JURNAL PENELITIAN GEOGRAFI
Vol (13), No (2), (2025), pp. 347-360
Doi: http://dx.doi.org/10.23960/jpg

Original Article

Disaster Education as a Strategy for Managing Flood Risk in Rural Communities: A Case Study of Trawasan Village

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ABSTRACT

Floods are a frequent natural disaster in Indonesia, particularly in Trawasan Village, Jombang Regency, due to its low topography and inadequate drainage system. This study aims to assess community understanding of flood risks and the effectiveness of disaster education methods. Using a qualitative descriptive method with a Grounded Theory approach, data collection was conducted through unstructured interviews, direct observation, and document analysis. Findings indicate a low level of disaster preparedness among residents, mainly due to a lack of education and awareness of evacuation procedures. This study highlights the need to improve disaster education programs to increase community resilience and preparedness for flooding. Ultimately, this study underscores the importance of collaboration between the government and community members in implementing effective disaster management strategies, thereby contributing to the overall safety and well-being of the village.

KEYWORDS
Flood;
Natural Disaster;
Community Role.

Received: July 7, 2025 **Acepted**: July 29, 2025 **Published**: September 30, 2025

Citation:
Wachidatullailiya, M., Putra, A. L. E., Qomari, I. N., Putri, S. A., & Eduat, S. M. (2025). Disaster Education as a Strategy for Managing Flood Risk in Rural Communities: A Case Study of Trawasan Village. *Jurnal Penelitian Geografi, 13*(2), 347-360. http://dx.doi.org/10.23960/jpg.v13.i2.33584

INTRODUCTION

Floods are among the most common natural disasters in Indonesia (Sulaksana et al., 2021). Trawasan Village, Jombang Regency, East Java Province, is one of the areas most frequently affected by flooding. This is because the village's topography is lower than the surrounding areas, making it prone to inundation from overflowing rivers and heavy rainfall (Suryadi et al., 2024). The impacts of flooding are extensive, including losses related to health, property, and the disruption of economic and educational activities. Floodwaters often become breeding grounds for various diseases such as dengue fever, skin irritation,

malaria, and diarrhea (Setiyani et al., 2023).

Disaster education is an effort carried out through educational activities to increase the knowledge and skills of communities in dealing with disasters (Pahleviannur, 2019). It includes learning about disaster risks, methods to reduce these risks, and appropriate actions to take in emergency situations (Septikasari & Ayriza, 2018). Disaster education also emphasizes the development of practical skills such as first aid, fire control, and other safety measures (Ihsan et al., 2023).

Disaster mitigation efforts encompass raising public awareness, establishing early warning systems, conducting hazard mapping, developing disaster-resistant infrastructure, and implementing disaster education programs (Rahmat et al., 2024). These efforts also include actions taken before, during, and after disasters to reduce risks and minimize their negative impacts on communities and the environment (Ihsan et al., 2023).

Geography, as a discipline, studies the complex interactions between humans and their environment (Aksa, 2019). Understanding geography is essential in disaster mitigation, which involves actions designed to reduce the risks and impacts of natural hazards (Kurniati, 2015). Geography education provides knowledge about factors that contribute to disasters, such as topography, rainfall intensity, land use, and climate change (Sari et al., 2024). It also teaches various mitigation strategies, including effective spatial planning, phased infrastructure development, and appropriate land management practices (Asep, 2024).

A disaster-prone area is characterized by geological, biological, hydrological, climatological, geographical, social, cultural, political, economic, or technological conditions that make it vulnerable to natural hazards. These characteristics, although beneficial for certain human activities, can reduce the ability of an area and its population to prepare for, respond to, and recover from disasters (Kurniawan et al., 2023).

Based on the 2023 KRB Analysis Report of Jombang Regency, Sumobito District is categorized as a "high" flood hazard area, covering 4.53% of its total 5,032 hectares. Considering this potential, this study aims to answer three key questions: (1) What is the level of community understanding of their surrounding environment across different age groups?; (2) What disaster education methods are most effective for implementation in Trawasan Village to address flood risks? And (3) What challenges arise in implementing disaster-related education in Trawasan Village?

Previous studies have shown that children are among the most vulnerable groups to disasters because they often lack awareness of the risks around them, resulting in low levels of preparedness (Pandiangan & Uma, 2025). Schools therefore play a crucial role in disaster management, as education enhances students' understanding and skills in responding to disasters. Children must be taught about disaster preparedness from an early age through disaster mitigation education (Pandiangan & Uma, 2025). Such education enables students to understand disaster hazards, improve their preparedness, and engage directly in simulation activities with disaster management experts.

Upon closer examination, disasters are triggered by multiple complex factors. These include settlement in vulnerable areas, poor local environmental management, environmental degradation, inadequate early warning systems, and insufficient preparedness among communities and authorities (Kimura, 2020).

Although numerous studies have been conducted, several empirical and integrative gaps remain unaddressed. One significant gap lies in the limited comprehensive research that explores the community's level of environmental awareness, particularly in Trawasan Village. Furthermore, very few studies have specifically investigated disaster education and the challenges associated with implementing it effectively at the local level.

This absence of in-depth studies is particularly concerning, given that Trawasan Village is an area prone to disaster risks. Therefore, enhancing community understanding and strengthening the effectiveness of disaster education are crucial for fostering preparedness and resilience. The lack of empirical data and evidence-based findings may impede the formulation of policies and intervention strategies that are responsive to local contexts and sustainability needs. Consequently, there is an urgent need for research that addresses these gaps and provides a robust scientific foundation for developing contextualized and applicable disaster education programs in Trawasan Village.

METHOD

Research Location

The research location is in Trawasan Village, Sumobito District, Jombang Regency. Trawasan Village has an area

of 2.13 km^2 with a population of 3,933, consisting of 2,009 males and 1,924 females (Central Statistics Agency, 2022). Trawasan Village itself consists of 3 hamlets, namely Trawasan Hamlet, Gebangsari Hamlet, and Sarirejo Hamlet, with coordinates of Trawasan Village (-7.5187645, 112.2810404).

The research location was selected purposively, considering the occurrence of floods and disaster mitigation activities. The research location was in Trawasan Village, Sumobito District, Jombang Regency. The research location is shown in Figure 1.

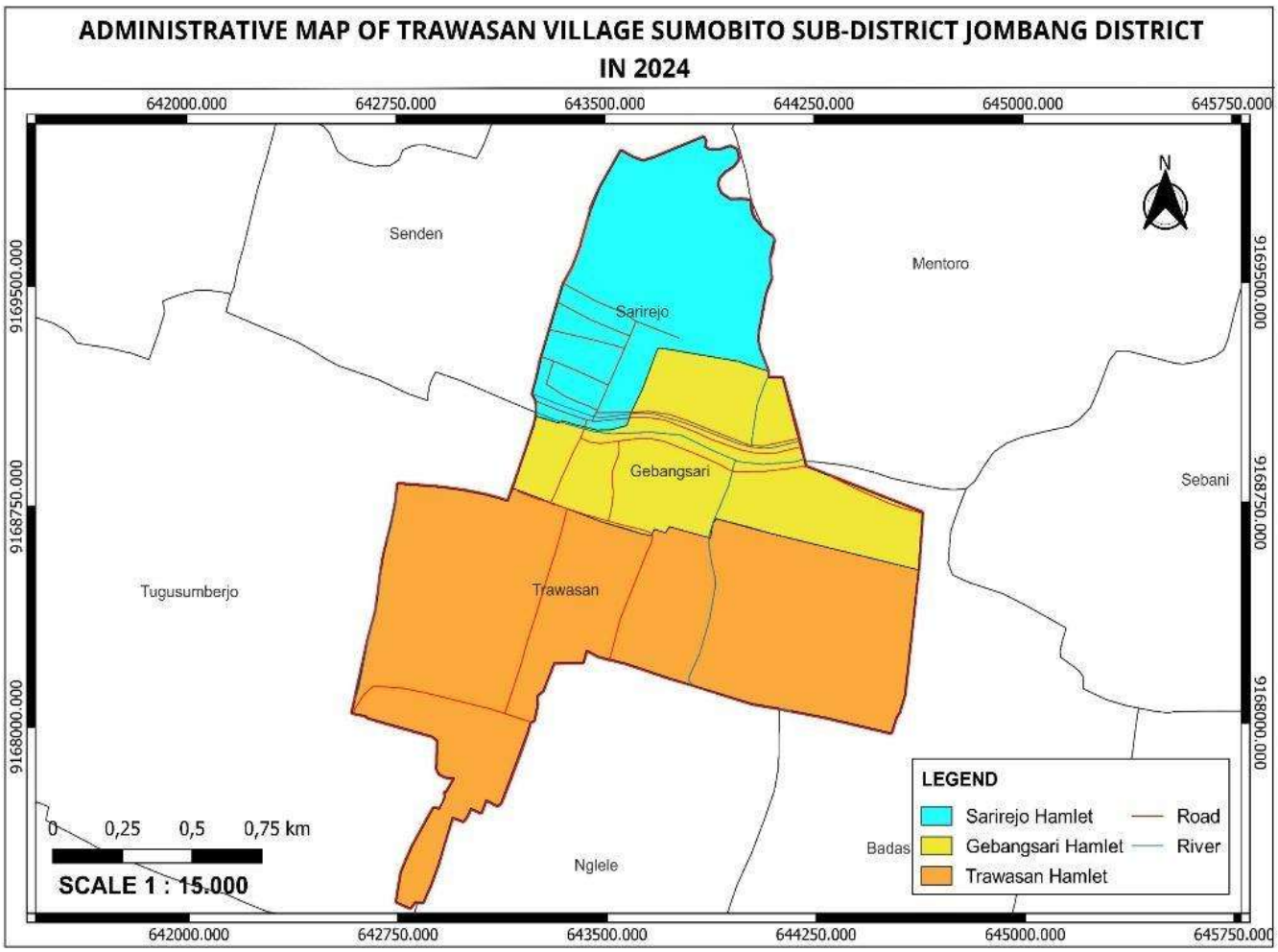

Figure 1. Administrative Map of Trawasan Village

Research Approach

The research method used in this study was a qualitative descriptive method with a Grounded Theory approach, data collection techniques in the form of unstructured open interviews, direct observation in the field (observation), and analysis of public documents such as previous journals, data on regional disaster risk assessments in Jombang Regency, and other supporting documents. In his book Qualitative Inquiry and Research Design: Choosing Among Five Approaches, John W. Creswell describes qualitative research as an investigative process to understand based on different methodological approaches that explore social or human problems (Creswell, 2015) .

The characteristics of qualitative research include a belief in multiple realities, the inclusion of values, and the use of an emergent inductive process shaped by the researcher's experience in collecting and analyzing data. Philosophical assumptions in qualitative research include ontology (the nature of reality), epistemology (what is considered knowledge), axiology (the role of values), and methodology (the research process) (Creswell, 2015) .

Qualitative research is a type of research that

aims to understand the phenomena experienced by research subjects, such as behavior, perceptions, motivations, actions, etc., as a whole and explicitly, using various natural techniques in a natural context (Fiantika et al., 2022). Qualitative research is also called the interpretive method because the research data is more related to the interpretation of the data found in the field. Qualitative researchers will go directly to the object, explore it with a grant tour question, so that the problem can be clearly identified. Through this research model, researchers will explore an object (Rusandi, 2021) .

Descriptive research is a form of research aimed at describing existing phenomena, both natural and man-made. These phenomena can take the form of shapes, activities, characteristics, changes, relationships, similarities, and differences. Descriptive research is conducted with the aim of explaining the current conditions without influencing the researcher, so that changes can be made, and efforts to solve practical educational problems do not function as scientific development (Magdalena et al., 2023) .

Research Procedure

This research was conducted in three stages:

1) Stage 1, Pre-fieldwork, which includes preparations such as determining the research theme, formulating research objectives, conducting a literature review, creating a field map, determining the observation location, and preparing research instruments.
2) Stage 2, Fieldwork was conducted during an internship at the Jombang District Disaster Management Agency (BPBD). Field activities included observation, interviews, documentation, and field checks.
3) Stage 3, Post-fieldwork consists of data processing, data analysis, and writing scientific articles. The research framework is shown in Figure 2.

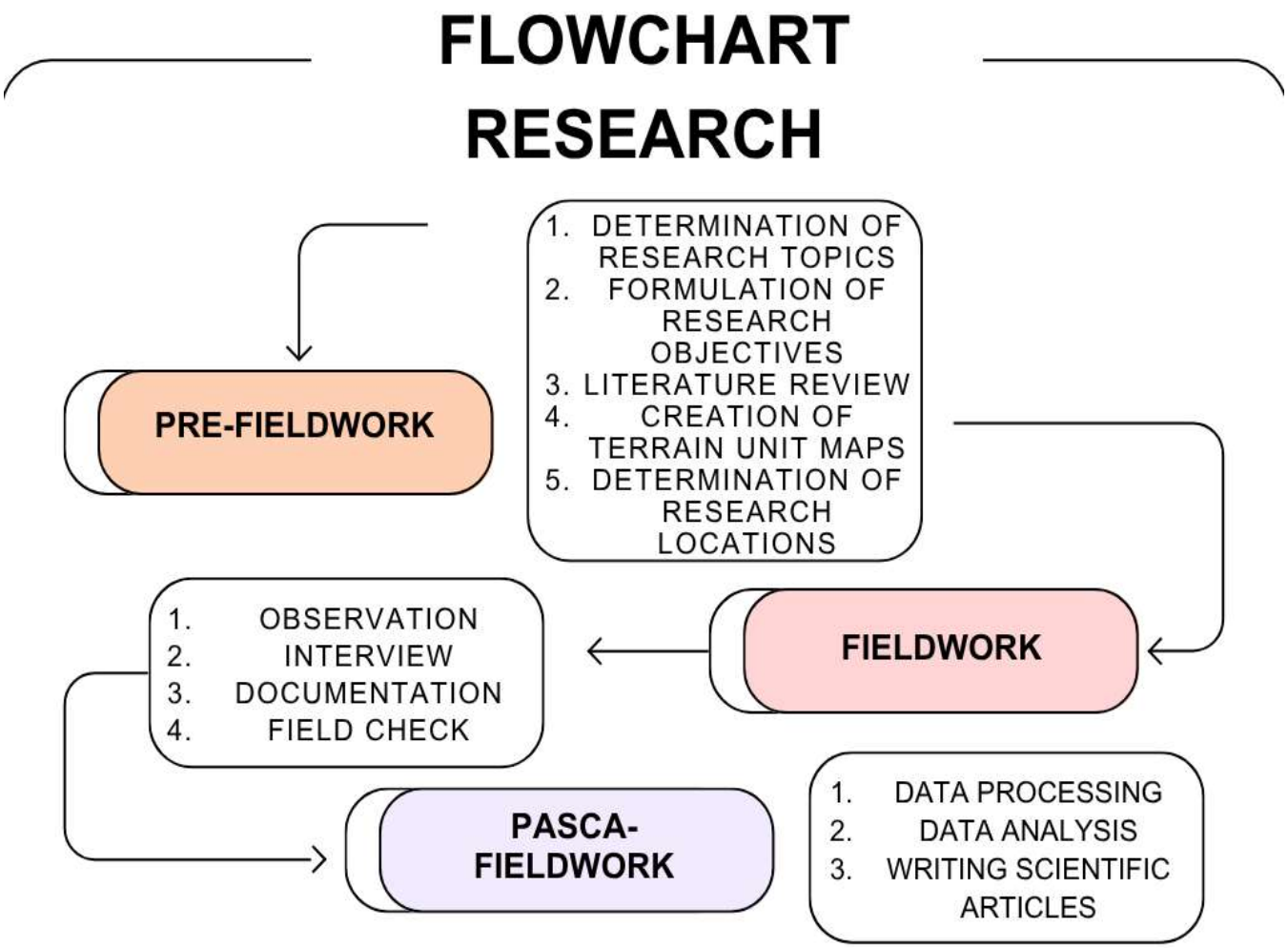

Figure 2. Research *flowchart*

Data Collection Instruments

This study conducted interviews with 10 local community members. The interviews were conducted using an unstructured open-ended interview guide. The involvement of the local community as informants was carried out by applying *accidental sampling* (Wachidatullailiya et al., 2025).

Figure 1. Interviews with Trawasan Village Residents
Source: Data collection, 2024

The data collection method used direct observation in the field (observation). The observation was conducted using the five senses combined with in-depth recording of the research subject, known as observation (Prawiyogi et al., 2021) . The focus of direct observation was on the local community in dealing with floods in Trawasan Village.

Furthermore, the secondary data obtained in this study are flood data from the Regional Disaster Management Agency of Jombang District and qualitative data obtained from literature studies and previous research.

Data Analysis

At the data processing stage. Data processing includes geospatial data and qualitative data processing. The geospatial data in this study is spatial information data that can be processed into maps. Map processing is carried out by applying GIS (Geographic Information System) technology. A Geographic Information System (GIS) is a combination of computer hardware and software that enables the creation of maps, analysis, and spatial data along with its attributes (Fahlefi et al., 2023) . With the rapid development of information technology, geographic information systems (GIS) have become an important option for monitoring volcanoes. GIS is expected to analyze an area so that potential disasters can be mitigated.

This study uses descriptive data analysis with percentages and scoring based on data obtained from the research results. This method is used to determine the level of community preparedness in facing disasters (Sinaga et al., 2020) . Meanwhile, qualitative data processing in this study was carried out using thematic analysis (Moleong, 2007) . The qualitative data collected was in the form of documentation obtained from direct observation in the field (primary data) and literature review (secondary data). Thematic analysis was carried out by creating qualitative codes in the form of identifying local community mitigation strategies in facing floods in Trawasan Village

RESULTS AND DISCUSSION

Flood Disaster Vulnerability in Trawasan Village, Sumobito District, Jombang Regency, reviewed from several years: 2015, 2020, and 2025. (Figure 2-5). Trawasan Village is one of the villages that experiences flooding almost every year, especially during the rainy season. Flooding in this village is often caused by the overflowing of the Ngotok River, located north of the village. The overflowing of this river is caused by the silting up of the river, which limits its water capacity. This condition is exacerbated by high rainfall, which prevents water from flowing smoothly. To overcome this problem, river normalization is urgently needed (Halim & Idrus, 2024).

However, even though the Trawasan village government has submitted a proposal for normalization since 2020, as of 2022, the process has not yet been carried out. The last major flood was recorded in 2022, with a depth of 60 cm, submerging residential areas for several days and causing significant damage to village infrastructure and residents' homes. Many agricultural crops were destroyed, and road access was damaged, disrupting community life. According to data obtained from local residents, the floods that occurred in 2022 and 2023 were not as severe as in previous years. The floods lasted only one day and receded the next day, unlike in previous years when they lasted for almost a week. This is because measures have been taken to dredge the bottom of the river and widen the river area, increasing the river's water capacity.

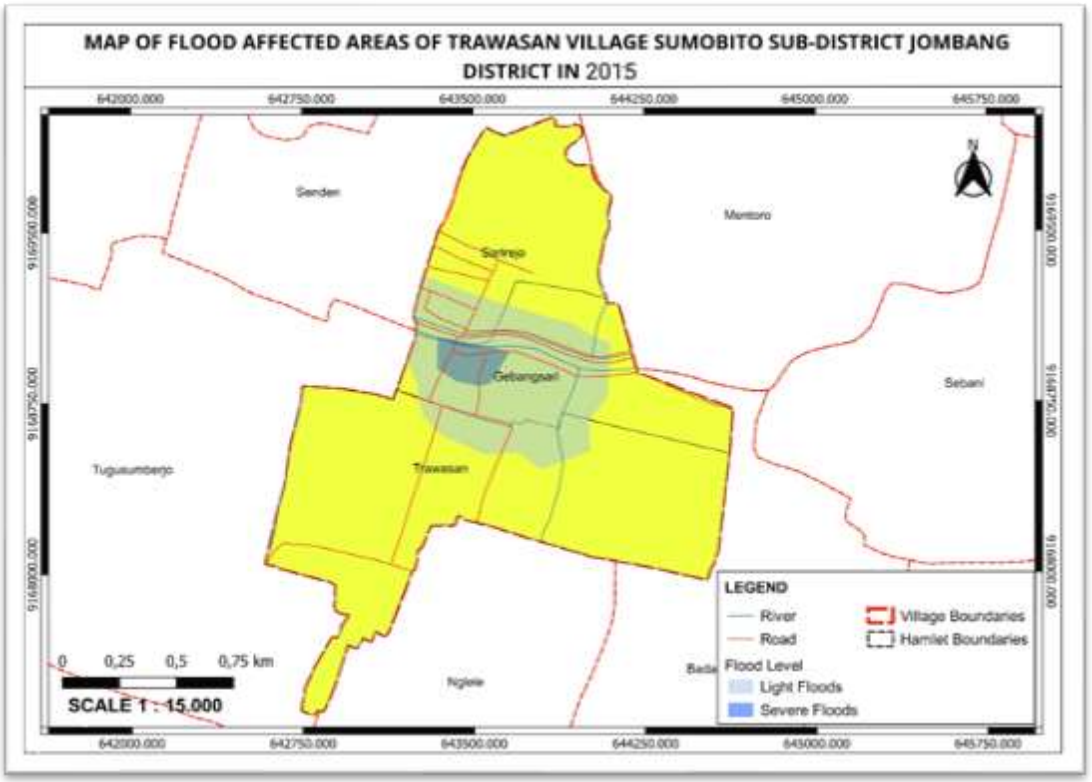

Figure 2. Trawasan 2015: Area affected by severe flooding was 4.66 ha, area affected by mild flooding was 46.97 ha, total area affected by flooding was 51.63 ha

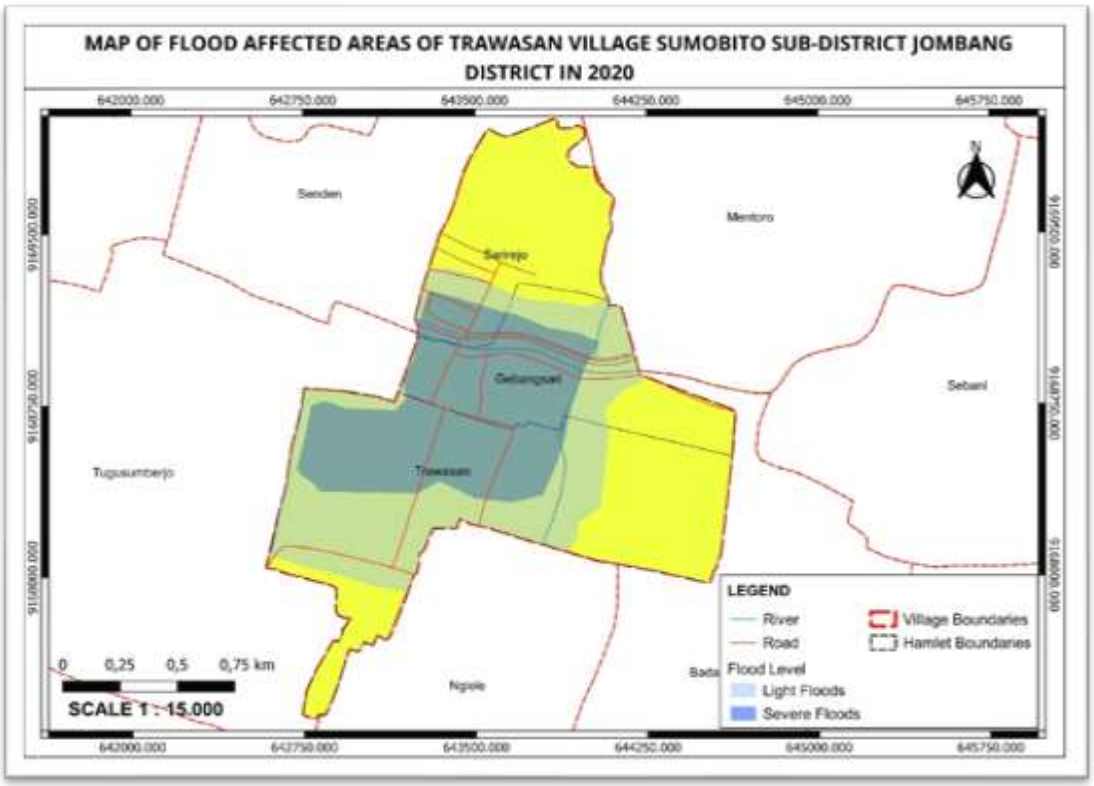

Figure 3. Trawasan 2020: Severe flood-affected area of 73.13 ha, mild flood-affected area of 65.08 ha, total flood-affected area of 138.21 ha

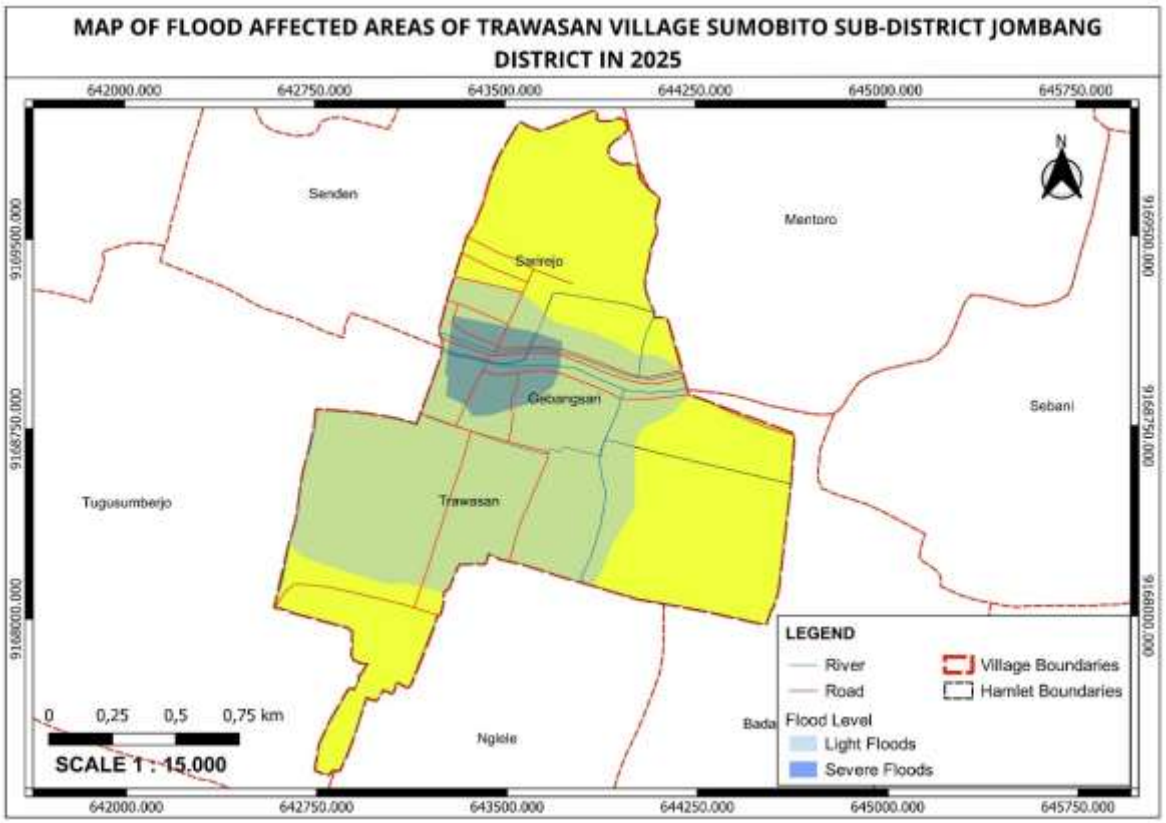

Figure 4. Trawasan 2025, Severe flood-affected area covering 13.61 ha, Mild flood-affected area covering 103.41 ha, total flood-affected area covering 117.02 ha

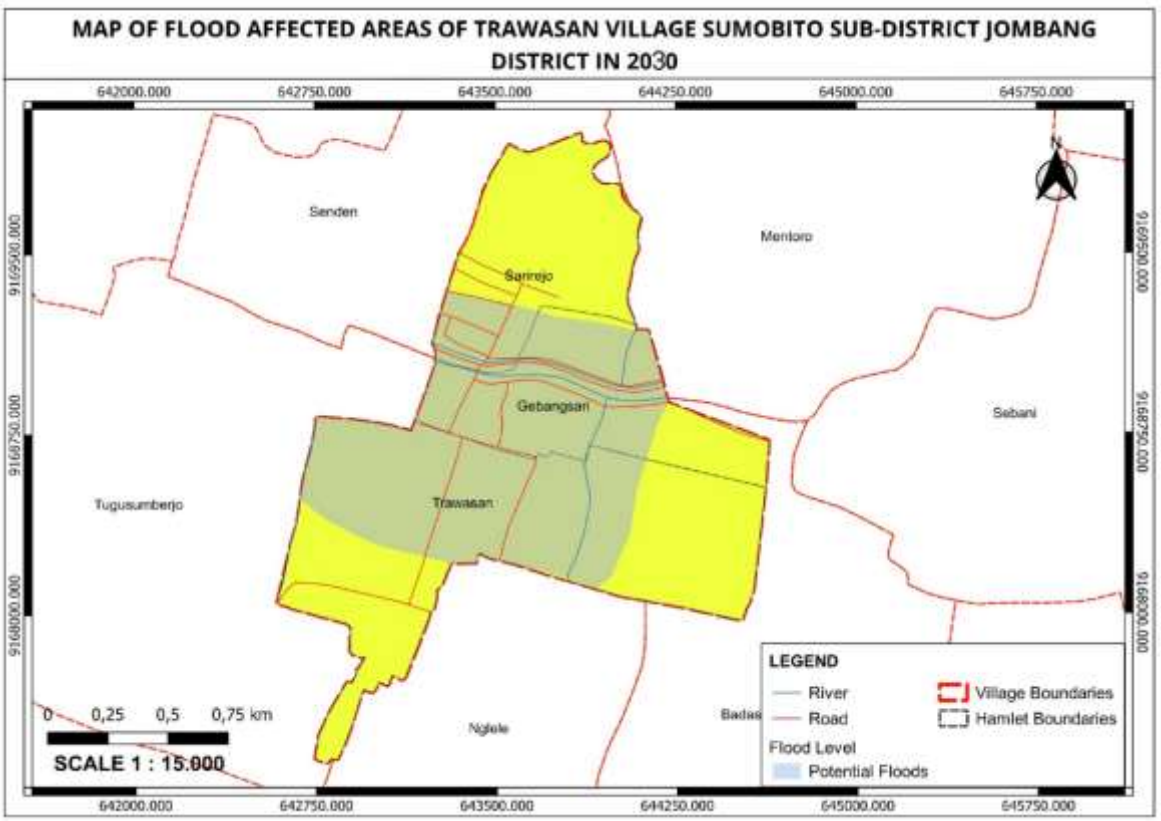

Figure 5. Trawasan 2030, potential flood-prone area covering 120.42 ha, mainly in areas along large rivers

The village of Trawasan, with a population of 3,933, faces various challenges every time flooding occurs. Most of the residents are farmers who depend heavily on their harvests to meet their daily economic needs. However, the overflowing Ngotok River often floods agricultural land, damages crops, and causes repeated crop failures. This condition has a direct impact on the decline in community income, the majority of whom are in the lower-middle economic category. The village's location along the river also increases the risk of flooding, especially during high rainfall, making this area prone to disasters. Basic education is compulsory for school-age children. This means that cultural, economic, demographic, political, and social backgrounds should not be barriers to school-age children receiving an education. Regardless of their limitations, parents must still strive to prioritize their children's education until they complete their basic education (Astuti & Nugraheni, 2016).

The low level of education among the population further exacerbates the situation (Anwar, 2022) . Based on data from the Central Statistics Agency (BPS) in 2022, as many as 1,166 residents did not complete their primary education. This limitation means that many residents do not understand evacuation procedures and safety measures when flooding occurs. As a result, when floods occur suddenly, they are often unprepared to deal with emergency situations, especially vulnerable groups such as children, the elderly, and people with disabilities who require more protection (Hidayanto, 2020).

This situation also hinders community participation in long-term disaster prevention efforts (Halim & Idrus, 2024) . Villagers still rely on assistance from the government or non-governmental organizations to deal with the impact of flooding, while awareness of the importance of preventive measures, or prevention, which are actions taken before flooding occurs to prevent or reduce the impact of the disaster, is still low . Simply put, these are actions taken to prevent flooding before it occurs (Ali et al., 2022) such as the construction of embankments, drainage system management, and reforestation of flood-prone areas, are still minimal. Therefore, efforts are needed to increase community capacity through disaster education, emergency response training, and strengthening village infrastructure (Ali et al., 2022) so that they are better prepared and resilient in facing the threat of flooding in the future. Population data based on educational level can be seen in Table 1 below.

Table 1. Population data based on educational level

No/Undergraduate	Elementary school/equivalent	Junior high school/middle school/equivalent	High school/vocational/ equivalent	Colleges
1166	841	875	880	171

Source: Jombang Regency Disaster Risk Assessment, 2023

Analysis and discussion of the population data of Trawasan Village according to education level, considering the fact that this village experiences flooding every year, shows that of the 3,933 residents of Trawasan Village, the group with the highest education level is the group that did not complete school (29.7%), while the group with the lowest level of education is the group currently pursuing higher education (4.3%) (Jombang Regency Disaster Risk Assessment, 2023). This poses a challenge in mitigating the impact of flooding because it requires understanding, preparedness, and community participation.

One important factor that influences an individual's and community's understanding and preparedness for disasters is the level of education (Kurniawati & Suwito, 2019) . Theoretically, education serves to instill the knowledge, attitudes, and skills needed to deal with disaster risks. In an interview, one informant stated, “Actually, we know that floods often occur every year, especially when it rains heavily and continuously. But we don't know what to do because there has never been any training or information from the government about what to do when floods come," said Pak Rochman (53), a resident of Krajan Hamlet, Trawasan Village. He added that although some residents have begun to understand the importance of evacuation and maintaining waterways, many still consider flooding to be a normal occurrence that does not require special preparation.

The people of Trawasan Village do not yet understand the steps for flood preparedness and mitigation, according to Mr. Rochman (53), even though

they have experienced flooding repeatedly. The community does not have sufficient knowledge and skills to deal with disasters systematically due to a lack of socialization or training from the authorities. This shows that strong preparedness cannot be built solely on empirical experience without organized support and assistance. Therefore, it can be concluded that one of the main factors causing the community to not understand flood mitigation efforts is the government's lack of efforts to provide disaster education.

In addition, people with higher levels of education tend to be more capable of critical thinking, obtain more information, and be more aware of environmental threats, including floods. Furthermore, they are better able to understand evacuation instructions and make better use of risk maps and early warnings. Thus, a person's formal and non-formal education is directly correlated with their knowledge of disasters, which includes their understanding of basic concepts and methods for reducing damage. Information about flood disaster preparedness may be difficult to access, understand, and apply for people with a low level of schooling. This leads to a lack of disaster preparedness, such as not having a family evacuation plan, not understanding official warnings or natural signs, and not knowing safe routes and assembly points.

Thus, the higher a person's level of education or schooling history, the more likely they are to have a good understanding and sufficient preparedness to deal with flood disasters. This relationship can be linear, where an increase in formal education has a direct impact on the community's understanding of disasters and their ability to respond appropriately and effectively. Consequently, formal and non-formal education integrated with disaster-related material is a strategic component in improving the community's ability to protect themselves from floods.

People's understanding of hazards, including floods, is influenced by their level of education:

a. Those who did not graduate/have not graduated (1,166 people, or 29.7%) are most likely children or people with limited access to education. They may not understand the importance of disaster prevention or mitigation. It is very important to provide special education to raise awareness of the dangers of flooding (Qurrotaini et al., 2022) .
b. Elementary school/MI/equivalent (841 people, 21.4%) have a better understanding of education than those who have not graduated or are still studying (Qurrotaini et al., 2022) . However, they may still need assistance in learning how to prevent flooding, such as using simple technology to manage water. With a junior high school education, people in this group can actively participate in flood mitigation programs, such as participating in community service activities, building simple embankments, or attending disaster preparedness training (Setiyobudi, 2022) .
c. Junior High School/MTs/Equivalent (875 people, 22.2%): People in this group may be actively involved in flood reduction programs such as mutual assistance, building simple embankments, or participating in disaster preparedness training (Qurrotaini et al., 2022) can be actively involved in flood mitigation programs, such as participating in mutual assistance activities, building simple embankments, or participating in disaster preparedness training.
d. High school/vocational school/equivalent (880 students, 22.4%) are more likely to have broader knowledge, enabling them to become drivers in the community (Qurrotaini et al., 2022) to manage the impact of flooding by providing information or initiating risk reduction programs.
e. Higher education institutions (171 people, 4.3%) are the smallest group but have a strategic role (Qurrotaini et al., 2022) . They can contribute to flood management planning and policy support, such as developing technological solutions or collaborating with external parties (Raysyah & Putra, 2025) .

There are several challenges that arise in Trawasan Village in dealing with flood disasters, namely: first, low education levels, which can affect the effectiveness of flood mitigation efforts; second, limited access to information, which can restrict access to relevant information about disaster management; third, behavior patterns that lack understanding of the surrounding environment, which can lead to practices that exacerbate the impact of flooding, such as littering in rivers.

The opportunities identified from this study in Trawasan Village are, first, the role of highly educated communities, who can become facilitators and drivers of community-based activities. Second, the empowerment of secondary education, in which residents with junior high and high school education can be involved in training programs or disaster simulations. Third, mutual cooperation. Trawasan Village still upholds the culture of mutual cooperation, which can be utilized to create local

solutions, such as river normalization or the construction of drainage channels.

Disaster education to reduce disaster risk in children is very important (Widjanarko & Minnafiah, 2018) . Early introduction to disasters and the benefits of ecosystems in the environment around the home is a real medium that can be developed and provided to the younger generation in shaping preparedness behavior in facing disasters (Sukamto et al., 2021) . The education sector is one of the development sectors affected by disasters (Pahleviannur, 2019) . In relation to disaster management efforts in Indonesia, there is a responsibility to provide education as an effort to realize national cultural development, including building a culture of disaster preparedness among citizens, specifically children or students. Children are the ones who must be protected and, at the same time, their knowledge of disasters needs to be improved (Widjanarko & Minnafiah, 2018) .

One of the efforts to improve preparedness in facing disasters is by conducting counseling or education about disasters and preparedness in facing disasters, where education about preparedness is a series of activities that must be known in order to anticipate disaster situations quickly and appropriately (Pahleviannur, 2019) . Schools are effective vehicles for disseminating information, knowledge, and skills to the surrounding community. Thus, disaster education activities in schools are effective, dynamic, and implementable in improving the ability of school members to reduce the impact of disaster risks in schools (Widjanarko & Minnafiah, 2018) .

Flood disaster education in schools is also one solution to improve student preparedness (Pahleviannur, 2019) . Flood disaster education programs can involve parties such as the Regional Disaster Management Agency (BPBD), volunteers, and health workers. This is because the level of awareness among students, starting from elementary to junior high school levels, is still quite low. Many people often use flood disasters as an opportunity to swim, which is dangerous for themselves and their families who worry about them. This emphasizes that flood disaster education is one of the solutions to improve student preparedness in facing flood disasters (Saragi & Limbong, 2023) .

In addition to disaster education for the community as one of the efforts to address flooding, other efforts such as infrastructure support from the local government are also crucial for flood prevention (Qanitah et al., 2024) . One of the efforts undertaken by the government in Trawasan Village is dredging the lower part of the river and widening the river basin. However, this does not necessarily mean that Trawasan Village and the surrounding hamlets are free from flooding. Flooding still occurs, albeit with lower intensity, such as in the residents' rice fields and homes near the river basin, which remain affected by flooding.

This is certainly a new task for the government in terms of how to deal with the aftermath of flooding, especially in rice fields and homes near rivers, because rice fields in the Trawasan area are one of the sectors that support the livelihoods and needs of the community. If the rice fields continue to be affected, the community's yields will certainly be reduced, which will ultimately affect the economy of the surrounding residents. Furthermore, the government must also consider how to handle flooding in residential areas near rivers. As a suggestion, the government could begin by prohibiting the construction of buildings near river areas to reduce the impact of flooding on the community's environment.

CONCLUSION

Disaster education plays an important role in increasing the preparedness of the Trawasan Village community against floods caused by natural and human factors. Lack of knowledge has made many residents unprepared to evacuate. Improving education, training, community participation, and mutual cooperation practices can strengthen local resilience, with the role of facilitators for highly educated communities and empowerment for middle-class groups. Schools also need to instill disaster education from an early age. Although the government has made efforts, the impact of flooding on the economy and agriculture is still being felt, so collaboration between the government and the community is key to reducing flood risk disaster.

The limitations of this study lie in the use of qualitative methods with a relatively small number of informants, so the findings obtained cannot represent the entire population of Trawasan Village. In addition, there is no quantitative data available to measure the level of community understanding and preparedness statistically. The study also focused more on social and educational aspects, so it did not explore in depth technical components such as hydrological conditions or the performance of flood control infrastructure. Future research should combine qualitative and quantitative methods to obtain a more comprehensive picture of

preparedness. Further studies could examine the relationship between socioeconomic characteristics, access to information, and community mitigation behaviors using statistical analysis. In addition, it is necessary to conduct more detailed flood risk mapping based on hydrological data and land use, as well as evaluate the effectiveness of existing flood control infrastructure. A participatory approach involving both the community and the government is also important to develop more contextual and sustainable disaster education strategies.

Acknowledgements : With respect and gratitude, we would like to express our appreciation for the preparation of this article to fulfill the final assignment of the 2024 Independent Internship Program in Geography Education at Surabaya State University at the Jombang Regency Disaster Management Agency. I would also like to express my deepest gratitude to my supervisor for his patient and wise guidance and direction. Not only did he provide knowledge and insight, but also financial support that was very meaningful for the smooth running of our activities. Without this support and assistance, we might not have achieved such satisfactory results. Last but not least, thank you to our colleagues at BPBD who have supported and cooperated with us every step of the way. Your cooperation and support were very important in achieving our common goals.

REFERENCES

Aksa, F. I. (2019). Geografi dalam Perspektif Filsafat Ilmu. *Majalah Geografi Indonesia*, *33*(1), 43. https://doi.org/10.22146/mgi.35682

Ali, I., Muqita, B., & Rijal, M. (2022). Upaya Hukum dalam Penanggulangan Tindak Pidana Pasca Banjir Bandang di Masamba Kabupaten Luwu Utara. *LEGAL : Journal of Law*, *1*(2), 57–72.

Anwar, Y. (2022). Kerentanan Masyarakat Terhadap Bencana Banjir Danau di Desa Melintang Kecamatan Muara Wis Kabupaten Kutai Kartanegara. *Geodika: Jurnal Kajian Ilmu Dan Pendidikan Geografi*, *6*(2), 142–151. https://doi.org/10.29408/geodika.v6i2.5905

Asep. (2024). Narasumber Seminar: Pembelajaran Geografi dalam Peningkatan Pemahaman Mitigasi Bencana Banjir. *Panggung Kebaikan : Jurnal Pengabdian Sosial*, *1*(2), 19–26. https://doi.org/10.62951/panggungkebaikan.v1i2.173

Astuti, K. Y., & Nugraheni, I. L. (2016). Abstrak Faktor Penyebab Anak Tidak Menyelesaikan Pendidikan Dasar Di Kecamatan Seputih Raman 2016. *Jurnal Penelitian Geografi (JPG)*, *2016*.

Chyntia, A., & Meiwanda, G. (2022). Strategi Penanggulangan Bencana Banjir Oleh Badan Penanggulangan Bencana Daerah (Bpbd) Kota Solok Sumatera Barat. *Journal of Research and Development on Public Policy*, *1*(3), 35–44. https://doi.org/10.58684/jarvic.v1i3.23

Creswell, J. W. (2015). *Qualitative inquiry and research design : choosing among five approaches*.

Fahlefi, M. R., Dewi, S. T., Makki, M. A., Haerudin, N., & Mulyasari, R. (2023). Pemanfaatan Sistem Informasi Geografis Sebagai Langkah Strategis Dalam Pemetaan Zona Longsor Di Kecamatan Banjarwangi. *GEOGRAPHY : Jurnal Kajian, Penelitian Dan Pengembangan Pendidikan*, *11*(2), 334. https://doi.org/10.31764/geography.v11i2.15553

Fariza, A., & Handayani, B. L. (2022). Tindakan Struktural Mitigasi Bencana Pemerintah Di Indonesia. *Jurnal Analisa Sosiologi*, *11*(2), 288–305. https://doi.org/10.20961/jas.v11i2.57282

Fiantika, M, W., Honesti, J., & Jonata, W. (2022). Metodologi Penelitian Kualitatif. In Metodologi Penelitian Kualitatif. In *Rake Sarasin* (Issue Maret). https://scholar.google.com/citations?user=O-B3eJYAAAAJ&hl=en

Halim, Z. A., & Idrus, I. (2024). Mitigasi Bencana Banjir Pada Daerah Aliran Sungai (DAS) Baringeng Di Dusun Maccini Desa Panaikang Kabupaten Sinjai Provinsi Sulawesi Selatan. *Jurnal Mahakarya Konstruksi*, *01*(1), 26–31.

Hidayanto, A. (2020). Pengetahuan dan sikap kesiapsiagaan masyarakat terhadap bencana banjir. *Higeiajournal of Public Health Research and Development*, *4*(4), 557–586. http://journal.unnes.ac.id/sju/index.php/higeiahttps://doi.org/10.15294/higeia/v4i4/38362

Ihsan, M. H., Adi T, M., Meysa N, R., Nurfauzia, S., & Candra, T. (2023). Peran Pendidikan Mitigasi Bencana Untuk Membangun Kesiapsiagaan

Menghadapi Ancaman Bencana Alam. *Jurnal Pendidikan, Humaniora, Linguistik Dan Sosial (Jagaddhita)*, *1*(2), 76–84. https://doi.org/10.58268/jagaddhita.v1i2.41

Kimura, N. (2020). *Research on the Correlation between Disaster Preparedness and Ecosystem Conservation-Toward Building a Culture of Disaster Risk Reduction for Local …. June*. https://repository.kulib.kyoto-u.ac.jp/dspace/bitstream/2433/254530/2/dtikk00200.pdf

Kurniati, I. (2015). Deskripsi Lokasi Banjir di Kecamatan Tanjung Karang Pusat Bandar Lampung 2011-2013. *Journal of Chemical Information and Modeling*, *53*(9), 1689–1699.

Kurniawan, S. T., Miswar, D., & Salsabilla, A. (2023). KARAKTERISTIK SOSIAL EKONOMI KEPALA KELUARGA DAERAH RAWAN BENCANA BANJIR DI KECAMATAN KELUMBAYAN KABUPATEN TANGGAMUS. *Jurnal Penelitian Geografi (JPG)*, *1*, 32–42.

Kurniawati, D., & Suwito, S. (2019). Pengaruh Pengetahuan Kebencanaan Terhadap Sikap Kesiapsiagaan Dalam Menghadapi Bencana Pada Mahasiswa Program Studi Pendidikan Geografi Universitas Kanjuruhan Malang. *JPIG (Jurnal Pendidikan Dan Ilmu Geografi)*, *2*(2). https://doi.org/10.21067/jpig.v2i2.3507

Magdalena, I., Khofifah, A., & Auliyah, F. (2023). Cendikia pendidikan. *Cendekia Pendidikan*, *2*(5), 10–20. https://ejournal.warunayama.org/index.php/sindorocendikiapendidikan/article/view/769

Mahardika, D., & Larasati, E. (2018). Manajemen Bencana Oleh Badan Penanggulangan Bencana Daerah (Bpbd) Dalam Menanggulangi Banjir Di Kota Semarang. *Journal of Public Policy and Management Review*, *7*(2), 502–518.

Moleong, L. J. (2007). *Metodologi Penelitian Kualitatif Edisi Revisi. In PT Remaja Rosdakarya*. *Maret*.

Pahleviannur, M. R. (2019). Edukasi Sadar Bencana Melalui Sosialisasi Kebencanaan Sebagai Upaya Peningkatan Pengetahuan Siswa Terhadap Mitigasi Bencana. *Jurnal Pendidikan Ilmu Sosial*, *29*(1), 49–55. https://doi.org/10.23917/jpis.v29i1.8203

Pandiangan, A. P. B., & Uma, N. (2025). Implementation of the Pancasila Student Profile Strengthening Project through Disaster Mitigation Education. *Journal of Elementary Education Research and Practice*, *1*(1), 11–20. https://doi.org/10.70376/wgkq8390

Prawiyogi, A. G., Sadiah, T. L., Purwanugraha, A., & Elisa, P. N. (2021). Penggunaan Media Big Book untuk Menumbuhkan Minat Membaca di Sekolah Dasar. *Jurnal Basicedu*, *5*(1). https://doi.org/10.31004/basicedu.v5i1.787

Qanitah, S. P., Napitupulu, R., Manullang, M., & Hairani, C. S. (2024). *Analisis manajemen bencana banjir di kampung aur*. *5*(7).

Qurrotaini, L., Amanda Putri, A., Susanto, A., & Sholehuddin, S. (2022). Edukasi Tanggap Bencana Melalui Sosialisasi Kebencanaan Sebagai Pengetahuan Anak Terhadap Mitigasi Bencana Banjir. *AN-NAS: Jurnal Pengabdian Masyarakat*, *2*(1), 35. https://doi.org/10.24853/an-nas.2.1.35-42

Rahmat, H. K., Frinaldi, A., Rembrandt, R., & Lanin, D. (2024). Model Kesiapsiagaan Bencana Berbasis Sekolah Melalui Program Satuan Pendidikan Aman Bencana di Kota Tangerang. *Al-Isyraq: Jurnal Bimbingan, Penyuluhan, Dan Konseling Islam*, *7*(3), 655–668.

Raysyah, R., & Putra, I. M. (2025). Partisipasi masyarakat terhadap penanganan banjir di kecamatan datuk bandar kota TanjungBalai. *SEMAR (Jurnal Ilmu Pengetahuan, Teknologi, Dan Seni Bagi Masyarakat)*, *14*(1), 175–185.

Rusandi, M. R. (2021). Merancang Penelitian Kualitatif Dasar/Deskriptif dan Studi Kasus. *Al-Ubudiyah: Jurnal Pendidikan Dan Studi Islam*, *2*(1), 48–60. https://doi.org/10.55623/au.v2i1.18

Saragi, M. M., & Limbong, M. H. (2023). Penyuluhan Mitigasi Bencana Banjir sebagai Upaya Meningkatkan Pengetahuan dan Sikap Kepala Keluarga dalam Kesiapsiagaan Bencana. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, *6*(11), 5037–5045. https://doi.org/10.33024/jkpm.v6i11.12405

Sari, D. N., Irawan, B., & Bahtiar, A. (2024). Mengidentifikasi Resiko Banjir Di Kabupaten Cirebon Dalam Menghadapi Curah Hujan Yang Ekstrem Menggunakan Algoritma K-Means. *JATI (Jurnal Mahasiswa Teknik Informatika)*, *8*(3), 2982–2987. https://doi.org/10.36040/jati.v8i3.9610

Septikasari, Z., & Ayriza, Y. (2018). Strategi Integrasi Pendidikan Kebencanaan Dalam Optimalisasi Ketahanan Masyarakat Menghadapi Bencana Erupsi Gunung Merapi. *Jurnal Ketahanan Nasional*, *24*(1), 47. https://doi.org/10.22146/jkn.33142

Setiyani, N., Rahmadi, & Yulian Widya Saputra. (2023). Pengaruh Pengetahuan Dan Perilaku Peserta Didik Sma Negeri 4 Samarinda Terhadap Kesiapsiagaan Menghadapi Bencana Banjir. *Jurnal Penelitian Geografi*, *1*, 19–31. https://doi.org/10.23960/jpg.v11.i1.26585

Setiyobudi, B. A. S. A. (2022). Penentuan Klasifikasi Desa Tangguh Bencana di Desa Padamukti Kecamatan Solokanjeruk. *FTSP Series*, 586–597.

Sinaga, M. T., Asyik, B., & Miswar, D. (2020). Kesiapsiagaan Masyarakat Desa Tangguh Bencana Di Desa Sukaraja Kecamatan Rajabasa Kabupaten Lampung Selatan. *Jurnal Penelitian Geografi (JPG)*, *8*, 118–126.

Sukamto, F. I., Nurhidayat, S., & Verawati, M. (2021). Pelatihan Siswa Tanggap Bencana sebagai Upaya Mitigasi Bencana di Ponorogo. *Amalee: Indonesian Journal of Community Research and Engagement*, *2*(1), 15–22. https://doi.org/10.37680/amalee.v2i1.178

Sulaksana, N., Rendra, P. P. R., & Sulastri, M. (2021). Sosialisasi Mitigasi Bencana Longsor Dan Banjir Secara Virtual Di Masa Pandemi Covid-19. *Kumawula: Jurnal Pengabdian Kepada Masyarakat*, *4*(3), 465. https://doi.org/10.24198/kumawula.v4i3.35516

Suryadi, Y., Lukitawati, L., & Ulya, H. (2024). Penerapan Pendidikan Bencana dalam Membangun Kesiapsiagaan Sekolah Dasar dari Risiko Bencana. *Jurnal Basicedu*, *8*(1), 633–642. https://doi.org/10.31004/basicedu.v8i1.7158

Wachidatullailiya, M., Adawiyah, R., Intan, P. A., Sinaga, E. F., & Wahyu, Y. P. (2025). Conservation Practices of Volcanic Landforms in Eruption Mitigation in the Southern Merapi Region , Klangon Hill , Daerah Istimewa Yogyakarta. *Jurnal Penelitian Geografi (JPG)*, *13*(13), 37–50.

Widjanarko, M., & Minnafiah, U. (2018). Pengaruh Pendidikan Bencana Pada Perilaku Kesiapsiagaan Siswa. *Jurnal Ecopsy*, *5*(1), 1. https://doi.org/10.20527/ecopsy.v5i1.4878