



Fiji NTWC Post Event Brief

3, February, 2022

**Update of the Hunga-Ha'apai,
Tonga Eruption Event and
Tsunami**

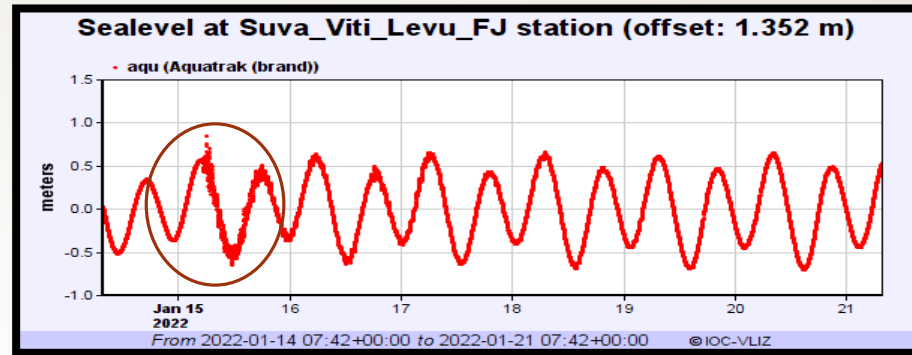
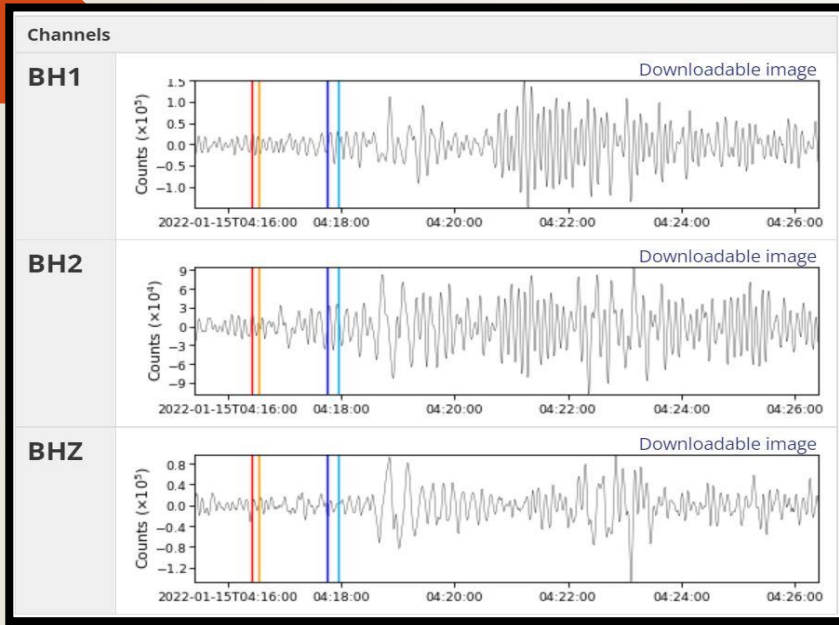
Timeline of Event / Action from the Observatory – 15 Jan, 2022

Time	Event / Action
04:27	Volcano Eruption in Tonga
04:35 – 04:45	<ul style="list-style-type: none">• Received phone call from MET in Lakeba as they could hear loud explosions• Monitoring team heard the loud explosion and noticed door shakings• Observation on tide gauges noticed changes on Nukualofa only• Observation on the seismic network detected no change
04:45	<ul style="list-style-type: none">• NTWC contacted Lakeba, Ono I Lau and Vatoa Islands and no response received• Another phone call received from Tubou Village on Lakeba Island. Villager heard the loud explosion and villagers started to move to high ground.• Continuous observation on tide gauges and seismic network
05:00	<ul style="list-style-type: none">• NTWC contacted Fiji MET for Tonga MET phone contact• Last tide gauge data received from Nukualofa
05:25	<ul style="list-style-type: none">• Contact was made to Nukuni village, Ono-i-Lau, wave started to past the high tide mark and villagers advised to evacuate inland or to high ground.
05:30	<ul style="list-style-type: none">• Contact was made to Vatoa Island- villagers observed abnormal waves and villagers advised to move to high ground• Contacted Lakeba Hospital. Doctor in charge had informed that villagers have moved to higher ground

Cont..>> Timeline of Event / Action from the Observatory – 15 Jan 2022

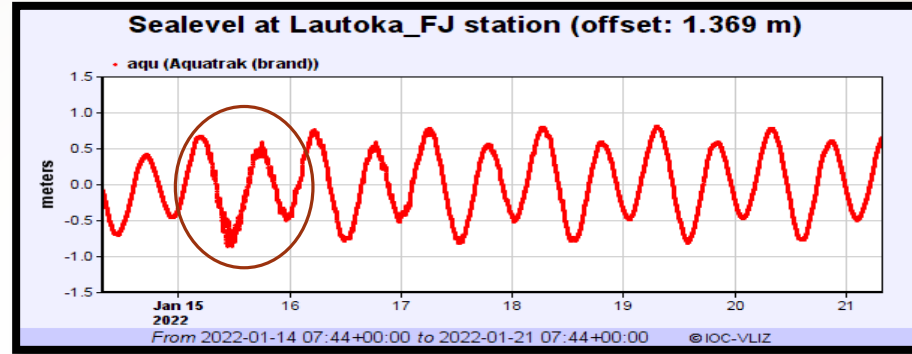
Event	Time/Action
06:00	<ul style="list-style-type: none"> • Observation on tide gauges noticed changes in Suva. • Received a call from Semesa Ketedromo in Pac Harbour. Informed of the Wave Changes (Waves withdrew for at least 3 minutes).
06:41	<ul style="list-style-type: none"> • First Advisory Information Released via Email, Viber EQ Alert Major & Fiji Seismology Facebook Page.
07:36	<ul style="list-style-type: none"> • NDMO Public Advisory 1
10:07	<ul style="list-style-type: none"> • Second Advisory Information Released via Email, Viber EQ Alert Major & Fiji Seismology Facebook Page.
11:17	<ul style="list-style-type: none"> • NDMO Public Advisory 2
16/01/2021	
09:00	<ul style="list-style-type: none"> • Tsunami Cancellation Released via Email, Viber EQ Alert Major & Fiji Seismology Facebook Page.
13:55	<ul style="list-style-type: none"> • NDMO Public Advisory 3 • Volcanic Ash Health Risk Public advisory

MSVF-AS031 Auxilliary Seismic Station, Monasavu, Fiji



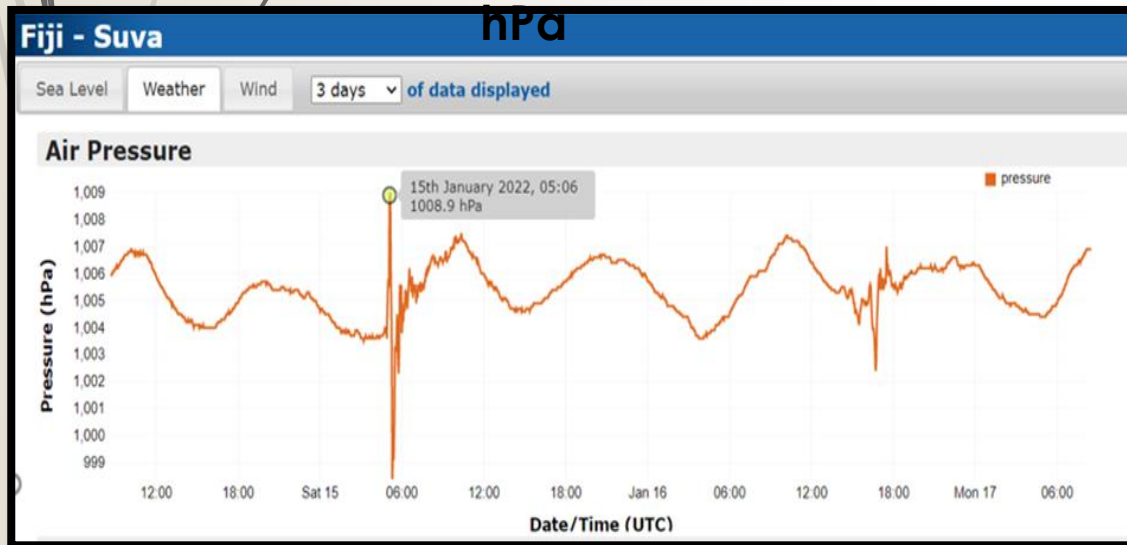
Suva Tide Gauge
Wave Time Arrival
Approx: 6.00pm

Fiji Tide Gauges

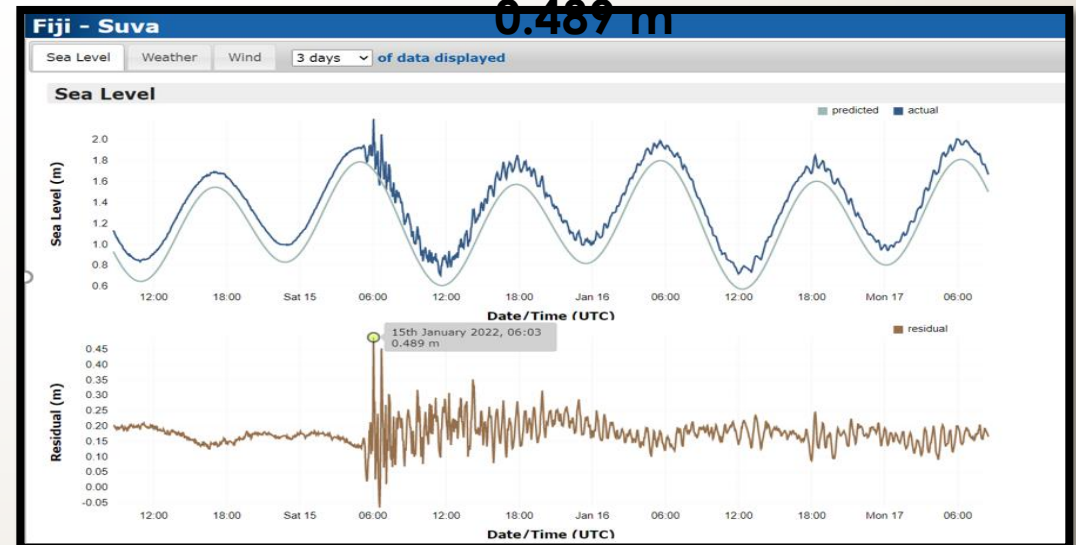


Lautoka Tide Gauge
Wave Time Arrival -
Approx: 6.30pm

Peak Air Pressure @0506 (UTC) – 1008.9 hPa



Suva Sea Level – Peak Residuals @ 0603(UTC) – 0.489 m



Lesson Learned

- No detection on local and regional seismic station
- Delayed Tsunami Information Statement released by PTWC
- Lack of communication with Tonga (no phone contact)
- No Volcano triggered Tsunami Warning SOP
- The current Tsunami Warning SOP didn't work for the issue of warning
- Lack of tide gauges in the Lau Group
- No access to NZ Dart Network
- No Volcano Monitoring System and expertise

Way Forward

- If possible to include Volcano triggered Tsunami in the warning SOP
- Installation of tide gauges in the Lau and Yasawa Group
- Access to NZ Dart Network
- Need backup communication between Pacific Island countries NTWC (HF Radio-Link)
- Refresher Awareness in collaboration with NDMO, MET and relevant NGO's.

Volcanic Eruption Impact Assessment Trip 20/01 – 26/01/22

Vanuabalavu Is–Lakeba Is–Moala Is–Ono-i-Lau Is–Vatoa Is–Moce Is

Date	Island	District	Village	Tide	Arrival (mins)	Inundation (m)	Depth (m)	Infrastructure and Asset Damage	Volcanic Eruption Materials Physical Observations	Comments
22/1	Vanuabalavu	Mualevu	Mavana	High	5	100	0.5	None	None	Experienced sudden rush of wave
			Daliconi	High	10	20	0.2	None	None	Sudden rush of wave
			Muamua	High	10	40	0.3	None	None	Series of waves
			Malaka	High	10	40	0.3	None	None	Withdraw of sea
			Mualevu	High	70	0.7	None	None	Sudden rush of waves	
		Loma2	Narocivo	High	5	70	0.4	None	None	Sudden rush of waves/ Series of waves
		DLoma2		High	8	30	0.4	None	None	Series of waves

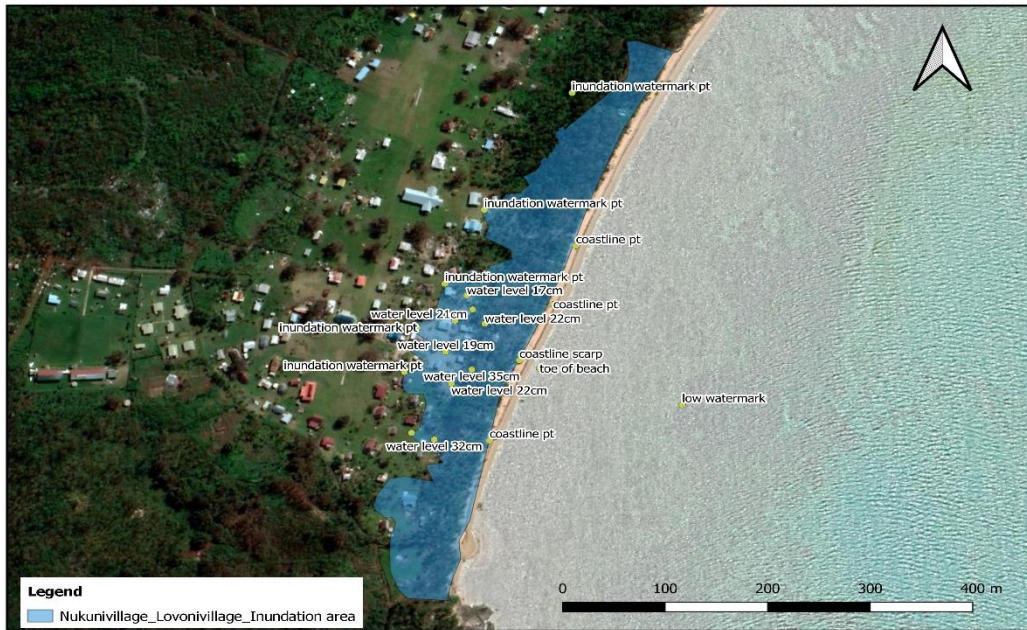
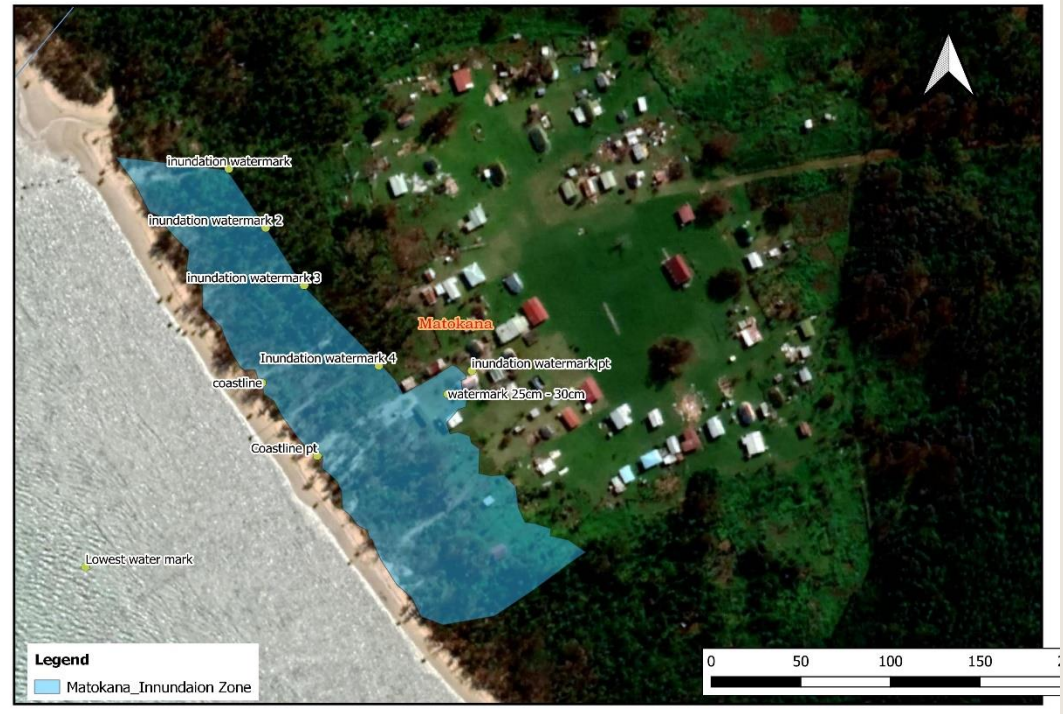
Date	Island	Village	Tide	Arrival (mins)	Inundation (m)	Depth (m)	Infrastructure and Asset Damage	Volcanic Eruption Materials Physical Observations	Comments
24/1	Lakeba	Nasaqalau	High	5	100	0.5	None	None	Experienced sudden rush of wave
		Vakano	High	5	10	0.8	Boat smashed by the wave against a tree	None	Sudden rush of wave
		Nukunuku	High	NM	NM	NM	None	None	No impact
		Waitabu	High	NM	NM	NM	None	None	No impact
		Waciwaci	High	10	80	0.7	None	None	Sudden rush of waves, inundated the coast and extended into the Waciwaci Primary School compound.
25/1	Moala	Cakova	High	20	11	0.8	None	None	Experienced sudden rush of wave
		Keteira	High	15	8.6	0.7	None	None	Sudden rush of wave
		Naroi	High	15	NM	NM	None	None	Rise above the seawall and flooded the road

Date	Islands	Village	Tide	Arrival (mins) from Explosion Sound	Inundation (m)	Depth (m)	Infrastructure and Asset Damage	Volcanic Eruption Materials Physical Observations	Comments
22/1	Ono-I-Lau	Nukuni	High	Approx 30-45 mins	103m from coastline to inundation highest watermark.	0.35m Max	* 1 House- Local * 1 Boat – Health Center	None	Sudden rush of waves
		Motukana	High	Approx 30-45 mins	58m from coastline to inundation highest watermark.	0.28m Max	None	None	Sudden rush of waves
		Lovoni	High	Approx 30-45 mins	102m from coastline to inundation highest watermark.	Inundated water doesn't reached the village.	None	None	Sudden rush of waves
		Doi	High	Approx 30-45 mins	77m from coastline to inundation highest watermark.	0.50m along the coastal area as described by a villager.	1 Shed	None	Gradual series of waves
24/1	Vatoa	Vatoa	High	Approx 30-45 mins	17m from coastline to inundation highest watermark.	Water level reaches only the coastal area and not the village.	None	None	Sudden rush of waves.
25/1	Moce	Nasau	High	Approx 30-45 mins	41m coastline to inundation highest watermark.	0.33 m Max	* 1 House * 1 Outdoor Kitchen	None	Sudden rush of waves
		Korotolu	High	Approx 30-45 mins	62m inland.	0.55 m Max	5 Houses (Including individual	None	Sudden rush of waves.

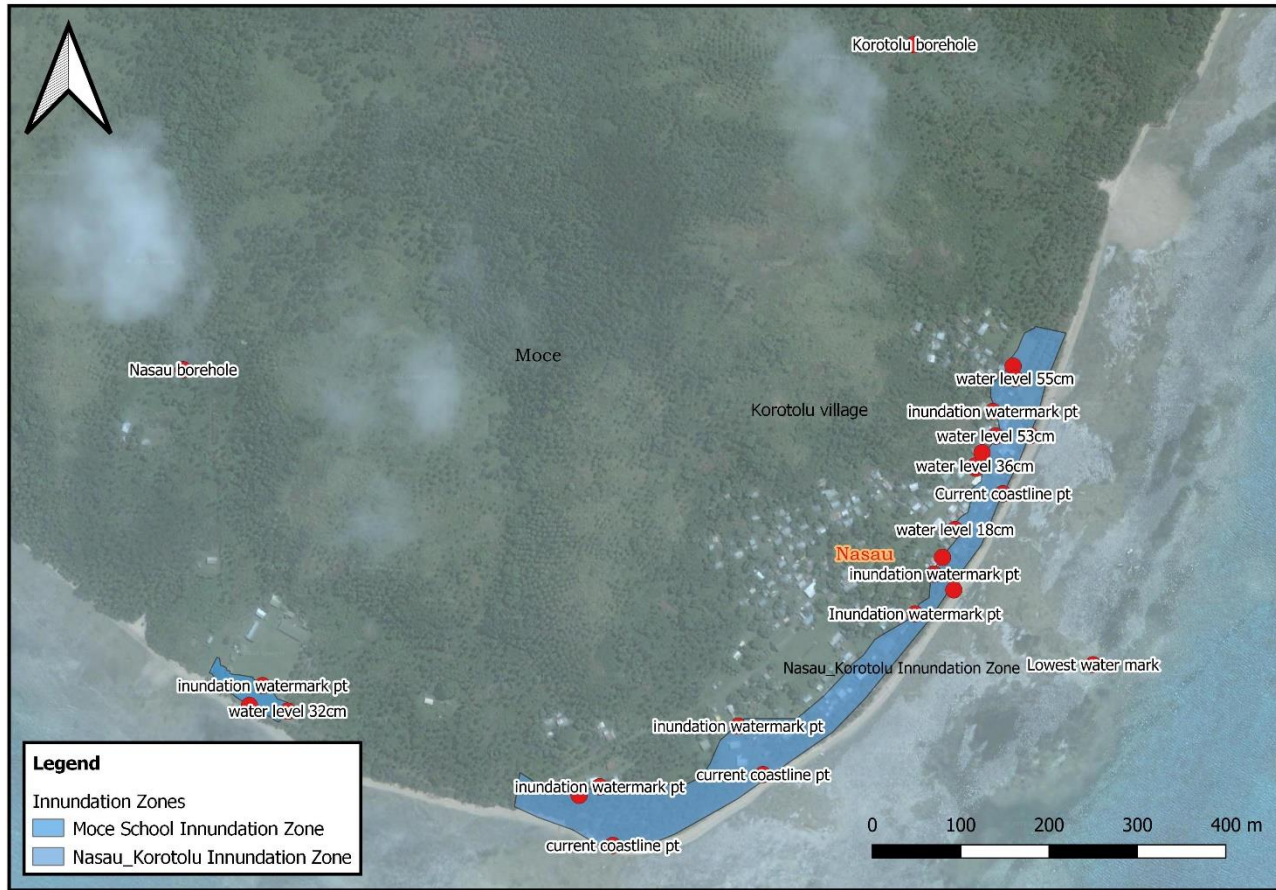
Data Collection & Coastal Inundation Map



Coastal Inundation Map



Moce



Vatoa



Findings from the Preliminary Assessment Conducted

Any tsunami generated from Tonga (volcanic or seismic), poses a threat to the Vanuabalavu, Lakeba, Moala, Ono-i-Lau, Vatoa and Moce Island Coastlines.

- ▶ **Any tsunami generated from Tonga**, can reach the following island coasts **within minutes** before proper warning or advice is issued;

- ▶ **Vanuabalavu**
- ▶ **Lakeba**
- ▶ **Moala**

However, for other following islands it will take **approx. 30-45 minutes** to reach coastlines;

- ▶ **Ono-i-Lau**
- ▶ **Vatoa**
- ▶ **Moce**

- ▶ Bay located villages may experience different effects of the wave, than those located along an open coast
- ▶ Not all villagers are aware of the dangers, of an approaching tsunami wave. However for Moala Island, villagers assessed were aware of the tsunami signs and threats, but did not have a committee to be activated in disaster situations.

- ▶ **Damaged Infrastructures**

- ▶ Ono-i-Lau
 - ▶ Nukuni- 1 house (Local) & 1 Boat (Health Center)
 - ▶ Doi- 1 Shed
- ▶ Moce
 - ▶ Nasau- 1 House & 1 Outdoor Kitchen
 - ▶ Korotolu- 5 Houses (Including each outdoor kitchens and cooperative extensions)



RECOMMENDATIONS

- Proper Advice to the Public (move away from the coast for future sonic boom) – Fiji Police Force,
- Tsunami and Evacuation Plans Preparedness Awareness on Moala Island – MRD & NDMO,
- Disaster Committee to be established on all villages – NDMO.
- Detailed and extensive coastal survey for confirmation of inundation area, and for further advice (affected area) – MRD (Geological Survey).