



2.a. SOP-TEWS: DMO Concept of Operation, Overview of Routine and Event Operation and Decision-making Timeline

Ardito M Kodijat

IOTIC UNESCO-IOC

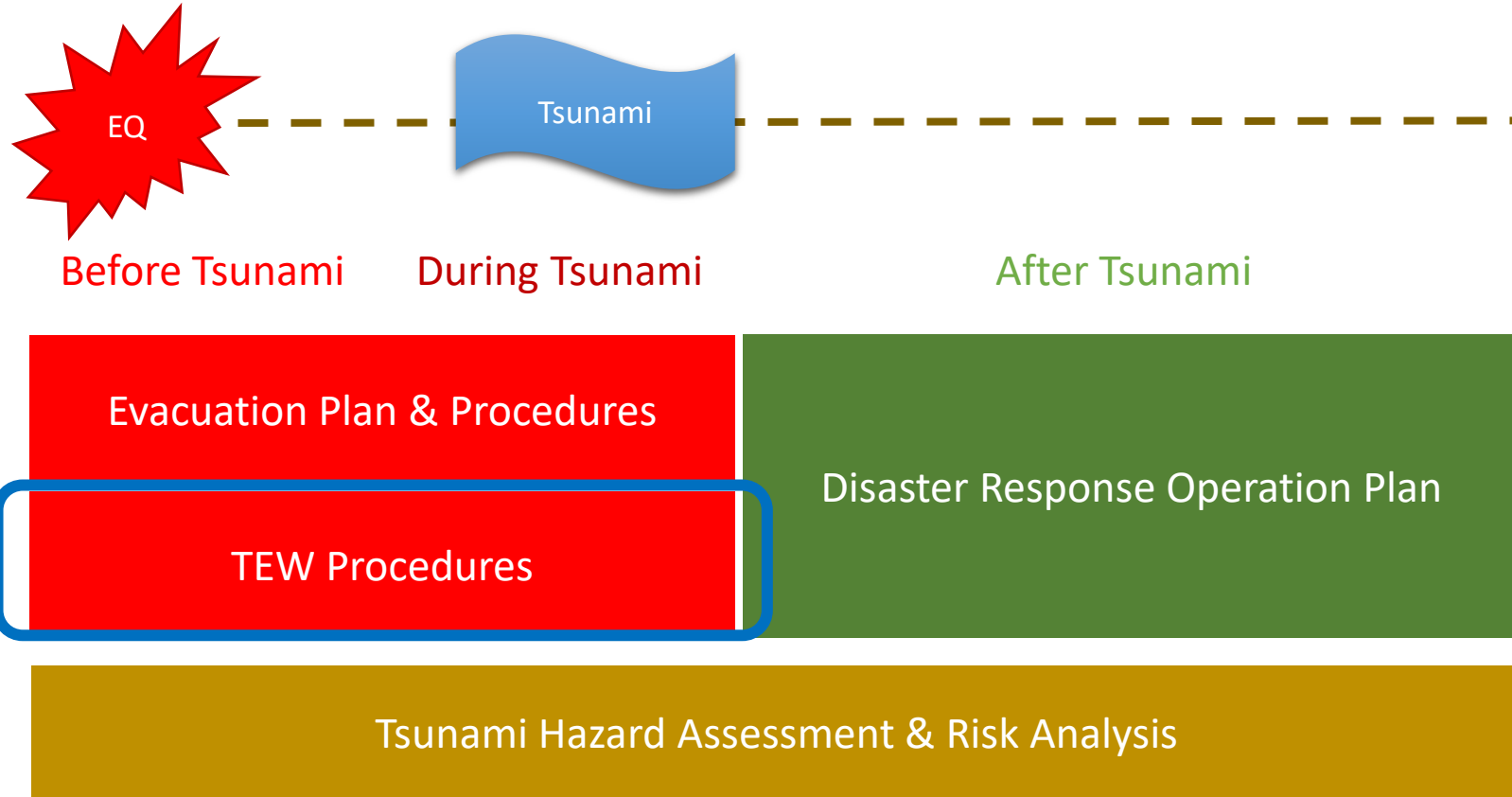
Suci Dewi Anugrah

Chair of Working Group 3

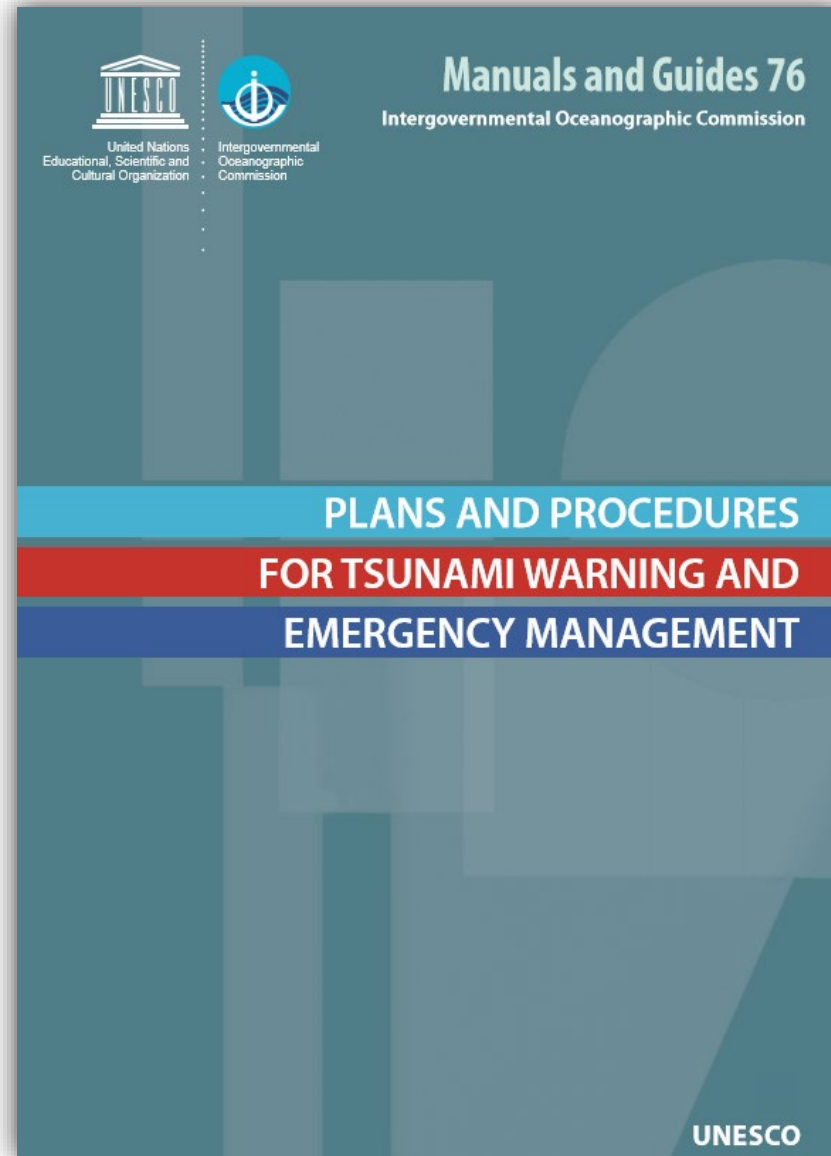
Manneela Vijaya Sunanda

Chair of RW NWIO

Tsunami Emergency Response



Reference



www.ioc-tsunami.org



Types of SOP Related Documents

1. **High-level** documents to establish **policy guidelines** (CONOPS, Warning Chain)
2. Comprehensive **emergency operations** SOP document with **details** for study and reference during **non-crisis**
3. **Quick-Reference** SOP documents for reference **during crisis**
4. **User Guides** so **recipients understand** SOPs and what to expect



Concept of Operations and SOPs

Concept of Operations (CONOPS)

- High level document
- Describes system components
- Assigns responsibilities

Standard Operating Procedures

- Each system component and responsibility requires an SOP
- Each SOP separate but synchronised

Without CONOPS, SOPs may be unaligned or uncoordinated activities and actions.



CONOPS – Typical contents

- 1. Purpose of Concept of Operations**
- 2. Roles and Responsibilities for**
 - Tsunami risk assessment
 - Receipt and assessment of TSP bulletins and monitoring data
 - Threat assessment
 - Creation and dissemination of warnings (to public, DMOs, and other response agencies), Tsunami Warning Chain
 - Call for evacuations
 - Media management
 - Public Education
- 3. Warning Concept** (thresholds, threat levels, etc.)
- 4. Types of Warnings** (including when each will be used)
- 5. Glossary**

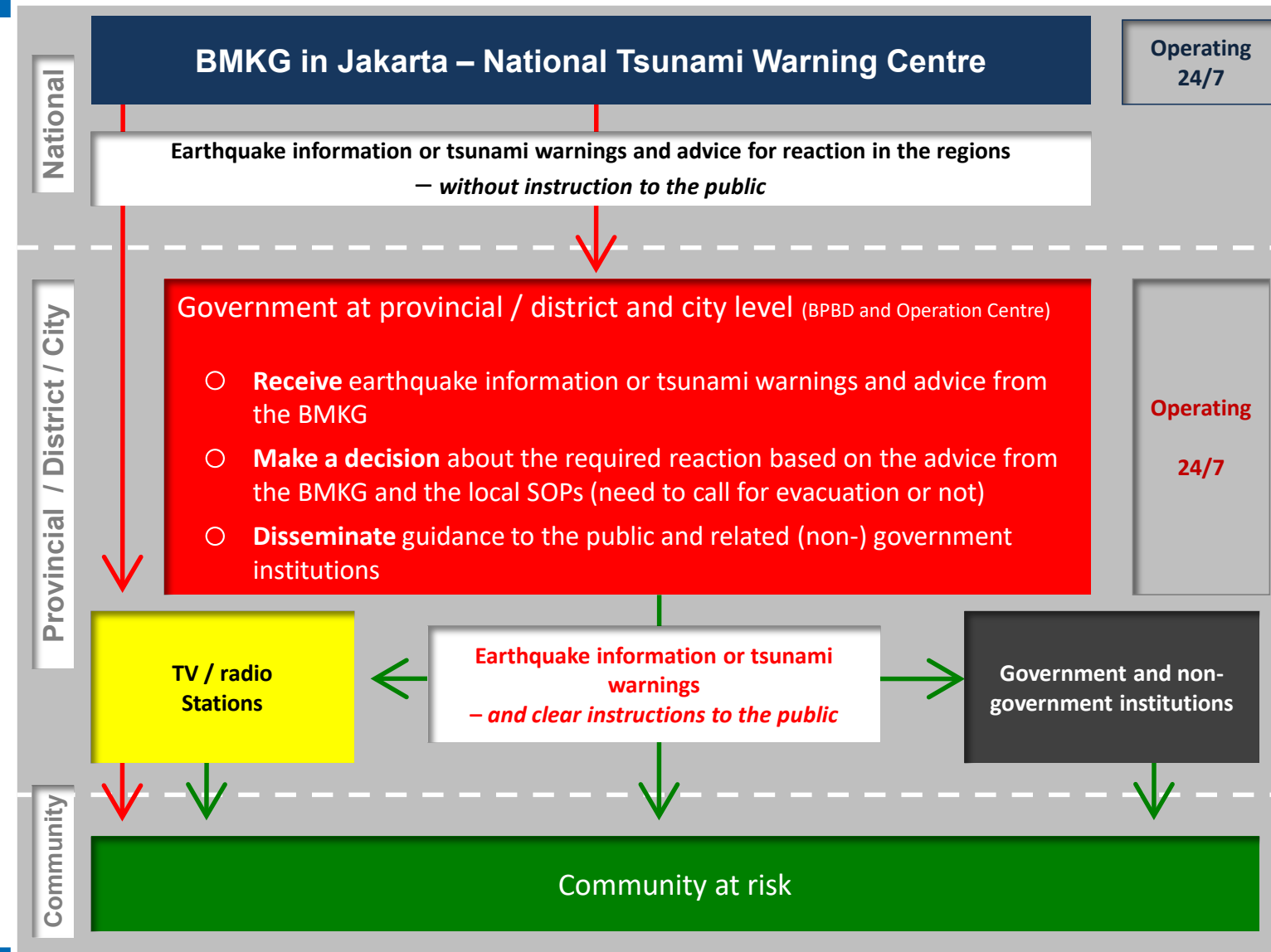


Concept of Operation for DMO tsunami warning services



unesco

Intergovernmental
Oceanographic
Commission



Tsunami early warning services

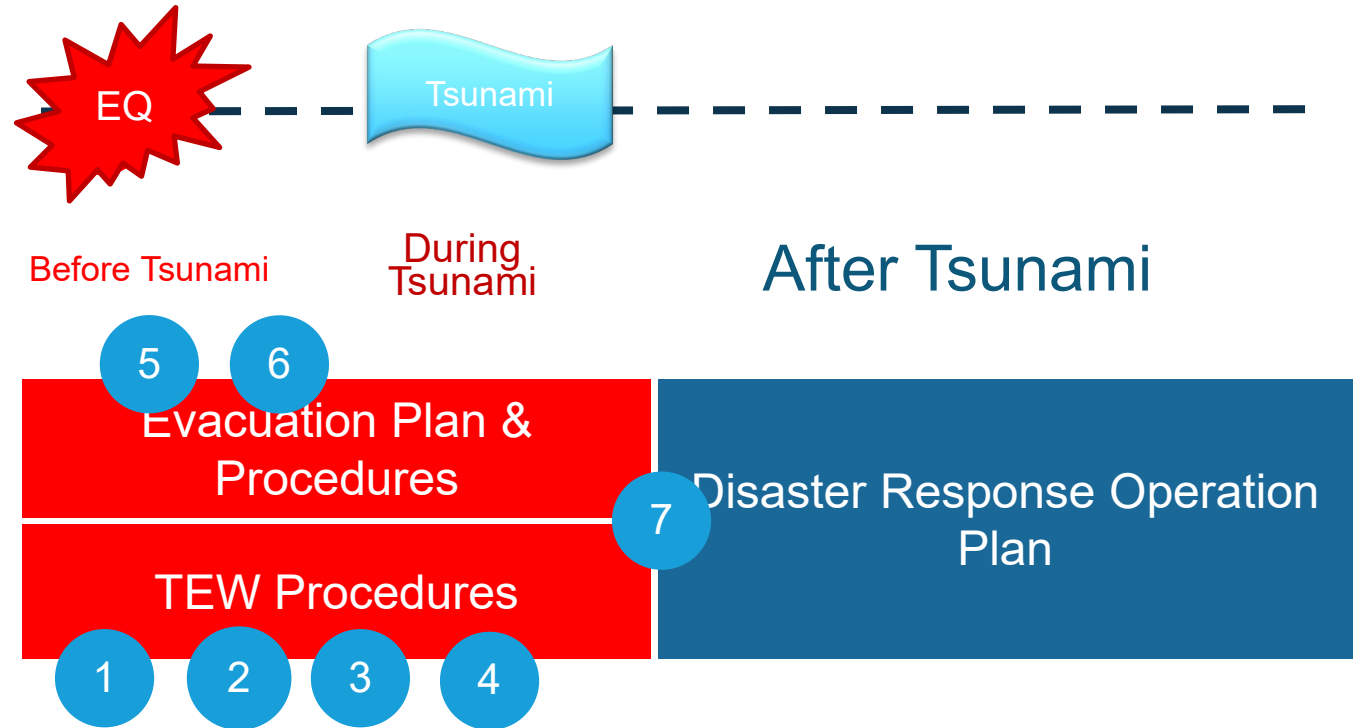
- must operate 24/7
- need to use SOPs
- requires official delegation of authority
- need synchronization of SOPs at the national, provincial, district and municipal levels
- need cooperation between national, provinces, districts and municipalities in delivery of tsunami early warning services and guidance

SOPs are

- the foundation of effective, reliable warning systems
- essential for rapid evaluation, warning and response in order to save lives
- linking communications between stakeholder in an end-to-end system. Linkages must be strong and robust or warning chain will be broken
- a “living document”. SOPs should be developed, practiced and modified as necessary.

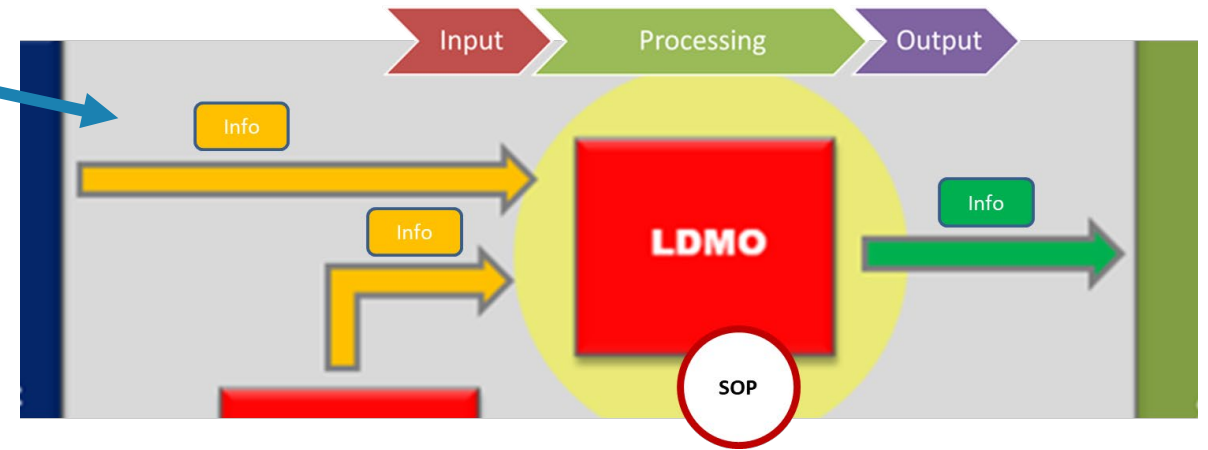
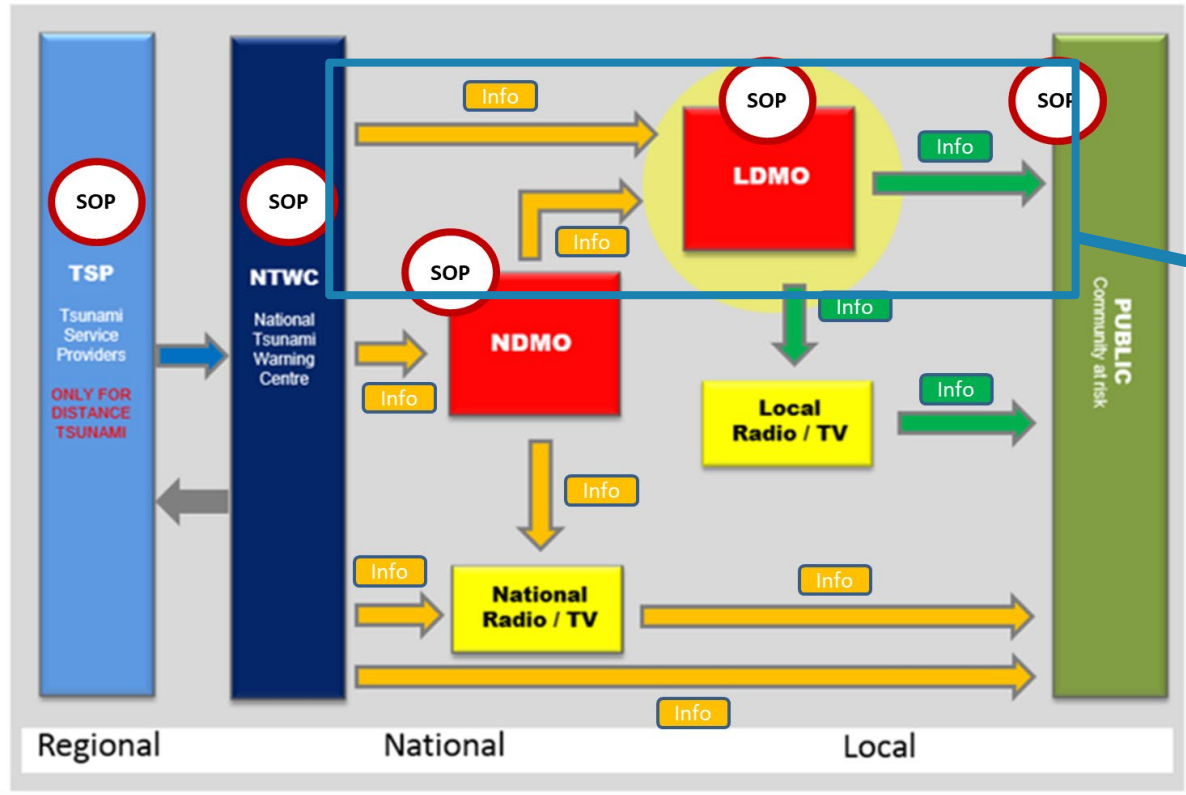
Different types of SOPs related to Tsunami Emergency Response

1. SOPs for receipt of warnings and cancellation messages from the NTWC
2. SOPs for decision making on evacuations
3. SOPs for public alerting
4. SOPs for media arrangements
5. SOPs for support evacuations
6. SOP for traffic management
7. SOP for all clear and safe return





The logic of DMO SOPs

Information products are distributed and processed along the warning chain



The logic of DMO SOPs in the warning chain



Input			Proceeding	Output		
What	From whom	How received	Processing the input, decision making and generating the output	What	To whom	How disseminated
						
Time in: EQ + x min			Timeline	Time out: EQ + x min		

Decision-making

- High level of uncertainty in the case of near-field tsunamis
- Based on warning/threat information provided by the NTWC
- Tsunami arrival times, determine critical decision point for each source / source region
- How long will it take for a community to evacuate?
- Use a Map & Table for easy reference
- Use Message template for easy fill-in
- Decide when authorization is required and who will authorize
- Essential to delegate authority for quick response

Warning for near-field tsunamis

Time is the most critical factor



unesco

Intergovernmental
Oceanographic
Commission

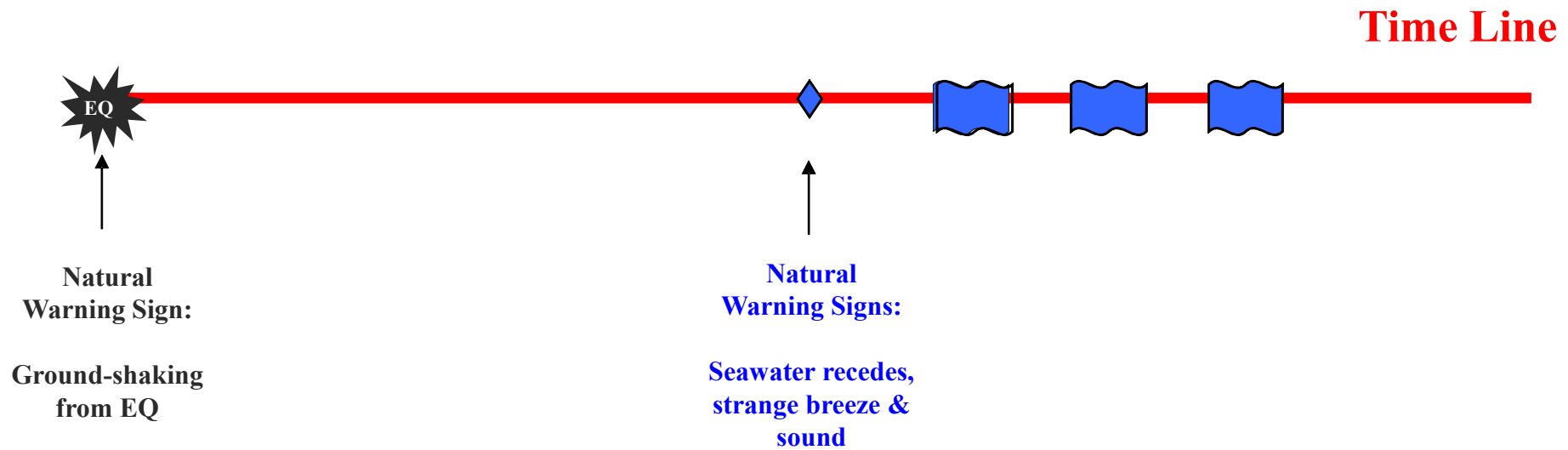


Understanding the time-line for near-field tsunamis



unesco

Intergovernmental
Oceanographic
Commission

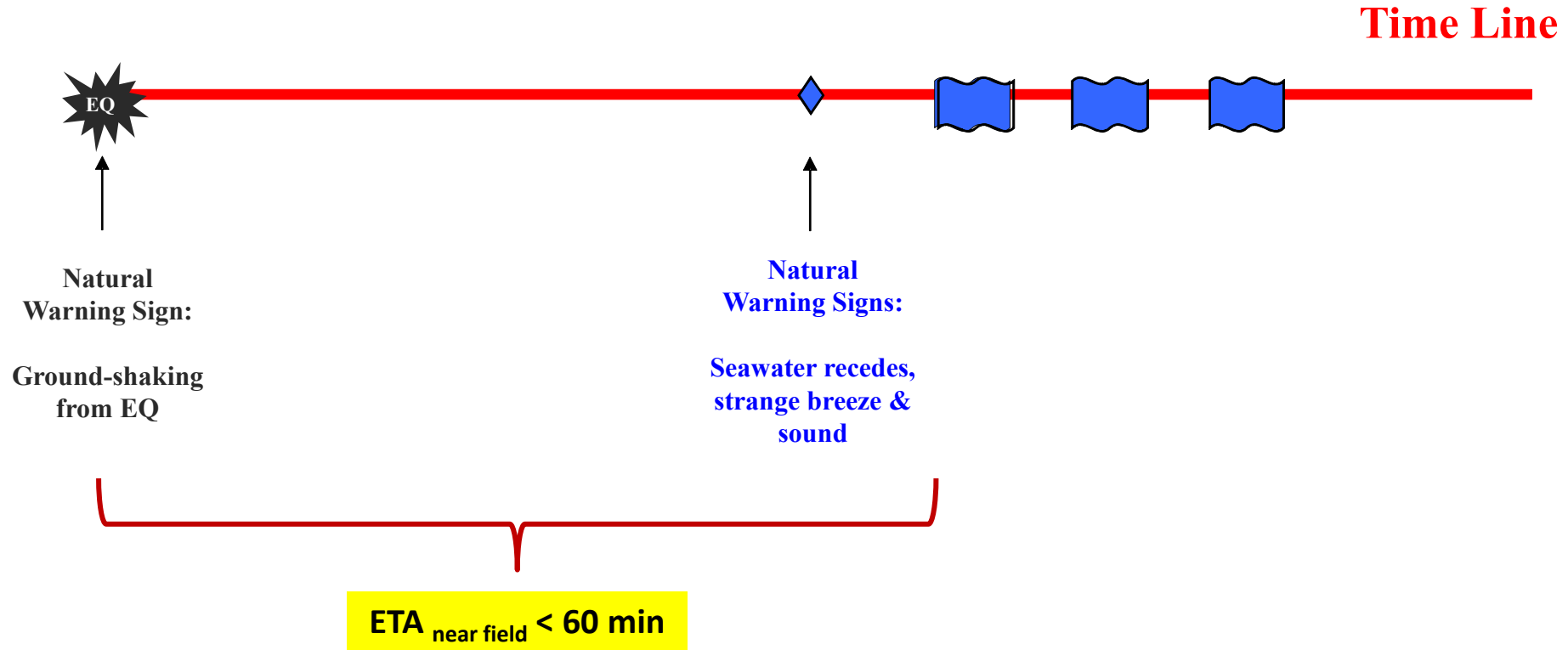


Understanding the time-line for near-field tsunamis



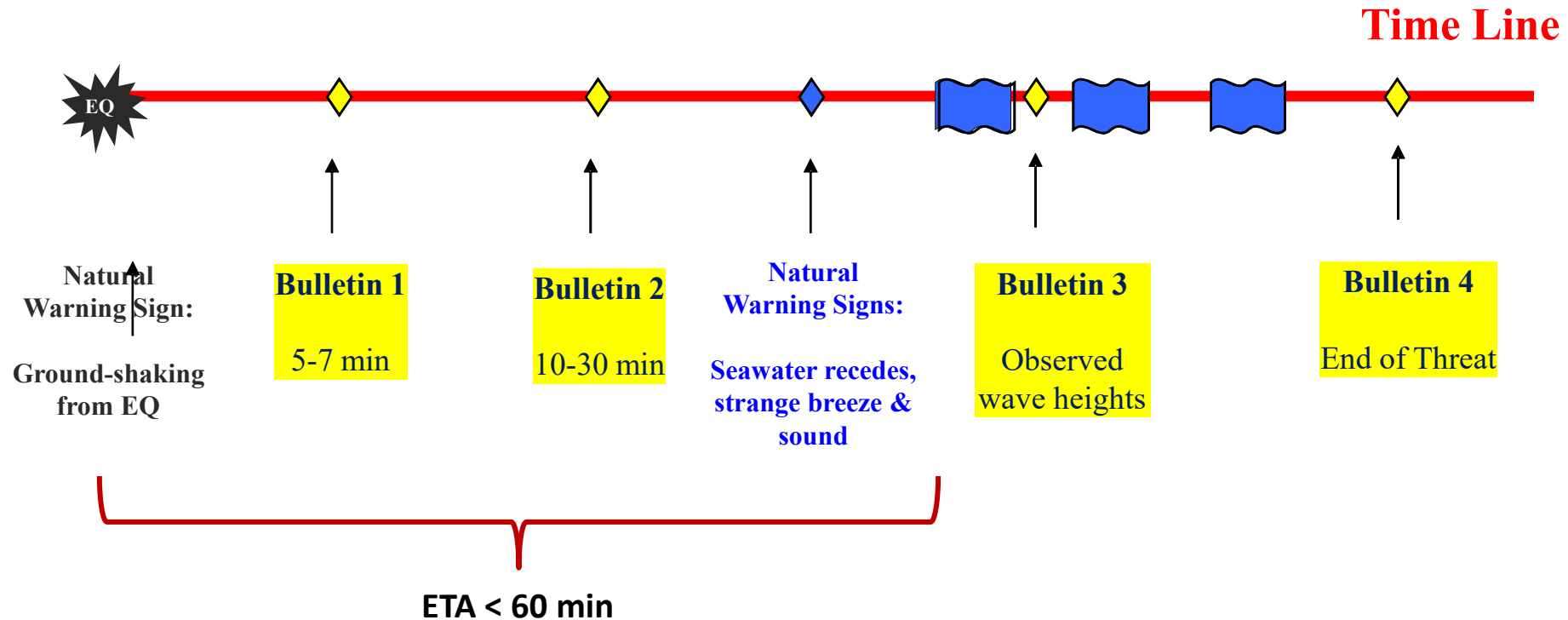
unesco

Intergovernmental
Oceanographic
Commission



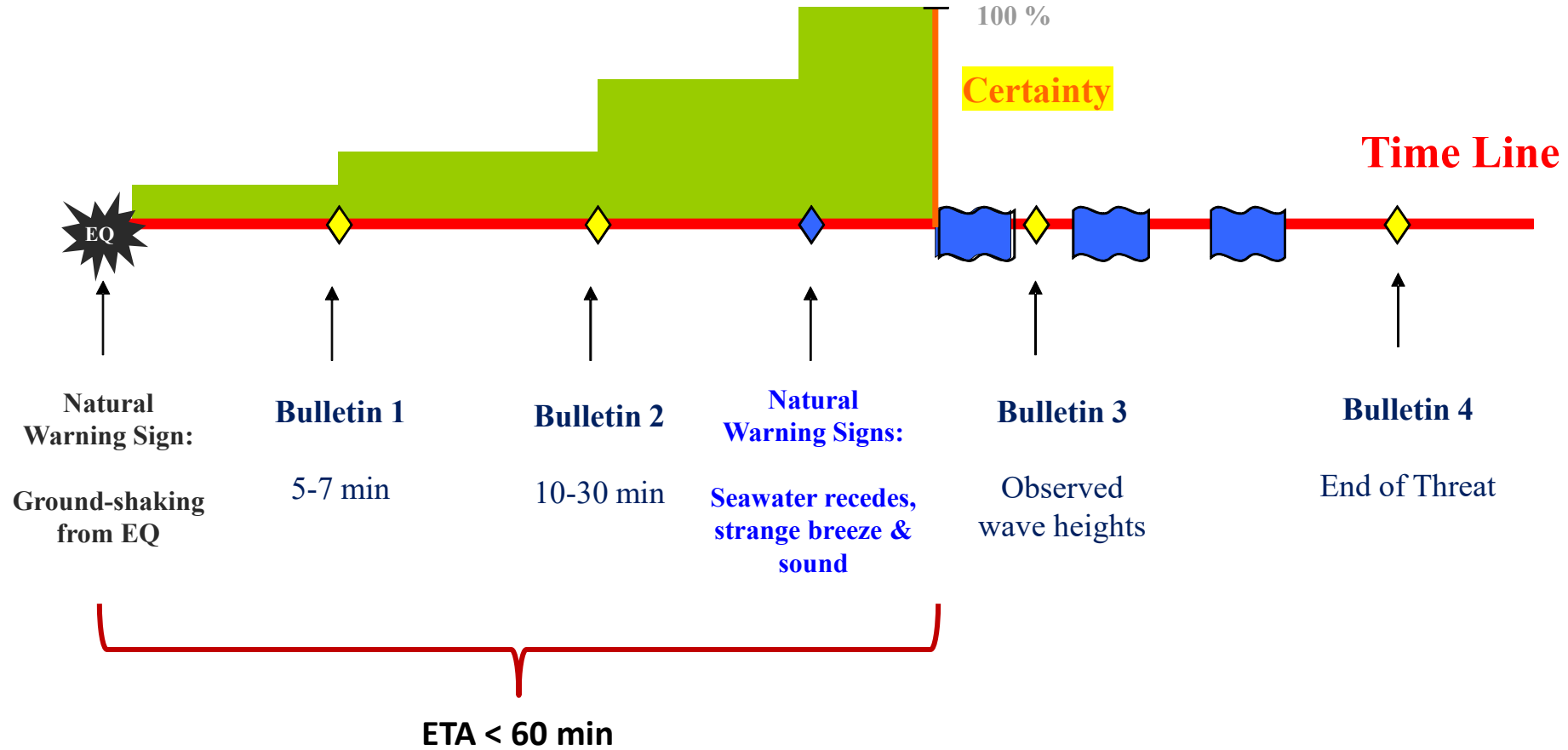
Understanding the time-line for near-field tsunamis

Example warning sequence



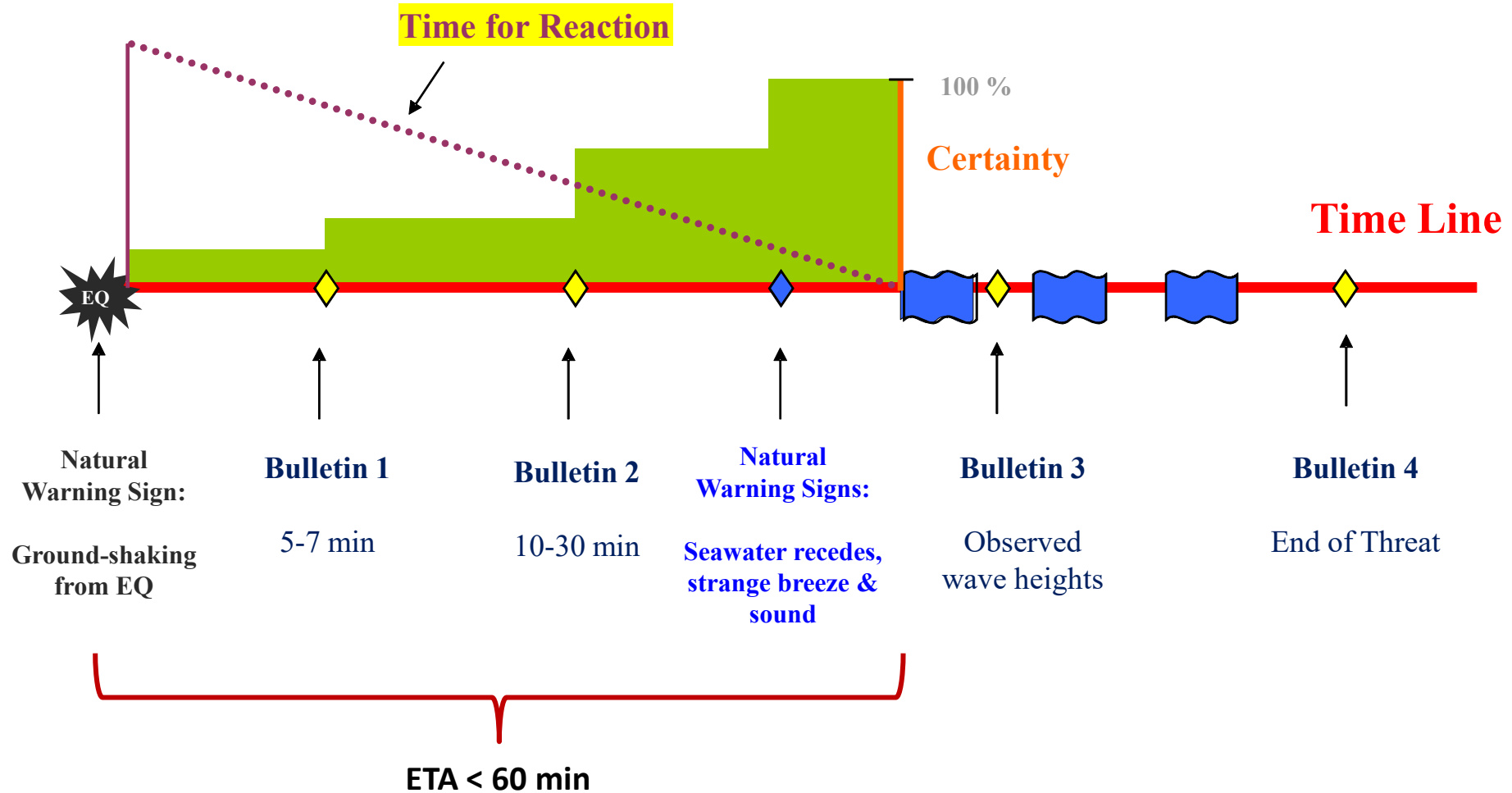
Understanding the time-line for near-field tsunamis

The dilemma of uncertainty



Understanding the time-line for near-field tsunamis

Challenge: decision-making under uncertainty



Public Alert System Activation

- What system for what type of message?
- Step-by-step activation guide
- Support arrangement for duty officer to inform stakeholders when activating public alert system: Emergency Services, Local Authority, Media, activate EOC, take calls

Safe return

- When to give 'safe to return' (all clear) to the public
- Who authorises?
- What are the criteria for “safe to return” – how is it determined?
- How will this be issued?

SOPs need to be

- strictly followed to ensure a complete and effective performance
- regularly reviewed
- approved

Staff must be trained. Their competence to perform the activities according to the SOPs should be regularly assessed.



unesco

Intergovernmental
Oceanographic
Commission

THANK YOU



unesco

IOWave25