

Community Preparedness for Tsunami Disaster: A Case Study for Tsunami Ready Community in Glagah Village, Kulon Progo, Yogyakarta - Indonesia



BMKG

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INTRODUCTION

Glagah Village has a high tsunami vulnerability, thus it is necessary to prepare its community for a tsunami that can occur at any time. The community of Glagah Village and many stakeholders in building a tsunami preparedness community have received national recognition from Indonesia's National Tsunami Ready Board and international recognition by IOC-UNESCO.

METHODS/DATA

This study adopts a qualitative method and desk study. The qualitative approach was conducted through participatory observation and focus group discussions. The fulfillment of the IOC-UNESCO Tsunami Ready Indicator requires data collected in the field.

START

RESULTS

Glagah Village has fulfilled all the Tsunami Ready Indicators. The people of Glagah have taken preparedness steps collaboratively, covering all elements of assessment, preparedness, and response.

CONCLUSION

Glagah Village has recognized as Tsunami Ready by NTRB in January 2022 and as a Tsunami Ready by IOC-UNESCO in November 2022.

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Why Glagah Village Should be Tsunami Ready?



Glagah is one of the cultural village in Kulon Progo, Yogyakarta, Indonesia which has several tourist objects, such as the beach, the Sidorejo Stupa site, the Puro Pakualam Pesanggrahan, and the Buk Abang bridge heritage. The village is also famous for cultural activities including the Arak-Arak Gunung festival, wayang kulit, traditional dancing, Adus Gongso festival, and Labuhan festival. As well the existence of Yogyakarta International Airport in Glagah as a gateway to Yogyakarta.

The activity of the subduction zone in southern of Java island has been generating severe earthquakes and tsunami events in the past. This natural disaster made the southern region of Java, including Yogyakarta, prone to tsunami. Glagah is one of 1.013 villages in Indonesia that has a high tsunami vulnerability.

Therefore, it is necessary to carry out reasonable mitigation efforts by setting up a system that can ensure the preparation of disaster-prone areas so that more lives can be saved. Preparations that need to be made include better planning, education, awareness, and emergency managers strengthening their local operations.



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The goals of the Tsunami Ready Programs:

1. Improve coastal community preparedness for tsunami and to minimize the loss of life, livelihoods and property.
2. Identification and fulfillment of tsunami ready indicators, including assessment, preparedness, and response
3. National and International Tsunami Ready Recognition

TSUNAMI READY INDICATORS	
I	ASSESSMENT (ASSESS)
1	ASSESS-1. Tsunami hazard zones are mapped and designated.
2	ASSESS-2. The number of people at risk in the tsunami hazard zone is estimated.
3	ASSESS-3. Economic, infrastructural, political, and social resources are identified.
II	PREPAREDNESS (PREP)
4	PREP-1. Easily understood tsunami evacuation maps are approved.
5	PREP-2. Tsunami information including signage is publicly displayed.
6	PREP-3. Outreach and public awareness and education resources are available and distributed.
7	PREP-4. Outreach or educational activities are held at least 3 times a year.
8	PREP-5: A community tsunami exercise is conducted at least every two years.
III	RESPONSE (RESP)
9	RESP-1. A community tsunami emergency response plan is approved.
10	RESP-2. The capacity to manage emergency response operations during a tsunami is in place.
11	RESP-3. Redundant and reliable means to timely receive 24-hour official tsunami alerts are in place.
12	RESP-4. Redundant and reliable means to timely disseminate 24-hour official tsunami alerts to the public are in place.



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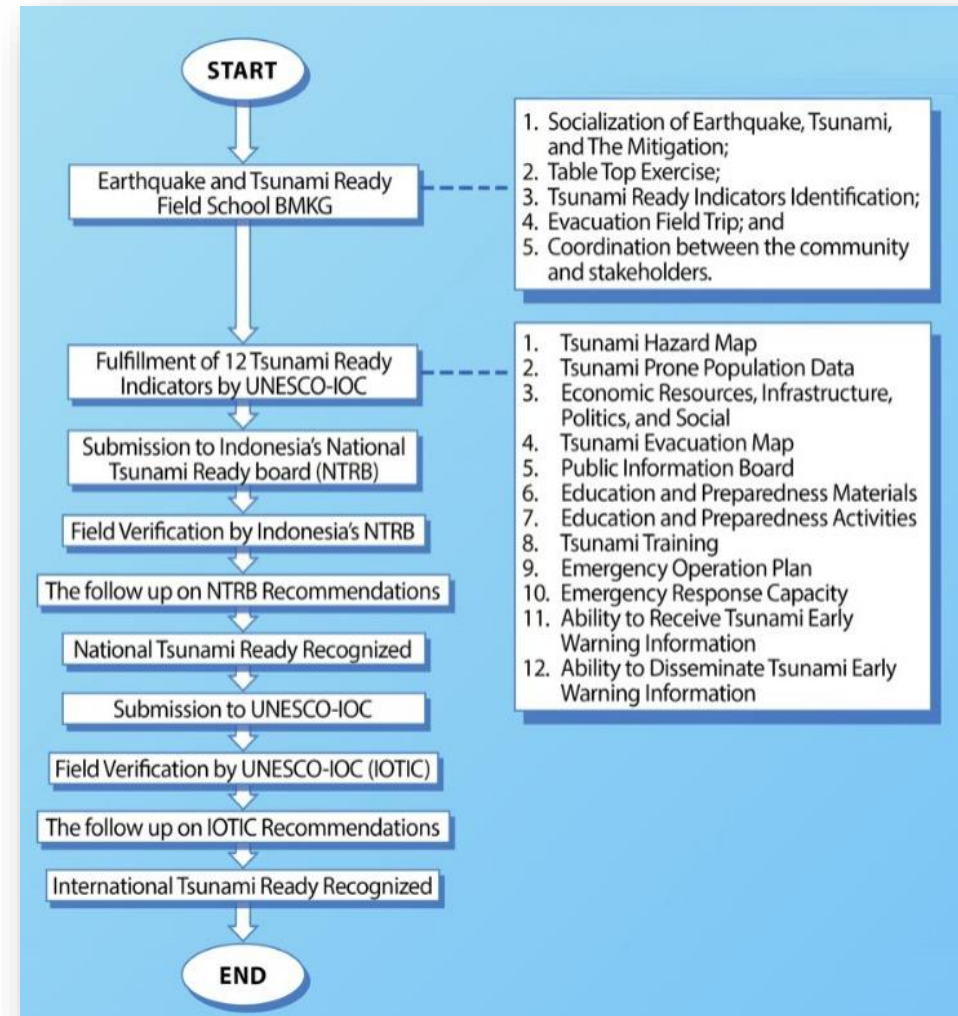
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Data

The fulfillment of the IOC-UNESCO Tsunami Ready Indicator requires data collected in the field. Data collection to meet the tsunami ready indicator is carried out by collecting data in the Glagah Village government, Glagah Regional Disaster Management Agency (BPBD), and community organizations such as Glagah Village Community Preparedness Forum (FPRB Glagah Village).

Methods

The method used in this study was to conduct interviews with the Glagah Village government, BPBD Kulonprogo Regency, Glagah Village Community Preparedness Forum (FPRB), and the Glagah Regency Tourism Office. As well, a field survey was conducted to determine the distribution of evacuation signs and tsunami disaster information boards and tsunami shelters in Glagah Village. This survey aims Tsunami Ready mapping was carried out using the standards set by IOC-UNESCO. The field survey was carried out on 2021-2022 by visiting the institutions mentioned above to collect data, conduct interviews, and conduct field visits to obtain data.



Tsunami Ready Indicators Fulfillment



The collaboration between community of Glagah Village and their stakeholder have taken covering all Tsunami Ready Indicators, including assessment, preparedness, and response.



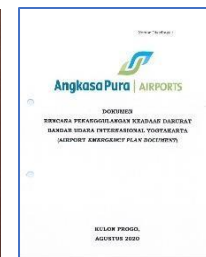
No	Kategori Penduduk Rawan	Jumlah (Jiwa)
1	Laki-laki	1.281
2	Perempuan	1.242
3	Lanjut Usia (≥60 tahun)	408
4	Balita dan anak-anak (0-12 tahun)	334
5	Disabilitas	23
6	Perkiraan penduduk/ pekerja tidak tetap	1.147
7	Perkiraan wisatawan hari libur	5000/ Hari
8	Perkiraan Jumlah Penduduk siang hari	2.141
9	Perkiraan Jumlah Penduduk malam hari	2.639



From left: Tsunami Hazard Map in Glagah beach area; Tsunami prone Population Data; YIA as Vertical evacuation building; SDN 3 Glagah as a temporary evacuation building



From left: Sozialitation of Tsunami Hazard Map to the community; Tsunami Evacuation Route Assessment; Public Information Board within tsunami mitigation materials; Earthquake and tsunami ready field school; tsunami drill in Glagah Village



From left: tsunami drill in YIA; emergency operation plan in Glagah Village and YIA; Warning Receiver System (WRS) New Gen in YIA, Tsunami Early Warning Sirens in Glagah Beach; HT Radio; Kentongan as local wisdom for disseminating emergency situation.

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Conclusion



The Glagah community have preparedness for tsunami and capacity through Identification and fulfillment of tsunami ready indicators, including assessment, preparedness, and response to minimize the loss of life, livelihoods and property.

Glagah has recognized as National Tsunami Ready by National Tsunami Ready Board (NTRB) Indonesia in January 2022 and as International Tsunami Ready by IOC-UNESCO in November 2022.



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