

Challenges of Local Disaster Management Agencies (BPBD) in Realizing Inclusive Disaster Management in Indonesia*

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Abstract. The Indonesian government, through the Disaster Management Law, has delegated the National Disaster Management Agency (BNPB) at the central level and Local Disaster Management Agencies (BPBD) at the regional level to organize inclusive disaster management. However, the role of BPBD in realizing this has not yet been optimally executed. This can be seen from the low of score Indonesian inclusiveness index and the assistance interventions provided to vulnerable groups that do not match their needs. This research aims to understand the complex issues experienced by vulnerable groups in Indonesia and identify various challenges faced by BPBD in achieving inclusive disaster management. This research uses a qualitative method that Research data was obtained through in-depth interviews, with research informants coming from three regions, namely BPBD Sleman Regency, BPBD South Lampung Regency, and BPBD Sigi Regency. To strengthen the analysis, data triangulation was conducted by analysing secondary data from various sources, including academic publications, policy papers, legislation, and mass media. The research results show that the number of vulnerable groups in Indonesia is huge, 37% of the population. This significant number requires attention and specific treatment that aligns with their characteristics and needs. At the implementation level, BPBD faces various challenges, including the lack of data categorization for vulnerable groups at the regional level, insufficient budget allocation for institutional strengthening, a shortage of human resources capacity, suboptimal coordination among government agencies, and limited participation of vulnerable groups in disaster management activities.

1 Introduction

Indonesia is one of the countries with a high risk of disasters [1]. From 2012 to 2022, the National Disaster Management Agency (BNPB) recorded 30,803 natural disasters in Indonesia, including floods, landslides, tornadoes, earthquakes, and forest and land fires [2]. The high frequency of disasters in Indonesia has result various losses, including economic losses. There was a total of approximately 44 million USD in economic losses due to disasters in Indonesia from 1900 to 2015 [3]. Disasters also result in a significant loss of life. In the last 10 years, there were a total of 8,902 deaths, 1,354 missing persons, 49,269 injuries, and 44.9 million people affected and displaced due to disasters [2].

In disaster situations, the group most vulnerable to the impacts are those classified as vulnerable groups. This is because vulnerable groups have limitations and, as a result, they require special treatment and attention. In emergency situations, these vulnerable groups often have difficulty in saving themselves. They include people with disabilities, children, the elderly, and pregnant women [4]. It is estimated that there are approximately 1 billion people, or roughly 15% of the world's population, who have disabilities. This group is most prevalent in developing countries like Indonesia [5].

Understanding the differences in characteristics and needs of each vulnerable group is crucial so that assistance interventions can be provided according to their specific requirements. For example, individuals with visual disabilities tend to be unprepared for disaster evacuation, including aspects like location, evacuation routes, food, and preparations [6]. The special needs of people with disabilities are often overlooked and marginalized [7]. Similarly, children are often the most significant victims in disaster events [4, 8].

The participation of vulnerable groups in disaster management is still relatively low. There is a common assumption that vulnerable groups are incapable of making sound decisions for themselves during disasters, which often leads to their passive role as objects rather than active subjects in disaster response [8]. In addition to participation, the knowledge and skills needed by vulnerable groups to cope with disasters also require further improvement [9-11].

Indonesia has mandated the National Disaster Management Agency (BNPB) at the national level and Local Disaster Management Agencies (BPBD) at the regional level to conduct inclusive disaster management. This is enshrined in Law Number 24 of 2007 on disaster management [12]. Creating an inclusive environment in governance has become a global priority. This is reflected in The Sendai Framework for Disaster Risk Reduction (SFDRR),

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which requires active and meaningful participation of vulnerable groups [13]. It is also reflected in various points within the 17 Sustainable Development Goals (SDGs), with one of the principles being "no one left behind" [14].

An important indicator that can serve as a reference for assessing the country's inclusivity is the Global Inclusivity Index published by the Othering & Belonging Institute at the University of California, Berkeley. In this report (Figure 1), Indonesia ranks 115th out of 134 surveyed countries with a score of 26.5. This figure lags significantly behind more developed countries like the Netherlands, New Zealand, Sweden, and even falls below several Southeast Asian countries such as the Philippines, Vietnam, Singapore, and Thailand [15].

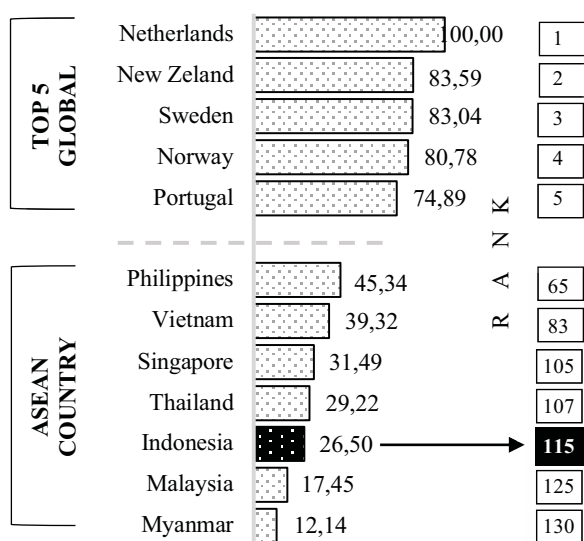


Figure 1. Indonesia's position on the 2020 Global Inclusivity Index [15]

The low of Indonesia's Inclusivity Index indicates that there are issues that need to be addressed at both the technical and implementation levels in the field. At this point, the role of the BPBD becomes crucial, because BPBD is the central institution for disaster management at the local level. Unfortunately, the performance of local governments and BPBD in Indonesia is still not optimal and has not been effective in reducing disaster risks, especially in fostering inclusivity towards vulnerable groups [16-18]

This research aims to explore and understand the characteristic and the complexity problem of each vulnerable groups as well as understand the challenges faced by BPBD in realizing inclusive disaster management in Indonesia.

2 Research Method

This study uses a qualitative method. Research data was obtained through in-depth interviews. The research informants are sourced from the Local Disaster Management Agencies (BPBD) in three regions, namely BPBD Sleman Regency, Special Region of Yogyakarta

Province, BPBD South Lampung Regency, Lampung Province, and BPBD Sigi Regency, Central Sulawesi Province (Table 2). These three samples were selected using a purposive sampling technique by considering the availability of data and representation of the western, central, and eastern regions of Indonesia (Sumatra, Java, and Sulawesi), with different characteristics of disaster threats, namely Tsunami (South Lampung), Earthquake (Sigi) and Volcano (Sleman). To enhance the analysis, data triangulation is conducted by analyzing secondary data from various sources, including academic publications, policy papers, legislation, and mass media.

Table 1. List of informant

| Informant | Agency | Position |
|-----------|-----------------------------|---|
| 1 | BPBD South Lampung, Lampung | Head of Prevention and Preparedness Division |
| 2 | BPBD Sleman, Yogyakarta | Secretarial Staff, General and Finance Subdivisions |
| 3 | BPBD Sigi, Central Sulawesi | Head of Prevention and Preparedness Division |

3. Literature Review

3.1. An Inclusive Disaster Management

According to the UN International Strategy for Disaster Reduction [19], the disaster is defined as "a serious disruption of the functioning of a community or a society causing widespread human, material, economic, or environmental losses which exceed the ability of the affected community or society to cope using its own resources." Based on this definition, disasters are influenced by three factors: the magnitude of the threat posed, the vulnerability of the community exposed to the threat, and how the community's capacity to respond to the threat is affected [20].

Disasters can occur when hazards and vulnerabilities intersect. However, if a community has a significant capacity to deal with disasters, the impact of these hazards can be reduced. These three components, hazard, vulnerability, and capacity are interconnected with each other. They are also referred to as the elements of risk. Understanding the relationship among these three components provides a fundamental understanding of disaster management [21]. In operational contexts, comprehensive disaster management is carried out at every stage of a disaster, beginning with mitigation, preparedness, emergency response, and extending to the recovery phase. Although various terminologies may be used to describe them, effective disaster management incorporates all of these components [20].

Not everyone has the same level of vulnerability. There is a group of individuals who, due to their limitations, which may be caused by both internal and external factors, face difficulties in accessing basic services. This group includes children, pregnant and lactating women, people with disabilities, the elderly,

and others [4, 22]. All these groups face a higher risk in the event of a disaster. Inclusive humanitarian response focuses on identifying and removing barriers so that they can participate on an equal footing with others in decision-making and benefit from it [22].

One of the inclusive responses in disaster management is to realize Inclusive Disaster Risk Management (DRM), which is a combination of disaster relief, emergency response, and recovery with Disaster Risk Reduction (DRR) strategies such as prevention, preparation, and mitigation. The aim is to reduce the vulnerabilities of those who are 'most at risk' during a disaster and to enhance their capacity [23]. In essence, it seeks to integrate efforts to both respond to disasters when they occur and proactively reduce the risks and vulnerabilities that make certain groups more susceptible to the impact of disasters.

To ensure that humanitarian responses are provided impartially and accountably to all vulnerable groups and reach those who are otherwise marginalized, the Inclusion Charter was developed [24]. This charter was adopted during the World Humanitarian Summit in 2016. The Inclusion Charter serves as a commitment for humanitarian actors in the design, implementation, monitoring, and funding of humanitarian assistance. The charter includes five steps, which are: (1) Participation, (2) Data, (3) Funding, (4) Capacity, and (5) Coordination.

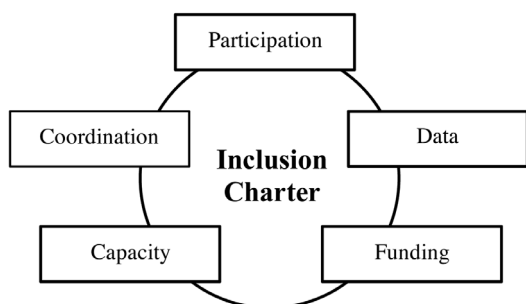


Figure 2. five steps of Inclusion Charter [24]

These steps emphasize the importance of involving affected communities, collecting, and using data that considers the specific needs of vulnerable groups, allocating adequate funding to address those needs, building the capacity of humanitarian actors to respond inclusively, and ensuring effective coordination among different stakeholders to achieve inclusive humanitarian responses [24].

3.2 BPBD as a Regional Apparatus Organization

Law Number 24 of 2007 on Disaster Management establishes that the Government and Regional Governments are responsible for the implementation of disaster management. Based on this mandate, Regional Governments are obligated to establish Regional Disaster Management Agencies (BPBD). At the provincial level, the head of BPBD is led by an official at a rank below the governor or at the level of echelon Ib, while at the district/city level, the head of BPBD is led by an official at a rank below the regent/mayor or at

the level of echelon IIA [12]. This indicates that BPBD plays a crucial role in disaster management at the regional level, and this regulation establishes the organizational structure and leadership hierarchy in disaster management efforts in Indonesia.

The position of BPBD holds a unique place when compared to other regional government agencies (OPD). According to Law 24/2007, the ex-officio head of BPBD is the Regional Secretary, who is the highest-ranking government official in their respective area [12]. This contrasts with other OPDs, as per Law Number 23 of 2014 on Regional Government and Government Regulation Number 18 of 2016 on Regional Apparatus, which state that the heads of agencies and Departments are chosen and appointed by the regional head upon the recommendation of the Regional Secretary [25, 26]. The position of BPBD in the organizational structure of regional government at the district level can be seen in Figure 3.

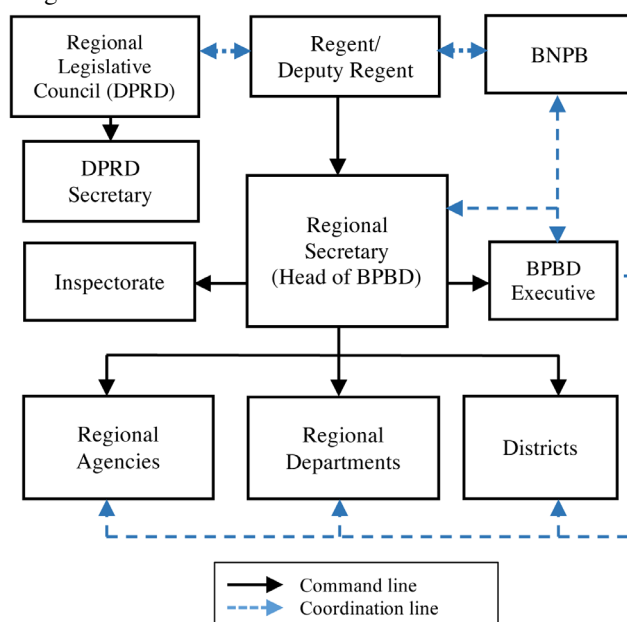


Figure 3. BPBD's position in the Regional Apparatus Organization

The selection of officials at the level of the Regional Secretary as the head of BPBD is intended to facilitate the functions of BPBD as outlined in Law 24/2007, which include coordination, command, and execution functions in disaster management within their respective regions. This choice ensures that a high-ranking government official is responsible for overseeing and leading disaster management efforts, which is crucial in coordinating and implementing disaster response activities effectively.

Organizations and institutions responsible for policy implementation must have a clear structure, adequate competence, and strong commitment in carrying out their duties to ensure that the ultimate goals of a policy can be achieved [27]. The success of disaster management depends on the government's ability to formulate policies and implement them effectively [28]. This highlights the importance of well-structured and capable institutions in achieving effective disaster management.

4. Finding and Discussion

4.1 Characteristics and Problems of Vulnerable Groups in Indonesia

Disasters can impact everyone, but not everyone is affected equally. This is because everyone has a different level of vulnerability. According to Law 24/2007, vulnerable groups include infants, toddlers, children, pregnant or lactating women, people with disabilities, and the elderly. In Indonesia, the number of vulnerable groups based on these biological aspects reaches 103.226 million people (Table 2). This emphasizes the need to address the specific needs of these vulnerable groups in disaster management efforts.

When compared to the projected population of Indonesia in 2022, this number amounts to 37% of the total population. If economic aspects are taken into account, where 26.16 million people in Indonesia live in poverty [29], the number of vulnerable groups in Indonesia could reach 46.89%. This indicates the significant portion of the population that is potentially at-risk during disasters and underscores the importance of inclusive disaster management strategies to address their specific needs.

Table 2. Estimates of vulnerable groups in Indonesia [30, 31]

| No | Vulnerable Group | Age Group/ Formulation | Sum |
|--------------|------------------------------|---------------------------|--------------------|
| 1 | Baby | 0-1 Years | 8.743.652 |
| 2 | Children under five | 1-4 Years | 17.482.763 |
| 3 | Pre School | 5-6 Years | 8.758.700 |
| 4 | Children of elementary/level | 7-12 Years | 26.413.659 |
| 5 | Elderly population | > 60 Years | 31.320.066 |
| 6 | Pregnant women | 1,1 x live birth | 4.897.988 |
| 7 | Maternity/ Postpartum mother | 1,05 x live birth | 4.675.360 |
| 8 | Physical disability | >5 Years | 584.503 |
| 9 | Sensory disability | > 5 Years | 159.918 |
| 10 | Intellectual disability | > 5 Years | 79.942 |
| 11 | Mental disability | > 5 Years | 109.530 |
| Total | | | 103.226.081 |

The significant number of vulnerable groups in Indonesia requires special attention, given the substantial risks and exposure they face. Knowing the number of vulnerable groups in the area allows government to estimate and adequately prepare resources for emergency situations if disaster occur. Additionally, we can prepare ourselves through mitigation and preparedness activities to reduce their risks. This emphasizes the importance of proactive disaster management strategies and community preparedness to safeguard these vulnerable populations.

In addition to the number, recognizing the characteristics and needs of each vulnerable group (Table 3) is also necessary to ensure that interventions provided during disasters can be effective and efficient. Although they are all categorized as vulnerable groups, the characteristics and needs of each of these vulnerable groups can vary significantly. Understanding these distinctions is essential for tailoring disaster response

efforts to address their specific requirements and vulnerabilities effectively.

Table 3. The Characteristics and Problems of vulnerable groups

| Vulnerable Groups | Problems | Interventions that can be implemented |
|--|--|--|
| Children | <ul style="list-style-type: none"> • Still dependent on adults • Cognitive capacity and information insight are still limited • Not much involved in disaster response • Difficulty saving themselves [32] | Involving children in mobilization, preparedness, response, and recovery from disasters [33] Involvement can take the form of education, risk communication, independent evacuation, peer counseling, etc [34] |
| Women (including pregnant and maternity women) | <ul style="list-style-type: none"> • Lack of fulfillment of basic needs during emergency situations, making personal hygiene, security, and privacy vulnerable [35] • Limited access for women in decision making [36] | Increasing the involvement of women in governance and decision making, thereby increasing the perspective and sensitivity of women's needs [36, 37] |
| People with Disabilities | <ul style="list-style-type: none"> • Experiencing internal, architectural, information and communication barriers [38] • Education and employment levels are still low [39] | Identifying the number and types of people with disabilities, increasing awareness of risks, improving home and workplace safety, providing special needs during emergencies [40] |
| Elderly People | <ul style="list-style-type: none"> • Experiencing changes and decline in body function so that emotions become unstable. • Difficulty adjusting, feeling alone, frustrated, depressed, and losing self-confidence. • Decreased quality of life in emergency situations [41] | Empowering the elderly through the formation and development of elderly groups such as Poskila, Poyandu Lansia, Posbindu Lansia [42] Involving the elderly as volunteers or disaster preparedness cadres [43, 44] |

4.2 BPBD's Challenges in Realizing Inclusive Disaster Risk Management

This section discusses the challenges faced by BPBD in achieving effective inclusive disaster risk management (PRB) by reviewing the five pillars outlined in the Inclusion Charter [24].

4.3.1 Participation

Participation refers to the act of contributing, influencing, sharing, or distributing controls, resources, benefits, knowledge, and skills by involving beneficiaries in decision-making processes [45]. It involves voluntary engagement in which individuals, including marginalized groups based on factors such as economic status, gender, social status, or education, participate in influencing or making decisions.

In general, this research found that the participation of vulnerable groups in PRB activities is relatively low, particularly in the case of children and people with disabilities. This is because these groups have limitations in terms of knowledge, economic resources, and communication. In the case of children, they are often seen as lacking the capacity to actively participate and are instead considered as recipients of knowledge rather than contributors. Children are not actively involved as subjects in disaster-resilient village activities. This perspective results in interventions for children being primarily just conducted in schools through programs like the Safe School Unit for Disaster Education (SPAB) led by education department, not disaster preparedness village (KSB) led by BPBD too. There are very few, if any, BPBD programs or activities that directly target children.

In the case of people with disabilities, in some instances, they have been involved not just as participants but also as speakers. However, the majority of people with disabilities have limited knowledge capacity. Many people with disabilities still lack access to proper education. This finding confirms the report by Bappenas [39], which states that most people with disabilities only receive primary school education or have no access to education. This situation ultimately acts as a barrier to their participation.

"The role of vulnerable groups is not yet maximized because many of them have a lack of education, and some still use their native language. In addition, stigma and economic family constraints also play a role." (Informant 3, July 24, 2023)

Another challenge in involving people with disabilities is the limited number of facilitators and the insufficient budget allocated by BPBD to support these facilitators. Organizing activities with people with disabilities requires a larger budget, and for BPBDs with limited financial resources, this makes it difficult for them to promote the participation of people with disabilities.

"We've had difficulty inviting our deaf friends because there are limited numbers of sign language interpreters in Lampung, and there are distance and budget constraints as well. The same goes for our visually impaired friends; they require a companion, so we have to account for two individuals." (Informant 1, July 27, 2023)

Meanwhile, the participation of women and the elderly is much better. They actively engage in activities organized by BPBD. In some villages in South Lampung, the participation of mothers is more dominant. In Sleman, there is a program called "Lansia Siaga Bencana" (Elderly Disaster Preparedness). These findings align with other research that indicates the participation of women and the elderly is relatively good. Alifa & Wibowo [46] mention that the role of women and the elderly in disaster management includes

their involvement as members of the Village Resilience Task Force.

4.3.2 Data

Data, especially disaggregated data, is one of the crucial components in disaster management systems. Disaggregated data is data that is sorted or categorized based on various characteristics or attributes. Concerning the implementation of disaster management, disaggregated data typically consists of location, gender, age, and disability diversity [47]. Sorting data in various stages of disaster management can provide information or guidance regarding the status, roles, conditions, and needs of each vulnerable group.

In this research, it was found that data collection remains a challenge for BPBD. The three areas sampled in this study still lack disaggregated data for vulnerable groups in their respective regions. The disaggregated data available to BPBD is limited to lists of participants in activities and data on disaster victims. However, data on vulnerable groups at the district level is not available. The absence of this disaggregated data is because BPBD relies on other entities to collect data. Furthermore, the data is often in raw form and scattered across various institutions. BPBD has not made serious efforts to consolidate data on vulnerable groups. Problems arise when the relevant institutions also do not possess this data, and if they do, it is often outdated.

"In writing, BPBD has not yet collected disaggregated data. But when needed BPBD asks the sub-district head or village" (Informant 3, July 24, 2023)

"For the KRB III Merapi area, it already exists, but until now it has not been updated. The last update was around 2012" (Informant 2, July 29, 2023).

The database is located within the Dukcapil (Population and Civil Registration Agency) under the Ministry of Home Affairs. However, local government agencies at the district or city level find it challenging to access this data.

"Dukcapil has the data, but if we want to request the data, we need permissions, and those permissions go up to the ministerial level. That's why we haven't been able to synchronize with Dukcapil. The reason is to protect the privacy of personal data." (Informant 2, July 29, 2023).

The utilization of population data held by Dukcapil for local government agencies (OPD) is still relatively low. Despite regulations regarding data integration and data interoperability being stipulated for all parties in UU 24/2013 [48], the administrative infrastructure for population data at the local level is not yet optimal. This is due to a lack of funds for providing the necessary equipment, a lack of understanding among OPD about

the importance of utilizing population data, and the absence of regulations at the regional level governing access rights and the utilization of population data [49].

4.3.3 Funding

There is no doubt that funding is one of the crucial factors in realizing an inclusive disaster management system. In Government Regulation 21/2008, it is mentioned that both the central and regional governments should allocate a budget for disaster management within the State Budget (APBN) and Regional Budgets (APBD) adequately [50]. The term "adequate" in this context implies flexibility. This means that disaster management funds can be allocated maximally or minimally, depending on what is considered adequate.

However, this study found that the disaster management budget within BPBD is still minimal. The ratio of BPBD budgets to the APBD in 2022 in the three study areas was as follows: BPBD Sleman 0.45%, BPBD Sigi 0.15%, and BPBD Lampung 0.14%.

"Nationally, in almost every coordination meeting, there are voices calling for a minimum budget for BPBD. We are asking for only two and a half percent of the APBD, like a form of zakat. In reality, it is still very small, only a fraction of a percent. However, this budget is essential for institutional strengthening. For example, in BPBD Lampung, we have a rapid response team, but during emergencies, our equipment is inadequate. Motorcycles, cars, or ambulances are all over a decade old. If we can even get to the disaster site, that's already considered good."
(Informant 1, July 27, 2023)

The limited disaster management budget at the local level is one of the significant challenges faced by BPBD. Effective disaster management should be supported by a well-allocated, disbursed, and transparent budget from both central government and local government budgets, as well as from the community [51]. The lack of budget affects the quantity of activities, programs, or interventions carried out for vulnerable groups. Additionally, the minimal budget can also impact the success of coordination with stakeholders [52].

The main obstacle to providing disaster management budget is the lack of commitment from local political leaders to prioritize disaster issues. These leaders often use a reactive rather than a preventive approach to disaster management. Another financing scheme, the Ready-to-Use Fund (Dana Siap Pakai), has been prepared by the government but can only be used when a disaster emergency status is declared.

These findings are consistent with Pratiwi's assessment [27], indicating that the policy orientation for disaster management at the local level is still based on a "react when disaster strikes" concept and has not yet evolved into strengthening institutions and promoting sustainable disaster management efforts.

4.3.4 Capacity

Capacity building refers to the systematic process through which individuals, organizations, and communities stimulate and develop their abilities over time to achieve social and economic goals. This includes enhancing knowledge, skills, systems, and institutions [19].

Routine capacity-building activities such as training, workshops, and seminars have been carried out by BPBD. However, these activities are typically open to the public and not specifically designed for vulnerable groups. Nevertheless, ensuring the participation and representation of vulnerable groups in these activities remains a concern. In some cases, vulnerable groups have been involved in these activities not only as participants but also as speakers or contributors.

"Specific mitigation training for vulnerable groups does not exist, but their participation as participants in general activities is present. They have even had the opportunity to take on roles as speakers, including individuals with disabilities"
(Informant 3, July 24, 2023).

The absence of capacity-building training specifically tailored to the needs of vulnerable groups has hindered the optimal development of their capacities. This finding aligns with Pujiono et al research [22], which suggests that capacity-building activities so far have been limited to basic knowledge and have not adequately accommodated specific conditions. As a result, they are difficult to implement effectively, and the capacity-building efforts have yet to be efficient in meeting the protection needs in emergency situations.

The development of the capacity of vulnerable groups is also hindered by internal factors, such as the shortage of human resources within BPBD. For instance, in Lampung Selatan, there hasn't been any new recruitment of BPBD staff in the last 7 years. Moreover, the existing human resources within BPBD may not have a comprehensive understanding of vulnerable groups, as well as the roles and functions of BPBD in implementing inclusive PRB in line with their job scope.

Another hindrance of internal factor is the mechanism of rotation within the civil service, which leads to BPBD employees or high-ranking officials frequently being transferred to various agencies or departments. This means that those who have developed the necessary capacities may be moved at any time and replaced by new personnel who lack the required skills. The accumulation of these various internal factors has resulted in BPBD in the three study areas – Sleman, Lampung Selatan, and Sigi – not yet having an Inclusive Disaster Risk Reduction Disability Service Unit (LIDI-PB).

On the other hand, capacity constraints on external factors include the fact that many vulnerable groups, especially people with disabilities, have limited access to education. This hampers their ability to participate and makes them further marginalized in development. Disabled Persons Organizations (DPOs), which are expected to be partners for BPBD, also face limitations

in terms of human resources and budget. That's why in some areas, DPOs are only present at the provincial level and not at the district level.

Rahmat et al [40] state that improving the capacities of people with disabilities in disaster risk reduction efforts is not easy. It requires technical skills, knowledge, and good intentions from all parties involved.

4.3.5 Coordination

One of the functions inherent in BPBD is the coordination function. BPBD should coordinate with local government units, vertical institutions in the region, business entities, and/or other necessary parties at each stage of disaster management. The term coordination refers to a collaborative effort among agencies or units in carrying out specific tasks in such a way that there is mutual reinforcement, mutual assistance, and mutual complementation [53]. In this context, the goal of coordination is to achieve inclusive disaster management.

This study found that there are already coordination mechanisms established by BPBD for stakeholders, both between government units and among community groups.

Coordination among government units is generally carried out through Forkompinda meetings. In emergency situations, the coordination mechanism is implemented through the activation of command posts, where the operations commander (usually the Secretary of the Region or personnel with equivalent rank/position appointed by the Secretary of the Region) has full authority to coordinate and mobilize the resources of each OPD. The command function ensures that coordination among OPDs is effective.

A different scenario occurs during normal situations. In this situation, disaster management is not led by the Secretary of the Region but by the executive head who holds a rank or position equivalent to other OPDs (Figure 3). Although BPBD has a command function, it is not effectively implemented during normal situations. The hierarchical relationships and rank-equivalent positions among OPDs, along with their sectoral interests, create coordination barriers. In this context, coordination effectiveness is more influenced by mutual understanding among OPDs.

Meanwhile, coordination between other entities such as NGOs, volunteers, and the community is more flexible. This is usually done through forums established at the district level. In Sigi, there is the Disaster Risk Reduction Forum in Sigi, in Sleman, there is the Sleman Community Volunteer Communication Forum, and in South Lampung, there is the South Lampung Disaster Watch Forum. Communication within these forums is dynamic, often facilitated through WhatsApp groups. Coordination through these forums typically involves information exchange, early warning, and the dissemination of risk communication messages.

Despite not being fully optimized, the coordination mechanisms implemented by BPBD in these three regions are generally functioning. Coordination between BPBD and the Department of Education, for example, is

reflected in the SPAB program, where children are beneficiaries of this program. For the elderly group, interventions are conducted through collaboration between BPBD and the Posyandu Lansia, as well as for pregnant women, infants, and toddlers, which are also coordinated with the local Health Department through local Posyandu. Meanwhile, for people with disabilities, interventions are carried out through the collaboration between BPBD and NGOs or disability organizations (OPDis). The challenge for the latter group lies in the limited number of OPDis partners at the district level, which is one of the reasons why BPBD in the three study regions does not yet have an LIDi Unit (Disability Inclusive Disaster Management Unit).

"The challenge we face is identifying them (OPDis). We need to find out where they are. There are many OPDis like PPDI and HWDI, but their leadership tends to be at the provincial level. There are none at the district level, especially in our relatively large area."
(Informant 1, July 27, 2023)

Experience in handling large-scale disasters also appears to influence the transformation of a more constructive coordination model. This transformation takes the form of flexible coordination among OPD. Sigi, which experienced an earthquake disaster, and Sleman, which experienced a volcanic eruption, have been successful in reducing rigidity and sectoral ego among OPDs. In contrast, this challenge is still quite noticeable in Lampung Selatan. The lack of experience, understanding, and empathy among parties in sharing roles, as well as the suboptimal role of BPBD as a coordinator, are suspected to be the causes. This is in line with Ariyanto's research [52], which suggests that success factors in coordination are influenced by various factors, including leadership and relevant experience.

6 Conclusion

The research findings highlight several challenges faced by BPBD in achieving inclusive disaster management in Indonesia, including;

- (1) The absence of disaggregated data on vulnerable groups, making it difficult to identify individuals and accommodate the roles and needs of each vulnerable group.
- (2) Insufficient regular budget allocations to BPBD, resulting in a low quantity of activities, programs, or interventions targeting vulnerable groups.
- (3) Limited human resources capacity in terms of quantity and quality, leading to the absence of an Inclusive Disaster Management Disability Service Unit.
- (4) Suboptimal coordination among regional government units (OPD) due to insufficient understanding and sectoral egos, impacting the effectiveness of interventions for vulnerable groups.

- (5) Low participation of vulnerable groups, particularly children and people with disabilities, in disaster management activities, resulting in misdirected programs and assistance.

These findings are expected to provide input for regional governments to strengthen BPBD institutions. Institutional strengthening and reform of BPBD are essential to enable them to perform their roles as commanders, coordinators, and implementers, ultimately realizing inclusive disaster management in Indonesia.

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