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Response Indicators – How to achieve, challenges and solutions

3.4 Warning and Response Plans (National, Local, Community) RESP 1 and 2



Dr. Laura Kong
International Tsunami Information Centre (ITIC)



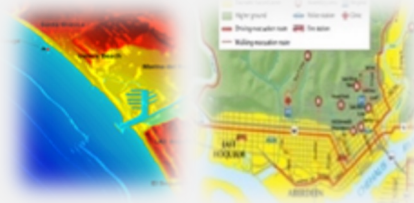
USAID
FROM THE AMERICAN PEOPLE

Tsunami Ready Indicators



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UNESCO IOC TSUNAMI READY INDICATORS

I ASSESSMENT (ASSESS)

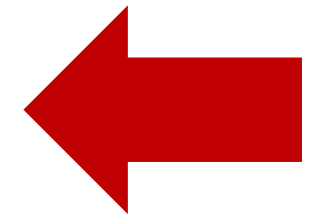
- 1 ASSESS-1. Tsunami hazard zones are mapped and designated
- 2 ASSESS-2. The number of people at risk in the tsunami hazard zone is estimated
- 3 ASSESS-3. Economic, infrastructural, political, and social resources are identified

II PREPAREDNESS (PREP)

- 4 PREP-1. Easily understood tsunami evacuation maps are approved
- 5 PREP-2. Tsunami information 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 three 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 (ERP) 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



Introduction



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The main purpose of **Tsunami Emergency Response Plan** (TERP) is to **prepare for effective response** in order to saving and protecting the general public

The TERP covers **arrangements for warnings and evacuations** and **public awareness of these arrangements**

Arrangements for **disaster response** (after tsunami impact) are another **important** part of TERP, **but not explicitly addressed** in the **Tsunami Ready Programme**.

The TERP is a **written set of instructions** detailing what must be done during tsunami emergency, how people and property protected and how resources used

A TERP is supported by agency-specific **SOPs** that will be activated on receipt of a tsunami warning or during a local source earthquake that may generate a tsunami



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RESP-1:

A community tsunami emergency response plan is approved

Scope and Focus

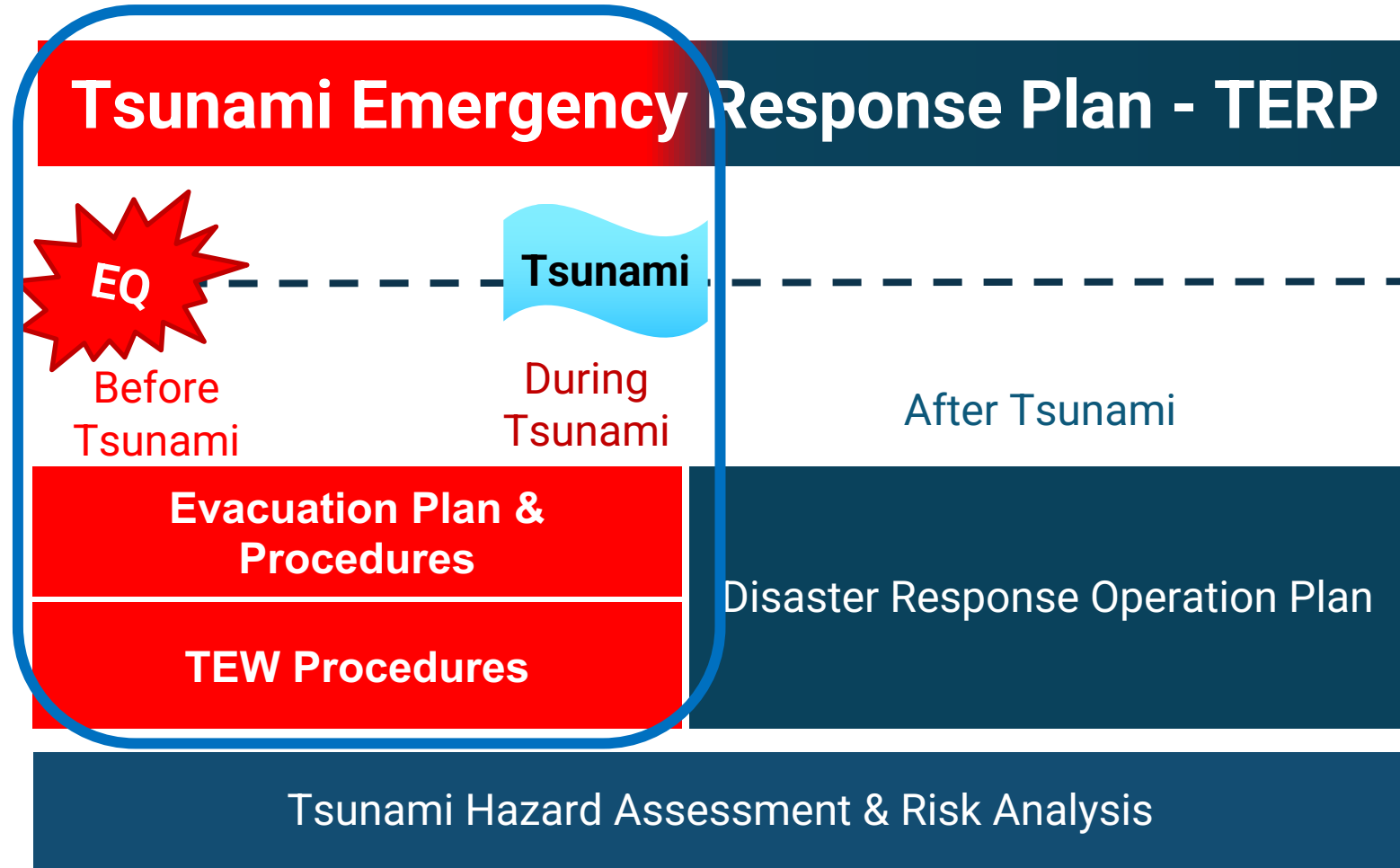


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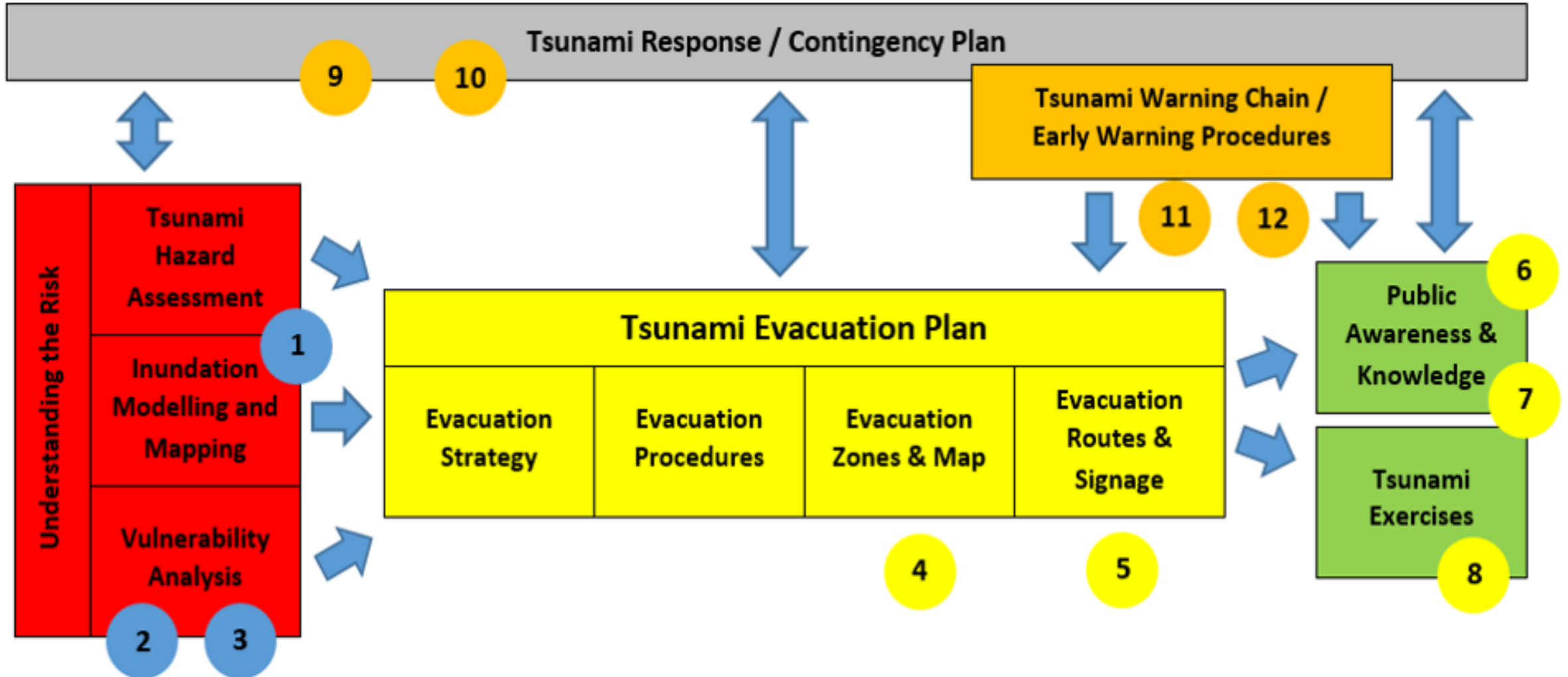
Tsunami Ready
Focus is **before**
and during
tsunami event, but
all phases important

Identify **steps** or
measures, assign
responsibilities,
chain of **authority**
and **organization**,
and identification
of **resources**



Scope and Focus

Tsunami Emergency Response Plans and relationships with Indicators

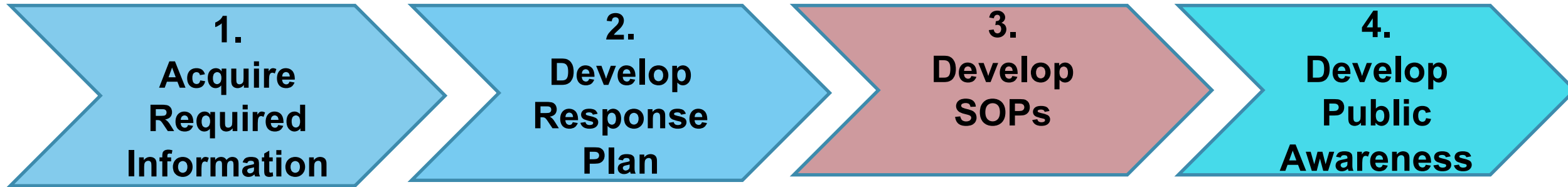


Tsunami Emergency Response Planning Steps



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There are 4 basic sequential steps to develop a TERP:

- **Steps 1 and 2 concerned with developing TERP based on information that is specific to community's circumstances as well as national references**
- **Step 3 relates to development of Standard Operating Procedures (SOPs) for specific activities by agencies within TERP**
- **Step 4 is vital to ensure that community is aware of TERP and understands what actions to take in the event TERP is activated**

Step 1 - Acquire required information

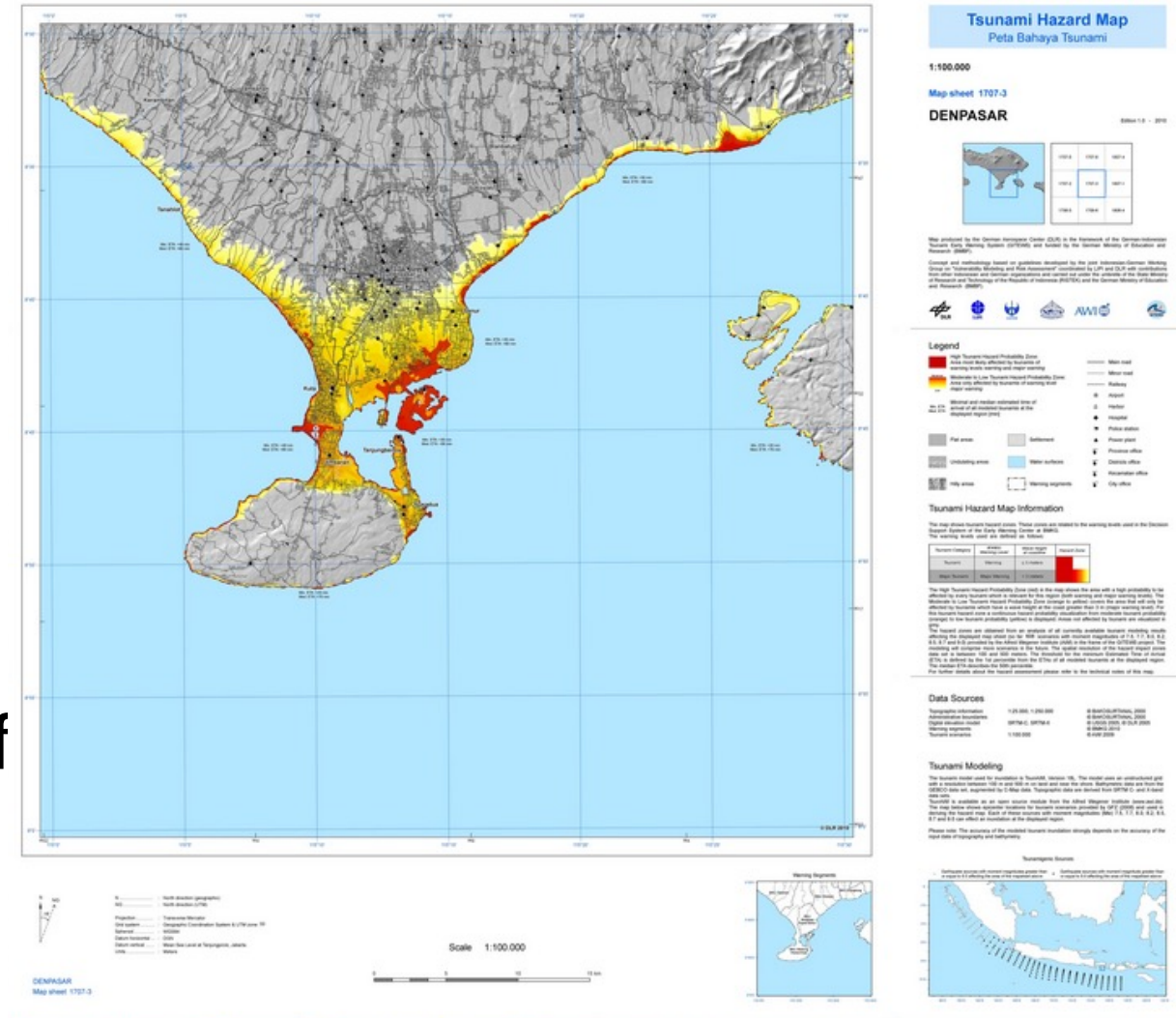


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1. Hazard and Risk Information

- Source areas and mechanism of tsunamis which might affect the area
- Affected areas
- Good understanding of time line



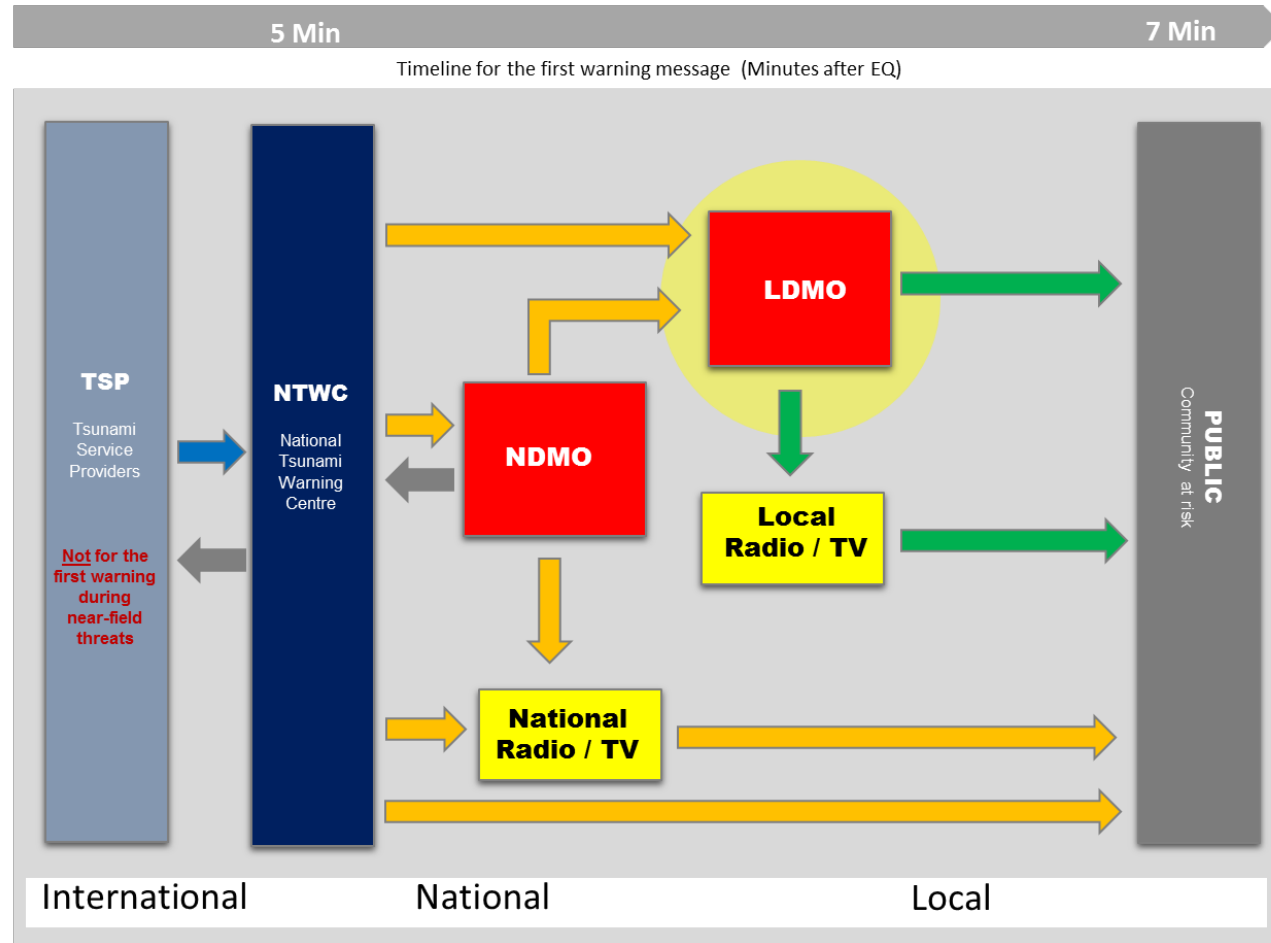
Step 1 - Acquire required information



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2. End-to-end tsunami warning process including clarification on roles & responsibilities



Step 1 - Acquire required information



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3. Local Evacuation Plan and Maps

- Evacuation strategy and zones concept
- Evacuation **trigger** (what and who triggers)
- **Public procedures**
- **Vulnerability profile** (demographic and geographic realities inside the evacuation zones, critical infrastructure)

1. Get prepared, long before anything happens

- Study the evacuation map and get familiar with the evacuation procedures
- Discuss procedures within your family and neighbourhood
- Participate in drills and information events
- If you are a visitor to Bali, please check with your hotel for procedures

2. If you feel an earthquake, protect yourself

- Don't panic!
- Drop, cover and hold!

3. After an earthquake, be aware that a tsunami may follow

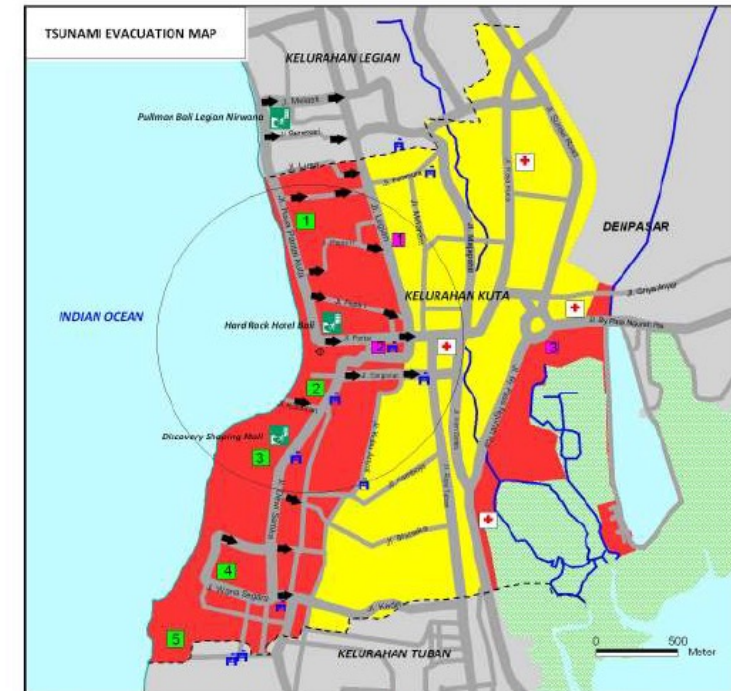
- Move away from the beach immediately as a precautionary measure!
- After strong and prolonged ground shaking, don't wait for an official warning. Leave the **RED ZONE** immediately!
- Listen to announcements from the local authorities and the radio for further information. Pay attention to the siren!

4. The sound of the siren is the official call for evacuation

- When the siren sounds, evacuate the **RED ZONE** immediately, or look for shelter in higher buildings!
- If you are in the **YELLOW ZONE**, seek shelter on higher floors
- If you are a visitor in a hotel, follow the instructions of hotel staff

After the first tsunami wave, more waves are likely to come!

Wait for an official "All Clear" message before leaving shelter



Step 2 – Develop Response Plan



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Establish the writing team

- The local DMO should take the lead but will require contributions from key stakeholders including Emergency Services, relevant government agencies, critical infrastructure, selected NGOs and members of civil society

Format and design

- A TERP is effective when emergency managers understand it and are easily able to locate information.
- A template for a TERP is provided in MG82 and is available [here](#).

Step 2 – Develop Response Plan



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Format and Design of a TERP

Organisation

- Should be **structured** so that it is **easy for users to find information**. Separate sub-divisions useful and allow revisions of particular sections without requirement to re-publish entire plan

Progression

- Should have **logical sequence** and **avoid unnecessary duplication**

Consistency

- Terms and concepts used consistently between different sections

Adaptability

- **Emergency managers should be able to adapt as event evolves** and TERP should facilitate this

Compatibility

- **TERP should align with other plans** so that it will not hinder coordination among different stakeholders

Step 3 – Develop SOPs



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- A SOP is a written document that describes the **actions to be taken in a system** or **process**.
- A SOP describes each individual activity in a sequence of activities, documenting **who does what, when, where, and how** for each activity.

Source: IOC Manuals and Guides, 76

“A description and **procedure on agreed steps** by institutions/agencies/groups/teams used in coordinating **who, what, when, where and how** for tsunami early warning and response”*

*From Indonesian Local SOP Workshops: Capacity Building for Development of Local SOPs for Tsunami Early Warning and Response. 2006-2007

- All warning and response systems require SOPs. In case of tsunamis **rapid evaluation, warning, and response is essential** to save lives.
- SOPs are “living documents” and should be developed, practiced and modified as necessary

Step 2 – Develop Response Plan

TERP should incorporate public warning arrangements and procedures that apply. Emergency management agency should evaluate tsunami information received from NTWC and decide on appropriate actions. Significant challenge associated with tsunami warnings is decision-making about evacuations

How is NTWC warning received by the local emergency management agency (LDMO)?

Who evaluates NTWC warning information and **takes decision** on appropriate action? **Who decides on evacuation?**

Who will process and disseminate official warnings to the local communities?

Warning templates need to be developed to allow for quick dissemination

Who will receive warning messages from the local LDMO?

What kind of **communications systems** are already in place and will be used?

Who can hear or read the alert?

How are people who cannot hear or read the alert notified?

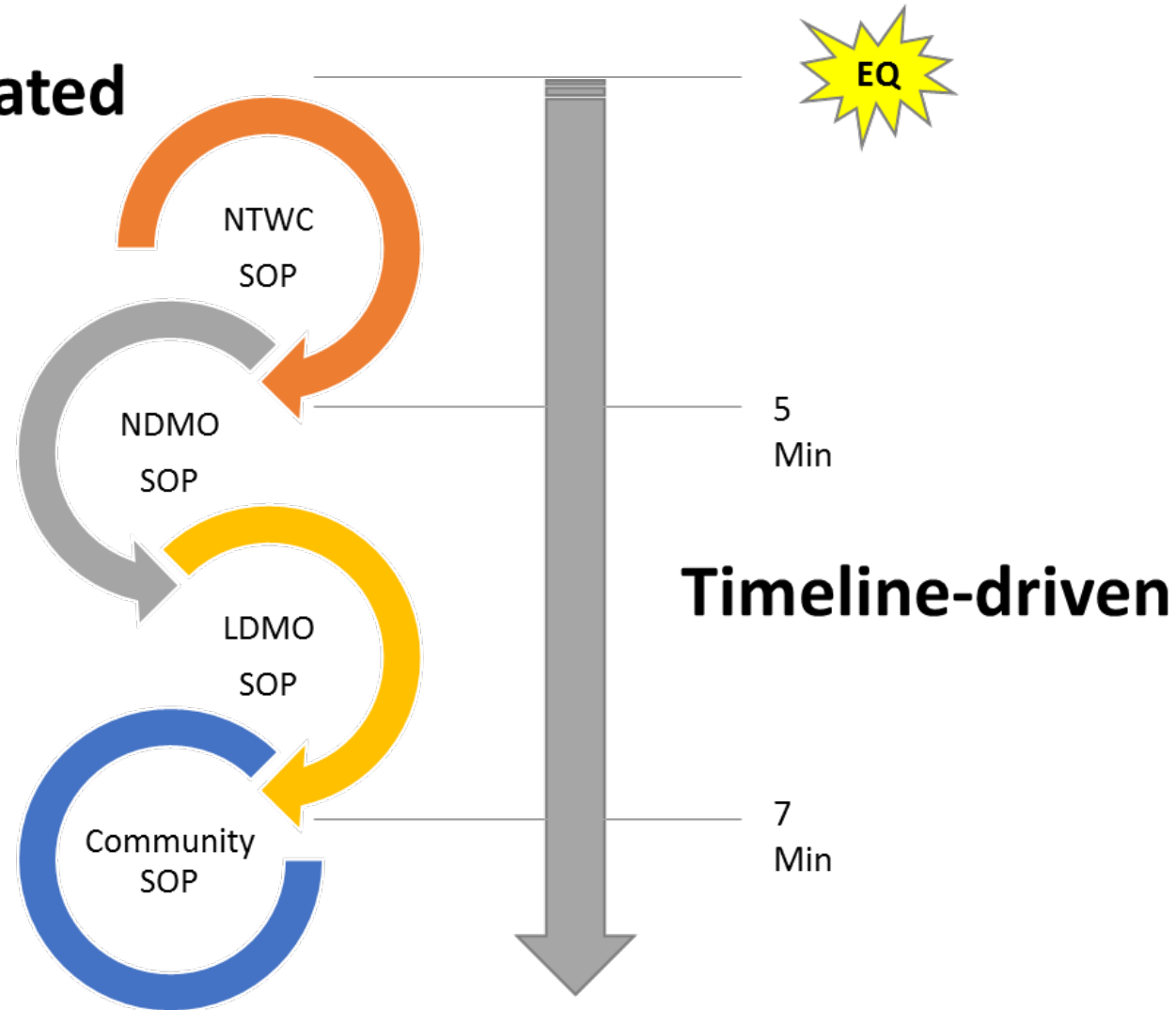
Step 3 – Develop SOPs



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Integrated



Step 3 – Develop SOPs

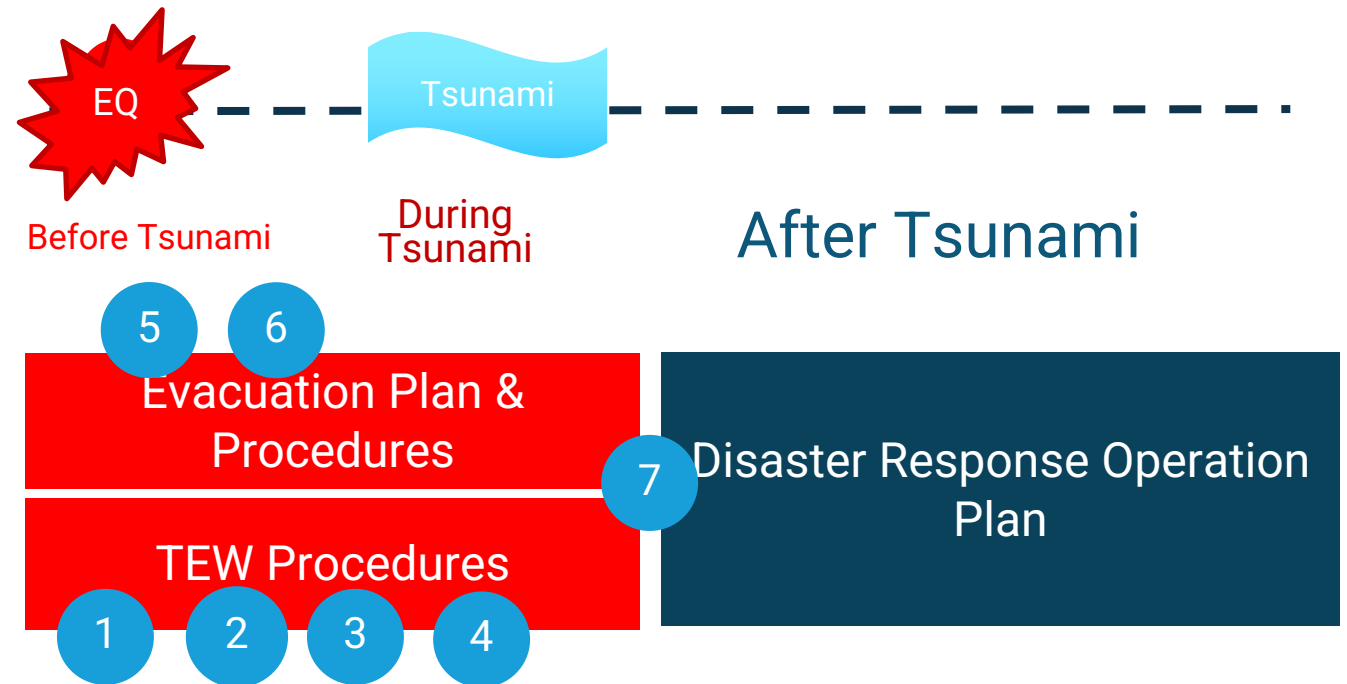


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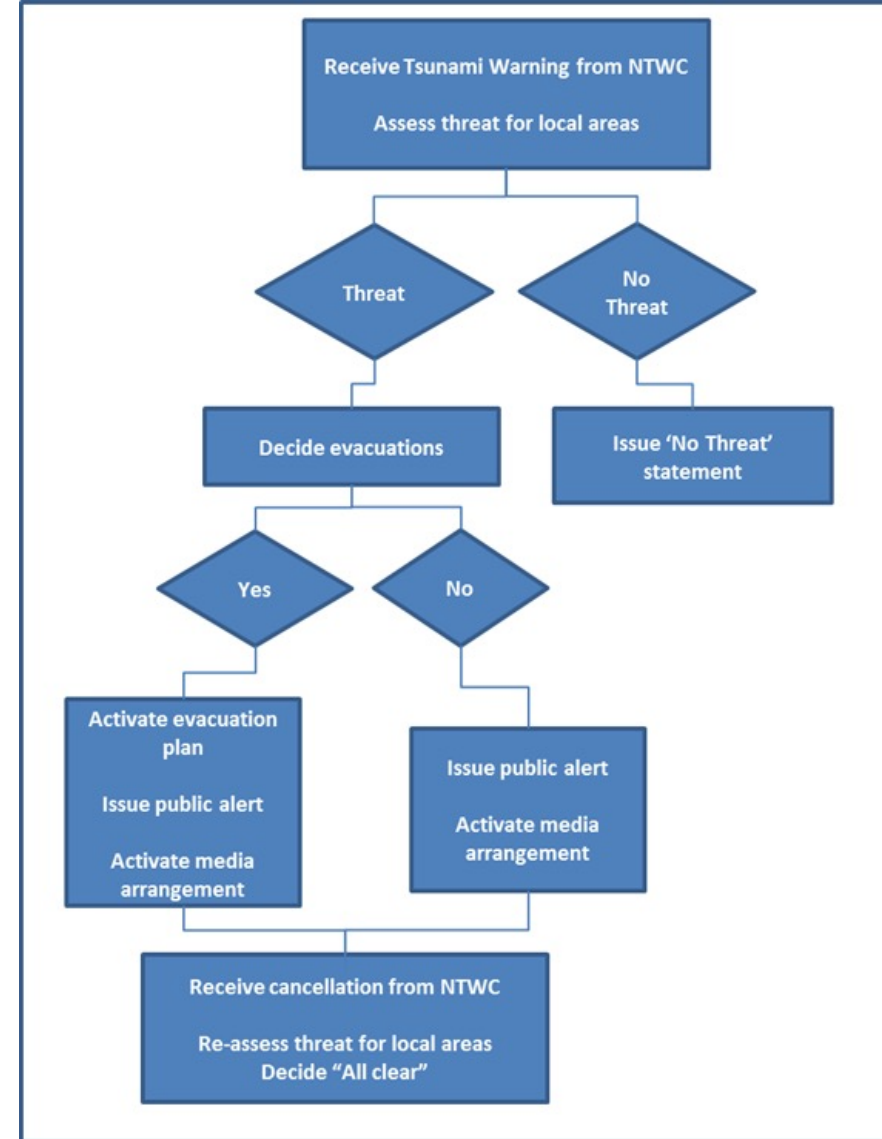
At local level, SOPs for

1. Receipt of warnings and cancellation messages from NTWC
2. Evacuation decision making
3. Public alerting
4. Media arrangements
5. Support and manage evacuations
6. Traffic management
7. All clear and safe return



Step 3 – Develop SOPs

Example of simplified flow chart for tsunami response at local level



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Step 4 – Develop Public Awareness



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Local or traditional knowledge

- **Powerful tool** to support scientific knowledge in community preparedness, but **will not be enough to ensure** an effective response

Community needs

- Awareness activities and material should be **tailored to country or area-specific community needs**. Geography, demography, language, culture, religion will influence the awareness approach

Coordination and collaboration

- Essential that different agencies work together

Public policy

- Formal tsunami education and awareness programme able to **sustain itself over political cycles** can be highly effective

A multi-faceted approach

- Awareness programme should use a **variety of formal and informal education and awareness-building** and preparedness activities such as exercises and drills

Step 4 – Public Awareness – What to Include

Basic information about tsunami hazards, with specific reference to country or area. Should be supported by information on historical tsunami events and their impacts, including local and/or traditional knowledge of past events.

Country's tsunami warning system – where will warnings come from, how and when will they be communicated and what information will they contain.

Tsunami evacuation arrangements – what evacuation zones and routes are, how instruction to evacuate will be issued, what to take, where assembly sites are, and where to listen or look for all-clear.

Understanding **natural warning signs** and how to respond (self-evacuations).

Tsunami **safety rules** (for people on land, in the water and in small boats).

Examples

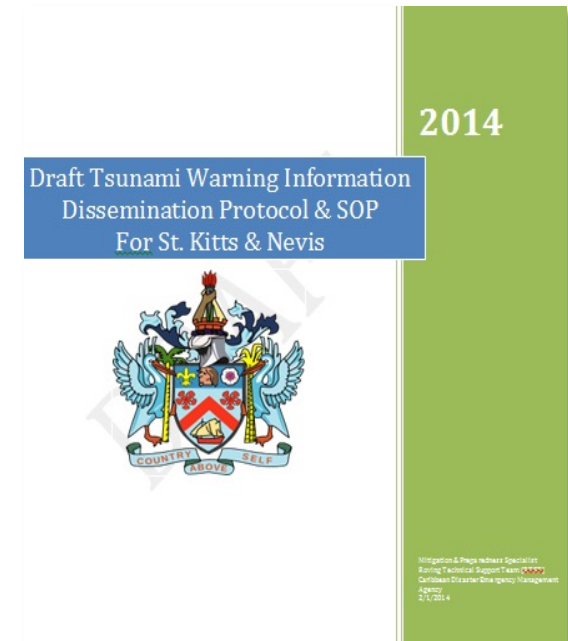
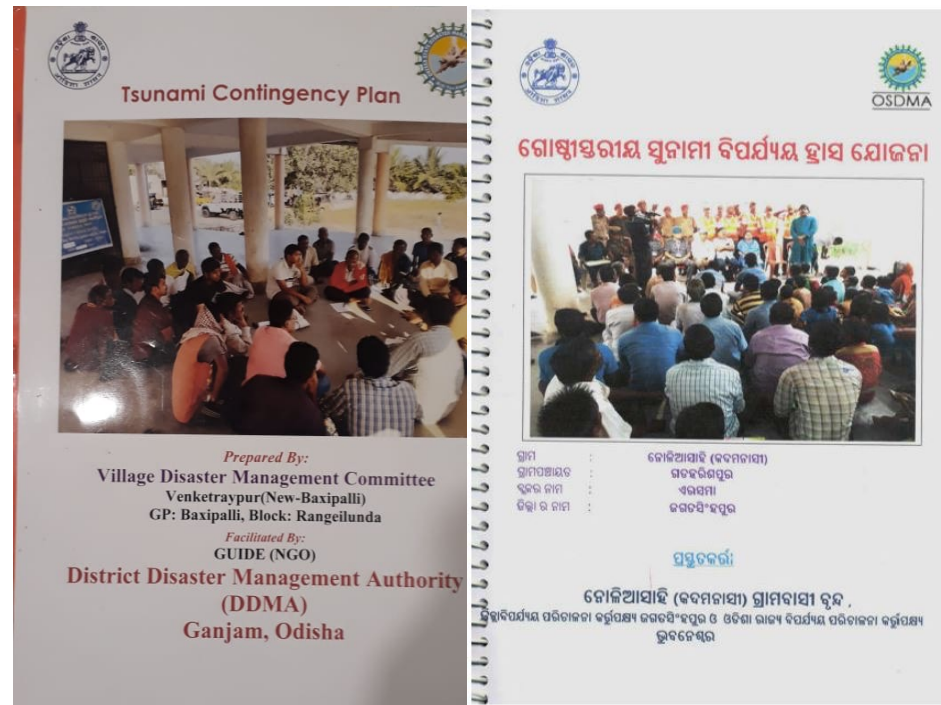


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*Cedeno, Honduras
Emergency Response Plan, 2017*



*Draft Tsunami Warning
Information Dissemination
Protocol and Standard
Operating Procedures (SOP)
for St. Kitts and Nevis which
satisfies RESP-1*



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Response Indicators – How to achieve, challenges and solutions

3.4 Capacity (National, Local, Community) RESP 1 and 2

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RESP-2:

The capacity to manage emergency response operations during a tsunami is in place

Introduction

In addition to having Emergency Operations Plan, **communities** should have **means to ensure that community officials can execute tsunami warning functions** (public notifications) and response functions based on **predetermined SOPs** related to tsunami warning information and/or tsunami incidents. May involve use of **Emergency Operations Centre (EOC)**.



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*Emergency Operations
Centre, Kos, Greece*



*St. Kitts Emergency
Operations Center*



*National EOC, Oficina
Nacional de Emergencia del
Ministerio del Interior
(ONEMI), Chile
(Courtesy of ITIC)*



Capacities needed to manage emergency response operations during a tsunami



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1. People **who will carry out** emergency response operation

- SOP
- Knowledge
- Skill

2. Facilities and Infrastructures **to implement emergency response operations**

- Tools
- Equipment
- Logistics

Arrangements needed to manage emergency response operations during a tsunami



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Communities should have means to **ensure tsunami warning and response functions can be executed** by designated community officials. May include activation of Emergency Resp Centre (ERC)

1. Has **24-hour operations / plan** to activate ERC for tsunami incidents
2. Has **warning reception and dissemination** capability
3. Has **ability and authority** to activate the public alert system
4. **Maintains** ability to communicate within and across jurisdictions
5. **Maintains** communications links with NTWC and/or DMO
6. Has capacity to manage evacuations and respond to consequences of a tsunami

Arrangements needed to manage emergency response operations during a tsunami



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- ✓ **The ERC roles that must be fulfilled are:**
 - **Control:** a local controller should be in charge and coordinates response activities
 - **Operations:** the appropriate and relevant agencies and organisations should be activated
 - **Planning and Intelligence:** to conduct threat analysis and to identify gaps and shortfalls
 - **Finance and Administration:** to keep track of costs and ensure continuity of operations

Capacities needed to manage emergency response operations during a tsunami

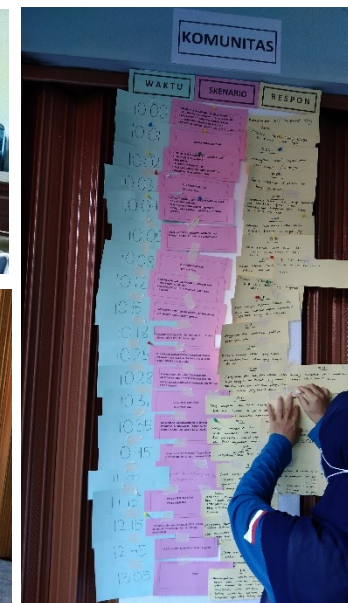
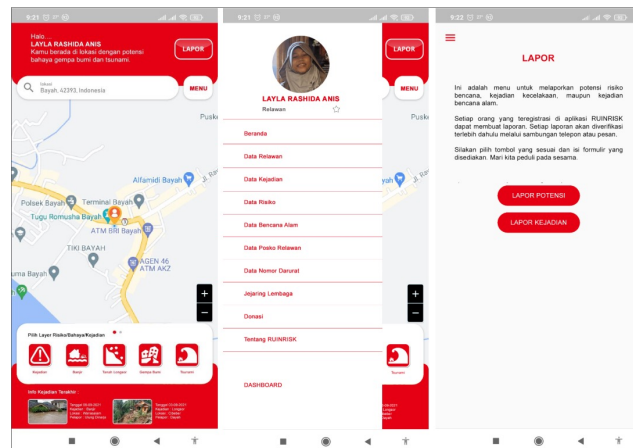
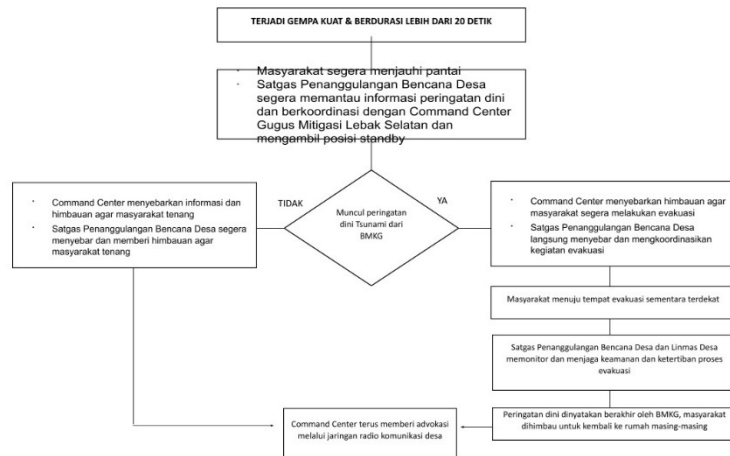


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Continuous capacity building, training, and exercises

SOP PERINGATAN DINI DAN EVAKUASI GEMPA TSUNAMI



Capacities needed to manage emergency response operations during a tsunami



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Emergency Operation Team 24/7



Capacities needed to manage emergency response operations during a tsunami



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Pangandaran Village Alert Car



Smart Poles at four locations



Command Centre



TAGANA Pangandaran Disaster Preparedness Equipment

FKDM Personnel Training with BPBD and BASARNAS





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2022 - 2026

THANK YOU

Vinaka Vakalevu

For more information:

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