

Mitigation of Psychological Impacts Caused by Landslide Disasters

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Abstract. The landslide disaster in Amanuban Village, Oebufu, caused significant losses, including the loss of land and homes, as well as damage to infrastructure. This study employs a case study approach. Data were collected through semi-structured interviews and document review, and then analyzed using thematic analysis. Based on the research findings, the community experienced psychological impacts in the form of stress and trauma. The disaster mitigation measures implemented included relocation, which involved providing relocation housing and moving residence; emotional support in the form of empowering fellow survivors; strengthening social cohesion through mutual aid and role-sharing; and enhancing disaster resilience through public awareness campaigns, outreach, education, disaster training, and disaster simulations. The objective of these mitigation efforts is to reduce the risk of loss of life, loss of property, loss of housing, and to prevent psychological impacts.

Keywords: Disaster mitigation, Landslide, Psychological impacts

Abstrak. Bencana tanah longsor di Kampung Amanuban, Oebufu, menyebabkan kerugian besar, termasuk hilangnya lahan dan tempat tinggal, serta kerusakan infrastruktur. Penelitian ini menggunakan pendekatan studi kasus. Data dikumpulkan melalui metode wawancara semi-terstruktur dan dokumentasi. Analisis menggunakan metode analisis tematik. Berdasarkan hasil penelitian, masyarakat mengalami dampak psikologis berupa stres dan trauma. Mitigasi bencana yang dilakukan adalah relokasi yang mencakup penyediaan rumah relokasi dan pemindahan tempat tinggal, dukungan emosional berupa memberikan kekuatan kepada sesama penyintas, penguatan motif sosial dengan gotong royong dan pembagian peran, dan peningkatan kemampuan menghadapi bencana melalui sosialisasi, penyuluhan, edukasi, pelatihan kebencanaan dan simulasi bencana. Tujuan mitigasi ini mengurangi risiko korban jiwa, kehilangan harta benda, kehilangan tempat tinggal dan mencegah dampak psikologis.

Kata kunci: Mitigasi bencana, Longsor, Dampak psikologis

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Introduction

Disasters and traumatic events significantly impact the physical, social, and psychological well-being of individuals and communities. The psychological impact stems from the fact that not everyone can accept the losses they experience. The burden experienced by victims can negatively affect mental health, particularly among those with poor stress management skills. Without good stress management and social support, individuals may develop mental health disorders (Andarmoyo, 2024; Anggereni & Yunita, 2023).

The psychological impact of disasters can vary from short-term to long-term. Short-term psychological impacts such as fear, acute anxiety, sadness, guilt, and a sense of emptiness are reported by some people, but these are not to be feared as they will dissipate over time. In the absence of intervention, these impacts have the potential to impede the capacity of survivors, their families, and communities to reconstruct their lives. Disasters can have a significant impact on reducing the quality of life, mental disorders, physical disorders, decreased endurance, and disruption of social relations (Wahyuni et al., 2023).

The Seroja storm, which occurred from March 29 to April 5, 2021, triggered subsequent disasters, including strong winds, storms, floods, landslides, and coastal erosion. These events caused damage to residential areas, disrupted access and housing functions, and increased the risk of future disasters, particularly for communities living along riverbanks. Various studies have shown that the psychological effects following disasters do not subside immediately but can emerge or persist in the long term, resulting in stress that may develop into post-traumatic stress disorder (Cahyani et al., 2023; Rizky et al., 2025).

The significant risk to mental health necessitates protective efforts, particularly for communities residing in landslide-prone areas. Research indicates that areas that have previously experienced landslides are at high risk of recurrence, highlighting the need for measures to protect, prepare, and enhance community preparedness (Lestari & Prasetyaningtiyas, 2025). Based on these considerations,

implementing mitigation strategies to prepare communities and increase disaster readiness, especially for those living and engaging in activities in hazard-prone areas, is essential (Pradipta et al., 2023).

Based on the results of observations and pre-research interviews on May 21, 2023, in Amanuban Village, Oebufu. It was found that the community did not know the early warning system, had the perception that the same disaster would not happen again, and had never participated in disaster training. The community felt anxious when strong winds occurred, and sometimes heard rumbling, so they experienced fear. Some residents were also forced to evacuate because their houses could not be repaired. Although the disaster occurred in 2021, various research findings and results from pre-research interviews indicate that post-disaster impacts and vulnerabilities can persist for some time, even years after the event. Therefore, this study remains relevant and important, particularly for examining the disaster mitigation measures implemented and their effect on survivors' psychological well-being.

Disaster mitigation carried out is structural, targeting physical development such as mapping residential areas, relocation and rehabilitation, as well as reducing landslides through reforestation, placing gabions on riverbanks, dredging rivers, and not throwing garbage on riverbanks. There is a lack of mitigation that impacts individuals' mental health. The type of mitigation to reduce the negative impact on mental health is non-structural, aimed at increasing community knowledge and individual capacity to deal with disasters. An effort is needed to reduce the impact of disasters, especially to prevent mental disorders in the future due to stress that is not handled properly. Psychological impact mitigation aims to ensure that people in risk areas are mentally prepared in the event of a disaster. With high psychological readiness, the community is expected to minimize the psychological impact (Simatupang, 2019).

Based on the description above, psychological impact mitigation should be carried out alongside physical mitigation implemented by the government, to protect the physical and mental well-being of people living in disaster-prone areas and those who have never experienced a disaster.

Methods

This research uses a qualitative case study approach to identify and describe the form of mitigation adopted by the community to address the psychological impact. This research was conducted by selecting a case to be studied and collecting data directly from research informants to obtain information on the issues to be discussed. In this case, the mitigation of psychological impacts carried out in Amanuban Village, Oebufo. The research subjects were selected by purposive sampling. Key informants are individuals with specialized knowledge, status, and certain communication skills who are willing to share what they know with researchers. Participants are 18-70 years old, male and/or female, have lived in the research location from before 2011 until are still living in the research location, are survivors of landslides in Amanuban village, and are willing to take the time to be interviewed.

The interview consisted of 3 (three) key informants and 8 (eight) participants. Data collection was conducted through semi-structured interviews using interview guidelines and documentation from reports and field documentation. Data analysis was carried out based on the steps of case study data analysis according to Creswell (2014), which includes six stages, namely organizing files for data, reading data and making initial codes, describing cases and their contexts, using categorical aggregation to create themes, using direct interpretation and developing naturalistic generalizations about lessons learned, and presenting an in-depth picture of the case using narratives and images. Data validity includes tests of credibility, transferability, and dependability. This method allows researchers to identify and describe disaster mitigation efforts undertaken by both the government and the community.

The validity of the data in this study was examined through three criteria: credibility, transferability, and dependability. Credibility was ensured by applying source triangulation, which involved comparing and verifying data obtained from multiple sources, including disaster survivors, village government officials, and the Regional Disaster Management Agency of Kupang City, with documentation, photographs, interview transcripts, and complemented by a member check process. Transferability was assessed based on the extent to which the research findings could be applied or generalized to other social contexts and situations. Meanwhile, dependability was tested through an audit of the entire research process to ensure the consistency and reliability of the data obtained.

Results

The results explain the informants' answers regarding the psychological impact of disasters on survivors and how to mitigate it. Researchers grouped the interview results into two main themes, namely the psychological impact of disasters on survivors (sub-themes: psychological impact during and after disasters) and efforts to mitigate the impact of disasters (sub-themes: relocation and risk reduction measures, emotional support, strengthening social motives, and increasing capacity to deal with disasters).

The Psychological Impacts of Landslide Disaster

The landslide disaster in Amanuban Village in 2021, caused by the Seroja storm, was the first such disaster in the area. This disaster damaged and rendered dozens of houses uninhabitable because they were in a red zone prone to landslides. Although it was recommended that they move to a safer place and relocation houses were provided, some people chose to stay in their old homes and commute between their new and old homes for various reasons.

In this study, the author will describe the psychological impact of natural disasters on survivors. The psychological impact represents one of the key disaster risks, alongside the loss of human life, environmental damage, and material losses. It is also recognized as a critical component within the rehabilitation and reconstruction

objectives formulated by the Regional Disaster Management Agency (BPBD) of Kupang City in response to the 2021 Seroja disaster (Badan Penanggulangan Bencana Daerah Kota Kupang, 2021). The author obtained information related to the impact of natural disasters through field interviews with informants. The researcher will explain these impacts as follows:

Psychological Impacts During Disaster

Disaster survivors usually experience intense and complex psychological reactions when a disaster occurs. Sudden disasters are not something anyone wants, but they can happen to anyone. Someone who experiences a sudden disaster will react with shock, confusion, freeze, and lose control. This was also felt by survivors of the landslide in the village of Amanuban. Survivors explained that the landslide was the first major disaster they had experienced. The psychological impact of the disaster disappeared sometime after the disaster.

Psychological Impact After Disaster

a. Trauma

Choosing to remain in survivors' old homes certainly poses the risk of experiencing the same natural disaster again. Natural disasters that occur suddenly and have a major impact cause trauma to individuals. The trauma experienced is the result of extraordinary events that threaten the physical well-being and self-esteem of individuals and are considered to cause death, insecurity, and helplessness when the event occurs. Survivors who experience trauma are those who have been directly or indirectly exposed to unusual events that cause fear that threatens the physical and mental well-being of individuals.

The trauma experienced by disaster survivors is due to the feeling that their lives are threatened, as they did when the disaster occurred. Based on the interview results, the trauma experienced by the community is characterized by feelings of fear, anxiety, uneasiness, and alertness to events that remind them of the disaster. This is because they do not know when a disaster will occur, especially during the rainy season or when the weather is extreme. Even though they have been relocated from

that place, they must return to their old homes for several reasons. The following is a picture of people who still return to their old homes even though their houses have been damaged. Here is an image of community members who have returned to their old homes despite the damage.



Figure 1. Survivors return to their old homes

Source: Researcher, 2024

a. Stress

Stress is defined as an environmental situation that a person feels is very stressful and directly experiences. For victims of natural disasters, stress can occur due to loss and the uncertainty after the disaster, such as loss of property, loss of shelter, and adjusting to a new place to live.

Based on interviews with research informants, landslide survivors experience stress due to the following reasons: survivors have not been able to adjust to their new place of residence. This is because survivors are often close to their old homes, their children attend school near their old homes, and their livelihoods are in their old homes. In addition, the demands of life are increasing, but the losses they have experienced make survivors worry about their children's future. One informant experienced stress to the point of being unable to sleep at night and resorted to alcohol. Another informant chose to cope with stress by accepting the situation and not dwelling on their feelings.

2. Mitigation of Psychological Impacts

Mitigation efforts aim to reduce disaster risk through physical development, awareness-raising, and capacity-building to respond to disasters. Psychological impact mitigation is carried out to reduce the psychological impact on survivors. In addressing the impact of disasters on mental health, social and psychological

interventions are needed. Interventions have been carried out to prevent impacts on mental health, including relocation, emotional support, strengthening social bonds, increasing disaster preparedness, and developing physical infrastructure.

Relocation and Physical Infrastructure Development

The impact of landslides on survivors is the loss of their homes. In Amanuban village, 160 households have been relocated because their homes were damaged and are located in a red zone prone to landslides. The loss of property can cause hardship for disaster survivors, so efforts are needed to prevent this impact. Meeting the need for safe housing can help reduce the sense of loss, while for communities that have not been relocated and are still in the red zone, evacuation facilities are provided.

Based on the results of interviews and data collection, 160 households were relocated to Manulai 2, of which 117 have received relocation houses, and 47 have not yet received them. The community that has not yet been relocated is still staying in their old homes, which have been repaired, while waiting for phase 2 of the relocation. This makes the community vulnerable to experiencing another landslide disaster. To protect the community and improve preparedness, the government, together with the Kupang City Disaster Management Agency, has built safety facilities in case of a disaster and to reduce the risk of disaster.



Figure 2. The relocation housing development in Manulai 2

Source: Researcher, 2024

The government's efforts to help survivors reduce the impact of disasters, restore their lives, and help survivors feel safe in disaster areas include providing relocation houses in Manulai 2 sub-district, building landslide mitigation facilities, and constructing evacuation facilities. Survivors provided with relocation houses are those whose homes were destroyed and who are in red zones prone to landslides. At

the same time, the community that still remains can find safe places and evacuation routes via the evacuation routes.



Figure 3. Gabions (mitigation facilities)

Source: Researcher, 2024



Figure 4. Evacuation Sign

Source: Researcher, 2024

Social Emotional Support

Social support is verbal and nonverbal information, in the form of advice, tangible assistance, or behavior provided by people who are familiar with the subject in the recipient's social environment, or in the form of presence or things that can provide emotional benefits, influencing the recipient's behavior. Social support can be provided by relatives, neighbors, coworkers, or friends with whom the individual interacts. Meanwhile, emotional support is an important aspect of helping disaster survivors recover, both in the early stages and in the long term. Emotional support can help victims overcome fear, anxiety, and trauma. Emotional support can take the form of expressions of empathy, attention, affection, appreciation, and togetherness.

This support provides a sense of security and comfort, a feeling of belonging and being loved, in a situation a person is experiencing. Therefore, in conclusion, emotional social support during a disaster refers to assistance that involves expressions of empathy, concern, and attention given to individuals to provide a sense of security and support their emotional well-being, thereby helping individuals

cope with stress and psychological challenges. Social support is considered an integral part of the government's reconstruction and rehabilitation efforts, specifically targeting humanitarian dimensions.

Strengthening Social Motives

Social motives are learned through contact with other people, and the individual's environment plays an important role. Social motives in the context of disasters determine how communities interact, cooperate, and build social solidarity as they face, manage, and recover from the impacts of disasters. Activities aimed at strengthening social motivation involve community groups or communities, such as communication among residents, training programs involving residents and surrounding communities, community service, group discussions, and collaborative reconstruction efforts. The aim is to strengthen relationships between community members and increase a sense of togetherness and resilience within the community. Disaster impact mitigation through the strengthening of social motives aims to prevent negative impact on individuals' mental health by fostering social interaction and strengthening surrounding communities.

Increasing Disaster Preparedness

Increasing the community's capacity to respond to disasters is a crucial effort aimed at mitigating the impact of disasters. The objective of this initiative is to equip the community with a better understanding of disaster risks, preventive measures, and appropriate response actions during a disaster event.

The capacity-building efforts in the Amanuban Village involved disaster training facilitated by the Regional Disaster Management Agency (BPBD) of Kupang City. The training took place in RW 003, an area prone to landslide hazards. The activities included a Communication, Information, and Education (KIE) session held from September 28-30, aimed at informing the community about the disaster risks in their local area. This was followed by a post-training drill and disaster simulation on October 1, 2024, which involved around 300 residents living along the riverbanks. This initiative was organized by the Prevention Section of BPBD Kupang City, and

the materials covered disaster risks not only for the residents of Amanuban but for the entire Kupang City community (Badan Penanggulangan Bencana Daerah Kota Kupang, 2021).



Figure 5. Disaster Simulation in Amanuban Village

Source: Researcher, 2024

Discussion

This section discusses the psychological impact of the landslide disaster on the community and the disaster mitigation efforts implemented in Amanuban Village, based on the study's results. The landslide disaster that occurred in Amanuban Village in 2021 was a consequence of the Seroja storm, which caused severe damage to housing, loss of property, and destruction of infrastructure. The sudden onset of the disaster left community members in shock, panic, fear, and confusion. Those who witnessed the chaotic situation during the disaster reported feelings of despair and helplessness as they saw their homes damaged or destroyed by the landslide. Such reactions of shock, panic, fear, and confusion are typical psychological responses exhibited by survivors during a disaster event. These reactions are considered normal as they represent a natural response to extraordinary life experiences.

For some individuals, these psychological responses may subside over time; however, for others, the reactions may persist and develop into psychological disorders that interfere with daily functioning. Previous studies have identified various post-disaster psychological impacts among survivors, including trauma-related behaviors such as excessive anxiety, panic attacks, and fear. In addition, survivors often experience depression and symptoms of post-traumatic stress

disorder (PTSD). (Masrukin, 2020; Mutianingsih & Mustikasari, 2019; Thoyibah et al., 2019).

Communities that continue to reside in disaster-prone areas remain at a high risk of experiencing recurrent landslides. During periods of extreme weather, participants reported feelings of fear, anxiety, vigilance, and restlessness as memories of the previous disaster were reactivated. Everly et al. (as cited in Arsih et al., 2022) explain that re-experiencing traumatic events through images, thoughts, or memories—as if reliving the disaster—is a common symptom of trauma. Such trauma arises because survivors were directly exposed to the disaster event, which elicited feelings of fear, anxiety, and helplessness stemming from the perception of physical and psychological threat.

The trauma symptoms identified in this study are consistent with those associated with PTSD, particularly hyperarousal symptoms, which reflect heightened vigilance toward both direct and indirect stressors reminiscent of the traumatic experience. Although interview results revealed that survivors claimed these symptoms did not significantly interfere with their daily activities, these conditions nonetheless warrant attention from both the surrounding community and the government. Previous research has shown that individuals who continue to reside in high-risk disaster zones are more vulnerable to psychological disturbances that negatively affect overall well-being.

The psychological impacts experienced by survivors were also attributed to feelings of loss, including the loss of property and uncertainty about their future. Informants reported losing their land, which had previously served as their primary source of livelihood. As a result, their future plans could no longer be realized. Although the government provided relocation housing, these houses could not accommodate all family members, which in turn caused stress.

This stress led to sleep disturbances and, eventually, to the use of alcohol as a coping mechanism, even among individuals who had not consumed alcohol prior to the disaster. The findings of this study are consistent with those of Ueda et al. (2022),

who found that some individuals, after experiencing a disaster, develop stress and begin to use alcohol as a means of coping with post-disaster stress and psychological effects, despite having no prior history of alcohol use. Participants reported using alcohol to deal with insomnia and stress caused by uncertainty, economic difficulties, trauma symptoms, and the challenges of relocation. Lazarus and Altman describe this type of behavior as maladaptive coping, which includes the use of substances to avoid or suppress sensations of stress and sleep disturbance (Matei-Mitacu, 2024).

The stress experienced by community members was also influenced by their emotional attachment to their place of residence and the life changes that required survivors to relocate from their original homes to the relocation area in Manulai 2. Altman and Low (as cited in Ujang & Zakariya, 2018) define place attachment as a positive emotional bond that individuals develop with a specific location or living environment. This attachment is associated with feelings of comfort, safety, belonging, of residence and social connectedness. Altman (1990) found that individuals with strong attachment to their homes tend to choose to remain in place, which in turn increases their perception of risk and emotional distress (including fear and anxiety about potential damage) when living within a high-risk or "red zone" area. Therefore, for residents who prefer not to relocate, alternative strategies to ensure community safety can be considered. These include strengthening house foundations, providing adequate evacuation facilities, and developing infrastructure to reduce landslide risks. Such measures can help minimize future damage and losses.

The post-disaster situation rendered the affected community increasingly vulnerable to psychological symptoms. The psychological effects experienced by survivors may emerge during the disaster itself and persist throughout the individual's lifetime. Given the extensive social, economic, and psychological consequences of such disasters, it is essential to implement effective strategies for disaster prevention and risk reduction. Disaster mitigation efforts are particularly crucial in high-risk areas, with the primary objective of protecting communities and

minimizing potential harm. Rahmat (2024) explains that, from a psychological perspective, disaster prevention and preparedness involve providing clear and accurate information about the disaster, engaging communities in emergency response planning, and delivering training programs to strengthen emergency response skills.

In this study, the researcher identified five key themes related to community-based disaster mitigation efforts: relocation and the development of evacuation facilities, social-emotional support, the strengthening of social motivation, and the enhancement of disaster response capacity. Disaster mitigation is defined as a series of efforts aimed at reducing disaster risks through both physical development and awareness-building activities that enhance the capacity to face disasters.

Based on the data analysis, disaster mitigation in Amanuban Village was found to be community-centered, involving all levels of society in the mitigation process—particularly those who continued to reside in landslide-prone areas. Adilah et al. (2022) and Nursyida (2024) found that community-based disaster mitigation is more effective and contributes significantly to disaster risk reduction through community participation, preparedness, and active engagement. The *social identity theory of crisis*, as proposed by Tajfel and Turner (Turner et al., 2020), suggests that social behavior during crises is strongly influenced by group identity.

In such situations, social solidarity arises from a shared sense of belonging among affected individuals, motivating them to participate in collective mitigation efforts. Communities that share a common identity and sense of collective suffering are more cooperative and display higher compliance with disaster response instructions. Social identity also plays a crucial role in preventing panic and strengthening cooperation during emergencies. Cruwys et al. (2024) demonstrated that social identity serves as an important source of psychological resilience among survivors. Those who can develop a shared group identity after a disaster tend to have better mental health, exhibit more adaptive responses during crises, and show greater capacity for post-disaster adjustment.

The first psychological mitigation strategy implemented immediately following the disaster was social-emotional support from the surrounding environment. This form of assistance involves psychological and emotional reinforcement provided by others, including family, friends, neighbors, volunteers, or professionals. Such support is critical, as disaster survivors experience the loss of property, a sense of insecurity, shock, panic, and psychological trauma. Support from government authorities and community leaders often takes the form of being supportive and delivering clear, calm information about ongoing disaster management, thereby preventing mass panic.

In addition, family and friends contribute by showing empathy and fostering a sense of kinship. Research by Tukan et al., (2025) indicates that social support is a crucial factor in enhancing resilience, helping survivors feel less isolated, and facilitating adaptation. Therefore, post-disaster intervention programs should incorporate social support components to strengthen community resilience.

Religious support also plays a significant role. Suprpto & Huda (2020) demonstrated that disaster experiences often lead to changes in religious practices, with religiosity serving as a source of strength that enables survivors to better cope with post-disaster trauma. Moreover, disasters often foster closer bonds among community members. Nurdin (2024) found that post-disaster recovery that incorporates religious elements supports both individual and community resilience, while also increasing social motivation and participation in mitigation activities. Consequently, integrating religious practices into disaster mitigation strategies is recommended.

The Kupang City Government, in response to the disaster, has implemented various measures to assist the community in recovering from the landslide-affected areas of Amanuban Village. One of these measures is providing relocation housing for residents living in red-zone areas prone to landslides. Relocation is a government effort aimed at reducing disaster risk and assisting the community in restoring their lives by moving them to safer locations. It is a form of rehabilitation and

reconstruction, executed in the post-disaster phase following Tropical Cyclone Seroja, and planned by the Kupang City Regional Disaster Management Agency (BPBD). Coordination between BPBD and relevant governmental and sectoral institutions was conducted after damage and loss assessments (BPBD Kota Kupang, 2021).

Properly executed relocation can positively impact community life by enhancing safety, social and economic welfare, quality of life, social solidarity, and optimism for the future. However, relocation can also have negative consequences on mental health due to loss of livelihood, distance from the previous home, separation from neighbors and schools, and land or housing ownership issues.

Deng et al. (2024) identified three factors contributing to stress among relocated survivors: environmental factors (housing quality and infrastructure), socio-cultural factors (community adaptation, coping capacity, and preparedness), and family socioeconomic factors (income, relocation distance, and relocation duration). These challenges may lead to economic instability, changes in family dynamics, and disconnection from land and community. Although relocation provides safety, it may not fully meet survivors' needs and could affect overall well-being.

In contrast, Burrows et al. (2021) reported that relocation following landslides could improve economic stability, optimism, and community closeness, thus enhancing overall welfare, although both studies agree that relocation increases a sense of safety. Therefore, relocation planning should involve survivors, incorporating social and economic considerations, rather than solely focusing on providing safety and housing.

Communities that choose to remain in disaster-prone areas require protection for their mental health by being prepared for potential risks. This responsibility is shared among the government, local communities, and social institutions. Collaborative efforts have been made to enhance community safety, including the construction of landslide risk reduction facilities, evacuation infrastructure, public

training, and the establishment of committees responsible for monitoring disaster signs, providing alerts, and guiding residents to safe locations during emergencies.

Communities equipped with knowledge, adequate evacuation facilities, and clear procedures, along with trusted personnel in charge, can better manage their actions during emergencies. This reduces anxiety and panic, allowing residents to remain calmer. Wungo et al. (2024) emphasize the importance of integrating structural and non-structural disaster mitigation measures, where structural mitigation supports disaster management stages, and non-structural measures aid post-disaster recovery, highlighting the essential role of government in sustaining effective mitigation strategies.

In Amanuban Village, community-based disaster mitigation actively involves residents in planning and implementation, even though relocation policies have not been fully realized, leading some residents to remain in their original homes located in high-risk areas. These residents choose to stay despite ongoing anxiety due to unpredictable land movements, particularly during extreme weather events, emphasizing the need for continuous monitoring and supervision of landslide-prone zones.

It is noteworthy that psychological support services provided by professional psychologists were not found in this context; interventions were primarily delivered by government authorities and local community members. Additionally, disaster preparedness training occurred three years after the landslide event, whereas such programs should have been conducted both prior to the disaster, after risk identification, and in the post-disaster phase to improve community readiness.

According to the United Nations Office for Disaster Risk Reduction and the Indonesian National Disaster Management Agency (BNPB) Regulation No. 4 of 2008 on Guidelines for Disaster Management Planning, disaster management comprises three main phases:

1. Pre-disaster (mitigation and preparedness): Activities such as socialization, training, and simulations to enhance community capacity in facing potential hazards.
2. During the disaster (emergency response): Focused on life-saving measures, evacuation, and meeting basic needs.
3. Post-disaster (rehabilitation and reconstruction): Educational activities conducted within 3–12 months post-disaster to strengthen recovery capacity and restore community preparedness.

In the case of Amanuban Village, landslides were not the primary focus of the government's response to Cyclone Seroja, being considered a consequence of prolonged rainfall in Kupang City, resulting in insufficient consideration of landslide risk in the initial disaster mitigation planning. Proactive consideration of landslide risks should have been integrated from the outset to ensure comprehensive disaster preparedness.

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Based on the findings of this study, it can be concluded that the forms of disaster mitigation implemented by and within the community include the provision of relocation housing and the adoption of relocation policies to address survivors' needs for safe housing and minimize future disaster risks. Emotional support plays an essential role in fostering psychological calm and helping survivors navigate the post-disaster recovery process. The strengthening of social motives contributes to enhancing solidarity, promoting collective risk reduction, and building community resilience. Furthermore, capacity building for disaster preparedness was achieved through community awareness campaigns, public outreach, education, disaster preparedness training, and simulation exercises conducted by the Kupang City Regional Disaster Management Agency (BPBD) over four days, from 27 September to 1 October 2024, in Amanuban Village.

Suggestion

It is recommended that government agencies, particularly disaster management bodies such as BPBD, integrate social and economic considerations into their decision-making processes to ensure that post-disaster recovery does not adversely affect the livelihoods of affected populations. Furthermore, ongoing community-based disaster mitigation programs should be strengthened to foster resilience and minimize mental health risks among survivors. To ensure the effectiveness of disaster preparedness initiatives, it is important to implement continuous, community-driven training and awareness programs. This will empower residents in disaster-prone areas to take proactive measures to safeguard their health and property, while also strengthening community bonds.

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