


19 Jan 2022


Volcanic Eruption of the 15th of January 2022 and induced tsunami, Hunga Tonga-hunga Ha'apai Volcano

Preliminary Satellite-Derived Damage Assessment

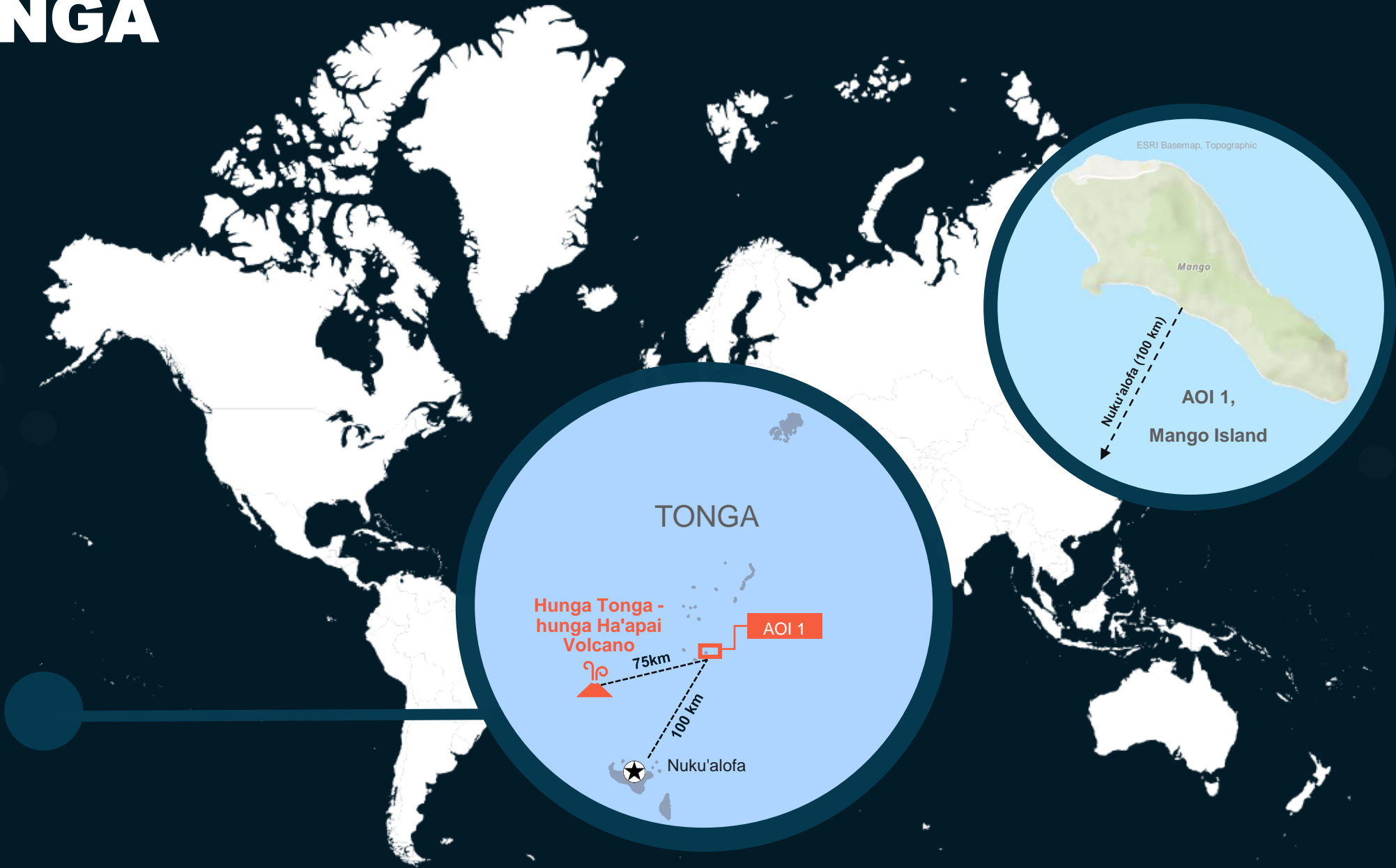
Mango Island, Kingdom of Tonga



 Status: Affected structures and ash deposit observed

 Further action(s): Continue monitoring

TONGA



AOI 1 MANGO ISLAND, MU'OMU'A DISTRICT, HA'APAI DIVISION

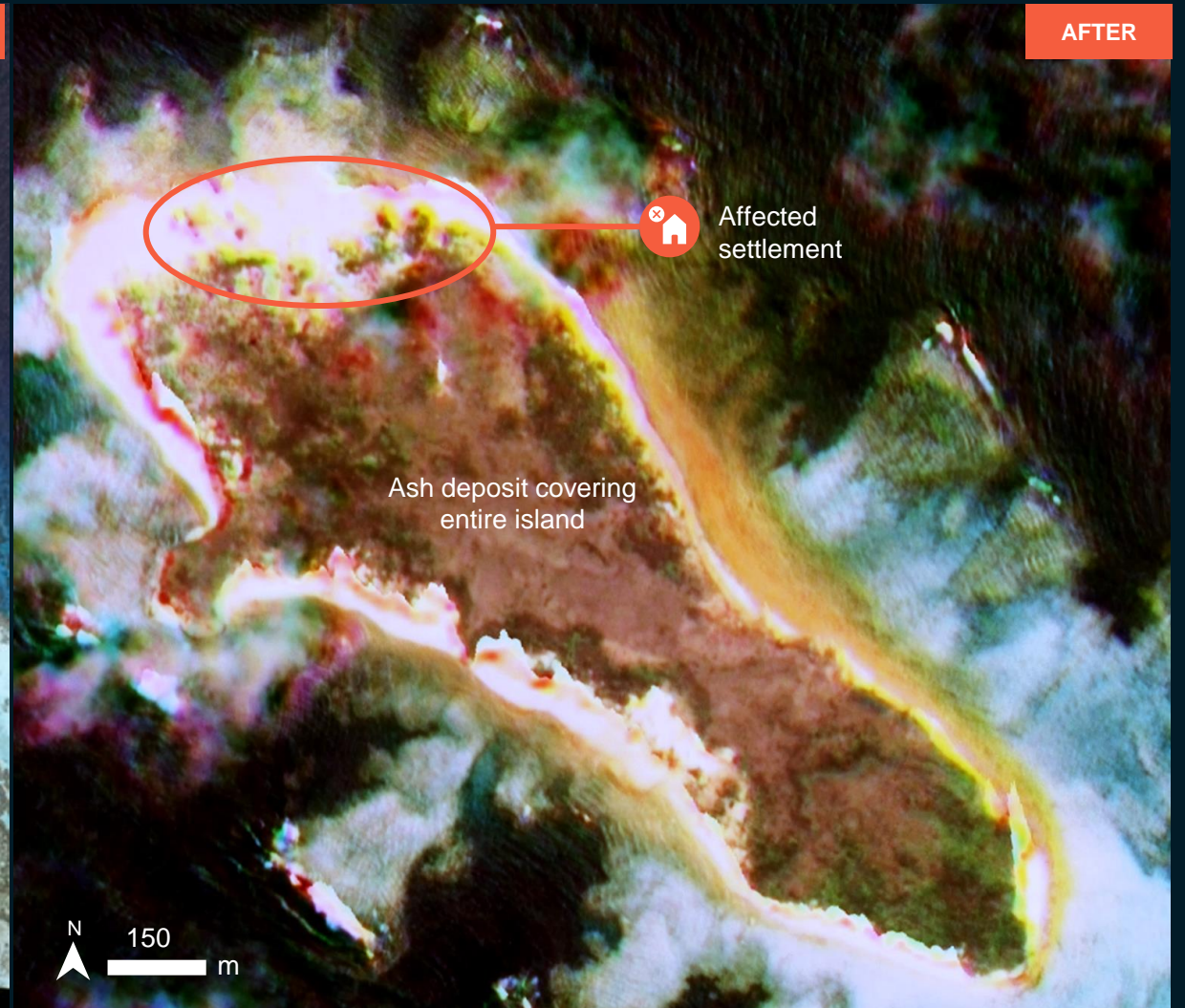
~75 km from Hunga Tonga - Hunga Ha'apai Volcano

Damaged vegetation and affected structures

Image center:
174°42'38.509"W
20°19'44.21"S



BEFORE



AFTER

Ash deposit covering entire island



Affected settlement

AOI 1 MANGO ISLAND, MU'OMU'A DISTRICT, HA'APAI DIVISION

~ 75 KM FROM HUNGA TONGA - HUNGA HA'APAI VOLCANO

Extensive damage to structures along the shoreline and ash deposits covering entire the island



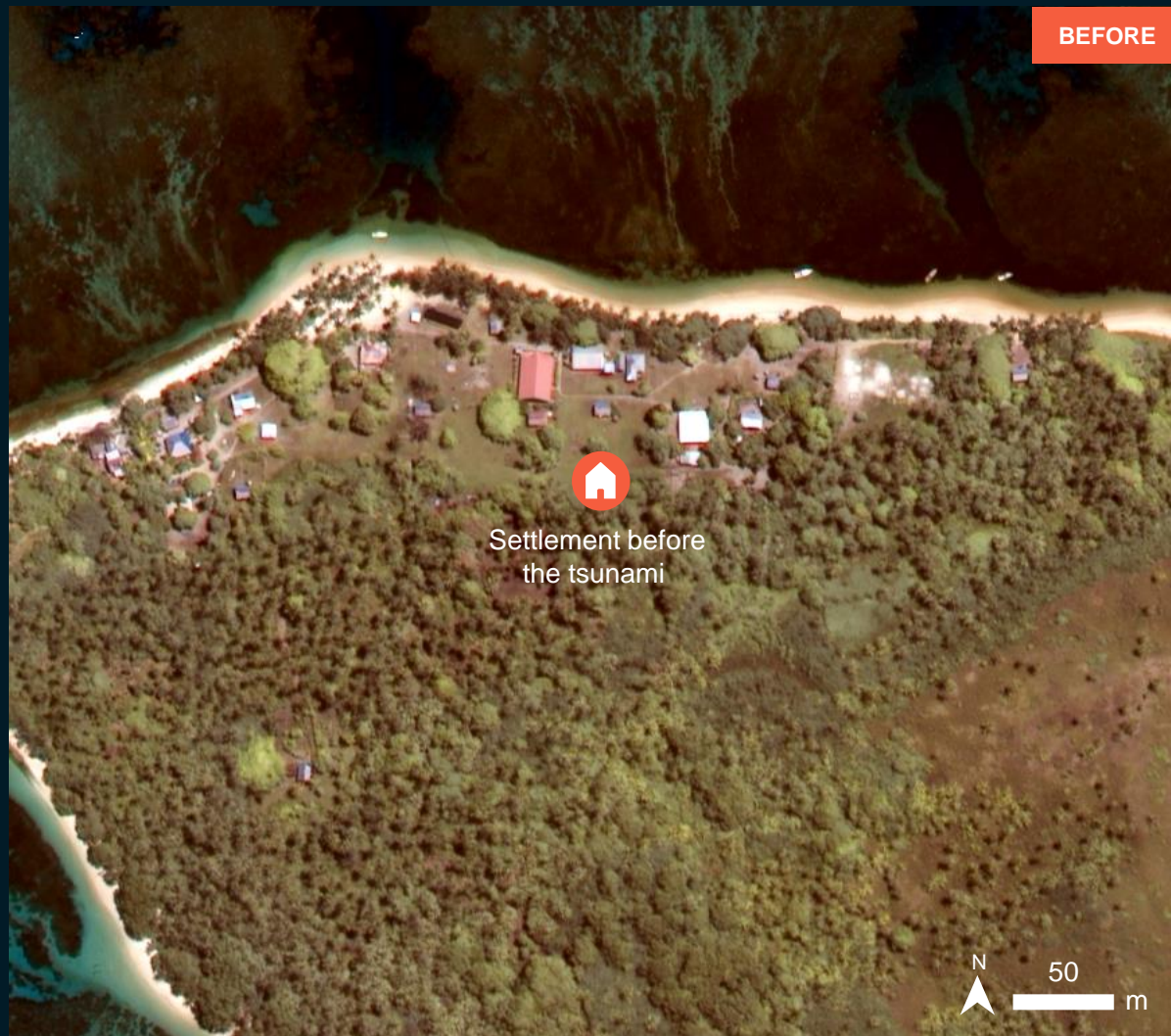
Kompsat-3 image acquired on 18 January 2022
Image Center : 174°42'47.597"W 20°19'30.681"S

AOI 1 MANGO ISLAND, MU'OMU'A DISTRICT, HA'APAI DIVISION

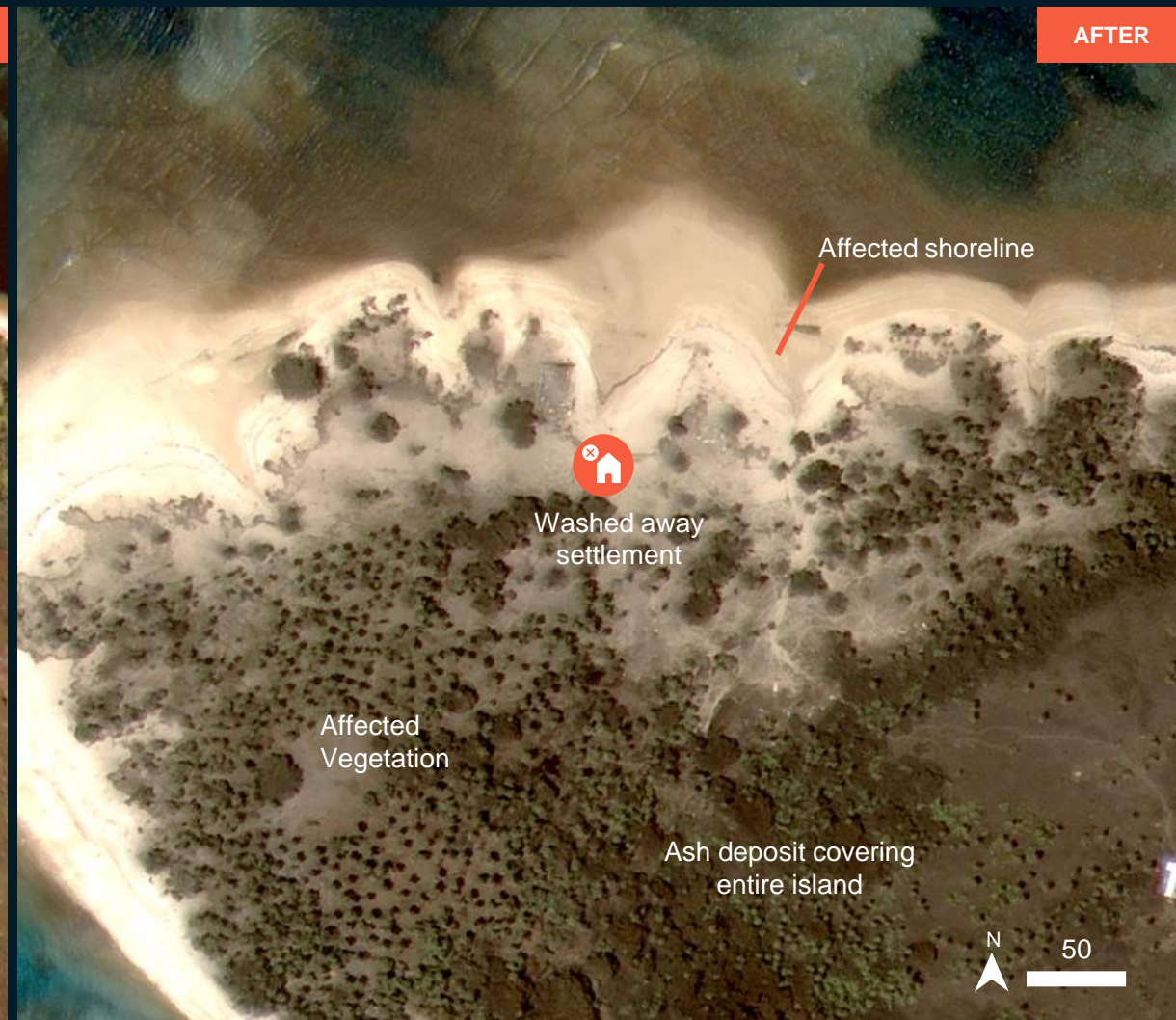
~75 km from Hunga Tonga - Hunga Ha'apai Volcano

Damaged structures & affected vegetation in Mango island

Image center:
174°42'52.26"W
20°19'30.476"S



WorldView-2 / 21 Nov 2021



Kompsat-3 / 18 Jan 2022

SUMMARY OF FINDINGS

- Extensive damage is observed the Mango island as of 18 January 2022 likely caused by the tsunami waves triggered by the volcanic eruption;
- The main settlement of the island seems to have been washed away by the tsunami waves as of 18 January 2022;
- 27 structures are heavily damaged and/or destroyed;
- Few structures in land seem to have not been destroyed but are likely damaged;
- Vegetation of the island is affected;
- Ash deposits covering entire Mango island as of 17 January 2022.

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Data sources:

(1) Satellite Image (Post-event)

Kanopus-V : 17 Jan 2022

Resolution: 2.2 m

Copyright: © NTs OMZ, All Rights Reserved, ROSCOSMOS 2022

Source: ROSCOSMOS

Kompsat-3: 18 Jan 2022

Resolution: 70 cm

Copyright: © KARI (2021)

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(2) Satellite Image (Pre-event)

WorldView-2 : 21 Nov 2021

Resolution: 50 cm

Copyright: © DigitalGlobe, Inc. (2021)

Source: USGS

(3) Ancillary data

Administrative boundaries: Secretariat of the Pacific Community,
Statistics for Development Division

Analysis: United Nations Satellite Centre (UNOSAT)

Production: United Nations Satellite Centre (UNOSAT)

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 **@UNITAR.unosat**



UNOSAT, United Nations Institute for Training
and Research (UNITAR)
7 bis, Avenue de la Paix, CH-1202 Geneva 2,
Switzerland

T +41 22 917 4720
E unosat@unitar.org
www.unosat.org