

## The Role of Participatory Planning in Community-Based Flood and Landslide Disaster Preparedness (Manado City)

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**Abstract.** Manado City is an area that is vulnerable to floods and landslides, but until now the effectiveness of disaster management still faces serious challenges due to low community involvement in mitigation planning. This study aims to analyze the role of participatory planning in improving community-based disaster preparedness, with a focus on how the Manado City Regional Disaster Management Agency (BPBD: Badan Penanggulangan Bencana Daerah) involves the community in the process of formulating disaster strategies. Using a non-empirical qualitative approach through a literature study method, data were obtained from scientific journals, policy documents, and institutional reports that were analyzed thematically and contextually with reference to the framework of community participation and disaster risk management. The results of the study show that community involvement is still at a symbolic level, limited to the implementation stage, and has not touched the strategic planning process in a meaningful way. Lack of institutional capacity, low disaster literacy, and absence of formal participatory mechanisms are the main inhibiting factors. As a result, disaster programs are often not aligned with local needs and have an impact on low preparedness effectiveness. This study concludes that strengthening community participation in disaster planning is needed to build a more adaptive and iterative preparedness system. Theoretically, the study broadens the understanding of the relevance of participatory planning approaches in community-based disaster management, while practically, the findings provide recommendations for BPBDs and local governments to develop more collaborative and local needs-based policies as a step towards sustainable disaster resilience.

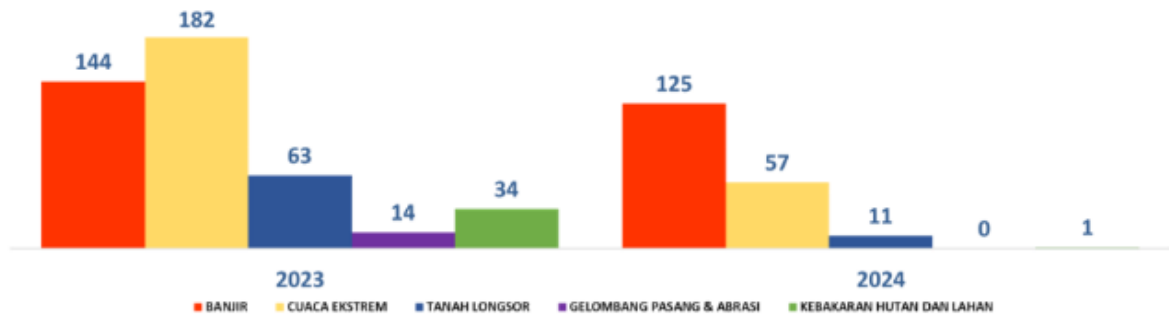
**Kata Kunci:** BPBD Manado, Community-Based Disaster, Disaster Preparedness, Participatory Planning, Risk Reduction.

### 1. INTRODUCTION

The definition of a disaster according to Law Number 24 of 2007 concerning Disaster Management is an event or series of events that can threaten and disrupt people's lives caused by natural, non-natural, and social factors that can result in human casualties, property losses, environmental damage, and psychological impacts (Heryati, 2020; Pomalango et al., 2024). Indonesia is one of the countries with the highest level of natural disaster vulnerability in the world because it is located in the Pacific Ring of Fire, an active tectonic region prone to earthquakes, volcanic eruptions, floods, landslides, and other hydrometeorological disasters. Indonesia is among the world's three active tectonic plates: the Indo-Australian, Eurasian, and Pacific plates (Rofika et al., 2025). Throughout 2020 to early 2025, Indonesia continues to experience an increase in disaster events, both in terms of number and impact. This has caused a lot of harm to society, both material and non-material. Data from the National Disaster Management Agency (BNPB: *Badan Penanggulangan Bencana Daerah*) noted that in 2020 there were more than 4,650 disaster events, mostly in the form of floods, tornadoes, and

landslides. This trend continues; in 2021, there were 5,402 disaster events spread across various regions of Indonesia, with floods being the most dominant type of disaster (gis.bnpb.go.id).

**Figure 1.** Number of Hydrometeorological Disaster Events in 2023 and 2024



Source: Badan Nasional Penanggulangan Bencana (2024)

Entering 2022–2023, the intensity of extreme rainfall influenced by global climate change is further aggravating conditions. Major floods hit a number of areas such as South Kalimantan, East Nusa Tenggara, and North Sulawesi, including Manado City, which is often subject to floods and landslides due to a combination of heavy rains, environmental damage, and spatial planning that is less adaptive to disaster risk. (Figure 1.) In January 2023, flash floods and landslides occurred simultaneously in Manado, killing several people, washing away homes, and causing thousands of residents to displace. Until early 2024, despite various mitigation efforts, similar incidents continue to recur, indicating that the early warning system and community preparedness in various regions are still weak.



**Figure 2.** Comparison of Disaster Impacts in January 2023 with 2024

Source: Badan Nasional Penanggulangan Bencana (2024)

From Figure 2, we can conclude that although disaster events in 2023 will decrease in 2024, the impact resulting from disaster events will be more in 2024. This phenomenon shows that disaster challenges in Indonesia are not only natural, but also social and institutional, especially in the aspects of spatial planning, environmental management, and community involvement in mitigation efforts. Therefore, a community-based and participatory approach is very relevant to strengthen preparedness, especially in vulnerable areas such as Manado City. In this context, participatory planning approaches are becoming increasingly important. Active community participation in the planning and implementation of disaster mitigation strategies can increase the effectiveness of disaster response and adaptation. However, in Manado, the implementation of participatory planning still faces various obstacles, including a lack of public awareness, limited resources, and suboptimal coordination between the government and local communities.

The disaster management paradigm has undergone a shift from a responsive approach to a more participatory and preventive approach. Community-based disaster management approaches are emerging as a promising strategy to increase community resilience to disasters. This is based on the fact that local communities are the first to face disasters, and they have the local knowledge and wisdom that is essential to dealing with disasters (Pomalango et al., 2024; Rofika et al., 2025).

Previous studies have highlighted the importance of community participation in disaster management. For example, Lengkey et al. (2020) found that in Paal Dua Village, community participation in flood management planning is still limited, with more involvement at the implementation stage than planning. Similarly, Sagay & Pangemanan (2023) identified that the effectiveness of the early warning system in Manado was influenced by low community participation and lack of understanding of the system. This shows that there is a research gap in understanding the role of participatory planning in improving community-based disaster preparedness in Manado.

This study aims to explore the role of participatory planning in improving community preparedness for flood and landslide disasters in Manado City. With a focus on the Manado City Regional Disaster Management Agency (BPBD), this study will analyze how community involvement in planning can affect the effectiveness of disaster mitigation strategies. Theoretically, this research contributes to the development of literature on community-based disaster management and participatory planning. By integrating community participation theory in the context of disaster mitigation, the study expands the understanding of how community involvement can improve resilience to disasters. Practically, the findings of this

study can be used by local governments, especially the Manado City BPBD, to design and implement more effective and inclusive disaster mitigation strategies. By actively involving the community in planning, it is hoped that the resulting strategies will be more in line with local needs and conditions, as well as increase public awareness and preparedness for disasters. Thus, this research not only fills a gap in the academic literature but also makes a real contribution to efforts to improve disaster preparedness at the community level. Through a participatory planning approach, it is hoped that the people of Manado can be more prepared and resilient in facing the threat of floods and landslides in the future.

## **2. LITERATURE REVIEW**

### **Community Participation**

The theory of Community Participation put forward by Sherry R. Arnstein in 1969 is one of the classic and fundamental approaches in the study of public participation, particularly in the context of public policy planning and decision-making (Delgado et al., 2023). Arnstein introduced a concept known as the "*Ladder of Citizen Participation*", which describes the eight levels of citizen participation in the decision-making process, ranging from the lowest to the highest level (Birhane et al., 2022; Kiss et al., 2022). This ladder is divided into three main categories: nonparticipation, tokenism, and citizen power. At the nonparticipation level, such as manipulation and therapy, citizens are only used as symbols without having any real influence in the decision-making process (Hamdani, 2020). The level of tokenism, which includes informing, consultation, and placation, reflects formalistic participation, where citizens are informed or asked for their opinions, but have no power to influence the final outcome. Meanwhile, at the citizen power level, which includes *partnership*, delegated power, and citizen control, citizens really have control and power in the process of planning and implementing programs (Kiss et al., 2022)..

The most meaningful participation occurs when stakeholders are truly in control of the design process (Sarifa et al., 2022). This means that they are not only invited to provide input, but also play a major role in determining how the discussion or research process is carried out, as well as deciding the final outcome. For example, the community or group involved can jointly formulate research questions, choose the method used, or even have full control over decisions (Delgado et al., 2023). In other words, it's not just "talked to" or "symbolically engaged," but rather real engagement where their voices and decisions really determine the direction of a project or policy. This approach is often referred to as the highest form of

participation because it ensures that the end result truly reflects the needs and perspectives of those most affected.

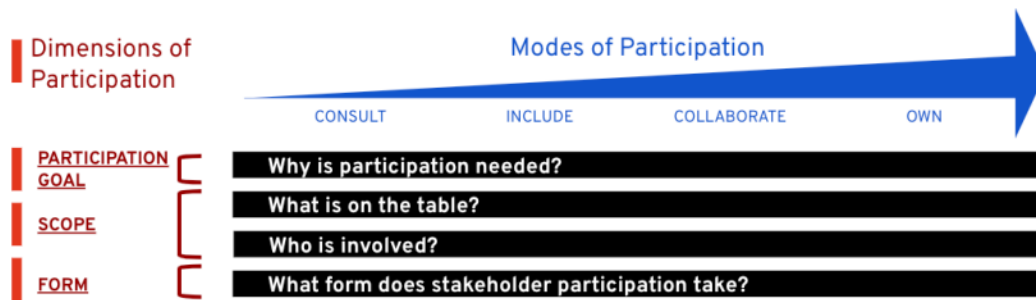
This theory is particularly relevant in the context of community-based disaster preparedness because it emphasizes the importance of community empowerment as a subject, not an object, in the disaster management process. The higher the level of community participation, the greater the likelihood of creating inclusive, effective, and sustainable policies or programs. In the context of this study, namely on the role of participatory planning in flood and landslide disaster preparedness in Manado City, Arnstein's participation ladder can be used as an analytical tool to evaluate the extent to which the community is really substantially involved by the Regional Disaster Management Agency (BPBD). Understanding this theory can help explain the difference between symbolic participation and participation that has transformative power in increasing the capacity of communities to deal with disasters.

### **Participatory Planning**

Participatory planning is an approach that places the community as the main actor in all stages of development planning, from problem identification, goal formulation, to program implementation and evaluation. This approach is inclusive and dynamic, with an orientation to the needs and aspirations of local communities. Recent research supports the importance of this approach. For example, a study by Suroso (2020) shows that participatory planning in Pejengkolan Village, Kebumen, has succeeded in increasing the synergy between village planning and district/city, provincial, and national development systematically and on target. This shows that community involvement in planning can produce programs that are more in line with local needs and increase the effectiveness of development. In addition, participatory planning also strengthens the community's sense of ownership of the designed program. By being directly involved in the planning process, the community better understands the intricacies of the program and feels responsible for its success. This is in line with the view of Conyers (1994) in Wirawan & Nurpratiwi (2015) who stated that community participation is a tool to obtain information about the conditions, needs, and attitudes of the local community, without which development programs would fail.

In the context of disaster preparedness, a participatory planning approach allows communities to be actively involved in risk identification, mitigation planning, and implementation of disaster management strategies. This not only increases the effectiveness of the program, but also strengthens the capacity of the community to deal with disasters independently and sustainably. Thus, participatory planning that actively and sustainably

involves communities is key to creating effective, inclusive, and locally-oriented development programs, including disaster preparedness and management efforts.



**Figure 3.** Participation Parameters

Sumber: Delgado et al. (2023)

Figure 3 above shows the "*Parameters of Participation*" framework that describes the dimensions and modes of participation in the involvement of stakeholders, particularly communities, in the planning process. There are three main dimensions of participation, namely participation goals, scope, and forms. The purpose of participation is to ask why the community needs to be involved in the planning process. The scope of participation describes what issues or agendas are discussed and is open to public participation. Meanwhile, the form of participation explains who is involved and in what form the involvement is carried out. These three dimensions are connected to a spectrum of participation modes that are arranged from the least to the most powerful, namely: consult, include, collaborate, and own. The higher the level of participation, the greater the power and control of the community in determining the direction and content of the planned policy or program.

In the context of research on the role of participatory planning in community-based flood and landslide disaster preparedness in Manado City, this framework is very relevant to assess the extent to which the community is truly involved in the planning process by the Regional Disaster Management Agency (BPBD). Through this framework, it can be analyzed whether community involvement is only symbolic (consultative), or has reached the stage of collaboration and ownership, where the community plays an active role in designing, implementing, and evaluating disaster preparedness plans. Thus, this approach measures not only the existence of participation, but also the quality and impact on the effectiveness of disaster management programs. Strengthening participation to the ownership level will increase the sense of responsibility, social resilience, and capacity of the community in dealing with disaster risks independently and sustainably.

## **Community-Based Disaster Preparedness**

*Community-Based Disaster Preparedness (CBDP)* is an approach that places local communities as key actors in all stages of disaster management, from risk identification, mitigation planning, to program implementation and evaluation (Husein, 2022; Lassa et al., 2018; Nibanupudi, 2024). This approach is rooted in the principle that communities living in disaster-prone areas have local knowledge, experience, and direct interest in risk reduction efforts, so their involvement is crucial in creating sustainable resilience (Nurcahyo et al., 2022; Ragil et al., 2020). This emphasizes community awareness and decision-making behavior, which is a key factor in increasing adaptive capacity to disasters. The relevance of the CBDP approach to this research lies in the emphasis on active community participation in the planning and implementation of disaster preparedness strategies. By directly involving communities, participatory planning can result in programs that are more in line with local needs, increase a sense of belonging, and strengthen community capacity in dealing with disaster risk.

Research by Suharini et al. (2020) in Kalipancur Village, Semarang, shows that the formation of a Community-Based Disaster Preparedness Team (SIBAT) plays an important role in increasing community resilience to landslides. Through a mixed approach (qualitative and quantitative), the study found that active community involvement in socialization, planning, and emergency response significantly improved community preparedness and adaptive capacity. These findings support the importance of integrating the CBDP approach in disaster management policies and practices at the local level. In addition, according to Pomalango et al. (2024), increasing the willingness and ability of the community to manage flood disasters in Biau village, Biau district can increase community capacity in flood disaster management independently that can be carried out by village communities. Research by Kristian (2024) highlights the importance of integrating community-based approaches into national disaster management policies. Through a blended approach, the study identifies that CBDP strategies are effective in increasing community resilience and need to be adopted more broadly within national policy frameworks to bridge the gap between central policies and local practices. Thus, the Community-Based Disaster Preparedness approach is not only relevant but also essential in the context of this research, as it emphasizes the importance of empowering local communities through participatory planning to improve preparedness and resilience to flood and landslide disasters in Manado City.

### **The Role of the Regional Disaster Management Agency (BPBD)**

The Regional Disaster Management Agency (BPBD) is a local government institution that is responsible for implementing disaster management at the local level. BPBD has a strategic role in all stages of disaster management, namely pre-disaster, during disaster, and post-disaster (Arisanti & Nugroho, 2018; Deby et al., 2019; Rahmah & Ikhsan, 2022). In the pre-disaster stage, BPBD plays a role in mitigation and preparedness, including the preparation of contingency plans, training, and socialization to the community. When a disaster occurs, BPBD acts as a coordinator in handling emergencies, coordinating evacuation, aid distribution, and rescue of victims. In the post-disaster stage, BPBD is involved in the rehabilitation and reconstruction of affected areas (Ramadhan et al. 2023). A study by Saputra et al. (2025) in West Bandung Regency highlights the role of BPBD in mitigating earthquake disasters due to the Lembang Fault. This research reveals that BPBD is active in preparing contingency plans and socializing to the community. However, challenges such as data limitations and inter-agency coordination are obstacles to the effective implementation of mitigation. This study uses a qualitative approach with a case study method. The role of BPBD is very crucial. BPBD is not only a technical implementer, but also a facilitator in encouraging the active participation of the community in the planning and implementation of disaster preparedness (Akhirianto, 2017; Ginting & Wijayanti, 2019). By involving local communities, participatory planning can increase the effectiveness of preparedness strategies and strengthen community resilience to disasters (Muflih et al., 2025; Mukarromah & Pranoto, 2024; Selvia & Angela, 2024). Therefore, strengthening the role of BPBD through capacity building, adequate resource allocation, and the establishment of inclusive participatory mechanisms is key to realizing effective and sustainable disaster preparedness

### **3. METHODS**

A non-empirical qualitative approach with the library research method used in this study (Adlini et al., 2022). This approach was chosen because the research aims to explore and analyze theoretical concepts and previous empirical findings regarding the role of participatory planning in community-based disaster preparedness, especially in the context of the work of the Manado City Regional Disaster Management Agency (BPBD). Thus, this study does not collect primary data from the field, but rather utilizes secondary data obtained from various sources of literature and relevant official documents. The data sources in this study are secondary and include national and international scientific journals, scientific reference books, public policy documents, official reports of government agencies, and statistical data from

trusted websites. Some of the main sources include Law Number 24 of 2007 concerning Disaster Management, reports from the National Disaster Management Agency (BNPB), as well as the latest academic publications that discuss community participation, participatory planning, and disaster risk management. Literature selection refers to publications in the last 5–10 years to ensure the relevance and actuality of the data.

The data collection technique was carried out through a systematic search of scientific literature using keywords such as "*participatory planning*", "*disaster preparedness*", "*community participation*", and "*community-based disaster preparedness*". The search was carried out through academic databases such as Google Scholar, DOAJ, as well as government agency websites such as BNPB and BPBD. The literature found was selected based on the suitability of the topic, the credibility of the source, and its contribution to the research focus. The data was analyzed using content analysis and thematic analysis. This technique is used to identify, classify, and interpret key themes emerging from literature sources, particularly related to the form, degree, and impact of community participation in the disaster preparedness planning process. The theoretical framework used in the analysis process includes the Ladder of Citizen Participation framework Parameters of Participation (Delgado et al., 2023) which provides a conceptual tool in assessing the quality and intensity of community participation in the decision-making process.

The validity of the data in this study is guaranteed through triangulation of sources, namely by comparing information from various literature and documents that complement each other. In addition, the analysis is carried out systematically and critically to ensure consistency between the data and the theoretical framework used. Data interpretation is carried out inductively, namely building a conceptual understanding of the results of the literature review to explain the relationship between participatory planning, the role of government institutions, and community preparedness for disasters. Through this approach, the research is expected to contribute to strengthening theoretical studies on community-based disaster management and produce strategic recommendations for public policy planning practices at the local level. By focusing on an analysis of the literature and secondary documents, this study presents an in-depth, reflective, and evidence-based understanding of the complexity of community involvement in disaster mitigation and preparedness efforts in Manado City.

#### 4. RESULTS AND DISCUSSION

The main results of this study show that community involvement in disaster preparedness planning in Manado City is still symbolic and has not yet achieved a meaningful form of participation. First, it was found that the level of community involvement in the disaster planning process is still relatively low. Previous studies, such as (Lengkey et al., 2020) and Sagay & Pangemanan (2023), show that the people of Manado City tend to be more involved in the program implementation stage, rather than in the process of formulating policies or mitigation strategies. This can be seen from the dominance of the pattern of community involvement only at the implementation stage, not at the strategic planning stage. These findings are in line with Arnstein's (1969) theory of the Ladder of Citizen Participation, which classifies public participation into eight levels, ranging from non-participation to citizen control (Delgado et al., 2023).

The lack of community involvement in the planning process has an impact on the low effectiveness of the disaster mitigation policies implemented. The programs formulated by BPBD tend not to reflect local conditions and needs, as shown by BNPB data indicating that although the number of disaster events will decrease in 2024, the impact will increase significantly. This strengthens the argument of Conyers (1994) in Wirawan & Nurpratiwi (2015), who asserts that community participation in development planning is necessary so that the programs implemented can reflect local needs and conditions.

Second, the role of the Manado City Regional Disaster Management Agency (BPBD) as a facilitator of participatory planning has not been running optimally. The study by Saputra et al. (2025) states that obstacles such as limited human resources, lack of budget, and weak coordination between agencies cause the participation process to be ineffective. This condition contributes to the weak institutional capacity to accommodate the aspirations of the community.

Third, it was found that there was a discrepancy between disaster policies or programs and local conditions of the community. This causes the effectiveness of the policy to be low. Empirical evidence is shown in **Table 1** which presents a comparison of the impact of floods and landslides in Manado City in 2023 and 2024.

**Table 1.** The Impact of Floods and Landslides in Manado City (2023-2024)

Year	Number of Events	Injured Victims	Damaged Houses	Refugee
2023	445 events	39 people	6.978 units	640.397 soul
2024	197 events	40 people	10.992 units	1.174.835 soul

Source: Badan Nasional Penanggulangan Bencana (2024)

Based on this data, although the number of disaster events will decrease in 2024, the impact will actually increase, both in terms of injuries, physical damage, and the number of refugees. These findings indicate that the preparedness system has not been effective and is still reactive rather than preventive.

Fourth, the top-down approach that still dominates the planning system in the Manado City BPBD is the main obstacle in realizing an integrated preparedness strategy. There is no formal mechanism to integrate people's aspirations systemically into BPBD planning documents. The community is still positioned as the object of policy recipients, not as active subjects in the mitigation process. As highlighted by Mukarromah & Pranoto (2024), planning systems that do not adopt a community-based disaster preparedness (CBDP) approach tend to ignore local knowledge and the adaptive capacity of communities, which are actually important assets in disaster mitigation. This is contrary to the principles of CBDP, which place communities as the primary subjects in the disaster risk management cycle (Lassa et al., 2018).

Factors that affect the weak involvement of the community include the limited institutional capacity of BPBD, the low disaster literacy in the community, and the lack of a forum or formal mechanism that ensures the sustainability of citizen participation. A study by Ginting & Wijayanti (2019) shows that community engagement will be successful if it is facilitated by institutions that have adequate technical capabilities, public trust, and policy support. In comparison, studies in other regions such as those conducted by Suharini et al. (2020) and Pomalango et al. (2024), show that when communities are actively involved in the formation of Disaster Preparedness Teams (SIBAT) and mitigation activities, the level of community preparedness and adaptation increases significantly.

This strategy has succeeded in fostering risk awareness, strengthening local capacity, and improving the effectiveness of disaster response. Thus, the results of this study conclude that community participation in disaster planning in Manado City is still symbolic and not yet transformative. It requires institutional strengthening, adequate resource allocation, and the establishment of an integrated participatory mechanism to encourage meaningful community involvement. These results also indicate the need to reformulate disaster planning strategies to be more community-based and contextual to local risks, in order to achieve sustainable disaster preparedness.

The main obstacle in the implementation of this research is limited access to primary field data that can describe the actual practice of community participation. As a non-empirical research based on literature studies, this limitation limits the scope of analysis to the social dynamics that may occur in the field. Therefore, follow-up research is recommended to use a

mixed methods approach that combines secondary data and field interviews to obtain a more comprehensive picture of the participatory disaster planning process. Theoretically, this research contributes to enriching the literature on disaster administration and participatory planning, especially in the context of local government. This research emphasizes the importance of integrating participatory approaches and community empowerment in building a sustainable disaster preparedness system. From a practical perspective, the results of this study provide concrete recommendations to local governments and BPBDs to strengthen institutional capacity, build a structured public consultation mechanism, and improve disaster literacy through community education. Thus, a deeper understanding of the role of communities in disaster planning is not only essential for the effectiveness of mitigation, but also for creating a risk management system that is fair, contextual, and resilient to the challenges of climate change and increased risk of future disasters.

## **5. CONCLUSION**

Participatory planning plays a strategic role in increasing community preparedness for floods and landslides, especially in Manado City which is classified as an area with a high level of vulnerability to hydrometeorological disasters. The results of the study show that community involvement in the planning process carried out by the Manado City BPBD is still at a symbolic level and has not touched the dimensions of substantive participation as explained in the framework of the Ladder of Citizen Participation and Parameters of Participation (Delgado et al., 2023). The community tends to be only involved in the implementation stage, while the strategy and policy planning stage is still dominated by a top-down approach from government agencies. The gap between formal policies and local needs is reflected in the 2024 disaster impact data, which shows a significant increase in the number of casualties, infrastructure damage, and the number of refugees, although the quantity of disaster events has decreased. This fact indicates that the effectiveness of the preparedness system is still low and has not been able to respond to risk challenges adaptively. The incompatibility of mitigation programs with local social and geographical characteristics is one of the main causes of weak community resilience. This study also found that the Manado City BPBD has not fully carried out its role as a facilitator of participatory planning. The obstacles faced include limited human resources, lack of budget, and the absence of formal mechanisms that ensure consistency and sustainability of community participation. This is exacerbated by low disaster literacy and lack of socialization from local governments to vulnerable communities. In comparison, previous studies in other regions have shown that the Community-Based Disaster Preparedness (CBDP)

model that places communities as active subjects in planning has been proven to increase risk awareness, strengthen local capacity, and produce more inclusive and adaptive policies. Therefore, institutional transformation towards participatory disaster management is an urgent need in Manado City.

This research contributes theoretically to enriching the study of participatory planning and community-based disaster risk management, as well as practically providing strategic input for local governments, especially BPBD, to build a more responsive and collaborative planning system. It is necessary to strengthen institutions, establish citizen communication forums, increase the technical capacity of the apparatus, and integrate community-based approaches into regional policies to ensure the sustainability of participation in disaster preparedness efforts. Thus, through strengthening meaningful participatory planning based on local needs, Manado City has a great opportunity to build a more prepared, resilient, and empowered community in facing the threat of floods and landslides that continue to recur in the future.

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