governments in implementing disaster management, covering the pre-disaster stage (mitigation, preparedness, and prevention), the disaster stage (emergency response), and the post-disaster stage (rehabilitation and reconstruction). The stages of disaster management are cyclical, with a proactive approach in the pre-disaster phase—through risk reduction investments and a national resilience vision—and a reactive approach during the emergency response phase for rescue and protection (Undang-Undang Nomor 24 Tahun 2007).

Disaster Budgeting

Disaster budgeting is a strategic process of allocating funds to support every stage of disaster management. In general, public budgeting is a written, systematic, and financially measurable statement of estimated performance to be achieved (Mardiasmo, 2018). Budgeting in public organizations emphasizes political processes and accountability (Halim & Kusufi, 2014), unlike in the private sector. In the context of disasters, budgeting requires high flexibility and rapid adjustment mechanisms due to the uncertainty of risks (Liu et al., 2022). Therefore, aspects such as estimation, reallocation mechanisms, and contingency funds are key (Mardiasmo, 2009).

Disaster Budgeting Actors

Disaster budgeting in Indonesia is carried out by central actors, namely National Disaster Management Agency (NDMA) and local actors (RDMA) in accordance with their primary duties and functions (Peraturan Pemerintah Nomor 22 Tahun 2008). NDMA is responsible for

coordinating and managing disaster management at the national level, while RDMA acts as the direct implementer in the regions, tailored to local characteristics (Peraturan Pemerintah Nomor 21 Tahun 2008). Both entities carry out coordination, command, and execution functions to ensure that disaster response efforts are well-directed, integrated, and comprehensive. However, budgeting at the local level often faces challenges, such as overlapping regulations, slow bureaucracy, and insufficient government commitment (Hartati et al., 2024).

Perception

Perception is an experience produced by the senses of sight, hearing, and smell (Gibson et al., 2012). In this study, perception can be understood as one of the important psychological aspects that enable humans to respond to the presence of various aspects and phenomena around them. According to Walgito (2004), perception is a cognitive process that begins with a sensory process, namely stimuli received by the sensory organs. Perception sometimes differs from reality.

According to Sunaryo (2004), the conditions for perception to occur are as follows.

1. The presence of an object to be perceived.
2. The presence of attention, which is the first step in preparing for perception.
3. The presence of sensory organs/receptors, which are the tools for receiving stimuli.
4. Sensory nerves, which are the tools for transmitting stimuli to the brain, which then act as the tool for producing a response.

According to Toha (2003), the following factors influence a person's perception.

1. Internal Factors
Feelings, attitudes, individual personality, prejudices, desires or expectations, attention (focus), learning processes, physical condition, mental disorders, values, interests, and motivation.
2. External Factors
Family background, information obtained, knowledge and needs of the surrounding environment, intensity, size, contrast, repetition of movement, newness or familiarity of an object.

Toha (2003) also explains the process of perception formation based on the following stages.

1. Stimulus
This stage is the first step in which individuals receive stimuli from both the external and internal environments. Stimuli can be information, events, or situations that affect a person's senses, such as sounds, light, or certain emotions. These stimuli become the basis for a person to begin to pay attention to what is happening around them and lead to the perception process.
2. Registration
Registration is the process by which stimuli received by the senses are processed and stored in the nervous system. At this stage, sensory organs such as the eyes, ears, and skin play a crucial role in capturing stimuli and transmitting them to the brain. This process involves initial filtering of information that is considered relevant so that only certain stimuli are processed further.
3. Interpretation
Interpretation is the process of giving meaning to stimuli that have been registered. At this stage, individuals use experience, knowledge, and context to understand or

interpret stimuli. Interpretation can vary between individuals because subjective factors, such as culture, values, and emotions, influence the way it is perceived. The result of this stage is the formation of different perceptions for each individual.

Proactive and Reactive Behavior

Based on behavioral science, individual behavior is a combination of several factors, such as perception, motivation, emotions, and learning (Gibson et al., 2012). In the face of various challenges, one of which is natural disasters, individual behavior can be classified into two main approaches: proactive and reactive behavior. Both approaches play a crucial role in determining how individuals, communities, or organisations respond to a situation, whether by taking preventive measures before an event occurs or by responding after the event has occurred. Understanding these two types of behavior is key to designing effective and sustainable disaster management systems.

Proactive and reactive behavior are two different approaches to responding to situations or events. Proactive behavior is an action initiated voluntarily by individuals or groups before an event occurs to prevent or mitigate adverse impacts. In contrast, reactive behavior is a response that arises after an event occurs, often as a direct reaction to the situation at hand. In the context of natural disasters, proactive behavior can be understood as an approach that focuses more on the prevention and mitigation of risks before a disaster occurs rather than simply responding to the disaster's impact (Wei et al., 2024). This approach aims to reduce vulnerability and improve community preparedness.

Meanwhile, reactive behavior in the context of disaster management policy refers to responses or actions taken after a disaster occurs (Choudhury & Haque, 2024). This behavior is often oriented toward providing immediate responses to disaster events, such as emergency assistance, rehabilitation, or recovery from damage that has occurred. Although reactive responses are crucial for managing disasters, this approach is often insufficient to mitigate the long-term effects of disasters. Research by (Utomo & Minza, 2018) examined the helping behavior of spontaneous volunteers after natural disasters, which is an example of reactive behavior in emergencies.

According to (Noy et al., 2022), proactive behavior refers to preparatory and risk management measures taken before a disaster occurs. Reactive behavior, on the other hand, refers to immediate responses to the impacts of a disaster after it has occurred. Furthermore, according to (Macaskill & Guthrie, 2018), reactive behavior refers to decision-making and resource allocation approaches that only respond to damage or immediate needs after a disaster has occurred. This behavior is often seen in infrastructure reconstruction budgeting. Decisions are based on physical damage that has already occurred without considering long-term needs or opportunities to improve infrastructure resilience.

These two approaches complement each other in disaster management. However, an emphasis on proactive behavior through mitigation and preparedness can significantly reduce losses and increase community resilience to natural disasters. Therefore, integration between proactive and reactive strategies is essential in comprehensive disaster management efforts.

Methodology

Research Approach

This study uses a qualitative phenomenological approach (Kusumawanti & Arawindha, 2018) to gain an in-depth understanding of the attitudes and behaviors of disaster budget actors in the region. The phenomenological approach was chosen because it is capable of exploring the subjective experiences of actors and how they interpret the decision-making process in disaster budgeting, particularly in areas with high risk of volcanic eruptions and earthquakes on the island of Java.

Data Collection and Sampling Techniques

To obtain rich and in-depth data, this study involved semi-structured in-depth interviews with 15 local budget actors in RDMA. Sampling was conducted using snowball sampling to identify relevant informants until data saturation was achieved. This saturation principle was applied to ensure that the themes obtained fully represent the perspectives of the actors and that no significant new information is present.

Interview Procedure and Data Analysis

The interview protocol was developed concerning previous literature and designed to facilitate the actors' real-life narratives. The interviews were conducted face-to-face in a semi-structured format, recorded with the participant's consent, and analysed inductively using phenomenological principles. This interpretive phenomenological approach focuses on understanding the meaning behind the subjective experiences (Seidman, 2013) of local budget actors. This approach not only examines what actors do but also why they do it and how they interpret their actions within the context of disaster budgeting decision-making.

Focus on Meaning Interpretation

By emphasising subjective experiences, this process aims to capture reality as directly experienced by actors, as well as how they construct logic and justification in budgeting practices, particularly when facing uncertainty and pressure in preparing budgets for disaster scenarios.

Results and Discussion

The Construction of Negative Perceptions and Their Impact on the Reactive Behavior of RDMA Officers

Negative perceptions that develop within the RDMA environment have profound implications for the behavior patterns of its officers, particularly when dealing with disaster situations.

When these negative perceptions grow systematically, influenced by both internal and external factors, the response to disasters tends to be reactive rather than preventive. In this context, not only is disaster preparedness disrupted, but also the effectiveness of response once a disaster has occurred. This section outlines the various sources of these negative

perceptions and how they hinder institutional performance in carrying out strategic disaster management functions.

Internally, negative perceptions among RDMA employees do not arise out of nowhere. One of the primary sources is the prevailing view that individuals assigned to the RDMA are low-performing employees. This stigma creates doubt among employees about the importance of demonstrating maximum performance: When they have been labelled as low-quality human resources, an implicit question arises—"why should I perform well?" This psychologically reduces work motivation. Additionally, limited personnel and high workloads contribute to stress levels, causing RDMA employees to experience burnout. This is exacerbated by the absence of institutional recognition and minimal affirmation of the strategic value of their work. In situations like this, a sense of belonging to the institution wanes, and commitment to public service becomes less compelling.

The lack of policy support for RDMA employees also reinforces these negative perceptions. When officers lack structural support, apathy and even cynicism can easily develop. This is closely related to the weak political will of local and central governments to strengthen the institutional capacity of RDMA. One concrete example of this weak external support is the lack of RDMA involvement in the budgeting process. This institution is often used solely as a technical implementer without participating in the design of budget policies. This condition not only reflects structural inequality but also confirms that the broader government system has not fully recognized the urgency of the RDMA's role.

Furthermore, in practice, the funds that RDMA can use for disaster management tend to be small. They are heavily dependent on grants, for example, from the NDMA, as well as volunteers and community groups. Such dependence highlights the weak fiscal autonomy of RDMA while also creating a working environment that is limited and uncertain.

Regarding emergency budget management, there has been internal debate about the effectiveness of unexpected expenditures. Some officials believe that the small allocation of unexpected expenditures for disasters reflects a lack of commitment to them. In addition, the mechanism for submitting BTT is considered too bureaucratic and complicated. Complex reporting procedures add to the administrative burden and render this instrument unable to respond quickly and efficiently to field needs. Some employees consider the preparation of financial accountability reports for unexpected expenditure funds to be a major obstacle. This complexity is thought to stem from the low literacy of RDMA employees in understanding the reporting system and public financial regulations. A lack of knowledge about the procedures creates an excessive fear of administrative errors, especially with the threat of legal sanctions looming.

This situation creates a serious dilemma: the need to act quickly in an emergency situation versus the obligation to comply with bureaucratic procedures that are considered slow and burdensome. When the system prioritizes administrative accountability over the effectiveness of responses, the choices made by officials tend to be conservative and defensive. In many cases, concrete actions on the ground are delayed or even not carried out at all due to concerns about potential legal repercussions. As a result, gaps in disaster response tend to be less optimal, and risks to public safety increase significantly.

This reactive attitude is essentially a manifestation of an unadaptive bureaucratic structure. RDMA officials are not given sufficient discretion to make quick decisions in emergency

situations. When policies are overly focused on administrative compliance, while on-the-ground needs demand speed and accuracy, a pattern of behavior emerges that tends to avoid responsibility and rely on external parties such as volunteers. In practice, volunteers often become the most active actors on the ground, while RDMA officials merely serve as administrative symbols.

Ironically, when volunteers act quickly, they face difficulties in reporting because there is no adequate accountability system, such as transaction documentation or purchase notes. This makes aid distribution impossible to audit properly, and ultimately, the government or NDMA tends to encourage donors to give aid directly to victims—a move that also reflects a lack of trust in the official distribution system. Without a strong institutional system and proportional budgetary support, the presence of volunteers will not be able to cover the structural weaknesses of state institutions.

In this situation, RDMA officers become more oriented towards avoiding administrative risks than towards urgent humanitarian needs. A bureaucratic culture that punishes mistakes more harshly than it rewards initiative encourages officers to be passive. In practice, this results in the neglect of disaster risks that could have been mitigated from the outset. When mitigation is not a priority, and only emergency response interventions are carried out, disaster management becomes very partial and patchy.

The situation is exacerbated by unclear authority between agencies and overlapping tasks, which cause confusion in coordination in the field. When responsibilities are not clearly divided, decision-making becomes slow, and each institution tends to pass the buck. Ultimately, what is seen is pseudo-performance: it appears that the RDMA is present and active, but the majority of the response is actually carried out by volunteers. Without a robust institutional system and proportional budgetary support, the presence of volunteers will not be able to sustainably address the structural weaknesses of the government.

This deep-rooted negative perception ultimately gives rise to reactive patterns of behavior in disaster management. The response of RDMA officers is no longer based on well-thought-out and anticipatory plans but rather on reactions to emergency situations as they arise. The root of this problem is very complex, involving policy aspects, weak institutional structures, and a bureaucratic culture that has not adapted to the principles of preparedness. One of the main issues is the absence of disaster budgeting priorities in the state financial structure, both at the national (state budget) and regional (regional budget) levels. When budgeting is not a priority, flexibility in responding to emergency situations is lost. As a result, resource allocation is inadequate, mitigation is not carried out effectively, and the performance of officers declines.

From a public policy perspective, this reactive behavior indicates systemic failure. RDMA actions are often emergency responses without prior comprehensive planning. Handling is partial, does not address the root causes, and tends to rely on short-term solutions. The main cause lies in budgeting policies that do not prioritize disasters in the Regional Revenue and Expenditure Budget. This situation has created a rigid budget structure that is inflexible to the dynamics of disasters, resulting in officers not having adequate room to manoeuvre. Populist budgetary politics and decisions that depend on the orientation of regional leaders have exacerbated the situation. Ultimately, interventions are temporary and do not address the root causes. Mitigation is neglected, preparedness is weakened, and post-disaster recovery is poorly managed.

Overall, reactive behavior in disaster management cannot be separated from the accumulation of complex structural problems: weak budgeting systems, low institutional literacy, unclear authority, and the absence of visionary and mitigation-oriented leadership. Without comprehensive reforms to the bureaucratic culture and institutional architecture of disaster management, this reactive behavior will continue to be the dominant pattern—sacrificing the effectiveness of interventions and eroding public trust in the state's ability to protect its citizens from disaster risks.

Between Dedication and Structural Limits: Considering the Orientation of Service in the Performance of RDMA Officers

Amidst bureaucratic complexity and minimal institutional support, there are still RDMA officers who view their work as a form of service. This positive perception is not based on financial incentives but rather stems from the belief that their duties are a moral calling to protect the community in times of emergency. Within this framework, the orientation toward service creates a deeper meaning for their duties. It is not merely technical implementation but rather a humanitarian dedication that is inherent to their professional identity.

However, this orientation toward service does not automatically negate previous findings regarding negative perceptions and reactive behavior. The apparent contradictions can be explained by distinguishing between individual intentions and structural limitations. Many RDMA officers are morally committed, but a minimal and inflexible budgeting system limits their room for maneuver. In many cases, they can only take active action once a disaster has occurred, not during the mitigation or pre-disaster stages. This is not merely a reflection of weak dedication but rather an objective condition where available budgets are limited and do not fully support preventive efforts.

The dedication of these officers is reflected in various concrete actions. They continue to carry out their duties even without overtime pay, travel allowances, or even outside official working hours. Their willingness to be on standby at night, outside office hours, without additional compensation, is clear evidence of their commitment to public safety. This attitude indicates that their motivation is not solely driven by material compensation, but by a strong internalisation of humanitarian values.

A commitment to service is also evident in their strong sense of social responsibility and duty. Officers who are sensitive to the suffering of the community will be motivated to act selflessly, regardless of limited facilities or budgets. They work with empathy and concern, aware that their work has a direct impact on the safety and lives of many people. These values form the moral foundation that keeps their spirit alive despite minimal structural support.

Such positive perceptions have the potential to encourage proactive behavior in disaster management. However, this will only develop optimally if supported by a strong support system. In this context, three important aspects can shape proactive behavior: community capacity building, cross-sector collaboration, and community network development.

The first aspect, community capacity building, is key to creating collective preparedness. Some RDMA officers have initiated activities such as disaster simulations, disaster impact scenario planning, and logistics procurement before disasters occur. However, these achievements are still limited to areas with relatively adequate budget support. RDMA officers with limited funds

often struggle to carry out similar activities optimally, despite their officers' intentions to do so.

The second aspect, cross-sectoral collaboration, is also uneven. Collaboration between RDMA and various stakeholders, including BMKG, social services, the media, and community organisations, can only take place in areas with a strong political commitment. In this study, only the RDMA of Sleman Regency demonstrated consistent and collaborative performance, which ultimately resulted in a higher budget than that of other RDMA. Sleman is often used as a benchmark for its effective approach to cross-sector integration. This success cannot be separated from the local government's political will, which has made disaster management a priority. Without this commitment, RDMA in other regions would struggle to replicate a similar model.

The third aspect, community networks, is a relatively more uniform element that has been successfully implemented in almost all regions. Amid the structural limitations of RDMA, community networks have become the frontline of disaster response. Organizations such as FPRB, HIMPSI, Banser, MDMC, and Baznas demonstrate high social capacity in evacuation, education, and aid distribution. They understand local conditions better, have flexibility in mobilizing resources, and are often more agile than RDMA itself. In this context, the role of the community is not merely complementary but rather a mainstay that fills the void left by the government's structural functions. As a result, the limited performance of the RDMA often appears superficial (pseudo-performance), which is driven by the contributions of the community on the ground.

This condition demonstrates that individual dedication is insufficient without support from a supportive system. Proactive behavior will only flourish if positive perceptions among officials are accompanied by a strong political will, adequate funding, and empowering regulations. Dedication without institutional support will only turn service into a silent spirit amid the clamour of bureaucratic procedures. Therefore, the challenge ahead is not merely to strengthen individual capacity but to build an institutional ecosystem that enables such dedication to translate into systemic, tangible actions.

Conclusion

This study reveals that the behaviour of local budget actors in disaster budgeting is strongly influenced by their individual perceptions and structural limitations within the RDMA. Positive perceptions encourage a sense of service and proactive actions, but limited funding, overlapping regulations, and rigid bureaucratic procedures often constrain these intentions, resulting in predominantly reactive behaviour. The findings highlight the need for strengthening institutional support systems, enhancing political commitment, and fostering cross-sector collaboration to promote proactive disaster management practices.

The implications of these findings suggest that policy reforms should focus on increasing budget flexibility, simplifying reporting procedures, and clarifying inter-agency responsibilities. Moreover, empowering RDMA officers through capacity building and community network strengthening can bridge the gap between dedication and institutional constraints.

This study is limited by its qualitative scope and focus on Java Island's high-risk areas, which may not fully capture the diversity of local contexts in other Indonesian regions. Future

research should extend to comparative studies across different provinces and employ mixed methods to enrich understanding of the behavioural dynamics in disaster budgeting.

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Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

The authors declare that they have used generative AI and AI-assisted technologies, including language editing tools and AI-based paraphrasing support, to assist in refining the clarity and language quality of this manuscript. The final content and interpretation remain the responsibility of the authors.

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