



ERMAN SYARIF UNM <ermansyarif@unm.ac.id>

[GEOSI] Submission Acknowledgement

1 pesan

Fahmi Arif Kurnianto <fahmiarif.fkip@unej.ac.id>
Kepada: Erman Syarif <ermansyarif@unm.ac.id>

17 November 2022 pukul 22.34

Erman Syarif:

Thank you for submitting the manuscript, " Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation" to Geosfera Indonesia. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

Submission URL: <https://jurnal.unej.ac.id/index.php/GEOSI/authorDashboard/submission/35066>
Username: ermansyarif

If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

Fahmi Arif Kurnianto

[Geosfera Indonesia](#)

[GEOSI] Editor Decision

1 pesan

Fahmi Arif Kurnianto <fahmiarif.fkip@unej.ac.id>
Kepada: Erman Syarif <ermansyarif@unm.ac.id>

26 November 2022 pukul 08.02

Dear Dr. Erman Syarif,

We have reached a decision regarding your submission to Geosfera Indonesia, " Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation ".

Our decision is: Revisions Required

Reviewers have now commented on your manuscript. You will see that they are advising that you revise your manuscript. The reviewers' comments can be found at the end of this email and attached files.

The revised manuscript should be uploaded to the Online Submission Interface (<https://jurnal.unej.ac.id/index.php/GEOSI>) in the "Upload Author Version" from Review task window. The revised document should include:

- One (1) MS Word file for Revision Note file in a table form with respect to Reviewers' comments including the location of the revision on the revised manuscript. The table columns should be Number, Reviewers Comments, Answer/Revision Note, Location of Revision (page number, column, and/or line).
- One (1) MS Word file for Revised Manuscript file according to Template-based format (MS Word file) (Important: please color highlight the revised sentences).

Thank you

Fahmi Arif Kurnianto
fahmiarif.fkip@unej.ac.id

Reviewer A:

Reviewer C:

The article can be published after some minor revision. Please do the minor corrections in red and work please on this email attached file.

Title

Has described the contents of the article

Abstract

Abstract has reflected the contents of the article

Introduction

The author clearly justifies the importance of the research in the background, the purpose of the research is quite clear in the introduction

Methods

The author has written all the important information needed in the method section (eg, research design, variables, instruments, subjects, analytic approach. but need to add enough references to ensure the method used is suitable in the research

Results and Discussion

The contents of the research results section have been well written and supported by pictures, tables and graphics in an order. But it needs to be strengthened with references to strengthen the statement on the results

Conclusion

The author draws the right conclusions based on the analysis and in accordance with the research objectives

References

The number of references in the manuscript is 27 sources. this amount consists of research articles and several books. The average year of referral sources is around the last 15 years. the part in the reference needs to be included in the article's online page. some writing references need to be reviewed

[Geosfera Indonesia](#)

2 lampiran



A-35066-99Z_Article Text-88504-1-4-20221120.docx
37K



C-35066-99Z_Article Text-88503-1-4-20221120.docx
471K

REVIEW FORM FOR CONTENT**Manuscript ID** : 35066**Manuscript Title** : Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation

Description	Clear	Partially	Not clear
The title reflects the content and purpose of the research	✓		
The abstract contains summarize of the paper content	✓		
The introduction clearly explains state of the art of research	✓		
The novelty is clearly defined	✓		
The purpose and objective of the work are clearly stated	✓		
The methodology is clearly described	✓		
The data are well presented	✓		
The results are well discussed based on references	✓		
The conclusion answered the problem in the research	✓		
The references are relevant and based on recent journals	✓		
Are the suggestions meaningful, valid, and based on the findings?	✓		
Are the references adequate?	✓		
Is cohesion achieved throughout the article?	✓		
Is the work contributing to the field?	✓		

GEOSFERA INDONESIA

ISSN: 2598-9723 (Print)| ISSN: 2614-8528 (Online)

Publisher : Department of Geography Education, University of Jember, Indonesia

Website : <https://jurnal.unej.ac.id/index.php/GEOSI>

REVIEWER'S COMMENTS

Title	The title is specific to the study that has been done
Abstract	Please summarize, so readers can easily get the key to your research
Introduction	You studied the problems in the Jenepono area, so what happened there? You did not describe the conditions of your research location. Please reveal past events at your research location.
Methods	Specific
Results and Discussion	You don't design your research results on people's behavior after a disaster. This needs to be done so that readers no longer interpret the numbers or percentages that you have written.
Conclusion	Specific
References	Specific

Evaluation:

- The article can be published as it is.
- The article can be published after some minor revision.
- The article must undergo a major revision before it can be resubmitted to the journal.
- The article cannot be published.

Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation

Abstract

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property. This study aims to identify community knowledge and the impact of floods on flood disasters and to determine community efforts to increase preparedness for flood disasters. This type of research is qualitative research. This research was conducted in the village of Sapanan, Binamu District, Jeneponto Regency. Sources of data in this study are informants. Data collection is done by observation, interviews, and documentation. The results of the study show: 1) The level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience, 2) The impacts that are often caused after flooding are the many disease outbreaks caused by flooding, the community cannot carry out their usual activities because the community is busy cleaning their homes, children cannot go to school because it is local and their chairs are filled with mud, and 3) The community's efforts to increase preparedness for flood disasters include monitoring land use and planning locations that are prone to flooding in safe areas, adjusting building designs to be flood-resistant and multilevel, infrastructure development must be watertight, and construction of retaining walls and n Embankments along rivers, seawalls along the coast which are prone to storms or tsunamis will greatly help to reduce flood disasters

Keywords: Pengetahuan; kesiapsiagaan; masyarakat; banjir

Comment [T1]: Please translate and insert disaster mitigation

1. Introduction

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property (Aryono, 2011; Badwi et al., 2020; Ningsih et al., 2020; Rahmadani & Syarif, 2020). According to Law Number 24 of 2007 concerning Disaster Management article 1 point 1 explains that a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors and/or non-natural factors as well as human factors so that resulting in human casualties, environmental damage, property losses, and psychological impacts (RI, 2007).

Most of the people in Sapanan Village, Binamu District, are in a vulnerable condition because they live in an area that has a potential flood hazard. These conditions indicate that the community needs a special strategy to remain able to live in areas with potential flood hazards. One of the efforts that can be made to minimize the impact of flood disasters is to have community preparedness efforts. Preparedness is a series of activities regarding the

needs that will arise if a disaster occurs to anticipate disasters and prepare the community for a better level of preparedness/readiness in dealing with disasters (Yulaelawati, 2008). Thus, community preparedness is needed to ensure an effective response in the event of a flood disaster to minimize the negative impacts arising from the disaster.

The condition in the community is that there is limited knowledge about flood disaster mitigation, and the community's reaction to disaster information is still slow because they feel that they often experience it. The flood incident on January 22 2019 has raised awareness and provided knowledge of the importance of community efforts in increasing preparedness for flood disasters that occur at any time.

Disaster preparedness is a fundamental need for every region to reduce the risk of disasters that can occur regardless of time and place. Therefore, it is necessary to prevent it with the right method so that the risk of a disaster occurring, especially involving human victims, can be minimized (Hoffmann & Muttarak, 2017; Kodoatie, 2002; Narayanan et al., 2018; Ronan et al., 2015; Thomas et al., 2015). The prevention methods used may differ in each region, because they are influenced by the geographic location of the area, the disasters that are common in that area, and the social conditions of the community. So each region needs to study the appropriate method for tackling natural disasters.

Preparedness in dealing with floods helps the community in forming and planning what actions need to be taken in the event of a flood. Success in handling and evacuating during floods is very dependent on the preparedness of the community and individuals themselves. When a flood occurs, all activities will be carried out in an emergency under chaotic conditions, so good planning, coordination, and training are needed so that handling and evacuation when floods take place properly (Hamed & Rao, 2019; Hirschboeck, 1988; Lane, 2017)

Based on the background, the aims of this research are: 1) to identify the community's knowledge of the flood disaster in the village of Sapanan, Binamu District, Jeneponto Regency, 2) to identify the impact of flooding on the community in Sapanan Village, Binamu District, Jeneponto Regency, and 3) to find out the efforts of the community in Sapanan Village, District Binamu Jeneponto Regency in increasing preparedness for flood disasters.

2. Methods

This study uses a type of qualitative research. This research was conducted in the village of Sapanan, Binamu District, Jeneponto Regency, South Sulawesi Province, Indonesia. This research was conducted in February – May 2022.



Figure 1. Study area

Comment [T2]: This means the correspondence of the figure in the text

Data sources in this study used primary and secondary data. Primary data sources were informants using the snowball sampling method, which consisted of:

1. Key informants: Sapanan Village Communities
2. Supporting Informants: Village Head, District Head, and the Communities

The secondary data in this study are related to data in the form of documents (relevant books and literature), and images related to the research focus. Data collection in this study was carried out by observing, interviewing, and documenting stages.

The analysis technique used in this study is a qualitative descriptive analysis technique. The data analysis model in this study follows the concept given by Miles and Huberman. Miles and Huberman revealed that the activities in qualitative data analysis were

carried out interactively and continuously at each stage of the research so that they were completed (Miles & Huberman, 1994). Data verification strategy with data reduction, data categorization, data display, and concluding.

3. Results and Discussion

3.1 Result

3.1.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the research that has been done, it was found that 61.67% of the respondents were women and the remaining 38.33% were men. A large number of female respondents was due to the time used when distributing the questionnaires during working days and hours. In addition, the use of the snowball sampling method also has an effect, because the selected female respondents tend to recommend that the next selected respondent is also a female.

When viewed based on the age of the respondents, it can be seen that the ages of the selected respondents ranged from 24-66 years, with the largest percentage being 40-49 years old (40%) and the smallest percentage being more than 59 years old (3.33%). The education level of the most selected respondents was S1 graduates and above, namely 56.67%. The occupation of the most selected respondents is housewives, with a percentage of 45%. The homeownership status of the majority of the selected respondents was 93.33% self-owned and the rest were rented/contracted by 6.67%. Based on their experience of experiencing floods, as many as 85% of respondents had experienced more than 5 (five) floods while living in Sapanan Village.

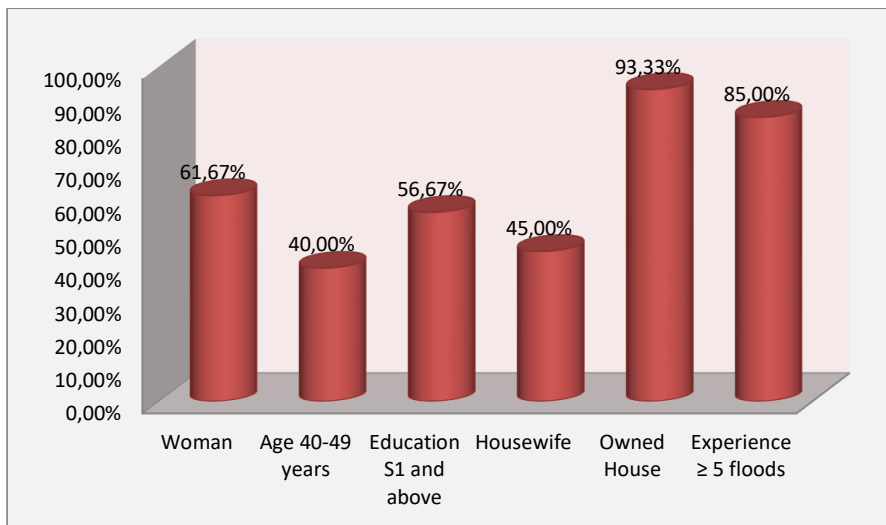


Figure 1. Graph of Respondent Profile's Dominant Characteristics

Comment [T3]: This means the correspondence of the figure in the text Figure 2?

Based on the results of research on the characteristics of the respondents, it can be seen that the majority of the residents of Sapanan Village are still in their productive age, with a fairly high level of education, they are residents who have lived in Sapanan Village for quite a long time, so they have a lot of experience regarding flood events. Although the respondents were dominated by women (61.67%), this did not reduce the objectivity of the research results considering that the majority (85%) of the respondents were people who had enough experience dealing with flood disasters, because they had experienced floods at their homes more than 5 times.

Based on the experience of respondents to the flood disaster, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficult to handle, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

Based on the results of the research that has been done, it was found that all selected respondents (100%) stated that floods that often occur in their residential locations are included in the disaster category because according to them the floods that occur cause disruption to people's lives (46.67%), the flood that occurred was a natural event that caused loss of life and property loss (18.33%), the flood that occurred was the result of careless

disposal of garbage (25%), and the flood was considered a puddle that occurred after rain (10%).

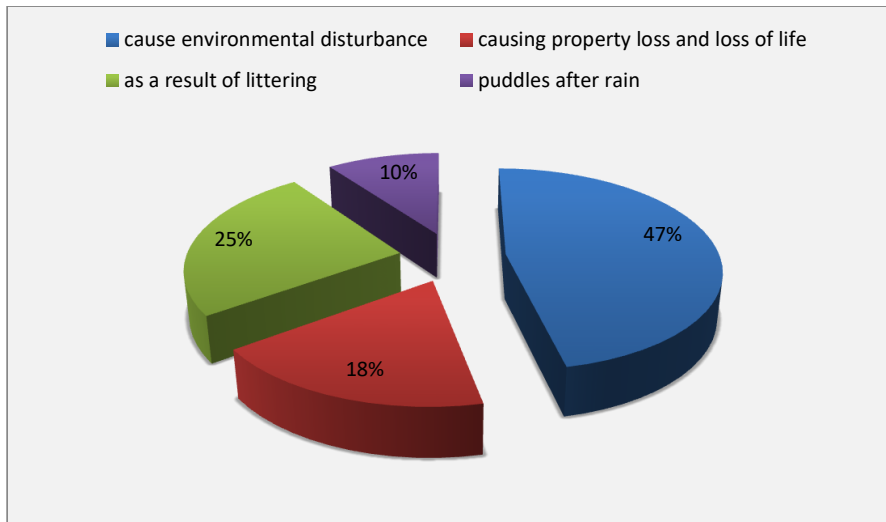


Figure 2. Definition of Flood according to Respondents

Comment [T4]: This means the correspondence of the figure in the text

Based on the experience of respondents to the flood disaster, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficult to handle, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

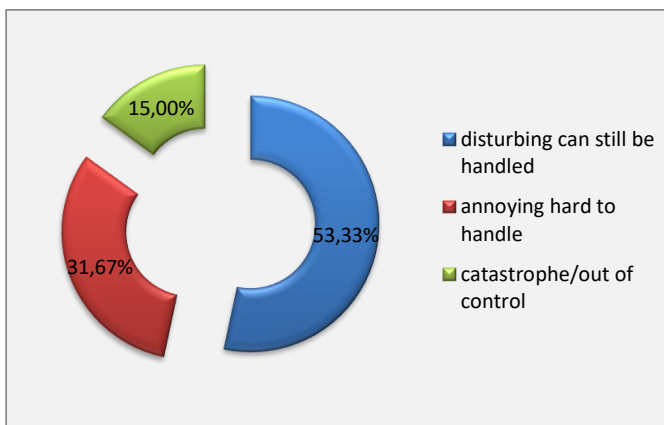


Figure 3. Respondents' experience of flooding

Comment [T5]: This means the correspondence of the figure in the text

The factors causing the flood disaster were identified into 2, namely due to natural factors and human factors. Based on the respondent's knowledge, natural factors that cause floods include high-intensity rainfall, especially in the upper reaches of the river (43.33%), erosion and sedimentation which causes siltation of rivers (30%), living conditions in basins/lowlands (20%), and there is high tide (6.67%). Meanwhile, according to the knowledge of the respondents, the human factor caused the flood disaster, littering behavior (55%), construction of houses on riverbanks (23.33%), illegal logging (11.67%), developments that change land use (10%).

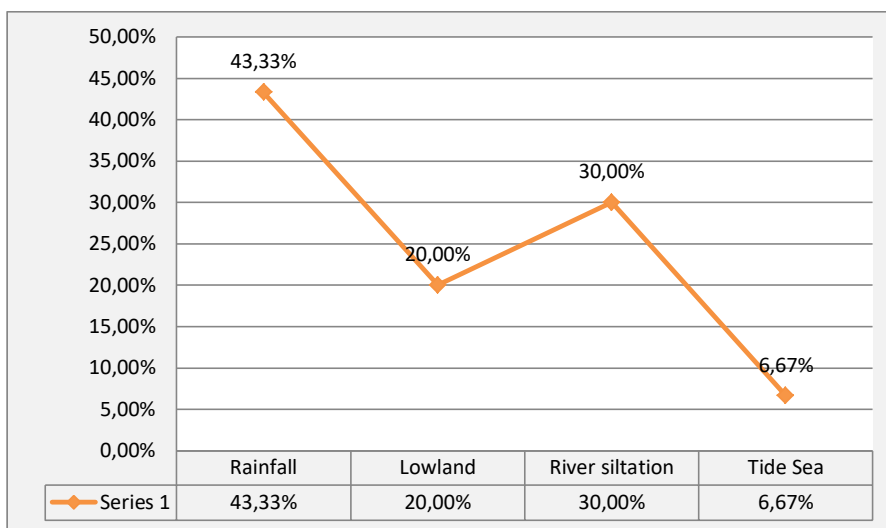


Figure 4. Natural Factors that Cause Floods

Comment [T6]: This means the correspondence of the figure in the text. Maybe figure 5??

The level of public knowledge about the signs of an impending flood disaster can be identified from each respondent's answer, according to respondents the signs of an impending flood disaster if heavy rains in the upstream area of the river are more than 2 hours (26.67%), There is information on the water level in the upstream it exceeds the normal threshold (51.67%), the river water is cloudy and a lot of material is washed away by the river water (3.33%), the river embankments start to leak or break and the pumps don't work (18.33%).

Regarding the actions taken to prevent or reduce the occurrence of floods, respondents have various answers to these questions. The various answers of respondents can describe the level of public knowledge. Actions were taken to prevent or reduce the occurrence of floods by disposing of garbage in its place (26.67%), cleaning waterways around residential houses (20%), working together to clean rivers (16.67%), planting trees in areas upstream (13.33%), and elevating river embankments (23.33%).

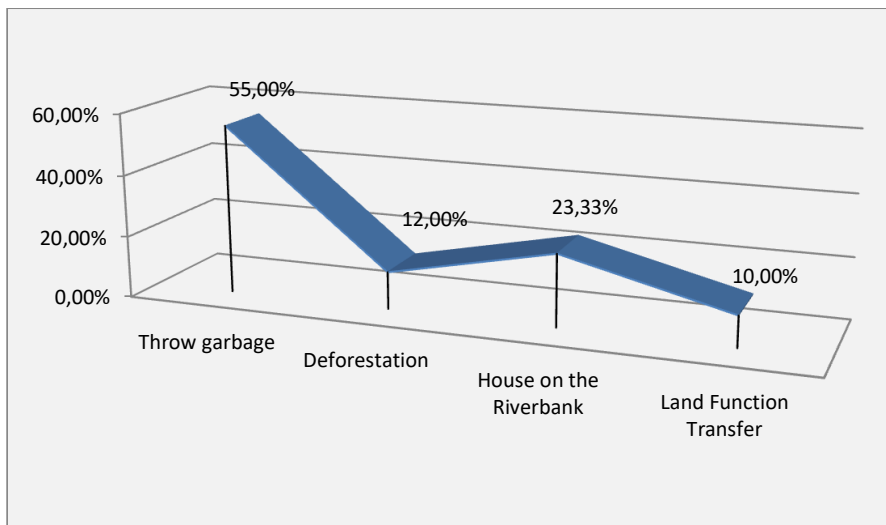


Figure 5. Human Factors Cause Flood

Comment [T7]: This means the correspondence of the figure in the text Figure 6?

Actions taken by the community regarding the occurrence of floods are divided into three stages, namely before the flood occurs, during the flood, and after the flood occurs. For actions taken before the flood occurred, respondents prepared a disaster-prepared bag containing important documents/securities (3.33%), prepared logistics (foodstuff) for emergency needs (10%), prepared equipment for evacuation (21.67%), renovated houses by raising the foundation or building a house into two floors (41.67%), planning/ placing valuables in a relatively safe place (23.33%).

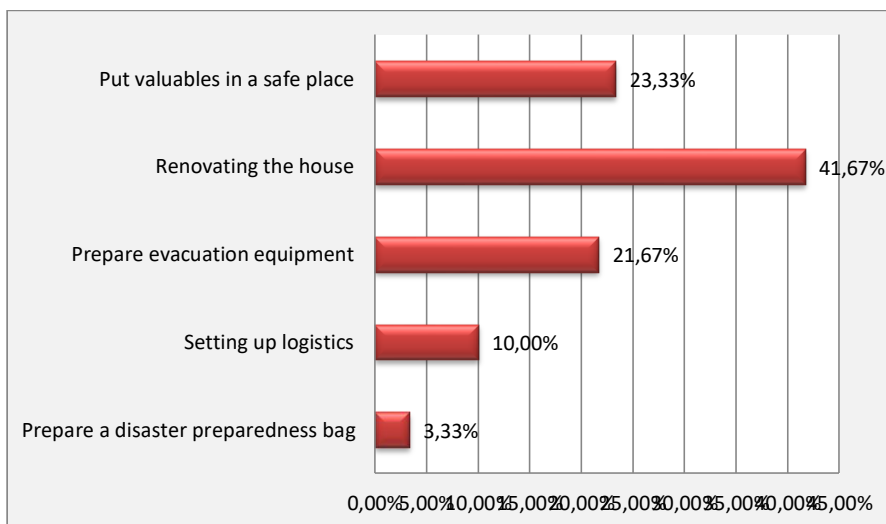


Figure 6. Actions Taken Before the Flood

Comment [T8]: This means the correspondence of the figure in the text

Actions taken by the community when a flood occurs based on information obtained from respondents are to stay at home to maintain the safety of belongings (36.67%), seek information related to flooding through neighbors, handy talkies, mobile phones, television and radio (25%), ensuring sufficient food/logistics supplies (6.67%), ensuring all family members are safe (20%), evacuating to a safe place (1.67%), and ensuring vehicles are in a safe place (11.67 %). Based on information from respondents, very few people evacuated/evacuated or stayed at home when a flood occurred, because most of the people had raised their houses.

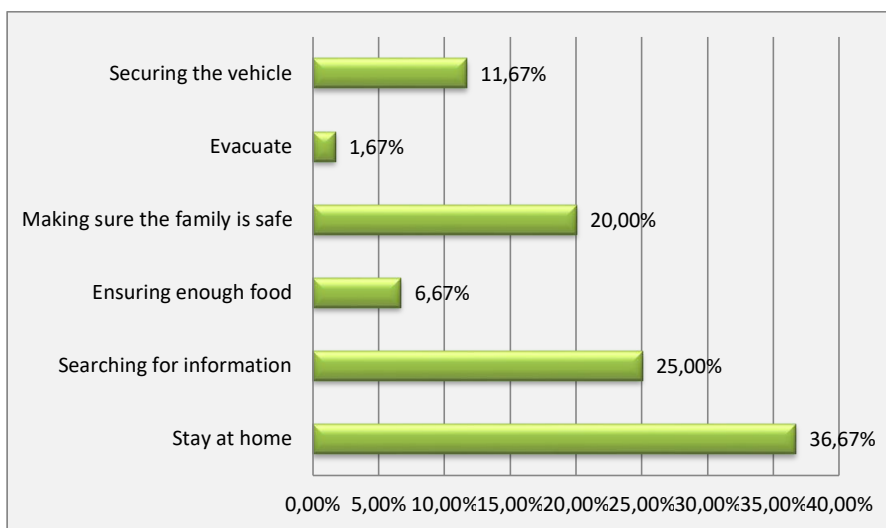


Figure 7. Actions to be taken during a flood

Comment [T9]: This means the correspondence of the figure in the text

Actions taken by the community after a flood occurred based on information obtained from respondents were cleaning houses and goods from water/mud/flood garbage (58.33%), providing clean water needs and bathing facilities for family needs (13.33%), ensuring the health condition of the family from the effects of the flood (8.33%), carrying out cooperation to clean up the environment from various rubbish/flood mud (15%), and ensuring that the electrical panels at home are in a safe condition (5%).

Based on research on the level of knowledge and actions taken by the community regarding flooding, it is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience.

3.1.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jeneponto Regency

Problems that often occur due to the impact of flooding on the community include physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impact, health risk, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation and others).
- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.
- e. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

This can be known from the results of research on the community in Sapanan village by interviewing him with the results as follows:

According to Mr. Hamzah Karaeng Lurang:

"When asked about the impact caused by this flood many people cannot carry out their activities as usual, because people are busy cleaning their homes. this flood also caused many diseases caused by this flood, if there is a flood ready apart from the illness that has caused me I cannot go to work as usual." (Interview, July 23, 2021)

According to Jamairah Karaeng Sangging:

"The impact of flooding that often occurs in this village, firstly, the houses are dirty due to the soil brought by the floods, secondly, there are many diseases that occur as a result of the coming floods" (Interview, 23 July 2021).

According to Syamsuddin Karaeng Liwang:

"The impact of flooding that often occurs in this village is, firstly, the houses are dirty due to the soil brought by the floods. Secondly, many diseases occur as a result of the coming floods" (Interview, 23 July 2021).

From the interview above, it is clear that the impact of flooding on the community is that many people's houses are dirty due to the mud soil brought by the flood, many diseases are caused by flooding, farmers cannot grow crops, children cannot go to school, and victims of property.

3.1.3 Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters.

Efforts were made by the community in Sapanan village to deal with flood disasters which often occur during the rainy season. Following are some principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Hold as much water as possible upstream by making reservoirs and
- b. soil and water conservation.
- a. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- b. Controlling water in the center by temporarily storing it in a retention area.
- c. Flowing water as soon as possible to the estuary or the sea by guarding
- c. water container capacity.
- a. Securing residents, vital infrastructure, and property.

According to Paimin in (Hermon, 2021) mitigation of flood, disasters are a series of efforts to reduce the risk of flood disasters, both through physical development and awareness and capacity building in dealing with the threat of flood disasters.

Based on the results of an interview with the Binamu sub-district head, he said:

I, as the Head of the Binamu Sub-District, certainly have to understand disaster mitigation, especially the Mitigation of flood disasters that have frequently occurred recently, especially in the village of Sapanan. So Mitigation is a series of efforts made when a disaster occurs. we have even invited and appealed to the public to be vigilant when a flood disaster comes. But there are still some people who are negligent in this regard. The obstacles in this socialization include the lack of public awareness of this socialization, secondly the lack of knowledge about mitigation. If asked whether or not they were involved in the mitigation process, the answer is, of course, involved in this counseling. (Interview July 25, 2021).

According to Suardi Karaeng Lira:

Actions or efforts made during the flood made efforts to save themselves, such as running to a high place, when the flood was over many people had itching, diarrhea, and lots of mosquitoes. (Interview July 26, 2021).

Muhammad Alwi Karaeng Tompo;

The efforts I made when the floods came were we ran to a high and safe place, and valuables were saved, that's all I know, if asked if I had participated in socialization I never had because I'd rather go to the fields, and rice fields (Interview July 26, 2021).

Amran Karaeng Sija:

The efforts that I make when the floods come are that we run to a high and safe place. Apart from that, every rainy season the government has also provided information or invited the public so that when the floods come, don't save things or things, but save yourself. The sub-district head has suggested to the government that ditches be made for the river, but so far this has not been implemented (Interview 26 July 2021).

Based on the results of the interview, it can be seen that the efforts made were running to a high place and making the foundation of the house higher so that when the flood came it would not be flooded.

3.2 Discussion

3.2.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the results of research on the level of knowledge and actions taken by the people of Sapanan village regarding flooding, this is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The results of this study are also following research conducted by (Chan et al., 2014), showing the greatest impact in calculating the level of preparedness of rural families and increasing the level of good knowledge by increasing the level of family preparedness. Knowledge is one of the

determinants of behavior and the mental side of what people know (Notoatmodjo et al., 2012). Lack of knowledge about flood disasters and the causes of flood disasters that affect people's attitudes in dealing with these disasters can be seen from the habits of people who do not care about protecting the environment around their own homes, for example, people still throw garbage indiscriminately on riverbanks and ditches, large land conversions -size and so on.

This is in line with the results of research from (Dantzler, 2013) which examines various factors that influence families in preparing themselves for disaster preparedness activities, one of these factors is the attitude of the family. Attitude is an individual's willingness to act, besides that attitude is also an action or behavior in determining this complete attitude, knowledge, thoughts, beliefs, and emotions play an important role. There are two components of the attitude factor in the family. The first involves risk perception, the second involves previous disaster experience. Because disasters are events separated in space and time, some people consider them only a possibility and a consequence of natural changes (Erdelj et al., 2017; Geale, 2012; Jiang & Ritchie, 2017; McEntire, 2021; Raikes et al., 2019).

3.2.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jeneponto Regency

The impact caused by the flood in Sapanan village can be seen from the impact caused by the flood disaster as described from the results of the interview, namely the many disease outbreaks that have occurred and prevented people from going to work because people were busy cleaning their homes. So that people's daily activities become busy cleaning up the remnants of mud resulting from flooding (Boardman & Vandaele, 2020; De Walque et al., 2017; Winkler et al., 2018). According to UNESCO, among others, the physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impacts include death, health risks, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, and shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation, etc.).

- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

3.2.3 Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters.

Based on the results of the research, shows that the efforts made by the community in Sapanan village are an effort to deal with flood disasters that often occur during the rainy season, namely self-rescue such as running to a high place and after the flood recedes the community returns to their respective homes. Apart from that, the community also does not throw trash in the river. Besides that, the efforts made by the community work together to clean the water ditches so that the course of river water is as it should be. Likewise, efforts to propose to make permanent ditches or retaining walls with embankments along the river, but so far have not been implemented. This is by the general guidelines for Disaster Mitigation, Regulation of the Minister of Home Affairs Number 33 of 2006 dated 18 October 2006. The steps taken in mitigating floods in more detail in efforts to reduce flood disasters include:

- a. Supervised land use and site planning for placing vital facilities that are vulnerable to flooding in the area safely.
- b. Adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel.
- c. Infrastructure development must be watertight.
- d. Construction of retaining walls and embankments along the river, and sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.
- e. Setting the speed of surface water flow and upstream areas is very helpful in reducing the occurrence of floods. Some of the efforts that need to be made to regulate the speed of water entering the drainage system include the development
- f. dams/reservoirs, reforestation, and construction of infiltration systems.
- g. Dredging rivers, and making river slits either in open channels or with pipes or tunnels can help reduce the risk of flooding.
- h. Construction of retaining walls and breakwaters for
- i. reduce wave energy in the event of a storm or tsunami for coastal areas.

While the principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Retain as much water as possible upstream by creating reservoirs and conserving soil and water.
- b. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- c. Controlling water in the middle by temporarily storing it in the retention area.
- d. Distribute water as soon as possible to the estuary or the sea by maintaining the capacity of the water tank.
- e. Securing residents, vital infrastructure, and property.

From the opinions and results of observations and research conducted by researchers, it can be stated that the understanding of the people of Sapanan village towards flood disaster mitigation can be categorized as understanding, in definition and intent as actions or efforts to save themselves from flood disasters (during a flood and after a flood occurs). , as well as the impact caused by flooding, and efforts to overcome it.

4. Conclusion

From the results of research conducted in Sapanan, Binamu District, Jeneponto Regency, it can be concluded that the level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The impact that is often caused after the flood is the many disease outbreaks caused by the flood, the community cannot carry out their usual activities because the community is busy cleaning their homes, and the children cannot go to school because they are local and their chairs are filled with mud. Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters supervision of land use and site planning for placing vital facilities that are vulnerable to flooding in the area safety, adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel, infrastructure development must be watertight, construction of retaining walls and embankments along rivers, sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.

5. Conflicts of Interest

The authors declare no conflict of interest.

6. References

Comment [T10]: Please insert doi of references

Examples:

Article :
Szewrański, S., Świąder, M., Kazak, J. K., Tokarczyk-Dorociak, K., & van Hoof, J. (2018). Socio-environmental vulnerability mapping for environmental and flood resilience assessment: The case of ageing and poverty in the city of wroclaw, poland. *Integrated Environmental Assessment and Management*, 14(5), 592-597. doi:10.1002/ieam.4077

please double check where it is placed point, where to put the comma, etc.

All manuscripts should be formatted using the [American Psychological Association \(APA\)](#) citation style. For additional examples, consult the most recent edition of the Publication Manual of the American Psychological Association. Reference list should only include works that have been published or accepted for publication. Unpublished works should be only mentioned in the text. Reference list should be with the bibliographic details of the cited books, book chapters, or journal articles. In this part, all the used references must be taken from primary sources (scientific journals and the least number is **80% from all the references**) that published in the last ten years.

Reference citations in the text:
Takahashi (2014) or (Takahashi, 2014); O'neil *et al.* (2006) or (O'neil *et al.*, 1974); Priyanto & Johnson (2011) or (Priyanto & Johnson, 2011). Citing a citation, such as Morris in Miftah *et al.* (2008), and using 'Anonym' as reference **are not allowed**. All the served data or quotes in the article taken from the other author articles should attach the reference sources. The references should use a reference application management such as **Mendeley, End Note, or Zotero**.

- Aryono, D. P. (2011). *The Silent Disaster Bencana dan Korban Massal*. CV. Sagung Seto. Jakarta.
- Badwi, N., Invanni, I., & Abbas, I. (2020). Pemetaan Tingkat Rawan Bencana Banjir di Daerah Aliran Sungai Maros Provinsi Sulawesi Selatan. *LaGeografia*, 18(3), 309–322.
- Boardman, J., & Vandaele, K. (2020). Managing muddy floods: Balancing engineered and alternative approaches. *Journal of Flood Risk Management*, 13(1), e12578.
- Chan, E. Y. Y., Kim, J. H., Lin, C., Cheung, E. Y. L., & Lee, P. P. Y. (2014). Is previous disaster experience a good predictor for disaster preparedness in extreme poverty households in remote muslim minority based community in China? *Journal of Immigrant and Minority Health*, 16(3), 466–472.
- Dantzer, D. (2013). *Basic household disaster preparedness decisional Influences among male federal employees in the national Capital region*. Capella University.
- De Walque, B., Degré, A., Maignard, A., & Biolders, C. L. (2017). Artificial surfaces characteristics and sediment connectivity explain muddy flood hazard in Wallonia. *Catena*, 158, 89–101.
- Erdelj, M., Natalizio, E., Chowdhury, K. R., & Akyildiz, I. F. (2017). Help from the sky: Leveraging UAVs for disaster management. *IEEE Pervasive Computing*, 16(1), 24–32.
- Geale, S. K. (2012). The ethics of disaster management. *Disaster Prevention and Management: An International Journal*, 21(4), 445–462.
- Hamed, K., & Rao, A. R. (2019). *Flood frequency analysis*. CRC press.
- Hermon, D. (2021). *Geografi Bencana Alam-Rajawali Pers*. PT. RajaGrafindo Persada.
- Hirschboeck, K. K. (1988). Flood hydroclimatology. *Flood Geomorphology*, 27, 49.
- Hoffmann, R., & Muttarak, R. (2017). Learn from the past, prepare for the future: Impacts of education and experience on disaster preparedness in the Philippines and Thailand. *World Development*, 96, 32–51.
- Jiang, Y., & Ritchie, B. W. (2017). Disaster collaboration in tourism: Motives, impediments and success factors. *Journal of Hospitality and Tourism Management*, 31, 70–82.
- Kodoatie, R. J. (2002). *Banjir: beberapa penyebab dan metode pengendaliannya dalam perspektif lingkungan*. Pustaka Pelajar.
- Lane, S. N. (2017). Natural flood management. *Wiley Interdisciplinary Reviews: Water*, 4(3), e1211.
- McEntire, D. A. (2021). *Disaster response and recovery: strategies and tactics for resilience*. John Wiley & Sons.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded*

sourcebook. sage.

- Narayanan, N., Lacy, C. R., Cruz, J. E., Nahass, M., Karp, J., Barone, J. A., & Hermes-DeSantis, E. R. (2018). Disaster preparedness: biological threats and treatment options. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 38(2), 217–234.
- Ningsih, Y. W., Imawati, N. D., A'dawiyah, R., Prihastomi, A., Gunawan, G., & Widyatmoko, W. (2020). Identifikasi Kesiapan Sekolah Menengah Muhammadiyah untuk Implementasi Sekolah Siaga Bencana di Kecamatan Wedi Kabupaten Klaten. *LaGeografia*, 18(2), 99–108.
- Notoatmodjo, S., Anwar, H., Ella, N. H., & Tri, K. (2012). Promosi kesehatan di sekolah. *Jakarta: Rineka Cipta*, 21–23.
- Rahmadani, S., & Syarif, E. (2020). **STUDI TINGKAT PENGETAHUAN KEBENCANAAN TERHADAP SIKAP KESIAPSIAGAAN MASYARAKAT DALAM MENGHADAPI BENCANA TANAH LONGSOR DI KECAMATAN PARANGLOE KABUPATEN GOWA TAHUN 2019**. *Jurnal Environmental Science*, 2(2), 162–169.
- Raikes, J., Smith, T. F., Jacobson, C., & Baldwin, C. (2019). Pre-disaster planning and preparedness for floods and droughts: A systematic review. *International Journal of Disaster Risk Reduction*, 38, 101207.
- RI, P. P. (2007). Undang-Undang Nomor 24 Tahun 2007 tentang Penanggulangan Bencana. *Jakarta: Peraturan Pemerintah Republik Indonesia*.
- Ronan, K. R., Alisic, E., Towers, B., Johnson, V. A., & Johnston, D. M. (2015). Disaster preparedness for children and families: a critical review. *Current Psychiatry Reports*, 17(7), 1–9.
- Thomas, T. N., Leander-Griffith, M., Harp, V., & Cioffi, J. P. (2015). Influences of preparedness knowledge and beliefs on household disaster preparedness. *Morbidity and Mortality Weekly Report*, 64(35), 965–971.
- Winkler, D., Bidló, A., Bolodár-Varga, B., Erdő, Á., & Horváth, A. (2018). Long-term ecological effects of the red mud disaster in Hungary: Regeneration of red mud flooded areas in a contaminated industrial region. *Science of The Total Environment*, 644, 1292–1303.
- Yulaelawati, E. (2008). *Mencerdasi bencana: banjir, tanah longsor, tsunami, gempa bumi, gunung api, kebakaran*. Grasindo.

Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation

Erman Syarif^{1*}, Maddatuang M², Alief Saputro³

^{1 2 3} Geography Education Study Program, Makassar State University, Makassar, 90222, Indonesia

*Corresponding author: ermansyarif@unm.ac.id

Abstract

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property. This study aims to identify community knowledge and the impact of floods on flood disasters and to determine community efforts to increase preparedness for flood disasters. This type of research is qualitative research. This research was conducted in the village of Sapanan, Binamu District, Jeneponto Regency. Sources of data in this study are informants. Data collection is done by observation, interviews, and documentation. The results of the study show: 1) The level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience, 2) The impacts that are often caused after flooding are the many disease outbreaks caused by flooding, the community cannot carry out their usual activities because the community is busy cleaning their homes, children cannot go to school because it is local and their chairs are filled with mud, and 3) The community's efforts to increase preparedness for flood disasters include monitoring land use and planning locations that are prone to flooding in safe areas, adjusting building designs to be flood-resistant and multilevel, infrastructure development must be watertight, and construction of retaining walls and n Embankments along rivers, seawalls along the coast which are prone to storms or tsunamis will greatly help to reduce flood disasters

Keywords: knowledge; preparedness; the community; flood

1. Introduction

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property (Aryono, 2011; Badwi et al., 2020; Ningsih et al., 2020; Rahmadani & Syarif, 2020). According to Law Number 24 of 2007 concerning Disaster Management article 1 point 1 explains that a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors and/or

non-natural factors as well as human factors so that resulting in human casualties, environmental damage, property losses, and psychological impacts (RI, 2007).

Research results from (Hartuti, 2022) state that from December 2018 to February 2019 in the Jeneponto district there was high rainfall which caused flooding in several locations. Furthermore (Syam et al., 2021) revealed that one of the areas in Jeneponto Regency that experienced severe flooding was in Binamu District, to be precise in Sapanang Village. The disaster not only caused material losses, but also caused many people to get sick from various groups, namely, infants, children, adolescents, and adults to the elderly, and even caused fatalities.

Most of the people in Sapanan Village, Binamu District, are in a vulnerable condition because they live in an area that has a potential flood hazard. These conditions indicate that the community needs a special strategy to remain able to live in areas with potential flood hazards. One of the efforts that can be made to minimize the impact of flood disasters is to have community preparedness efforts. Preparedness is a series of activities regarding the needs that will arise if a disaster occurs to anticipate disasters and prepare the community for a better level of preparedness/readiness in dealing with disasters (Yulaelawati, 2008). Thus, community preparedness is needed to ensure an effective response in the event of a flood disaster to minimize the negative impacts arising from the disaster.

The condition in the community is that there is limited knowledge about flood disaster mitigation, and the community's reaction to disaster information is still slow because they feel that they often experience it. The flood incident on January 22 2019 has raised awareness and provided knowledge of the importance of community efforts in increasing preparedness for flood disasters that occur at any time.

Disaster preparedness is a fundamental need for every region to reduce the risk of disasters that can occur regardless of time and place. Therefore, it is necessary to prevent it with the right method so that the risk of a disaster occurring, especially involving human victims, can be minimized (Hoffmann & Muttarak, 2017; Kodoatie, 2002; Narayanan et al., 2018; Ronan et al., 2015; Thomas et al., 2015). The prevention methods used may differ in each region, because they are influenced by the geographic location of the area, the disasters that are common in that area, and the social conditions of the community. So each region needs to study the appropriate method for tackling natural disasters.

Preparedness in dealing with floods helps the community in forming and planning what actions need to be taken in the event of a flood. Success in handling and evacuating during floods is very dependent on the preparedness of the community and individuals

themselves. Effective and efficient flood disaster management requires knowledge of the hazards and risks that exist in the watershed (Rahmadani & Syarif, 2020; Simanjuntak & Paolo, 2022). When a flood occurs, all activities will be carried out in an emergency under chaotic conditions, so good planning, coordination, and training are needed so that handling and evacuation when floods take place properly (Hamed & Rao, 2019; Hirschboeck, 1988; Lane, 2017)

Based on the background, the aims of this research are: 1) to identify the community's knowledge of the flood disaster in the village of Sapanan, Binamu District, Jeneponto Regency, 2) to identify the impact of flooding on the community in Sapanan Village, Binamu District, Jeneponto Regency, and 3) to find out the efforts of the community in Sapanan Village, District Binamu Jeneponto Regency in increasing preparedness for flood disasters.

2. Methods

This study uses a type of qualitative research. This research was conducted in Sapanan Village, Binamu District, Jeneponto Regency, South Sulawesi Province, Indonesia as shown in Figure 1 below. This research was conducted in February – May 2022.



Figure 1. Study area

Data sources in this study used primary and secondary data. Primary data sources were informants using the snowball sampling method, which consisted of:

1. Key informants: Sapanan Village Communities
2. Supporting Informants: Village Head, District Head, and the Communities

The secondary data in this study are related to data in the form of documents (relevant books and literature), and images related to the research focus. Data collection in this study was carried out by observing, interviewing, and documenting stages.

The analysis technique used in this study is a qualitative descriptive analysis technique. The data analysis model in this study follows the concept given by Miles and Huberman. Miles and Huberman revealed that the activities in qualitative data analysis were

carried out interactively and continuously at each stage of the research so that they were completed (Miles & Huberman, 1994). Data verification strategy with data reduction, data categorization, data display, and concluding.

3. Results and Discussion

3.1 Result

3.1.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the research that has been done, it was found that 61.67% of the respondents were women and the remaining 38.33% were men. A large number of female respondents was due to the time used when distributing the questionnaires during working days and hours. In addition, the use of the snowball sampling method also has an effect, because the selected female respondents tend to recommend that the next selected respondent is also a female.

When viewed based on the age of the respondents, it can be seen that the ages of the selected respondents ranged from 24-66 years, with the largest percentage being 40-49 years old (40%) and the smallest percentage being more than 59 years old (3.33%). The education level of the most selected respondents was S1 graduates and above, namely 56.67%. The occupation of the most selected respondents is housewives, with a percentage of 45%. The homeownership status of the majority of the selected respondents was 93.33% self-owned and the rest were rented/contracted by 6.67%. Based on their experience of experiencing floods, as many as 85% of respondents had experienced more than 5 (five) floods while living in Sapanan Village.

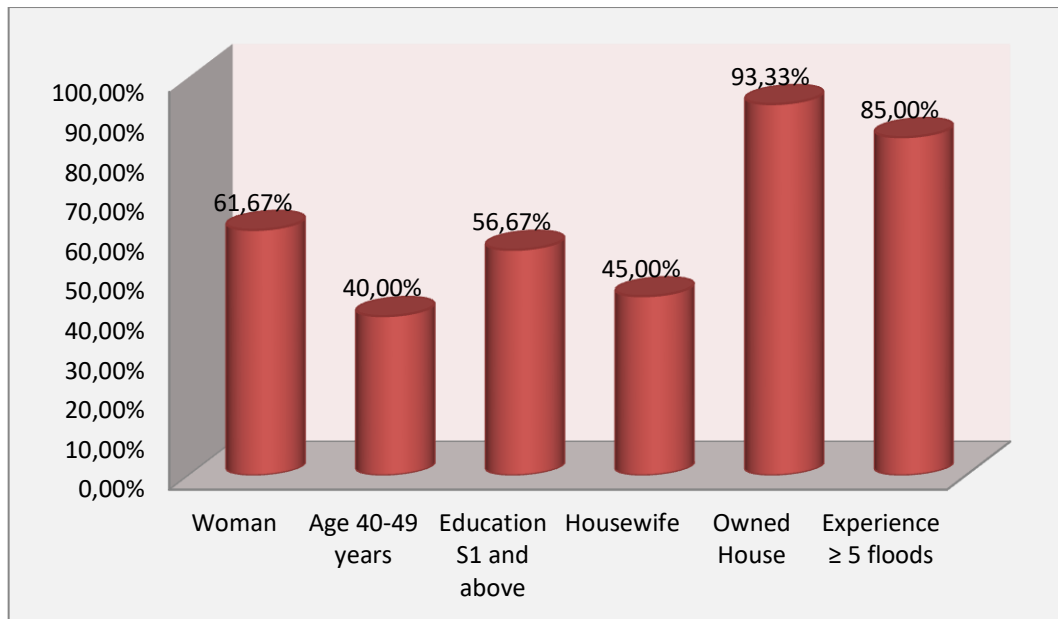


Figure 2. Graph of Respondent Profile's Dominant Characteristics

Based on the results of research on the characteristics of the respondents in figure 2, it can be seen that the majority of the residents of Sapanan Village are still in their productive age, with a fairly high level of education, they are residents who have lived in Sapanan Village for quite a long time, so they have a lot of experience regarding flood events. Although the respondents were dominated by women (61.67%), this did not reduce the objectivity of the research results considering that the majority (85%) of the respondents were people who had enough experience dealing with flood disasters, because they had experienced floods at their homes more than 5 times.

Based on the experience of respondents to the flood disaster, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficult to handle, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

Based on the results of the research in figure 3 that has been done, it was found that all selected respondents (100%) stated that floods that often occur in their residential locations are included in the disaster category because according to them the floods that occur cause disruption to people's lives (46.67%), the flood that occurred was a natural event that caused loss of life and property loss (18.33%), the flood that occurred was the result of careless

disposal of garbage (25%), and the flood was considered a puddle that occurred after rain (10%).

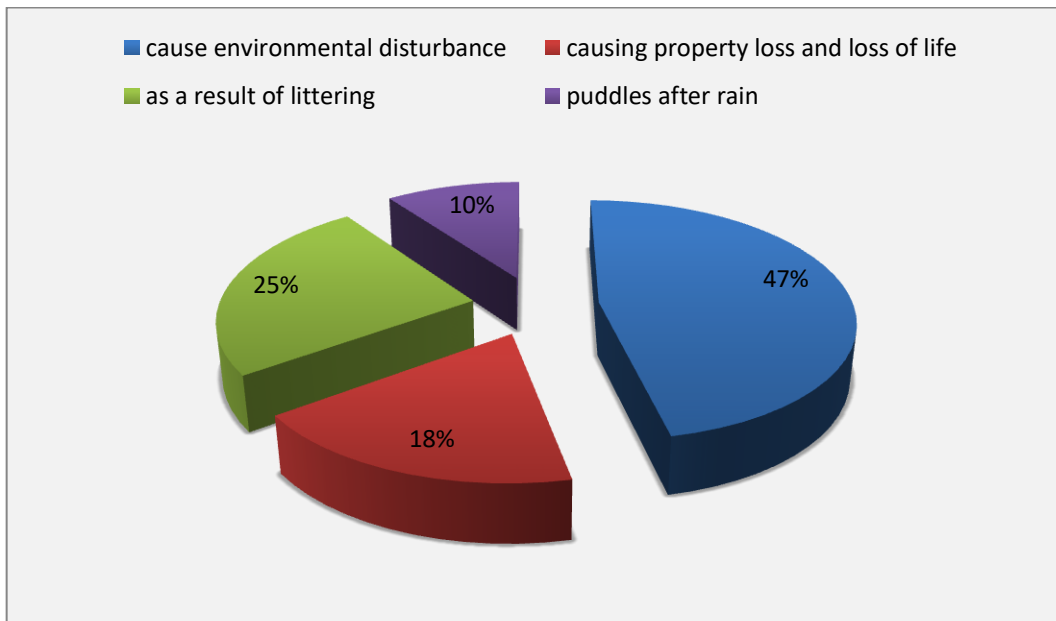


Figure 3. Definition of Flood according to Respondents

Based on the experience of respondents to the flood disaster in figure 4, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficult handling, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

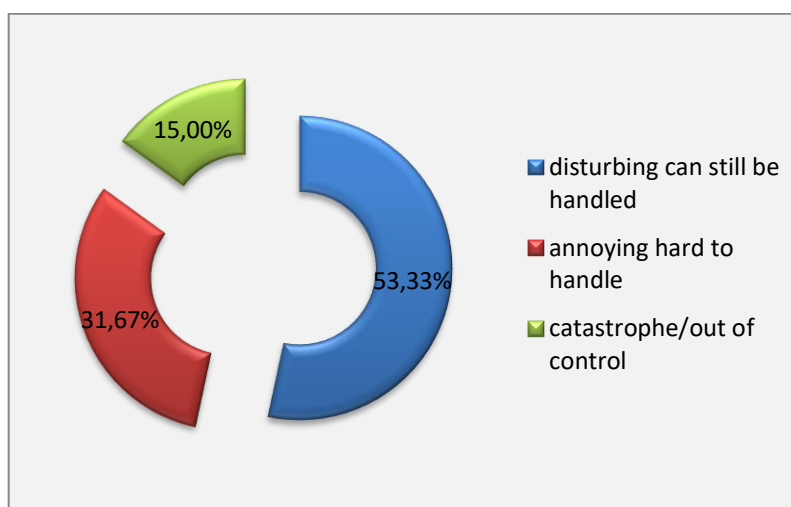


Figure 4. Respondents' experience of flooding

The factors causing the flood disaster were identified into 2, namely due to natural factors and human factors. Based on the respondent's knowledge in figure5, natural factors that cause floods include high-intensity rainfall, especially in the upper reaches of the river (43.33%), erosion and sedimentation which causes siltation of rivers (30%), living conditions in basins/lowlands (20%), and there is high tide (6.67%). Meanwhile, according to the knowledge of the respondents, the human factor caused the flood disaster, littering behavior (55%), construction of houses on riverbanks (23.33%), illegal logging (11.67%), developments that change land use (10%).

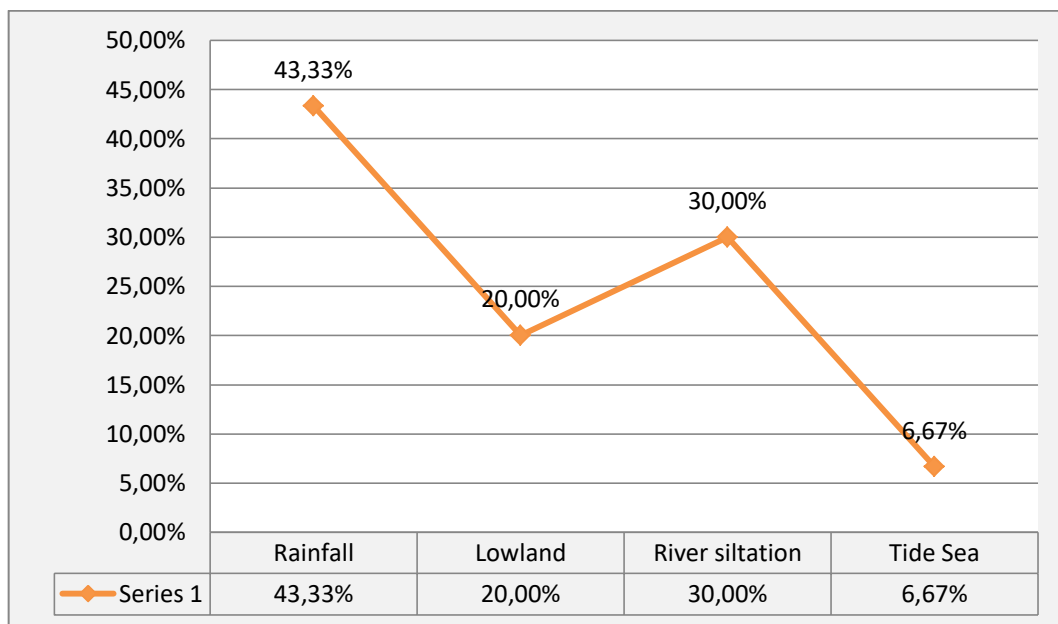


Figure 5. Natural Factors that Cause Floods

The level of public knowledge about the signs of an impending flood disaster can be identified from each respondent's answer, according to respondents the signs of an impending flood disaster if heavy rains in the upstream area of the river are more than 2 hours (26.67%), There is information on the water level in the upstream it exceeds the normal threshold (51.67%), the river water is cloudy and a lot of material is washed away by the river water (3.33%), the river embankments start to leak or break and the pumps don't work (18.33%).

Regarding the actions taken to prevent or reduce the occurrence of floods, respondents have various answers to these questions. The various answers of respondents can describe the level of public knowledge. Actions were taken to prevent or reduce the occurrence of floods by disposing of garbage in its place (26.67%), cleaning waterways around residential houses (20%), working together to clean rivers (16.67%), planting trees in areas upstream (13.33%), and elevating river embankments (23.33%).

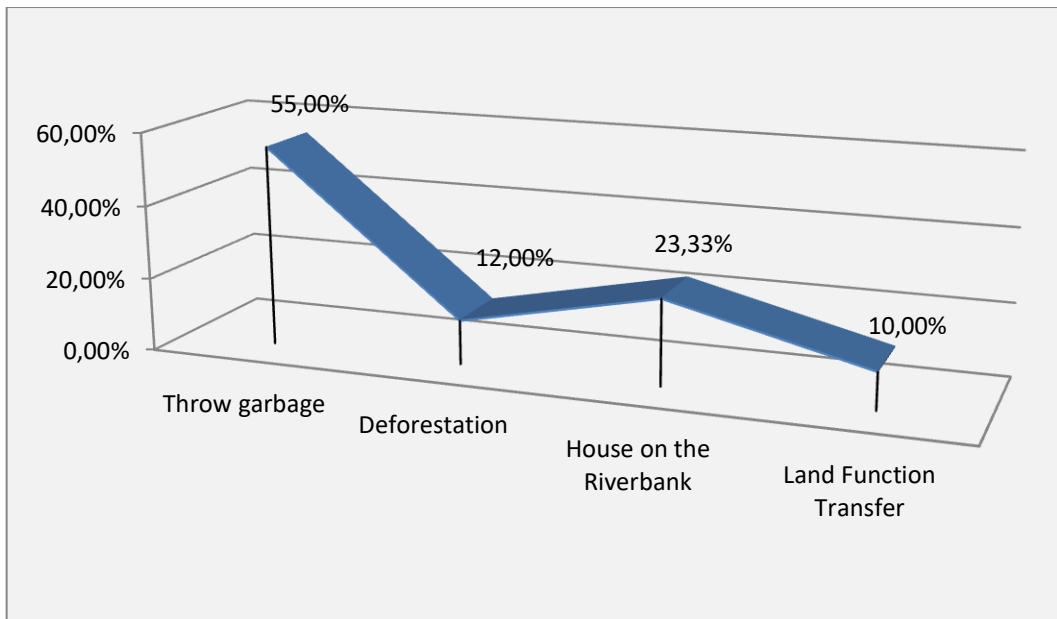


Figure 6. Human Factors Cause Flood

Actions taken by the community regarding the occurrence of floods are divided into three stages, namely before the flood occurs, during the flood, and after the flood occurs. For actions taken before the flood occurred, respondents prepared a disaster-prepared bag containing important documents/securities (3.33%), prepared logistics (foodstuff) for emergency needs (10%), prepared equipment for evacuation (21.67%), renovated houses by raising the foundation or building a house into two floors (41.67%), planning/ placing valuables in a relatively safe place (23.33%).

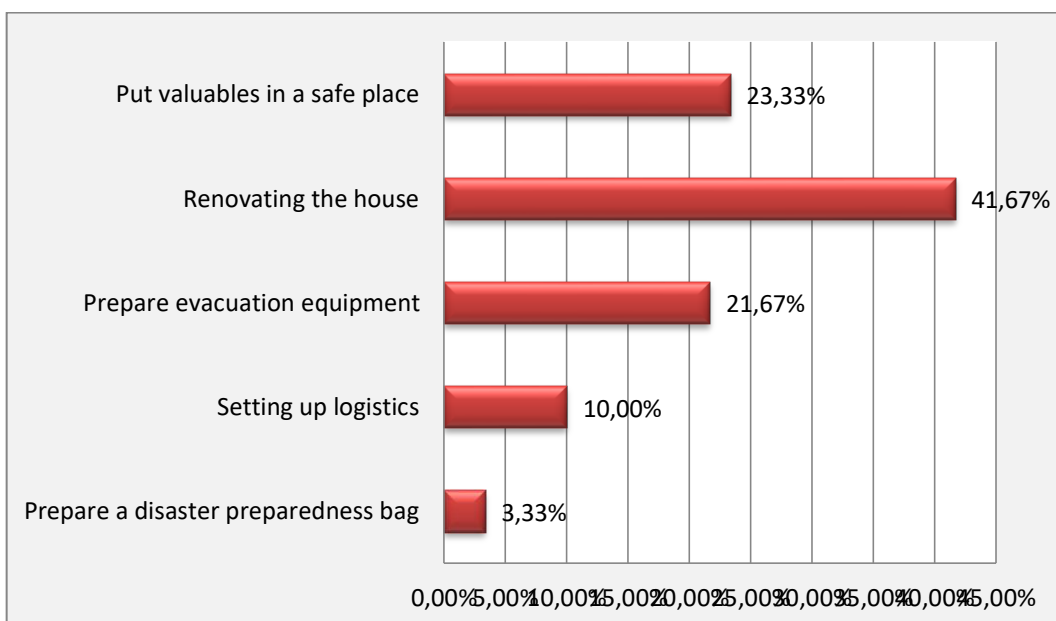


Figure 7. Actions Taken Before the Flood

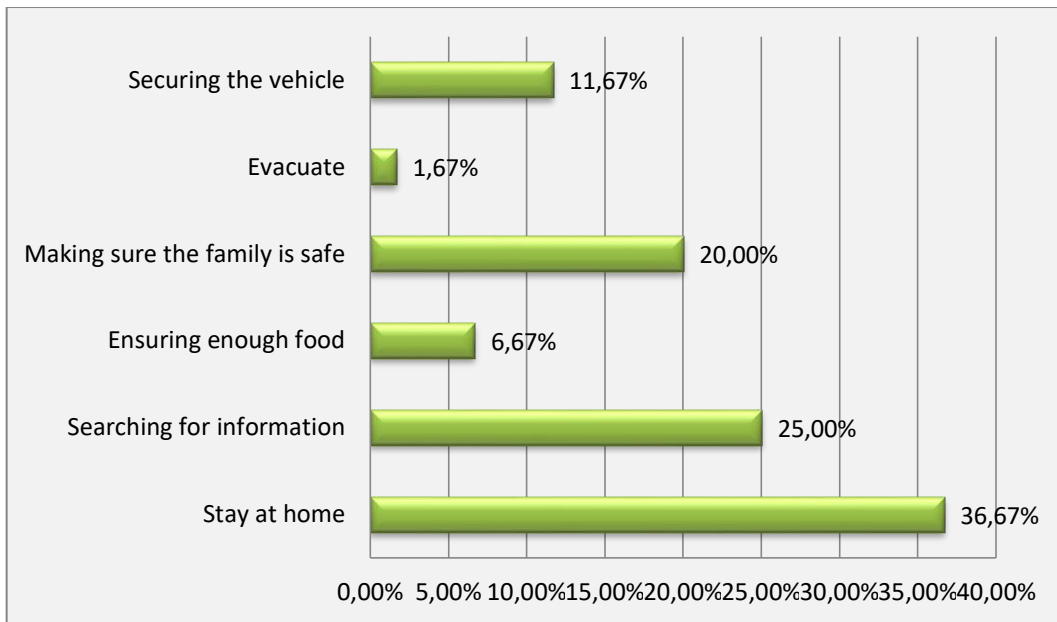


Figure 8. Actions to be taken during a flood

Actions taken by the community when a flood occurs based on information in figure 8 obtained from respondents are to stay at home to maintain the safety of belongings (36.67%), seek information related to flooding through neighbors, handy talkies, mobile phones, television and radio (25%), ensuring sufficient food/logistics supplies (6.67%), ensuring all family members are safe (20%), evacuating to a safe place (1.67%), and ensuring vehicles are in a safe place (11.67 %). Based on information from respondents, very few people evacuated/evacuated or stayed at home when a flood occurred, because most of the people had raised their houses.

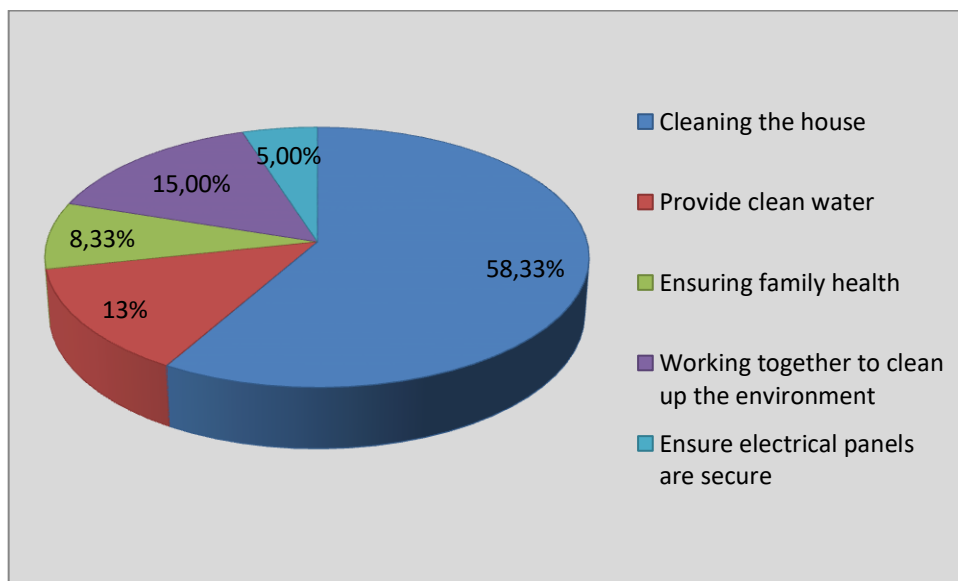


Figure 9. Actions Taken After the Flood

Actions taken by the community after a flood occurred based on information obtained from respondents in figure 9 were cleaning houses and goods from water/mud/flood garbage (58.33%), providing clean water needs and bathing facilities for family needs (13.33%), ensuring the health condition of the family from the effects of the flood (8.33%), carrying out cooperation to clean up the environment from various rubbish/flood mud (15%), and ensuring that the electrical panels at home are in a safe condition (5%).

Based on research on the level of knowledge and actions taken by the community regarding flooding, it is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience.

3.1.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jeneponto Regency

Problems that often occur due to the impact of flooding on the community include physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impact, health risk, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation and others).
- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.
- e. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

This can be known from the results of research on the community in Sapanan village by interviewing him with the results as follows:

According to Mr. Hamzah Karaeng Lurang:

"When asked about the impact caused by this flood many people cannot carry out their activities as usual, because people are busy cleaning their homes. this flood also caused many diseases caused by this flood, if there is a flood ready apart

from the illness that has caused me I cannot go to work as usual.” (Interview, July 23, 2021)

According to Jamairah Karaeng Sangging:

"The impact of flooding that often occurs in this village, firstly, the houses are dirty due to the soil brought by the floods, secondly, there are many diseases that occur as a result of the coming floods" (Interview, 23 July 2021).

According to Syamsuddin Karaeng Liwang:

"The impact of flooding that often occurs in this village is, firstly, the houses are dirty due to the soil brought by the floods. Secondly, many diseases occur as a result of the coming floods" (Interview, 23 July 2021).

From the interview above, it is clear that the impact of flooding on the community is that many people's houses are dirty due to the mud soil brought by the flood, many diseases are caused by flooding, farmers cannot grow crops, children cannot go to school, and victims of property.

3.1.3 Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters.

Efforts were made by the community in Sapanan village to deal with flood disasters which often occur during the rainy season. The following are some principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Hold as much water as possible upstream by making reservoirs and
- b. soil and water conservation.
- a. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- b. Controlling water in the center by temporarily storing it in a retention area.
- c. Flowing water as soon as possible to the estuary or the sea by guarding
- c. water container capacity.
- a. Securing residents, vital infrastructure, and property.

According to Paimin (Hermon, 2021) mitigation of flood, disasters are a series of efforts to reduce the risk of flood disasters, both through physical development and awareness and capacity building in dealing with the threat of flood disasters.

Based on the results of an interview with the Binamu sub-district head, he said:

I, as the Head of the Binamu Sub-District, certainly have to understand disaster mitigation, especially the Mitigation of flood disasters that have frequently occurred recently, especially in the village of Sapanan. So Mitigation is a series of efforts made when a disaster occurs. we have even invited and appealed to the public to be vigilant when a flood disaster comes. But there are still some people who are negligent in this regard. The obstacles in this socialization include the lack of public awareness of this socialization, secondly the lack of knowledge about mitigation. If asked whether or not they were involved in the mitigation process, the answer is, of course, involved in this counseling. (Interview July 25, 2021).

According to Suardi Karaeng Lira:

Actions or efforts made during the flood made efforts to save themselves, such as running to a high place, when the flood was over many people had itching, diarrhea, and lots of mosquitoes. (Interview July 26, 2021).

Muhammad Alwi Karaeng Tompo;

The efforts I made when the floods came were we ran to a high and safe place, and valuables were saved, that's all I know, if asked if I had participated in socialization I never had because I'd rather go to the fields, and rice fields (Interview July 26, 2021).

Amran Karaeng Sija:

The efforts that I make when the floods come are that we run to a high and safe place. Apart from that, every rainy season the government has also provided information or invited the public so that when the floods come, don't save things or things, but save yourself. The sub-district head has suggested to the government that ditches be made for the river, but so far this has not been implemented (Interview 26 July 2021).

Based on the results of the interview, it can be seen that the efforts made were running to a high place and making the foundation of the house higher so that when the flood came it would not be flooded.

3.2 Discussion

3.2.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the results of research on the level of knowledge and actions taken by the people of Sapanan village regarding flooding, this is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The results of this study are also following research conducted by (Chan et al., 2014), showing the greatest impact in calculating the level of preparedness of rural families and increasing the level of good knowledge by increasing the level of family preparedness. Knowledge is one of the determinants of behavior and the mental side of what people know (Notoatmodjo et al., 2012). Lack of knowledge about flood disasters and the causes of flood disasters that affect people's attitudes in dealing with these disasters can be seen from the habits of people who do not care about protecting the environment around their own homes, for example, people still throw garbage indiscriminately on riverbanks and ditches, large land conversions -size and so on.

This is in line with the results of research (Dantzler, 2013) which examines various factors that influence families in preparing themselves for disaster preparedness activities, one of these factors is the attitude of the family. Attitude is an individual's willingness to act, besides that attitude is also an action or behavior in determining this complete attitude, knowledge, thoughts, beliefs, and emotions play an important role. There are two components of the attitude factor in the family. The first involves risk perception, the second involves previous disaster experience. Because disasters are events separated in space and time, some people consider them only a possibility and a consequence of natural changes (Erdelj et al., 2017; Geale, 2012; Jiang & Ritchie, 2017; McEntire, 2021; Raikes et al., 2019).

3.2.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jeneponto Regency

The impact caused by the flood in Sapanan village can be seen from the impact caused by the flood disaster as described from the results of the interview, namely the many disease outbreaks that have occurred and prevented people from going to work because people were busy cleaning their homes. So that people's daily activities become busy cleaning up the remnants of mud resulting from flooding (Boardman & Vandaele, 2020; De Walque et al., 2017; Winkler et al., 2018). According to UNESCO, among others, the physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impacts include death, health risks, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, and shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation, etc.).
- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

3.2.3 Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters.

Based on the results of the research, shows that the efforts made by the community in Sapanan village are an effort to deal with flood disasters that often occur during the rainy season, namely self-rescue such as running to a high place and after the flood recedes the community returns to their respective homes. Apart from that, the community also does not throw trash in the river. Besides that, the efforts made by the community work together to clean the water ditches so that the course of river water is as it should be. Likewise, efforts to propose to make permanent ditches or retaining walls with embankments along the river, but so far have not been implemented. This is by the general guidelines for Disaster Mitigation, Regulation of the Minister of Home Affairs Number 33 of 2006 dated 18 October 2006. The steps taken in mitigating floods in more detail in efforts to reduce flood disasters include:

- a. Supervised land use and site planning for placing vital facilities that are vulnerable to flooding in the area safely.
- b. Adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel.

- c. Infrastructure development must be watertight.
- d. Construction of retaining walls and embankments along the river, and sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.
- e. Setting the speed of surface water flow and upstream areas is very helpful in reducing the occurrence of floods. Some of the efforts that need to be made to regulate the speed of water entering the drainage system include the development
- f. dams/reservoirs, reforestation, and construction of infiltration systems.
- g. Dredging rivers, and making river slits either in open channels or with pipes or tunnels can help reduce the risk of flooding.
- h. Construction of retaining walls and breakwaters for
- i. reduce wave energy in the event of a storm or tsunami for coastal areas.

While the principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Retain as much water as possible upstream by creating reservoirs and conserving soil and water.
- b. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- c. Controlling water in the middle by temporarily storing it in the retention area.
- d. Distribute water as soon as possible to the estuary or the sea by maintaining the capacity of the water tank.
- e. Securing residents, vital infrastructure, and property.

From the opinions and results of observations and research conducted by researchers, it can be stated that the understanding of the people of Sapanan village towards flood disaster mitigation can be categorized as understanding, in definition and intent as actions or efforts to save themselves from flood disasters (during a flood and after a flood occurs). , as well as the impact caused by flooding, and efforts to overcome it.

4. Conclusion

From the results of research conducted in Sapanan, Binamu District, Jenepono Regency, it can be concluded that the level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The impact that is often caused after the flood is the

many disease outbreaks caused by the flood, the community cannot carry out their usual activities because the community is busy cleaning their homes, and the children cannot go to school because they are local and their chairs are filled with mud. Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters supervision of land use and site planning for placing vital facilities that are vulnerable to flooding in the area safety, adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel, infrastructure development must be watertight, construction of retaining walls and embankments along rivers, sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.

5. Conflicts of Interest

The authors declare no conflict of interest.

6. References

- Aryono, D. P. (2011). *The Silent Disaster Bencana dan Korban Massal*. CV. Sagung Seto. Jakarta.
- Badwi, N., Invanni, I., & Abbas, I. (2020). Pemetaan Tingkat Rawan Bencana Banjir di Daerah Aliran Sungai Maros Provinsi Sulawesi Selatan. *LaGeografia*, 18(3), 309-322. <https://doi.org/10.35580/lageografia.v18i3.13930>
- Boardman, J., & Vandaele, K. (2020). Managing muddy floods: Balancing engineered and alternative approaches. *Journal of Flood Risk Management*, 13(1), e12578. <https://doi.org/10.1111/jfr3.12578>
- Chan, E. Y. Y., Kim, J. H., Lin, C., Cheung, E. Y. L., & Lee, P. P. Y. (2014). Is previous disaster experience a good predictor for disaster preparedness in extreme poverty households in remote muslim minority based community in China? *Journal of Immigrant and Minority Health*, 16(3), 466-472. <https://doi.org/10.1007/s10903-012-9761-9>
- Dantzler, D. (2013). *Basic household disaster preparedness decisional Influences among male federal employees in the national Capital region*. Capella University.
- De Walque, B., Degré, A., Maignard, A., & Bielders, C. L. (2017). Artificial surfaces characteristics and sediment connectivity explain muddy flood hazard in Wallonia. *Catena*, 158, 89-101. <https://doi.org/10.1016/j.catena.2017.06.016>
- Erdelj, M., Natalizio, E., Chowdhury, K. R., & Akyildiz, I. F. (2017). Help from the sky:

- Leveraging UAVs for disaster management. *IEEE Pervasive Computing*, 16(1), 24-32.
<https://doi.org/10.1109/MPRV.2017.11>
- Geale, S. K. (2012). The ethics of disaster management. *Disaster Prevention and Management: An International Journal*, 21(4), 445-462.
<https://doi.org/10.1108/09653561211256152>
- Hamed, K., & Rao, A. R. (2019). *Flood frequency analysis*. CRC press.
- Hartuti, N. (2022). Hubungan Pengetahuan dan Sikap Remaja Putri Terhadap Tindakan Genitalia Hygiene Pada Pasca Bencana Banjir di SMK Negeri 1 Jeneponto Tahun 2022. *Jurnal Kesehatan Delima Pelamonia*, 6(1), 55-61.
- Hermon, D. (2021). *Geografi Bencana Alam-Rajawali Pers*. PT. RajaGrafindo Persada.
- Hirschboeck, K. K. (1988). Flood hydroclimatology. *Flood Geomorphology*, 27, 49.
- Hoffmann, R., & Muttarak, R. (2017). Learn from the past, prepare for the future: Impacts of education and experience on disaster preparedness in the Philippines and Thailand. *World Development*, 96, 32-51. <https://doi.org/10.1016/j.worlddev.2017.02.016>
- Jiang, Y., & Ritchie, B. W. (2017). Disaster collaboration in tourism: Motives, impediments and success factors. *Journal of Hospitality and Tourism Management*, 31, 70-82.
<https://doi.org/10.1016/j.jhtm.2016.09.004>
- Kodoatie, R. J. (2002). *Banjir: beberapa penyebab dan metode pengendaliannya dalam perspektif lingkungan*. Pustaka Pelajar.
- Lane, S. N. (2017). Natural flood management. *Wiley Interdisciplinary Reviews: Water*, 4(3), e1211. <https://doi.org/10.1002/wat2.1211>
- McEntire, D. A. (2021). *Disaster response and recovery: strategies and tactics for resilience*. John Wiley & Sons.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.
- Narayanan, N., Lacy, C. R., Cruz, J. E., Nahass, M., Karp, J., Barone, J. A., & Hermes-DeSantis, E. R. (2018). Disaster preparedness: biological threats and treatment options. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 38(2), 217-234. <https://doi.org/10.1002/phar.2068>
- Ningsih, Y. W., Imawati, N. D., A'dawiyah, R., Prihastomi, A., Gunawan, G., & Widyatmoko, W. (2020). Identifikasi Kesiapan Sekolah Menengah Muhammadiyah untuk Implementasi Sekolah Siaga Bencana di Kecamatan Wedi Kabupaten Klaten. *LaGeografia*, 18(2), 99-108. <https://doi.org/10.35580/lageografia.v18i2.11614>
- Notoatmodjo, S., Anwar, H., Ella, N. H., & Tri, K. (2012). *Promosi kesehatan di sekolah*.

- Jakarta: Rineka Cipta, 21-23.
- Rahmadani, S., & Syarif, E. (2020). Studi Tingkat Pengetahuan Kebencanaan Terhadap Sikap Kesiapsiagaan Masyarakat Dalam Menghadapi Bencana Tanah Longsor Di Kecamatan Parangloe Kabupaten Gowa Tahun 2019. *Jurnal Environmental Science*, 2(2), 162-169. <https://doi.org/10.35580/jes.v2i2.13198>
- Raikes, J., Smith, T. F., Jacobson, C., & Baldwin, C. (2019). Pre-disaster planning and preparedness for floods and droughts: A systematic review. *International Journal of Disaster Risk Reduction*, 38, 101207. <https://doi.org/10.1016/j.ijdrr.2019.101207>
- RI, P. P. (2007). Undang-Undang Nomor 24 Tahun 2007 tentang Penanggulangan Bencana. Jakarta: Peraturan Pemerintah Republik Indonesia.
- Ronan, K. R., Alisic, E., Towers, B., Johnson, V. A., & Johnston, D. M. (2015). Disaster preparedness for children and families: a critical review. *Current Psychiatry Reports*, 17(7), 1-9. <https://doi.org/10.1007/s11920-015-0589-6>
- Simanjuntak, P. P., & Paolo, D. (2022). Proyeksi Daerah Potensi Banjir Tahun 2031-2040 Berdasarkan Skenario Iklim Representative Concentration Pathways 4.5. *LaGeografia*, 21(1), 12-30. <https://doi.org/10.35580/lageografia.v21i1.36127>
- Syam, I., Syatriani, S., & Saputri, A. S. D. (2021). Penguatan Sistem Kewaspadaan Dni Bencana Banjir Di Dusun Sapanang Dan Dusun Sapiri Desa Sapanang Kecamatan Binamu Kabupaten Jeneponto. *Jurnal Pengabdian Masyarakat Gerakan Aksi Sehat (GESIT)*, 2(1), 21-28. <https://doi.org/10.51171/b.v2i1.255>
- Thomas, T. N., Leander-Griffith, M., Harp, V., & Cioffi, J. P. (2015). Influences of preparedness knowledge and beliefs on household disaster preparedness. *Morbidity and Mortality Weekly Report*, 64(35), 965-971. <https://doi.org/10.15585/mmwr.mm6435a2>
- Winkler, D., Bidló, A., Bolodár-Varga, B., Erdő, Á., & Horváth, A. (2018). Long-term ecological effects of the red mud disaster in Hungary: Regeneration of red mud flooded areas in a contaminated industrial region. *Science of The Total Environment*, 644, 1292-1303. <https://doi.org/10.1016/j.scitotenv.2018.07.059>
- Yulaelawati, E. (2008). Mencerdasi bencana: banjir, tanah longsor, tsunami, gempa bumi, gunung api, kebakaran. Grasindo.

Revisi ke-2



ERMAN SYARIF UNM <ermansyarif@unm.ac.id>

[GEOSI] New notification from Geosfera Indonesia

Fahmi Arif Kurnianto <fahmiarif.fkip@unej.ac.id>

1 Desember 2022 pukul 10.32

Balas Ke: Open Journal Systems <admin-ojs@unej.ac.id>

Kepada: Erman Syarif <ermansyarif@unm.ac.id>

You have a new notification from Geosfera Indonesia:

You have been added to a discussion titled "Request revision 2" regarding the submission " Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation".

Link: <https://jurnal.unej.ac.id/index.php/GEOSI/authorDashboard/submission/35066>

Fahmi Arif Kurnianto

[Geosfera Indonesia](#)

Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation

Erman Syarif^{1*}, Maddatuang M², Alief Saputro³

^{1,2,3} Geography Education Study Program, Makassar State University, Makassar, 90222, Indonesia

*Corresponding author: ermansyarif@unm.ac.id

Abstract

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property. This study aims to identify community knowledge and the impact of floods on flood disasters and to determine community efforts to increase preparedness for flood disasters. This type of research is qualitative research. This research was conducted in the village of Sapanan, Binamu District, Jeneponto Regency. Sources of data in this study are informants. Data collection is done by observation, interviews, and documentation. The results of the study show: 1) The level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience, 2) The impacts that are often caused after flooding are the many disease outbreaks caused by flooding, the community cannot carry out their usual activities because the community is busy cleaning their homes, children cannot go to school because it is local and their chairs are filled with mud, and 3) The community's efforts to increase preparedness for flood disasters include monitoring land use and planning locations that are prone to flooding in safe areas, adjusting building designs to be flood-resistant and multilevel, infrastructure development must be watertight, and construction of retaining walls and n Embankments along rivers, seawalls along the coast which are prone to storms or tsunamis will greatly help to reduce flood disasters

Keywords: knowledge; preparedness; the community; flood

Comment [(1): Please add a conclusion statement (1 sentence) at the end of abstract

1. Introduction

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property (Aryono, 2011; Badwi et al., 2020; Ningsih et al., 2020; Rahmadani & Syarif, 2020). According to Law Number 24 of 2007 concerning Disaster Management article 1 point 1 explains that a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors and/or

non-natural factors as well as human factors so that resulting in human casualties, environmental damage, property losses, and psychological impacts (RI, 2007).

Research results from (Hartuti, 2022) state that from December 2018 to February 2019 in the Jeneponto district there was high rainfall which caused flooding in several locations. Furthermore (Syam et al., 2021) revealed that one of the areas in Jeneponto Regency that experienced severe flooding was in Binamu District, to be precise in Sapanang Village. The disaster not only caused material losses, but also caused many people to get sick from various groups, namely, infants, children, adolescents, and adults to the elderly, and even caused fatalities.

Most of the people in Sapanan Village, Binamu District, are in a vulnerable condition because they live in an area that has a potential flood hazard. These conditions indicate that the community needs a special strategy to remain able to live in areas with potential flood hazards. One of the efforts that can be made to minimize the impact of flood disasters is to have community preparedness efforts. Preparedness is a series of activities regarding the needs that will arise if a disaster occurs to anticipate disasters and prepare the community for a better level of preparedness/readiness in dealing with disasters (Yulaelawati, 2008). Thus, community preparedness is needed to ensure an effective response in the event of a flood disaster to minimize the negative impacts arising from the disaster.

The condition in the community is that there is limited knowledge about flood disaster mitigation, and the community's reaction to disaster information is still slow because they feel that they often experience it. The flood incident on January 22 2019 has raised awareness and provided knowledge of the importance of community efforts in increasing preparedness for flood disasters that occur at any time.

Disaster preparedness is a fundamental need for every region to reduce the risk of disasters that can occur regardless of time and place. Therefore, it is necessary to prevent it with the right method so that the risk of a disaster occurring, especially involving human victims, can be minimized (Hoffmann & Muttarak, 2017; Kodoatie, 2002; Narayanan et al., 2018; Ronan et al., 2015; Thomas et al., 2015). The prevention methods used may differ in each region, because they are influenced by the geographic location of the area, the disasters that are common in that area, and the social conditions of the community. So each region needs to study the appropriate method for tackling natural disasters.

Preparedness in dealing with floods helps the community in forming and planning what actions need to be taken in the event of a flood. Success in handling and evacuating during floods is very dependent on the preparedness of the community and individuals

themselves. Effective and efficient flood disaster management requires knowledge of the hazards and risks that exist in the watershed (Rahmadani & Syarif, 2020; Simanjuntak & Paolo, 2022). When a flood occurs, all activities will be carried out in an emergency under chaotic conditions, so good planning, coordination, and training are needed so that handling and evacuation when floods take place properly (Hamed & Rao, 2019; Hirschboeck, 1988; Lane, 2017)

Based on the background, the aims of this research are: 1) to identify the community's knowledge of the flood disaster in the village of Sapanan, Binamu District, Jenepono Regency, 2) to identify the impact of flooding on the community in Sapanan Village, Binamu District, Jenepono Regency, and 3) to find out the efforts of the community in Sapanan Village, District Binamu Jenepono Regency in increasing preparedness for flood disasters.

2. Methods

This study uses a type of qualitative research. This research was conducted in Sapanan Village, Binamu District, Jenepono Regency, South Sulawesi Province, Indonesia as shown in Figure 1 below. This research was conducted in February – May 2022.

Comment [(2): Before the objectives and after the literature review, the author must state the *gap analysis or novelties statements* to show why does this paper is important and what is a unique idea of this paper compared to other previous researchers' suggestions.
One of the examples of novelty statement or the gap analysis statement at the end of Introduction section (after state of the art of previous research survey):
"..... (short summary of background).....
.....(put here state of the art or overview of previous researches similar to this research)..... A few researchers focused on There have been limited studies concerned on Therefore, this research intends to The objectives of this research are".



Figure 1. Study area

Comment [(3): Map should be in English

Data sources in this study used primary and secondary data. Primary data sources were informants using the snowball sampling method, which consisted of:

1. Key informants: Sapanan Village Communities
2. Supporting Informants: Village Head, District Head, and the Communities

The secondary data in this study are related to data in the form of documents (relevant books and literature), and images related to the research focus. Data collection in this study was carried out by observing, interviewing, and documenting stages.

The analysis technique used in this study is a qualitative descriptive analysis technique. The data analysis model in this study follows the concept given by Miles and Huberman. Miles and Huberman revealed that the activities in qualitative data analysis were

carried out interactively and continuously at each stage of the research so that they were completed (Miles & Huberman, 1994). Data verification strategy with data reduction, data categorization, data display, and concluding.

Comment [(4): Please explain more detail (specific for this study) about data reduction, data categorization, data display, and concluding

3. Results and Discussion

3.1 Result

3.1.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the research that has been done, it was found that 61.67% of the respondents were women and the remaining 38.33% were men. A large number of female respondents was due to the time used when distributing the questionnaires during working days and hours. In addition, the use of the snowball sampling method also has an effect, because the selected female respondents tend to recommend that the next selected respondent is also a female.

When viewed based on the age of the respondents, it can be seen that the ages of the selected respondents ranged from 24-66 years, with the largest percentage being 40-49 years old (40%) and the smallest percentage being more than 59 years old (3.33%). The education level of the most selected respondents was S1 graduates and above, namely 56.67%. The occupation of the most selected respondents is housewives, with a percentage of 45%. The homeownership status of the majority of the selected respondents was 93.33% self-owned and the rest were rented/contracted by 6.67%. Based on their experience of experiencing floods, as many as 85% of respondents had experienced more than 5 (five) floods while living in Sapanan Village.

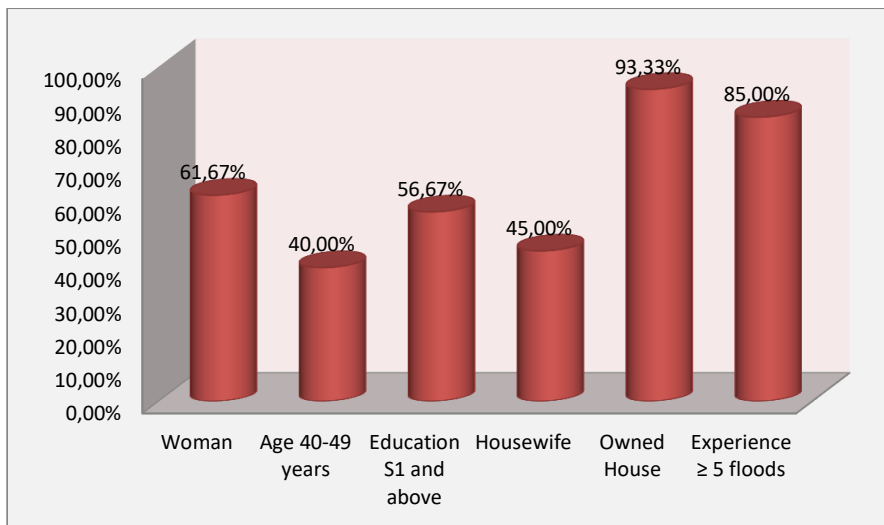


Figure 2. Graph of Respondent Profile's Dominant Characteristics

Comment [(5): In english, comma is (.) ... (dalam bahasa inggris, simbol tanda koma adalah titik). Please change it at this figure

Based on the results of research on the characteristics of the respondents in figure 2, it can be seen that the majority of the residents of Sapanan Village are still in their productive age, with a fairly high level of education, they are residents who have lived in Sapanan Village for quite a long time, so they have a lot of experience regarding flood events. Although the respondents were dominated by women (61.67%), this did not reduce the objectivity of the research results considering that the majority (85%) of the respondents were people who had enough experience dealing with flood disasters, because they had experienced floods at their homes more than 5 times.

Based on the experience of respondents to the flood disaster, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficult to handle, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

Based on the results of the research in figure 3 that has been done, it was found that all selected respondents (100%) stated that floods that often occur in their residential locations are included in the disaster category because according to them the floods that occur cause disruption to people's lives (46.67%), the flood that occurred was a natural event that caused loss of life and property loss (18.33%), the flood that occurred was the result of careless

disposal of garbage (25%), and the flood was considered a puddle that occurred after rain (10%).

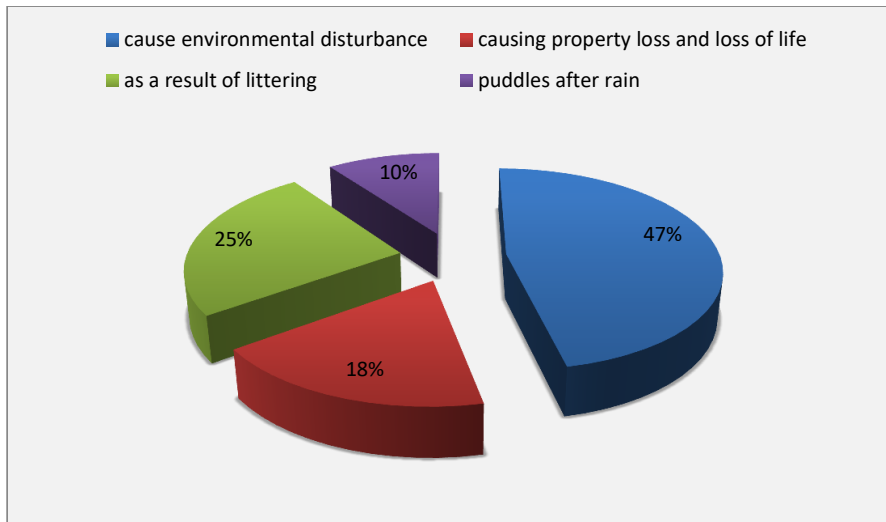


Figure 3. Definition of Flood according to Respondents

Based on the experience of respondents to the flood disaster in figure 4, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficulty handling, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

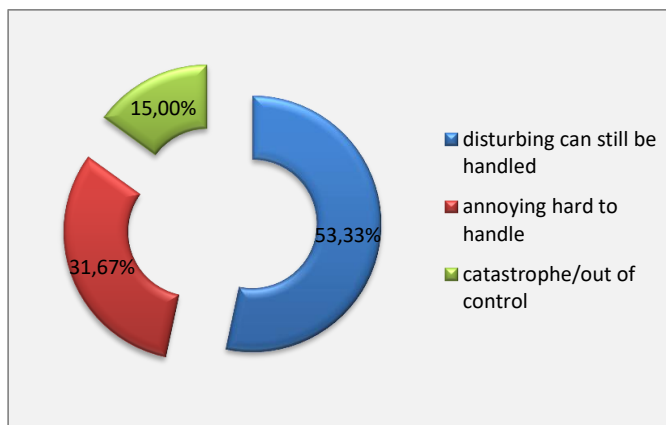


Figure 4. Respondents' experience of flooding

Comment [(6): In english, comma is (.) ... (dalam bahasa inggris, simbol tanda koma adalah titik). Please change it at this figure

The factors causing the flood disaster were identified into 2, namely due to natural factors and human factors. Based on the respondent's knowledge in figure5, natural factors that cause floods include high-intensity rainfall, especially in the upper reaches of the river (43.33%), erosion and sedimentation which causes siltation of rivers (30%), living conditions in basins/lowlands (20%), and there is high tide (6.67%). Meanwhile, according to the knowledge of the respondents, the human factor caused the flood disaster, littering behavior (55%), construction of houses on riverbanks (23.33%), illegal logging (11.67%), developments that change land use (10%).

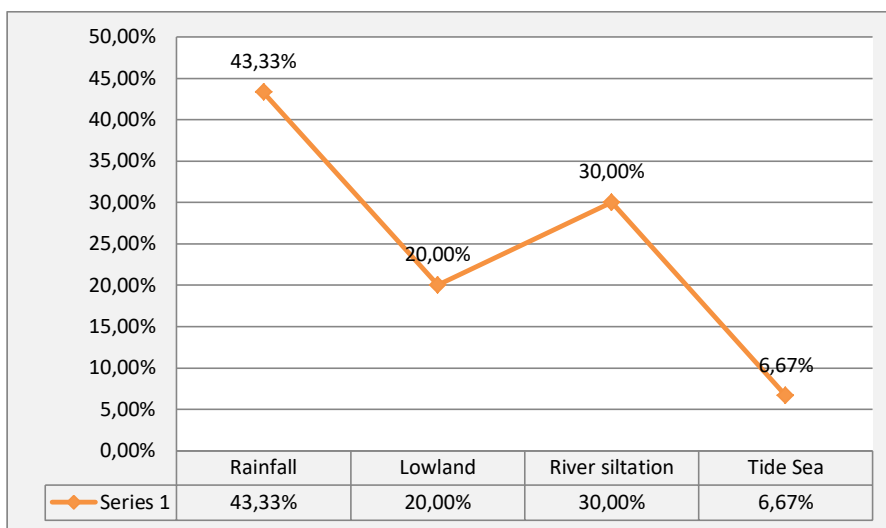


Figure 5. Natural Factors that Cause Floods

Comment [(7): In english, comma is (.) ... (dalam bahasa inggris, simbol tanda koma adalah titik). Please change it at this figure

The level of public knowledge about the signs of an impending flood disaster can be identified from each respondent's answer, according to respondents the signs of an impending flood disaster if heavy rains in the upstream area of the river are more than 2 hours (26.67%), There is information on the water level in the upstream it exceeds the normal threshold (51.67%), the river water is cloudy and a lot of material is washed away by the river water (3.33%), the river embankments start to leak or break and the pumps don't work (18.33%).

Regarding the actions taken to prevent or reduce the occurrence of floods, respondents have various answers to these questions. The various answers of respondents can describe the level of public knowledge. Actions were taken to prevent or reduce the occurrence of floods by disposing of garbage in its place (26.67%), cleaning waterways around residential houses (20%), working together to clean rivers (16.67%), planting trees in areas upstream (13.33%), and elevating river embankments (23.33%).

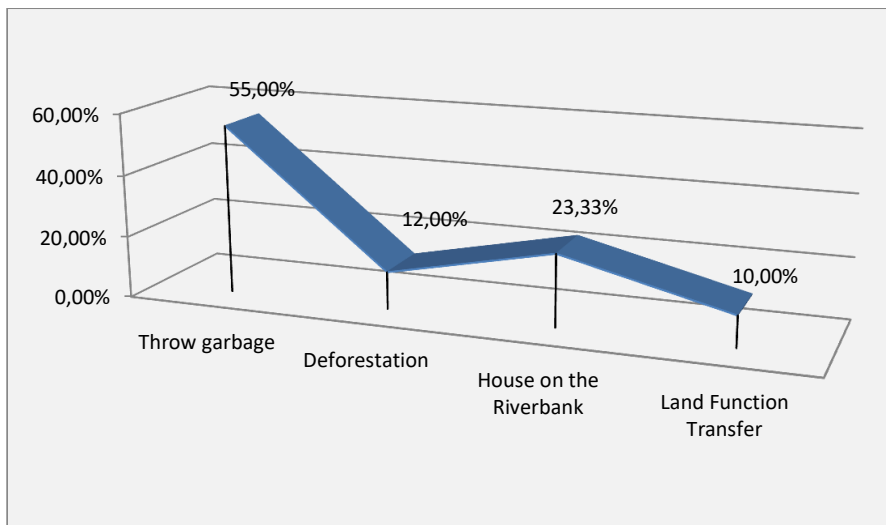


Figure 6. Human Factors Cause Flood

Actions taken by the community regarding the occurrence of floods are divided into three stages, namely before the flood occurs, during the flood, and after the flood occurs. For actions taken before the flood occurred, respondents prepared a disaster-prepared bag containing important documents/securities (3.33%), prepared logistics (foodstuff) for emergency needs (10%), prepared equipment for evacuation (21.67%), renovated houses by raising the foundation or building a house into two floors (41.67%), planning/ placing valuables in a relatively safe place (23.33%).

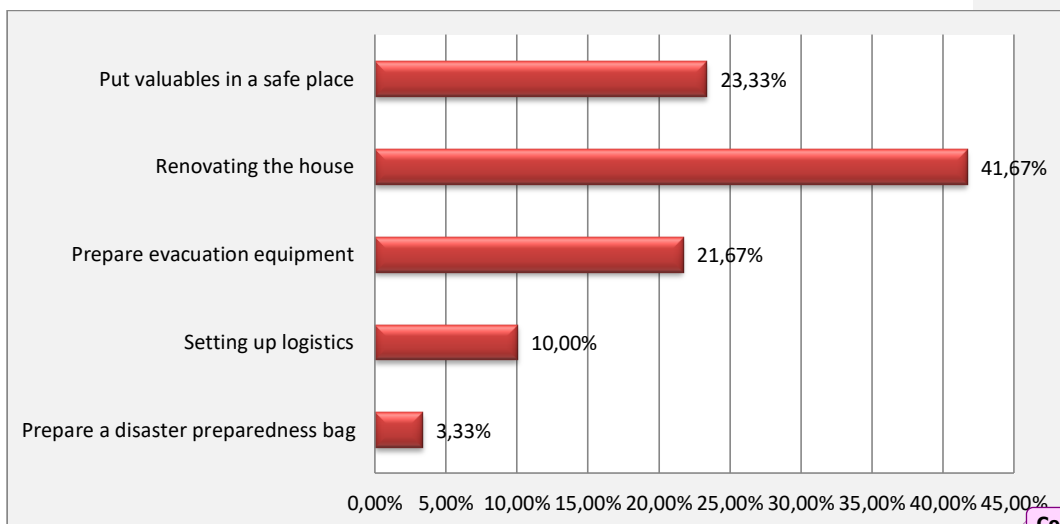


Figure 7. Actions Taken Before the Flood

Comment [(8): In english, comma is (.) ... (dalam bahasa inggris, simbol tanda koma adalah titik). Please change it at this figure

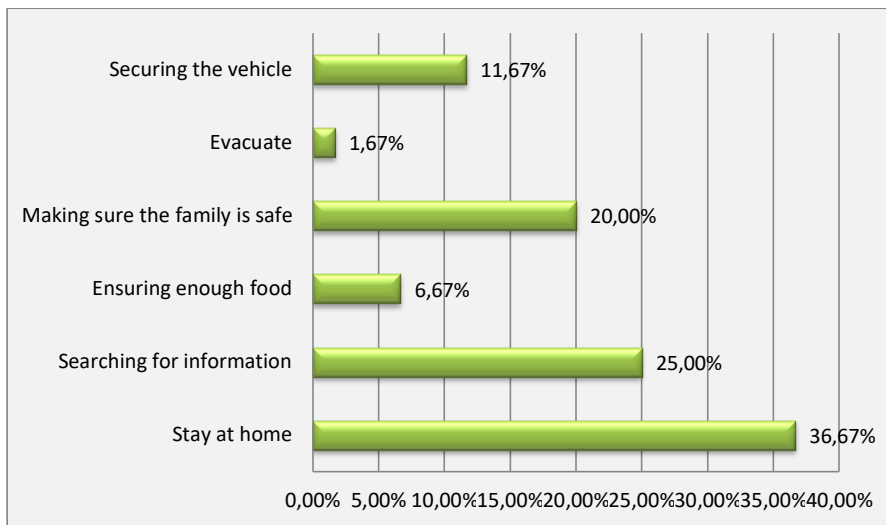


Figure 8. Actions to be taken during a flood

Actions taken by the community when a flood occurs based on information in figure 8 obtained from respondents are to stay at home to maintain the safety of belongings (36.67%), seek information related to flooding through neighbors, handy talkies, mobile phones, television and radio (25%), ensuring sufficient food/logistics supplies (6.67%), ensuring all family members are safe (20%), evacuating to a safe place (1.67%), and ensuring vehicles are in a safe place (11.67 %). Based on information from respondents, very few people evacuated/evacuated or stayed at home when a flood occurred, because most of the people had raised their houses.

Comment [(9): In english, comma is (.) ... (dalam bahasa inggris, simbol tanda koma adalah titik). Please change it at this figure

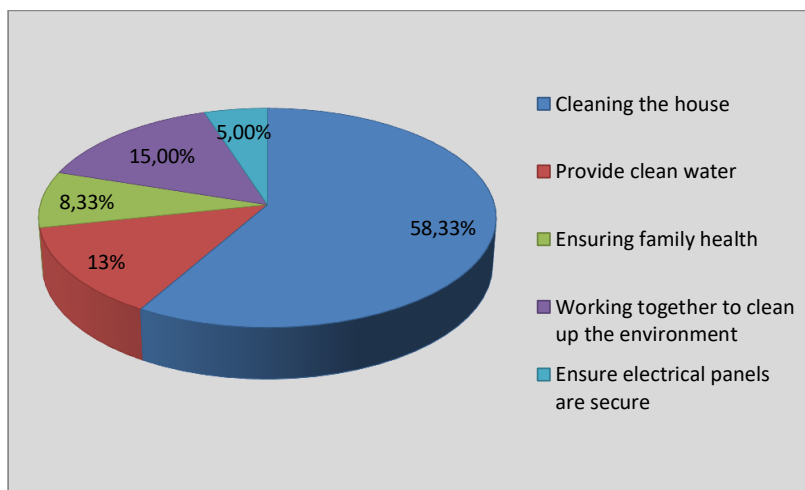


Figure 9. Actions Taken After the Flood

Comment [(10): In english, comma is (.) ... (dalam bahasa inggris, simbol tanda koma adalah titik). Please change it at this figure

Actions taken by the community after a flood occurred based on information obtained from respondents in figure 9 were cleaning houses and goods from water/mud/flood garbage (58.33%), providing clean water needs and bathing facilities for family needs (13.33%), ensuring the health condition of the family from the effects of the flood (8.33%), carrying out cooperation to clean up the environment from various rubbish/flood mud (15%), and ensuring that the electrical panels at home are in a safe condition (5%).

Based on research on the level of knowledge and actions taken by the community regarding flooding, it is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience.

3.1.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jenepono Regency

Problems that often occur due to the impact of flooding on the community include physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impact, health risk, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation and others).
- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.
- e. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

This can be known from the results of research on the community in Sapanan village by interviewing him with the results as follows:

According to Mr. Hamzah Karaeng Lurang:

"When asked about the impact caused by this flood many people cannot carry out their activities as usual, because people are busy cleaning their homes. this flood also caused many diseases caused by this flood, if there is a flood ready apart

from the illness that has caused me I cannot go to work as usual.” (Interview, July 23, 2021)

According to Jamairah Karaeng Sangging:

“The impact of flooding that often occurs in this village, firstly, the houses are dirty due to the soil brought by the floods, secondly, there are many diseases that occur as a result of the coming floods” (Interview, 23 July 2021).

According to Syamsuddin Karaeng Liwang:

“The impact of flooding that often occurs in this village is, firstly, the houses are dirty due to the soil brought by the floods. Secondly, many diseases occur as a result of the coming floods” (Interview, 23 July 2021).

From the interview above, it is clear that the impact of flooding on the community is that many people's houses are dirty due to the mud soil brought by the flood, many diseases are caused by flooding, farmers cannot grow crops, children cannot go to school, and victims of property.

3.1.3 Community efforts in Sapanan Village, Binamu District, Jenepono Regency in increasing preparedness for flood disasters.

Efforts were made by the community in Sapanan village to deal with flood disasters which often occur during the rainy season. The following are some principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Hold as much water as possible upstream by making reservoirs and
- b. soil and water conservation.
- a. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- b. Controlling water in the center by temporarily storing it in a retention area.
- c. Flowing water as soon as possible to the estuary or the sea by guarding
- c. water container capacity.
- a. Securing residents, vital infrastructure, and property.

According to Paimin (Hermon, 2021) mitigation of flood, disasters are a series of efforts to reduce the risk of flood disasters, both through physical development and awareness and capacity building in dealing with the threat of flood disasters.

Based on the results of an interview with the Binamu sub-district head, he said:

I, as the Head of the Binamu Sub-District, certainly have to understand disaster mitigation, especially the Mitigation of flood disasters that have frequently occurred recently, especially in the village of Sapanan. So Mitigation is a series of efforts made when a disaster occurs. we have even invited and appealed to the public to be vigilant when a flood disaster comes. But there are still some people who are negligent in this regard. The obstacles in this socialization include the lack of public awareness of this socialization, secondly the lack of knowledge about mitigation. If asked whether or not they were involved in the mitigation process, the answer is, of course, involved in this counseling. (Interview July 25, 2021).

According to Suardi Karaeng Lira:

Actions or efforts made during the flood made efforts to save themselves, such as running to a high place, when the flood was over many people had itching, diarrhea, and lots of mosquitoes. (Interview July 26, 2021).

Muhammad Alwi Karaeng Tompo;

The efforts I made when the floods came were we ran to a high and safe place, and valuables were saved, that's all I know, if asked if I had participated in socialization I never had because I'd rather go to the fields, and rice fields (Interview July 26, 2021).

Amran Karaeng Sija:

The efforts that I make when the floods come are that we run to a high and safe place. Apart from that, every rainy season the government has also provided information or invited the public so that when the floods come, don't save things or things, but save yourself. The sub-district head has suggested to the government that ditches be made for the river, but so far this has not been implemented (Interview 26 July 2021).

Based on the results of the interview, it can be seen that the efforts made were running to a high place and making the foundation of the house higher so that when the flood came it would not be flooded.

3.2 Discussion

3.2.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the results of research on the level of knowledge and actions taken by the people of Sapanan village regarding flooding, this is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The results of this study are also following research conducted by (Chan et al., 2014), showing the greatest impact in calculating the level of preparedness of rural families and increasing the level of good knowledge by increasing the level of family preparedness. Knowledge is one of the determinants of behavior and the mental side of what people know (Notoatmodjo et al., 2012). Lack of knowledge about flood disasters and the causes of flood disasters that affect people's attitudes in dealing with these disasters can be seen from the habits of people who do not care about protecting the environment around their own homes, for example, people still throw garbage indiscriminately on riverbanks and ditches, large land conversions -size and so on.

This is in line with the results of research (Dantzler, 2013) which examines various factors that influence families in preparing themselves for disaster preparedness activities, one of these factors is the attitude of the family. Attitude is an individual's willingness to act, besides that attitude is also an action or behavior in determining this complete attitude, knowledge, thoughts, beliefs, and emotions play an important role. There are two components of the attitude factor in the family. The first involves risk perception, the second involves previous disaster experience. Because disasters are events separated in space and time, some people consider them only a possibility and a consequence of natural changes (Erdelj et al., 2017; Geale, 2012; Jiang & Ritchie, 2017; McEntire, 2021; Raikes et al., 2019).

3.2.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jeneponto Regency

The impact caused by the flood in Sapanan village can be seen from the impact caused by the flood disaster as described from the results of the interview, namely the many disease outbreaks that have occurred and prevented people from going to work because people were busy cleaning their homes. So that people's daily activities become busy cleaning up the remnants of mud resulting from flooding (Boardman & Vandaele, 2020; De Walque et al., 2017; Winkler et al., 2018). According to UNESCO, among others, the physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impacts include death, health risks, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, and shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation, etc.).
- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

3.2.3 Community efforts in Sapanan Village, Binamu District, Jenepono Regency in increasing preparedness for flood disasters.

Based on the results of the research, shows that the efforts made by the community in Sapanan village are an effort to deal with flood disasters that often occur during the rainy season, namely self-rescue such as running to a high place and after the flood recedes the community returns to their respective homes. Apart from that, the community also does not throw trash in the river. Besides that, the efforts made by the community work together to clean the water ditches so that the course of river water is as it should be. Likewise, efforts to propose to make permanent ditches or retaining walls with embankments along the river, but so far have not been implemented. This is by the general guidelines for Disaster Mitigation, Regulation of the Minister of Home Affairs Number 33 of 2006 dated 18 October 2006. The steps taken in mitigating floods in more detail in efforts to reduce flood disasters include:

- a. Supervised land use and site planning for placing vital facilities that are vulnerable to flooding in the area safely.
- b. Adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel.

- c. Infrastructure development must be watertight.
- d. Construction of retaining walls and embankments along the river, and sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.
- e. Setting the speed of surface water flow and upstream areas is very helpful in reducing the occurrence of floods. Some of the efforts that need to be made to regulate the speed of water entering the drainage system include the development
- f. dams/reservoirs, reforestation, and construction of infiltration systems.
- g. Dredging rivers, and making river slits either in open channels or with pipes or tunnels can help reduce the risk of flooding.
- h. Construction of retaining walls and breakwaters for
- i. reduce wave energy in the event of a storm or tsunami for coastal areas.

While the principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Retain as much water as possible upstream by creating reservoirs and conserving soil and water.
- b. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- c. Controlling water in the middle by temporarily storing it in the retention area.
- d. Distribute water as soon as possible to the estuary or the sea by maintaining the capacity of the water tank.
- e. Securing residents, vital infrastructure, and property.

From the opinions and results of observations and research conducted by researchers, it can be stated that the understanding of the people of Sapanan village towards flood disaster mitigation can be categorized as understanding, in definition and intent as actions or efforts to save themselves from flood disasters (during a flood and after a flood occurs). , as well as the impact caused by flooding, and efforts to overcome it.

4. Conclusion

From the results of research conducted in Sapanan, Binamu District, Jeneponto Regency, it can be concluded that the level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The impact that is often caused after the flood is the

many disease outbreaks caused by the flood, the community cannot carry out their usual activities because the community is busy cleaning their homes, and the children cannot go to school because they are local and their chairs are filled with mud. Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters supervision of land use and site planning for placing vital facilities that are vulnerable to flooding in the area safety, adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel, infrastructure development must be watertight, construction of retaining walls and embankments along rivers, sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.

5. Conflicts of Interest

The authors declare no conflict of interest.

6. References

- Aryono, D. P. (2011). *The Silent Disaster Bencana dan Korban Massal*. CV. Sagung Seto. Jakarta.
- Badwi, N., Invanni, I., & Abbas, I. (2020). Pemetaan Tingkat Rawan Bencana Banjir di Daerah Aliran Sungai Maros Provinsi Sulawesi Selatan. *LaGeografia*, 18(3), 309-322. <https://doi.org/10.35580/lageografia.v18i3.13930>
- Boardman, J., & Vandaele, K. (2020). Managing muddy floods: Balancing engineered and alternative approaches. *Journal of Flood Risk Management*, 13(1), e12578. <https://doi.org/10.1111/jfr3.12578>
- Chan, E. Y. Y., Kim, J. H., Lin, C., Cheung, E. Y. L., & Lee, P. P. Y. (2014). Is previous disaster experience a good predictor for disaster preparedness in extreme poverty households in remote muslim minority based community in China? *Journal of Immigrant and Minority Health*, 16(3), 466-472. <https://doi.org/10.1007/s10903-012-9761-9>
- Dantzer, D. (2013). *Basic household disaster preparedness decisional Influences among male federal employees in the national Capital region*. Capella University.
- De Walque, B., Degré, A., Maignard, A., & Biielders, C. L. (2017). Artificial surfaces characteristics and sediment connectivity explain muddy flood hazard in Wallonia. *Catena*, 158, 89-101. <https://doi.org/10.1016/j.catena.2017.06.016>
- Erdelj, M., Natalizio, E., Chowdhury, K. R., & Akyildiz, I. F. (2017). Help from the sky:

- Leveraging UAVs for disaster management. *IEEE Pervasive Computing*, 16(1), 24-32.
<https://doi.org/10.1109/MPRV.2017.11>
- Geale, S. K. (2012). The ethics of disaster management. *Disaster Prevention and Management: An International Journal*, 21(4), 445-462.
<https://doi.org/10.1108/09653561211256152>
- Hamed, K., & Rao, A. R. (2019). *Flood frequency analysis*. CRC press.
- Hartuti, N. (2022). Hubungan Pengetahuan dan Sikap Remaja Putri Terhadap Tindakan Genitalia Hygiene Pada Pasca Bencana Banjir di SMK Negeri 1 Jenepono Tahun 2022. *Jurnal Kesehatan Delima Pelamonia*, 6(1), 55-61.
- Hermon, D. (2021). *Geografi Bencana Alam-Rajawali Pers*. PT. RajaGrafindo Persada.
- Hirschboeck, K. K. (1988). Flood hydroclimatology. *Flood Geomorphology*, 27, 49.
- Hoffmann, R., & Muttarak, R. (2017). Learn from the past, prepare for the future: Impacts of education and experience on disaster preparedness in the Philippines and Thailand. *World Development*, 96, 32-51. <https://doi.org/10.1016/j.worlddev.2017.02.016>
- Jiang, Y., & Ritchie, B. W. (2017). Disaster collaboration in tourism: Motives, impediments and success factors. *Journal of Hospitality and Tourism Management*, 31, 70-82.
<https://doi.org/10.1016/j.jhtm.2016.09.004>
- Kodoatie, R. J. (2002). *Banjir: beberapa penyebab dan metode pengendaliannya dalam perspektif lingkungan*. Pustaka Pelajar.
- Lane, S. N. (2017). Natural flood management. *Wiley Interdisciplinary Reviews: Water*, 4(3), e1211. <https://doi.org/10.1002/wat2.1211>
- McEntire, D. A. (2021). *Disaster response and recovery: strategies and tactics for resilience*. John Wiley & Sons.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.
- Narayanan, N., Lacy, C. R., Cruz, J. E., Nahass, M., Karp, J., Barone, J. A., & Hermes-DeSantis, E. R. (2018). Disaster preparedness: biological threats and treatment options. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 38(2), 217-234. <https://doi.org/10.1002/phar.2068>
- Ningsih, Y. W., Imawati, N. D., A'dawiyah, R., Prihastomi, A., Gunawan, G., & Widyatmoko, W. (2020). Identifikasi Kesiapan Sekolah Menengah Muhammadiyah untuk Implementasi Sekolah Siaga Bencana di Kecamatan Wedi Kabupaten Klaten. *LaGeografia*, 18(2), 99-108. <https://doi.org/10.35580/lageografia.v18i2.11614>
- Notoatmodjo, S., Anwar, H., Ella, N. H., & Tri, K. (2012). Promosi kesehatan di sekolah.

Jakarta: Rineka Cipta, 21-23.

- Rahmadani, S., & Syarif, E. (2020). Studi Tingkat Pengetahuan Kebencanaan Terhadap Sikap Kesiapsiagaan Masyarakat Dalam Menghadapi Bencana Tanah Longsor Di Kecamatan Parangloe Kabupaten Gowa Tahun 2019. *Jurnal Environmental Science*, 2(2), 162-169. <https://doi.org/10.35580/jes.v2i2.13198>
- Raikes, J., Smith, T. F., Jacobson, C., & Baldwin, C. (2019). Pre-disaster planning and preparedness for floods and droughts: A systematic review. *International Journal of Disaster Risk Reduction*, 38, 101207. <https://doi.org/10.1016/j.ijdrr.2019.101207>
- RI, P. P. (2007). Undang-Undang Nomor 24 Tahun 2007 tentang Penanggulangan Bencana. Jakarta: Peraturan Pemerintah Republik Indonesia.
- Ronan, K. R., Alisic, E., Towers, B., Johnson, V. A., & Johnston, D. M. (2015). Disaster preparedness for children and families: a critical review. *Current Psychiatry Reports*, 17(7), 1-9. <https://doi.org/10.1007/s11920-015-0589-6>
- Simanjuntak, P. P., & Paolo, D. (2022). Proyeksi Daerah Potensi Banjir Tahun 2031-2040 Berdasarkan Skenario Iklim Representative Concentration Pathways 4.5. *LaGeografia*, 21(1), 12-30. <https://doi.org/10.35580/lageografia.v21i1.36127>
- Syam, I., Syatriani, S., & Saputri, A. S. D. (2021). Penguatan Sistem Kewaspadaan Dni Bencana Banjir Di Dusun Sapanang Dan Dusun Sapiri Desa Sapanang Kecamatan Binamu Kabupaten Jeneponto. *Jurnal Pengabdian Masyarakat Gerakan Aksi Sehat (GESIT)*, 2(1), 21-28. <https://doi.org/10.51171/b.v2i1.255>
- Thomas, T. N., Leander-Griffith, M., Harp, V., & Cioffi, J. P. (2015). Influences of preparedness knowledge and beliefs on household disaster preparedness. *Morbidity and Mortality Weekly Report*, 64(35), 965-971. <https://doi.org/10.15585/mmwr.mm6435a2>
- Winkler, D., Bidló, A., Bolodár-Varga, B., Erdő, Á., & Horváth, A. (2018). Long-term ecological effects of the red mud disaster in Hungary: Regeneration of red mud flooded areas in a contaminated industrial region. *Science of The Total Environment*, 644, 1292-1303. <https://doi.org/10.1016/j.scitotenv.2018.07.059>
- Yulaelawati, E. (2008). Mencerdasi bencana: banjir, tanah longsor, tsunami, gempa bumi, gunung api, kebakaran. Grasindo.

Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation

Erman Syarif^{1*}, Maddatuang M², Alief Saputro³

^{1 2 3} Geography Education Study Program, Makassar State University, Makassar, 90222,
Indonesia

*Corresponding author: ermansyarif@unm.ac.id

Abstract

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property. This study aims to identify community knowledge and the impact of floods on flood disasters and to determine community efforts to increase preparedness for flood disasters. This type of research is qualitative research. This research was conducted in the village of Sapanan, Binamu District, Jeneponto Regency. Sources of data in this study are informants. Data collection is done by observation, interviews, and documentation. The results of the study show: 1) The level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience, 2) The impacts that are often caused after flooding are the many disease outbreaks caused by flooding, the community cannot carry out their usual activities because the community is busy cleaning their homes, children cannot go to school because it is local and their chairs are filled with mud, and 3) The community's efforts to increase preparedness for flood disasters include monitoring land use and planning locations that are prone to flooding in safe areas, adjusting building designs to be flood-resistant and multilevel, infrastructure development must be watertight, and construction of retaining walls and n Embankments along rivers, seawalls along the coast which are prone to storms or tsunamis will greatly help to reduce flood disasters

Keywords: knowledge; preparedness; the community; flood

1. Introduction

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property (Aryono, 2011; Badwi et al., 2020; Ningsih et al., 2020; Rahmadani & Syarif, 2020). According to Law Number 24 of 2007 concerning Disaster Management article 1 point 1 explains that a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors and/or

non-natural factors as well as human factors so that resulting in human casualties, environmental damage, property losses, and psychological impacts (RI, 2007).

Research results from (Hartuti, 2022) state that from December 2018 to February 2019 in the Jeneponto district there was high rainfall which caused flooding in several locations. Furthermore (Syam et al., 2021) revealed that one of the areas in Jeneponto Regency that experienced severe flooding was in Binamu District, to be precise in Sapanang Village. The disaster not only caused material losses, but also caused many people to get sick from various groups, namely, infants, children, adolescents, and adults to the elderly, and even caused fatalities.

Most of the people in Sapanan Village, Binamu District, are in a vulnerable condition because they live in an area that has a potential flood hazard. These conditions indicate that the community needs a special strategy to remain able to live in areas with potential flood hazards. One of the efforts that can be made to minimize the impact of flood disasters is to have community preparedness efforts. Preparedness is a series of activities regarding the needs that will arise if a disaster occurs to anticipate disasters and prepare the community for a better level of preparedness/readiness in dealing with disasters (Yulaelawati, 2008). Thus, community preparedness is needed to ensure an effective response in the event of a flood disaster to minimize the negative impacts arising from the disaster.

The condition in the community is that there is limited knowledge about flood disaster mitigation, and the community's reaction to disaster information is still slow because they feel that they often experience it. The flood incident on January 22 2019 has raised awareness and provided knowledge of the importance of community efforts in increasing preparedness for flood disasters that occur at any time.

Disaster preparedness is a fundamental need for every region to reduce the risk of disasters that can occur regardless of time and place. Therefore, it is necessary to prevent it with the right method so that the risk of a disaster occurring, especially involving human victims, can be minimized (Hoffmann & Muttarak, 2017; Kodoatie, 2002; Narayanan et al., 2018; Ronan et al., 2015; Thomas et al., 2015). The prevention methods used may differ in each region, because they are influenced by the geographic location of the area, the disasters that are common in that area, and the social conditions of the community. So each region needs to study the appropriate method for tackling natural disasters.

Preparedness in dealing with floods helps the community in forming and planning what actions need to be taken in the event of a flood. Success in handling and evacuating during floods is very dependent on the preparedness of the community and individuals

themselves. Effective and efficient flood disaster management requires knowledge of the hazards and risks that exist in the watershed (Rahmadani & Syarif, 2020; Simanjuntak & Paolo, 2022). When a flood occurs, all activities will be carried out in an emergency under chaotic conditions, so good planning, coordination, and training are needed so that handling and evacuation when floods take place properly (Hamed & Rao, 2019; Hirschboeck, 1988; Lane, 2017)

Based on the background, the aims of this research are: 1) to identify the community's knowledge of the flood disaster in the village of Sapanan, Binamu District, Jeneponto Regency, 2) to identify the impact of flooding on the community in Sapanan Village, Binamu District, Jeneponto Regency, and 3) to find out the efforts of the community in Sapanan Village, District Binamu Jeneponto Regency in increasing preparedness for flood disasters.

2. Methods

This study uses a type of qualitative research. This research was conducted in Sapanan Village, Binamu District, Jeneponto Regency, South Sulawesi Province, Indonesia as shown in Figure 1 below. This research was conducted in February – May 2022.



Figure 1. Study area

Data sources in this study used primary and secondary data. Primary data sources were informants using the snowball sampling method, which consisted of:

1. Key informants: Sapanan Village Communities
2. Supporting Informants: Village Head, District Head, and the Communities

The secondary data in this study are related to data in the form of documents (relevant books and literature), and images related to the research focus. Data collection in this study was carried out by observing, interviewing, and documenting stages.

The analysis technique used in this study is a qualitative descriptive analysis technique. The data analysis model in this study follows the concept given by Miles and Huberman. Miles and Huberman revealed that the activities in qualitative data analysis were

carried out interactively and continuously at each stage of the research so that they were completed (Miles & Huberman, 1994). Data verification strategy with data reduction, data categorization, data display, and concluding.

3. Results and Discussion

3.1 Result

3.1.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the research that has been done, it was found that 61.67% of the respondents were women and the remaining 38.33% were men. A large number of female respondents was due to the time used when distributing the questionnaires during working days and hours. In addition, the use of the snowball sampling method also has an effect, because the selected female respondents tend to recommend that the next selected respondent is also a female.

When viewed based on the age of the respondents, it can be seen that the ages of the selected respondents ranged from 24-66 years, with the largest percentage being 40-49 years old (40%) and the smallest percentage being more than 59 years old (3.33%). The education level of the most selected respondents was S1 graduates and above, namely 56.67%. The occupation of the most selected respondents is housewives, with a percentage of 45%. The homeownership status of the majority of the selected respondents was 93.33% self-owned and the rest were rented/contracted by 6.67%. Based on their experience of experiencing floods, as many as 85% of respondents had experienced more than 5 (five) floods while living in Sapanan Village.

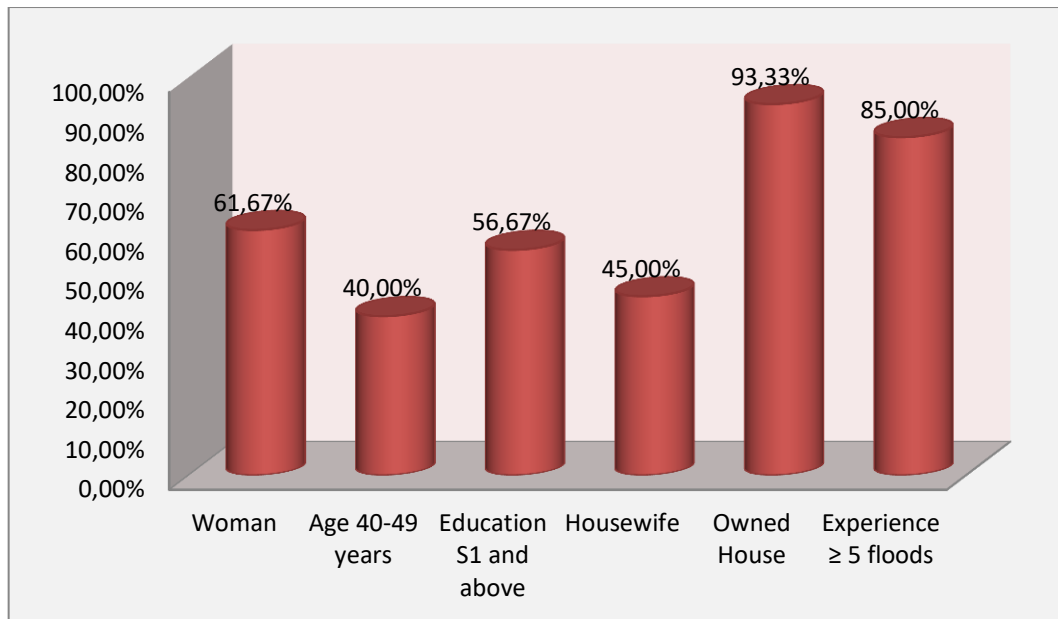


Figure 2. Graph of Respondent Profile's Dominant Characteristics

Based on the results of research on the characteristics of the respondents in figure 2, it can be seen that the majority of the residents of Sapanan Village are still in their productive age, with a fairly high level of education, they are residents who have lived in Sapanan Village for quite a long time, so they have a lot of experience regarding flood events. Although the respondents were dominated by women (61.67%), this did not reduce the objectivity of the research results considering that the majority (85%) of the respondents were people who had enough experience dealing with flood disasters, because they had experienced floods at their homes more than 5 times.

Based on the experience of respondents to the flood disaster, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficult to handle, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

Based on the results of the research in figure 3 that has been done, it was found that all selected respondents (100%) stated that floods that often occur in their residential locations are included in the disaster category because according to them the floods that occur cause disruption to people's lives (46.67%), the flood that occurred was a natural event that caused loss of life and property loss (18.33%), the flood that occurred was the result of careless

disposal of garbage (25%), and the flood was considered a puddle that occurred after rain (10%).

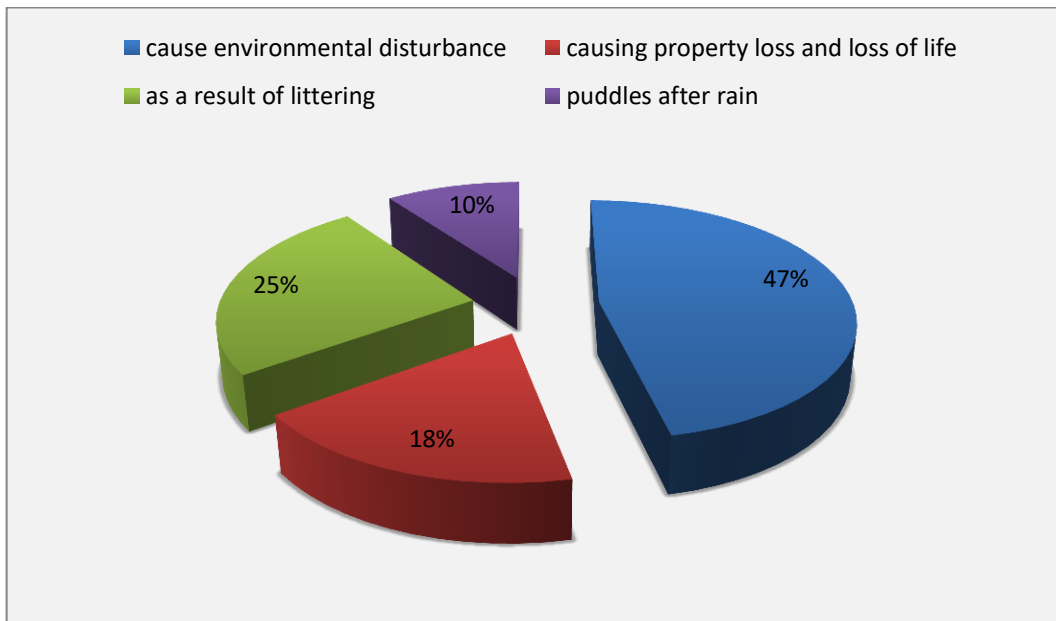


Figure 3. Definition of Flood according to Respondents

Based on the experience of respondents to the flood disaster in figure 4, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficult handling, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

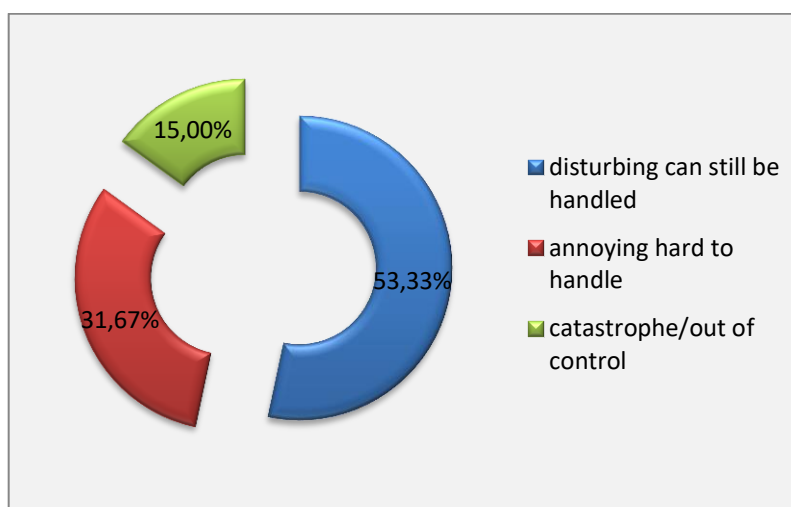


Figure 4. Respondents' experience of flooding

The factors causing the flood disaster were identified into 2, namely due to natural factors and human factors. Based on the respondent's knowledge in figure5, natural factors that cause floods include high-intensity rainfall, especially in the upper reaches of the river (43.33%), erosion and sedimentation which causes siltation of rivers (30%), living conditions in basins/lowlands (20%), and there is high tide (6.67%). Meanwhile, according to the knowledge of the respondents, the human factor caused the flood disaster, littering behavior (55%), construction of houses on riverbanks (23.33%), illegal logging (11.67%), developments that change land use (10%).

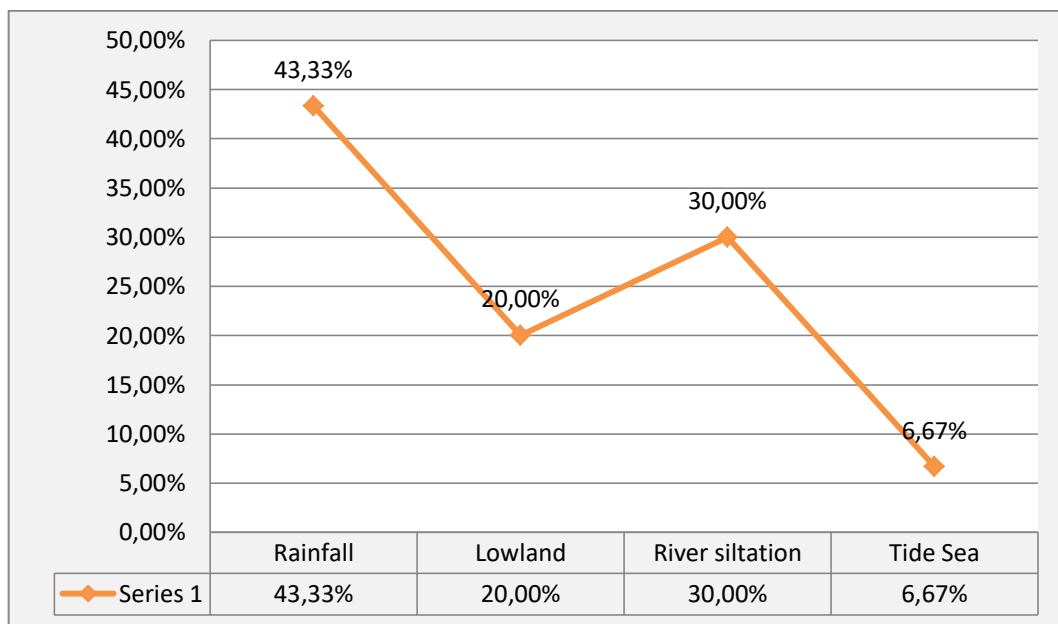


Figure 5. Natural Factors that Cause Floods

The level of public knowledge about the signs of an impending flood disaster can be identified from each respondent's answer, according to respondents the signs of an impending flood disaster if heavy rains in the upstream area of the river are more than 2 hours (26.67%), There is information on the water level in the upstream it exceeds the normal threshold (51.67%), the river water is cloudy and a lot of material is washed away by the river water (3.33%), the river embankments start to leak or break and the pumps don't work (18.33%).

Regarding the actions taken to prevent or reduce the occurrence of floods, respondents have various answers to these questions. The various answers of respondents can describe the level of public knowledge. Actions were taken to prevent or reduce the occurrence of floods by disposing of garbage in its place (26.67%), cleaning waterways around residential houses (20%), working together to clean rivers (16.67%), planting trees in areas upstream (13.33%), and elevating river embankments (23.33%).

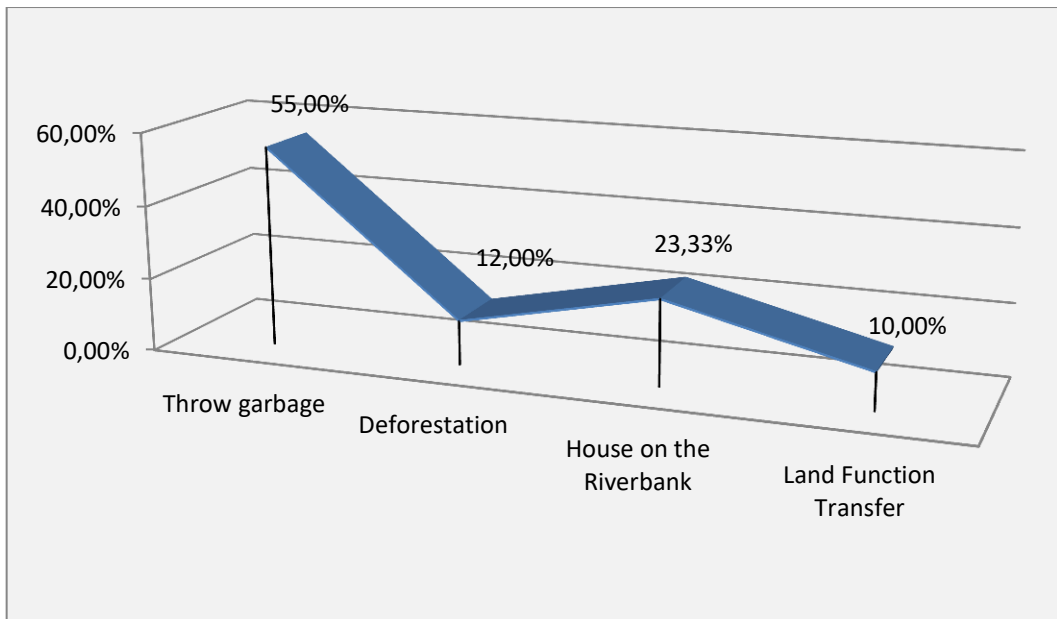


Figure 6. Human Factors Cause Flood

Actions taken by the community regarding the occurrence of floods are divided into three stages, namely before the flood occurs, during the flood, and after the flood occurs. For actions taken before the flood occurred, respondents prepared a disaster-prepared bag containing important documents/securities (3.33%), prepared logistics (foodstuff) for emergency needs (10%), prepared equipment for evacuation (21.67%), renovated houses by raising the foundation or building a house into two floors (41.67%), planning/ placing valuables in a relatively safe place (23.33%).

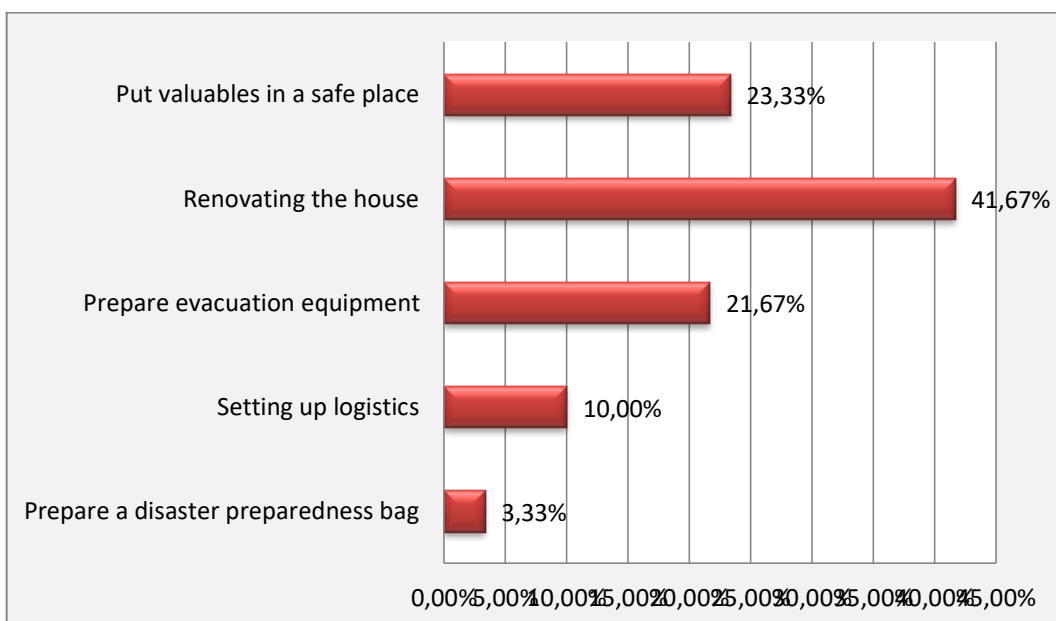


Figure 7. Actions Taken Before the Flood

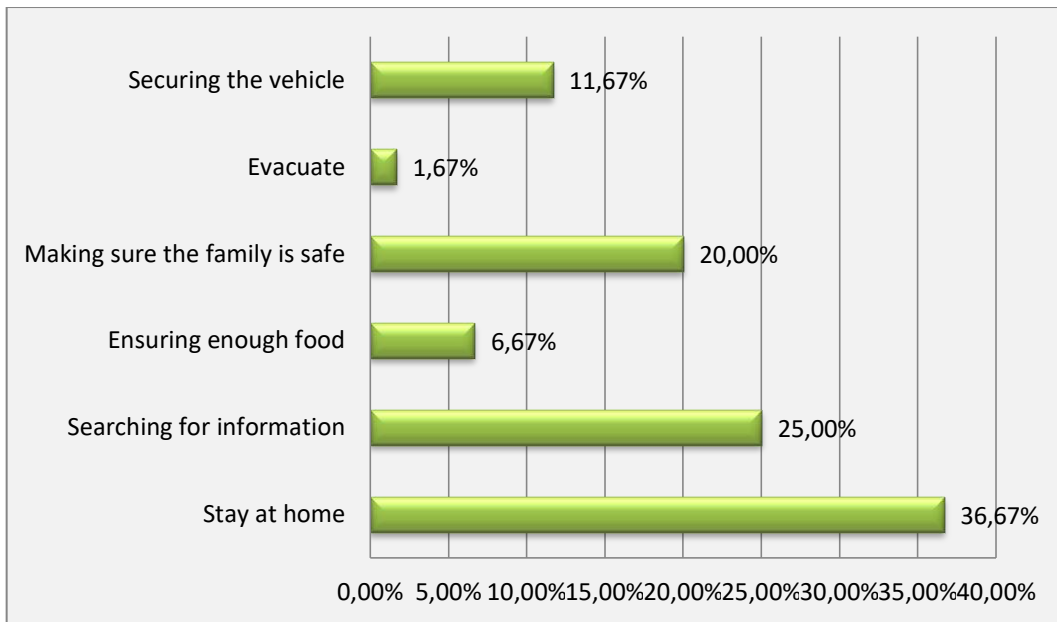


Figure 8. Actions to be taken during a flood

Actions taken by the community when a flood occurs based on information in figure 8 obtained from respondents are to stay at home to maintain the safety of belongings (36.67%), seek information related to flooding through neighbors, handy talkies, mobile phones, television and radio (25%), ensuring sufficient food/logistics supplies (6.67%), ensuring all family members are safe (20%), evacuating to a safe place (1.67%), and ensuring vehicles are in a safe place (11.67 %). Based on information from respondents, very few people evacuated/evacuated or stayed at home when a flood occurred, because most of the people had raised their houses.

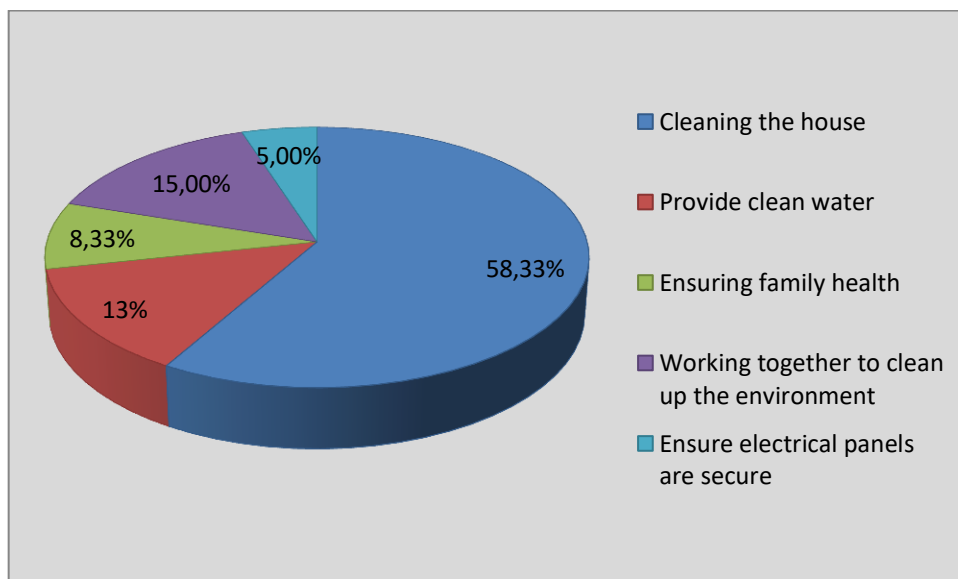


Figure 9. Actions Taken After the Flood

Actions taken by the community after a flood occurred based on information obtained from respondents in figure 9 were cleaning houses and goods from water/mud/flood garbage (58.33%), providing clean water needs and bathing facilities for family needs (13.33%), ensuring the health condition of the family from the effects of the flood (8.33%), carrying out cooperation to clean up the environment from various rubbish/flood mud (15%), and ensuring that the electrical panels at home are in a safe condition (5%).

Based on research on the level of knowledge and actions taken by the community regarding flooding, it is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience.

3.1.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jeneponto Regency

Problems that often occur due to the impact of flooding on the community include physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impact, health risk, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation and others).
- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.
- e. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

This can be known from the results of research on the community in Sapanan village by interviewing him with the results as follows:

According to Mr. Hamzah Karaeng Lurang:

"When asked about the impact caused by this flood many people cannot carry out their activities as usual, because people are busy cleaning their homes. this flood also caused many diseases caused by this flood, if there is a flood ready apart

from the illness that has caused me I cannot go to work as usual.” (Interview, July 23, 2021)

According to Jamairah Karaeng Sangging:

"The impact of flooding that often occurs in this village, firstly, the houses are dirty due to the soil brought by the floods, secondly, there are many diseases that occur as a result of the coming floods" (Interview, 23 July 2021).

According to Syamsuddin Karaeng Liwang:

"The impact of flooding that often occurs in this village is, firstly, the houses are dirty due to the soil brought by the floods. Secondly, many diseases occur as a result of the coming floods" (Interview, 23 July 2021).

From the interview above, it is clear that the impact of flooding on the community is that many people's houses are dirty due to the mud soil brought by the flood, many diseases are caused by flooding, farmers cannot grow crops, children cannot go to school, and victims of property.

3.1.3 Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters.

Efforts were made by the community in Sapanan village to deal with flood disasters which often occur during the rainy season. The following are some principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Hold as much water as possible upstream by making reservoirs and
- b. soil and water conservation.
- a. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- b. Controlling water in the center by temporarily storing it in a retention area.
- c. Flowing water as soon as possible to the estuary or the sea by guarding
- c. water container capacity.
- a. Securing residents, vital infrastructure, and property.

According to Paimin (Hermon, 2021) mitigation of flood, disasters are a series of efforts to reduce the risk of flood disasters, both through physical development and awareness and capacity building in dealing with the threat of flood disasters.

Based on the results of an interview with the Binamu sub-district head, he said:

I, as the Head of the Binamu Sub-District, certainly have to understand disaster mitigation, especially the Mitigation of flood disasters that have frequently occurred recently, especially in the village of Sapanan. So Mitigation is a series of efforts made when a disaster occurs. we have even invited and appealed to the public to be vigilant when a flood disaster comes. But there are still some people who are negligent in this regard. The obstacles in this socialization include the lack of public awareness of this socialization, secondly the lack of knowledge about mitigation. If asked whether or not they were involved in the mitigation process, the answer is, of course, involved in this counseling. (Interview July 25, 2021).

According to Suardi Karaeng Lira:

Actions or efforts made during the flood made efforts to save themselves, such as running to a high place, when the flood was over many people had itching, diarrhea, and lots of mosquitoes. (Interview July 26, 2021).

Muhammad Alwi Karaeng Tompo;

The efforts I made when the floods came were we ran to a high and safe place, and valuables were saved, that's all I know, if asked if I had participated in socialization I never had because I'd rather go to the fields, and rice fields (Interview July 26, 2021).

Amran Karaeng Sija:

The efforts that I make when the floods come are that we run to a high and safe place. Apart from that, every rainy season the government has also provided information or invited the public so that when the floods come, don't save things or things, but save yourself. The sub-district head has suggested to the government that ditches be made for the river, but so far this has not been implemented (Interview 26 July 2021).

Based on the results of the interview, it can be seen that the efforts made were running to a high place and making the foundation of the house higher so that when the flood came it would not be flooded.

3.2 Discussion

3.2.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the results of research on the level of knowledge and actions taken by the people of Sapanan village regarding flooding, this is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The results of this study are also following research conducted by (Chan et al., 2014), showing the greatest impact in calculating the level of preparedness of rural families and increasing the level of good knowledge by increasing the level of family preparedness. Knowledge is one of the determinants of behavior and the mental side of what people know (Notoatmodjo et al., 2012). Lack of knowledge about flood disasters and the causes of flood disasters that affect people's attitudes in dealing with these disasters can be seen from the habits of people who do not care about protecting the environment around their own homes, for example, people still throw garbage indiscriminately on riverbanks and ditches, large land conversions -size and so on.

This is in line with the results of research (Dantzler, 2013) which examines various factors that influence families in preparing themselves for disaster preparedness activities, one of these factors is the attitude of the family. Attitude is an individual's willingness to act, besides that attitude is also an action or behavior in determining this complete attitude, knowledge, thoughts, beliefs, and emotions play an important role. There are two components of the attitude factor in the family. The first involves risk perception, the second involves previous disaster experience. Because disasters are events separated in space and time, some people consider them only a possibility and a consequence of natural changes (Erdelj et al., 2017; Geale, 2012; Jiang & Ritchie, 2017; McEntire, 2021; Raikes et al., 2019).

3.2.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jeneponto Regency

The impact caused by the flood in Sapanan village can be seen from the impact caused by the flood disaster as described from the results of the interview, namely the many disease outbreaks that have occurred and prevented people from going to work because people were busy cleaning their homes. So that people's daily activities become busy cleaning up the remnants of mud resulting from flooding (Boardman & Vandaele, 2020; De Walque et al., 2017; Winkler et al., 2018). According to UNESCO, among others, the physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impacts include death, health risks, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, and shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation, etc.).
- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

3.2.3 Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters.

Based on the results of the research, shows that the efforts made by the community in Sapanan village are an effort to deal with flood disasters that often occur during the rainy season, namely self-rescue such as running to a high place and after the flood recedes the community returns to their respective homes. Apart from that, the community also does not throw trash in the river. Besides that, the efforts made by the community work together to clean the water ditches so that the course of river water is as it should be. Likewise, efforts to propose to make permanent ditches or retaining walls with embankments along the river, but so far have not been implemented. This is by the general guidelines for Disaster Mitigation, Regulation of the Minister of Home Affairs Number 33 of 2006 dated 18 October 2006. The steps taken in mitigating floods in more detail in efforts to reduce flood disasters include:

- a. Supervised land use and site planning for placing vital facilities that are vulnerable to flooding in the area safely.
- b. Adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel.

- c. Infrastructure development must be watertight.
- d. Construction of retaining walls and embankments along the river, and sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.
- e. Setting the speed of surface water flow and upstream areas is very helpful in reducing the occurrence of floods. Some of the efforts that need to be made to regulate the speed of water entering the drainage system include the development
- f. dams/reservoirs, reforestation, and construction of infiltration systems.
- g. Dredging rivers, and making river slits either in open channels or with pipes or tunnels can help reduce the risk of flooding.
- h. Construction of retaining walls and breakwaters for
- i. reduce wave energy in the event of a storm or tsunami for coastal areas.

While the principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Retain as much water as possible upstream by creating reservoirs and conserving soil and water.
- b. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- c. Controlling water in the middle by temporarily storing it in the retention area.
- d. Distribute water as soon as possible to the estuary or the sea by maintaining the capacity of the water tank.
- e. Securing residents, vital infrastructure, and property.

From the opinions and results of observations and research conducted by researchers, it can be stated that the understanding of the people of Sapanan village towards flood disaster mitigation can be categorized as understanding, in definition and intent as actions or efforts to save themselves from flood disasters (during a flood and after a flood occurs). , as well as the impact caused by flooding, and efforts to overcome it.

4. Conclusion

From the results of research conducted in Sapanan, Binamu District, Jeneponto Regency, it can be concluded that the level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The impact that is often caused after the flood is the

many disease outbreaks caused by the flood, the community cannot carry out their usual activities because the community is busy cleaning their homes, and the children cannot go to school because they are local and their chairs are filled with mud. Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters supervision of land use and site planning for placing vital facilities that are vulnerable to flooding in the area safety, adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel, infrastructure development must be watertight, construction of retaining walls and embankments along rivers, sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.

5. Conflicts of Interest

The authors declare no conflict of interest.

6. References

- Aryono, D. P. (2011). *The Silent Disaster Bencana dan Korban Massal*. CV. Sagung Seto. Jakarta.
- Badwi, N., Invanni, I., & Abbas, I. (2020). Pemetaan Tingkat Rawan Bencana Banjir di Daerah Aliran Sungai Maros Provinsi Sulawesi Selatan. *LaGeografia*, 18(3), 309-322. <https://doi.org/10.35580/lageografia.v18i3.13930>
- Boardman, J., & Vandaele, K. (2020). Managing muddy floods: Balancing engineered and alternative approaches. *Journal of Flood Risk Management*, 13(1), e12578. <https://doi.org/10.1111/jfr3.12578>
- Chan, E. Y. Y., Kim, J. H., Lin, C., Cheung, E. Y. L., & Lee, P. P. Y. (2014). Is previous disaster experience a good predictor for disaster preparedness in extreme poverty households in remote muslim minority based community in China? *Journal of Immigrant and Minority Health*, 16(3), 466-472. <https://doi.org/10.1007/s10903-012-9761-9>
- Dantzler, D. (2013). *Basic household disaster preparedness decisional Influences among male federal employees in the national Capital region*. Capella University.
- De Walque, B., Degré, A., Maignard, A., & Bielders, C. L. (2017). Artificial surfaces characteristics and sediment connectivity explain muddy flood hazard in Wallonia. *Catena*, 158, 89-101. <https://doi.org/10.1016/j.catena.2017.06.016>
- Erdelj, M., Natalizio, E., Chowdhury, K. R., & Akyildiz, I. F. (2017). Help from the sky:

- Leveraging UAVs for disaster management. *IEEE Pervasive Computing*, 16(1), 24-32.
<https://doi.org/10.1109/MPRV.2017.11>
- Geale, S. K. (2012). The ethics of disaster management. *Disaster Prevention and Management: An International Journal*, 21(4), 445-462.
<https://doi.org/10.1108/09653561211256152>
- Hamed, K., & Rao, A. R. (2019). *Flood frequency analysis*. CRC press.
- Hartuti, N. (2022). Hubungan Pengetahuan dan Sikap Remaja Putri Terhadap Tindakan Genitalia Hygiene Pada Pasca Bencana Banjir di SMK Negeri 1 Jeneponto Tahun 2022. *Jurnal Kesehatan Delima Pelamonia*, 6(1), 55-61.
- Hermon, D. (2021). *Geografi Bencana Alam-Rajawali Pers*. PT. RajaGrafindo Persada.
- Hirschboeck, K. K. (1988). Flood hydroclimatology. *Flood Geomorphology*, 27, 49.
- Hoffmann, R., & Muttarak, R. (2017). Learn from the past, prepare for the future: Impacts of education and experience on disaster preparedness in the Philippines and Thailand. *World Development*, 96, 32-51. <https://doi.org/10.1016/j.worlddev.2017.02.016>
- Jiang, Y., & Ritchie, B. W. (2017). Disaster collaboration in tourism: Motives, impediments and success factors. *Journal of Hospitality and Tourism Management*, 31, 70-82.
<https://doi.org/10.1016/j.jhtm.2016.09.004>
- Kodoatie, R. J. (2002). *Banjir: beberapa penyebab dan metode pengendaliannya dalam perspektif lingkungan*. Pustaka Pelajar.
- Lane, S. N. (2017). Natural flood management. *Wiley Interdisciplinary Reviews: Water*, 4(3), e1211. <https://doi.org/10.1002/wat2.1211>
- McEntire, D. A. (2021). *Disaster response and recovery: strategies and tactics for resilience*. John Wiley & Sons.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.
- Narayanan, N., Lacy, C. R., Cruz, J. E., Nahass, M., Karp, J., Barone, J. A., & Hermes-DeSantis, E. R. (2018). Disaster preparedness: biological threats and treatment options. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 38(2), 217-234. <https://doi.org/10.1002/phar.2068>
- Ningsih, Y. W., Imawati, N. D., A'dawiyah, R., Prihastomi, A., Gunawan, G., & Widyatmoko, W. (2020). Identifikasi Kesiapan Sekolah Menengah Muhammadiyah untuk Implementasi Sekolah Siaga Bencana di Kecamatan Wedi Kabupaten Klaten. *LaGeografia*, 18(2), 99-108. <https://doi.org/10.35580/lageografia.v18i2.11614>
- Notoatmodjo, S., Anwar, H., Ella, N. H., & Tri, K. (2012). *Promosi kesehatan di sekolah*.

- Jakarta: Rineka Cipta, 21-23.
- Rahmadani, S., & Syarif, E. (2020). Studi Tingkat Pengetahuan Kebencanaan Terhadap Sikap Kesiapsiagaan Masyarakat Dalam Menghadapi Bencana Tanah Longsor Di Kecamatan Parangloe Kabupaten Gowa Tahun 2019. *Jurnal Environmental Science*, 2(2), 162-169. <https://doi.org/10.35580/jes.v2i2.13198>
- Raikes, J., Smith, T. F., Jacobson, C., & Baldwin, C. (2019). Pre-disaster planning and preparedness for floods and droughts: A systematic review. *International Journal of Disaster Risk Reduction*, 38, 101207. <https://doi.org/10.1016/j.ijdrr.2019.101207>
- RI, P. P. (2007). Undang-Undang Nomor 24 Tahun 2007 tentang Penanggulangan Bencana. Jakarta: Peraturan Pemerintah Republik Indonesia.
- Ronan, K. R., Alisic, E., Towers, B., Johnson, V. A., & Johnston, D. M. (2015). Disaster preparedness for children and families: a critical review. *Current Psychiatry Reports*, 17(7), 1-9. <https://doi.org/10.1007/s11920-015-0589-6>
- Simanjuntak, P. P., & Paolo, D. (2022). Proyeksi Daerah Potensi Banjir Tahun 2031-2040 Berdasarkan Skenario Iklim Representative Concentration Pathways 4.5. *LaGeografia*, 21(1), 12-30. <https://doi.org/10.35580/lageografia.v21i1.36127>
- Syam, I., Syatriani, S., & Saputri, A. S. D. (2021). Penguatan Sistem Kewaspadaan Dni Bencana Banjir Di Dusun Sapanang Dan Dusun Sapiri Desa Sapanang Kecamatan Binamu Kabupaten Jeneponto. *Jurnal Pengabdian Masyarakat Gerakan Aksi Sehat (GESIT)*, 2(1), 21-28. <https://doi.org/10.51171/b.v2i1.255>
- Thomas, T. N., Leander-Griffith, M., Harp, V., & Cioffi, J. P. (2015). Influences of preparedness knowledge and beliefs on household disaster preparedness. *Morbidity and Mortality Weekly Report*, 64(35), 965-971. <https://doi.org/10.15585/mmwr.mm6435a2>
- Winkler, D., Bidló, A., Bolodár-Varga, B., Erdő, Á., & Horváth, A. (2018). Long-term ecological effects of the red mud disaster in Hungary: Regeneration of red mud flooded areas in a contaminated industrial region. *Science of The Total Environment*, 644, 1292-1303. <https://doi.org/10.1016/j.scitotenv.2018.07.059>
- Yulaelawati, E. (2008). Mencerdasi bencana: banjir, tanah longsor, tsunami, gempa bumi, gunung api, kebakaran. Grasindo.

Revisi ke-3



ERMAN SYARIF UNM <ermansyarif@unm.ac.id>

[GEOSI] New notification from Geosfera Indonesia

1 pesan

Fahmi Arif Kurnianto <fahmiarif.fkip@unej.ac.id>

4 Desember 2022 pukul 16.01

Balas Ke: Open Journal Systems <admin-ojs@unej.ac.id>

Kepada: Erman Syarif <ermansyarif@unm.ac.id>

You have a new notification from Geosfera Indonesia:

You have been added to a discussion titled "English proofreading required" regarding the submission " Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation".

Link: <https://jurnal.unej.ac.id/index.php/GEOSI/authorDashboard/submission/35066>

Fahmi Arif Kurnianto

[Geosfera Indonesia](#)

English proofreading required



Participants

Fahmi Arif Kurnianto (fahmiarif)

Erman Syarif (ermansyarif)

Messages

Note

From

Dear Dr. Erman Syarif,

fahmiarif

Please submit this manuscript to goodlingua (link : <https://goodlingua.com/>) for english proofreading (proofread costs borne by the authors and direct payment to GoodLingua).

Dec 04

Please use the **last version** of the manuscript for proofreading.

After proofread process, author must upload the manuscript by this menu. After this process, there is no another publication fee.

Thank you

Add Message

Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation

Erman Syarif^{1*}, Maddatuang M², Alief Saputro³

^{1 2 3} Geography Education Study Program, Makassar State University, Makassar, 90222, Indonesia

*Corresponding author: ermansyarif@unm.ac.id

Abstract

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property. This study aims to identify community knowledge and the impact of floods on flood disasters and to determine community efforts to increase preparedness for flood disasters. This type of research is qualitative research. This research was conducted in the village of Sapanan, Binamu District, Jeneponto Regency. Sources of data in this study are informants. Data collection is done by observation, interviews, and documentation. The results of the study show: 1) The level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience, 2) The impacts that are often caused after flooding are the many disease outbreaks caused by flooding, the community cannot carry out their usual activities because the community is busy cleaning their homes, children cannot go to school because it is local and their chairs are filled with mud, and 3) The community's efforts to increase preparedness for flood disasters include monitoring land use and planning locations that are prone to flooding in safe areas, adjusting building designs to be flood-resistant and multilevel, infrastructure development must be watertight, and construction of retaining walls and n Embankments along rivers, seawalls along the coast which are prone to storms or tsunamis will greatly help to reduce flood disasters

Keywords: knowledge; preparedness; the community; flood

1. Introduction

Floods are natural disasters that need attention because they threaten people's lives and the economy and are the third largest natural disaster in the world which has claimed many lives and lost property (Aryono, 2011; Badwi et al., 2020; Ningsih et al., 2020; Rahmadani & Syarif, 2020). According to Law Number 24 of 2007 concerning Disaster Management article 1 point 1 explains that a disaster is an event or series of events that threatens and disrupts people's lives and livelihoods caused, both by natural factors and/or

non-natural factors as well as human factors so that resulting in human casualties, environmental damage, property losses, and psychological impacts (RI, 2007).

Research results from (Hartuti, 2022) state that from December 2018 to February 2019 in the Jeneponto district there was high rainfall which caused flooding in several locations. Furthermore (Syam et al., 2021) revealed that one of the areas in Jeneponto Regency that experienced severe flooding was in Binamu District, to be precise in Sapanang Village. The disaster not only caused material losses, but also caused many people to get sick from various groups, namely, infants, children, adolescents, and adults to the elderly, and even caused fatalities.

Most of the people in Sapanan Village, Binamu District, are in a vulnerable condition because they live in an area that has a potential flood hazard. These conditions indicate that the community needs a special strategy to remain able to live in areas with potential flood hazards. One of the efforts that can be made to minimize the impact of flood disasters is to have community preparedness efforts. Preparedness is a series of activities regarding the needs that will arise if a disaster occurs to anticipate disasters and prepare the community for a better level of preparedness/readiness in dealing with disasters (Yulaelawati, 2008). Thus, community preparedness is needed to ensure an effective response in the event of a flood disaster to minimize the negative impacts arising from the disaster.

The condition in the community is that there is limited knowledge about flood disaster mitigation, and the community's reaction to disaster information is still slow because they feel that they often experience it. The flood incident on January 22 2019 has raised awareness and provided knowledge of the importance of community efforts in increasing preparedness for flood disasters that occur at any time.

Disaster preparedness is a fundamental need for every region to reduce the risk of disasters that can occur regardless of time and place. Therefore, it is necessary to prevent it with the right method so that the risk of a disaster occurring, especially involving human victims, can be minimized (Hoffmann & Muttarak, 2017; Kodoatie, 2002; Narayanan et al., 2018; Ronan et al., 2015; Thomas et al., 2015). The prevention methods used may differ in each region, because they are influenced by the geographic location of the area, the disasters that are common in that area, and the social conditions of the community. So each region needs to study the appropriate method for tackling natural disasters.

Preparedness in dealing with floods helps the community in forming and planning what actions need to be taken in the event of a flood. Success in handling and evacuating during floods is very dependent on the preparedness of the community and individuals

themselves. Effective and efficient flood disaster management requires knowledge of the hazards and risks that exist in the watershed (Rahmadani & Syarif, 2020; Simanjuntak & Paolo, 2022). When a flood occurs, all activities will be carried out in an emergency under chaotic conditions, so good planning, coordination, and training are needed so that handling and evacuation when floods take place properly (Hamed & Rao, 2019; Hirschboeck, 1988; Lane, 2017)

Based on the background, the aims of this research are: 1) to identify the community's knowledge of the flood disaster in the village of Sapanan, Binamu District, Jeneponto Regency, 2) to identify the impact of flooding on the community in Sapanan Village, Binamu District, Jeneponto Regency, and 3) to find out the efforts of the community in Sapanan Village, District Binamu Jeneponto Regency in increasing preparedness for flood disasters.

2. Methods

This study uses a type of qualitative research. This research was conducted in Sapanan Village, Binamu District, Jeneponto Regency, South Sulawesi Province, Indonesia as shown in Figure 1 below. This research was conducted in February – May 2022.



Figure 1. Study area

Data sources in this study used primary and secondary data. Primary data sources were informants using the snowball sampling method, which consisted of:

1. Key informants: Sapanan Village Communities
2. Supporting Informants: Village Head, District Head, and the Communities

The secondary data in this study are related to data in the form of documents (relevant books and literature), and images related to the research focus. Data collection in this study was carried out by observing, interviewing, and documenting stages.

The analysis technique used in this study is a qualitative descriptive analysis technique. The data analysis model in this study follows the concept given by Miles and Huberman. Miles and Huberman revealed that the activities in qualitative data analysis were

carried out interactively and continuously at each stage of the research so that they were completed (Miles & Huberman, 1994). Data verification strategy with data reduction, data categorization, data display, and concluding.

3. Results and Discussion

3.1 Result

3.1.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the research that has been done, it was found that 61.67% of the respondents were women and the remaining 38.33% were men. A large number of female respondents was due to the time used when distributing the questionnaires during working days and hours. In addition, the use of the snowball sampling method also has an effect, because the selected female respondents tend to recommend that the next selected respondent is also a female.

When viewed based on the age of the respondents, it can be seen that the ages of the selected respondents ranged from 24-66 years, with the largest percentage being 40-49 years old (40%) and the smallest percentage being more than 59 years old (3.33%). The education level of the most selected respondents was S1 graduates and above, namely 56.67%. The occupation of the most selected respondents is housewives, with a percentage of 45%. The homeownership status of the majority of the selected respondents was 93.33% self-owned and the rest were rented/contracted by 6.67%. Based on their experience of experiencing floods, as many as 85% of respondents had experienced more than 5 (five) floods while living in Sapanan Village.

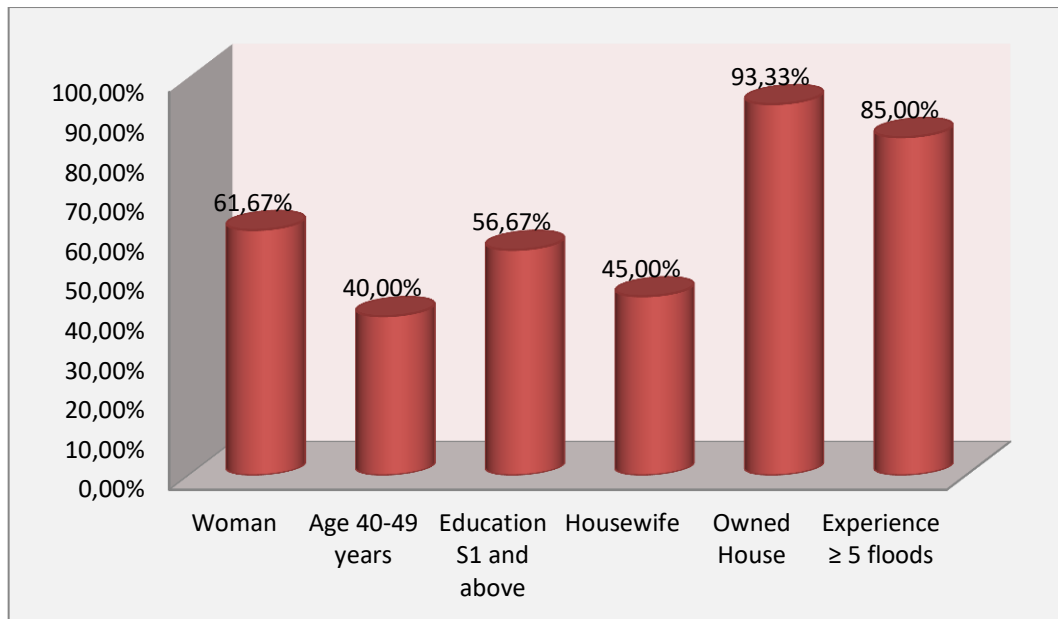


Figure 2. Graph of Respondent Profile's Dominant Characteristics

Based on the results of research on the characteristics of the respondents in figure 2, it can be seen that the majority of the residents of Sapanan Village are still in their productive age, with a fairly high level of education, they are residents who have lived in Sapanan Village for quite a long time, so they have a lot of experience regarding flood events. Although the respondents were dominated by women (61.67%), this did not reduce the objectivity of the research results considering that the majority (85%) of the respondents were people who had enough experience dealing with flood disasters, because they had experienced floods at their homes more than 5 times.

Based on the experience of respondents to the flood disaster, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficult to handle, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

Based on the results of the research in figure 3 that has been done, it was found that all selected respondents (100%) stated that floods that often occur in their residential locations are included in the disaster category because according to them the floods that occur cause disruption to people's lives (46.67%), the flood that occurred was a natural event that caused loss of life and property loss (18.33%), the flood that occurred was the result of careless

disposal of garbage (25%), and the flood was considered a puddle that occurred after rain (10%).

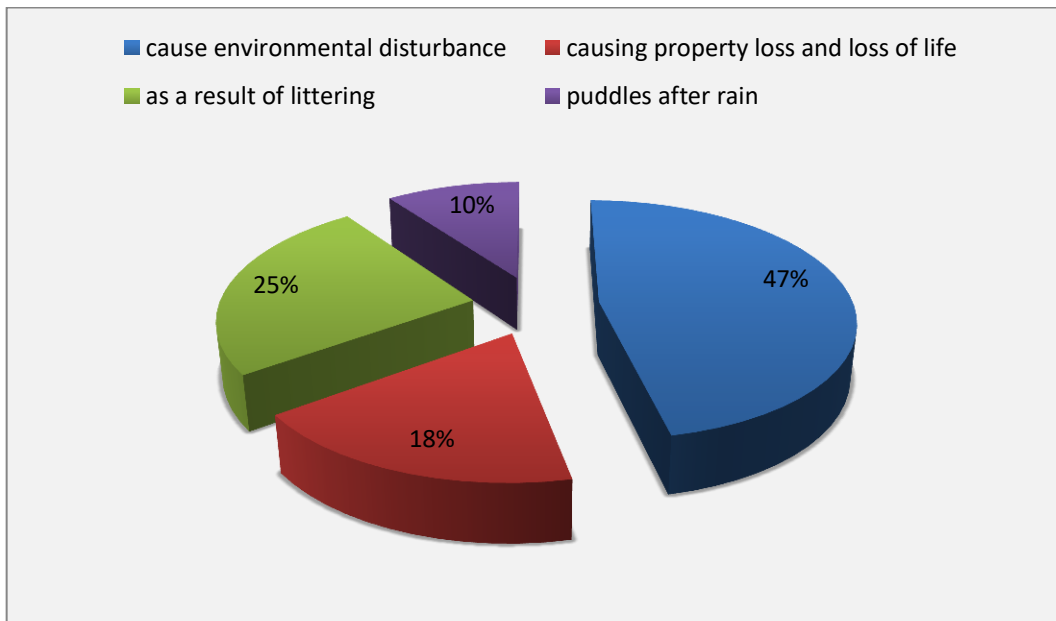


Figure 3. Definition of Flood according to Respondents

Based on the experience of respondents to the flood disaster in figure 4, they thought that floods had disrupted life but could still be handled, such as experiencing problems with clean water, difficulty working, power outages (53.33%), disturbing and difficulty handling, had caused various problems, such as being forced to not working, having to save family and property (31.67%), disaster or catastrophe because it is out of control and for safety all families have to evacuate (15%).

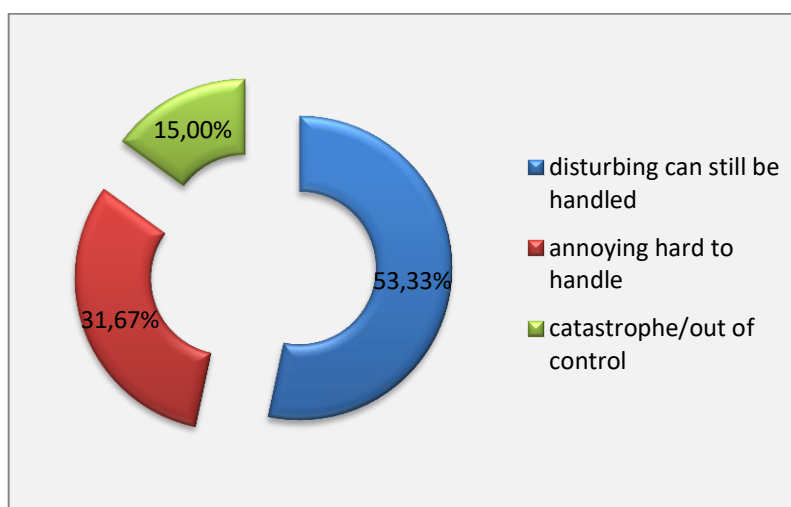


Figure 4. Respondents' experience of flooding

The factors causing the flood disaster were identified into 2, namely due to natural factors and human factors. Based on the respondent's knowledge in figure5, natural factors that cause floods include high-intensity rainfall, especially in the upper reaches of the river (43.33%), erosion and sedimentation which causes siltation of rivers (30%), living conditions in basins/lowlands (20%), and there is high tide (6.67%). Meanwhile, according to the knowledge of the respondents, the human factor caused the flood disaster, littering behavior (55%), construction of houses on riverbanks (23.33%), illegal logging (11.67%), developments that change land use (10%).

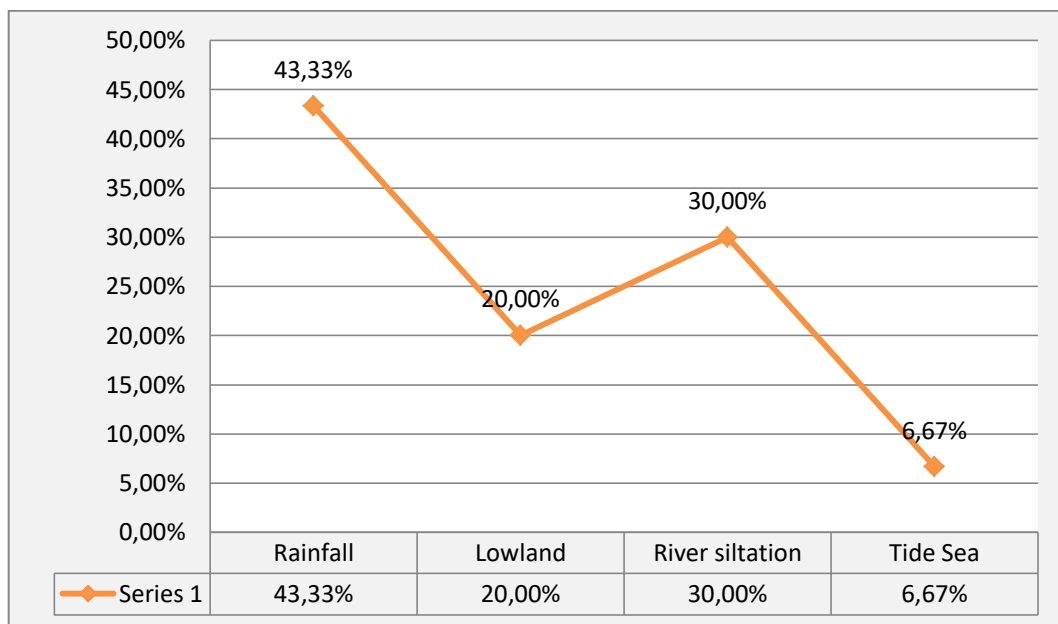


Figure 5. Natural Factors that Cause Floods

The level of public knowledge about the signs of an impending flood disaster can be identified from each respondent's answer, according to respondents the signs of an impending flood disaster if heavy rains in the upstream area of the river are more than 2 hours (26.67%), There is information on the water level in the upstream it exceeds the normal threshold (51.67%), the river water is cloudy and a lot of material is washed away by the river water (3.33%), the river embankments start to leak or break and the pumps don't work (18.33%).

Regarding the actions taken to prevent or reduce the occurrence of floods, respondents have various answers to these questions. The various answers of respondents can describe the level of public knowledge. Actions were taken to prevent or reduce the occurrence of floods by disposing of garbage in its place (26.67%), cleaning waterways around residential houses (20%), working together to clean rivers (16.67%), planting trees in areas upstream (13.33%), and elevating river embankments (23.33%).

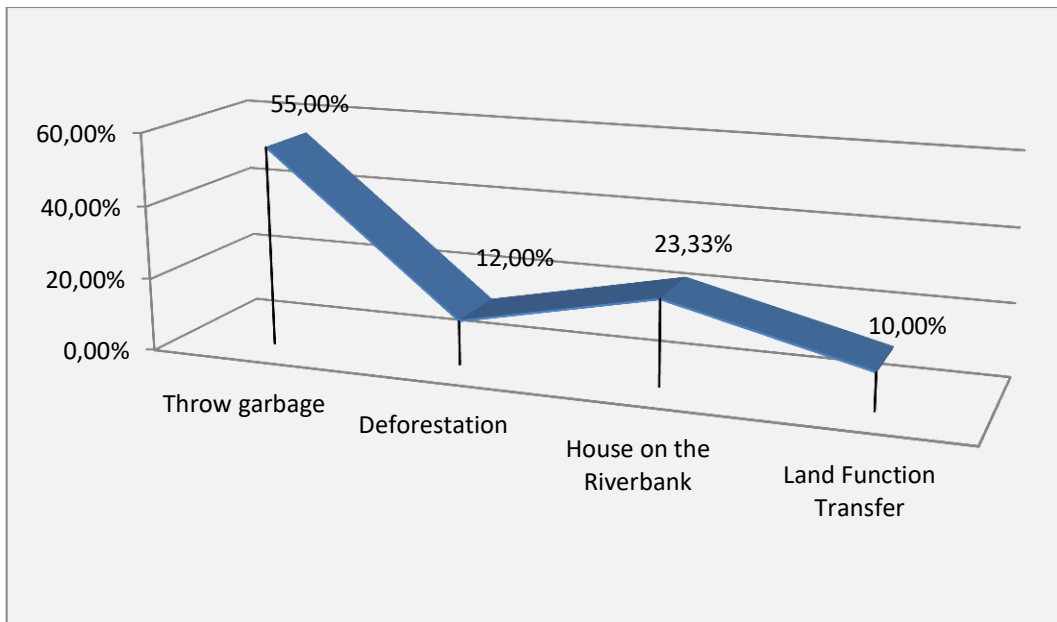


Figure 6. Human Factors Cause Flood

Actions taken by the community regarding the occurrence of floods are divided into three stages, namely before the flood occurs, during the flood, and after the flood occurs. For actions taken before the flood occurred, respondents prepared a disaster-prepared bag containing important documents/securities (3.33%), prepared logistics (foodstuff) for emergency needs (10%), prepared equipment for evacuation (21.67%), renovated houses by raising the foundation or building a house into two floors (41.67%), planning/ placing valuables in a relatively safe place (23.33%).

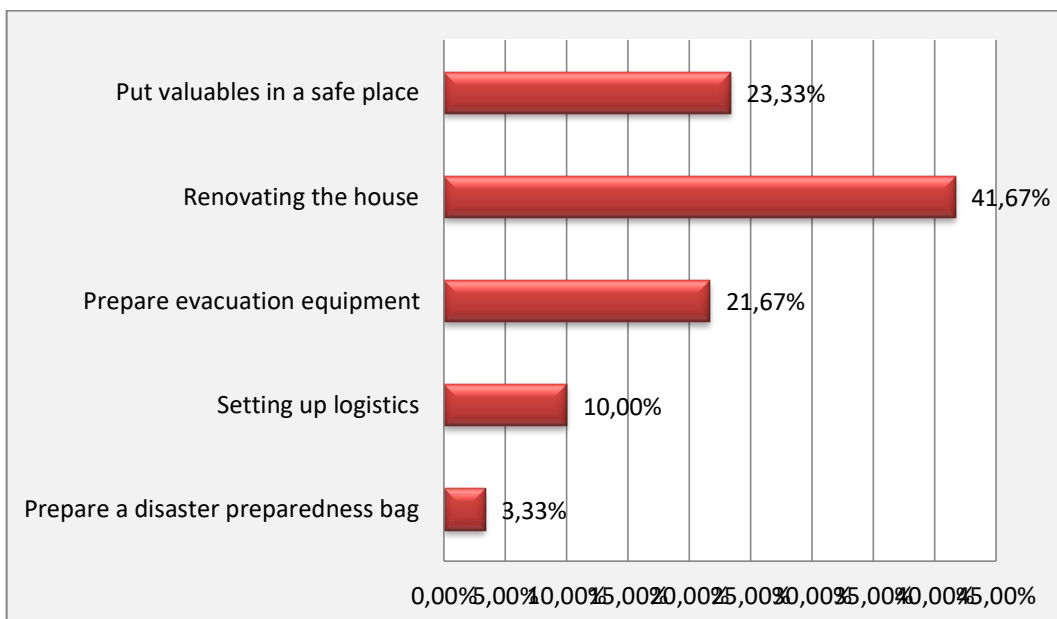


Figure 7. Actions Taken Before the Flood

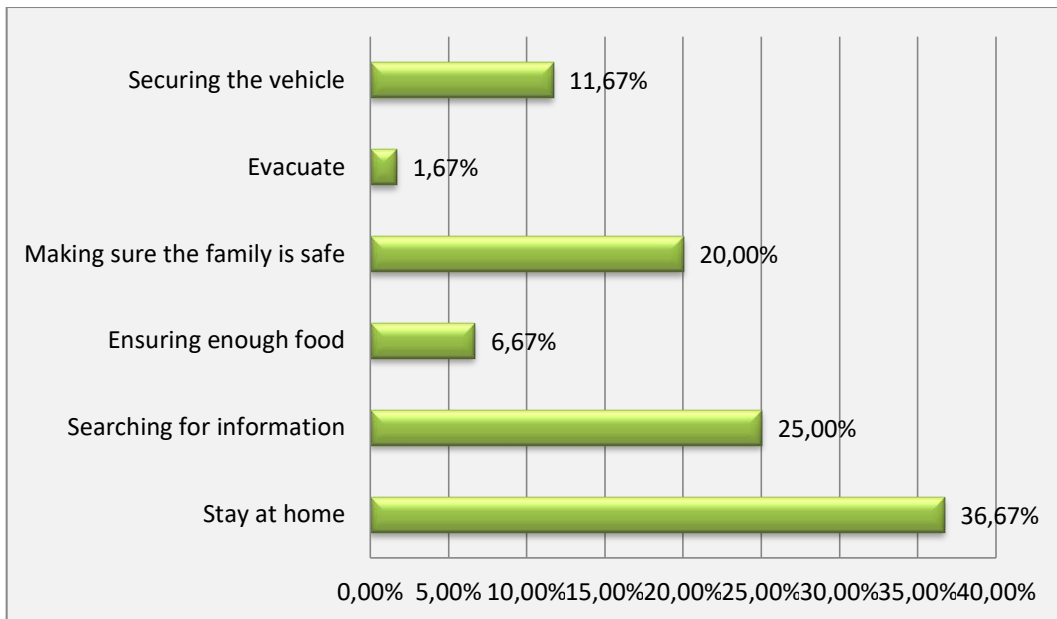


Figure 8. Actions to be taken during a flood

Actions taken by the community when a flood occurs based on information in figure 8 obtained from respondents are to stay at home to maintain the safety of belongings (36.67%), seek information related to flooding through neighbors, handy talkies, mobile phones, television and radio (25%), ensuring sufficient food/logistics supplies (6.67%), ensuring all family members are safe (20%), evacuating to a safe place (1.67%), and ensuring vehicles are in a safe place (11.67 %). Based on information from respondents, very few people evacuated/evacuated or stayed at home when a flood occurred, because most of the people had raised their houses.

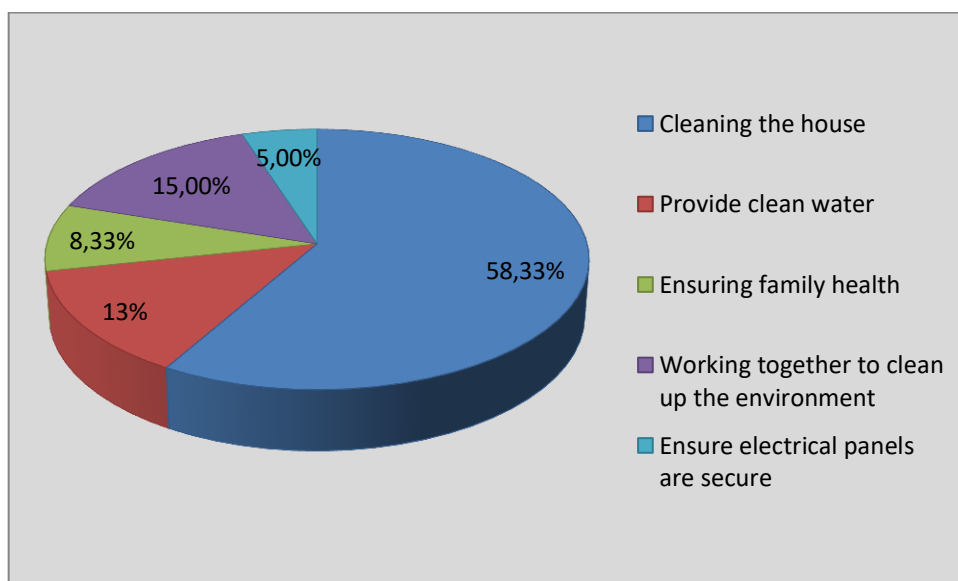


Figure 9. Actions Taken After the Flood

Actions taken by the community after a flood occurred based on information obtained from respondents in figure 9 were cleaning houses and goods from water/mud/flood garbage (58.33%), providing clean water needs and bathing facilities for family needs (13.33%), ensuring the health condition of the family from the effects of the flood (8.33%), carrying out cooperation to clean up the environment from various rubbish/flood mud (15%), and ensuring that the electrical panels at home are in a safe condition (5%).

Based on research on the level of knowledge and actions taken by the community regarding flooding, it is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience.

3.1.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jeneponto Regency

Problems that often occur due to the impact of flooding on the community include physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impact, health risk, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation and others).
- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.
- e. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

This can be known from the results of research on the community in Sapanan village by interviewing him with the results as follows:

According to Mr. Hamzah Karaeng Lurang:

"When asked about the impact caused by this flood many people cannot carry out their activities as usual, because people are busy cleaning their homes. this flood also caused many diseases caused by this flood, if there is a flood ready apart

from the illness that has caused me I cannot go to work as usual.” (Interview, July 23, 2021)

According to Jamairah Karaeng Sangging:

"The impact of flooding that often occurs in this village, firstly, the houses are dirty due to the soil brought by the floods, secondly, there are many diseases that occur as a result of the coming floods" (Interview, 23 July 2021).

According to Syamsuddin Karaeng Liwang:

"The impact of flooding that often occurs in this village is, firstly, the houses are dirty due to the soil brought by the floods. Secondly, many diseases occur as a result of the coming floods" (Interview, 23 July 2021).

From the interview above, it is clear that the impact of flooding on the community is that many people's houses are dirty due to the mud soil brought by the flood, many diseases are caused by flooding, farmers cannot grow crops, children cannot go to school, and victims of property.

3.1.3 Community efforts in Sapanan Village, Binamu District, Jenepono Regency in increasing preparedness for flood disasters.

Efforts were made by the community in Sapanan village to deal with flood disasters which often occur during the rainy season. The following are some principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Hold as much water as possible upstream by making reservoirs and
- b. soil and water conservation.
- a. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- b. Controlling water in the center by temporarily storing it in a retention area.
- c. Flowing water as soon as possible to the estuary or the sea by guarding
- c. water container capacity.
- a. Securing residents, vital infrastructure, and property.

According to Paimin (Hermon, 2021) mitigation of flood, disasters are a series of efforts to reduce the risk of flood disasters, both through physical development and awareness and capacity building in dealing with the threat of flood disasters.

Based on the results of an interview with the Binamu sub-district head, he said:

I, as the Head of the Binamu Sub-District, certainly have to understand disaster mitigation, especially the Mitigation of flood disasters that have frequently occurred recently, especially in the village of Sapanan. So Mitigation is a series of efforts made when a disaster occurs. we have even invited and appealed to the public to be vigilant when a flood disaster comes. But there are still some people who are negligent in this regard. The obstacles in this socialization include the lack of public awareness of this socialization, secondly the lack of knowledge about mitigation. If asked whether or not they were involved in the mitigation process, the answer is, of course, involved in this counseling. (Interview July 25, 2021).

According to Suardi Karaeng Lira:

Actions or efforts made during the flood made efforts to save themselves, such as running to a high place, when the flood was over many people had itching, diarrhea, and lots of mosquitoes. (Interview July 26, 2021).

Muhammad Alwi Karaeng Tompo;

The efforts I made when the floods came were we ran to a high and safe place, and valuables were saved, that's all I know, if asked if I had participated in socialization I never had because I'd rather go to the fields, and rice fields (Interview July 26, 2021).

Amran Karaeng Sija:

The efforts that I make when the floods come are that we run to a high and safe place. Apart from that, every rainy season the government has also provided information or invited the public so that when the floods come, don't save things or things, but save yourself. The sub-district head has suggested to the government that ditches be made for the river, but so far this has not been implemented (Interview 26 July 2021).

Based on the results of the interview, it can be seen that the efforts made were running to a high place and making the foundation of the house higher so that when the flood came it would not be flooded.

3.2 Discussion

3.2.1 Community Knowledge of Flood Disasters in Sapanan Village, Binamu District, Jeneponto Regency

Based on the results of research on the level of knowledge and actions taken by the people of Sapanan village regarding flooding, this is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The results of this study are also following research conducted by (Chan et al., 2014), showing the greatest impact in calculating the level of preparedness of rural families and increasing the level of good knowledge by increasing the level of family preparedness. Knowledge is one of the determinants of behavior and the mental side of what people know (Notoatmodjo et al., 2012). Lack of knowledge about flood disasters and the causes of flood disasters that affect people's attitudes in dealing with these disasters can be seen from the habits of people who do not care about protecting the environment around their own homes, for example, people still throw garbage indiscriminately on riverbanks and ditches, large land conversions -size and so on.

This is in line with the results of research (Dantzler, 2013) which examines various factors that influence families in preparing themselves for disaster preparedness activities, one of these factors is the attitude of the family. Attitude is an individual's willingness to act, besides that attitude is also an action or behavior in determining this complete attitude, knowledge, thoughts, beliefs, and emotions play an important role. There are two components of the attitude factor in the family. The first involves risk perception, the second involves previous disaster experience. Because disasters are events separated in space and time, some people consider them only a possibility and a consequence of natural changes (Erdelj et al., 2017; Geale, 2012; Jiang & Ritchie, 2017; McEntire, 2021; Raikes et al., 2019).

3.2.2 The Impact of Floods on the Community in Sapanan Village, Binamu District, Jeneponto Regency

The impact caused by the flood in Sapanan village can be seen from the impact caused by the flood disaster as described from the results of the interview, namely the many disease outbreaks that have occurred and prevented people from going to work because people were busy cleaning their homes. So that people's daily activities become busy cleaning up the remnants of mud resulting from flooding (Boardman & Vandaele, 2020; De Walque et al., 2017; Winkler et al., 2018). According to UNESCO, among others, the physical, social, economic, and environmental impacts:

- a. The physical impact is damage to public facilities, and public service offices caused by flooding.
- b. Social impacts include death, health risks, mental trauma, economic downturn, disruption of educational activities (children unable to go to school), disruption of public service office activities, and shortage of food, energy, water, and other basic needs.
- c. Economic impacts include material losses, and disruption of economic activities (people unable to go to work, late for work, or obstructed commodity transportation, etc.).
- d. Environmental impacts include water pollution (by pollutants brought by the flood) or vegetation around the river which is damaged by the flood.

3.2.3 Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters.

Based on the results of the research, shows that the efforts made by the community in Sapanan village are an effort to deal with flood disasters that often occur during the rainy season, namely self-rescue such as running to a high place and after the flood recedes the community returns to their respective homes. Apart from that, the community also does not throw trash in the river. Besides that, the efforts made by the community work together to clean the water ditches so that the course of river water is as it should be. Likewise, efforts to propose to make permanent ditches or retaining walls with embankments along the river, but so far have not been implemented. This is by the general guidelines for Disaster Mitigation, Regulation of the Minister of Home Affairs Number 33 of 2006 dated 18 October 2006. The steps taken in mitigating floods in more detail in efforts to reduce flood disasters include:

- a. Supervised land use and site planning for placing vital facilities that are vulnerable to flooding in the area safely.
- b. Adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel.

- c. Infrastructure development must be watertight.
- d. Construction of retaining walls and embankments along the river, and sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.
- e. Setting the speed of surface water flow and upstream areas is very helpful in reducing the occurrence of floods. Some of the efforts that need to be made to regulate the speed of water entering the drainage system include the development
- f. dams/reservoirs, reforestation, and construction of infiltration systems.
- g. Dredging rivers, and making river slits either in open channels or with pipes or tunnels can help reduce the risk of flooding.
- h. Construction of retaining walls and breakwaters for
- i. reduce wave energy in the event of a storm or tsunami for coastal areas.

While the principles for actively mitigating flood disasters BNPB, 2008 (Hermon, 2021):

- a. Retain as much water as possible upstream by creating reservoirs and conserving soil and water.
- b. Absorb as much rainwater as possible into the ground with infiltration wells and provide green open areas.
- c. Controlling water in the middle by temporarily storing it in the retention area.
- d. Distribute water as soon as possible to the estuary or the sea by maintaining the capacity of the water tank.
- e. Securing residents, vital infrastructure, and property.

From the opinions and results of observations and research conducted by researchers, it can be stated that the understanding of the people of Sapanan village towards flood disaster mitigation can be categorized as understanding, in definition and intent as actions or efforts to save themselves from flood disasters (during a flood and after a flood occurs). , as well as the impact caused by flooding, and efforts to overcome it.

4. Conclusion

From the results of research conducted in Sapanan, Binamu District, Jeneponto Regency, it can be concluded that the level of knowledge and actions taken by the people of Sapanan village regarding flooding is quite good, this is because the community has had a lot of experience dealing with flood disasters while living in Sapanan village, and the community wants to learn from their experience. The impact that is often caused after the flood is the

many disease outbreaks caused by the flood, the community cannot carry out their usual activities because the community is busy cleaning their homes, and the children cannot go to school because they are local and their chairs are filled with mud. Community efforts in Sapanan Village, Binamu District, Jeneponto Regency in increasing preparedness for flood disasters supervision of land use and site planning for placing vital facilities that are vulnerable to flooding in the area safety, adjustments to the design of buildings in flooded areas must be resistant to flooding and made multilevel, infrastructure development must be watertight, construction of retaining walls and embankments along rivers, sea walls along the coast that are prone to storms or tsunamis very helpful to reduce the flood disaster.

5. Conflicts of Interest

The authors declare no conflict of interest.

6. References

- Aryono, D. P. (2011). *The Silent Disaster Bencana dan Korban Massal*. CV. Sagung Seto. Jakarta.
- Badwi, N., Invanni, I., & Abbas, I. (2020). Pemetaan Tingkat Rawan Bencana Banjir di Daerah Aliran Sungai Maros Provinsi Sulawesi Selatan. *LaGeografia*, 18(3), 309-322. <https://doi.org/10.35580/lageografia.v18i3.13930>
- Boardman, J., & Vandaele, K. (2020). Managing muddy floods: Balancing engineered and alternative approaches. *Journal of Flood Risk Management*, 13(1), e12578. <https://doi.org/10.1111/jfr3.12578>
- Chan, E. Y. Y., Kim, J. H., Lin, C., Cheung, E. Y. L., & Lee, P. P. Y. (2014). Is previous disaster experience a good predictor for disaster preparedness in extreme poverty households in remote muslim minority based community in China? *Journal of Immigrant and Minority Health*, 16(3), 466-472. <https://doi.org/10.1007/s10903-012-9761-9>
- Dantzler, D. (2013). *Basic household disaster preparedness decisional Influences among male federal employees in the national Capital region*. Capella University.
- De Walque, B., Degré, A., Maignard, A., & Bielders, C. L. (2017). Artificial surfaces characteristics and sediment connectivity explain muddy flood hazard in Wallonia. *Catena*, 158, 89-101. <https://doi.org/10.1016/j.catena.2017.06.016>
- Erdelj, M., Natalizio, E., Chowdhury, K. R., & Akyildiz, I. F. (2017). Help from the sky:

- Leveraging UAVs for disaster management. *IEEE Pervasive Computing*, 16(1), 24-32.
<https://doi.org/10.1109/MPRV.2017.11>
- Geale, S. K. (2012). The ethics of disaster management. *Disaster Prevention and Management: An International Journal*, 21(4), 445-462.
<https://doi.org/10.1108/09653561211256152>
- Hamed, K., & Rao, A. R. (2019). *Flood frequency analysis*. CRC press.
- Hartuti, N. (2022). Hubungan Pengetahuan dan Sikap Remaja Putri Terhadap Tindakan Genitalia Hygiene Pada Pasca Bencana Banjir di SMK Negeri 1 Jeneponto Tahun 2022. *Jurnal Kesehatan Delima Pelamonia*, 6(1), 55-61.
- Hermon, D. (2021). *Geografi Bencana Alam-Rajawali Pers*. PT. RajaGrafindo Persada.
- Hirschboeck, K. K. (1988). Flood hydroclimatology. *Flood Geomorphology*, 27, 49.
- Hoffmann, R., & Muttarak, R. (2017). Learn from the past, prepare for the future: Impacts of education and experience on disaster preparedness in the Philippines and Thailand. *World Development*, 96, 32-51. <https://doi.org/10.1016/j.worlddev.2017.02.016>
- Jiang, Y., & Ritchie, B. W. (2017). Disaster collaboration in tourism: Motives, impediments and success factors. *Journal of Hospitality and Tourism Management*, 31, 70-82.
<https://doi.org/10.1016/j.jhtm.2016.09.004>
- Kodoatie, R. J. (2002). *Banjir: beberapa penyebab dan metode pengendaliannya dalam perspektif lingkungan*. Pustaka Pelajar.
- Lane, S. N. (2017). Natural flood management. *Wiley Interdisciplinary Reviews: Water*, 4(3), e1211. <https://doi.org/10.1002/wat2.1211>
- McEntire, D. A. (2021). *Disaster response and recovery: strategies and tactics for resilience*. John Wiley & Sons.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.
- Narayanan, N., Lacy, C. R., Cruz, J. E., Nahass, M., Karp, J., Barone, J. A., & Hermes-DeSantis, E. R. (2018). Disaster preparedness: biological threats and treatment options. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 38(2), 217-234. <https://doi.org/10.1002/phar.2068>
- Ningsih, Y. W., Imawati, N. D., A'dawiyah, R., Prihastomi, A., Gunawan, G., & Widyatmoko, W. (2020). Identifikasi Kesiapan Sekolah Menengah Muhammadiyah untuk Implementasi Sekolah Siaga Bencana di Kecamatan Wedi Kabupaten Klaten. *LaGeografia*, 18(2), 99-108. <https://doi.org/10.35580/lageografia.v18i2.11614>
- Notoatmodjo, S., Anwar, H., Ella, N. H., & Tri, K. (2012). *Promosi kesehatan di sekolah*.

Jakarta: Rineka Cipta, 21-23.

- Rahmadani, S., & Syarif, E. (2020). Studi Tingkat Pengetahuan Kebencanaan Terhadap Sikap Kesiapsiagaan Masyarakat Dalam Menghadapi Bencana Tanah Longsor Di Kecamatan Parangloe Kabupaten Gowa Tahun 2019. *Jurnal Environmental Science*, 2(2), 162-169. <https://doi.org/10.35580/jes.v2i2.13198>
- Raikes, J., Smith, T. F., Jacobson, C., & Baldwin, C. (2019). Pre-disaster planning and preparedness for floods and droughts: A systematic review. *International Journal of Disaster Risk Reduction*, 38, 101207. <https://doi.org/10.1016/j.ijdrr.2019.101207>
- RI, P. P. (2007). Undang-Undang Nomor 24 Tahun 2007 tentang Penanggulangan Bencana. Jakarta: Peraturan Pemerintah Republik Indonesia.
- Ronan, K. R., Alisic, E., Towers, B., Johnson, V. A., & Johnston, D. M. (2015). Disaster preparedness for children and families: a critical review. *Current Psychiatry Reports*, 17(7), 1-9. <https://doi.org/10.1007/s11920-015-0589-6>
- Simanjuntak, P. P., & Paolo, D. (2022). Proyeksi Daerah Potensi Banjir Tahun 2031-2040 Berdasarkan Skenario Iklim Representative Concentration Pathways 4.5. *LaGeografia*, 21(1), 12-30. <https://doi.org/10.35580/lageografia.v21i1.36127>
- Syam, I., Syatriani, S., & Saputri, A. S. D. (2021). Penguatan Sistem Kewaspadaan Dni Bencana Banjir Di Dusun Sapanang Dan Dusun Sapiri Desa Sapanang Kecamatan Binamu Kabupaten Jeneponto. *Jurnal Pengabdian Masyarakat Gerakan Aksi Sehat (GESIT)*, 2(1), 21-28. <https://doi.org/10.51171/b.v2i1.255>
- Thomas, T. N., Leander-Griffith, M., Harp, V., & Cioffi, J. P. (2015). Influences of preparedness knowledge and beliefs on household disaster preparedness. *Morbidity and Mortality Weekly Report*, 64(35), 965-971. <https://doi.org/10.15585/mmwr.mm6435a2>
- Winkler, D., Bidló, A., Bolodár-Varga, B., Erdő, Á., & Horváth, A. (2018). Long-term ecological effects of the red mud disaster in Hungary: Regeneration of red mud flooded areas in a contaminated industrial region. *Science of The Total Environment*, 644, 1292-1303. <https://doi.org/10.1016/j.scitotenv.2018.07.059>
- Yulaelawati, E. (2008). Mencerdasi bencana: banjir, tanah longsor, tsunami, gempa bumi, gunung api, kebakaran. Grasindo.



ERMAN SYARIF UNM <ermansyarif@unm.ac.id>

[GEOSI] Editor Decision

1 pesan

Fahmi Arif Kurnianto <fahmiarif.fkip@unej.ac.id>
Kepada: Erman Syarif <ermansyarif@unm.ac.id>

20 Desember 2022 pukul 08.50

Erman Syarif:

We have reached a decision regarding your submission to Geosfera Indonesia, " Exploration of Knowledge and Community Preparedness in Anticipation of Flood Disaster Mitigation".

Our decision is to: Accept Submission

Fahmi Arif Kurnianto
fahmiarif.fkip@unej.ac.id

[Geosfera Indonesia](#)