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IMPLEMENTATION OF DISASTER MITIGATION POLICIES BASED ON LOCAL COMMUNITY PARTICIPATION

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ABSTRACT

This article analyzes the implementation of disaster mitigation policies based on local community participation by connecting disaster risk reduction literature with Indonesia's legal framework. The research employs a qualitative method consisting of a literature review and normative legal analysis of journal articles with verified DOIs or publisher webpages, as well as relevant legislation. The analysis is conducted through conceptual mapping, examination of institutional responsibilities, and thematic synthesis concerning participation, local knowledge, social inclusion, coordination, evaluation, and legal certainty. The synthesis indicates that citizen involvement is more meaningful when it influences the determination of priorities, contingency plans, implementation, monitoring, and policy learning. Implementation challenges include differences in local government capacity, merely formalistic participation, limited sustainable financing, barriers to the representation of vulnerable groups, and weak links between community forums and bureaucratic decisions. Regulations need to be translated into clear operational procedures and aligned with development planning, while evaluation should measure the quality of citizens' influence and changes in capacity rather than merely count activities. This article recommends an inclusive, evidence-based participation system linked to budgeting and subject to joint oversight. Since this is a literature review, its conclusions should be followed up through empirical research in regions with different risk profiles.

A. INTRODUCTION

Indonesia faces a range of disaster hazards, including earthquakes, tsunamis, volcanic eruptions, floods, landslides, droughts, and extreme weather. Its archipelagic character, the density of settlements in certain areas, changes in land cover, and infrastructure disparities mean that disasters have different impacts across regions. Disaster mitigation policy therefore cannot be understood merely as a technical government matter, such as building embankments, mapping hazard zones, or installing early-warning equipment. Policy must also strengthen people's ability to identify risks, agree on actions, and participate in decisions that affect their safety. Literature on community involvement in Indonesia emphasizes a shift away from government-centred approaches toward governance that is more participatory, rooted in local culture, and supported by technology. This shift is important because communities are the first to experience changes in environmental conditions and are often the first responders when access to formal assistance is obstructed. Nevertheless, participation must not stop at attendance at public-awareness events. Meaningful involvement requires opportunities to influence local mitigation priorities, budgets, programme design, and the assessment of results.[1]

Community participation-based mitigation rests on the view that disaster risk is formed through the interaction of hazards, exposure, vulnerability, and capacity. Natural hazards cannot always be prevented, but losses can be reduced when communities know evacuation routes, understand warning signs, strengthen houses, protect the environment, and maintain assistance networks. The long experience of community-based disaster risk reduction in an Indonesian dryland village demonstrates that resilience does not emerge from a single, stand-alone training activity. It is shaped by the continuity of local organizations, learning from previous events, facilitation, leadership, and the ability to integrate activities into everyday life. For local governments, this means designing programmes as recurring cycles: jointly identifying risks, preparing plans, implementing measures, testing preparedness, and then improving plans based on evaluation. Participation must also be distinguished from transferring the State's responsibilities to citizens. Government remains obliged to provide safety standards, reliable information, resources, and technical support; communities contribute contextual knowledge, social oversight, and collective action that strengthen policy effectiveness.[2]

The localization of disaster risk reduction places residents' knowledge, capabilities, and resources within the regional preparedness system. Studies of community-based preparedness initiatives in Bima and Palangkaraya demonstrate the importance of connecting community plans with development documents recognized by village governments. Such a connection creates opportunities for contingency plans to become more than project documents: they can be incorporated into development agendas and gain legitimacy for implementation. The link between community plans and government plans helps explain why participation must be designed from the outset. A residents' forum established without a connection to decision-making institutions risks losing its ability to influence budget allocations; conversely, official documents prepared without the voices of affected groups may fail to reflect evacuation routes, working conditions, transport access, or the needs of vulnerable groups.

1 Azhar Firdaus et al., "Community Engagement in Natural Disaster Management: A Decade of Practice and Future Directions in Indonesia," *Jurnal Kommunity Online*, Vol. 7, No. 1, 2026. P. 68–82. DOI: https://doi.org/10.15408/jko.v7i1.50615.

2 Jonatan A. Lassa et al., "Twenty years of community-based disaster risk reduction experience from a dryland village in Indonesia," *Jàmbá: Journal of Disaster Risk Studies*, Vol. 10, No. 1, 2018. P.K 502. DOI: https://doi.org/10.4102/jamba.v10i1.502.

Regional implementation therefore requires mechanisms that bring together local governments, village administrations, educational institutions, health facilities, civil society organizations, businesses, and volunteers. These coordination mechanisms must specify who does what, when actions are to be carried out, which resources are available, and how residents can propose corrections when plans do not match conditions on the ground.[3]

Flooding clearly demonstrates the relationship between everyday behaviour, spatial planning, and the capacity of local organizations. People living in hazard-prone areas can help identify inundation points, blocked drainage channels, changes in water currents, and households that require assistance first. Research on community adaptation to tidal flooding in Langsa shows that local strategies develop in response to repeated experiences and limitations in structural protection. Such knowledge is useful for supplementing maps and technical data, not for replacing them. Government should validate residents' information through risk assessments, hydrological data, and professional observation, and then explain the findings openly. At the same time, residents need channels through which they can report damaged facilities, changes in river conditions, and obstacles to evacuation before an emergency occurs. This approach can shorten the distance between risk information and practical decisions, such as selecting assembly points, positioning emergency supplies, or prioritizing drainage maintenance. To ensure fairness, participation must not depend solely on volunteers who have ample free time. Government must consider incentives, volunteer safety, childcare, access for persons with disabilities, and opportunities for informal workers whose time is limited.[4]

Findings from a flood study in Sidenreng Rappang Regency show that participation can take the form of simple actions, such as cleaning drainage channels, sharing information, joining preparedness activities, and coordinating with officials. These actions become meaningful when connected to clear planning and evaluation. A participatory programme should not assess success only by the number of participants or public-awareness activities, because such figures do not show whether residents' decisions genuinely influence policy or reduce vulnerability. Evaluation should assess participant representation, improvements in risk knowledge, the timeliness of warning dissemination, access to safe routes, the functioning of local organizations, and the sustainability of resources. Measurements taken before and after a programme can help identify changes in capacity, while incident records and simulations provide an indication of performance in near-real situations. Local governments can also use village deliberations, public consultations, and community monitoring to assess whether activity allocations correspond to the main risks. In this way, mutual-aid activities do not become directionless voluntary labour; instead, they are linked to policy objectives, verifiable outcomes, and clear institutional responsibilities.[5]

Effective participation also depends on a clear division of roles between government and the community. A study of flood management at the village level found that residents were involved in cleaning drainage channels and were aware of the importance of participating in disaster-management programmes. In a mature mitigation policy, however, such activities must be reinforced by access to information,

3 Rahmawati Husein, "Localizing disaster risk reduction: a case study of community-based disaster preparedness in Bima and Palangkaraya Indonesia," *IOP Conference Series: Earth and Environmental Science*, Vol. 989, No. 1, 2022. P. 012027. DOI: https://doi.org/10.1088/1755-1315/989/1/012027.

4 Furqan I. Aksa & Ramdan Afrian, "Community adaptation strategies toward tidal flood: A case study in Langsa, Indonesia," *Jàmbá: Journal of Disaster Risk Studies*, Vol. 14, No. 1, 2022. P. a1258. DOI: https://doi.org/10.4102/jamba.v14i1.1258.

5 Muliani Samiri et al., "Community Engagement and Participation in Flood Disaster Mitigation: A Case Study of Sidenreng Rappang Regency, Indonesia," *Society*, Vol. 12, No. 1, 2024. P. 129–139. DOI: https://doi.org/10.33019/society.v12i1.472.

complaint procedures, explanations of decisions, and opportunities to oversee programme implementation. Local governments should not interpret participation as legitimizing the transfer of financing and technical work to the community. Safety infrastructure, warning systems, control of spatial use, and protection of vulnerable groups still require public authority and investment. Communities can contribute to participatory mapping, the preparation of evacuation routes, peer education, environmental monitoring, simulations, and evaluation. This distinction matters because residents do not possess equal resources or power. Low-income groups may live in the highest-risk locations precisely because their housing choices are limited. Fair policy recognizes these circumstances and provides support to reduce barriers to participation. Cooperation must therefore be built not only on goodwill, but also on rights, responsibilities, technical assistance, and measurable accountability.[6]

Gender dimensions and power relations must be treated as substantive components of mitigation design. A community is not necessarily a homogeneous group; economic status, age, gender, disability, occupation, language, and place of residence can affect a person's ability to attend meetings, receive warnings, or leave home during a disaster. A study of community-based disaster risk reduction in the coastal area of Kupang shows that women's presence in a program does not automatically mean that they have an equal voice in decision-making. Participation indicators should therefore measure influence, not merely the number of people in attendance. Community forums can adopt accessible schedules, provide information in different formats, offer transport assistance, translate materials into local languages, and establish safe ways to express opinions. Representatives of vulnerable groups should also be involved in determining budget priorities, shelter locations, sanitation needs, health services, and livelihood-recovery support. An inclusive approach increases the legitimacy of decisions while reducing the possibility that plans will reflect only the needs of the most influential groups. This principle also encourages government to examine disaggregated data so that program impacts are not concealed by apparently positive aggregate figures.[7]

Local knowledge, including religious values, customary practices, ecological experience, and collective habits, can strengthen preparedness when critically combined with scientific knowledge. Local knowledge helps explain environmental changes that residents recognize through long experience, while scientific analysis estimates hazards and systematically tests possible impacts. A study in West Sumatra shows that community-based disaster management practices can combine religious values and local wisdom to strengthen social cohesion and make approaches more compatible with residents' everyday lives. However, local wisdom must not be assumed to be invariably accurate or accepted by every group. Government and communities need to assess whether particular practices are safe, inclusive, and consistent with verifiable disaster information. Local knowledge should serve as a basis for dialogue, not as a reason to reject safety standards. Through this process, local governments can develop risk communication using language and symbols understood by residents without compromising the accuracy of information. The research need addressed by this article lies in connecting participation with governance, financing, inclusion, and evaluation. This article analyzes the implementation of community participation-based mitigation policy as a public-policy and administrative-law issue, with particular attention to the division of responsibilities and the sustainability of regional

6 Makhfud & Lailul Mursyidah, "Community Participation in Flood Disaster Management," *Indonesian Journal of Law and Economics Review*, Vol. 19, No. 4, 2024. P. 1176. DOI: https://doi.org/10.21070/ijler.v19i4.1176.

7 I Putu Yoga Bumi Pradana et al., "When resilience excludes: Gendered power, intersectionality, and community-based disaster risk reduction in coastal Indonesia," *JKAP (Jurnal Kebijakan dan Administrasi Publik)*, Vol. 29, No. 2, 2025. P. 107637. DOI: https://doi.org/10.22146/jkap.107637.

programmes.[8]

B. RESEARCH METHODS

This research uses a qualitative approach with a literature-review design and normative legal analysis. The research materials consist of scholarly journal articles with verifiable DOIs or publisher webpages, Indonesian legislation, and official documents relevant to disaster risk reduction and regional governance. The literature search focuses on citizen participation, community preparedness, local knowledge, vulnerable groups, institutional coordination, programme evaluation, and gaps between policy design and implementation. Sources are purposively selected based on the relevance of their titles and abstracts, author identities, journal information, and connection to the article's focus. The analysis is conducted in three stages: first, mapping the main concepts of mitigation and participation; second, conducting a normative examination of the principles, authorities, and obligations reflected in the regulations; and third, carrying out a thematic synthesis to compare available empirical findings with the requirements of regional disaster governance. The analysis does not claim to generate new field data and does not present untested effectiveness figures. To avoid excessive generalization, the findings are presented as policy arguments that require further testing through case studies in regions with different hazard characteristics, fiscal capacities, social structures, and levels of community organization. This approach is relevant because participation evaluation requires the expected outcomes to be determined before activities begin, followed by indicators that connect community activities with resilience that can actually be observed.[9]

C. RESULTS AND DISCUSSION

1. A Model for Implementing Community Participation-Based Mitigation

Community participation becomes more operational when it is positioned as a sequence of activities that culminates in decision-making outcomes. A study of the participation model for natural-disaster mitigation in Majene Regency describes the need to map the forms of residents' involvement, the factors that support it, and the obstacles that hinder it. In regional implementation, such mapping can be translated into stakeholder analysis, consultation forums, task allocation, and action plans with designated persons in charge. The initial stage is to identify the dominant hazards and potentially affected groups, together with community assets and resources. The next stage is to formulate realistic priorities, connect the results to the work plans of regional agencies, and determine implementation indicators. Participation should also take place during monitoring, not only when plans are drafted. Residents need to know why a programme was selected, where its funding comes from, when it will be implemented, and how objections can be submitted. Government, for its part, must provide capable facilitators so that forums are not dominated by local elites or reduced to formalities. This model makes community contributions traceable and accountable without diminishing the government's primary responsibility for public safety.[10]

Village volunteers are an important link between formal organizations and

8 Syafwan Rozi et al., "Local community-based disaster management: The transformation of religious and local wisdom values in preparation to deal with natural hazards in West Sumatra, Indonesia," *Jàmbá: Journal of Disaster Risk Studies*, Vol. 13, No. 1, 2021. P. 1020. DOI: https://doi.org/10.4102/jamba.v13i1.1020.

9 Kim A. Johnston et al., "Evaluation of community engagement for resilience outcomes: A pre-engagement approach," *International Journal of Disaster Risk Reduction*, Vol. 110, 2024. P. 104613. DOI: https://doi.org/10.1016/j.ijdrr.2024.104613.

10 Saddam Husain Tamrin et al., "Community-Based Natural Disaster Mitigation Participation Model in Majene Regency," *PINISI Discretion Review*, Vol. 8, No. 2, 2025. P. 347–364. DOI: https://doi.org/10.26858/pdr.v8i2.69476.

community capacity. Research on the extra-role behaviour of volunteers in Kalibening highlights altruism, courtesy, responsibility, civic involvement, and the ability to cooperate in the activities of disaster risk reduction organizations. These values matter for mitigation because preventive action requires continuity even when no emergency occurs. However, relying on voluntary sacrifice without institutional support can weaken organizations and create unequal workloads. Local governments need to develop tiered training, safety procedures, protection while on duty, access to equipment, recognition of competencies, and clear coordination channels with the Regional Disaster Management Agency (BPBD). Volunteer organizations also need generational renewal so that knowledge does not remain concentrated in only a few people. Performance assessment should not merely count activities, but also examine the quality of information delivered, the appropriateness of exercises, outreach to vulnerable groups, and the ability to correct mistakes. Strengthening volunteers must preserve their participatory character while recognizing that their safety, time, and well-being have value. With adequate support, social solidarity can become a lasting organizational capacity rather than a spontaneous response after a disaster has occurred.[11]

An early-warning system is useful only when information is translated into timely action. Accordingly, capacity-building for community facilitators should involve residents as both learners and producers of knowledge, not merely as recipients of instructions. Participatory action research on early-warning facilitators in Indonesia demonstrates the value of repeated planning, action, observation, and reflection to strengthen understanding and adaptive skills. For local governments, this means that training should use scenarios suited to local hazards, test communication channels, and give participants room to assess what worked and what failed. Residents must understand warning levels, official information sources, evacuation routes, assembly points, and ways to assist people who need additional support. Simulations should also test whether messages can be understood when electricity, telecommunications networks, or transport are disrupted. After exercises, joint evaluation should record delays, confusion, and access gaps without blaming residents. The data can then be used to update protocols and improve facilities. Through continuous improvement, disaster-education activities can produce practical skills, trust, and collective preparedness that are more relevant than one-off training.[12]

Local wisdom can serve as an entry point for risk communication when its social meaning is understood and managed carefully. A study of the Larung Sesaji tradition in the Mount Kelud area views cultural practices as one of the mechanisms associated with collective memory, identity, and preparedness among communities living near the volcano. For local governments, such findings show that mitigation messages may be more readily accepted when communicated with respect for residents' social context. Nevertheless, tradition cannot replace volcanological monitoring, official hazard zones, or evacuation instructions. An ideal collaboration brings together customary leaders, religious leaders, educators, volunteers, scientists, and officials so that cultural messages remain consistent with risk assessments. Local knowledge must also remain open to evaluation and change when environmental conditions change. Involving local figures can help disseminate information, while government provides accurate materials and a correction mechanism when misinformation circulates. Culture is thus not treated as programme decoration, but as a social resource that can increase trust

11 Sujatmiko et al., "Perilaku ekstra-peran relawan dan ketangguhan desa dalam pengurangan risiko bencana," *Indonesian Journal of Environment and Disaster*, Vol. 5, No. 2, 2026. P. 99–117. DOI: https://doi.org/10.20961/ijed.v5i2.3263.

12 Ninil Riyati Miftahul Jannah et al., "Participatory Action Research to Strengthen Community Early-Warning Facilitators in Nonformal Education: An Indonesian Case," *Journal of Nonformal Education*, Vol. 12, No. 1, 2026. P. 108–123. DOI: https://doi.org/10.15294/jone.v12i1.41103.

and become part of disaster learning. Evaluation remains necessary to determine which groups have been reached, what actions have changed, and which risks remain unresolved.[13]

Coordination among stakeholders is a prerequisite for local participation to influence policy implementation. A study of the stakeholder approach to building community resilience shows that political leadership and cross-departmental cooperation can broaden involvement and help turn risk awareness into collective action. In regional government, coordination must be designed in greater detail than general statements about collaboration. Planning documents should identify the responsible institution, the support to be provided by each regional agency, work schedules, funding sources, indicators, and reporting procedures. Coordination forums must also have a mechanism for resolving jurisdictional conflicts, because disaster programmes often relate to public works, health, education, social affairs, the environment, transportation, and spatial planning. Local governments can schedule regular meetings based on risk data and residents' reports, while community organizations communicate needs and evaluate service quality. To prevent coordination from becoming ceremonial, meeting decisions must be translated into action plans with deadlines and designated persons in charge. Transparency helps residents understand government follow-up, while public reports provide a basis for assessing consistency between promises, budgets, and results. With this approach, participation becomes part of everyday governance rather than an additional activity outside the government system.[14]

The term participation is frequently used in disaster policy, but its meaning may differ among officials, experts, residents' organizations, and communities exposed to risk. A cross-country study of flood awareness and readiness to receive warnings shows that participation is influenced by the capacity, willingness, and understanding of the parties concerning their expected roles. Local governments therefore need to distinguish between levels of participation: receiving information, providing input, taking part in planning, helping implement activities, and exercising actual influence over decisions. An activity that invites residents only after a decision has been made cannot yet be described as substantive participation. Good participation, by contrast, requires early access to information, an opportunity to propose alternatives, a clear response from policymakers, and a mechanism for reviewing decisions. Forum design must be adapted to local circumstances because barriers to attending meetings may include working hours, language, transport, trust in government, or opportunity costs. Government must also explain which decisions can still be changed and the scientific basis for safety decisions that are not negotiable. This clarity prevents false expectations while maintaining trust. Indicators should therefore measure the quality of residents' influence and institutional responses, rather than merely the number of meetings or participants.[15]

Evaluation of the effectiveness of community-based programmes must place outcomes at the centre of the assessment. Research on large-scale community-based disaster reduction programmes emphasizes the need to assess achievements empirically rather than treating participation itself as proof of success. In regional policy

13 Dedi Sasmito Utomo et al., "Larung Sesaji as an indigenous community resilience practice at Mount Kelud, Indonesia," *International Journal of Disaster Risk Reduction*, Vol. 133, 2026. P. 106006. DOI: https://doi.org/10.1016/j.ijdrr.2026.106006.

14 Judy Burnside-Lawry & Luis Carvalho, "A stakeholder approach to building community resilience: Awareness to implementation," *International Journal of Disaster Resilience in the Built Environment*, Vol. 7, No. 1, 2016. P. 4–25. DOI: https://doi.org/10.1108/ijdrbe-07-2013-0028.

15 Alexander Fekete et al., "Increasing flood risk awareness and warning readiness by participation – But who understands what under participation?" *International Journal of Disaster Risk Reduction*, Vol. 57, 2021. P. 102157. DOI: https://doi.org/10.1016/j.ijdrr.2021.102157.

design, indicators can be divided into outputs, intermediate outcomes, and realistic impacts. Outputs include updated participatory risk maps, the number of facilitators who pass competency tests, agreed contingency plans, and inspected evacuation routes. Intermediate outcomes include improved risk understanding, faster receipt of warnings, involvement of vulnerable groups, and consistency of exercises. Long-term impacts, such as reductions in casualties or losses, must be analyzed carefully because they are affected by hazard magnitude, exposure, building quality, and various other factors that cannot be controlled by a single programme. Quantitative data should be supplemented with interviews and residents' records to explain why particular activities succeed or fail. Data collection must also take privacy, security, and accessibility into account. Independent or cross-stakeholder evaluation can increase the credibility of findings and provide a basis for shifting budgets away from less effective activities toward measures with greater impact.[16]

The narrative of mutual assistance can strengthen motivation for collective action, but communication strategies must be carefully designed so that solidarity is not equated with adequate preparedness. Research on narratives of civic participation in disaster preparedness examines how language and collective identity can encourage joint action. In regional policy, risk communication can draw on residents' experiences, verifiable success stories, and shared responsibility without downplaying hazards or blaming victims. Campaigns that emphasize only togetherness risk obscuring the need for budgets, infrastructure, and government coordination. Effective messages also provide concrete instructions: actions to take before a hazard occurs, responses when a warning is issued, reliable information points, and procedures after conditions become safe. Communication channels should be diverse, including neighbourhood meetings, schools, local radio, digital messages, public-address systems, and community-leader networks, so that one disruption does not cut off all information. Government should test whether messages are understood and record which groups are not reached. Two-way communication enables residents to correct inaccurate information and report changing conditions. When participation is accompanied by institutional responsibility, collective narratives become a practical coordination tool rather than a slogan in programme documents.[17]

2. Harmonization of Regulations, Institutions, and Regional Accountability

The national legal framework places disaster management within a system that must be implemented in a planned, integrated, coordinated, and comprehensive manner. A normative analysis of the Disaster-Resilient Village approach demonstrates the importance of connecting national policy with local government structures, while also highlighting challenges that arise when delegated roles are not accompanied by effective implementation instruments. In this context, community participation must be translated into clear working procedures: who invites residents, how vulnerable groups are represented, how proposals are recorded, how decisions are explained, and how outcomes are reviewed. A disaster-resilient village programme cannot be assessed merely by the establishment of a forum or the preparation of administrative documents. Local governments must ensure that community organizations have access to risk data, working relations with BPBD, and support to implement contingency plans. Regulations must also prevent overlapping responsibilities among village governments, subdistricts, regencies, and technical regional agencies. Where authority is unclear, participation

16 Jingyan Wu et al., "How effective are community-based disaster reduction strategies? Evidence from the largest-scale program so far," *Risk Analysis*, Vol. 43, No. 8, 2023. P. 1667–1681. DOI: https://doi.org/10.1111/risa.14043.

17 Manomita Das et al., "'One big team working together': Shifting narratives to encourage civic participation and collective action in disaster preparedness," *International Journal of Disaster Risk Reduction*, Vol. 118, 2025. P. 105218. DOI: https://doi.org/10.1016/j.ijdrr.2025.105218.

may stop at consultation without follow-up. Policy analysis must therefore examine whether regulations are consistent with the capacity of implementers and the social conditions of the region. A strong norm provides a basis for authority while also facilitating coordination, oversight, and correction by affected communities.[18]

Law Number 24 of 2007 concerning Disaster Management provides the principal foundation for a systematic approach to disaster management in Indonesia, while Government Regulation Number 21 of 2008 concerning the Implementation of Disaster Management elaborates the conduct of disaster management, including prevention and preparedness activities. This framework must be implemented together with the principles of transparency, clarity of roles, and government responsibility for protecting the public. Research on the institutional mandate of the National Disaster Management Agency (BNPB) highlights the need to harmonize regulations and coordinate the central government, regional disaster management agencies (BPBDs), and sectoral institutions. From an implementation perspective, coordination does not automatically occur merely because authority is stated in a legal norm. Local governments need data-sharing protocols, designated persons in charge, reporting standards, and workable financing arrangements. Residents also need access to plans, opportunities to raise objections, and responses to proposals that are accepted or rejected. Legal harmonization should examine the relationship between general disaster-management norms, regional-government regulations, development plans, and applicable technical guidelines. The aim is not simply to add more regulations, but to ensure that the public's right to participate has an operational form. In this way, legal substance and organizational capacity function together, preventing participation from becoming trapped in formal consultation without consequences for mitigation decisions.[19]

The application of regulations must take social justice into account because exposure to risk and the capacity to recover are not distributed equally. An analysis of the legal framework for disaster risk reduction from the national to the local level identifies the protection of vulnerable groups, equitable funding, access to information, meaningful participation, and accountability as important indicators. These criteria help assess whether formal procedures produce equal protection. For example, risk maps and evacuation routes must be usable by persons with disabilities; warnings must reach residents who do not own smartphones; and shelters must take into account the needs of women, children, older persons, and people requiring medical assistance. Justice also requires budget decisions to be explained on the basis of risk and need, rather than merely the political visibility of a project. Public deliberations should provide a safe space for groups that are usually unheard and document how their input influences decisions. If participation takes place only through digital channels, groups with limited internet access may be left behind. Regional agencies should therefore combine face-to-face and online mechanisms, provide easily understandable data, and establish equity indicators. A mitigation policy that is procedurally lawful is not necessarily fair in its outcomes; evaluation must examine both dimensions.[20]

Implementation gaps between national policy and local government are often related to variations in organizational capacity, political priorities, human resources, and the historical conditions of a region. Research on disaster risk reduction education

18 Saru Arifin, "Disaster resilient village-based approach to disaster risk reduction policy in Indonesia: A regulatory analysis," *Jàmbá: Journal of Disaster Risk Studies*, Vol. 13, No. 1, 2021. P. 1021. DOI: https://doi.org/10.4102/jamba.v13i1.1021.

19 Ellectrananda Anugerah Ash-shidiqqi et al., "Reformulating the Legal and Institutional Mandate of BNPB in Disaster Mitigation Policy," *Indonesian Journal of Administrative Law and Local Government*, Vol. 2, No. 1, 2026. P. 46925. DOI: https://doi.org/10.26740/ijalgov.v2i01.46925.

20 Lita Tyesta Addy Listya Wardhani et al., "Disaster Risk Reduction and Social Justice Framework in Indonesian Law: From National to Local Regulation," *Masalah-Masalah Hukum*, Vol. 55, No. 1, 2026. P. 197–230. DOI: https://doi.org/10.14710/mmh.55.1.2026.197-230.

in several Indonesian provinces shows that the same policy may be implemented differently because local contexts affect implementers' ability to translate regulations into programmes. This lesson is relevant to participatory mitigation: a general mandate will not guarantee uniform results unless it is adapted to local hazards, government structures, resources, and social networks. Local governments can translate national provisions into annual work plans, medium-term targets, service standards, and budgets that connect mitigation with spatial planning and basic services. At the same time, community involvement helps test whether bureaucratic priorities correspond to realities on the ground. Implementation assessments should examine cross-agency barriers, dependence on temporary project assistance, and the continuity of facilitators after funding ends. Monitoring systems should measure the availability of resources and the ability to use them, not merely the existence of documents. A context-sensitive approach reduces the risk of blaming communities for failure when the actual constraints lie in institutional design or resource allocation.[21]

Spatial planning and disaster risk reduction must be connected with community knowledge concerning location, mobility, and the use of space. A study of community resilience in the Lembang Fault area, drawing lessons from Japan's experience, emphasizes the importance of viewing resilience as a cross-sectoral process rather than merely the provision of infrastructure. Under regional policy, communities can be involved in identifying realistic evacuation routes, safe assembly points, public assets, locations at risk of isolation, and communication needs during an earthquake. Nevertheless, the results of participatory mapping must still be checked against geospatial data, technical analysis, and applicable spatial plans. Consultation results should be recorded transparently so that proposals not accommodated are accompanied by technical or legal reasons. Government must avoid involving residents merely as a formality after development decisions have been finalized. Instead, public input should be sought during problem identification and the assessment of alternatives, when changes are still possible. Participation also includes monitoring compliance with spatial plans and providing information about changes in risk. If residents discover that a new building blocks an evacuation route or that an activity increases flood potential, complaint and follow-up mechanisms must be available. This integration encourages mitigation to become part of safe and sustainable regional development.[22]

Community-based policies may lose legitimacy when programmes disregard residents' attachment to place and culture. A study of Betawi community empowerment along the Ciliwung riverbanks shows how local knowledge, ecological practices, cultural activities, and social networks can serve as resources for flood mitigation. From a regulatory perspective, local governments should recognize community contributions without idealizing every custom as a safe practice. Dialogue is needed to identify practices that support risk reduction, adapt them to scientific knowledge, and ensure that their benefits are not enjoyed by only certain groups. Recognition of local wisdom can take the form of local disaster-education curricula, partnerships with community organizations, documentation of residents' knowledge, and involvement of local figures in risk communication. Nevertheless, technical obligations to protect river basins, control spatial use, build drainage systems, and provide early warnings remain with the authorized institutions. Local wisdom should therefore be integrated with regional regulations, development plans, and measurable safety standards. Such an approach

21 Ni Made Wiwik Astuti et al., "Disaster risk reduction education in Indonesia: Territorial conversion factors and public policy processes," *International Journal of Disaster Risk Reduction*, Vol. 143, 2026. P. 106278. DOI: https://doi.org/10.1016/j.ijdrr.2026.106278.

22 Rizqi Abdulharis et al., "Developing Community Disaster Resilience in the Lembang Fault Area, Indonesia: Lessons Learned from Japanese Experience," *Applied Sciences*, Vol. 12, No. 3, 2022. P. 1271. DOI: https://doi.org/10.3390/app12031271.

can preserve local identity while preventing the romanticization of culture from suppressing criticism. Success should be assessed by improvements in residents' capacity and safety, not merely by the preservation of cultural symbols.[23]

Legal certainty at the regional level must be supported by legal literacy and disaster education that communities can understand. Research on legal awareness in local-wisdom-based mitigation in Bengkulu shows the relevance of combining education, empowerment, and cultural context so that regulations are not viewed merely as external instructions. Local governments can provide simple materials explaining residents' rights to information, their obligations to follow lawful safety measures, prohibitions related to hazardous areas, and channels for requesting explanations of decisions. These materials must distinguish official information from unverified reports, especially when disaster warnings spread rapidly through social media. Legal education must not be used to place all blame for failures on the community; the State must also fulfil its obligations to provide services and communicate information in a timely manner. Community forums can serve as venues to discuss contingency plans and identify obstacles to regulatory implementation. Implementation should avoid difficult technical language, provide access for groups with different needs, and assess levels of understanding. With better literacy, communities can participate in oversight, raise objections on a clear legal basis, and cooperate with officials without losing their rights. Education becomes a bridge between the existence of written norms and the behavioural changes required in mitigation practice.[24]

The development of community-based disaster management policies in vulnerable areas must be based on an understanding of local needs and capacities, rather than on the uniform copying of a model. Research on community policy development emphasizes the usefulness of qualitative approaches for identifying factors that influence programme implementation. At the regional level, preliminary analysis should examine hazard patterns, employment structures, social networks, the quality of public services, budgets, and residents' experiences with previous programmes. Government and communities can then formulate priorities and establish a realistic division of roles. Policy plans should contain measurable objectives, cross-sectoral support, financing, review schedules, and mechanisms for changing plans when risks change. Participation should take place throughout the entire cycle, from problem formulation to evaluation, with records accessible to the public. Government must also explain the limits of authority and responsibility so that community forums do not make decisions beyond their competence. Conversely, technical agencies need to remain open to residents' findings that reveal weaknesses in policy design. This framework helps maintain consistency between legal objectives and implementation realities. Institutionalized public involvement creates space for joint learning, improves the legitimacy of decisions, and strengthens programme sustainability after external support ends.[25]

23 Briliana Losdy & Sofyan Cholid, "Pemberdayaan Masyarakat Berbasis Kearifan Lokal Betawi dalam Mitigasi Bencana Banjir di Jakarta: Studi Kasus Komunitas Padepokan Ciliwung Condet," *Jurnal Impresi Indonesia*, Vol. 5, No. 6, 2026. P. 2675–2688. DOI: https://doi.org/10.58344/jii.v5i6.7783.

24 Sinung Mufti Hangabei et al., "Strengthening Legal Awareness in Mitigation: Education and Community Empowerment Study Based on Local Wisdom in Bengkulu," *University of Bengkulu Law Journal*, Vol. 10, No. 1, 2025. P. 84–100. DOI: https://doi.org/10.33369/ubelaj.v10i1.39870.

25 Rofika et al., "Pengembangan Kebijakan Manajemen Bencana Berbasis Komunitas Studi Kasus di Kawasan Rentan Bencana," *Journal of Multidisciplinary Inquiry in Science, Technology and Educational Research*, Vol. 2, No. 1, 2024. P. 2500. DOI: https://doi.org/10.32672/mister.v2i1.2500.

D. CONCLUSION

Based on the literature synthesis and normative analysis, the implementation of disaster mitigation based on community participation requires a consistent relationship among regulations, local government capacity, and mechanisms for public involvement. Participation cannot be demonstrated merely through public-awareness activities or attendance at meetings; it must be reflected in community influence over priority-setting, budget monitoring, contingency planning, and outcome evaluation. Indonesia's legal framework provides a basis for disaster management, but its effectiveness continues to depend on institutional coordination, transparency, resource support, and attention to vulnerable groups. Local governments need to establish success measures covering access to information, group representation, preparedness skills, the functioning of early-warning systems, and follow-up to community input. Local practices also need to be evaluated in relation to residents' rights, access to recovery, and the delivery of public services after disasters. A study of disaster recovery in a coastal village in Lampung demonstrates the importance of examining how legal norms operate in social and administrative realities. Accordingly, policy quality should be assessed not merely by the completeness of documents, but by institutions' ability to fulfil their obligations and respond to the needs of affected communities fairly and accountably.

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