

## Public Perception of Earthquake and Tsunami Disaster Management in Tanjung Padang Village, Sirenja District, Donggala Regency

Poniman<sup>1</sup>, Ince Rahmi<sup>2</sup>, Helvie Etma Wati Gae<sup>3</sup>, Ani Maryani<sup>4</sup>, Zhanaz Tasya<sup>5</sup>, Budiman<sup>6</sup>

<sup>1234</sup> Mahasiswa Prodi Magister Kesehatan Masyarakat, Universitas Muhammadiyah Palu

<sup>5</sup> Bagian Epidemiologi Universitas Muhammadiyah Palu

<sup>6</sup> Bagian Kesehatan Lingkungan Universitas Muhammadiyah Palu

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Corresponding Author:

Poniman

[ponimansyifa@gmail.com](mailto:ponimansyifa@gmail.com)

**Abstract:** This study aims to explore the perceptions of the Tanjung Padang Village community, Sirenja District, Donggala Regency, regarding earthquake and tsunami disaster management. A qualitative approach was used, using the Focus Group Discussion (FGD) method, involving 10 participants, including the Village Head, Hamlet Head, Posyandu (Integrated Service Post) cadres, LPM (LPM) members, community leaders, and village midwives. The results show that community perceptions of disasters vary, with most viewing them as fate, while others are beginning to understand the importance of mitigation. Technical knowledge related to disaster preparedness is still limited, and an adequate early warning system is not yet available. However, the community showed high enthusiasm for participating in disaster training and has social potential in the form of mutual cooperation that can be developed as a local strength. This study highlights the importance of community involvement and strengthening local capacity in community-based disaster management.

**Keywords:** Public perception, disaster, preparedness, community

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## INTRODUCTION

Indonesia is known as one of the countries with a high level of vulnerability to natural disasters, especially earthquakes and tsunamis, because it is geographically located in the Ring of Fire or Pacific Ring of Fire area (Priti Singh, 2025). This region is at the meeting point of three major tectonic plates: the Indo-Australian plate, the Eurasian plate, and the Pacific plate, which causes intense seismic and volcanic activity. This condition makes Indonesia highly vulnerable to various types of geological disasters, including tectonic earthquakes, which are often followed by tsunamis. This vulnerability not only impacts the physical aspects but also has serious implications for life safety, infrastructure damage, and the social and economic resilience of communities in affected areas (Patria & Putra, 2020).

Donggala Regency is one of the areas in Central Sulawesi Province that was significantly impacted by the earthquake and tsunami disaster that occurred in 2018 (Widiyanto et al., 2019). One of the most severely affected villages was Tanjung Padang Village, located in Sirenja



District. This village suffered significant infrastructure damage, including homes, public facilities, and road and communication access. In addition to material losses, the disaster also left deep psychological trauma for the community, given the high number of casualties and the evacuation process, which took place under emergency conditions with minimal coordination. The village's geographical location on the coast and close to the Palu-Koro fault makes it highly vulnerable to similar disasters in the future. Therefore, understanding community perceptions in this area is crucial for formulating more effective, locally-based disaster management and mitigation strategies (Jaya et al., 2019).

Even though major disasters have occurred and had widespread impacts, the level of community preparedness at the local level is still relatively low. (Ryan et al., 2020) This lack of preparedness is caused by various factors, one of which is limited access to accurate and ongoing disaster information. Furthermore, education on disaster mitigation and management has not reached all levels of society equally, especially in remote areas like Tanjung Padang Village. Outreach and training activities that should be conducted routinely tend to be sporadic and not integrated into the village government system. (Daimon et al., 2023).

This is exacerbated by the lack of active community involvement in the planning and implementation of disaster mitigation programs, resulting in strategies often not tailored to local needs and conditions. The lack of a community-based approach leaves communities unprepared to respond effectively and coordinated to emergencies. Therefore, building community resilience through active participation, ongoing education, and strengthening local institutions is a crucial aspect of efforts to improve preparedness for future disasters. (Pandey, 2019).

Public perception plays a crucial role in determining how individuals and communities respond and behave in disaster situations. This perception encompasses the public's perspectives, beliefs, and understanding of disaster threats, risk levels, and the effectiveness of available mitigation measures. (AlQahtany & Abubakar, 2020) When public perceptions align with scientific information and a risk-based approach, disaster responses tend to be more focused, rapid, and appropriate.

Conversely, misperceptions such as viewing disasters as mere fate or as a once-in-a-lifetime occurrence can foster a sense of resignation, hinder preparedness efforts, and weaken participation in mitigation programs. In this context, understanding public perceptions is a crucial foundation for policymakers and disaster management practitioners to design more adaptive, communicative, and contextual interventions. Without addressing this perceptual dimension, efforts to improve community preparedness tend to be ineffective and less sustainable. (Azad et al., 2019).

The lack of participatory assessments in disaster research remains a weakness in developing mitigation strategies based on local needs and realities. Most existing studies tend to be technocratic, focusing on statistical data, spatial models, or top-down approaches from formal institutions, while the voices of communities, especially those at the village level after a disaster, are often overlooked. Yet, local communities possess contextual knowledge, empirical

experience, and local wisdom that are highly relevant for inclusion in the planning and evaluation of disaster management programs. Participatory approaches, such as Focus Group Discussions (FGDs), allow researchers to explore community perceptions, narratives, and aspirations in greater depth and dialogue.(Scheelbeek et al., 2020)Unfortunately, this approach is rarely applied systematically, especially in disaster-affected areas like Tanjung Padang Village. Therefore, research using a participatory approach is crucial for enriching understanding of local dynamics and increasing the effectiveness of inclusive and sustainable disaster interventions.(Ngulube et al., 2024).

The purpose of this study is to explore and understand in-depth the perceptions of the community of Tanjung Padang Village, Sirenja District, Donggala Regency, regarding the earthquake and tsunami disaster management efforts they experienced. This study seeks to uncover how the community interprets the threat of disasters, the actions they take in response to emergency situations, and the extent to which they are involved in existing mitigation programs. Furthermore, this study also aims to identify various challenges faced by the community in building an effective preparedness system, including limited information, education, and institutional support. Furthermore, this study explores local potential that can be empowered, such as social capital, local wisdom, and community structure, as a foundation for forming a community-based disaster management approach. Thus, the results of this study are expected to form the basis for the development of a more participatory, contextual, and sustainable disaster management strategy at the village level.

Most research on disaster management in Indonesia still focuses on technical, institutional, or government policy aspects, thus under-representing social aspects and community perceptions, particularly at the village level. The approaches used are generally quantitative and macro, without involving local communities in a participatory manner. Yet, community perception is a crucial factor influencing disaster preparedness and response. Furthermore, previous studies tend to overlook the strategic role of local figures such as village heads, integrated health post (Posyandu) cadres, community-based organizations (LPM), and community leaders in shaping community understanding and actions in the face of disasters.

In addition to the limited community-based qualitative approaches, there is limited research exploring the potential of local values such as mutual cooperation, social solidarity, and traditional wisdom in disaster mitigation. Yet, these values can form an important foundation for building a community-based disaster management system. Therefore, this study aims to fill this gap by examining community perceptions in depth through focus group discussions (FGDs) and uncovering the role of local actors and social capital as crucial elements in building contextual, inclusive, and sustainable disaster preparedness.

This research offers a novelty through a community-based participatory approach to directly understanding community perceptions post-disaster, using the Focus Group Discussion (FGD) method involving various elements of the village community such as the village head, community leaders, integrated health post (Posyandu) cadres, LPM (Lembaga Masyarakat

Pemberdayaan Masyarakat), and village midwives. Unlike previous studies that were generally quantitative or institutionally oriented, this research specifically explores the local socio-cultural dimensions that shape how communities understand, respond to, and interpret disasters (Carmen et al., 2022). The findings contribute to the development of disaster mitigation strategies that are more contextual, adaptive, and rooted in local values and the active role of community actors, as an alternative to the top-down approach that has been dominant in disaster policy.

## METHODOLOGY

This study used a qualitative approach with a Focus Group Discussion (FGD) method to explore community perceptions regarding earthquake and tsunami disaster management in Tanjung Padang Village, Sirenja District, Donggala Regency. This approach was chosen because it allows researchers to deeply understand the views, experiences, and practices of the community in facing and managing disasters. The research location is in Tanjung Padang Village, which was chosen purposively because it is an area directly affected by the disaster and has geographical and social characteristics relevant to the research focus. Participants in the FGD were also selected purposively based on their involvement and roles in the community, particularly in disaster management activities. FGD participants consisted of the Village Head (1 person), Hamlet Head (1 person), Posyandu Cadres (2 people), members of the Community Empowerment Institution/LPM (2 people), Community Leaders (2 people), and Village Midwives (2 people), so that the total number of participants was 10 people who were considered to have relevant knowledge, experience, and perspectives on the issues studied. The FGDs were conducted in an open and conducive atmosphere, guided by a moderator and a note-taker, lasting 1.5 to 2 hours, using a discussion guide developed based on the research problem formulation. The entire discussion process was recorded (with the consent of the participants) and transcribed for analysis. The data analysis technique used thematic analysis, namely by identifying, grouping, and interpreting the main themes that emerged from the discussion results, with data validity maintained through source triangulation techniques and discussions between researchers.

## RESULTS AND DISCUSSION

The research results show that the Tanjung Padang Village community's perceptions of the earthquake and tsunami disaster remain diverse. Most residents view the disaster as fate or God's will, while others are beginning to recognize the importance of disaster preparedness and knowledge. Community technical knowledge remains low; most have never participated in evacuation training or simulations, and they are unfamiliar with evacuation routes and emergency response procedures. Furthermore, the village lacks a formal early warning system such as sirens or emergency communication devices, forcing residents to rely solely on information from social media or rumors, which are not always accurate.

On the other hand, this study found that local figures such as village heads, hamlet heads, integrated health post (Posyandu) cadres, and community leaders play a crucial role as sources of information and motivators of collective action during disasters. The community's reliance on these figures demonstrates the importance of their empowerment in mitigation programs. The community demonstrated high enthusiasm for participation in disaster training if properly facilitated. Local values such as mutual cooperation and social solidarity remain strong and have the potential to become key social capital in building a contextual and sustainable community-based disaster management system.

Table 1. Summary of FGD Findings related to Disaster Management Perceptions and Practices

| Aspects Studied                           | Key Findings                                                                 | Information Source (FGD Participants)                        |
|-------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>Perception of disaster</b>             | Disasters are considered fate; some understand the importance of mitigation. | Village Head, Community Leader, Integrated Health Post Cadre |
| <b>Disaster technical knowledge</b>       | Low; there has never been any evacuation training or simulation              | LPM, Village Midwife, Posyandu Cadre                         |
| <b>Community preparedness</b>             | Minimal; not all residents know evacuation routes and safe points            | Hamlet Head, Community Leader                                |
| <b>The role of local figures</b>          | Very powerful as a source of information and direction during a crisis       | Village Head, Hamlet Head, Community Leader                  |
| <b>Early warning system</b>               | Not officially available; information is informal                            | All participants                                             |
| <b>Community expectations</b>             | Want regular disaster training and community-based warning systems           | All participants, especially village cadres and midwives     |
| <b>Local wisdom and social solidarity</b> | Mutual cooperation remains strong as a post-disaster relief mechanism.       | Community Leaders, LPM, Posyandu Cadres                      |

*Source: 2025 Data Processing Results*

Table 1 shows the findings from focus group discussions (FGDs) involving various community elements in Tanjung Padang Village, Sirenja District. This table summarizes community perceptions and practices regarding earthquake and tsunami disaster management.

Some important things reflected in the table include:

1. Public perceptions of disasters are still varied, with the majority viewing disasters as God's will that cannot be prevented, although some are beginning to understand the importance of preparedness and mitigation.
2. Technical knowledge and community preparedness remain low. The majority of residents have never received disaster training, are unfamiliar with evacuation routes, and are unfamiliar with emergency response simulations.
3. Local figures play a central role, particularly village heads, hamlet heads, and community leaders. They are considered the primary sources of information during a disaster.

4. An early warning system is not yet officially available in the village, so residents rely on information from social media, messages between residents, or natural signs.
5. Communities show enthusiasm to be actively involved in disaster training if facilities, training and support are provided by external parties (government or non-governmental organizations).
6. Local values such as mutual cooperation and social solidarity are key strengths in post-disaster recovery efforts. This local wisdom has the potential to be developed as the foundation for a community-based mitigation system.

Overall, the results of this FGD emphasized the importance of a participatory and locally-based approach to disaster management. Involving community leaders, strengthening community capacity, and developing adaptive early warning systems are key to increasing village resilience to future disasters.

### **Variations in Perceptions of Disaster Risk**

Variations in community perceptions of the risk of earthquake and tsunami disasters in Tanjung Padang Village show a diversity of perspectives influenced by factors of experience, level of education, and social position in the community (Benazir et al., 2023). Some people tend to have a fatalistic view, viewing disasters as an unavoidable act of nature or destiny, thus not requiring anticipatory action. This mindset is generally found in communities with limited access to disaster information and education. On the other hand, there are also individuals or groups who understand disasters as part of the natural cycle whose impact can be predicted and minimized through knowledge, preparedness, and preventive measures. This perception is more common among those who have been involved in disaster training or hold strategic roles in the community, such as health cadres or village officials (Xi et al., 2019). This difference in perception is an important indicator for mitigation program designers, because it shows that the risk communication approach must be adapted to the social characteristics and disaster literacy levels of each community group so that the strategies implemented can be accepted and implemented effectively (Renn, 2020).

### **Lack of Technical Knowledge about Disaster Management**

The lack of technical knowledge about disaster management among the Tanjung Padang Village community was a key finding in the focus group discussions (FGDs). Most participants reported having never received formal training on evacuation, disaster simulations, or emergency response procedures (Erniwati et al., 2023). Public knowledge about evacuation routes, safe assembly points, and self-rescue procedures remains very limited, and tends to be informal and passed down through generations. This lack of knowledge creates high vulnerability, especially in emergency situations where reaction time is crucial for safety. This situation reflects a serious gap in the distribution of disaster information and education at the local level. The lack of initiative from relevant parties to conduct outreach and community empowerment further widens the preparedness gap. Therefore, systematic and sustainable interventions are needed in the form of training, simulations, and the development of participatory risk maps, so that communities have the technical and psychological tools to face disasters in a more structured and effective manner (Hancock, 2023).

### **Dependence on Community Leaders and Village Government**

Community dependence on community leaders and village government officials during disasters is a prominent phenomenon in Tanjung Padang Village. FGD results indicate that residents tend to wait for instructions or direction from the village head, hamlet head, or religious leaders before taking any





rescue action. These local leaders are viewed as authoritative figures and trustworthy guardians of social stability in emergencies. While this demonstrates strong social cohesion and trust in local leadership, excessive dependency also carries potential risks. If these leaders are not present or do not have adequate emergency response capacity, the community response can be slow, or even uncoordinated. This dependency highlights the need to strengthen the capacity of community leaders and empower individuals and families to make quick, independent decisions in the face of disasters. Therefore, disaster training targeting both community leaders and all community members is crucial for creating a more resilient and responsive community-based preparedness system (Hm Chotib et al., 2024).

### **Lack of Infrastructure and Early Warning Systems**

Lack of infrastructure and early warning systems is one of the main obstacles in disaster management efforts in Tanjung Padang Village (Sufri et al., 2020). At the time of the research, this village did not have warning systems such as evacuation sirens or an integrated emergency communications system. In critical situations, residents rely solely on informal information dissemination through social media, instant messaging, or word of mouth among residents. This reliance on informal information networks poses significant risks, especially if signal disruptions or mass panic slow the spread of information. The absence of this formal system reflects structural vulnerabilities and weak technical preparedness at the village level. This situation underscores the need for concrete support from the district and provincial governments to provide early warning systems, user training, and integrated disaster information systems that are quickly and equitably accessible to all residents. Without adequate supporting infrastructure, the community will remain vulnerable when another disaster strikes (Edelsburg, 2021).

### **Expectations for Training and Community Engagement**

FGD participants explicitly expressed their hope that the government and relevant institutions would provide regular, practical, and applicable training in disaster mitigation. They emphasized the importance of hands-on knowledge such as evacuation simulations, familiarization with safety equipment, and local risk mapping (Kamara et al., 2019). The community's enthusiasm for learning and participation is evident, especially when there is consistent support and structured participation at every stage of the disaster program. Communities want to be more than just recipients of aid, but also active participants in planning, implementing, and evaluating disaster management efforts. This reflects the significant social potential that can be developed to strengthen community capacity. If this potential is properly facilitated, village communities will not only be better prepared to face disasters but also able to build a sustainable local resilience system based on the values of mutual cooperation (Franco & Tracey, 2019).

### **Local Values as Social Capital**

Local values such as mutual cooperation, solidarity, and a sense of togetherness are still alive and are the main strength of the Tanjung Padang Village community, especially when facing the emergency response period after the disaster (Moeis et al., 2022). In crisis situations, people spontaneously help each other without waiting for formal instructions, starting from evacuating vulnerable residents, providing emergency food, to repairing basic facilities independently (Kako et al., 2020). This attitude demonstrates a high level of social cohesion that can be leveraged as a key asset in building a sustainable and inclusive disaster mitigation system. By integrating local wisdom into disaster management programs, mitigation efforts will be more acceptable, culturally relevant, and have a higher success rate. Therefore, it is



important to design disaster strategies that are not only technically based but also value and optimize social strengths that have proven effective at the community level (Hermans et al., 2022).

## CONCLUSIONS

Community perceptions of disasters in Tanjung Padang Village are still dominated by a fatalistic view, where earthquakes and tsunamis are considered inevitable acts of nature, although some residents are beginning to understand the importance of mitigation and preparedness. The community's low technical knowledge of disaster management, due to limited access to disaster training, simulations, and information, contributes to a lack of preparedness in emergency situations. Local figures such as village heads, hamlet heads, and community leaders play a strategic role as sources of information and guides community action during disasters, but heavy reliance on them also has the potential to slow response if they are unprepared. The absence of an adequate early warning system in the village leaves the community relying solely on information from social media or individual communication, which is prone to delays and inaccuracies. Nevertheless, the community has shown high enthusiasm for actively participating in preparedness activities, such as routine training and simulations, if properly facilitated. Strong local wisdom and the value of mutual cooperation (gotong royong) are important social assets that can be optimized in building a community-based mitigation system. This research emphasizes the urgency of strengthening local capacity and direct community involvement in the planning and implementation of disaster management programs to make them more contextual, inclusive, and sustainable.

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