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Solomon Islands Tsunami Warning Arrangements



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NOAA/NCEI WDS Tsunami Source Events

Effects of the Tsunami:

- Very Many Deaths (≥1000 or more deaths): Large solid purple circle
- Many Deaths (≥100 to 999 deaths): Medium solid purple circle
- Some Deaths (≥1 to 99 deaths): Small solid purple circle
- None Deaths or Unknown: Small open circle

Plate Boundaries (Based, 2003):

- Convergent: Solid line with triangles
- Divergent: Dashed line with triangles
- Transform: Solid line with circles

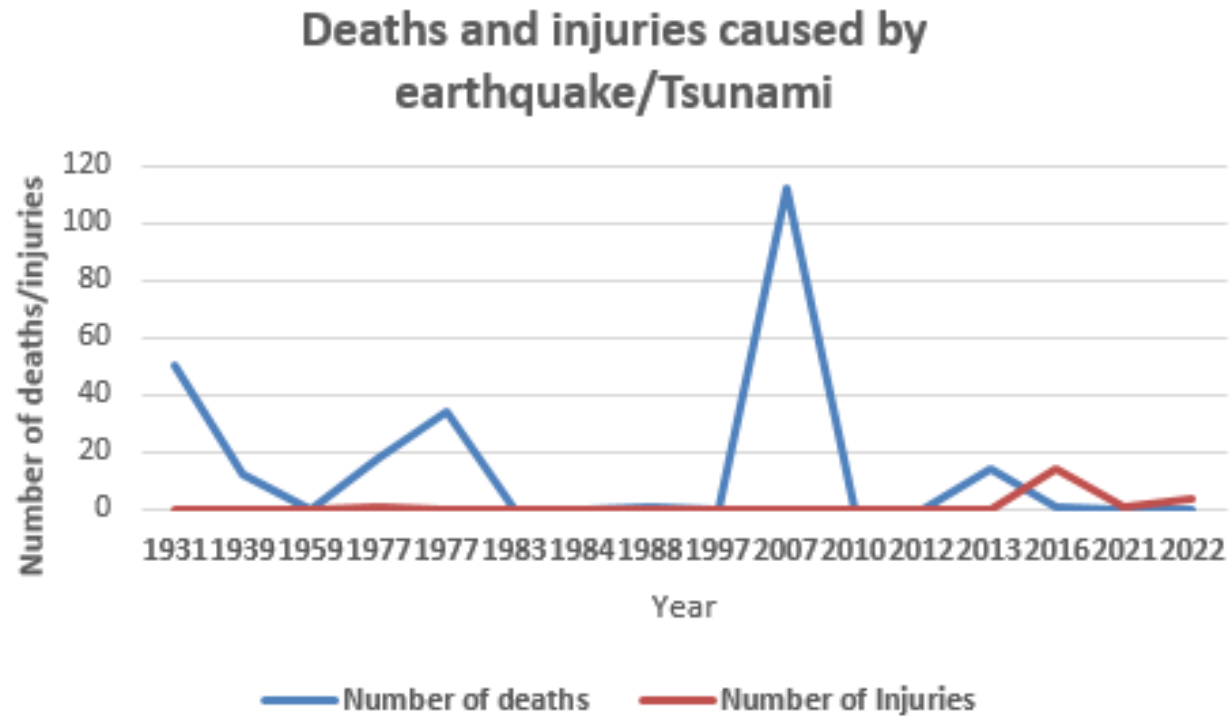
Other Symbols:

- Earthquake: Solid circle (size indicates magnitude: 6.0, 6.5, 7.0, 7.5, 8.0, 8.5, 9.0)
- Volcanic Eruption: Solid triangle
- Landslide: Solid square
- Unknown Cause: Question mark

Scale: A single arrow of a pair represents local velocity of plates in cm/yr. 0-50, 50-100, 100-150, 150-200.

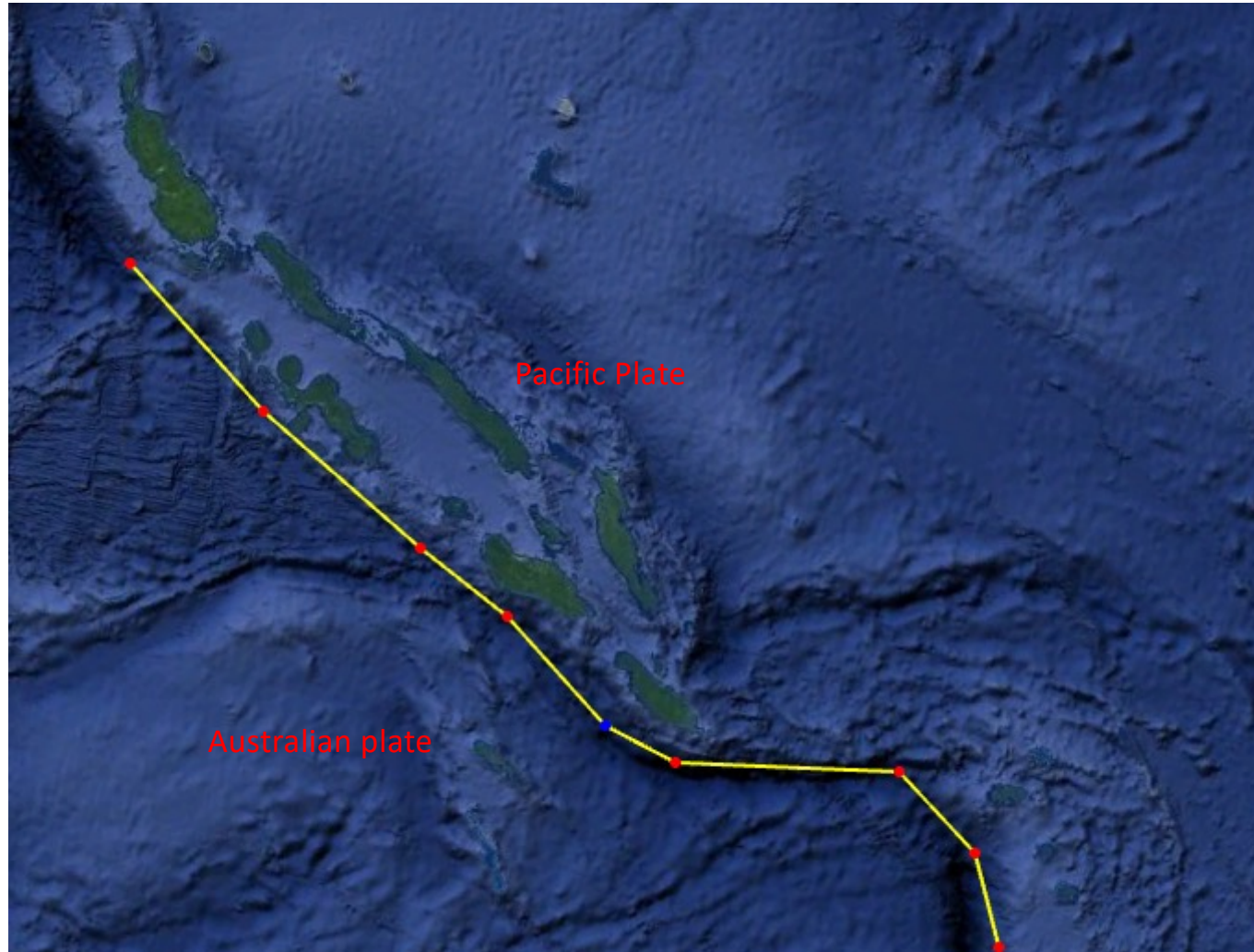
Historical Background of Earthquake/Tsunami in the SI

Date	Province	Magnitude	Impact	Number of deaths	Number of Injuries
3 rd October 1931	Makira	7.8	Tsunami/Major damage	50	0
30 th March 1939	Guadalcanal	7.8	Tsunami/Moderate damage	12	0
17 th July 1950	Western (On land)	7.0	Major damage	0	0
20 th March 1977	Guadalcanal	6.7	Tsunami/Major damage	34	0
21 th March 1977	Guadalcanal	7.5	Tsunami/Major damage	18	1
1 st March 2007	Western	8.1	Tsunami/Major damage	112	0
6 th February 2013	Temotu	8.0	Tsunami/Major damage	14	17



Source: <https://www.worlddata.info/oceania/solomon-islands/tsunamis.php>

Solomon Islands is sitting on two plate boundaries

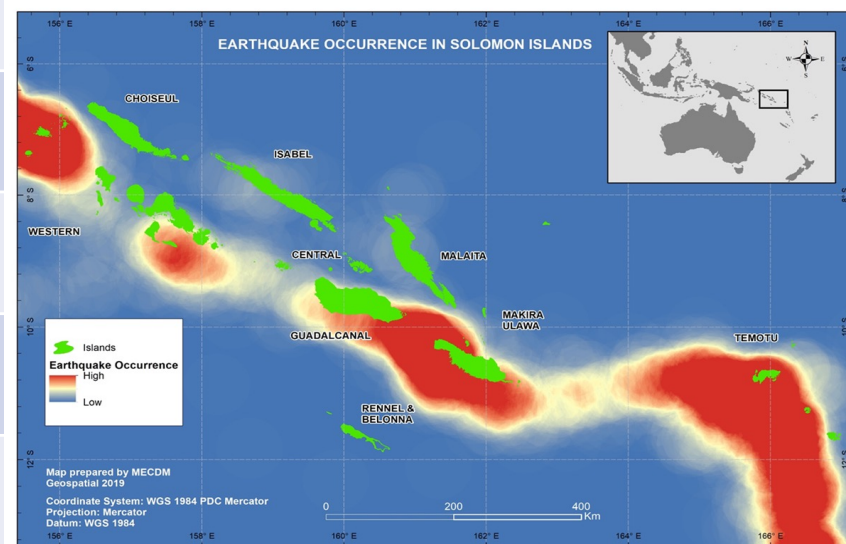
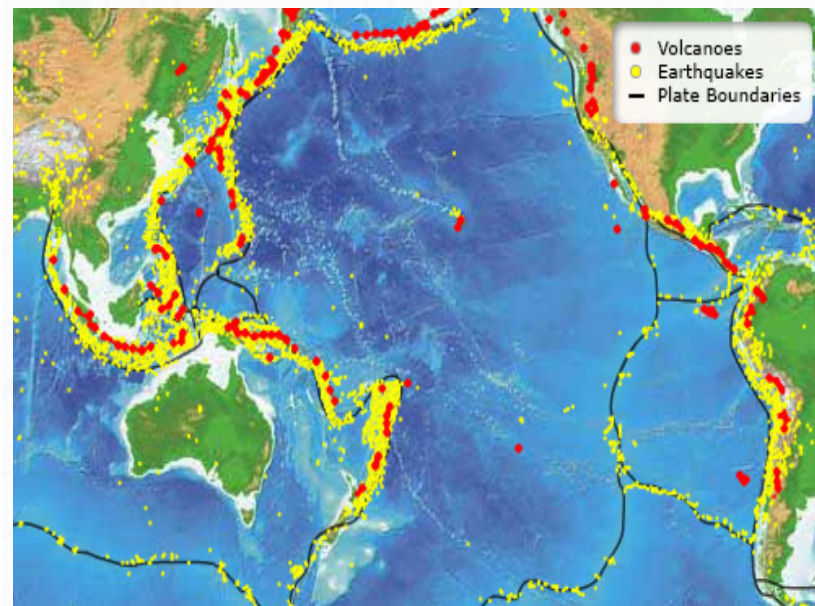




Common hazards and their risk levels for Solomon Islands

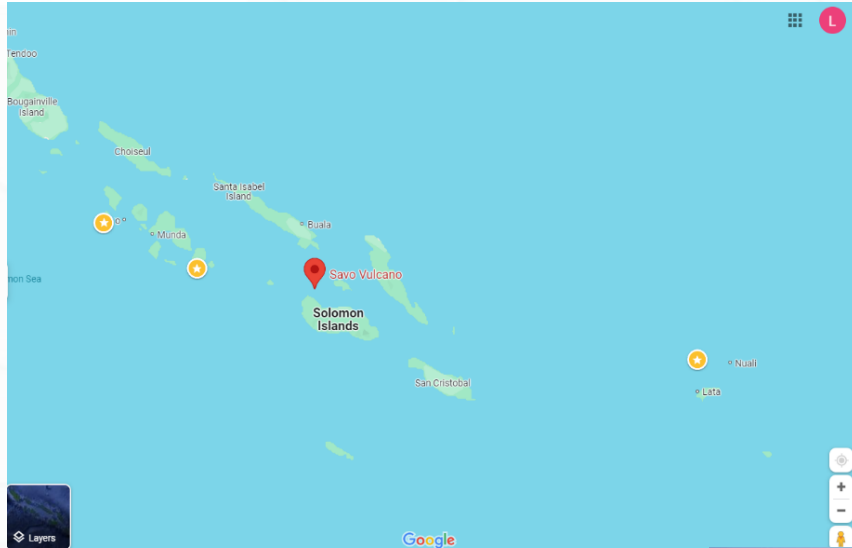


Hazards	Risk Level	Remarks
Cyclone	High	Season: Nov to April. At least 2/year
Rising sea level/Coastal surge	High	Affect low lying atoll islands 99% of Coastal Villages
River Flooding	High	
Tsunami	High	80 year history - SI experienced 19 events, highest mag 8.1
Earthquake	High	Situated on the Seismic belt
Landslides	High	Communities have been relocated
Drought	Low	1986/7 Experienced the worst drought
Volcanic Eruption	High	Savo, Simbo, Tinakula, Kavachi





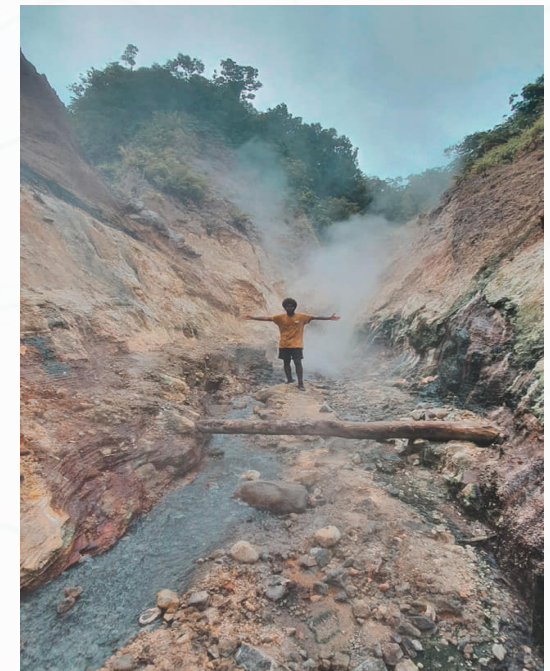
Solomon Islands in brief



- ☐ Population: <734,000 people
- ☐ Total of 9 provinces
- ☐ More than 1000 islands
- ☐ 3 volcanoes, 1 is a submarine volcano
- ☐ 3 tide gauges, only 2 are in operation
- ☐ 4 seismic stations, only 1 is operation



Tinakula Eruption



MetService
24/10/2017
Image from Solomon Islands
Meteorological Service

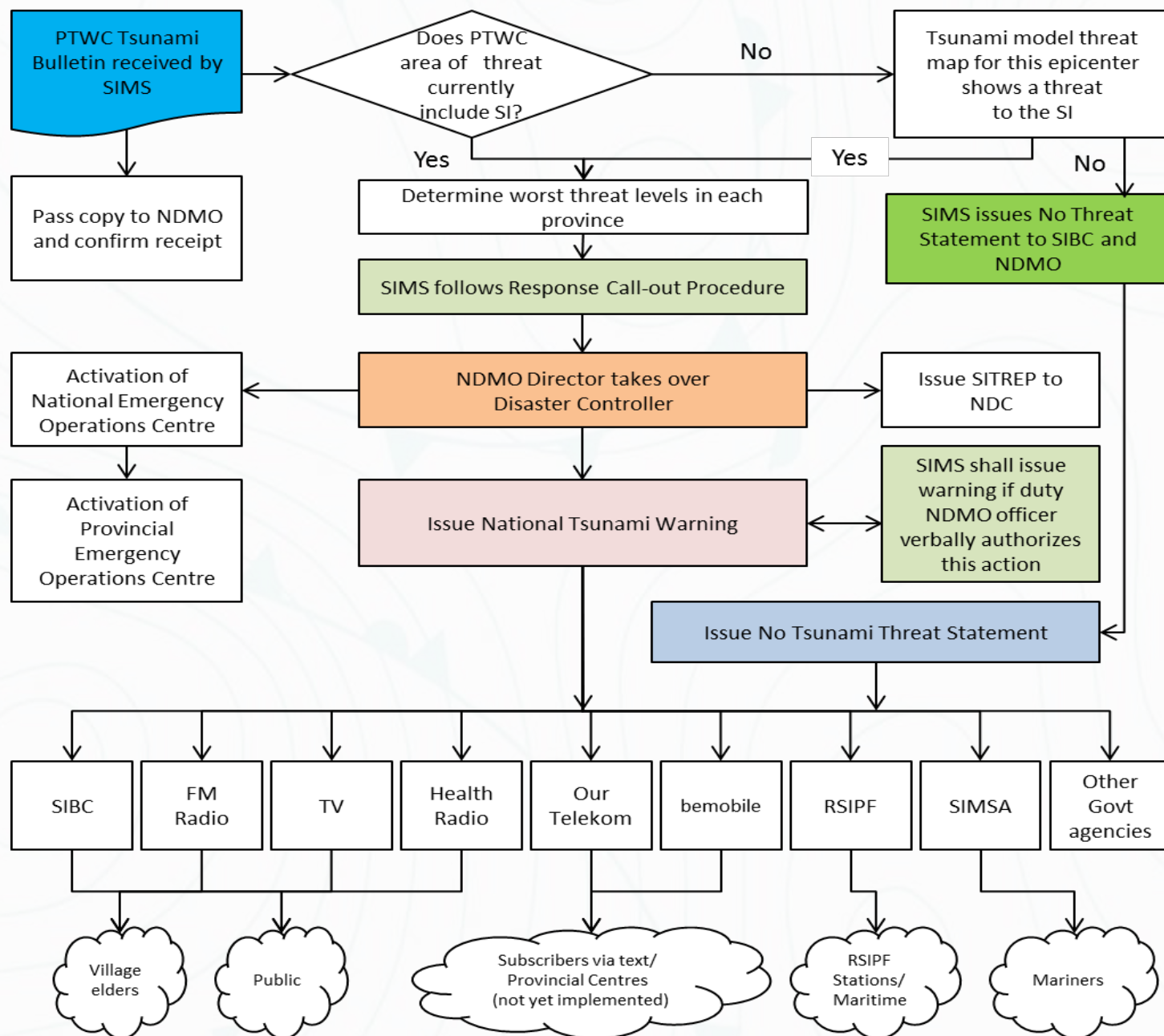
Source: Google maps and facebook pages



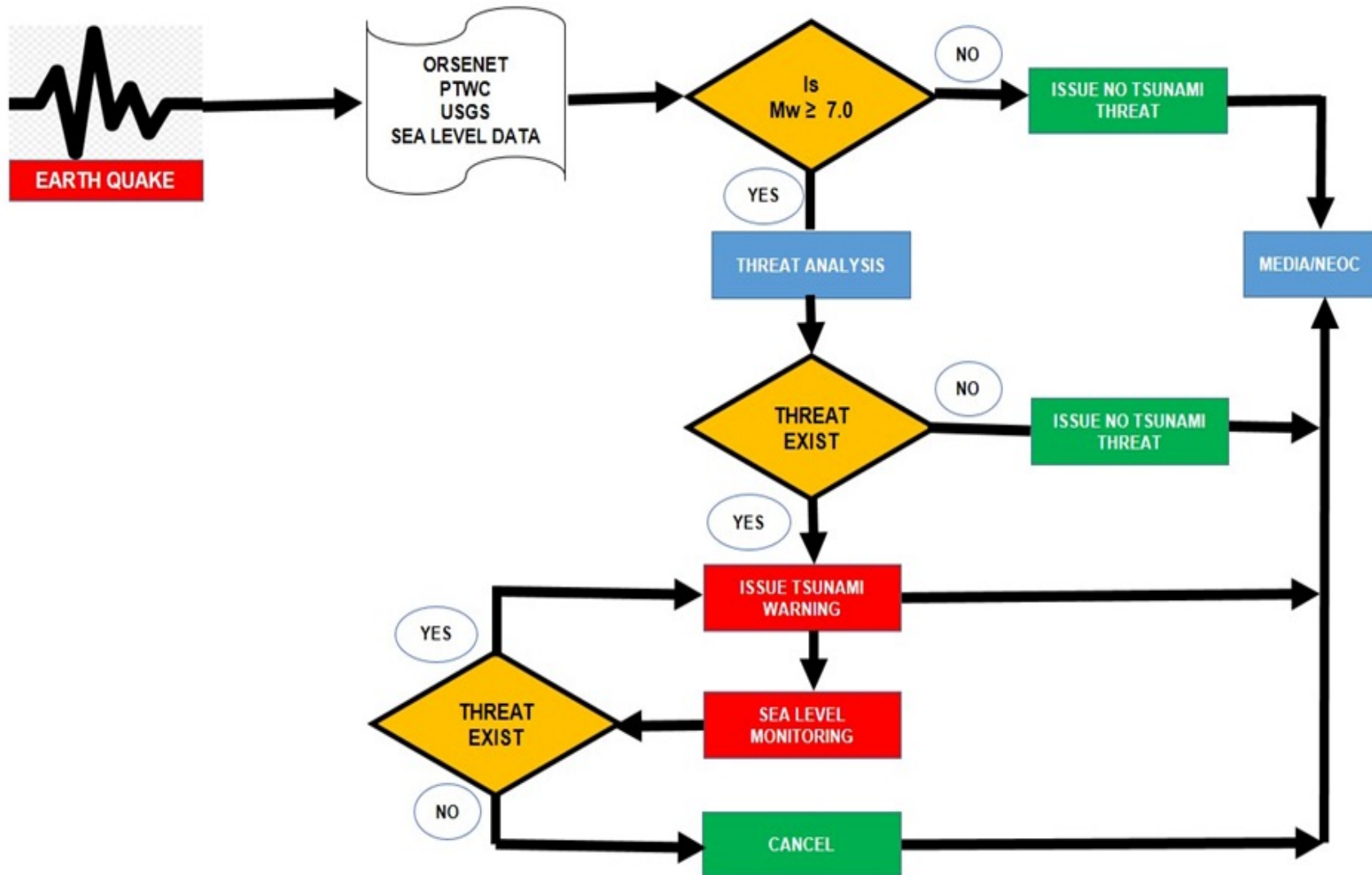
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Tsunami Warning Sub-plan



FLOW CHART FOR TSUNAMI WARNINGS:





Threat Analysis – Example Scenario 3

Using Tsunami Assessment Tool (MOST & TsuCAT)



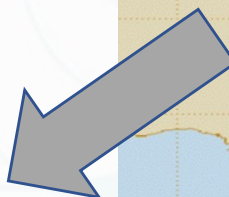
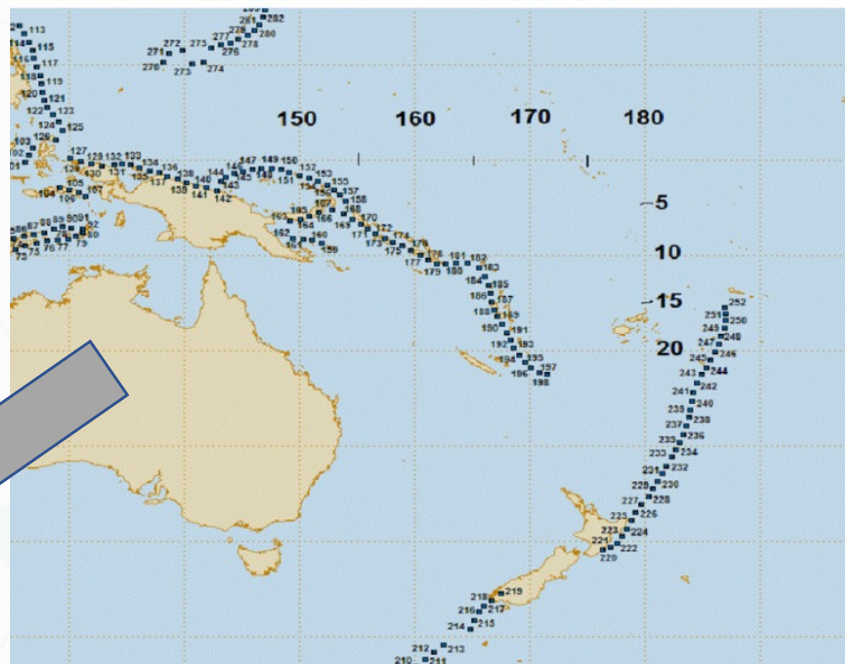
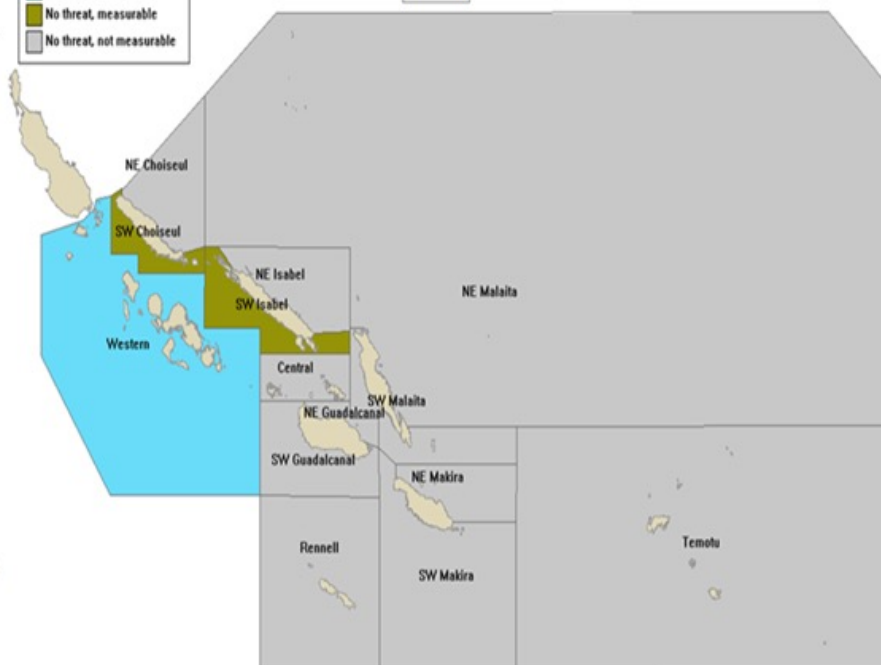
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MOST T2 Scenario = 172 magnitude = 7.3

- Destructive tsunami
- Dangerous rips and currents
- No threat, measurable
- No threat, not measurable

172
7.3



Geological Survey Division
Solomon Islands Government



Solomon Islands
Meteorological Services



National Disaster Management Office
National Disaster Council

TSUNAMI ADVISORY

MEDIA: PLEASE BROADCAST THIS INFORMATION IMMEDIATELY

TSUNAMI ADVISORY STATEMENT

Issued by the Solomon Islands Meteorological Service at _____

Orange Alert for coast of Western

A Tsunami Advisory is issued for Coast of Western Province and south of Choiseul...

STAY OUT OF THE WATER AND AWAY FROM THE SHORE.

Dangerous sea currents and waves will be experienced along the coast of..... Western Province and south of Choiseul.

An undersea earthquake of magnitude _____ occurred at _____ near _____ (Latitude _____ Longitude _____) This is approximately 87 km west of Honiara.

Next updates will be issued when new information comes in hand. For earthquake information and

Overview of Tsunami Warnings

Type of Message	Hazard Potential (Impacts)	Public Action Statement
No Threat statement Scenario 1	No threat and no measurable Very distant event for which hazard has not been determined	No action
Tsunami Watch Scenario 2	No threat but measurable Tsunami is Possible This is an alert level which may change once more information is known	Be prepared to act Stay tuned to local radio/TV
Tsunami Advisory Scenario 3	Dangerous rips and currents. Marine threat - Strong currents and waves dangerous to those in or very near coastal waters	Stay out of the water and away from the shore
Tsunami Warning Scenario 4	Destructive tsunami Marine & Land threat - Dangerous coastal flooding and powerful currents	Move to high ground or inland immediately
Cancellation	Threat passed	
All Clear	Issued by NDMO	



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Natural Warnings- Response to local tsunami

WHAT TO DO? SENSING A TSUNAMI



Tsunamis can be detected using our human senses.
Recognize a tsunami's natural warning signs.

FEEL

- Big local earthquakes may cause tsunamis.
- **FEEL** the ground shaking severely, or for a long time?

SEE

- Tsunami may be preceded by a rapid fall in sea level as the ocean recedes, exposing reefs, rocks, and fishes on the sea bottom.
- Tsunami often come ashore as a wall of water, and quickly flood inland.
- **SEE** an unusual disappearance of water, or oncoming wall of water?

HEAR

- Abnormal ocean activity, a wall of water, and approaching tsunami create a loud "roaring" sound similar to that of a train or jet aircraft.
- **HEAR** the roar?

RUN

- Don't wait for official evacuation orders.
- Immediately leave low-lying coastal areas.
- Move inland to higher ground.
- **RUN** if you see a tsunami coming!

TSUNAMI

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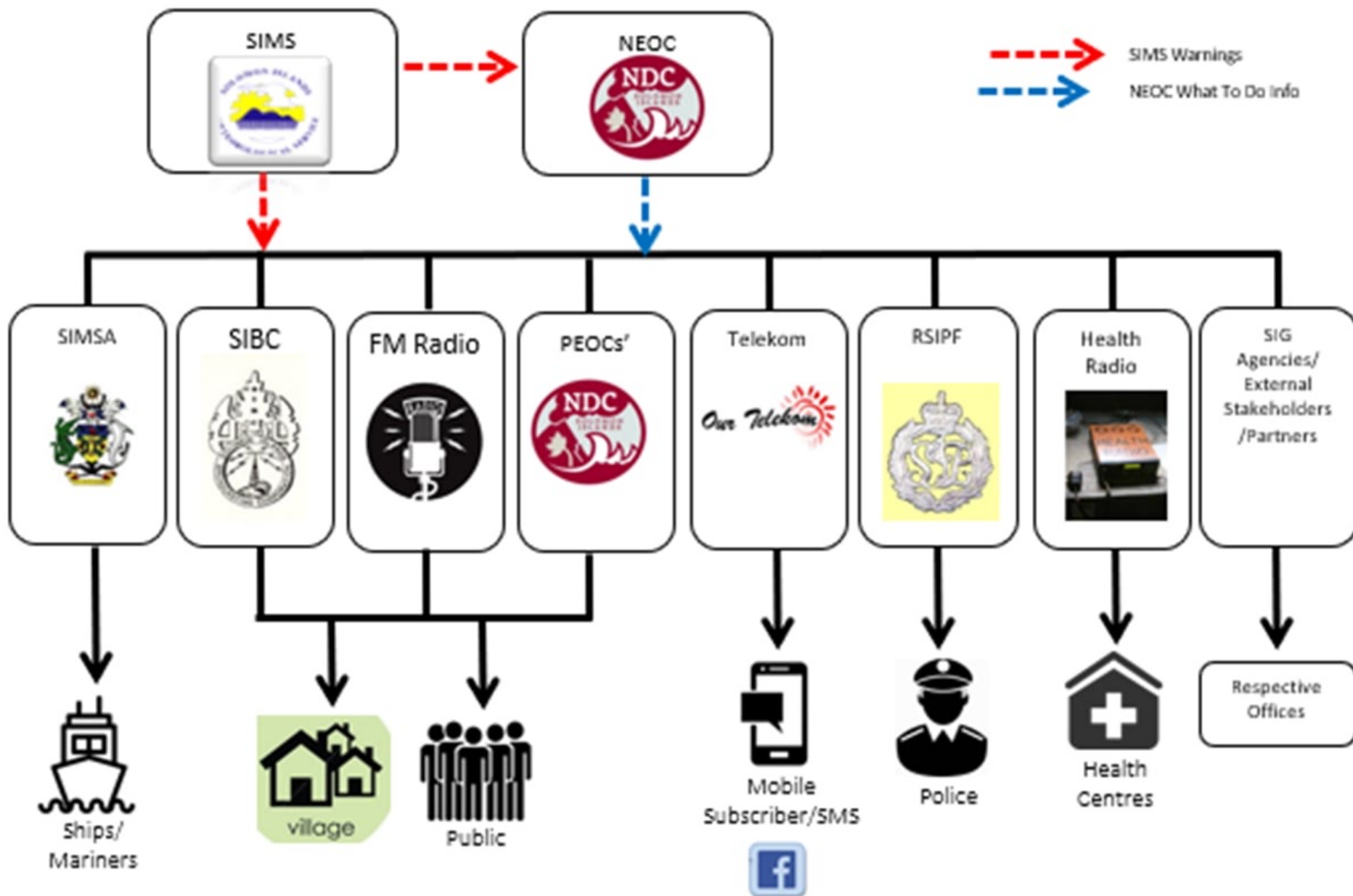


International Tsunami Information Center
A UNESCO/IOC - NOAA Partnership
E-mail: Itc.tsunami@noaa.gov
Web: <http://www.tsunamiaware.org>





DISSEMINATIONS





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Education and Awareness



- Tsunami awareness to schools
- Help schools establish School Disaster Response Plan
- Conducting awareness and established CBDRM plan through NGOs



Students grouped in their own class as they arrived at the safe area to allow head count to be conducted out easily by the class teachers



Students arrived at the safe area and briefed by the head teacher.



With Save the Children team to Isabel province, March 2024



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Education and Awareness



Image above: World met Day 2024



Students participating during World tsunami awareness day 2023



During our school visitation programs in one of the boarding schools



Awareness at the National University with the nursing students



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Tsunami Ready Program



**Tsunami Ready: Tsunami Ready
Capacity building, collaboration
and preparedness**



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Challenges /Limitations

- Delay of seismic data especially locally felt earthquake through CISN–(15-20 minutes varies with magnitude).
- Limited observation network- seismic and sea level stations.
- Limited communication coverage.
- No SMS.
- No local tsunami inundation model



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Aloha pō