

Local Wisdom and the Effectiveness of Disaster Resilient Village Policy in West Bandung Regency

Azharisman Rozie, Heru Sulistiyo

Institut Pemerintahan Dalam Negeri, Indonesia; hhrozie@ipdn.ac.id

Received: 30/10/2023

Revised: 12/05/2024

Accepted: 30/06/2024

Abstract

This study aims to evaluate the effectiveness of the implementation of the Disaster Resilient Village policy based on local wisdom in West Bandung Regency, particularly in addressing the threat of earthquakes and landslides caused by the Lembang Fault, which stretches across densely populated areas. Using descriptive-qualitative research methods, this study analyzes the Disaster Resilient Village program implementation process, the challenges faced, and the potential for integrating local Sundanese wisdom into disaster mitigation efforts. Data were collected through field observations, interviews with informants, and a review of Disaster Resilient Village program documents in villages affected by the Lembang Fault. The results indicate that Disaster Resilient Village implementation has had a positive impact through increased community capacity, disaster simulations, the development of evacuation routes, and the formation of disaster preparedness groups. However, the policy's effectiveness is hampered by several key factors, including suboptimal communication between institutions, outreach that has not specifically targeted areas vulnerable to the Lembang Fault, and a high dependence on Village Funds or external assistance, which hampers the program's sustainability. Furthermore, the study identified that the local wisdom of the Sundanese people—such as knowledge of natural signs, traditional earthquake-responsive construction practices, experience-based land use planning, and the transmission of values through oral tradition—has not been fully integrated into formal disaster mitigation policies. This study concludes that the effectiveness of Disaster Resilient Village in West Bandung Regency will increase through strengthening the organizational structure, formalizing local wisdom in village disaster planning documents, and increasing human resource capacity through training and academic support.

Keywords

Disaster Resilient Village, Disaster Preparedness, Local Wisdom, Policy, West Bandung Regency.

Corresponding Author

Azharisman Rozie

Institut Pemerintahan Dalam Negeri, Indonesia; hhrozie@ipdn.ac.id

1. INTRODUCTION

According to Law Number 24 of 2007, a disaster is an event or series of events that pose a threat and disrupt people's lives and livelihoods. These events can be triggered by natural, non-natural, or human-induced factors, potentially causing loss of life, environmental damage, material losses, and psychological impacts (Wibowo & Satispi, 2017). Although the exact time, magnitude, and location of a disaster cannot be precisely determined, its potential occurrence can be estimated through scientific knowledge, recognized natural signs, and historical disaster patterns (Sabir & Phill, 2016).



© 2024 by the authors. Open access publication under the terms and conditions of the Creative Commons Attribution 4.0 International License (CC BY NC) license (<https://creativecommons.org/licenses/by/4.0/>).

Natural disasters continue to strike in Indonesia without warning, leaving deep sorrow, grief, and concern for all levels of society (Shalih & Nugroho, 2021). In addition to destroying various aspects of life, these disasters also cause suffering and significant losses for both citizens and the nation. According to the UN's ESCAP report, Indonesia ranks second in the Asia-Pacific region in terms of the number of fatalities due to natural disasters. Over the past two decades, various disasters in Indonesia are estimated to have caused economic losses of at least US\$22.5 billion (Cahyono, 2018).

West Bandung Regency is one of the areas in West Java with a high level of disaster vulnerability, primarily due to its complex geological and geographical conditions. One of the most significant potential disasters in this region is the Lembang Fault, an active fault that stretches approximately 29 kilometers from North Bandung to the eastern part of West Bandung Regency (Kinasih et al., 2023). Tectonic activity on the Lembang Fault has the potential to cause large-magnitude earthquakes, placing the community at high risk of physical damage and loss of life. This situation demands structured, systematic, and community-based mitigation efforts (Ramadhan et al., 2022).

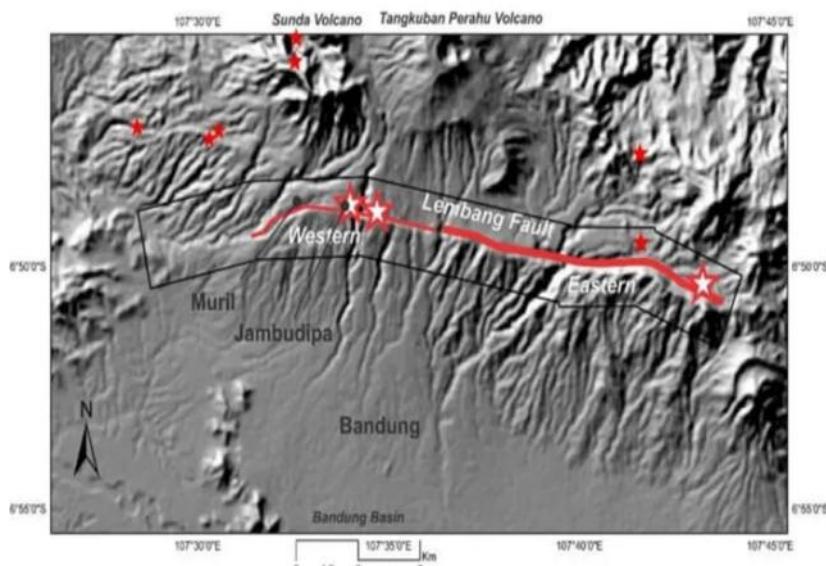


Figure 1 Lembang Fault

Source: Data Research

The Lembang Fault is known to have a history of significant seismic activity and is estimated to be capable of generating earthquakes up to magnitude 6.5–7 if a major shift occurs. The earthquake threat from this fault affects not only the area around Lembang, but also densely populated areas in West Bandung Regency within the danger zone (Rasmid, 2014). In addition to building damage, potential aftershocks such as landslides, ground movement, and damage to critical infrastructure can worsen post-disaster conditions. Therefore, community preparedness is a crucial factor in reducing vulnerability and accelerating recovery in the event of a disaster (Risnawati, 2019).

Table 1 List of Villages Prone to Earthquakes and Landslides Due to the Lembang Fault

Sub District	Number of Villages	List of Villages
Cisarua	8	Cipada Jambudipa Kertawangi Padaasih

Sub District	Number of Villages	List of Villages
		Pasirhalang Pasirlangu Sadangmekar Tugumukti
Lembang	16	Cibodas Cibogo Cikahuripan Cikidang Cikole Gudangkahuripan Jayagiri Kayuambon Langensari Lembang Mekarwangi Pagerwangi Sukajaya Suntenjaya Wangunharja Wangunsari
Ngamprah	11	Bojongkoneng Cilame Cimanggu Cimareme Gadobangkong Margajaya Mekarsari Ngamprah Pakuhaji Sukatani Tanimulya
Padalarang	10	Cempakamekar Ciburuy Cimerang Cipeundeuy Jayamekar Kertajaya Kertamulya Laksanamekar Padalarang Tagogapu
Parongpong	7	Cigugur Girang Cihanjuang Cihanjuang Rahayu Cihideung Ciwaruga Karyawangi Sariwangi

Communities, as the beneficiaries of the disaster, are expected to be functionally involved in efforts to reduce potential disaster risks in West Bandung Regency. One such measure is the Disaster Resilient Village policy (Habibullah, 2013). This policy is a national strategy to build community resilience in the face of disasters, empowering residents through awareness-raising, training, risk identification, developing early warning measures, and forming volunteers (such as Tagana) to organize potential efforts and carry out independent mitigation, from prevention to recovery (Hijri et al., 2020). The local wisdom of the West Bandung Regency community is also a crucial aspect in supporting the implementation of Disaster Resilient Villages (Suparmini et al., 2014). Values such as mutual cooperation, social solidarity, and local knowledge of natural signs can serve as social capital to strengthen community preparedness. The integration of formal government policies and local wisdom practices is believed to create a more adaptive mitigation system that is accepted by village communities (Puspitasari et al., 2018).

In Sundanese culture in West Java, the concept of disaster mitigation based on local wisdom is reflected in various folktales. Among them, as found in Pratama & Hiram (2024), the story of Darmaraja and the myth of the white crab contain symbolic messages regarding potential disasters. The myth describes that when Jatigede is flooded, it is believed that it will awaken the white crab which then causes damage to the dam. The white crab is interpreted as a representation of a series of active faults such as the Lembang Fault, the Cimandiri Fault, and other geological structures that are interconnected and resemble the shape of a crab. The activation of these faults has the potential to trigger serious damage to dam infrastructure and cause water overflows that could have major impacts on the Sumedang, Tomo, Bandung, Cirebon, and Kadipaten regions. This form of local knowledge demonstrates how Sundanese people have long understood and communicated potential disaster threats through traditional symbols and narratives (Putri & Taqyuddin, 2022).

Research by Hanif et al. (2022) emphasizes the crucial role of community-based disaster education in improving community preparedness, particularly through involving residents in learning about disaster risks and mitigation measures. This finding aligns with the Disaster Resilient Village program, which positions communities as the primary actors in disaster risk reduction. Meanwhile, research by Abdurachman & Nurliawati (2022) examined the implementation of the Disaster Resilient Village program in West Java and found that while the program was able to build a disaster organizational structure at the village level, its effectiveness was still limited by budget constraints, uneven training, and suboptimal inter-agency coordination. On the other hand, a study by Pakniany et al. (2022) showed that local wisdom significantly contributes to community resilience in Nuwewang Village, Pulau Letti District, Southwest Maluku Regency, because cultural values play a role in building solidarity, environmental knowledge, and collective responses to disasters. This is relevant for the Sundanese community, which has narratives and myths related to geological phenomena, which can serve as social capital to support preparedness. Furthermore, research by Kinasih et al. (2023) on the potential risks of the Lembang Fault revealed that the fault poses a significant threat to the Greater Bandung area, with the potential for earthquakes to have widespread impacts on infrastructure and settlements. These findings reinforce the urgency of research evaluating Disaster Resilient Village policies in West Bandung Regency, which is located in a high-risk zone, and demonstrate the need to integrate scientific knowledge and local wisdom in building community preparedness.

Geological research on the Lembang Fault has produced various hazard models and earthquake scenarios indicating a high potential risk for the Greater Bandung area, including West Bandung Regency. However, studies linking these scientific findings to village community preparedness are still

very limited. All previous research indicates a gap, namely the lack of a comprehensive evaluation of Disaster Resilient Villages that specifically considers the threat of the Lembang Fault and the potential contribution of local wisdom. Therefore, this research is crucial to fill this gap and provide evidence-based policy recommendations that are more relevant to the regional context.

2. METHODS

This study used a qualitative, descriptive-analytical approach to gain a deeper understanding of the implementation of the Disaster Resilient Village policy to enhance disaster preparedness based on local wisdom in West Bandung Regency. This approach was chosen because it comprehensively describes social phenomena, including how communities interpret the threat of the Lembang Fault and how the policy is implemented at the village level (Kusumastuti & Khoiron, 2019). The research was conducted in villages located in earthquake-prone areas around the Lembang Fault, such as Cikahuripan and Kayu Ambon villages in Lembang District, considering these areas have high levels of vulnerability and are also implementation locations for the Disaster Resilient Village program. Data sources were obtained from informants including village government officials, Disaster Resilient Village volunteers, BPBD officers, and community members familiar with local wisdom practices related to disasters.

Data collection was conducted through in-depth interviews to elicit information on policy implementation, community understanding of disaster mitigation, and the integration of local values into the program. Field observations were also conducted to assess infrastructure readiness, volunteer activities, and community behavior in responding to potential disasters. Documentation studies were also used as a complement by reviewing important documents such as risk maps, activity reports, village profiles, and guidelines for implementing Disaster Resilient Villages. The collected data were analyzed using the Miles and Huberman model, which includes data reduction, data presentation, and drawing conclusions (Sugiyono, 2013). To maintain data validity, this study applied triangulation of sources, techniques, and time to ensure the findings were more valid and accountable. Furthermore, the entire research process upheld research ethics by maintaining the confidentiality of informants' identities, clearly explaining the research objectives, and obtaining informed consent before conducting interviews.

3. FINDINGS AND DISCUSSION

3.1 Implementation of the Disaster Resilient Village Policy in West Bandung Regency

Policy implementation is a crucial stage in the overall process of formulating and implementing government policy. It is at this stage that the various decisions made are translated into concrete actions to achieve policy objectives. The success of implementation is not only determined by the quality of planning but also depends heavily on the role of policy implementers, both working individually and in groups (Wahab, 2021). Implementers are the key actors ensuring that policies are implemented in accordance with established standards, mechanisms, and objectives. Their ability, commitment, and understanding of the policy's substance are important indicators of implementation effectiveness. Furthermore, inter-agency coordination, resource support, and social environmental conditions also influence how the policy is implemented in the field (Iswandi et al., 2021).

The implementation of the Disaster Resilient Village policy in West Bandung Regency has shown quite effective results, particularly in terms of establishing disaster preparedness institutions and increasing community knowledge about disaster mitigation. Steps such as the formation of village

volunteer teams, outreach on disaster threats, and conducting evacuation simulations demonstrate the local government's commitment to strengthening village capacity. However, implementation still faces several challenges. The most prominent obstacle is weak communication and coordination between relevant institutions, both at the village and district levels. Furthermore, limited human resources, budget, and a lack of disaster management tools prevent the Disaster Resilient Village program from running optimally. The existing bureaucratic structure and disposition also require refinement to serve as clearer guidance, particularly in addressing potential disasters related to the Lembang Fault activity.

Meanwhile, the Regional Government and the West Bandung Regency Regional Disaster Management Agency continue to address these shortcomings through various strategic measures. These efforts include accelerating disaster risk mapping, strengthening village human resource capacity through advanced training, and increasing collaboration with non-governmental organizations competent in disaster mitigation. However, the success of the Disaster Resilient Village program depends not only on the government but is also crucially determined by the level of community awareness and active participation. Without community support—whether through outreach activities, evacuation drills, or environmental monitoring—the Disaster Resilient Village program will struggle to achieve its primary goal of creating resilient, responsive, and disaster-prepared communities. Regarding the disaster mitigation implementation pattern in West Bandung Regency, all efforts have been made to the maximum in accordance with Law Number 24 of 2007 concerning disaster mitigation, although obstacles remain. The following is a discussion of the implementation of the Disaster Resilient Village Policy in Bandung Regency, including:

a. Communication

Communication is one of the biggest challenges in implementing the Disaster Resilient Village policy in West Bandung Regency. The communication flow within the pentahelix approach (government, community, academics, business, and media) is not yet optimal and consistent, resulting in frequent delays in information transmission to the public. Many residents in West Bandung Regency still hold the paradigm that disaster management is the exclusive domain of the government, resulting in low active participation in the formation and management of Disaster Risk Reduction forums at the village level. This misperception indicates that the dissemination of information regarding local community participation in disaster preparedness has not been effectively communicated.

Barriers to communication strategies are also closely related to technical operational issues, namely the incomplete mapping of disaster-prone areas across all villages in West Bandung Regency. Limited human resources assigned to the mapping team have resulted in many high-risk areas not being identified in detail. As a result, it is difficult for the West Java Regional Disaster Management Agency or village governments to develop specific communication messages tailored to local hazard characteristics (e.g., landslides in hilly areas vs. flooding in lowlands). This lack of accurate data weakens the substance of disaster mitigation communication, which should be the foundation of the Disaster Resilient Village program.

Finally, communication effectiveness is also eroded by the lack of a solid organizational structure in some villages in West Java. When a village does not have a formally organized disaster resilient village team or volunteers recognized within the village structure, the program is often run by only a handful of village implementers on an ad-hoc basis. This situation creates inconsistencies in information delivery and coordination, preventing important messages regarding early warnings or evacuation routes from being delivered quickly and evenly. Optimizing communication,

therefore, depends heavily on strengthening institutions and ensuring the availability of qualified human resources at the village level.

b. Resources

Limited human resources are one of the most significant challenges in implementing the Disaster Resilient Village policy in West Bandung Regency. The Disaster Resilient Village program relies heavily on the initiative and performance of field personnel, including village officials, local volunteers, and members of the Disaster Risk Reduction forum. However, the number of available personnel is often disproportionate to the size and complexity of the disaster threats faced. Beyond quantity, the quality and competency of human resources is also a concern. Many field implementers have not received comprehensive and ongoing disaster mitigation training, so their understanding of disaster management—from pre-disaster, during, and post-disaster—remains limited. This directly impacts the quality of contingency planning and emergency response at the village level.

Inadequate incentives also exacerbate this resource constraint. Disaster Resilient Village volunteers and program implementers often work based on humanitarian needs without adequate financial compensation or social security. This lack of clear incentives can undermine the motivation and long-term commitment of personnel, leading to high volunteer turnover. When trained volunteers resign, the Disaster Resilient Village program in that village must start the recruitment and training process from scratch, which is time-consuming and expensive and hinders program sustainability.

Structurally, this lack of resources creates vulnerabilities in the disaster preparedness system in West Bandung Regency. The Disaster Resilient Village program, which should serve as the vanguard in community-based disaster management, is not performing optimally. A larger budget allocation and policies that support the strengthening of local human resources, including the provision of certified training and equitable incentives, are needed. Without strong resource support, the vision of creating independent and disaster-resilient villages in West Bandung Regency will be difficult to achieve.

c. Disposition

The issue of disposition, or the placement of institutional responsibilities, presents a structural obstacle to the implementation of Disaster Resilient Villages in West Bandung Regency. In several villages, disaster mitigation programs operate without a binding formal bureaucratic structure, such as a Village Disaster Management Task Force or Disaster Preparedness Group, integrated into village governance. This lack of a clear disposition often results in the Disaster Resilient Village program relying solely on the personal initiative of the Village Head or the local Village Consultative Body, rather than being part of institutionalized village policy. As a result, the program's sustainability is vulnerable to changes in leadership or shifts in priorities at the village level.

This situation is exacerbated by the fact that the majority of field implementers are freelance volunteers and are not directly coordinated under the formal village government structure. While volunteerism in West Bandung Regency is quite high given the frequency of hydrometeorological disasters, their informal status often presents obstacles in the chain of command, resource mobilization, and reporting accountability. These volunteers may be highly dedicated, but without a clear mandate from the village government, they struggle to access village funds, training facilities, or even obtain the necessary legal recognition when coordinating with the Regional Disaster Management Agency of the Regency. This lack of formal coordination significantly reduces the effectiveness of disaster response at the community level.

d. Bureaucratic Structure

The problematic bureaucratic structure at the village level is a fundamental obstacle to ensuring the effectiveness and sustainability of the Disaster Resilient Village program in West Bandung Regency. In some villages, the implementation of this policy is hampered by the absence of a dedicated unit or section explicitly assigned to manage disaster risk. As a result, disaster management responsibilities tend to become additional tasks for village officials already burdened with other primary workloads, or are not institutionalized at all. The absence of a clear structure of responsibility within the village governance organization leaves the Disaster Resilient Village program without a legal basis and a definite budget allocation, resulting in sporadic and unplanned disaster preparedness initiatives.

The absence of a binding bureaucratic structure directly impacts the status and coordination of implementers in the field. Many personnel involved in disaster mitigation activities are simply freelance volunteers who have not been formally and directly coordinated by the village. While they play a vital role as frontline workers, this informal status presents significant challenges related to operational management. Volunteers often struggle to access village resources, such as operational funds or equipment, due to the lack of a legal framework or official assignment letter. This not only hinders efficient response during disasters but also complicates the ongoing mentoring and capacity building process for volunteers by the West Bandung Regency Regional Disaster Management Agency. The absence of a binding bureaucratic structure directly impacts the status and coordination of implementers in the field. Many personnel involved in disaster mitigation activities are simply freelance volunteers who have not been formally and directly coordinated by the village. While they play a vital role as frontline workers, this informal status presents significant challenges related to operational management. Volunteers often struggle to access village resources, such as operational funds or equipment, due to the lack of a legal framework or official assignment letter. This not only hinders efficient response during disasters but also complicates the ongoing mentoring and capacity building process for volunteers by the West Bandung Regency Regional Disaster Management Agency.

3.2 Disaster Preparedness Based on Local Wisdom in West Bandung Regency

Local wisdom plays a crucial role in disaster mitigation efforts. This concept refers to the distinctive characteristics of a community reflected in various aspects of their lives. Local wisdom encompasses values, norms, ethics, beliefs, traditions, and rules that are recognized and passed down through generations within a community (Pajarianto et al., 2022). More than simply knowledge about relationships between individuals, local wisdom also reflects a community's understanding of the interconnectedness between humans and nature, including how to maintain balance and create harmonious and sustainable relationships with the surrounding environment (Hidayati et al., 2020). Disaster preparedness for earthquakes and landslides caused by the Lembang Fault in West Bandung Regency integrates modern knowledge with Sundanese local wisdom passed down through generations. These traditional practices focus on a harmonious relationship between humans and nature to reduce disaster risk. These practices can be described as follows:

a. Recognizing Natural Signs

Traditional knowledge often includes a heightened sensitivity to environmental changes perceived as harbingers of disaster. For example, in some communities, unusual animal behavior (such as birds or reptiles migrating to higher ground before flooding), extreme changes in weather

patterns, or specific natural phenomena in a location are believed to signal impending danger. This local wisdom serves as a community-based early warning system that has existed for generations. Although the scientific mechanisms behind some of these "signs" are sometimes difficult to explain, these natural markers remain relevant and can be combined with modern knowledge to validate and strengthen collective community awareness in disaster-prone areas.

b. Sustainable Development Practices

In terms of infrastructure, local wisdom provides a blueprint for more earthquake-adaptive housing development, particularly in areas crossed by the Lembang Fault. Traditional Sundanese houses often use locally available lightweight materials such as wood, bamboo, and palm fibre. The construction techniques applied, such as the *umpak* system (stone foundations that do not rigidly bind the house pillars) and flexible dowel connections, allow the building structure to sway during shocks without experiencing fatal structural damage, unlike rigid reinforced concrete buildings which are prone to cracking and collapse.

c. Appropriate Land Use

Local wisdom practices consistently promote a harmonious relationship between people and the land they inhabit, reflected in the careful selection of settlement locations to avoid areas considered "forbidden" or naturally dangerous. Traditional communities often intuitively recognize and adhere to high-risk zones—such as flood-prone riverbanks, unstable steep slopes, or geological fault areas. This experiential spatial knowledge results in a natural land use system where vital activities like farming or building shelters take place in safe zones, while risky areas are left as open space or forest. This preventative approach, which prioritizes safety by not challenging nature, is now a fundamental principle in modern disaster mitigation spatial planning, where local governments identify Landslide Hazard Red Zones or Disaster-Prone Areas.

d. Knowledge Transmission Through Oral Tradition

The practice of knowledge transmission through oral tradition is a key pillar of disaster preparedness in West Bandung Regency, particularly in addressing the threat of Lembang Fault earthquakes and landslides. Essential knowledge about natural signs, such as unusual animal behaviour or changes in spring conditions before an earthquake, as well as the history of past disasters, is effectively preserved and disseminated through folklore, pantun, or the wise advice of local elders. This method of knowledge transmission has proven highly effective because it is delivered within the familiar and easily understood context of Sundanese culture, thus not only increasing the local community's disaster mitigation awareness but also strengthening collective memory and communal bonds in a shared effort to reduce disaster risk from generation to generation.

3.3 Evaluation of the Disaster Resilient Village Policy Based on Local Wisdom in West Bandung Regency

The West Bandung Regency Government implemented the Disaster Resilient Village program in response to the geographic vulnerability of its region, particularly the threat posed by the active Lembang Fault. This approximately 29-kilometer-long active fault traverses several densely populated districts and has the potential to trigger significant earthquakes with magnitudes up to 6.8, making it a local disaster mitigation priority. Case studies of Disaster Resilient Village implementation, such as in Kayu Ambon Village, Lembang District, demonstrate the program's crucial role in increasing the awareness and capacity of residents living in the fault's red zone. Through the Disaster Resilient Village

program, communities are trained to understand evacuation routes, prepare emergency kits, and conduct regular earthquake simulations. This effort aims to transform geological knowledge about the Lembang Fault into practical actions on the ground, although the challenge is ensuring the program's sustainability and the active participation of all community elements evenly along the fault line.

An evaluation of the effectiveness of the Disaster Resilient Village policy in the context of the Lembang Fault threat revealed the following:

a. Suboptimal Communication

An evaluation of the effectiveness of the Disaster Resilient Village policy in West Bandung Regency revealed that suboptimal communication is one of the main obstacles in mitigating the Lembang Fault threat. Ineffective information transmission between the Regional Disaster Management Agency (BPBD), village governments, and communities has led to gaps in understanding the risks at the grassroots level. This problem is not simply a lack of information, but also a lack of adaptive and structured delivery methods. As a result, understanding of specific mitigation measures for earthquakes caused by the Lembang Fault varies from village to village, hampering the development of a comprehensive disaster awareness culture.

Observations in villages along the Lembang Fault indicate that formal communication systems are often one-way and do not effectively reach all levels of society. Official village meetings tend to involve only representatives, and local early warning systems are often poorly maintained or lack public awareness. Interviews with village officials highlighted the difficulty in translating technical disaster language from the BPBD into simple, easily understandable language for residents. Meanwhile, residents themselves admit to receiving information more often from informal sources such as neighbors or social media, whose accuracy is sometimes questionable. Therefore, urgent improvements are needed to the Disaster Resilient Village program's communication mechanisms. Communication strategies must be more participatory, involve two-way interaction, and utilize informal channels that have proven effective within the local community. By ensuring that information about the Lembang Fault is conveyed clearly, consistently, and sustainably, it is hoped that the resilience of the community in West Bandung Regency in facing potential earthquake disasters can be significantly increased.

b. Socialization and Education

An evaluation of the effectiveness of the Disaster Resilient Village policy in West Bandung Regency shows that optimizing socialization and education is key to addressing the specific threat of the Lembang Fault, which has the potential to trigger destructive earthquakes. Current approaches tend to be generic and do not specifically target communities living along the fault line. A more focused approach is needed through formal and informal education, as well as existing community forums in villages. This aims to transform geological knowledge about the Lembang Fault into a practical understanding of self-rescue measures, evacuation routes, and family preparedness, with the hope of significantly improving community response when a disaster occurs.

Engaging the younger generation is also a crucial strategy in optimizing this socialization and education. Young people can act as effective information disseminators within families and peer communities, while ensuring the sustainability of future disaster mitigation programs. The integration of Lembang Fault mitigation materials into the local curriculum in schools in West Bandung Regency is supported by West Java Governor Regulation No. Law No. 1 of 2020 concerning Increasing the Cultural Capacity of Disaster-Resilient Communities can serve as a strong legal and structural foundation. Thus, educational efforts are not merely incidental but become an integral

part of community life, fostering a deeply rooted culture of disaster awareness in facing the threat of the Lembang Fault.

c. Funding Dependence

An evaluation of the effectiveness of the Disaster Resilient Village policy in West Bandung Regency in the context of the Lembang Fault threat indicates significant funding vulnerabilities. Several disaster mitigation programs, including outreach, training, and infrastructure procurement, remain heavily dependent on Village Fund allocations or external funding assistance. This financial dependency poses a risk to program sustainability; when the primary funding source ceases or is diverted to other village development priorities, the Disaster Resilient Village initiative could potentially stall. This is crucial given that the Lembang Fault threat is permanent and requires consistent, long-term mitigation efforts, not just seasonal projects.

To ensure the resilience of the Disaster Resilient Village program, a more innovative and independent financing model is needed, reducing absolute dependence on ADD. Alternative solutions include optimizing local resources, such as establishing Village-Owned Enterprises that allocate a portion of their profits to mitigation activities, or transparently managed local community-based fundraising. Furthermore, local governments, through the Regional Disaster Management Agency and related agencies, need to facilitate village access to sustainable funding schemes, such as grants from private institutions or partnerships with the private sector through corporate social responsibility programs. Diversifying funding sources is essential to ensure the Disaster Resilient Village program remains effective in building community resilience in the face of the Lembang Fault threat.

Furthermore, to increase the effectiveness of the local wisdom-based Disaster Resilient Village policy in West Bandung Regency, several steps are as follows:

a. Strengthening the Organizational Structure

To increase the effectiveness of the Disaster Resilient Village policy in West Bandung Regency, the first fundamental step is strengthening the organizational structure at the grassroots level. Evaluations have shown that currently, some villages still rely solely on casual volunteers, resulting in sporadic and unsustainable program operations. Ensuring that each village has a clear, competent Disaster Resilient Village management structure that is integrated with the village government and the local the Regional Disaster Management Agency is crucial. This structure must have a strong mandate, supported by a Village Head Decree, and staffed by personnel who have received adequate disaster mitigation training. This institutional strengthening serves as the operational backbone, ensuring systematic coordination, resource allocation, and long-term program sustainability, particularly in addressing the latent threat of the Lembang Fault.

Integration of this organizational structure with the village government and local the Regional Disaster Management Agency is also essential to ensure program synchronization from the local to the district level. This will minimize bureaucratic obstacles and communication issues previously identified as major weaknesses. An integrated structure allows for effective information flow, both from the Regional Disaster Management Agency to villages regarding early warnings and feedback from villages regarding specific needs on the ground. Furthermore, strengthening this organizational structure also opens up opportunities for more accountable and efficient funding management, reducing dependence on uncertain external funding by optimizing the planned allocation of village funds for sustainable disaster mitigation programs.

b. Formal Integration of Local Wisdom

The next crucial step in improving the effectiveness of Disaster Resilient Village in West Bandung Regency is the formal integration of Sundanese local wisdom into disaster mitigation policies. Although local wisdom, such as the value of mutual cooperation or spatial understanding of nature, has existed for generations, its application within Disaster Resilient Village's formal policy framework is still suboptimal and requires in-depth study. Identifying and documenting local knowledge—for example, natural markers of potential disasters or lifestyle practices aligned with the geographic conditions of the Lembang Fault—and then incorporating it into the disaster mitigation education curriculum or Village Disaster Management Plan will create an approach that is more relevant and easily accepted by local communities.

This integration process is also strongly supported by relevant legal frameworks, such as West Java Governor Regulation No. 1 of 2020 concerning Increasing the Cultural Capacity of Disaster-Resilient Communities in West Java Province. This regulation provides a legal framework for village governments and the Regional Disaster Management Agency to systematically incorporate cultural elements and local wisdom into every aspect of disaster management. Thus, the Disaster Resilient Village policy relies not only on formal standard operating procedures from the central government but is also enriched with an approach rooted in local values, ensuring that efforts to build community resilience in the face of the Lembang Fault threat are holistic, participatory, and sustainable.

c. Human Resource Capacity Building

Human resource capacity building is a crucial pillar for ensuring the success of the Disaster Resilient Village program in West Bandung Regency. Evaluations have shown that the competency of village officials and field volunteers still needs to be improved to effectively manage the risks of the Lembang Fault. Structured and ongoing training is essential, not only to provide technical disaster knowledge but also to build managerial skills in crisis coordination and communication. This training should be tailored to local hazards, encompassing both structural and non-structural mitigation aspects, and supported by modules that are easily applicable at the village level.

In addition to internal training, involving academics from renowned institutions such as Padjadjaran University or the Bandung Institute of Technology can provide significant added value through expert mentoring. Academics and researchers from these institutions often possess up-to-date research data on Lembang Fault activity and experience in disaster response in West Java. Their role can include providing accurate scientific data for the development of Village Disaster Management Plans, technical assistance in risk mapping, and regular evaluation of the effectiveness of the Disaster Resilient Village program. This partnership between local governments, villages, and academics creates synergy that ensures a mitigation approach based on scientific evidence and best practices, thus optimally enhancing community resilience to earthquake threats.

4. CONCLUSION

The implementation of the Disaster Resilient Village policy in West Bandung Regency has shown progress through the establishment of disaster preparedness institutions, volunteer training, and community capacity building. However, its effectiveness remains hampered by communication issues, limited resources, weak institutional disposition, and suboptimal bureaucratic structures at the village level. Disintegrated communication channels, limited risk mapping data, a lack of trained human resources, dependence on specific funding sources, and the lack of formal recognition of volunteers pose significant challenges to the program's sustainability. Efforts by the Regional Government and the

West Bandung Regency Disaster Management Agency have led to improvements, such as increased collaboration, accelerated risk mapping, and strengthened staff capacity. However, the full success of Disaster Resilient Village remains highly dependent on the support of a strong institutional structure, adequate resource allocation, and active community participation as the core of community-based disaster mitigation. Disaster preparedness in West Bandung Regency relies not only on modern knowledge but also on strengthening community resilience through local Sundanese wisdom passed down through generations. This local wisdom is reflected in sensitivity to natural signs, adaptive development practices that address earthquake risks, land selection and management in harmony with natural conditions, and the transmission of knowledge through oral traditions that maintain the community's collective memory of various disaster threats. The integration of local traditions and modern disaster science makes community preparedness more comprehensive, culturally rooted, and effective in reducing disaster risk in areas exposed to the Lembang Fault threat.

The effectiveness of the Disaster Resilient Village policy in West Bandung Regency in addressing the Lembang Fault threat is greatly influenced by the quality of communication, outreach, funding, and institutional capacity at the village level. Evaluations show that although Disaster Resilient Village has become an important instrument for improving community preparedness, its implementation still faces obstacles such as suboptimal communication, outreach that is not specific to the fault threat, and a high dependence on limited funding sources. Therefore, increasing Disaster Resilient Village's effectiveness requires strategic steps, including strengthening village organizational structures, formal integration of local wisdom into mitigation policies, and increasing human resource capacity through ongoing training and partnerships with academics. By making these improvements, Disaster Resilient Village can become a more holistic, adaptive, and sustainable approach in building the resilience of the West Bandung Regency community against the risk of earthquakes caused by the Lembang Fault.

REFERENCES

Abdurachman, W., & Nurliawati, N. (2022). Evaluasi Pengembangan Desa/Kelurahan Tangguh Bencana di Jawa Barat Menggunakan Analisis Biaya dan Manfaat. *Konferensi Nasional Ilmu Administrasi*, 6(1), 125-129.

Cahyono, S. A. T. (2018). Bertahan Hidup di Bawah Bayang-Bayang Bencana Kemampuan Kampung Siaga Bencana (KSB) dalam Penanganan Korban Bencana Alam. *Media Informasi Penelitian Kesejahteraan Sosial*, 42(1), 73-90.

Habibullah, H. (2013). Kebijakan Penanggulangan Bencana Berbasis Komunitas: Kampung Siaga Bencana Dan Desa/Kelurahan Tangguh Bencana. *Sosio Informa*, 18(2).

Hanif, M., Dewi, N. L. Y., Hidajad, A., Fikri, A., & Saleh, F. (2022). Menguatkan Kembali Penanggulangan Bencana Berbasis Masyarakat: Belajar dari Kearifan Lokal di Indonesia. *ijd-demos*, 4(4).

Hidayati, N. A., Waluyo, H. J., & Winarni, R. (2020). Exploring the Implementation of Local Wisdom-Based Character Education among Indonesian Higher Education Students. *International Journal of Instruction*, 13(2), 179-198.

Hijri, Y. S., Kurniawan, W., & Hilman, Y. A. (2020). Praktik Penyusunan Peraturan Desa (Perdes) sebagai Penguatan Desa Tangguh Bencana di Kabupaten Malang. *Amalee: Indonesian Journal of Community Research and Engagement*, 1(1), 1-11.

Iswandi, I., Ramadhani, P., Randa, M. G., & Nofrijon, N. (2021). Implementasi, Proses Kompleks, Dan Faktor-Faktor Pelaksanaan Kebijakan Pendidikan. *Jurnal Menata: Jurnal Program Studi Manajemen*

Pendidikan Islam, 4(1), 30-41.

Kinasih, F. A., Miladan, N., & Kusumastuti, K. (2023). Kajian risiko bencana gempa bumi akibat aktivitas Sesar Lembang di Kabupaten Bandung Barat. *Region: Jurnal Pembangunan Wilayah dan Perencanaan Partisipatif*, 18(2), 357-371.

Kusumastuti, A., & Khoiron, A. M. (2019). *Metode penelitian kualitatif*. Lembaga Pendidikan Sukarno Pressindo (LPSP).

Pajarianto, H., Pribad, I., & Sari, P. (2022). Tolerance between religions through the role of local wisdom and religious moderation. *HTS Teologiese Studies/Theological Studies*, 78(4).

Pakniany, Y., Tiwery, W. Y., & Rakuasa, H. (2022). Mitigasi Bencana Gempa Bumi Berbasis Kearifan Lokal di Desa Nuwewang Kecamatan Pulau Letti Kabupaten Maluku Barat Daya. *Dialektika: Jurnal Pemikiran Islam Dan Ilmu Sosial*, 15(1), 1-7.

Pratama, J. P., & Hiram, T. P. B. P. S. (2024). Manajemen Mitigasi Berbasis Kearifan Lokal Di Daerah Jawa Barat. *Jurnal Edukasi dan Multimedia*, 2(2), 42-52.

Puspitasari, A. E., Bima, D. P. S., & Dewi, T. P. (2018). Mitigasi bencana berbasis kearifan lokal di Desa Tieng, Kabupaten Wonosobo. *Jurnal Geografi Lingkungan Tropik*, 2(2), 42-49.

Putri, A., & Taqyuddin, T. (2022). Mitigasi Bencana Berbasis Kearifan Lokal. *Jurnal Kajian Ilmu Sosial*.

Ramadhan, T., Dewi, N. I. K., Minggra, R., Aryanti, T., Fitria, D., & Surasetja, I. (2022). Membangun Kesadaran Mitigasi Bencana Melalui Sosialisasi dan Edukasi Kerawanan Wilayah dan Bangunan di Jalur Sesar Lembang Desa Kertawangi, Kecamatan Cisarua, Kabupaten Bandung Barat. *Lentera Karya Edukasi*, 2(1), 49-56.

Rasmid, R. (2014). Aktivitas sesar lembang di utara cekungan bandung. *Jurnal Meteorologi Dan Geofisika*, 15(2).

Rismawati, R. (2019). Sesar Lembang: Potensi Bencana Di Kawasan Perkotaan Cekungan Bandung (Suatu Tinjauan Yuridis). *Creative Research Journal*, 5(01), 23-32.

Sabir, A., & Phil, M. (2016). Gambaran Umum persepsi masyarakat terhadap bencana di Indonesia. *Jurnal Ilmu Ekonomi Dan Sosial*, 5(3), 304-326.

Shalih, O., & Nugroho, R. (2021). Reformulasi kebijakan penanggulangan bencana di Indonesia. *Cakrawala: Jurnal Litbang Kebijakan*, 15(2), 2021.

Sugiyono, D. (2013). Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan R&D. Alfabeta.

Suparmini, S., Setyawati, S., & Sumunar, D. R. S. (2014). Mitigasi bencana berbasis kearifan lokal masyarakat Baduy. *Jurnal Penelitian Humaniora*, 19(1).

Wahab, S. A. (2021). *Analisis kebijakan: dari formulasi ke penyusunan model-model implementasi kebijakan publik*. Bumi Aksara.

Wibowo, E. A., & Satispi, E. (2017). Implementasi Undang-Undang Nomor 24 Tahun 2007 Tentang Penanggulangan Bencana di Provinsi Daerah Istimewa Yogyakarta. *Jurnal SWATANTRA*, 15(2).