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Webinar:
Lessons Learnt during Exercise IOWave 2023

12 - 13 December 2023

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Scenarios Exercised

- [ ] Andaman Trench (4 Oct)
- [ ] Makran Trench (11 Oct)
- [ ] Heard Island (18 Oct)
- [x] Java Trench (25 Oct)

Scenario – SOUTH JAVA

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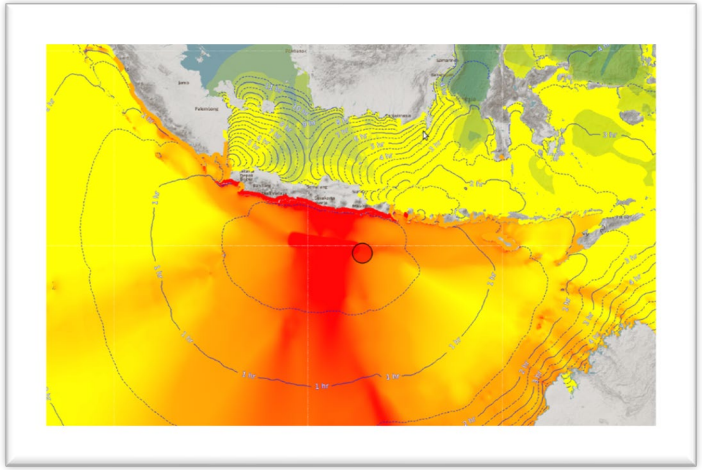
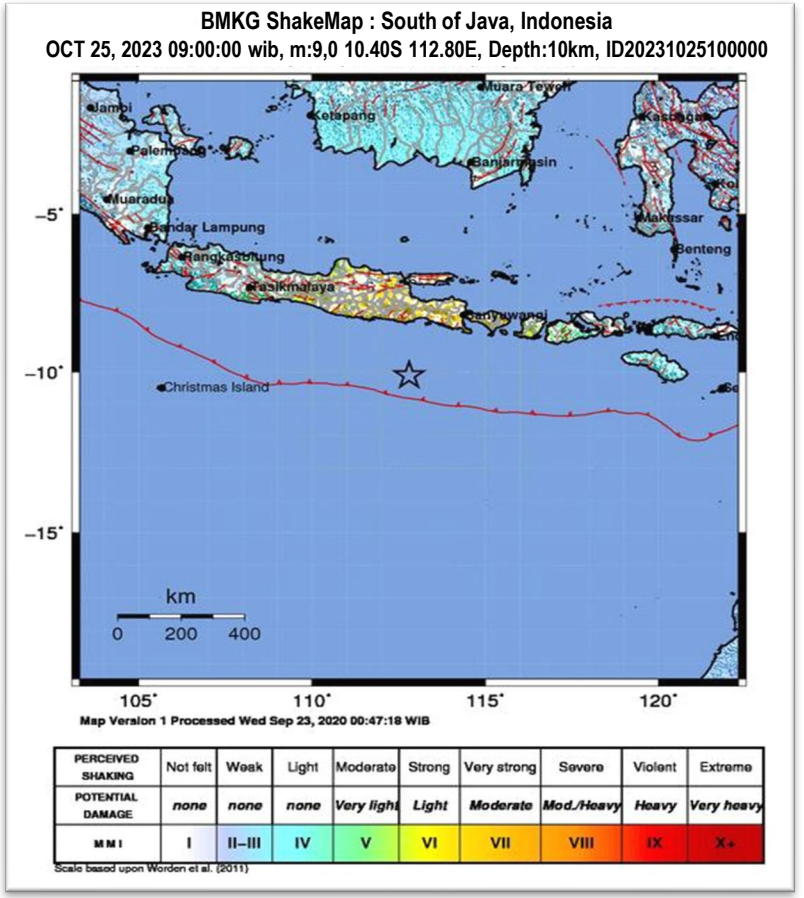
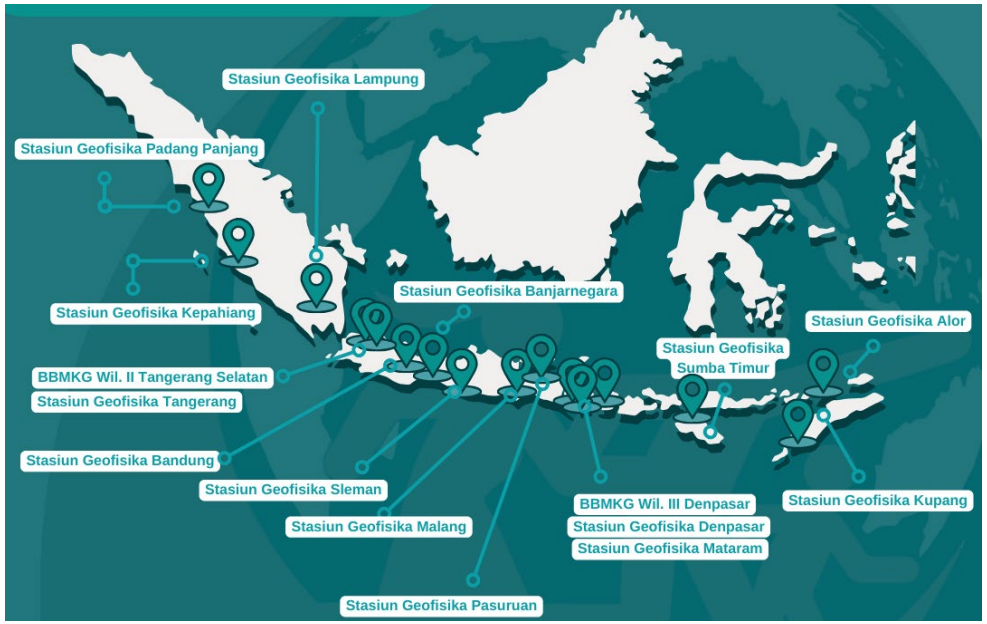
Scenario # : South of Java

Magnitude	: 9.0
Depth	: 10 km
Date	: 25 October 2023
Origin Time	: 02.00 UTC
Latitude	: 10.40S
Longitude	: 112.80E
Location	: South of Java, Indonesia





Exercise Participants



12 Provinces

25 Local DMO

16 BMKG Station

30 Institution : BMKG, BNPB, ITB, BIG, BRIN, UNESCO-IOTIC, U-INSPIRE, & other disaster mitigation researcher and practicioner

1910 Participant in total, which consist of:
- **1654 executors drill;**
- **124 executors ttx;**
- **62 Facilitators;**
- **56 observers;**
- **14 AAR team**

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Exercise Scheme:

- Type of exercise was **Table-Top Exercise and tsunami drill.**
- The main facilitator delivered **scenario and inject directly**;
- BMKG Headquarter disseminate **4 tsunami bulletins (PDT-1, PDT-2, PDT-3, PDT-4) via sms, fax, email and WRS New Generation**. The WRS NG format is submitted via URL;
- All scenarios / injects was responded by all executors directly by action or metacard;
- For locations that were assisted by a facilitator, **the scenarios was enriched by the facilitator for each location**, and was responded with specific actions;

Exercise Scheme

AAR:
BNPB, BIG, BRIN, ITB,KOMINFO
UNESCO/IOTIC, Media

Fasilitator:
BMKG
Local Office

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Observer:
BMKG
Local Office

Pelaku:
- 16 BMKG Local Office
- 25 Local DMO
- 2 National Media

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Sistem Peringatan Dini Tsunami Indonesia (InaTEWS)
BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA
Alamat:Jl. Angkasa I no.2 Kemayoran, Jakarta, Indonesia, 10720
Telp.: (+62-21) 4246321/6546316 , Fax: (+62-21) 6546316/4246703
P.O. Box 3540 Jkt, Website : http://www.bmkg.go.id

Tanggal dikeluarkan: 06-Okt-2020 10:03:01 WIB
Peringatan dini-1
No.:1003-07/warning/InaTEWS/10/2020

TELAH TERJADI GEMPA BUMI DENGAN PARAMETER SEMENTARA SEBAGAI BERIKUT:

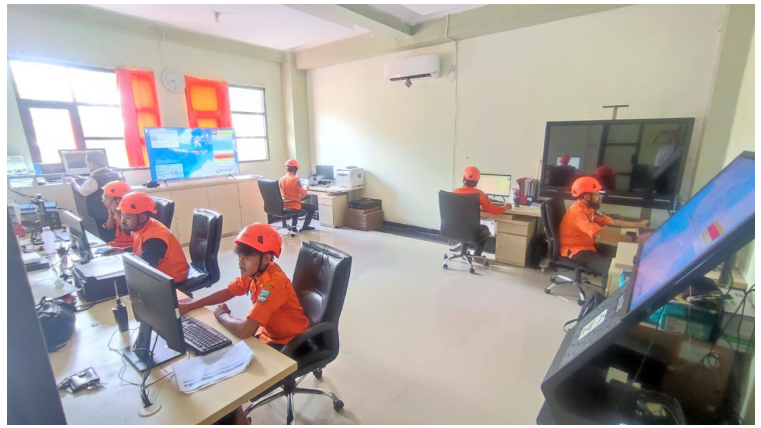
Kekuatan : 9.1 SR
Tanggal : 06-Oct-2020
Waktu Gempa : 10:00:00 WIB
Garis Lintang : 10.40 LS
Garis Bujur : 112.80 BT
Kedalaman : 10 Km

Lokasi : South of Java, Indonesia
Keterangan : 252 km Tenggara KAB-MALANG-JATIM
256 km BaratDaya LUMAJANG-JATIM
260 km Tenggara KAB-BLITAR-JATIM
329 km BaratDaya DENPASAR-BALI
813 km Tenggara JAKARTA-INDONESIA

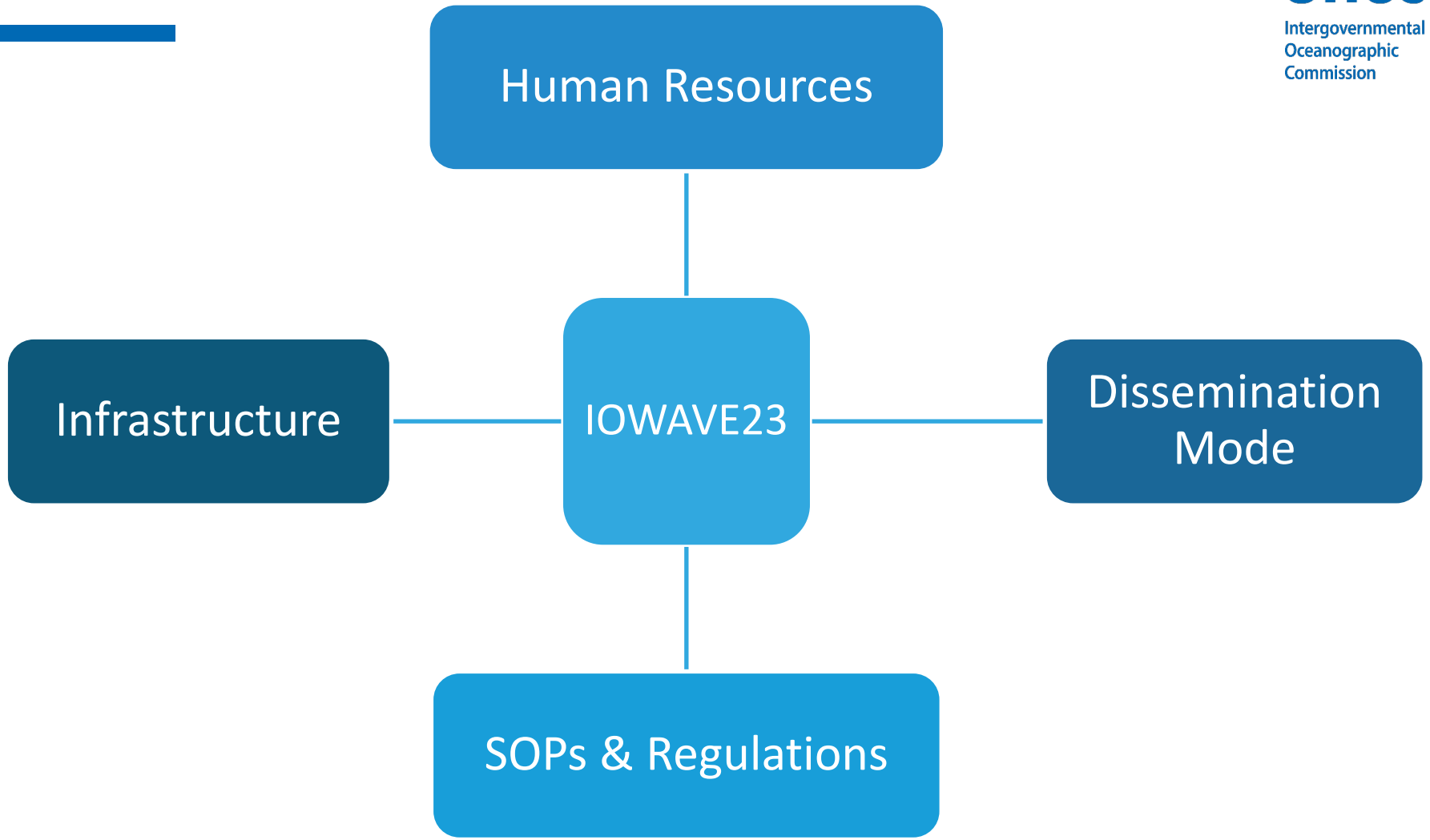
Evaluasi:

BERPOTENSI TERJADI TSUNAMI DI WILAYAH:

Provinsi	Lokasi	Status
JATIM	BANYUWANGI BAGIAN SELATAN	AWAS
BALI	BADUNG PANTAI-KUTA	AWAS
JATIM	JEMBER PULAU NUSABARUNG	AWAS
JATIM	MALANG	AWAS
NTB	LOMBOK-BARAT BAGIAN SELATAN	AWAS
JATIM	TRENGGALEK	AWAS
JATIM	JEMBER	AWAS
JATIM	BLITAR	AWAS
NTB	LOMBOK-TENGAH	AWAS
BALI	KLUNGKUNG PULAU NUSAPENIDA	AWAS
JATIM	TULUNGAGUNG	AWAS
NTB	SUMBAWA BAGIAN BARAT	AWAS
JATIM	PACITAN	AWAS
JATENG	WONOGIRI	AWAS
JATIM	BANYUWANGI BAGIAN TIMUR	AWAS
NTB	LOMBOK-TIMUR BAGIAN SELATAN	AWAS
DIY	GUNUNG-KIDUL	AWAS



Lesson Learnt



Lesson Learnt

➢ ***Human Resources***

- High rate of mutation of Local DMO personnels sometime resulted in a knowledge gap in understanding of tsunami warnings and receiver/dissemination devices operation.

➢ ***Dissemination Mode***

- Most reliable receiver device is **WRS New Generation**, while the reception performance via Email and SMS mode was mostly late/delayed;
- Most Dissemination mode cannot function when the power fails. It is suggested to **cooperate with National Electrical Company regarding the power failure condition** their existing SOP related to this matter to prevent power shutting down during a disaster;
- Most popular dissemination mode is **WhatsApp applic**ation. It is suggested to combine WRS New Generation dissemination feature with the apps;
- **Communication technology** integration is the main problem in most Local DMO;
- **Radio communication** found to be extremely reliable, especially in post-disaster. Local DMO expected to cooperate with Radio Amateur Organization (ORARI).
- **Tsunami siren is needed for most locations**. While the existing sirens is only operate in several location, BMKG plan to develop a more cost-efficient siren system that can be deployed in all tsunami-prone villages.

Lesson Learnt

➢ *SOPs & Regulations*

- Some local DMO do not have SOPs regarding decision making in tsunami emergency situation, especially for Tsunami Siren activation;
- About 75% of the executors are able to understand BMKG information products and take the initiative to self-evacuate even using local wisdom, but the rest mostly wait for direction from facilitators;

➢ ***Infrastructure***

- Most regions do not have tsunami evacuation support material and infrastructure like hazard map, evacuation map, evacuation route, tsunami shelter. To solve this situation, Indonesia government are currently developing International and national standard (ISO & SNI) of community-based early warning system which standardize the implementation of all of the above.

Challenges

Coordination between stakeholders needs more intense discussions in both online and offline meetings to confirm their understanding of the exercise.

Develop SOPs related to tsunami warning and response that can be applied to all communities and people with disabilities.

Recommendation For Next IOwave

- Need to **expand the dissemination mode of TSP through social media**.

- Encouraging the community to participate in realizing a **Tsunami Ready Community.**

- Encouraging exercise through **virtual and physical exercise** with involve more stakeholder

Images

IOWave23 Bulletins Dissemination

Public evacuations and rescue

Tsunami awareness activities in relief shelters

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THANK YOU