



COMMUNITY PERCEPTIONS AND ADAPTATION STRATEGIES TO RECURRENT FLOODING: A CASE STUDY OF LOCAL COMMUNITIES IN NAGARI PELANGAI, RANAH PESISIR SUB- DISTRICT, PESISIR SELATAN DISTRICT

Enjelina C. Sinaga¹, Ulva Rahmi¹, Faras Fazira Anarku¹, Elsi Madrisah¹, Nurul Aisyah¹, Tio Atfiano¹

¹Student Department of Geography Universitas Negeri Padang
E-mail: enjelinacsinaga3@gmail.com

ABSTRACT: Nagari Pelangai, located in Pesisir Selatan Regency, is one of the coastal areas that experiences recurrent flooding every year. This research aims to analyze the community's views on flood disasters that occur on an ongoing basis and explore the adaptation strategies they apply before and after flooding. The method used in this research is a descriptive qualitative approach with a phenomenological approach, which involves in-depth interview techniques, field observations, and documentation collection. The results show that the community has various views on flooding: some consider it a normal natural phenomenon, some see it as a worrying threat, and some view it as an event that needs to be watched out for. The adaptation strategies implemented include preventive measures such as building houses with more height, storing important items in a safe place, as well as responsive measures such as self-evacuation and cleaning up after flooding. However, most adaptation efforts are still individual and not collectively coordinated. These findings point to the importance of structural support and community capacity building in developing sustainable and locally-based adaptation strategies

Keywords: *flood disaster; community perception; adaptation strategies*

1. INTRODUCTION

Indonesia is one of the countries that is often affected by various kinds of natural disasters. Its location in the meeting zone of three tectonic plates makes the region very vulnerable to geological disasters, such as earthquakes, tsunamis, landslides, and volcanic eruptions. In addition, being located in the equatorial region, Indonesia is also prone to hydrometeorological disasters, including floods, flash floods, droughts, and tornadoes. Among these disasters, floods are the most common. Based on a report from the National Disaster Management Agency (BNPB) in 2021, during 2020 there were 4,650 disaster events, with floods ranking the highest at 1,518 cases. According to Yuniartanti (2018), flooding is one of the most significant consequences of disturbances in the hydrometeorological cycle. Meanwhile, Yulinar and Virianita (2021) revealed that the effects caused by floods generally have a negative impact on society. Apart from damaging physical infrastructure such as houses, bridges, embankments, and schools, floods also disrupt social and economic activities in an area. In addition, floods can cause public health problems, including sanitation issues, the spread of waterborne diseases, and even result in loss of life. Floods not only cause damage to physical infrastructure such as houses, bridges, levees, and schools, but also disrupt social and economic activities in an area. In addition, flooding can trigger health problems for the community.

As a disaster that occurs frequently and affects almost all regions in Indonesia, it is crucial for communities to formulate adaptation strategies in the face of flooding. Disaster mitigation is a collective responsibility, one of which can be done through increasing community capacity to reduce flood risk. Research conducted by Nadila and Ratri (2020) highlighted the importance of community participation in the disaster adaptation process, both in the planning and intervention stages. Faradiba et al. (2020) revealed that the impact of flooding on communities is influenced by the way communities adapt and their attitudes towards the disaster. Rasdiana et al. (2021) emphasized the importance of capacity building for flood-affected communities to deal with disasters. Andrea et al. (2020) state that one way to reduce disaster risk is to increase community preparedness. Almuthorri' and Purnomo (2019) emphasized that community attitudes and actions in dealing with disasters are part of an adaptation strategy to environmental threats. Suliono (2018) emphasizes that adaptation strategies to natural conditions and climate change must be built jointly by all parties. Sari et al. (2020) found that disaster management



socialization that prioritizes local wisdom is more effective in increasing public awareness of disasters. Research by Kharimah et al. (2021) showed the need for contingency plans, documents for disaster-prone areas, early warning systems, and legal strengthening for illegal logging perpetrators in flood disaster mitigation efforts.

The enormous potential in coastal areas encourages cultural development and concentration of development, where urban growth and human activities are centered in the region (Marfai, 2014). Human activities in coastal areas are one of the factors that influence the dynamics of the coastal environment (Rijanta et al., 2014). The use of coastal areas for ponds and settlements makes coastal areas increasingly vulnerable. Disaster is a major threat to humanity that can directly shake and reduce the resilience of a region. Regional resilience is a dynamic condition that includes all aspects of community life in an integrated manner, reflecting the resilience and strength that allows the region to face and overcome various challenges, threats, obstacles, and disturbances, both from within and outside, either directly or indirectly (Lemhannas, 2000).

In general, communities living in flood-prone areas have developed various strategies to deal with such disasters, although the approaches taken are not always uniform and may not always be effective. Research by Ramisa et al. (2021) shows that people's understanding of flood disaster mitigation is influenced by their education, experience and sources of information. Meanwhile, Triuri and Marwasta (2012) found that communities tend to choose technical adaptation strategies in the face of flooding, including the decision to remain in their place. Hardoyo et al. (2011) explained that adaptation involves adjusting attitudes to uncertain situations and is strongly influenced by specific socioeconomic and ecological conditions. Research on community adaptation strategies to flood disasters has been conducted by several researchers, including Hadi (2017), Mussadun et al. (2016), Happy et al. (2022), Asrofi et al. (2017), and Wunarlan (2019).

Based on interviews conducted in Nagari Pelangai, the local community has implemented various forms of adaptation, such as elevating houses, moving goods to safer locations during floods, and conducting social cooperation in emergency response situations. However, these measures tend to be reactive and have not been integrated with a long-term, community-based mitigation approach. This finding is in line with the opinion of Arnesy and Budiyanto (2024), who state that community adaptation strategies are often limited to individual efforts in the absence of adequate structural support. In addition, there is a tendency for communities to perceive flooding as part of an unavoidable annual cycle, which can reduce motivation to change behavior or encourage improvements in environmental management. Rusdanisari and Herwangi (2024) emphasize that adaptation approaches involving community participation need to be combined with disaster education and policy interventions that support vulnerable groups.

Thus, this study aims to understand the views of the Nagari Pelangai community regarding recurrent flooding and explore various adaptation strategies that have been and are being implemented by the local community. It is hoped that the results of this research can contribute to the development of disaster risk reduction policies that are local, participatory and sustainable.

2. METHODS

According to Setiadi (2013), the design in research is a research design that is arranged in such a way, so that then the researcher gets answers to the problems studied. This research uses a descriptive qualitative research design with a phenomenological approach. The phenomenological approach is a research approach that tries to understand the phenomena of human life in the mindset and behavior of society as understood by the individuals themselves (Fitriana 2018). The purpose of this approach is to gain better knowledge related to the realities that occur in society.

2.1. Research Location

This research was conducted in Nagari Pelangai which is one of the villages in Ranah Pesisir District, Pesisir Selatan Regency. This Nagari has an area of 7km² and is directly adjacent to 5 other Nagari, namely Pelangai Gadang, Pelangai Kaciak, Koto VIII Pelangai, Sungai Tanu Utara, and Melambai Pelangai. This research was conducted around residential areas located in several villages, namely in Nagari Pelangai, Pelangai Kaciak, Pelangai Gadang, Sungai Liku, Pasia Pelangai, and Koto VIII Palangai.

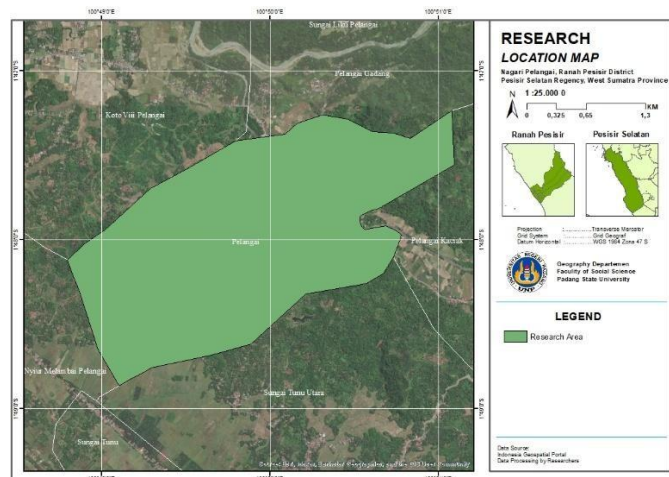


Figure 1. Administrative Map of Research Locations

3. RESULTS AND DISCUSSION

Nagari Pelangai is one of the areas in Pesisir Selatan Regency, some of which are classified as flood-prone areas. The geographical condition which is dominated by lowland areas and the presence of watersheds that cross this area make Nagari Pelangai vulnerable to flooding, especially when the rain intensity increases. In the past few years, floods have been recorded to occur almost every year, and can even occur more than once a year, depending on the extreme weather conditions that hit the area. This phenomenon has become part of the social reality of the local community. For some residents who live around the riverbanks, flooding is no longer considered an extraordinary disaster, but rather a seasonal routine that seems inevitable every time the rainy season arrives.

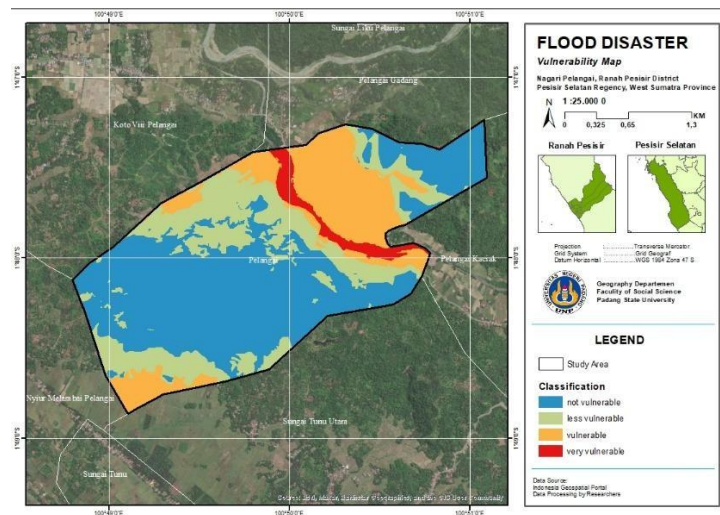


Figure 2. Flood Disaster Vulnerability Map of Pelangai

3.1 Community Perceptions of Flood Disasters

According to Leavitt in Bimo Walgito (2011: 117) perception in a narrow sense is vision, namely how someone sees something. Meanwhile, in a broad sense, perception is a view, namely how someone views or interprets something. Humans as social creatures as well as individual creatures have different characteristics from one another. This difference in character is one of the reasons why some people see things positively, while others may judge them negatively. This is closely related to the way each individual responds to an object through their own point of view. In practice, the majority of behavior, attitudes, and the way a person adjusts to the environment are influenced by their perspective. Because basically, perception is a person's process in giving meaning and assessment to something he observes. The experience of the community in Nagari Palangai, Pesisir Selatan Regency based on the results of the



research the majority are have experienced flooding, the perception of flood disasters is closely related to the experience of experiencing flooding. Individual experience influences risk perceptions of flooding (Nastiti et al., 2021). The experience of flooding makes everyone increase their awareness of vulnerability and increase their risk perception (Susila et al., 2020). Observations consisting of smelling, hearing, and past experiences are called experiences (Fitriani & Selvyana, 2021). Perception in this study is the community's perception of the flood disaster. Based on interviews that have been conducted, the dominant community of Nagara Pelangai considers that flooding is an ordinary natural event, meaning that there is nothing to be afraid of and some people consider that this flood is troubling and disturbing because this flood disaster is detrimental to the community. The following are some forms of perception of the nagari palangai community towards flood disasters:

3.1.1 Flooding as a Common Occurrence

Most residents in Nagari Pelangai consider flooding as a common thing. Phrases such as "it is common", "it has become a regular natural occurrence", and "it looks normal" illustrate the high level of adaptation to the disaster. They no longer consider flooding as something to be feared, but rather part of the routine of the rainy season. However, this perception can be a threat. On the one hand, people seem calmer and less panicked. On the other hand, there could be a decrease in vigilance that ignores the importance of mitigation measures. This passive attitude can be risky when the intensity of flooding increases due to climate change or worsening environmental damage.

3.1.2 Flood as a Frightening and Threatening Event

Some informants described flooding as a traumatic experience. One informant stated that the flooding that occurred about five years ago was so terrible that they were forced to ask for help from the government. Phrases such as "very worrying", "dangerous" and "extremely terrible" indicate a strong fear of a potential recurrence of a similar disaster. This perception reflects people's uncertainty and helplessness in dealing with disasters, especially if infrastructure support and government preparedness are perceived to be inadequate. This sense of anxiety is usually stronger in communities that have experienced heavy losses due to flooding, both physically and emotionally.

3.1.3 Flood as a Natural Phenomenon to Watch Out for

This group did not see flooding as something extraordinary, but they still showed a vigilant attitude. Some informants referred to flooding as an "annoying" event, but emphasized that floods are "quite big" and "unsettling and detrimental", so they still need to be anticipated. Although flooding is considered part of the natural cycle, they are aware that its impact cannot be underestimated. This attitude indicates a more rational understanding that natural disasters cannot be prevented, but their impacts can be minimized. Communities with this perception are generally open to disaster education programs and tend to support community-based prevention policies

3.2 Community Adaptation Strategies in Facing Recurrent Floods

In human life, adaptation and change are two things that will always occur and cannot be separated Bennet (2017) argues that adaptation is a form of human self-adjustment to the environment. Adaptation carried out by humans is a survival effort carried out at the present time and in the future as a form of survival based on human interactions with the environment that occurred in the past. In the face of the flood phenomenon that occurs repeatedly, the Nagari Pelangai Community has 2 types of adaptations in dealing with flood disasters, namely:

3.2.1 Pre-Flood Adaptation Strategy

Pre-flood strategies are carried out by the Nagari Pelangai community in order to reduce the level of risk and losses that may occur in the event of a flood. Most of the people of Nagari Palangai do not have a collectively planned pre-flood strategy, but from the interview data, several forms of adaptation that are carried out individually were identified. These strategies include the habit of building houses with higher positions or foundations as an anticipatory effort against recurrent flooding. In addition, some informants mentioned measures such as planting inundation-resistant crops such as corn, and



storing goods and staples in safer places. Although not all residents take these steps, these strategies reflect local awareness of potential risks, even if they are not supported by a community-based mitigation system. Some residents also expressed the hope that more appropriate waste disposal sites would be provided to reduce blockage of waterways.

3.2.2 Adaptation Strategies During Floods

Based on the results of interviews with people in Nagari Pelangai, it appears that the adaptation strategies applied during floods tend to be individual and spontaneous, without any organized collective system. Most of the adaptive actions taken are reactive, such as moving to higher ground or preparing items for evacuation when heavy rain begins to fall. These actions indicate an awareness, although they are not yet integrated into a community-based preparedness system. However, there were also respondents who did not have any adaptation strategies at all, or simply chose to "wait for the water to recede," indicating limitations in their understanding and adaptive capacity in the face of flooding. This emphasizes the importance of collective adaptive capacity building as well as support from institutions to reduce disaster risk at the local level.

3.2.3 Post-Flood Adaptation Strategy

After the floods hit, the majority of informants described strategies undertaken as a form of emergency response and physical adjustment to the impact of the disaster. These strategies included evacuating to higher ground, salvaging essential items, and cleaning the house and environment independently. One informant described the situation after the flood as "up to the limit of an adult's waist", which illustrates the scale of damage and panic experienced. Some informants mentioned that gotong royong to clean the gutters was conducted after the flood, although not all admitted to participating or even knowing about the activity. Sentences such as "just cleaning their own houses" and "there was help after the flood" emphasize that post-flood adaptation is more individual and incidental, rather than part of a coordinated emergency response system.

4. CONCLUSION

This research shows that most people view flooding as a natural event that is common and has become part of the seasonal life cycle, so they tend to be passive and less worried. However, there are also groups that view flooding as a threatening and traumatizing event, especially for those who experience large physical and emotional losses.

In terms of adaptation strategies, the people of Nagari Palangai show two main forms of response to recurrent flooding, namely pre-flood adaptation and post-flood adaptation. Pre-flood strategies are individualized and include actions such as building houses with higher foundations, planting inundation-resistant crops, and storing important items in safe places. However, these strategies have not been collectively integrated or supported by a community-based mitigation system. During floods, people generally show spontaneous and practical responses, such as moving to higher houses, actively monitoring the surrounding conditions, and immediately packing important items for rescue. Some residents have shown an awareness to seek a safe place earlier when heavy rain begins to fall, although not all community members have implemented this step consistently. Meanwhile, post-flood strategies are more reactive, such as evacuating, saving property, and cleaning the environment independently. Mutual aid efforts and assistance from outside parties do exist, but they are not yet evenly distributed or systematic. These findings emphasize the need to strengthen disaster education, community-based risk management, and increase cooperation between residents and the government in dealing with recurrent flood disasters in the region.

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