National Report
Japan

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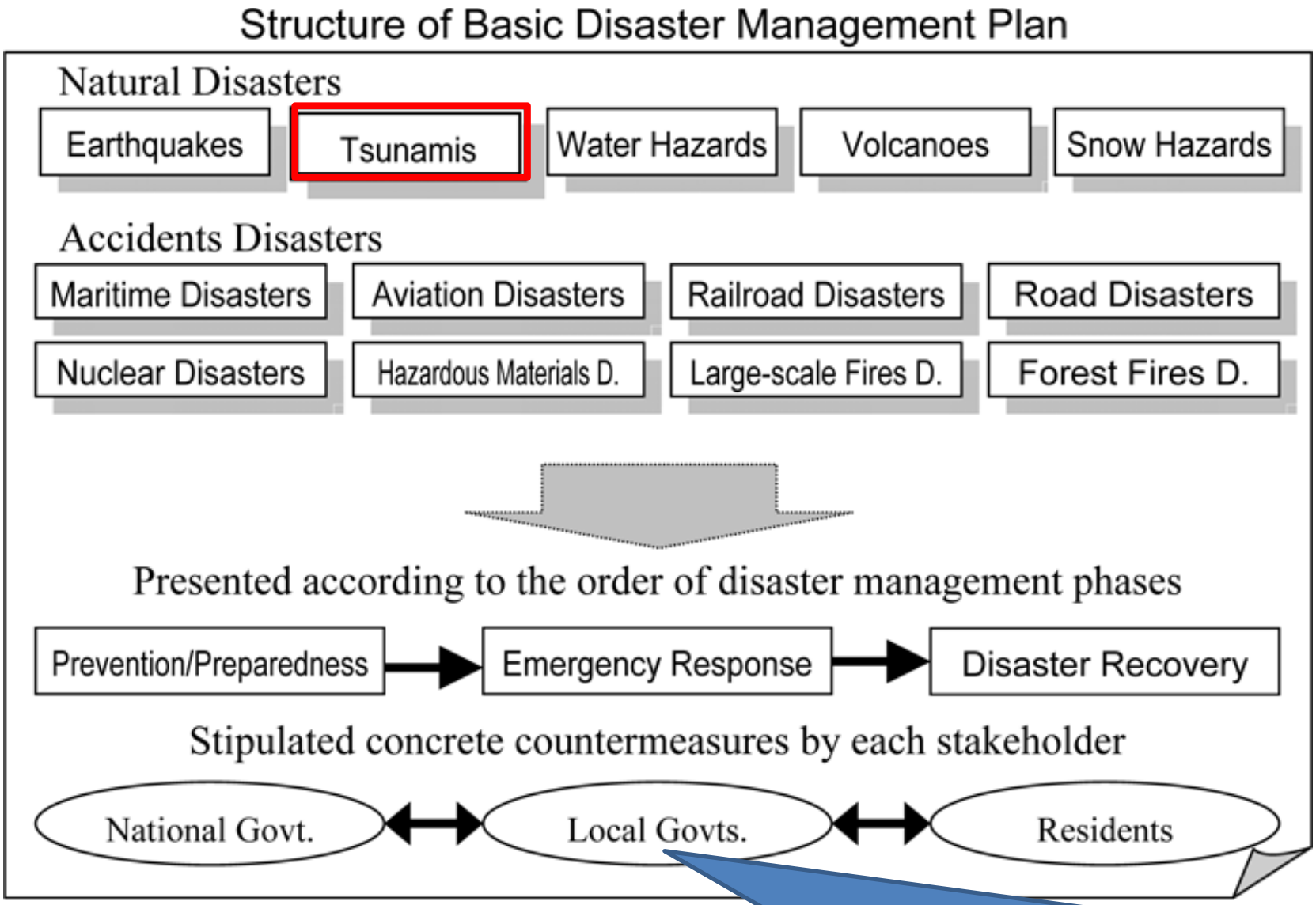
Japan Meteorological Agency (JMA)

Basic Disaster Management Plan



Each local government has its own Disaster Management Plan based on the Basic Disaster Management Plan.

World Tsunami Awareness Day

Shake out drill
(Tokushima City, Tokushima Pref.)

Drill for evacuation shelter establishment
(Tokushima City, Aichi Pref.)

Tsunami evacuation drill
(Nachikatsuura Town, Wakayama Pref.)

Workshop for disaster awareness and preparedness (Naha City, Okinawa Pref.)

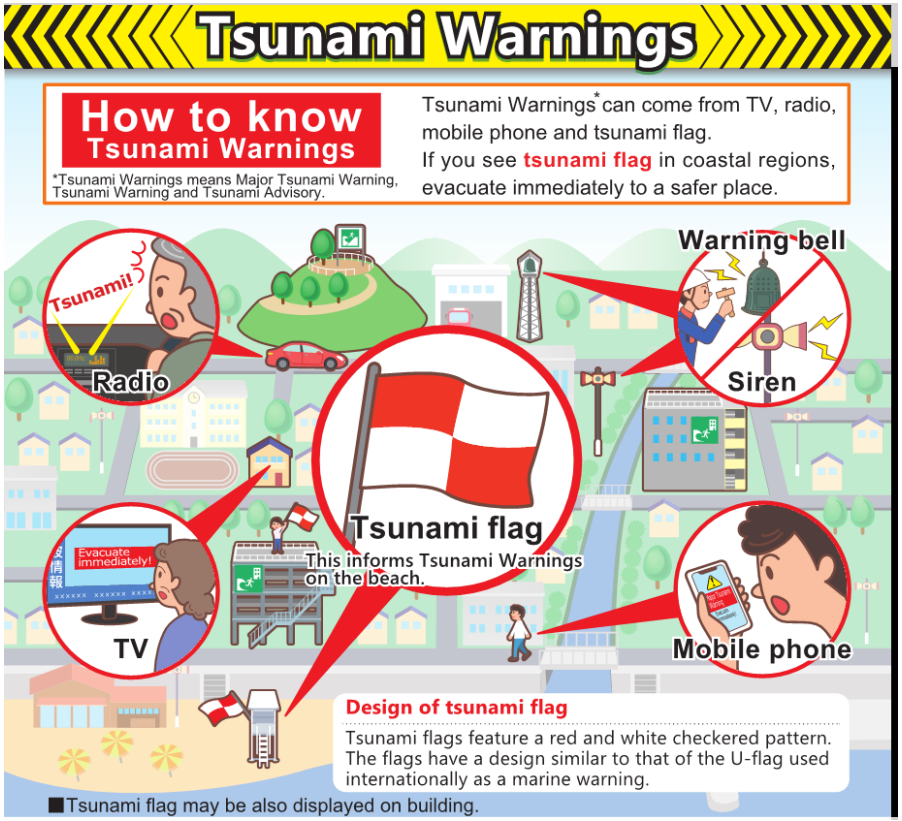
World Tsunami Awareness Day, 5 November, is the Tsunami Disaster Prevention Day in Japan.

The poster reads, "Faster, higher! Evacuate immediately to higher and safer ground".

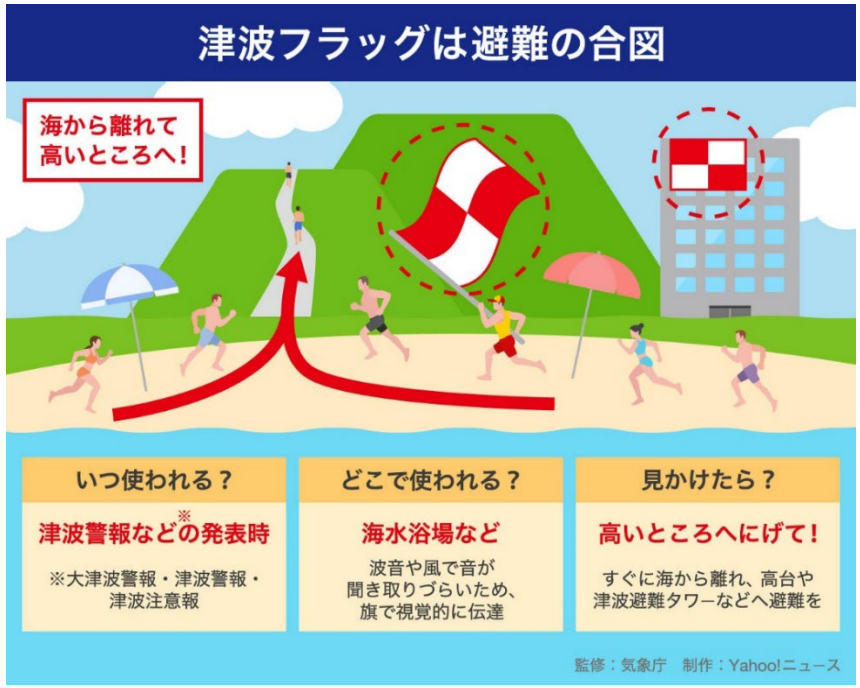
In 2022, about 1.95 million people participated in the tsunami drills

Tsunami Flag

JMA has established the Tsunami Flag as a means of visually communicating tsunami warnings.
JMA is working to promote tsunami flag to coastal municipalities throughout Japan.



Leaflet in English is also available on the JMA HP



This picture is produced by Yahoo News under the supervision of JMA

Operations for volcanic tsunamis (1)

Case of a tsunami or barometric pressure caused by a large-scale volcanic eruption far from Japan is observed.

Large eruption occurred

a large-scale eruption with an eruption altitude of about 15,000 m or more was observed.

Confirm clear change at brightness temperature on satellite image

Observe tsunami at overseas observation sites

(as needed)

Observe the tsunami at domestic site

Observe the tsunami in various domestic sites

Information #1

・Large-scale eruption

・the estimated arrival time of a tsunami based on velocity of Lamb wave, etc.

Information #2

・Observation of tsunami overseas

・Clear barometric pressure wave analysis with satellite images

(Isuring information as needed)

Press Release

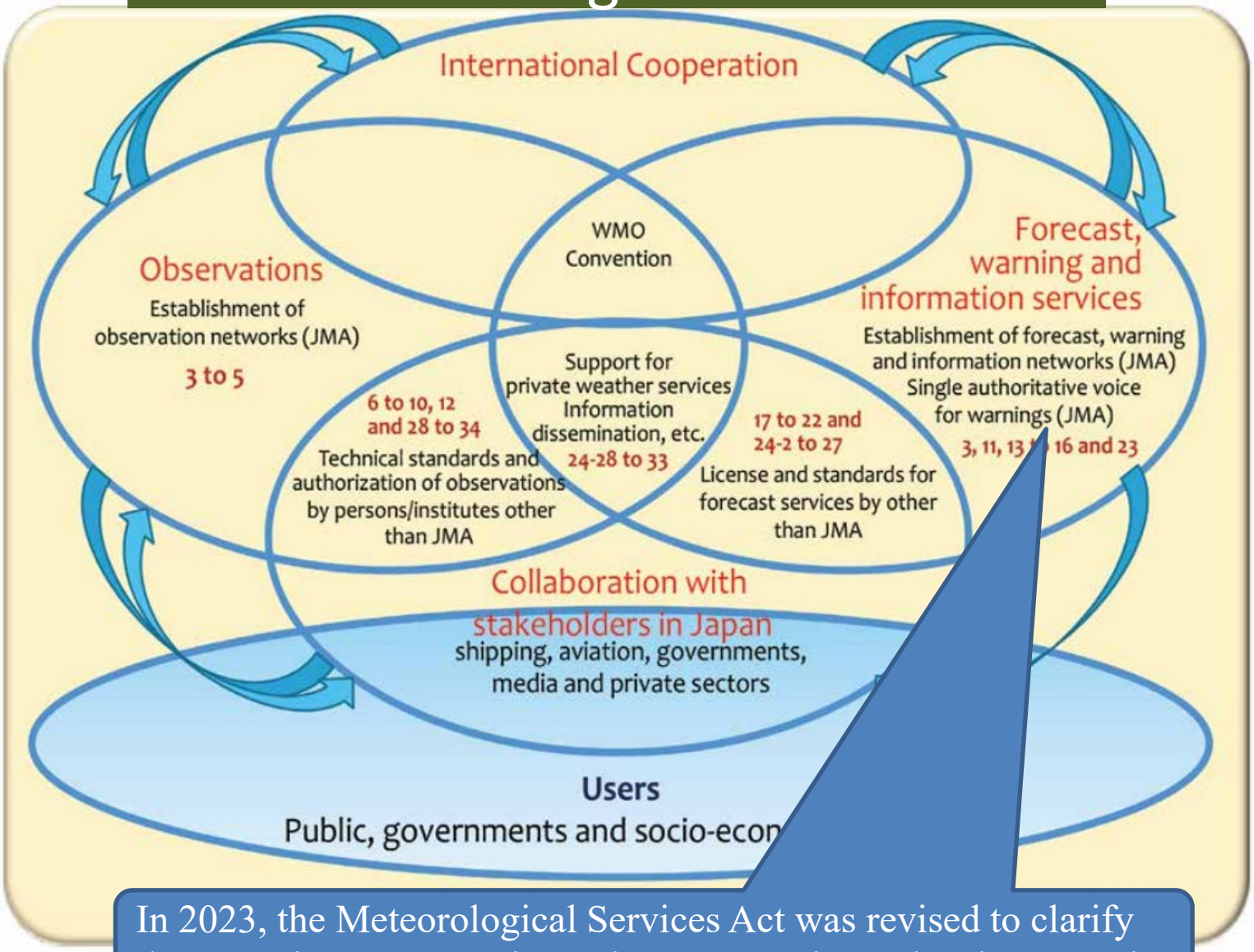
Explain the phenomena that are occurring, similar cases, scenarios for timing of information and precautions

Tsunami warning/advisory
(for observed area)

Tsunami warnings /advisories
(for each observed areas)

Operations for volcanic tsunamis (2)

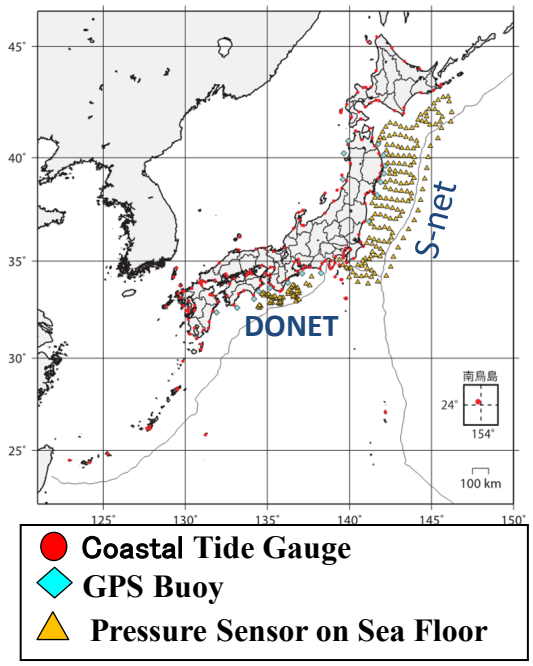
The Meteorological Services Act



In 2023, the Meteorological Services Act was revised to clarify that JMA issues tsunami warnings concerning volcanic tsunamis.

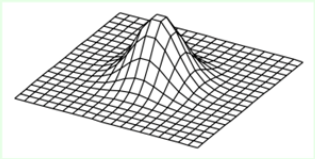
Tsunami Forecasting based on Inversion for initial sea-Surface Height

tFISH (tsunami Forecasting based on Inversion for initial sea-Surface Height) [Tsushima et al. 2009, 2012, JGR] , has been used operationally to update tsunami warnings since March 2019.



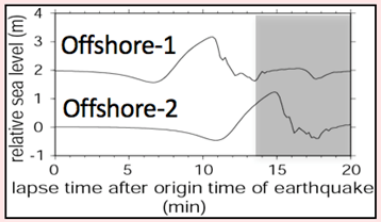
Tsunami waveform inversion
using origin time & epicenter location based on seismic analysis

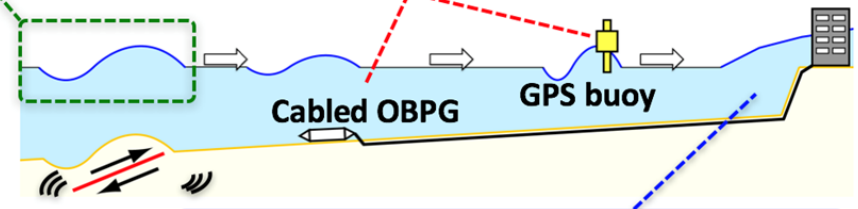
Initial sea-surface displacement distribution



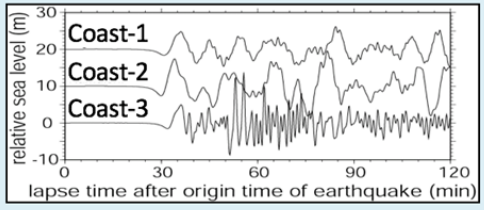
Waveform synthesis
by linear superposition of pre-computed Green functions

Offshore tsunami waveform data
(observed until time of forecast execution)





Tsunami waveform near coast



- ✓ **Permanent seafloor deformation is taken into account in the inversion** (Tsushima et al. 2012, JGR)
- ✓ Origin time and epicenter based on seismic data are used in tFISH.
- ✓ Analysis can be done without information of earthquake fault geometry and magnitude.

Technical Cooperation (1)

- Nicaragua - Project for Strengthening of Capacity of the Central American Tsunami Advisory Center(CATAC)

Technical Cooperation (2)

- Vanuatu - Project for Enhancing the Capacity of Issuing Earthquake, Tsunami and Storm Surge Information

- Indonesia – Project for Capacity Development on Operation of Earthquake and Tsunami Analysis and Warning Dissemination

Thank you