

Progress Report on Tonga's Tsunami Early Warning System
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1. Tsunami Hazard and Vulnerability Assessment

- (1) Tsunami modelling for main island Tongatapu completed**
- (2) Still outstanding for the rest of Tonga**

2. Tsunami detection

- (1) ORSNET installed at Geological Survey Unit in 2015 for sharing of earthquake information. Anticipate installation at MET Office in 2 weeks time**
- (2) 12 tide gauges and wave detection units to be installed by the MET Office under the Pacific Climate Resilience Pilot (PCRP)**

3. Formulating of warnings

- ❖ **7 MET staff have attended the ITIC training in Honolulu.**
- ❖ **SOP for tsunami warnings and criteria based on the new tsunami warning products completed in October 2014 but needs to be reviewed after the recent Loyalty Islands Event**
- ❖ **Competency guidance needs development and competency assessment needed for staff**
- ❖ **VHF Radio Systems have been installed (Australia Government Funded) at GSU, MET, NEMO, AM Radio Tonga and 87.5 FM**

4. Dissemination of warnings and alerts

- ❖ **Primary Dissemination method – Radio Tonga AM Frequencies**
- ❖ **7 Tsunami sirens installed around Tongatapu managed and controlled by NEMO/MET Office**
- ❖ **1 siren installed on the Island of Mounga'one (UNESCO/IOC Pilot) with 1 more to be installed at Pangai (Ha'apai capital)**
- ❖ **AM Radio transmission problematic to the northern islands of Niuafuou and Niuatoputapu**

5. Community understanding & response

- ❖ Tsunami awareness campaign has been completed by NEMO and MET at schools and villages in the inundation zone in Tongatapu and for low lying villages in Ha'apai, Vava'u and 'Eua main islands**
- ❖ TV and Radio awareness campaign are done every time after there is a warning event.**
- ❖ Tsunami evacuation signage has been put up in Tongatapu and Ha'apai by NEMO with NZ Government Assistance**
- ❖ On February 2015 a tsunami Exercise completed at Mounga'one Island and a tsunami and tropical cyclone awareness pamphlet and developed by the MET Office (UNESCO/IOC support). Another 2000 copies are to be printed and distributed to households shortly.**

ACTIVITIES & RESPONSIBILITIES

❖ Detection

- ❖ Geohazards Section, Tonga Geological Services (TGS), Ministry of Lands, Survey and Natural Resources (MLSNR)

❖ Warning

- ❖ Tonga Meteorological Services (TMS), Ministry of Energy, Information, Disaster, Environment, Climate Change and Communication (MEIDECCC).

❖ Response

- ❖ National Emergency Management Office (NEMO), Ministry of Energy, Information, Disaster, Environment, Climate Change and Communication.

❖ Mitigation Activities

- ❖ Evacuation Plans (Routes), TGS, TMS, NEMO
- ❖ Relocation Strategy (National Spatial Planning Authority)

Future works to remedy Gaps

- ❖ **Joint Met/NEMO Office under construction to be completed in 2018 (USD3M)**
- ❖ **Tonga Seismic Network to be upgrade under Pacific Resilience Project (PREP)**
- ❖ **Alert System for Tsunami warnings to be implemented by Japan Grant Aid in 2018 (includes FM Radio broadcast like NOAA weather Radio and radio triggered sirens in strategic locations)**
- ❖ **Automatic switch to control the AM Radio transmitter to be installed under PREP project at the new joint MET/NEMO Office**
- ❖ **GTS communication link to be installed under PREP**
- ❖ **Tsunami competency and readiness Pilots to be proposed to PREP**

Future works to remedy Gaps

- ❖ **National exercise planned for 2017 (Dates to be confirmed)**
- ❖ **MET Office to order evacuation from a local tsunami currently being discussed under our new METEOROLOGY BILL 2016.**
- ❖ **Glossary of tsunami terms to be translated into Tongan language**
- ❖ **Looking to legislate control over communication systems under the Meteorology Act for warning messages to be priority in all dissemination systems**
- ❖ **Investigate courses needed to fulfil competency of warnings staff**
- ❖ **Radio Operators certificate training needed for NEMO, GSU and Radio staff**