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An Analysis of Junior High School Vulnerability in Flood-Prone Areas, Grogol, Sukoharjo Regency, Indonesia

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ABSTRACT
Flood is a condition in which water enters and floods areas with low river areas or drainage which results in its inability to drain and accommodate water. The impact of the flood not only resulted in the paralysis of social, economic and community activities but also resulted in the cessation of educational activities. Vulnerability itself is a condition where the community and society are powerless to overcome the threat of a disaster that occurs. This study aims to determine the level of vulnerability of junior high schools in flood-prone areas, Grogol District, Sukoharjo Regency. This study uses a quantitative descriptive approach based on the variables studied. Quantitative research is research that focuses on analyzing numerical data processed by statistical methods. The research design used is a survey design. The population and sample used in this study is the population used, namely junior high schools located in flood-prone areas in Grogol District. The sample used is three junior high schools located in KRB Flood. The sample was determined using purposive sampling based on the Sukoharjo Regency Flood KRB Map published by the Sukoharjo Regency Spatial Plan. The results of the data analysis of the three junior high schools have social vulnerabilities that are relatively vulnerable to flood disasters, seen from schools that have medium class vulnerabilities. The physical condition of the three junior high schools has a vulnerability that is considered vulnerable by having a medium class and disaster risk reduction efforts. The three junior high schools show the same class, namely Low.

***Keywords**: Flood, Vulnerability, PRB*

1. INTRODUCTION

Flood is a condition where water enters and floods areas with low river areas or drainage, resulting in its inability to drain and accommodate water [2]. Floods as a hazard significantly impact the Indonesian state, impact property, buildings, and facilities, and impact the community's economy. Floods that come considerably affect social, economic, and educational conditions. Social conditions show people's lives or activities that have social values. Social needs can be studied from the demographic condition variables as a scientific field with population problems related to flooding hazards' Number, structure, and growth [3]. In addition, the condition of education in schools as a forum for educational institutions to become a suitable means to

acquire knowledge, cultivate attitudes, and produce disaster-responsive behavior [4]. Economic conditions describe the life of community activities that have economic value. It can be studied into three variables: livelihood, income, and ownership of valuable property [3].

Losses due to disasters depend on the community's resilience, the existing infrastructure, and the environment. The greater the magnitude of the disaster, the greater the loss, the more widespread and more significant the impact of humans, infrastructure, and the environment itself are more vulnerable to impact. The vulnerability itself is one of the conditions where the community and society are powerless to overcome the threat of disasters [5]. The level of exposure is divided into social vulnerability, physical vulnerability [6]. Vulnerability is closely related to loss or risk. Schools are agents that play an essential role in the education process, especially regarding approaches to knowledge about disasters and disaster risk reduction. Disaster risk reduction is to provide children with an in-depth

understanding and understanding of the characteristics of natural disasters and obtain ways so that they can be directly involved in carrying out disaster risk reduction (DRR) [7].

Sukoharjo Regency is located in Central Java Province. In contrast, geographically, it is located in the eastern part of 110° 57' 33.70" east longitude, the western part of 110° 42' 6.79" east longitude, the northern part of 7° 32' 17.00" south latitude and 7° 49' 32.00. "LS. Sukoharjo Regency has an area of 46,666 Km² or 1.43% of the scope of Central Java Province [8]. Sukoharjo Regency in the hydrological system is located in the Bengawan Solo watershed. Therefore, Sukoharjo Regency is an area with a high risk of flooding. In Sukoharjo Regency, there have been several flood disasters, and the most extensive flood was on December 27, 2007. Grogol sub-district is the most impacted sub-district because the Bengawan Solo River traverses Grogol sub-district. The impact of the flood disaster disrupted community activities and educational activities [9], damaged houses, and damaged facilities until there were fatalities. The effect of the Flood Disaster is upsetting and disturbing, especially in the school environment when children carry out activities in the school environment. Escort or supervision carried out by parents tends to be minimal or minimal when the child is in the school environment. Therefore, the child in the school environment must always be alert and be on guard to deal with flood disaster conditions that may occur at any time. Can come to minimize the risk of a flood disaster [12].

Education is the right choice to understand disaster knowledge, which will foster an attitude of being prepared and prepared to face disasters. when a potential disaster threatens, disaster education is crucial. Schools are educational infrastructure facilities that are appropriate for providing knowledge and inculcating attitudes to give birth to behavior that is ready to be prepared for disasters [13]. Disaster education is vital to learn and improve preparedness in dealing with disasters and reducing disaster vulnerability. So understanding and learning at school is very important concerning increasing awareness among students about the risks of disasters in schools and encouraging preparedness actions. Junior high school is a first-level school where students are obliged to understand and understand disasters. This study aims to analyze the vulnerability of junior high schools in flood-prone areas in Grogol District, Sukoharjo Regency, Central Java.

2. METHOD

This study uses a quantitative descriptive approach. The research instrument is written guidelines on observations, documentation, or a list of questions [14]. This study focuses on the analysis of Vulnerability research in junior high schools in flood-prone areas. The research was conducted at SMPN 1 Grogol, SMPN 2 Grogol and SMP Pesantren Tahfidz Azzayadiy Sukoharjo, Sukoharjo Regency, Central Java. The population used is a junior high school located in a flood-prone area in Grogol District. The sample used is three junior high schools located in flood-prone areas. The sample was determined using purposive sampling based on the Sukoharjo Regency Map of Flood Prone Areas.

The vulnerability itself is a condition or condition of the community's ability to prepare for disaster hazards or threats. The relationship between hazard and vulnerability produces a risk condition, where the higher the level of vulnerability, the higher the level of risk caused by the disaster. Vulnerability is very closely related to loss or risk. Social vulnerability is a component of vulnerability in the form of social conditions of the local community that can be a threat; that social parameters are Demographic Components in the form of data related to the population considered vulnerable if exposed to hazards. The physical vulnerability has a physical component that can be lost or damaged if exposed to a threat. This component is a physical object that is considered to have value.

Education has a vital role in facing disasters and preventing hazards from becoming disasters. through an assessment of hazards and risks. It is essential to fulfill a plan based on the study results, carry out physical or environmental protection, and make a preparedness plan. Therefore the hazards that arise can be prevented to make it a disaster.

The data analysis technique is one of the most effective actions to determine the research; therefore, data analysis can summarize the research results [15]. The data analysis used for this research uses quantitative analysis techniques. It uses a geometric progression method by dividing the highest data value by dividing the lowest value by the root of the Number of classes required (Riyadi, 1996). In this study, researchers used a classification carried out using a geometric progression with indicators presented in Table 1.

Table 1. Vulnerability Indicators and weights

No	Vulnerability	Indicator
1.	Social Vulnerability 60%	a. 60% of school communities (principals, vice principals, teachers, and school personnel) b. The gender ratio of teachers (ten percent) and students (30 percent).
2.	Physical vulnerability 40%	a. Number of classrooms 40% b. Structural condition of school buildings 40% (Foundations, Walls, Beams, Columns, and Roofs) c. Supporting facilities 20% (Number of laboratories, library, principal's office, teacher's room, mosque, and classroom.

Source: Analysis, 2021

With the Geometric progression formula as follows:
Geometric Intervals
The size of the interval is determined using the formula:
Xn = B/A
A = Lowest value
B = Highest score
N = Number of classes
X = class interval

The determination of the boundaries of the interval class is as follows:

Class I = A
Class II = A x ik^2
Class III = A x ik 3
The next stage is scoring each component on each vulnerability variable. The scores given are:
Low : 1
Medium : 2
Height : 3
Then the score is multiplied by each vulnerability component
Weighting with 3 class scheme with a score of 1-3

Table 2. Classification, Score, and Weight

Class	Score	Weight
High	3	2,0-3,5
Middle	2	0,5-2,0
Low	1	< 0,5

Source: Analysis, 2021

The total vulnerability index results from accumulating all vulnerability parameters into the Weight Equation (the total weight of all vulnerability components). Each vulnerability variable (social vulnerability and physical vulnerability) is summed, and the results are used as the basis for determining the total vulnerability class.
Total Vulnerability = (0.6 × social vulnerability score) + (0.4 × physical vulnerability score)
(Sumber : [17]

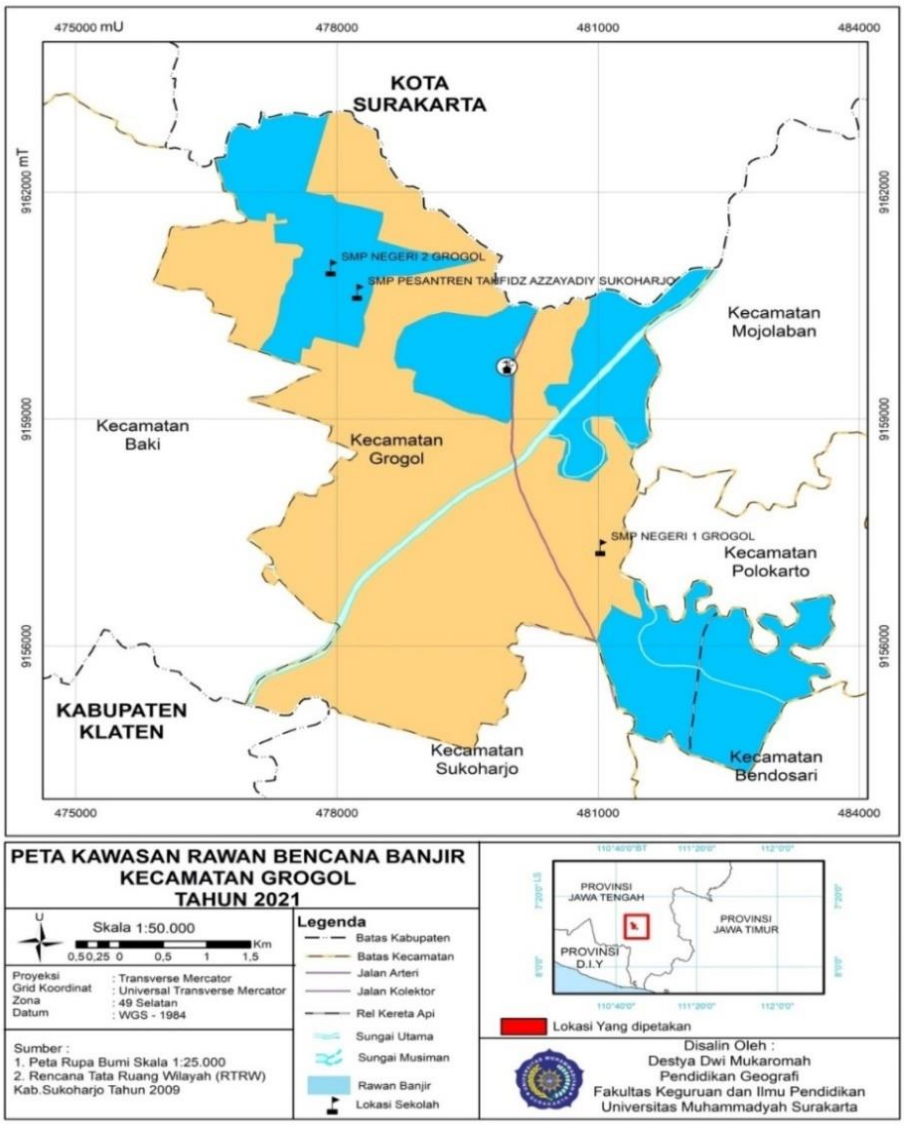

Figure 1 Map of the Flood-Prone Areas of Grogol District in 2021
Source: (Perda Kab Sukoharjo No. 1, 2018.)

3. RESULT AND DISCUSSION

3.1. Result

Data for vulnerability analysis were obtained from questionnaires and interviews with social science teachers and observations at schools. Variables of social vulnerability include the Number of school communities, the gender ratio of teachers and students, physical vulnerability variables include structural school buildings, supporting facilities.

3.1.1 Social Vulnerability

3.1.1.1 Number of School Communities

There are variables in the parameters of the school community, including the number of teachers and principals, staff, and the number of students, which will be calculated using a formula and classified according to the provisions.

Table 3. Number of Communities

No.	School Name	Number of school communities		Total	Score	Weight	Class
		Teachers, Principals, and Staff	Student				
1.	State Junior High School 1 Grogol	50	957	1007	2	1,2	Medium
2.	Tahfid Azzayadiy Islamic Boarding School	14	152	166	1	0,6	Low

No.	School Name	Number of school communities		Total	Score	Weight	Class
		Teachers, Principals, and Staff	Student				
3.	State Junior High School 2 Grogol	44	933	977	2	1,2	Medium

Source: Analysis, 2021

Parameters for the Number of school communities include the Number of teachers and principals, staff, and the Number of students, calculated using a formula and classified according to the provisions. The Number of school communities consisting of teachers and principals, staff, and students shows different classes for each school. The weight is determined using a score of x 0.6, and the multiplication results are classified into three categories. 2 schools show moderate grades, namely State Junior High School 1 Grogol and State Junior High School 2 Grogol, which have a score of 2 and a weight of 1.2. At the same time, the Tahfid Azzayadiy Islamic Boarding School is relatively low, with a score of 1 and a weight of 0.6.

3.1.1.2 Gender Ratio

There are variables in the gender ratio parameter, including the number of male and female teacher sex ratios, which will be calculated using a formula and classified according to the provisions.

Table 4. Teacher Ratio

No	School Name	Gender		Total	Gender Ratio	Score	Weight	Class
		Man	Woman					
1.	State Junior High School 1 Grogol	24	26	50	192,31	2	0,6	Medium
2.	Tahfid Azzayadiy Islamic Boarding School	9	5	14	280,00	2	0,6	Medium
3.	State Junior High School 2 Grogol	21	23	44	191,30	2	0,6	Medium

Source: Analysis, 2021.

The sex ratio includes the total sex ratio of male and female teachers, calculated using a formula and classified according to the provisions. Vulnerability level based on Teacher Gender Ratio. Teacher Gender Ratio shows the same class. Vulnerability classes based on teacher gender at State Junior High School 1 Grogol, Tahfid Azzayadiy Islamic Boarding School, and State Junior High School 2 Grogol showed an intermediate class with a score of 2 and a weight of 0.6.

3.1.1.3 Student Ratio

Table 5. Student Ratio

No	School Name	Gender		Total	Gender Ratio	Score	Weight	Class
		Man	Woman					
1.	State Junior High School 1 Grogol	409	548	957	57,262	1	0,1	Low
2.	Tahfid Azzayadiy Islamic Boarding School	93	59	152	38,816	1	0,1	Low
3.	State Junior High School 2 Grogol	492	441	933	47,267	1	0,1	Low

Source: Analysis, 2021

The gender of students consists of the Number of male and female students. Vulnerability class is determined by the Gender Ratio of students in the school showing the same category. The vulnerability class of State Junior High School 1 Grogol, Tahfid Azzayadiy Islamic boarding school, and State Junior High School 2 Grogol offers a low class with a score of 1 and a weight of 0.1.

3.1.1.4 Social Vulnerability

Table 6. Social Vulnerability

No.	School Name	School Community		Teacher and Teacher Gender Ratio		Student Gender Ratio		Social Vulnerability	
		Weight	Class	Weight	Class	Weight	Class	Weight	Class
1.	State Junior High School 1 Grogol	1,2	Medium	0,2	Medium	0,3	Low	1,7	Medium
2.	Tahfid Azzayadiy Islamic Boarding School	0,6	Low	0,2	Medium	0,3	Low	1,1	Medium
3.	State Junior High School 2 Grogol	1,2	Medium	0,2	Medium	0,3	Low	1,7	Medium

Source: Analysis, 2021

The level of social vulnerability consists of the level of exposure of the school community, the sex ratio of teachers and students. Social vulnerability classes at State Junior High School 1 Grogol, Tahfid Azzayadiy Islamic Boarding School, and State Junior High School 2 Grogol show an intermediate class with 1.7 and 1.1

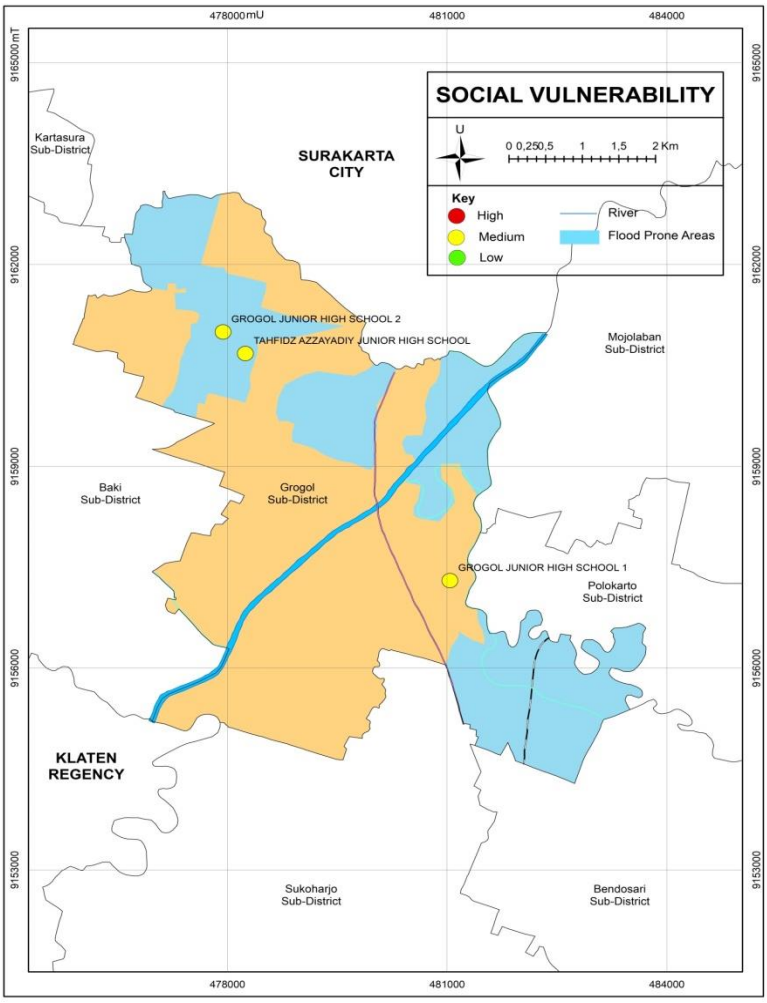

Figure 2 Social Vulnerability Map
Source: Analysis, 2021

3.1.2 Physical Vulnerability

3.1.2.1 School Building Structure

There are variables in the structural parameters of school buildings, including the age of the school building, foundations, walls, roofs, drainage, poles, which will be calculated using a formula and classified according to the provisions.

Table 7. School building structure

No	School Name	Total	Score	Weight	Class
1.	State Junior High School 1 Grogol	11	1	0,4	Low
2.	Tahfid Azzayadiy Islamic Boarding School	13	1	0,4	Low
3.	State Junior High School 2 Grogol	11	1	0,4	Low

Source: Analysis, 2021

Structural parameters of school buildings include the age of school buildings, foundations, walls, roofs, drainage, and poles, calculated using a formula and

Classified according to the provisions. The level of vulnerability in the Structural Parameters of school buildings. The calculation results show that the weight of the structural parameters of school buildings in schools leads the same class. The school's vulnerability class based on the structural condition of the building shows a low class with a score of 1 and a weight of 0.4.

3.1.2.2 Supporting Facilities

Parameters Supporting facilities there are variables, including laboratories, libraries, prayer rooms, principals' rooms, teachers' rooms, which will be calculated using a formula and classified according to the provisions.

Table 8. Supporting Facilities

No	School Name	Supporting Facilities					Total	Score	Weight	Class
		Laboratory	library	Mosque	Principal's office	Teacher's room				
1.	State Junior High School 1 Grogol	4	2	1	1	1	9	2	0,8	Medium
2.	Tahfid Azzayadiy Islamic Boarding School	1	1	1	1	1	5	1	0,2	Low
3.	State Junior High School 2 Grogol	3	2	1	1	1	8	2	0,8	Medium

Source: Analysis, 2021

The level of vulnerability in supporting facilities is obtained from the results of the analysis of the Laboratory, Library, Mosque, Principal's Room, Teacher's Room. The results of data analysis show that the weight of the supporting facilities parameters in each school is different. The table shows the vulnerability class of State Junior High School 1 Grogol and State Junior High School 2 Grogol moderate classes with a score of 2 and a weight of 0.8. Tahfid Azzayadiy Islamic Boarding School Junior High School shows a low class with a score of 1 and a weight of 0.2.

3.1.2.3 Classroom

Parameters Supporting facilities have variables, including Class 7, Class 8, Class 9 and Christian Classroom, which will be calculated using a formula and classified according to the provisions.

Table 9. Classroom

No	School Name	Classroom				Total	Score	Weight	Class
		Class 7	Class 8	Class 9	Christian religion room				
1.	State Junior High School 1 Grogol	10	10	10	1	30	2	0,8	Medium
2.	Tahfid Azzayadiy Islamic Boarding School	4	4	3	0	11	1	0,4	Low

3.	State Junior High School 2 Grogol	10	10	10	1	30	2	0,8	Medium

Source: Analysis, 2021

Parameters Supporting facilities have variables, including Class 7, Class 8, Class 9, and Christian Classroom, calculated using a formula and classified according to the provisions. There are variables,

including laboratories, libraries, prayer rooms, principals' rooms, teachers' rooms, and classrooms.

Determining the weight utilizing a score of x 0.4 and the multiplication results show that the weight of the supporting facilities parameters in each school is different. The table shows that State Junior High School 1 Grogol is moderate and State Junior High School 2 Grogol is moderate with a score of 2 and a weight of 0.8, while the Tahfid Azzayadiy Islamic boarding boarding boarding school is low with a score of 1 and a weight of 0.4.

3.1.2.4 Physical Vulnerability

Table 10. Physical Vulnerability

No.	School Name	Number of Classrooms		Supporting Facilities		Structural Condition		Physical Vulnerability	
		Weight	Class	Weight	Class	Weight	Class	Weight	Class
1.	State Junior High School 1 Grogol	0,8	Medium	0,4	Medium	0,4	Low	1,6	Medium
2.	Tahfid Azzayadiy Islamic Boarding School	0,4	Low	0,2	Low	0,4	Low	1	Medium
3.	State Junior High School 2 Grogol	0,8	Medium	0,4	Medium	0,4	Low	1,6	Medium

Source: Analysis, 2021

The level of physical vulnerability on the physical vulnerability variable consists of school buildings and supporting facilities. Determining the weight through a score of x 0.4 and the table shows the vulnerability class of SMPN 1 Grogol and SMPN 2 Grogol and Tahfid Azzayadiy Islamic Boarding Schools, which are moderate with weights of 1.6 and 1.

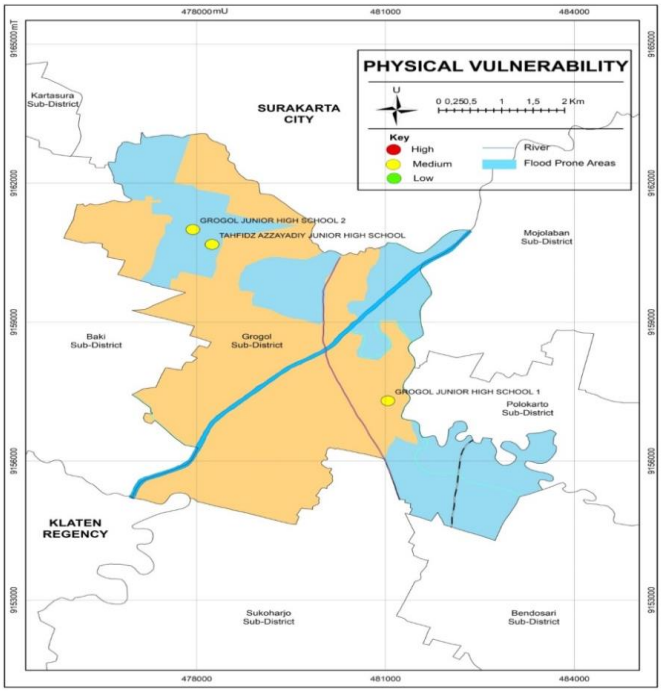

Figure 3 Physical Vulnerability Map
Source: Analysis, 2021

2.1.3 Total Vulnerability

Table 11. Total Vulnerability

No	School Name	SOCIAL 0,6		PHYSICAL 0,4		Total vulnerability	Class
		Weight	Class	Weight	Class		
1.	State Junior High School 1 Grogol	1,7	Sedang	1,6	Sedang	1,7	Medium
2.	Tahfid Azzayadiy Islamic Boarding School	1,1	Sedang	1	Sedang	1,1	Medium
3.	State Junior High School 2 Grogol	1,7	Sedang	1,6	Sedang	1,7	Medium

Source: Analysis, 2021

The total vulnerability level of the three schools, namely State Junior High School 1 Grogol, State Junior High School 2 Grogol, and Tahfid Azzayadiy Islamic Boarding School, are located in flood-prone areas Grogol District, Sukoharjo Regency. SMPN 1 Grogol for the social vulnerability weights 1.7. The medium class for the physical vulnerability weights 1.6.

A moderate class, State Junior High School 2 Grogol for the social vulnerability weights 1.7, and physical vulnerability weights 1.7 medium class, while for Tahfid Azzayadiy Islamic Boarding School has a social exposure with a weight of 1.1 and a medium-class for the physical vulnerability has a weight of 1 and a medium class. The weights of social and physical vulnerability have been calculated with each weight in the Number to become a total vulnerability, and the class has been determined. The table shows that the three schools have a moderate level of vulnerability.

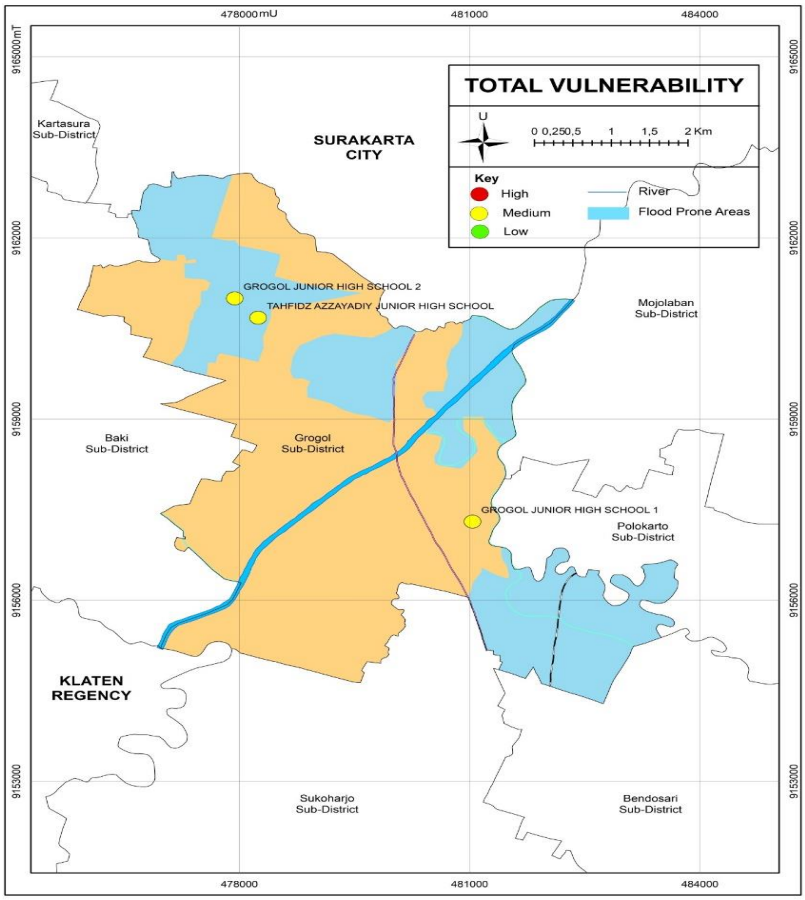

Figure 4 Total Vulnerability Map
Source: Researcher data analysis, 2021

2.1.4 Disaster Risk Reduction Efforts

2.1.4.1 Knowledge

Efforts to reduce school disaster risk are taken from the results of a questionnaire that has been given to respondents. The questionnaire has variables, namely Knowledge and Attitude, School Policy, Preparedness Planning, and Resource Mobility.

Table 12. Knowledge Score

School Name	Total	Class
State Junior High School 1 Grogol	3	Medium
Tahfid Azzayadiy Islamic Boarding School	2	Low
State Junior High School 2 Grogol	4	Medium

Source: Analysis, 2021

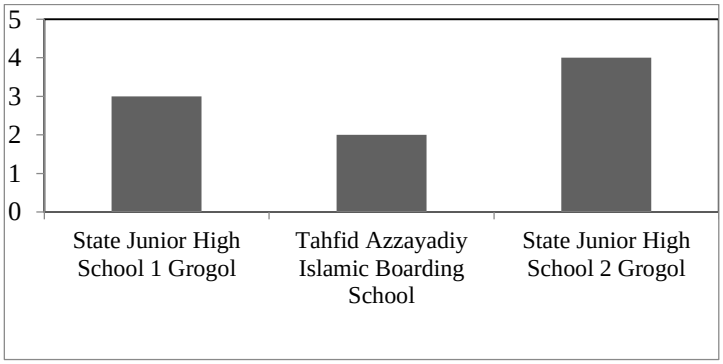

Figure 5 Total Knowledge score
Source: Analysis, 2021

2.1.4.2 Attitude

Table 13. Attitude

School Name	Total	Class
State Junior High School 1 Grogol	**1**	**Low**
Tahfid Azzayadiy Islamic Boarding School	**1**	**Low**
State Junior High School 2 Grogol	**2**	**High**

Source: Analysis, 2021

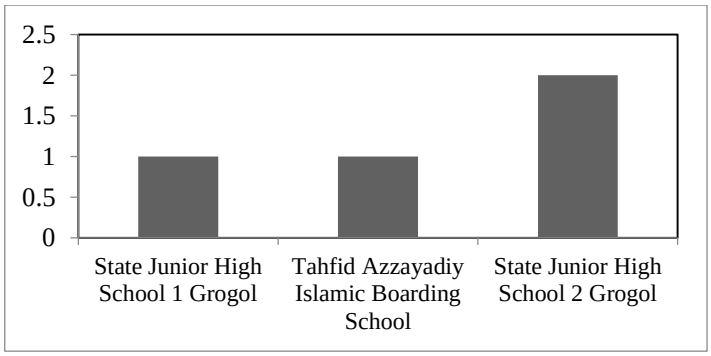

Figure 6 Total Attitude score
Source: Analysis, 2021

Attitude variable there are two questions. Schools that have a high class are at State Junior High School 2 Grogol.

The schools that have low grades are State Junior High School 1 Grogol and Tahfid Azzayadiy Islamic Boarding School.

2.1.4.3 School Policy

Table 14. School Policy

School Name	Total	Class
State Junior High School 1 Grogol	8	Low
Tahfid Azzayadiy Islamic Boarding School	4	Low
State Junior High School 2 Grogol	8	Low

Source: Analysis, 2021

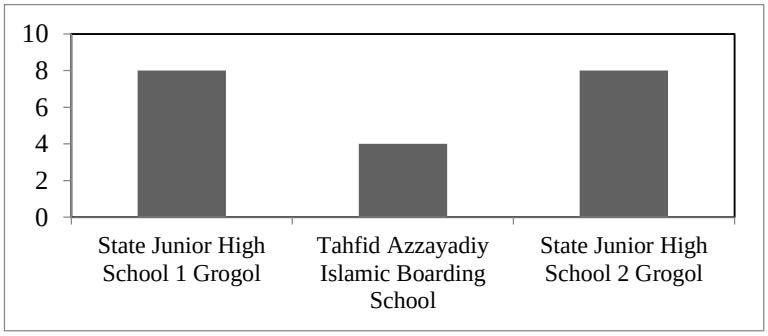

Figure 7 Total School Policy score
Source: Analysis, 2021

Variable School policy there are 10 questions. State Junior High School 1 Grogol, State Junior High School 2 Grogol and Tahfid Azzayadiy Islamic Boarding School have low grades.

2.1.4.3 Preparedness Planning

Table 15. Preparedness Planning

School Name	Total	Class
State Junior High School 1 Grogol	3	Medium
Tahfid Azzayadiy Islamic Boarding School	2	Low
State Junior High School 2 Grogol	4	High

Source: Analysis, 2021

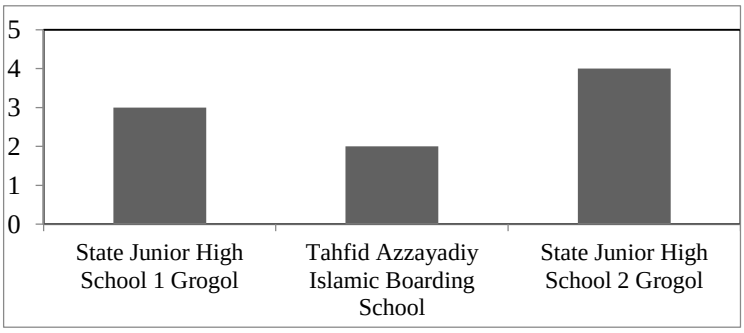

Figure 8 Total Preparedness Planning
Source: Analysis, 2021

The Preparedness Planning variable has seven questions. Schools that have a high class are at State Junior High School 2 Grogol, a school that has a medium class is State Junior High School 1 Grogol.

Schools that have low grades are SMP Tahfid Azzayadiy Islamic Boarding School.

2.1.4.4 Resource Mobility

Table 16. Resource Mobility

School Name	Total	Class
State Junior High School 1 Grogol	6	Low
Tahfid Azzayadiy Islamic Boarding School	4	Low
State Junior High School 2 Grogol	9	High

Source: Analysis, 2021

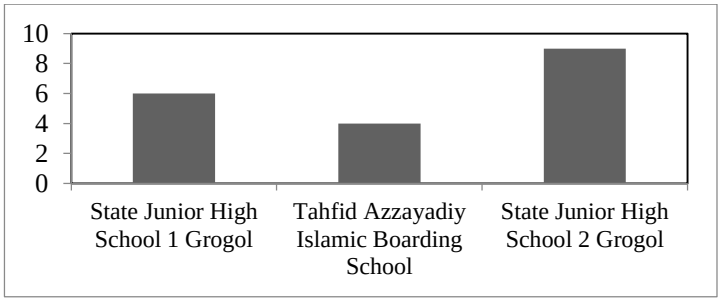

Figure 9 Total Resource Mobilization score
Source: Analysis, 2021

The Resource Mobilization Variable has six questions. Schools with high grades are at State Junior High School 2 Grogol and State Junior High School 1 Grogol, while Tahfid Azzayadiy Islamic Boarding School has low grades.

Table 17. Disaster Risk Reduction Effort Class

School Name	Knowledge	Attitude	Policy School	Planning Preparedness	Mobilization Resource	Total	Class
State Junior High School 1 Grogol	3	1	8	3	6	21	Low
Tahfid Azzayadiy Islamic Boarding School	2	1	4	2	4	13	Low
State Junior High School 2 Grogol	4	2	8	4	9	27	Low

Source: Analysis, 2021

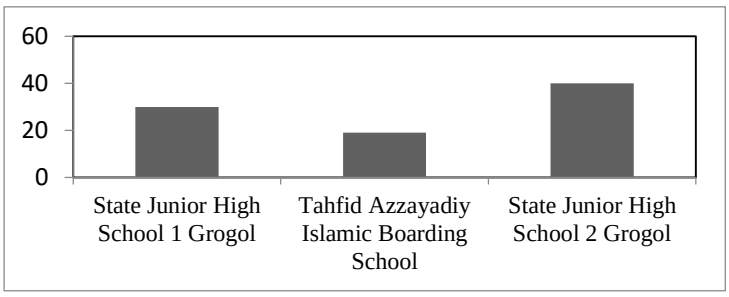

Figure 10 Total score of Disaster Risk Reduction Efforts
Source: Analysis, 2021

Table 17 and Figure 10 show the total score for each variable Knowledge, Attitude, School Policy, Preparedness Planning, and Resource Mobilization. After being added together, we get the Disaster Risk

Reduction. These results show that all schools have a low policy class.

3.2 Discussion

Based on the results of the research above, it has several parameters, including social vulnerability and physical vulnerability.

Based on the research results above, it has several parameters, including social vulnerability and physical vulnerability. Social exposure is closely related to the ability of individuals or groups of people to cope, survive, and recover from the impact of disasters. Disasters will occur when the community faces a hazard phenomenon that exceeds the capacity of the community in dealing with the hazard. This condition means that the level of community vulnerability influences the effects of a disaster on threats [19]. Social condition is one aspect of exposure that needs to be studied to determine the ability to deal with disasters. Social vulnerabilities in this study include various variables Number of school communities, the sex ratio of teachers and students.

The data analysis results showed the level of social vulnerability to flooding in 3 junior high schools in Grogol District, Sukoharjo Regency, namely State Junior High School 1 Grogol, State Junior High School 2 Grogol, and Tahfid Azzayadiy Islamic Boarding School showed the same class, namely Medium. State Junior High School 1 Grogol indicates more teachers, students, and school communities. State Junior High School 1 Grogol has 50 teachers, 957 students, and 1007 school communities; there are 2014 whole school communities. SMPN 2 Grogol has 44 teachers, 933 students, and 977 school communities. Meanwhile, SMP Tahfid Azzayadiy Islamic Boarding School has 14 teachers, 152 students, and 166 school communities in a total of 334 school communities.

Physically, the form of vulnerability possessed by community groups is in the form of resistance to specific hazards, for example, the strength of buildings or facilities for community groups in earthquake-prone areas, the existence of flood safety dikes for community groups living on riverbanks, and so on (Sangkertadi et al., 2021).

The data analysis results showed physical vulnerability to flooding in 3 junior high schools in Grogol District, Sukoharjo Regency, namely State Junior High School 1 Grogol, State Junior High School 2 Grogol, and Tahfid Azzayadiy Islamic Boarding School showed 2 classes, namely Medium and Low. SMPN 1 Grogol and State Junior High School 2 Grogol in the Middle class and Tahfid Azzayadiy Islamic Boarding School show a Low class. State Junior High School 1 Grogol has 30 classrooms, 30 locations, 9 facilities, and 13 school building structures with 82. Tahfid Azzayadiy Islamic boarding school has 11 classrooms, 11 places, 5 facilities, and 15 school building structures with 42. State Junior High School 2 Grogol has 30 classrooms, 30 locations, 8 facilities, and 14 school structures with 82.

Vulnerability is related to the ability of humans to protect themselves and the ability to cope with the effects of disasters. The most significant impact due to disasters is the community. It is necessary to increase the awareness and capacity of the community in anticipating disasters that occur in their area, and the community becomes the main object when a disaster occurs. The community should have the ability to know the existing vulnerabilities so that they can become the main actors in disaster risk reduction efforts so that losses can be minimized [21]. In this study, the parameters of disaster risk reduction efforts contained variables, namely Knowledge and Attitude, School Policies, Preparedness Planning, and Resource Mobility.

The data analysis results showed social vulnerability to flooding in 3 junior high schools in Grogol District, Sukoharjo Regency, namely State Junior High School 1 Grogol, State Junior High School 2 Grogol, and Tahfid Azzayadiy Islamic Boarding School showed the same class, namely Low. SMPN 1 Grogol has total knowledge of 3, Attitude 1, School policy 8, Preparedness planning three, and Mobilization of resources 6 with a total of 21. SMP Tahfid Azzayadiy Islamic Boarding School has total knowledge of 2, Attitude 1, School policy 4, Preparedness planning 2, and Resource mobilization 4 with a total of 13. State Junior High School 2 Grogol has total knowledge of 4, Attitude 2, School policy 8, Preparedness planning 4, and Mobilization of resources 9 with a total of 27.

4. CONCLUSION

Based on the data analysis, the three junior high schools have school communities relatively vulnerable to flood disasters. The schools that have Medium class vulnerability State Junior High School 1 Grogol, State Junior High School 2 Grogol, and Tahfid Azzayadiy Islamic Boarding School. The physical condition of the two junior high schools has a vulnerability that is considered vulnerable by having a medium-class are SMPN 1 Grogol, SMPN 2 Grogol, and SMP Pesantren Tahfid Azzayadiy. Disaster risk reduction efforts The three junior high schools, SMPN 1 Grogol, SMPN 2 Grogol, and SMP Pesantren Tahfid Azzayadiy showed the same class, namely Low. The school community's capacity to manage disaster risk in its area is still low in knowledge and attitudes, school policies, preparedness planning, and resource mobility.

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