



*Training/Workshop on
Tsunami Evacuation Maps, Plans, and Procedures and
the UNESCO-IOC Tsunami Ready Recognition Programme for the Indian Ocean Member States
Hyderabad - India, 15-23 April 2025*

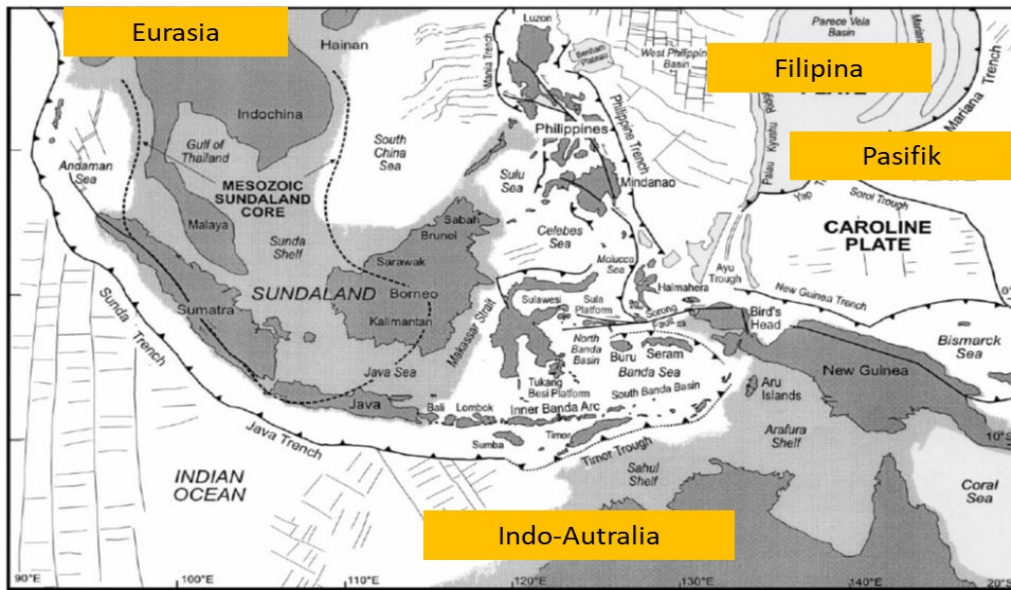
UNESCO-IOC Tsunami Ready Indicators

TRRP 19: Lessons Learnt from Indonesia on Capacity Building for Tsunami Ready Community



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BACKGROUND: EARTHQUAKE, TSUNAMIS AND PREPAREDNESS IN INDONESIA



As a result of the collision of tectonic plates:

- 16 Subduction Zones
- 13 Megathrust
- 295 Active fault

in Indonesian territory

4 large tectonic plates located in Indonesia

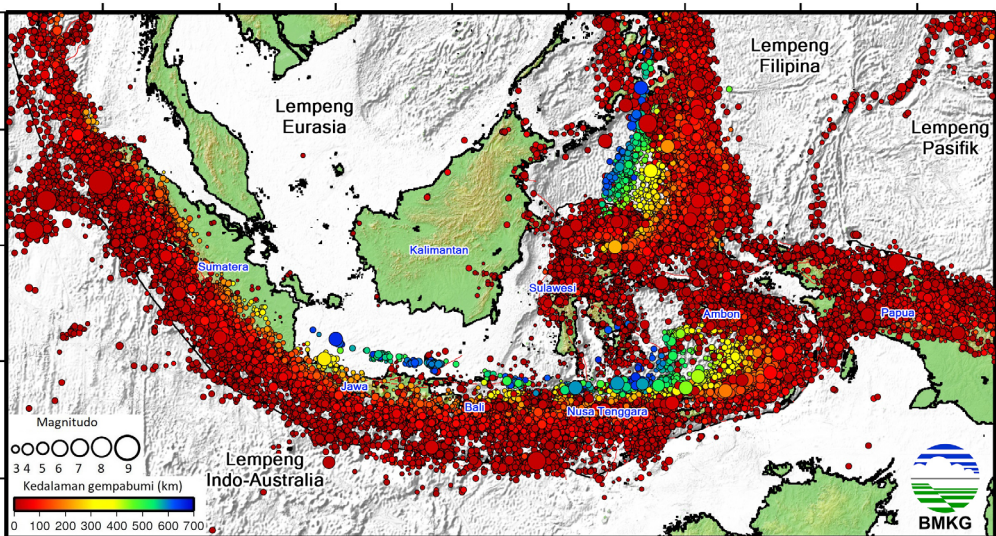
1. Indo Aurlalia
2. Eurasia
3. Pasifik
4. Phillipines

Indonesia is a country with a very high level of earthquake vulnerability

Average per year:

- Earthquakes occurred around 6,000 times (various magnitudes);
- 350 earthquakes with magnitude $M > 5.0$;
- Destructive earthquakes struck about 10 times
- Earthquakes cause tsunamis every 2 years

Tsunami:
Low Frequency,
High Impact



- Indonesia needs to build a culture of community preparedness for earthquake and tsunami disasters.
- The Agency for Meteorology Climatology and Geophysics (BMKG) has the task of providing and disseminating information on earthquakes and tsunami early warnings. It is always active in conducting earthquake and tsunami outreach, training and tsunami simulations.

OBJECTIVES AND TARGETS

OBJECTIVES

1. Strengthen coordination between BMKG region (Geophysics) as an extension of the BMKG HQ and stakeholders
2. Strengthen the role of BPBD as the main node of the regional communication chain in providing correct information and direction to the community and SKPD regarding tsunami early warning.
3. Develop an earthquake and tsunami response for communities and schools located in potential earthquake and tsunami areas.
4. Develop a Tsunami Ready Community

TARGETS

1. Tsunami Ready Community which is internationally recognized by IOC-UNESCO, by implementing 12 UNESCO-IOC Tsunami Ready Community Indicators
2. Improved understanding of earthquake information and tsunami early warning
3. The number of participants per location is 300-320 participants (50 SLG participants and 250-270 BMKG Goes to School participants)



WHAT IS EARTHQUAKE AND TSUNAMI FIELD SCHOOL (SLG) ??

Educational activities on understanding earthquake and tsunami information (disseminated by BMKG) to ensure that the NDMO/Military/Police, community, schools, media, and related institutions can understand properly and appropriately in responding and making decisions when an earthquake and tsunami disaster occurs.

Orientation Exercise

Table Top Exercise

Drill Exercise



EARTHQUAKE AND TSUNAMI FIELD SCHOOL (SLG) 2015-2024



PELAKSANAAN SEKOLAH LAPANG GEMPABUMI DAN TSUNAMI DAN BMKG GOES TO SCHOOL

Periode Tahun 2015 - 2023



January-May 2024:

- 4 locations
- 270 participants

And will continue to be held in at least 14 locations until the end of 2024.

EARTHQUAKE AND TSUNAMI FIELD SCHOOL ACTIVITIES

Scope:

1. Coordination and Survey of 12 Tsunami Ready Community Indicators
2. Earthquake and Tsunami Field School Workshop
3. BMKG Goes to School



Earthquake and Tsunami Field School Workshop



Coordination and Survey of 12 Tsunami Ready Community Indicators



BMKG Goes to School in SMA 6 Skouw Jayapura



EARTHQUAKE AND TSUNAMI FIELD SCHOOL ACTIVITIES

SCOPE 2: EARTHQUAKE FIELD SCHOOL WORKSHOP

SCOPE OF WORKSHOP

- Pretest and Post Test
- Material Presentation:
- Group Discussion:
- Table Top Exercise
- Exploring Tsunami Evacuation Routes
- Recommendations and Follow-up Plans

Workshop participants were 50 people consisting of:

- NDMO
- Community (Village/District Head, Disaster Preparedness Group/disaster activists, community leaders,)
- School
- Military and Police
- Tourism Manager (tourist attractions/hotels)
- Industrial or critical infrastructure institutions
- Relevant agencies (rescue team, community health center, etc.)
- Media



The Earthquake and Tsunami Field School Opening Ceremony aims to provide a general overview of SLG activities by BMKG and obtain direction from the Regional Government in building earthquake and tsunami preparedness

EARTHQUAKE AND TSUNAMI FIELD SCHOOL ACTIVITIES

SCOPE 2: EARTHQUAKE FIELD SCHOOL WORKSHOP

PRETEST AND POST TEST

Participants must fill in knowledge questions about earthquakes and tsunamis and how to mitigate these disasters before starting the material presentation (pre-test) and after the material presentation is given (post-test).

Objective: to determine the level of participants' understanding of earthquakes and tsunamis before and after receiving the material

MATERIAL PRESENTATION SESSION

Materials:

1. Earthquake and Tsunami Potential
2. Earthquake and Tsunami Preparedness
3. Tsunami Ready Community
4. Tsunami Hazard Map



Objective: to provide basic knowledge regarding the potential and mitigation of earthquakes and tsunamis

EARTHQUAKE AND TSUNAMI FIELD SCHOOL ACTIVITIES

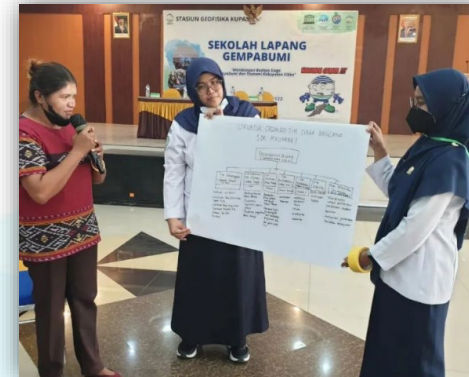
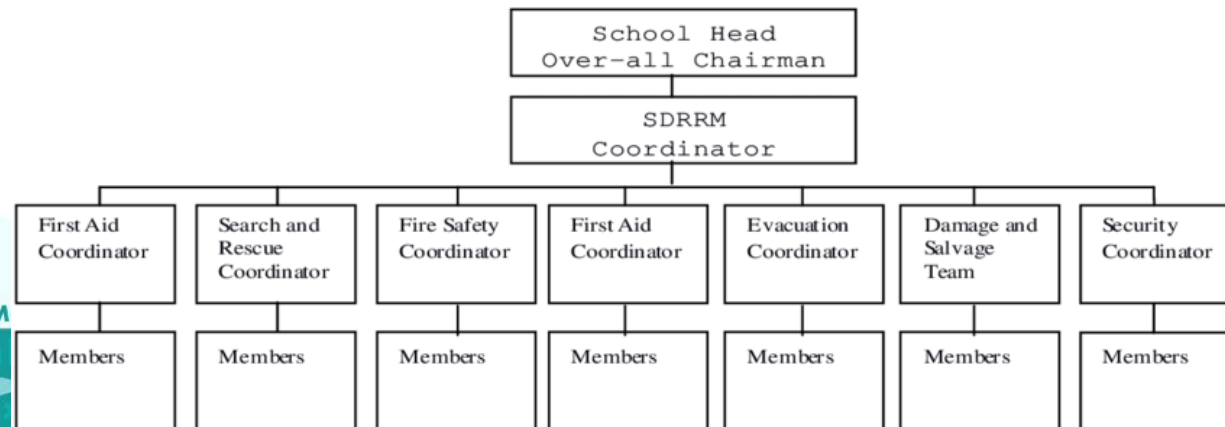
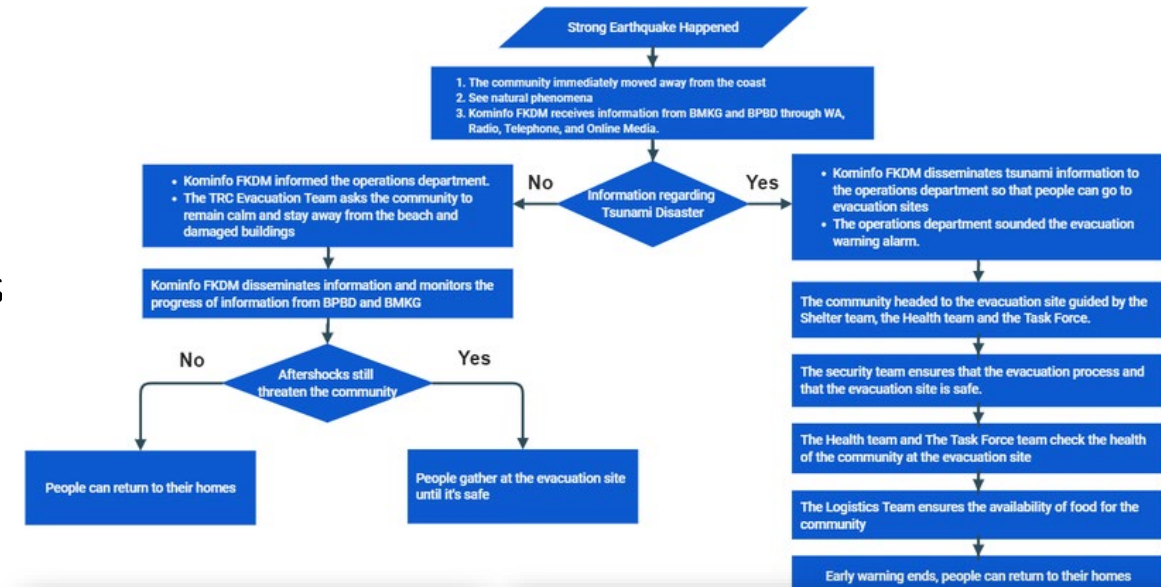
SCOPE 2: EARTHQUAKE FIELD SCHOOL WORKSHOP

GROUP DISCUSSION

Discuss:

1. Formation of a Disaster Preparedness Team/Forum
2. SOP for Earthquake and Tsunami Response

Objective: Participants can form a disaster preparedness team and determine earthquake and tsunami response SOPs for community groups, schools and tourism.



EARTHQUAKE AND TSUNAMI FIELD SCHOOL ACTIVITIES

SCOPE 2: EARTHQUAKE FIELD SCHOOL WORKSHOP

TABLE TOP EXERCISE (TTx)

Objectives:

Table Top Exercise (TTX) is indoor activity to train:

1. Understanding Tsunami Early Warning
2. Early Warning Communication Chain
3. SOP for Earthquake and Tsunami Response/Evacuation
4. Evacuation Plan



TTX Implementation:

- Participants are divided into several groups according to their background
 - TTx is guided by 1 main facilitator and each group is accompanied by a facilitator from BMKG
 - Participants were given several case examples with worst earthquake and tsunami scenarios
 - Participants responded to each case adapting existing earthquake and tsunami response SOPs or those that had been prepared in previous discussions
- evaluate each group's TTx process

EARTHQUAKE AND TSUNAMI FIELD SCHOOL ACTIVITIES

SCOPE 2: EARTHQUAKE FIELD SCHOOL WORKSHOP

EXPLORING TSUNAMI EVACUATION ROUTES

Exploration of evacuation routes based on the Tsunami Hazard Map that has been created.

Objectives:

- Understanding Tsunami Hazard Maps
- Carry out field verification of the Hazard Map that has been created
- Understand the danger zone and tsunami safe zone in the area
- As input for preparing the Evacuation Map

After tracing the evacuation route, participants evaluate the route they have taken in group discussions:

- Is the evacuation route safe from tsunamis, tall buildings/trees?
- Are there evacuation signs along the evacuation routes?, etc



EARTHQUAKE AND TSUNAMI FIELD SCHOOL ACTIVITIES

SCOPE 2: EARTHQUAKE FIELD SCHOOL WORKSHOP

RECOMMENDATION AND FOLLOW-UP PLANS

- Recommendations are made by the facilitator and mutually agreed upon
- Recommendations contain matters related to the completeness of the 12 UNESCO-IOC Tsunami Ready Community indicators in efforts to increase preparedness for earthquakes and tsunamis
- Follow-up is an earthquake and tsunami mitigation effort in the near future from the community (Who is responsible and when will they do it)

REKOMENDASI MASYARAKAT SIAGA TSUNAMI
DESA KALINAUN KECAMATAN LIKUPANG TIMUR
KABUPATEN MINAHASA UTARA PROVINSI JAWA TIMUR
KAMIS, 17 Juni 2021

Dalam rangka mewujudkan masyarakat siaga tsunami di Desa Kalinaun, Kecamatan Likupang Timur, Kabupaten Minahasa Utara, perlu untuk dapat melengkapi dan menyempurnakan indikator masyarakat siaga tsunami, yaitu:

1. Komunitas agar dapat segera melakukan penyusunan Peta Bahaya Tsunami berdasarkan pemodelan inundasi (genangan tsunami) dibantu oleh BMKG.
2. Komunitas perlu untuk melengkapi data penduduk di wilayah rawan yang terdokumentasikan dengan baik. (sumber data: komunitas dan desa)
3. Komunitas agar dapat menginventarisir seluruh sumber daya ekonomi, sosial, Infrastruktur, Fasilitas umum dan Politik yang mendukung Pengurangan Risiko Bencana dalam sebuah dokumen.
4. Komunitas perlu membuat atau memperbaharui peta evakuasi yang disusun berdasarkan Peta Bahaya Tsunami. Peta evakuasi harus disosialisasikan dan dapat dimengerti oleh seluruh komunitas.
5. Komunitas perlu untuk memanfaatkan dan mengelola secara rutin website dan/atau media sosial sebagai sarana distribusi materi edukasi.
6. Komunitas perlu untuk mempunyai agenda rutin kegiatan Pendidikan dan Kesiapsiagaan secara mandiri dengan melibatkan perangkat desa. Kegiatan dapat berupa sosialisasi pintu ke pintu dan bisa disisipkan pada kegiatan keagamaan
7. Komunitas harus terlibat dalam kegiatan IOWAVE setiap 2 tahun sekali, untuk melatih sistem peringatan dini tsunami dari hulu hingga hilir.
8. Komunitas harus memanfaatkan momen HKB (Hari Kesiapsiagaan Bencana) setiap tanggal 26 April untuk melakukan latihan simulasi gempabumi dan tsunami secara mandiri.
9. Komunitas perlu untuk dapat memperbaharui dokumen rencana kedaruratan yang terdiri atas:
 - a. Kondisi Geografis dan Topografi

- b. Potensi Gempabumi dan Tsunami, serta potensi bencana lainnya
- c. Data komunitas, infrastruktur, dan fasilitas kritis.
- d. Rencana Kedaruratan yang meliputi:
 - Aktivasi (Waktu dijalankannya rencana kedaruratan)
 - Tim Siaga Bencana
 - SOP Respon Gempabumi dan Peringatan Dini Tsunami, serta Rencana Evakuasi Tsunami
 - Rantai Komunikasi Peringatan Dini Tsunami
 - Peta Evakuasi Tsunami
 - Kriteria Status Aman
 - Pelaporan Dampak

10. Komunitas perlu untuk memanfaatkan aplikasi Mobile (Info BMKG, WRS Mobile), Media sosial @Infobmkg (FB, Twitter, IG), Aplikasi Chat Telegram (<https://t.me/Infobmkg>) dan cloud WRS BMKG (<http://warning.bmkg.go.id/wrs/index.php>) sebagai sarana penerima info gempa dan peringatan dini tsunami.

EARTHQUAKE AND TSUNAMI FIELD SCHOOL ACTIVITIES

SCOPE 3: BMKG GOES TO SCHOOL

BMKG Goes to School is an activity to implement Earthquake Simulation in schools (elementary school, junior high school, high school) carried out by BMKG with teachers who are participants in the Earthquake and tsunami Field School Workshop.

Implementation of BMKG Goes to School includes:

- Presentation of earthquake and tsunami response material
- Socialization or Refinement of the School Disaster Preparedness Team and Earthquake and Tsunami Response SOPs which had previously been prepared by school representatives at the SLG Workshop
- Earthquake and tsunami simulation to test school evacuation plans





Thank you



***IOC/UNESCO Indian Ocean Tsunami Information Centre
IOTIC-BMKG Programme Office***

***Disaster Risk Reduction and Tsunami Information Unit
UNESCO Jakarta Office***

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