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## Level of Community Participation in Flood Disaster Mitigation Efforts in West Rasana'e District, Bima City

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### ABSTRACT

The floods that occurred in West Rasana'e Subdistrict not only caused physical damage, such as the destruction of homes and infrastructure, but also impacted the community's socioeconomic aspects, including disruptions to economic activities, health, and children's education; thus, it is necessary to involve the active participation of the community as the most affected party. This study aims to analyze the level of community participation in flood disaster mitigation efforts in West Rasana'e Subdistrict, Bima City. The researcher employed purposive sampling as the sampling method, utilizing a Likert scale analysis to measure community attitudes, perceptions, and participation levels regarding various aspects of flood disaster mitigation. This study revealed that, overall, the community in Rasana'e Barat Subdistrict has demonstrated good participation and awareness at every stage of flood mitigation—including planning, implementation, maintenance, and response. The community in Rasana'e Barat Subdistrict exhibits high levels of participation and awareness regarding flood disaster mitigation efforts. However, this participation remains situational and has not yet been fully institutionalized into daily routines. Therefore, capacity building is necessary through disaster training, regular outreach, and community empowerment to ensure that community participation becomes more sustainable and effective

## INTRODUCTION

Indonesia is a country highly vulnerable to various types of natural disasters, one of which is flooding. Geographically, Indonesia is located in the tropics, where rainfall is high, and features diverse topography, ranging from lowlands to hills and mountains. According to data from the National Disaster Management Agency (BNPB) 2023, floods are among the most frequent disasters in Indonesia and cause significant impacts in social, economic, and environmental terms.

According to Law No. 24 of 2007 on Disaster Management, a disaster is an event or series of events that threaten and disrupt community life, caused by natural, non-natural, or human factors, resulting in loss of life, environmental damage, property loss, and psychological impacts. In this context, flooding falls under the category of hydrometeorological natural disasters that are heavily influenced by rainfall, land-use conditions, and human behavior toward the environment.

The city of Bima is one of the regions in West Nusa Tenggara Province that frequently experiences flooding every year, particularly during the rainy season. The Rasana'e Barat subdistrict, as one of the administrative districts of Bima City, is classified as an area with a relatively high flood risk. This is caused by various factors, including the low-lying geographical location, poor drainage systems, the narrowing of the watershed, and the community's habit of littering in waterways. Uncontrolled land-use changes, such as the conversion of water-absorption areas into densely populated settlements, also exacerbate this situation.

The flooding in Rasana'e Barat Subdistrict not only caused physical damage, such as the destruction of homes and infrastructure, but also impacted the community's socio-economic aspects, including disruptions to economic activities, health, and children's education. This situation demonstrates that flood disaster mitigation cannot rely solely on the government's role but must involve the active participation of the community as the most affected party.

According to Soekanto (2012), community participation is the involvement of an individual or a group of people in social activities, whether in the form of contributions of labor, ideas, time, or material resources, to achieve a common goal. In the context of disasters, community participation is a

crucial element in the disaster management cycle, particularly during the mitigation phase.

Mitigation, according to (Carter, W. N. 2008), refers to any efforts undertaken before a disaster occurs to reduce or minimize the potential adverse impacts. Meanwhile, (LIPI-UNESCO/ISDR 2006) explains that disaster mitigation is a series of actions aimed at reducing disaster risk through enhanced community preparedness and awareness. Thus, community involvement in mitigation activities—such as maintaining environmental cleanliness, improving drainage systems, conducting reforestation, and participating in disaster awareness campaigns—constitutes concrete steps that can strengthen a region's resilience against flood disasters.

However, in reality, the level of community participation in Rasana'e Barat Subdistrict remains relatively low. Some residents still perceive flood management as solely the government's responsibility, not a shared responsibility. Mitigation activities are often carried out only after a disaster occurs, rather than as preventive measures. (Syafuruddin 2013) asserts that low community participation is frequently caused by a lack of knowledge and awareness regarding disaster risks, weak inter-agency coordination, and insufficient support for community empowerment programs at the local level.

In line with the view (Chambers, R 1995) that the success of a development or disaster management program depends heavily on the extent to which the community is involved in the planning, implementation, and evaluation of activities. Active community participation fosters a sense of belonging to the environment and enhances the effectiveness of mitigation efforts.

Based on this explanation, the researcher chose the research title "Community Participation in Flood Mitigation in the Rasana'e Barat Subdistrict of Bima City." This study is expected to provide an overview of the extent to which the community participates in mitigation activities, as well as the factors influencing their level of participation. The results of this study are also expected to serve as a basis for local governments, disaster management agencies, and other relevant parties in developing more participatory and sustainable flood mitigation strategies in the Bima City area.

## METHODS

### A. Population and Sampling Technique

#### 1. Population

The population for this study comprises all residents living in Rasana'e Barat Subdistrict, totaling 31,131 people in Bima City, who are directly or indirectly affected by flood disasters.

#### 2. Sampling Technique

In this study, the researcher used purposive sampling as the sampling method. This is a non-probabilistic sampling technique, in which subjects are deliberately selected based on specific criteria deemed relevant to the research objectives. The criteria for respondents selected as samples in this study are:

- a. Residents living in flood-prone areas in the Rasana'e Barat subdistrict of Bima City.
- b. Residents who have been involved in, witnessed, or have experience with flood disaster mitigation activities, whether carried out individually, by community groups, or by the government.
- c. At least 18 years of age and able to provide clear information regarding their participation in flood disaster mitigation activities.

Purposive sampling was selected because not all residents have the same level of experience or involvement in flood mitigation activities. Therefore, only individuals meeting these criteria were selected as respondents to ensure the data collected is more focused, relevant, and in-depth in addressing the research problem.

The sample size for this study was determined using the Slovin formula. This formula is used to determine the sample size from a large population with a specific margin of error. The margin of error used in this study is 10%, which was set by considering the limitations of time, cost, and research resources.

#### 1. Sampling Technique

In this study, the researcher used purposive sampling as the sampling method. This technique is a form of non-probabilistic sampling, in which research subjects are not selected randomly but are deliberately chosen based on specific criteria deemed relevant to the research objectives

##### a. Determining the Sample Size

To determine the sample size for a population of 31,131 individuals, the researcher used the Slovin formula with a margin of error of 10% ( $e = 0.1$ ). A 10% margin of error is considered

sufficiently representative for social research involving large populations.

**Slovin's Formula:**

$$n = \frac{N}{1 + N(e^2)}$$

Calculation:

$$n = \frac{31.131}{1 + 31.131(0,1^2)}$$

$$n = \frac{31.131}{1 + 31.131(0,01)}$$

$$n = \frac{31.131}{1 + 311,31}$$

$$n = \frac{31.131}{312,31}$$

$n = 99.67$  (Rounded to 100 respondents)

Based on the above calculations, the minimum number of respondents required is 100. However, in this study, the researcher set the sample size at 101 respondents to ensure that the data's representativeness exceeded the required minimum threshold.

#### a. Respondent Criteria (Purposive Sampling)

The purposive sampling technique was chosen because not all residents have the same level of experience or involvement in flood disaster mitigation activities. The criteria for respondents selected as the sample in this study are as follows:

1. Residence: Residents living in flood-prone areas in the Rasanae Barat subdistrict of Bima City
2. Experience: Residents who have been involved in, witnessed, or have experience with flood disaster mitigation activities, whether conducted individually, by community groups, or by the government.
3. Age and Capacity: At least 18 years of age and deemed capable of providing clear information regarding their participation in flood disaster mitigation activities.

By establishing these characteristics, the selected respondents are expected to provide more focused, relevant, and in-depth data in addressing the research questions.

## Likert Scale Analysis

The Likert scale is used to measure public attitudes, perceptions, and levels of participation regarding various aspects of flood disaster mitigation. This scale consists of several statements to which participants respond with answer options that reflect their level of agreement with the statements. Common answer options used in the Likert scale are: strongly agree, agree, neutral, disagree, and strongly disagree.

Researchers use the Likert scale to delve deeper into the public's level of understanding regarding flood disaster mitigation, as well as to measure the extent of their role in such efforts. Each question in the questionnaire is assigned a numerical weight, for example, 5 for strongly agree, 4 for agree, 3 for neutral, 2 for disagree, and 1 for strongly disagree. In

this way, the data obtained will be easier to analyze quantitatively.

The following is the Likert scale formula according to (Sugiyono 2019) that will be used in this study:

$$Mean = \frac{\sum Skor \times F}{101}$$

The mean was calculated by summing the products of the response scores and their frequencies, then dividing the result by the total number of respondents. In this study, the sample consisted of 101 respondents located in the Rasanae Barat subdistrict of Bima City.

Table 1. Likert Scale Assessment Criteria (n=101)

Mean Score Range	Category
4,1 – 5,00	Very High
3,1 – 4,0	High
2,1 – 3,0	Fairly High
1,1 – 2,0	Low
0,1 – 1,0	Very Low

Source: (Sugiyono 2019)

## RESULTS AND DISCUSSION

### A. General Description of the Research Area

The Rasana'e Barat Subdistrict is one of five subdistricts in Bima City, West Nusa Tenggara. Geographically, Bima City is located at coordinates approximately 8°20'–8°30' South Latitude and 118°41'–118°48' East Longitude. The total area of Rasana'e Barat Subdistrict is 10.14 km<sup>2</sup>, which makes it relatively small compared to other subdistricts in Bima City. This subdistrict is divided into several villages, namely Tanjung, Paruga, Sarae, Nae, Pane, and Dara. The subdistrict capital is Paruga Village. The administrative boundaries of Rasana'e Barat include: North (Ambalawi Subdistrict, Bima Regency); East (Wawo Subdistrict, Bima Regency); South (Palibelo Subdistrict, Bima Regency); West (Bima Bay coastal area).

The terrain of Rasana'e Barat is relatively flat to undulating. Based on land use and slope data for Bima City: Rasana'e Barat has a significant area of flat land (0–2%), although there are sections with

gentle hills. The average elevation in Rasana'e Barat is approximately 3 meters above sea level (masl), indicating that this area is somewhat low-lying and close to coastal settlements.

The population of Rasana'e Barat Subdistrict in 2024 was approximately 31,131 people, representing a portion of the larger population of Bima City. The population density in Rasana'e Barat is very high, at around 3,070 people per km<sup>2</sup>, making it one of the subdistricts with the highest population density in Bima City.

Some aspects of the existing infrastructure and public facilities include: 1) Housing; many homes in West Rasana'e are deemed habitable, although some are not. Data indicates that uninhabitable homes still exist, which could be a risk factor for flooding; 2) Trade and economic activities: Paruga Village, as part of West Rasana'e, serves as a hub for commercial activities in Bima City. Numerous Small and Medium Enterprises (SMEs) and home-based businesses operate there. Major roads such as Soekarno Hatta Street, which passes through Paruga,

also serve as primary trade and transportation routes. 3) Public services: Educational and health facilities are available, but their distribution may be uneven across sub-districts. Sub-district-specific data (number of schools, health posts, community health centers) indicates that the community has access, though challenges related to distance, capacity, and quality persist.

Rasana'e Barat has a largely low-lying and flat terrain and is located near Bima Bay; the potential threat of tidal flooding or flooding from poor drainage is a real concern. The flat and low-lying conditions exacerbate the risk of stormwater runoff if the drainage system is inadequate. Land cover and land use (residential areas, high-density buildings, and economic activities) can reduce water infiltration areas, thereby accelerating the flow of rainwater into drainage channels and rivers. This can increase the intensity and duration of flooding. Topographic

information and land-use management are crucial for understanding the level of flood vulnerability in this region.

West Rasana'e is relatively close to the center of Bima City, particularly Paruga, which serves as a commercial hub. Road access is fairly good in some areas, especially along major thoroughfares. However, in densely populated and narrow areas, the road network may have limited capacity and inadequate drainage, making these areas prone to flooding. The proportion of homes with road access, street lighting, and other public facilities is important as part of mitigation efforts, because if there is extreme rainfall and drainage is inadequate, water can pool and disrupt community activities and mobility. The following is a map of the study area in Rasanae Barat Subdistrict:

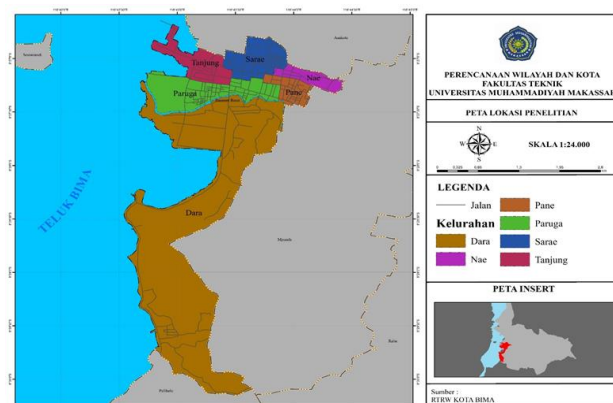


Figure 1. Map of the Research Location in West Rasana'e Subdistrict

## B. Flood Vulnerability Data for the West Rasana'e Subdistrict

Flood vulnerability data for West Rasana'e Subdistrict was compiled to provide an initial overview of the area's vulnerability to potential flood disasters. This information includes the risk levels for each village within the subdistrict, serving as a

reference for planners, researchers, and local governments in disaster mitigation and response efforts. It is hoped that the presentation of this data will assist in identifying areas requiring priority attention and encourage more informed and evidence-based decision-making.

Table 2. Flood Risk Data in Rasanae Barat Subdistrict

Year / Event	Area	Impact	Notes
2016	West Rasanae (6 villages)	±33,492 people affected, ±32,892 people displaced	Major flooding; river overflow; BNPB data
2021	Na'e, Sarae Villages	248 houses flooded	River overflow due to heavy rain

2023	Pane, Nae, Sarae, Dara, Paruga Villages	Nae: 675 families/2,689 people; Pane: 13 families/59 people; Dara: 20 families/100 people	Local flooding due to high rainfall intensity
2024	All of West Rasanæ (some of the worst-hit villages)	Part of >2,000 families affected by flooding in 20 villages of Bima City	Major flooding; post-flood mud cleanup

Source: Bima City Disaster Management Agency, 2025

### B. Respondent Demographic Data

The description of these research findings is based on scores derived from the questionnaire used to assess the level of community participation in flood mitigation in West Rasanæ Subdistrict, Bima City. This area is a coastal region that is potentially affected by tidal flooding and waterlogging

during the rainy season, particularly in neighborhoods with high population density.

The observed level of participation encompasses community involvement in the planning, implementation, and evaluation of flood prevention and mitigation efforts.

Table 3. Respondent Demographic Data

Category	Description	Frequency	Percentage
<b>Gender</b>	Male	71 people	70,7%
	Female	30 people	29,3%
<b>Age</b>	<18	11 people	11,8%
	18-25	25 people	43,6%
	26-35	32 people	30,8%
	36-40	20 people	20,9%
	41-50	13 people	12,9%
	<b>Education Level</b>	Elementary School	0 people
	Junior High School	0 people	0%
	High School	31 people	31,7%
	Bachelor's Degree	63 people	62,4%
	Master's Degree	7 people	5,9%
<b>Occupation</b>	Farmers	26 people	25%
	Private Employees	13 people	13%
	Civil Servants	13 people	14%
	Traders	25 people	24%
	Honorers	8 people	8%
	Students	16 people	16%
	<b>Length of Residence in West Rasa Nae</b>	<5 Year	30 people
	5-10 Year	16 people	15,3 %
	>10 Year	24 people	23,5%
	>20 Year	31 people	30,6%

Source: Survey Results from Respondents

Based on Table 2 regarding Respondent Demographic Data, when viewed by gender, male respondents dominated the sample with 71 individuals (70.7%), while female respondents numbered 30 (29.3%). This indicates that male

participation in disaster mitigation activities in the study area is higher than that of females.

In terms of age, the 18–25 age group was the largest with 24 respondents (43.6%), followed by the 26–35 age group with 32 people (30.8%), the 36–40 age group with 20 people (20.9%), those aged  $\leq 18$

with 12 people (11.8%), and 13 people (12.9%) aged 41–50 years. These data indicate that the majority of respondents are of working age, making them physically and mentally better prepared to participate in disaster mitigation activities.

In terms of highest level of education, the majority of respondents held a bachelor's degree (S1), totaling 63 people (62.4%), followed by high school (SMA) graduates at 32 people (31.7%), and master's degree (S2) holders at 7 people (5.9%), while there were no respondents with elementary (SD) or junior high school (SMP) education. This indicates that the educational level of the community in West Rasanae Subdistrict is relatively high, which may influence their level of awareness and understanding regarding the importance of disaster mitigation.

In terms of occupation, the respondents came from a variety of professions, distributed as follows: 26 farmers (25%), 13 private-sector employees (13%), 14 civil servants (14%), 25 merchants (24%), 8 contract workers (8%), and 16 students (16%). These data indicate that the majority of respondents work in the informal sector and agriculture, which generally involve direct proximity to the environment and potential disaster impacts.

Based on the length of residence in the Rasa Nae Barat area, it was found that 31 respondents (30.6%) had lived there for <5 years, 16 respondents (15.3%) for 5–10 years, 24 respondents (23.5%) for >10 years, and 31 respondents (30.6%) for >20 years. This indicates that the majority of the community has resided in the area for a long time, thereby possessing firsthand experience regarding local environmental conditions and flood events.

Overall, the table shows that the majority of study respondents are men of working age, hold a

bachelor's degree (S1), and have resided in the Rasa Nae Barat area for a long time. These conditions reflect that the respondents possess sufficient capacity and experience to provide an objective assessment regarding the level of community participation and awareness in flood disaster mitigation efforts.

## **B. Level of Community Participation and Awareness in Flood Disaster Mitigation Efforts in Rasanae Barat Subdistrict, Bima City**

1. To determine the level of participation and awareness among residents of West Rasanae Subdistrict, Bima City, regarding flood disaster mitigation efforts, data was collected using a questionnaire based on a Likert scale.
2. This Likert scale was used to measure the extent to which respondents agreed or disagreed with statements related to their participation and awareness in dealing with flood disasters.
3. The Likert scale used consists of several response levels, ranging from strongly disagree to strongly agree, which were then converted into numerical values to facilitate analysis. The results of this data processing will provide a quantitative picture of the level of community participation and awareness, which can later be used as a basis for formulating more effective disaster mitigation recommendations.
4. The following is a Likert scale analysis based on data obtained from the community in West Rasanae Subdistrict:
  1. Participation Indicator

Table 4. Results of the Recapitulation of the Questionnaire by Item of Participation Indicator Statements

No	Statement	Rating Scale					Total
		STS	TS	R	S	SS	
1	I provide suggestions or opinions in flood mitigation planning activities in the village.	15	18	20	36	12	101
2	The government involves the community in developing flood mitigation programs.	12	14	25	32	18	101
3	I attend meetings or outreach related to flood management in my neighborhood.	17	11	14	33	26	101
4	I feel that community opinions are valued in flood mitigation planning.	16	15	18	35	17	101
5	I am aware of the flood mitigation programs in my neighborhood.	10	11	27	27	26	101
<b>Total</b>		70	69	104	164	98	505
<b>Average</b>		14	13,8	20,8	32,8	19,6	101

Source: Results of the Recapitulation of the Participation Indicator Questionnaire

Table 5. Calculation of Respondent Results for Planning Indicators

No	Answer	Score	Frequency	Score x F
1	Strongly Disagree	1	14	14
2	Disagree	2	13,8	27,6
3	Undecided	3	20,8	62,4
4	Agree	4	32,8	131,2
5	Strongly Agree	5	19,6	98
<b>Total</b>			101	333,2

Based on the table above, the average Likert scale value of the planning indicators can be calculated as follows:

$$Mean = \frac{\sum Skor \times F}{Jumlah Responden} = \frac{1.666}{101} = 3,29$$

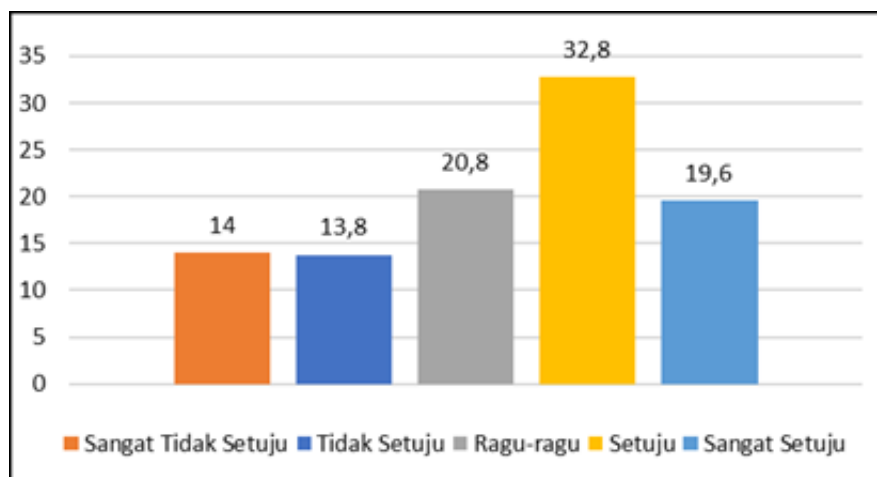


Figure 2. Diagram of Respondents for Participation Indicators

## 7. Implementation Indicators

Table 6. Results of the Questionnaire Summary for Each Item of the Implementation Indicator Statement

No	Assessment	Scale Statement					total
		STS	TS	R	S	SS	
1	I plant trees or plants around my house to reduce the risk of flooding.	14	8	23	30	26	101
2	I participate in community service activities to clean water channels or drainage.	7	15	17	37	25	101
3	I assist the government or related institutions in implementing flood mitigation activities.	13	17	16	37	18	101
4	I participate in flood disaster management training or simulations.	14	7	26	33	21	101
5	I participate in cleaning rivers or the surrounding environment.	16	8	19	34	24	101
Total		64	55	101	171	114	505
Averange		12,8	11	20,2	34,2	22,8	101

Source: Results of the Recapitulation of the Implementation Indicator Questionnair

Table 7. Calculation of Respondent Results for Implementation Indicators

No	Answer	Score	Frequency	Skor x F
1	Strongly Disagree	1	12,8	12,8
2	Disagree	2	11	22
3	Undecided	3	20,2	60,6
4	Agree	4	34,2	136,8
5	Strongly Agree	5	22,8	114
Total			101	346,2

Source: Results of Implementation Indicator Questionnaire Analysis

Based on the table above, the average Likert scale value of the implementation indicators can be calculated as follows:

$$\text{Mean} = \frac{\sum \text{Skor} \times F}{\text{Jumlah Responden}} = \frac{346,2}{101}$$

$$= 3,42$$

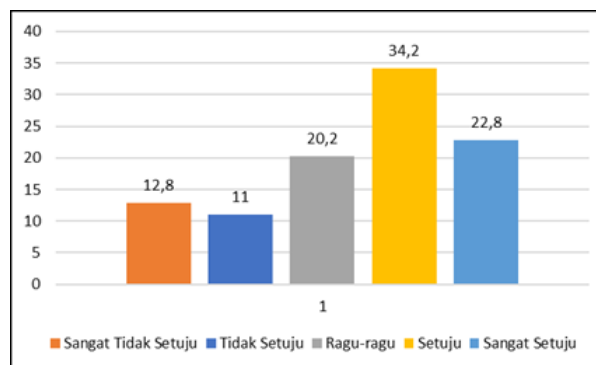


Figure 3. Diagram of Respondents for Implementation Indicators

## Maintenance Indicators

Table 8. Summary Results of the Questionnaire by Statement Item for Maintenance Indicators

No	Statement	Rating					Total
		STS	TS	R	S	SS	
1	I regularly maintain the environment to prevent clogged waterways.	11	14	22	35	19	101
2	I help oversee the implementation of flood mitigation projects in my area.	10	10	20	36	25	101
3	I report any damage to flood control facilities to the relevant authorities.	13	17	23	27	21	101
4	I remind other residents not to throw trash into rivers or drainage channels.	10	14	25	31	21	101
5	I help preserve the rivers and water catchment areas in my neighborhood.	13	9	23	35	21	101
Total		57	64	113	164	107	505
Average		11,4	12,8	22,6	32,8	21,4	101

Source: Results of the Recapitulation of the Maintenance Indicator Questionnaire

Table 9. Calculation of Respondent Results for Maintenance Indicators

No	Answer	Score	Frequency	Skor x F
1	Strongly Disagree	1	11,4	11,4
2	Disagree	2	12,8	25,6
3	Undecided	3	22,6	67,8
4	Agree	4	32,8	131,2
5	Strongly Agree	5	21,4	107
Total			101	343

Source: Results of the Maintenance Indicator Questionnaire Analysis

Based on the table above, the average Likert scale value of the maintenance indicator can be calculated as follows:

$$Mean = \frac{\sum Skor \times F}{Jumlah Responden} = \frac{343}{101}$$

$$= 3,39$$

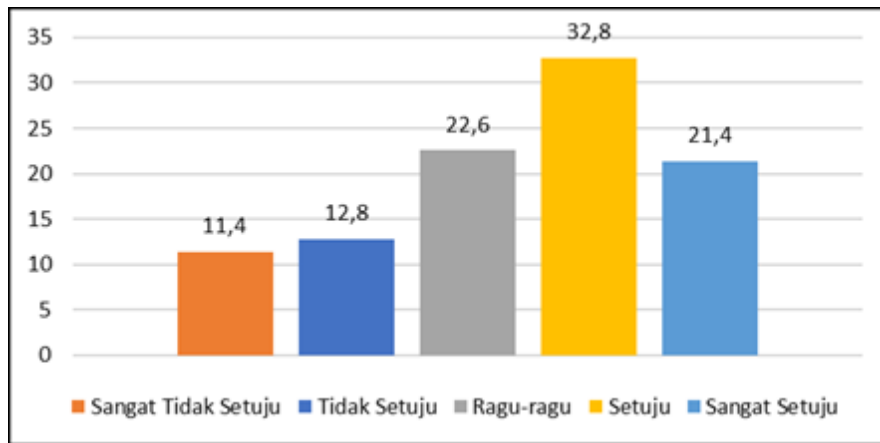


Figure 4. Diagram of Respondents for Maintenance Indicators

### Mitigation Indicators

Table 10. Summary Results of the Questionnaire by Item for Mitigation Indicator Statements

No	Statement	Rating					Total
		STS	TS	R	S	SS	
1	I participated in the restoration of public facilities after the flood.	12	12	15	30	32	101
2	I was involved in post-flood education or outreach activities.	11	17	17	31	25	101
3	I provided assistance in the form of labor, goods, or funds to flood victims.	12	15	17	32	25	101
4	I participated in the repair of the drainage system after the flood.	13	16	10	37	25	101
5	I helped flood victims in my neighborhood.	13	11	28	32	17	101
Total		61	71	87	162	124	505
Average		12,2	14,2	17,4	32,4	24,8	101

Source: Summary of Response Indicator Questionnaire Results

Table 11. Calculation of Response Indicator Respondent Results

No	Answer	Score	Frequency	Skor x F
1	Strongly Disagree	1	12,2	12,2
2	Disagree	2	14,2	28,4
3	Undecided	3	17,4	52,2
4	Agree	4	32,4	129,6
5	Strongly Agree	5	24,8	124
<b>Total</b>			<b>101</b>	<b>346,4</b>

Source: Results of the Survey Analysis of Mitigation Indicators

Based on the table above, the average Likert scale value of the mitigation indicators can be calculated as follows:

$$\text{Mean} = \frac{\sum \text{Skor} \times F}{\text{Jumlah Responden}} = \frac{346,4}{101} = 3,43$$

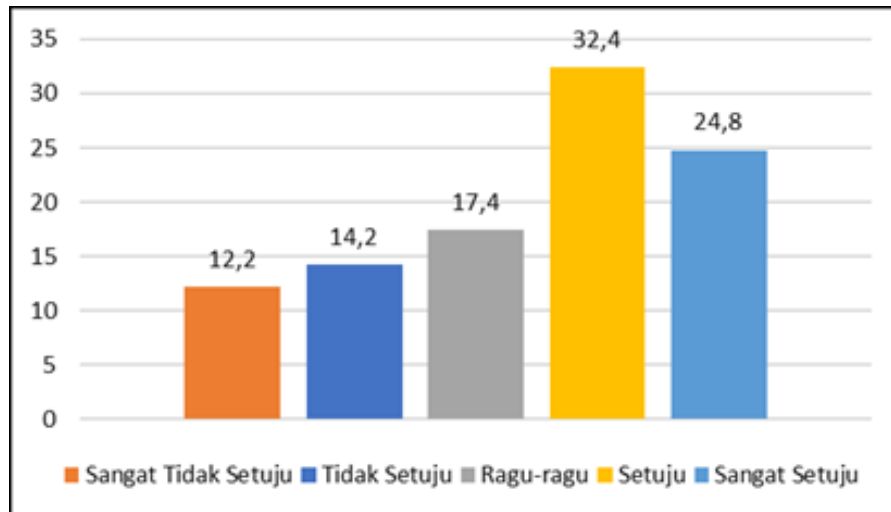


Figure 5. Diagram of Respondents for Mitigation Indicators

Based on the results of the Likert scale analysis of the questionnaire regarding the level of community participation in flood disaster mitigation in West Rasana'e District, Bima City, the results can be presented in the table summarizing the overall

results of the analysis of indicators of Community Participation and Awareness in Flood Disaster Mitigation Efforts in West Rasana'e District, Bima City, as follows:

Table 12. Summary of the Likert Scale Analysis Results on the Level of Community Participation and Awareness in Flood Disaster Mitigation Efforts in Rasana'e Barat Subdistrict, Bima City

No	Indicator	Average Score	Category
1	Planning	3,29	Medium
2	Implementation	3,42	High
3	Maintenance	3,39	Medium
4	Mitigation	3,43	High

Source: Results of the Liker Scale Analysis of Respondents' Questionnaires

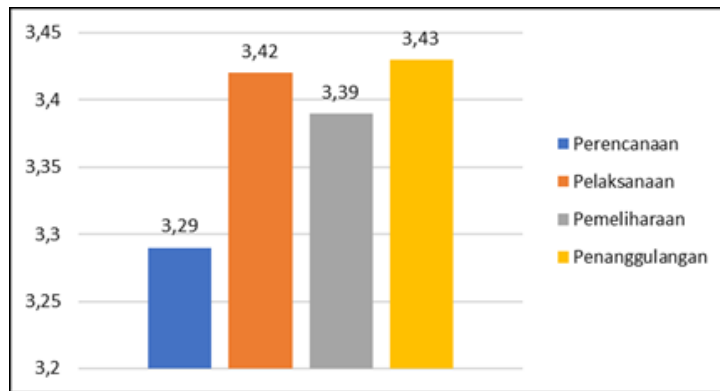


Figure 6. Diagram of the Level of Public Participation and Awareness in Flood Mitigation Efforts in West Rasana'e District, Bima City

Based on the results of the Likert scale analysis in Table 12, it can be seen that the level of community participation and awareness in flood disaster mitigation efforts in the Rasanae Barat Subdistrict of Bima City falls into the high category. This is evident from the average scores for each indicator, which all exceed 3.00. The planning indicator received an average score of 3.29, with the moderate category observed in Dara Village, indicating that the community has been active in the planning phase of flood mitigation activities, such as formulating strategies and participating in community meetings. Furthermore, the implementation indicator received an average score of 3.42, with a high category in Dara and Tanjung villages, indicating that community involvement in direct activities such as community service and tree planting is proceeding well.

Meanwhile, the maintenance indicator has an average score of 3.39, with the moderate category found in Sarae and Nae sub-districts, indicating that the community is highly consistent in maintaining and caring for the infrastructure built to reduce flood risks. As for the mitigation indicator, it received a score of 3.43, with the high category found in Paruga and Pane villages, meaning the community has a high level of awareness in dealing with emergency situations and participates in flood disaster mitigation efforts.

Thus, overall it can be concluded that the community in West Rasanae District has shown good participation and awareness in every stage of flood

mitigation, both in terms of planning, implementation, maintenance, and response.

In general, the level of community participation and awareness is an important factor in the success of flood disaster mitigation efforts. Disaster mitigation does not only depend on the role of the government, but also highly requires active involvement from the community as the party closest to the risk sources. Based on the results of the Likert scale analysis obtained through the distribution of questionnaires to the residents of West Rasanae District, it is known that the level of community participation falls into the fairly high to very high category.

Based on the data presented in Table 12, the planning indicator received an average score of 3.29 with a medium category in Dara sub-district. This indicates that the community has a good level of involvement in planning mitigation activities, such as neighborhood meetings and preparing cleanliness agendas. However, there are still some residents who are passive and only participate in activities when requested by the sub-district officials or community leaders. The implementation indicator received a score of 3.42 with a high category in Dara and Tanjung sub-districts. This means that the community is quite active in implementation activities, such as communal work, cleaning waterways, and organizing the area around their homes. However, this participation is not yet evenly distributed across all areas, as some residents are less involved due to work commitments and economic factors.

In the maintenance indicator, the average score reached 3.39, which falls into the medium category and is found in the Sarae and Nae sub-districts. This indicates that most people are concerned with keeping drains and public facilities that have been built clean. Environmental maintenance activities are carried out regularly, although they still require supervision from the sub-district authorities to remain sustainable. Meanwhile, the mitigation indicator scored 3.43 with a high category, found in the Paruga and Pane sub-districts. This shows that public awareness increases significantly when a flood disaster occurs. Residents tend to help each other, evacuate victims, and clean the environment after the flood. This phenomenon indicates that the spirit of solidarity among the community is still strong, but it needs to be directed so that it does not only appear during emergency response, but also in the prevention stage.

Overall, these results confirm that the community of Rasanae Barat District has a high level of participation and awareness concerning flood disaster mitigation efforts. However, this participation is still situational and has not yet been fully institutionalized in daily habits. Therefore, it is necessary to improve capacity through disaster training, regular socialization, and empowerment of community environments so that community participation becomes more sustainable and effective.

This aligns with the Theory of Community Awareness (Freire, Paulo 1984), which explains that community awareness (conscientization) is a process in which individuals or groups become aware of their roles and responsibilities towards social change in their environment. This awareness develops through a process of reflection and concrete action (praxis).

## CONCLUSION

Research reveals that Rasana'e Barat District has an area that is mostly low and flat, and being close to Bima Bay, the potential threat of tidal flooding or waterlogging from poor drainage becomes a real issue. The low and flat conditions

exacerbate the risk of rainwater runoff if the drainage system is inadequate. Surface conditions and land use (residential areas, dense buildings, and economic activities) can reduce water absorption areas, thereby accelerating rainwater flow into channels and rivers. Overall, the community in Rasana'e Barat District has shown good participation and awareness in every stage of flood mitigation, both in terms of planning, implementation, maintenance, and emergency response.

These results confirm that the community in Rasanae Barat District has a high level of participation and awareness regarding flood disaster mitigation efforts. However, this participation is still situational and has not been fully institutionalized in daily habits. Therefore, it is necessary to enhance capacity through disaster training, routine socialization, and the empowerment of local communities so that public participation becomes more sustainable and effective.

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