

Impact of kampung siaga bencana on increasing disaster preparedness in the community of West Bandung regency

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Abstract. The focus of this research is to look at the impact of Kampung Siaga Bencana on improving community disaster preparedness in Cipada Village and Cililin Village, both in West Bandung Regency. Cipada Village and Cililin Village are the only villages in West Bandung Regency that are designated as Kampung Siaga Bencana. This study is based on the Kampung Siaga Bencana theory, which is a community-based disaster mitigation technique. The descriptive method and quantitative methodology are used in this study. Questionnaires and interviews were used to collect data, which was then analyzed using statistics. The findings revealed that 1) the Kampung Siaga Bencana influence on Cipada Village was only 0.33 or less than 0.5. This implies that the value of the impact or relationship between disaster preparedness villages and readiness is low value. 2) The research findings for Cililin Village are 0.773 or greater than 0.5. This indicates that the the impact or interaction between Kampung Siaga Bencana and Cililin Village preparedness is quite significant. In conclusion, there are differences in the results in the two villages because Cililin Village is a disaster-prone village, and many Kampung Siaga Bencana programs are implemented and applied well in the village. In contrast to Cipada Village, which is not prone to disasters.

1. Introduction

A disaster is a series of events that result in massive losses of life, property, and the social structure of a society, endangering and interrupting the community's usual life pattern. A disaster is an occurrence that threatens life, resulting in human casualties, environmental damage, property losses, and psychological effects due to natural and/or non-natural forces as well as human factors [1]. This perspective is different who argues that a disaster as an unusual natural or human-made event, including incidents caused by technological system failures that weaken the response capacity of human communities, groups, individuals, or the natural environment, resulting in substantial damage, economic loss, destruction, injury, and/or death [2]. As a result, the disaster can be described as a tragedy that has resulted in infrastructural damage and the loss of many lives.

The Ministry of Social Affairs implements programs aimed at reducing disasters through community groups, such as the establishment of a Kampung Siaga Bencana. The definition of Kampung Siaga Bencana, is a community-based disaster management concept created in disaster-prone locations [3]. The Kampung Siaga Bencana was established with the goal of educating the community about the dangers of disasters in their area. As an outcome, disaster preparedness is established in the community. The requirements for establishing a Disaster-Prepared Village are that the area has a vulnerability to specific types of disasters and that there is readiness and active participation from the community residing in disaster-prone areas [4]. The Disaster-Prepared Village is established to provide protection to the community from disaster threats and risks by conducting community-based disaster prevention and mitigation activities through local wisdom [5], through activities in the form of routine training when a disaster occurs to residents. If the community regularly conducts disaster drills, they will have better disaster mitigation and preparedness. Communities that have strong disaster mitigation skills are characterized by their preparedness to face disasters and their long-term risk reduction actions taken before a disaster occurs. Mitigation is also referred to as disaster risk prevention or reduction, and is considered the foundation of disaster management [6]. Mitigation efforts can be carried out in the form of structural mitigation and non-structural mitigation [7].

In the disaster-ready village, there is a community group similar to karang taruna (youth organization) known as TAGANA, or Taruna Siaga Bencana (Youth Disaster Preparedness). TAGANA is trained volunteers in community-based disaster prevention. TAGANA must be ready to be present at the location within one hour after the disaster occurs responsive and fast in social protection for disaster victims, and have an understanding of disaster management [8]. Therefore, the mitigation to be carried out in this study is non-structural mitigation through a human-centered approach. This approach aims to develop individuals who are knowledgeable and aware of disaster hazards. To achieve this, human behavior and lifestyles must be improved and adapted to the environmental conditions and disaster risks they face [9].

Cipada Village and Cililin Village, both in West Bandung Regency, have been designated as Disaster Alert Villages. Landslides and ground movements were the most common disasters in the two villages, according to BPBD data for West Bandung Regency. According to the 2019 West Java BNPB data, there were 20 landslides, 3 fires, 3 hurricanes, and 1 earth movement in the Cililin District. Landslides damaged 15 residences, one bridge connecting the village was damaged, and four roads collapsed, according to reports. Three homes were destroyed by the hurricane, while three more have been destroyed in a fire. Ground movement also caused damage to one home. Meanwhile, 4 landslides, 1 fire, 3 tornadoes, and 1 land movement happened in Cisarua District. 4 houses were significantly destroyed by landslides, 3 houses were moderately damaged by hurricanes, and 1 road collapsed due to ground movement, according to information.

Preparedness in dealing with disasters and long-term risk reduction efforts before a disaster happens are characteristics of communities that already have good disaster mitigation capacities. Reforestation of woods, as well as counseling and increasing knowledge of individuals living in disaster-prone areas, are all activities that help to reduce disaster risk. Community preparedness is a key factor in disaster management [10]. Preparedness is closely related to knowledge about the disaster itself. Knowledge and attitudes serve as the primary indicators for measuring the community's preparedness for a disaster [11]. Therefore, knowledge about disasters is the main reason for individuals to engage in protective activities or preparedness efforts [12]. Another definition states that preparedness is a state of readiness to deal with a crisis, disaster, or other emergency [13]. The community, as the main element

affected by a disaster, must have independence in facing it, because the losses caused by a disaster are greatly determined by the community's preparedness, knowledge, and skills [14].

The purpose of this research is to analyze the Kampung Siaga Bencana program in Cililin Village and Cipada Village, and also the level of community disaster preparedness in Cipada Village and Cililin Village, and the impact of community disaster preparedness in Cipada Village and Cililin Village having followed the Kampung Siaga Bencana programme.

2. Methods

The Kampung Siaga Bencana programme is designed as the independent variable in this study, while disaster preparedness functions as the dependent variable. The indicators in these variables will be created into question items using a Likert scale and a Guttman scale as stated in a questionnaire, and then examined using statistical programs such as normality tests, reliability tests, simple regression, and correlation analysis. As a result, this research will take a quantitative approach.

3. Results and Discussion

3.1 Implementation of Kampung Siaga Bencana program

Based on the results of interviews and observations with the head of the Cipada Village Kampung Siaga Bencana, the below are the field findings about the disaster preparedness village program:

Table 3.1 Implementation KSB Program at Cipada Village

1.	Socialization, counseling or community awareness activities about the dangers of disasters are implemented in this village		SS	S	KD V	HTP	TP
2.	a local early warning system was set up in this village			V			
3.	An inventory of existing potentials and resources in disaster-prone areas is implemented in this village				V		
4.	Implementation of disaster personnel training at the local level in collaboration with relevant agencies or parties implemented in this village				V		
5.	Simulations (disaster rehearsals) according to the type and vulnerability of disasters are periodically implemented as needed in this village				V		
6.	The formation of working networks with related parties is implemented in this village				V		

7.	Implementation of local disaster preparedness calls at certain times is implemented in this village					V	
8.	Implementation of data collection on disaster victims and initial disaster management measures if a disaster occurs in this village			V			
9.	Implementation of other risk reduction efforts in dealing with the possibility of disasters in this village					V	
10.	Helping all parties in social recovery efforts implemented in this village				V		
11.	Data collection and mapping of local disaster-prone areas, including evacuation routes implemented in villages					V	
12.	Creating a disaster barn as a place for local logistics preparedness to be implemented in this village						V

(Source: Data Processing Results from the Researcher, 2021)

The following are the results from the field on the Kampung Siaga Bencana program, based on interviews and observations with the head of the Cililin Village;

Table 3.2 Implementation of KSB program at Cililin Village

1.	Socialization, counseling or community awareness activities about the dangers of disasters are implemented in this village		SS	S	KD	HTP	TP
2.	a local early warning system was set up in this village			V			
3.	An inventory of existing potentials and resources in disaster-prone areas is implemented in this village			V			
4.	Implementation of disaster personnel training at the local level in collaboration with relevant agencies or parties implemented in this village		V				
5.	Simulations (disaster rehearsals) according to the type and vulnerability of disasters are periodically implemented as needed in this village				V		
6.	The formation of working networks with related parties is implemented in this village			V			
7.	Implementation of local disaster preparedness calls at certain times is implemented in this village				V		

8.	Implementation of data collection on disaster victims and initial disaster management measures if a disaster occurs in this village			V			
9.	Implementation of other risk reduction efforts in dealing with the possibility of disasters in this village			V			
10.	Helping all parties in social recovery efforts implemented in this village			V			
11.	Data collection and mapping of local disaster-prone areas, including evacuation routes implemented in villages			V			
12.	Creating a disaster barn as a place for local logistics preparedness to be implemented in this village			V			

(Source: Data Processing Results from the Researcher, 2021)

3.2 Implementation Findings at the Level of Preparedness

The results on the level of preparation of the Cipada Village community per indicator are as follows:

Table 3.3 Knowledge and Attitude

Knowledge and Attitude	Frequency
Moderately ready	3
Less ready	18
Not Ready	3

(Source: Data Processing Results from the Researcher, 2021)

Table 3.4 Policy

Policy	Frequency
Moderately ready	14
Less ready	8
Not Ready	2

(Source: Data Processing Results from the Researcher, 2021)

Table 3.5 Plan for an Emergency

Plan for an Emergency	Frequency
Moderately ready	11
Less ready	13

(Source: Data Processing Results from the Researcher, 2021)

Table 3.6 System for Early Warning of Disasters

System for Early Warning of Disasters	Frequency
Highly Prepared	3
Moderately ready	10
Less ready	11

(Source: Data Processing Results from the Researcher, 2021)

Table 3.7 Mobilization of Resources

Mobilization of Resources	Frekuensi
Less ready	10
Not Ready	14

(Source: Data Processing Results from the Researcher, 2021)

The results on the level of preparation of the Cililin Village community per indicator are as follows:

Table 3.8 Knowledge and Attitude

Knowledge and Attitude	Frequency
Moderately ready	49
Less ready	2

(Source: Data Processing Results from the Researcher, 2021)

Table 3.9 Policy

Policy	Frequency
Moderately ready	32
Less ready	5
Not Ready	14

(Source: Data Processing Results from the Researcher, 2021)

Table 3.10 Plan for an Emergency

Plan for an Emergency	Frequency
Moderately ready	35
Less ready	16

(Source: Data Processing Results from the Researcher, 2021)

Table 3.11 System for Early Warning of Disasters

System for Early Warning of Disasters	Frequency
Moderately ready	35
Less ready	16

(Source: Data Processing Results from the Researcher, 2021)

3.12 Mobilization of Resources

Mobilization of Resources	Frequency
Moderately ready	35
Not Ready	16

(Source: Data Processing Results from the Researcher, 2021)

3.3 Results on the Impacts of Kampung Siaga Bencana on Preparedness Levels

The results of the normality test using the Kolmogorov $v -$ Smirnov statistic are used to generate the normal distribution assumption. The purpose is to find a probability function that represents the spread of a variable's distribution. For more information, please see the table below;

Table 3.13 normal distribution assumption of Cipada Village

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		24
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	17.98382828
Most Extreme Differences	Absolute	.163
	Positive	.131
	Negative	-.163
Test Statistic		.163
Asymp. Sig. (2-tailed)		.101^c

(Source: Data Processing Results from the Researcher, 2021)

The results of the asym. sig kolmogorov smirnov test of 0.101 were obtained by statistical testing. As a result of the asym sig 0.05 results, it can be concluded that the research data is normally distributed. This means that the data can be used to represent the entire field of research.

Table 3.14 Result Corelation of Desa Cipada

Correlations			
		KSB	preparedness
KSB	Pearson Correlation	1	.330
	Sig. (2-tailed)		.116
	N	24	24
Kesiapsiagaan	Pearson Correlation	.330	1
	Sig. (2-tailed)	.116	
	N	24	24

(Source: Data Processing Results from the Researcher, 2021)

Table 3.15 Corelation For Indicator

Correlations						
Control Variables		PS	K	RTP	SPB	MSD
KSB	Correlation	.220	.291	.397	.228	.240
	Significance (2-tailed)	.301	.167	.055	.283	.259
	Df	22	22	22	22	22

(Source: Data Processing Results from the Researcher, 2021)

This correlation is positive, as shown by the results of the analysis of the correlation test in table 3.14. The correlation's magnitude is 0.33 or 0.5, indicating that the impact or relationship between disaster preparedness villages and preparedness is low.

Table 3.15 shows the results of the analysis of the correlation test between disaster preparedness villages and preparedness indicators. All correlation results of less than 0.5 indicate that they are all of low value.

Crosstabulation analysis is used to compare two or more variables in order to determine their relationship.

Table 3.16 Crosstab Analysis of Cipada Village

Kampung Siaga Bencana * Crosstabulation Of Preparedness		
	preparedness	Total

		Ever	never	
Kampung Siaga Bencana	Moderately ready	7	4	11
	Less ready	3	10	13
Total		10	14	24

(Source: Data Processing Results from the Researcher, 2021)

According to the result of the research in table 3.16, 7 people who think they are not ready to have preparedness skills have used it in their daily lives. 4 persons who think they have the ability to prepare rarely use it in their daily lives.

Meanwhile, three persons with adequate preparedness skills use it in their regular lives on occasion. Meanwhile, ten people who believe they lack the ability to prepare use it in their daily lives on occasion.

3.3.1 Assumption of Abnormal Distribution

This resources used Kolmogorov-Smirnov analysis, but the results found from Asymp Sig 2 tailed reveal 0.000, indicating that the data is not normal because 0.05, as shown in table 3.17. As a result, the data does not cover the entire Cililin Village area.

Table 3.17 Analysis Result Abnormal

One-Sample Kolmogorov-Smirnov Test			
		KSB	preparedness
N		51	51
Normal Parameters ^{a,b}	Mean	69.49	58.12
	Std. Deviation	13.972	18.222
Most Extreme Differences	Absolute	.454	.388
	Positive	.271	.240
	Negative	-.454	-.388
Test Statistic		.454	.388
Asymp. Sig. (2-tailed)		.000 ^c	.000 ^c

(Source: Data Processing Results from the Researcher, 2021)

Spearman correlation test used in this research. Because the research data isn't distributed equally. The following table illustrates how to find out the results:

Table 3.18 Table Corelation Result of Cililin Village.

Correlations				
			KSB	preparedness
Spearman's rho	KSB	Correlation Coefficient	1.000	.773**
		Sig. (2-tailed)	.	.000
		N	51	51
	Kesiapsiagaan	Correlation Coefficient	.773**	1.000
		Sig. (2-tailed)	.000	.
		N	51	51

(Source: Data Processing Results from the Researcher, 2021)

Table 3.19 Corelation For Indicator

Control Variabel	PS	K	RTP	SPB	MSD
Correlation Coefficient	.808**	.738**	.626**	.760**	.626**

KSB	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	51	51	51	51	51

(Source: Data Processing Results from the Researcher, 2021)

The strength of the correlation is 0.773 or > 0.5, indicating that the impact or relationship between Kampung Siaga Bencana on preparedness in Cililin Village is of high value, according to the findings of the study of the correlation test in table 3.18.

Table 3.19 shows the results of the correlation test study between Kampung Siaga Bencana and preparedness indicators. All correlation results > 0.5 indicate that the connection between Kampung Siaga Bencana and each preparedness indicator has high value.

3.3.2 Crosstabulation Analysis

Crosstabulation method is used to analyse two or more variables in order to identify their relationship.

3.20 Crosstabulation Result of Cililin Village

Kampung Siaga Bencana * Kesiapsiagaan Crosstabulation				
		Preparedness		Total
		ever	never	
Kampung Siaga Bencana	Less ready	11	3	14
	highly prepared.	5	32	37
Total		16	35	51

(Source: Data Processing Results from the Researcher, 2021)

Table 3.20 shows that 11 persons who are less prepared in preparedness have applied their knowledge in everyday life, based on the results of the crosstabulation in Cililin Village. Meanwhile, three persons who are less prepared never put their information into practice.

Then, five people who are well-prepared for disasters have put their knowledge to use in their daily lives. Meanwhile, 35 people who are highly well prepared in terms of preparedness never put their knowledge to use in their daily lives.

4. Conclusion

The impact of the Kampung Siaga Bencana program on the level of preparedness of the Cipada Village community is only 0.33 or less than 0.5. This graph illustrates the impact of disaster preparedness villages on low value preparedness. Meanwhile, the impact for Cililin Village is 0.773, which is greater than 0.5. This means that the impact or interaction between Kampung Siaga Bencana and Cililin Village is quite significant. There is a difference because the Kampung Siaga Bencana program in Cililin Village simulates or socializes disasters once a year. So that the community has a greater understanding of disaster compared to Cipada Village which only carried out disaster simulations once at the beginning of the formation of the Kampung Siaga Bencana. As a result, people's applications in everyday life are different.

Stakeholders must think about and provide clear and detailed indicators for the conditions that will lead to the development of a Kampung Siaga Bencana. As a result, the Kampung Siaga Bencana is truly dedicated to disaster-prone areas.

Regular follow-up on the level of preparedness is required, such as giving disaster socialization on a scale for the community so that preparedness knowledge and understanding

are always updated. The village's Kampung Siaga Bencana status will be removed if no progress is made in terms of preparedness.

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