

06 March 2023



# TROPICAL CYCLONE JUDY AND KEVIN, PRELIMINARY SATELLITE-DERIVED DAMAGE ASSESSMENT




## VANUATU


Efate Island - Shefa Province

Erromango, Tanna & Aniwa Islands -Tafea Province

Espiritu Santo Island - Sanma Province

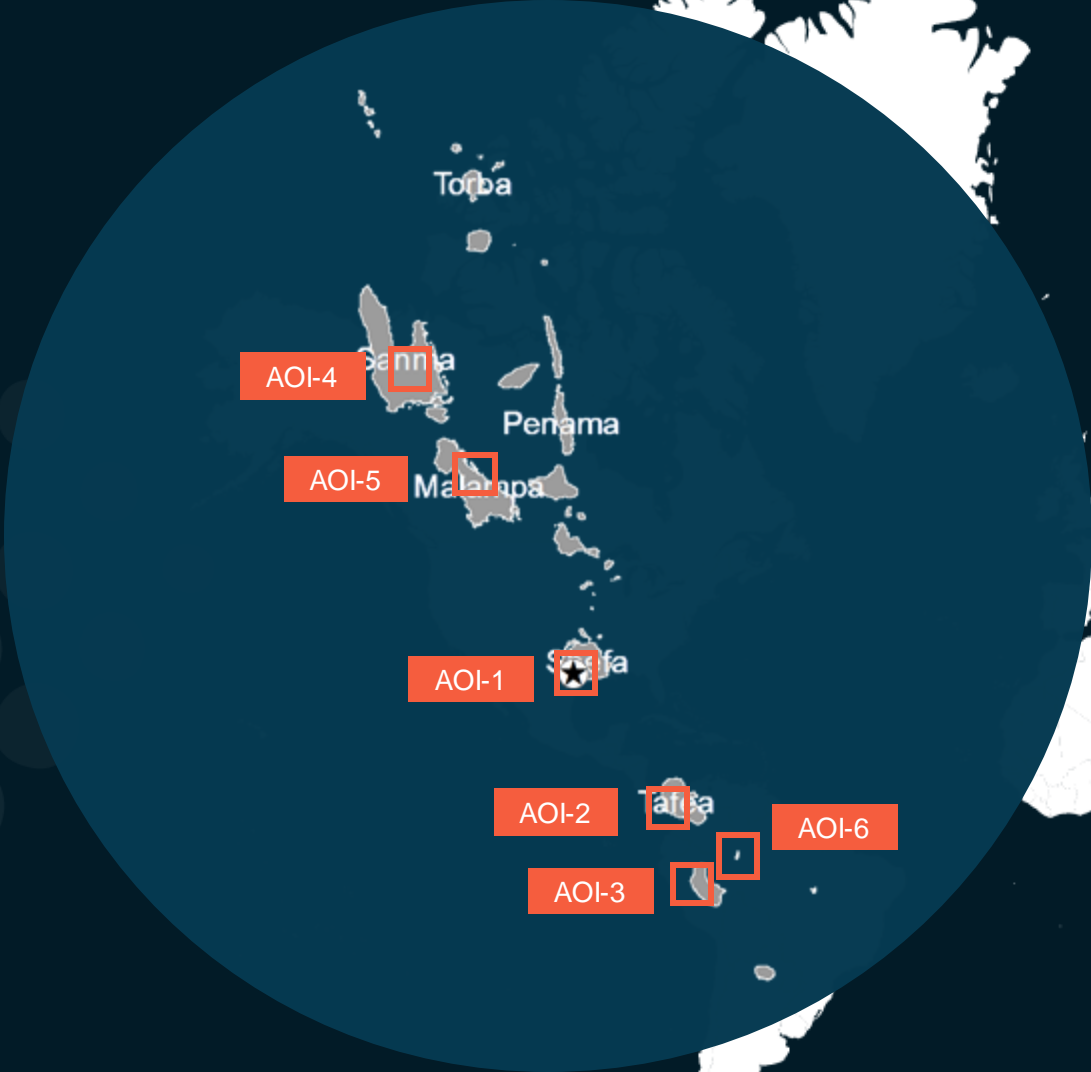
Malakula Island - Malampa Province



 Status: Impact on structures observed

 Further action(s): Continue monitoring



# VANUATU



-  Area of interest
-  Province boundary

# AOI 1 PORT VILA, EFATE ISLAND - SHEFA PROVINCE

Widespread damaged structures observed



# AOI 1 PORT VILA, EFATE ISLAND - SHEFA PROVINCE

Widespread damaged structures observed



Damaged structures



Damaged structures



Damaged structure

Debris



30 m

N

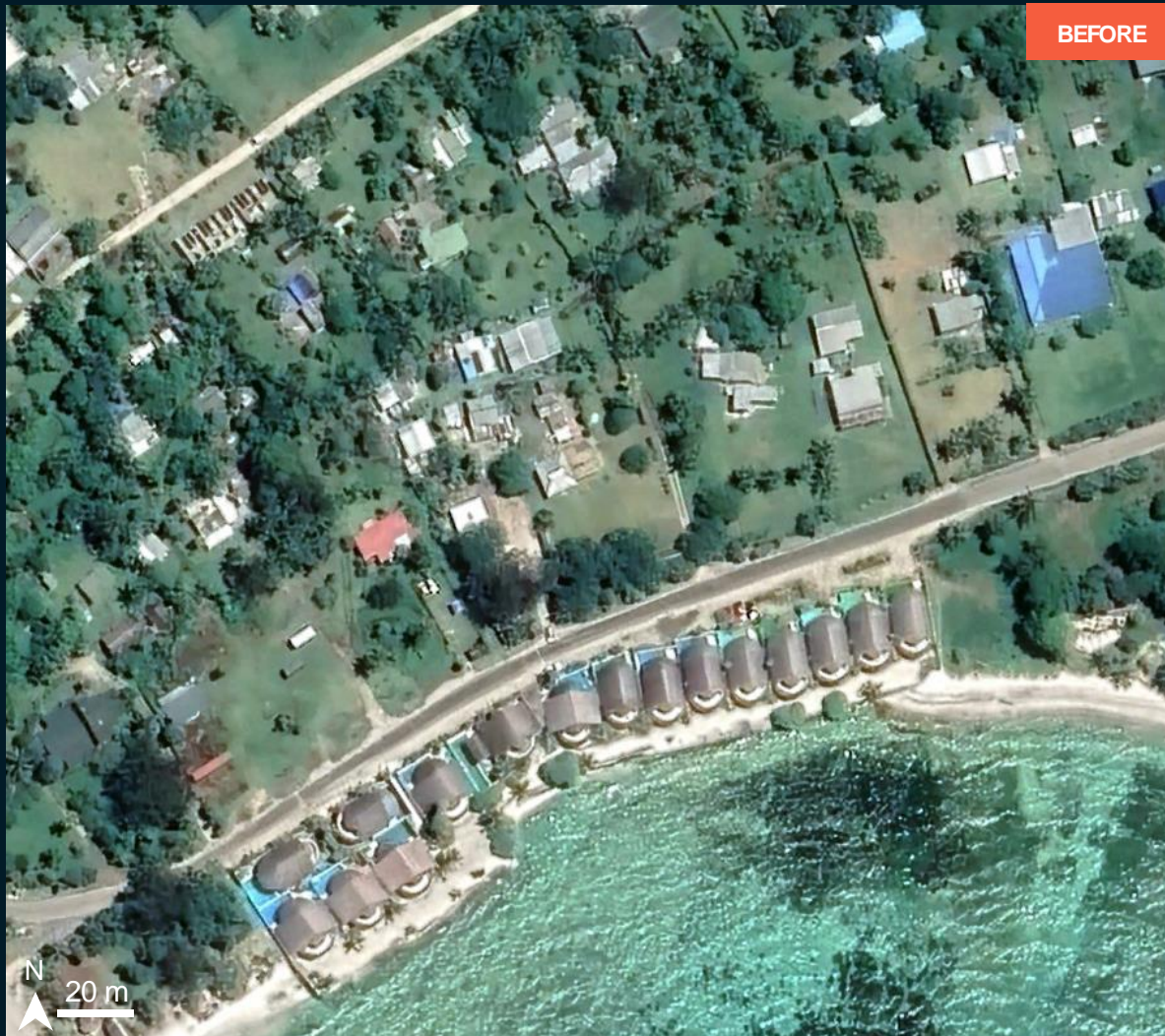


# AOI 1 PORT VILA, EFATE ISLAND - SHEFA PROVINCE

Image center:  
168° 17' 33.137"E  
17° 46' 31.307"S



## Widespread damaged structures observed



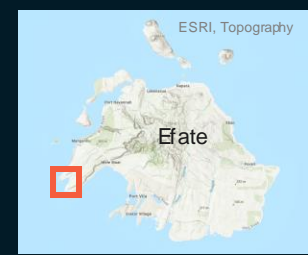
WorldView / 1 November 2022



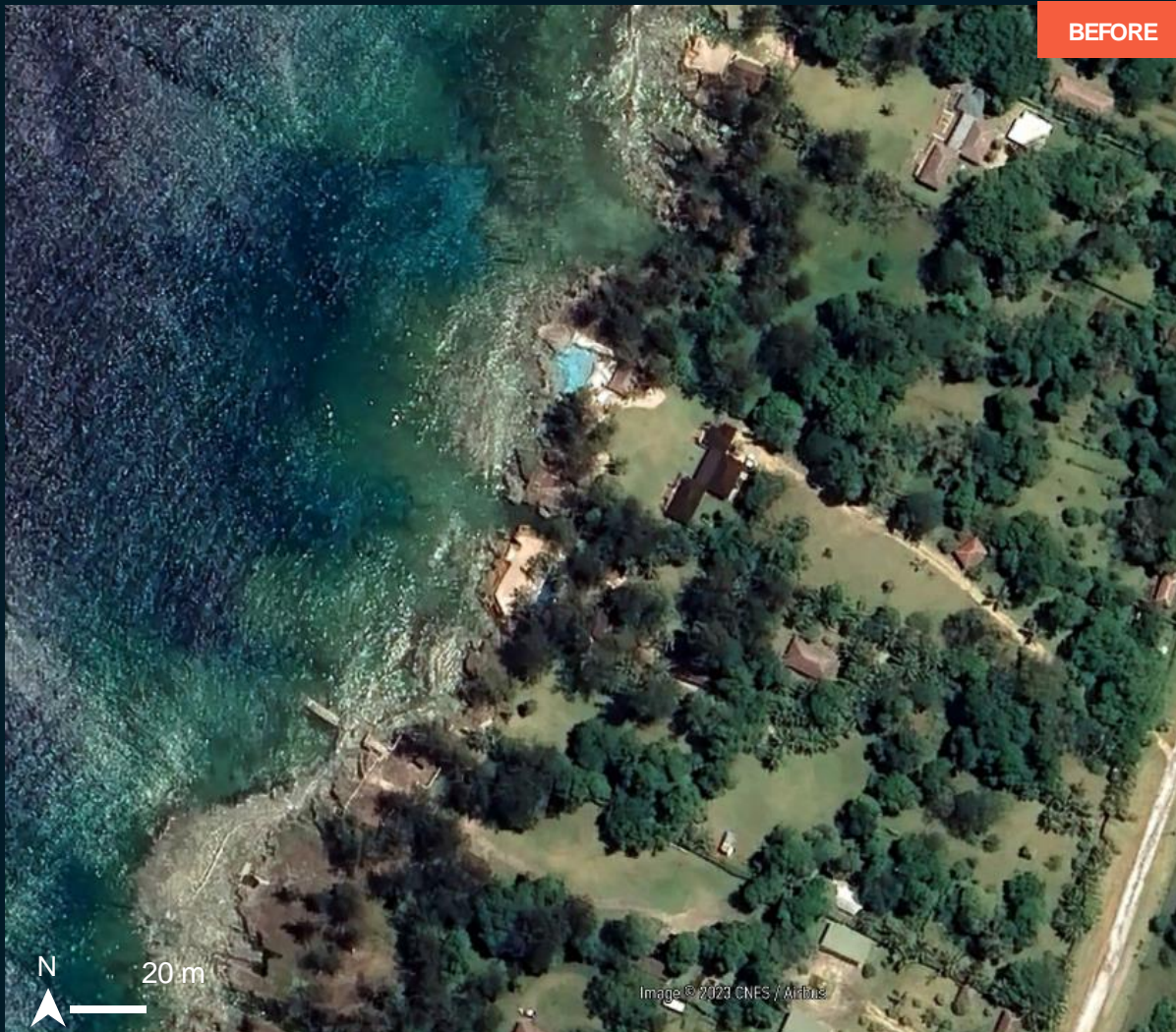
Pleiades / 4 March 2023

# AOI 1 PORT VILA, EFATE ISLAND - SHEFA PROVINCE

Image center:  
168°10'25.178"E  
17°43'24.173"S



## Potentially damaged structures by the storm surge



WorldView / 1 November 2022



Pleiades / 4 March 2023

# AOI 2 UNPONGKOR VILLAGE, ERROMANGO ISLAND - TAFEA PROVINCE

Damaged structures observed



UNOSAT  
United Nations  
Satellite Centre



Williams River

Damaged structures



30 m



Pleiades image acquired on 04 March 2023, 23:11 UTC  
Image Center : 169°0'58.736"E 18°49'2.842"S

# AOI 3 LENAHEL VILLAGE, TANNA ISLAND - TAFEA PROVINCE

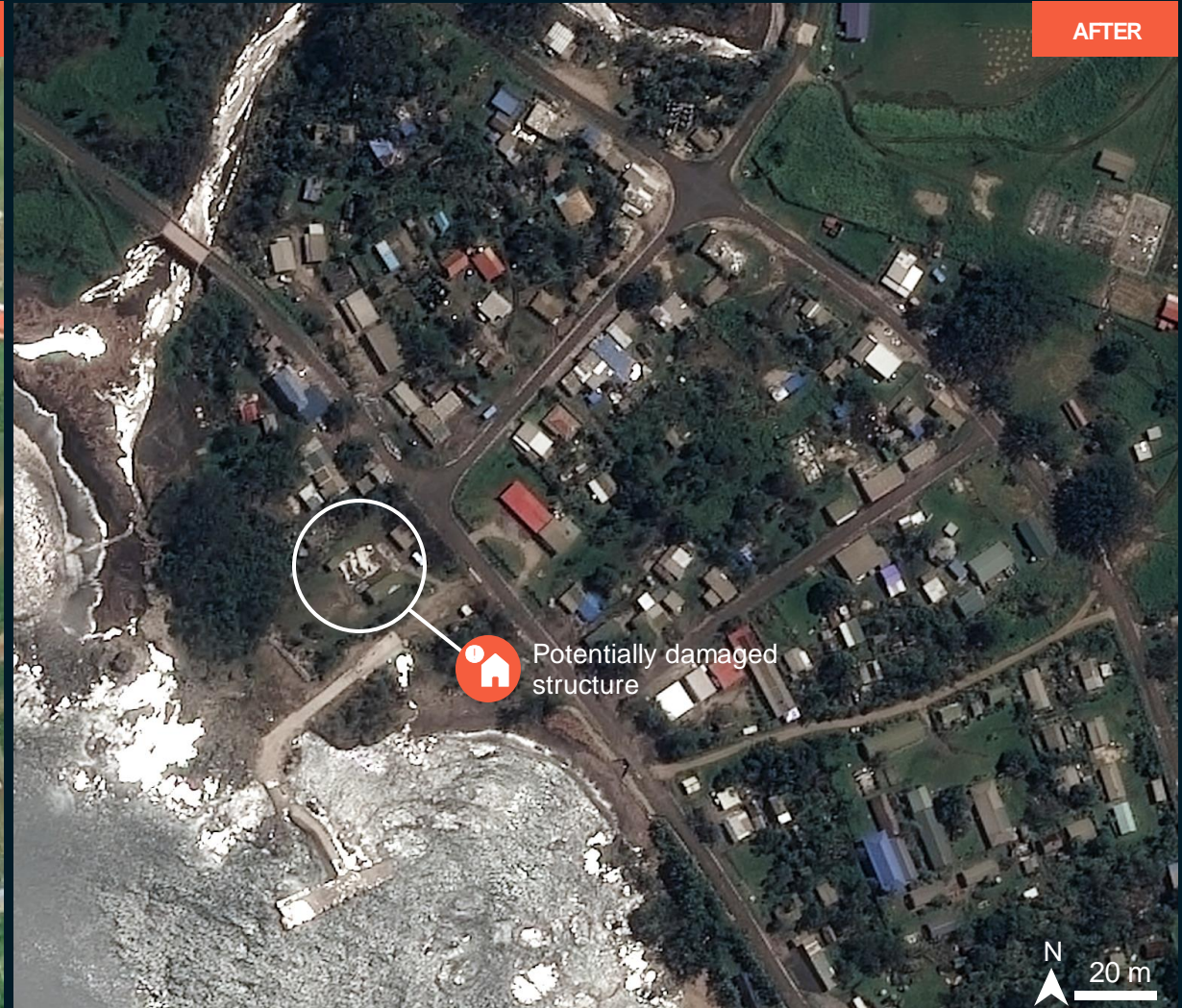
Image center:  
168° 17' 33.137" E  
17° 46' 31.307" S



## Potentially damaged structures observed



WorldView / 12 December 2022



Pleiades / 4 March 2023



# AOI 3 LOWANATOM VILLAGE, TANNA ISLAND - TAFEA PROVINCE

Image center:  
169°14'47.431"E  
19°30'16.697"S



No visible damage observed



BEFORE



AFTER

WorldView / 4 August 2021

Pleiades / 4 March 2023

# AOI 3 LENUS VILLAGE, TANNA ISLAND - TAFEA PROVINCE

Image center:  
169°14'25.261"E  
19°29'48.019"S



## Potentially damaged structures observed



BEFORE

WorldView / 4 August 2021



AFTER

Pleiades / 4 March 2023

# AOI 3 TANNA ISLAND - TAFEA PROVINCE

Potentially damaged structures observed



# AOI 4 LUGANVILLE CITY, ESPIRITU SANTO ISLAND - SANMA PROVINCE

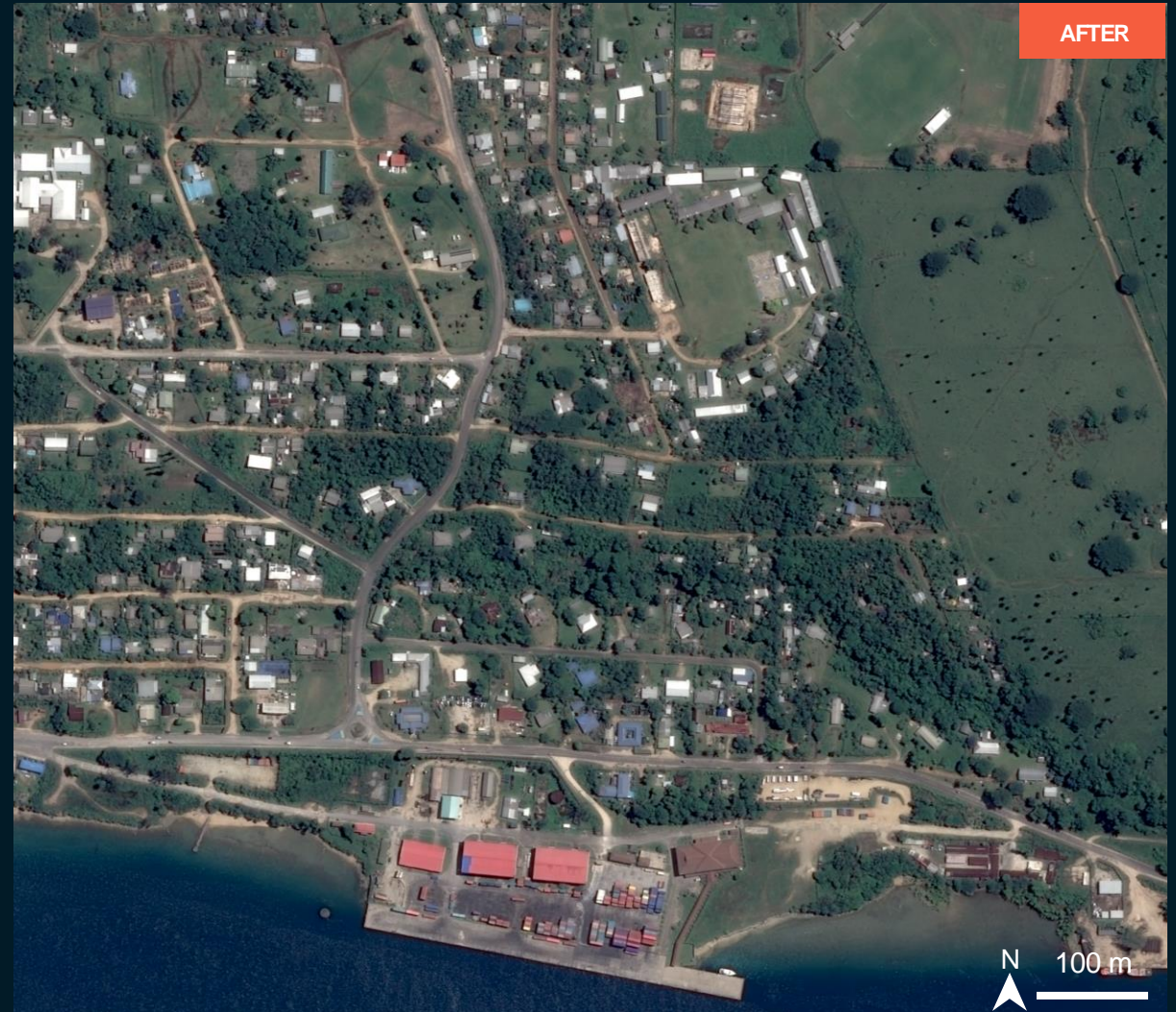
No visible damage observed

Image center:  
167°11'21"E  
15°30'43"S



BEFORE

WorldView-2 / 02 August 2021



AFTER

Pleiades / 4 March 2023

# AOI 5 LITSLITS VILLAGE, MALAKULA ISLAND - MALAMPA PROVINCE

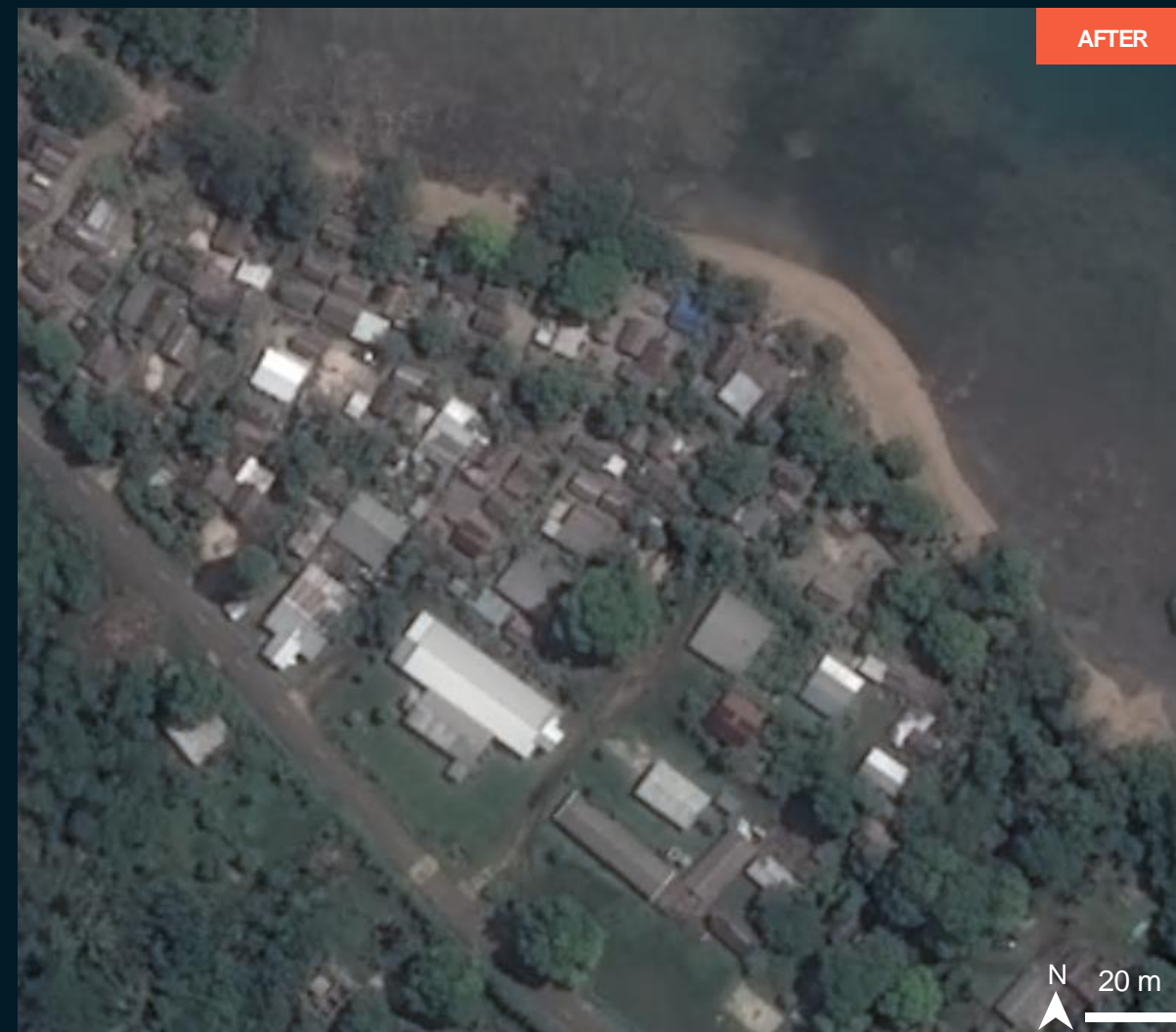
Image center:  
167°26'16"E  
16°16,45"S



No visible damage observed



WorldView / 19 January 2016



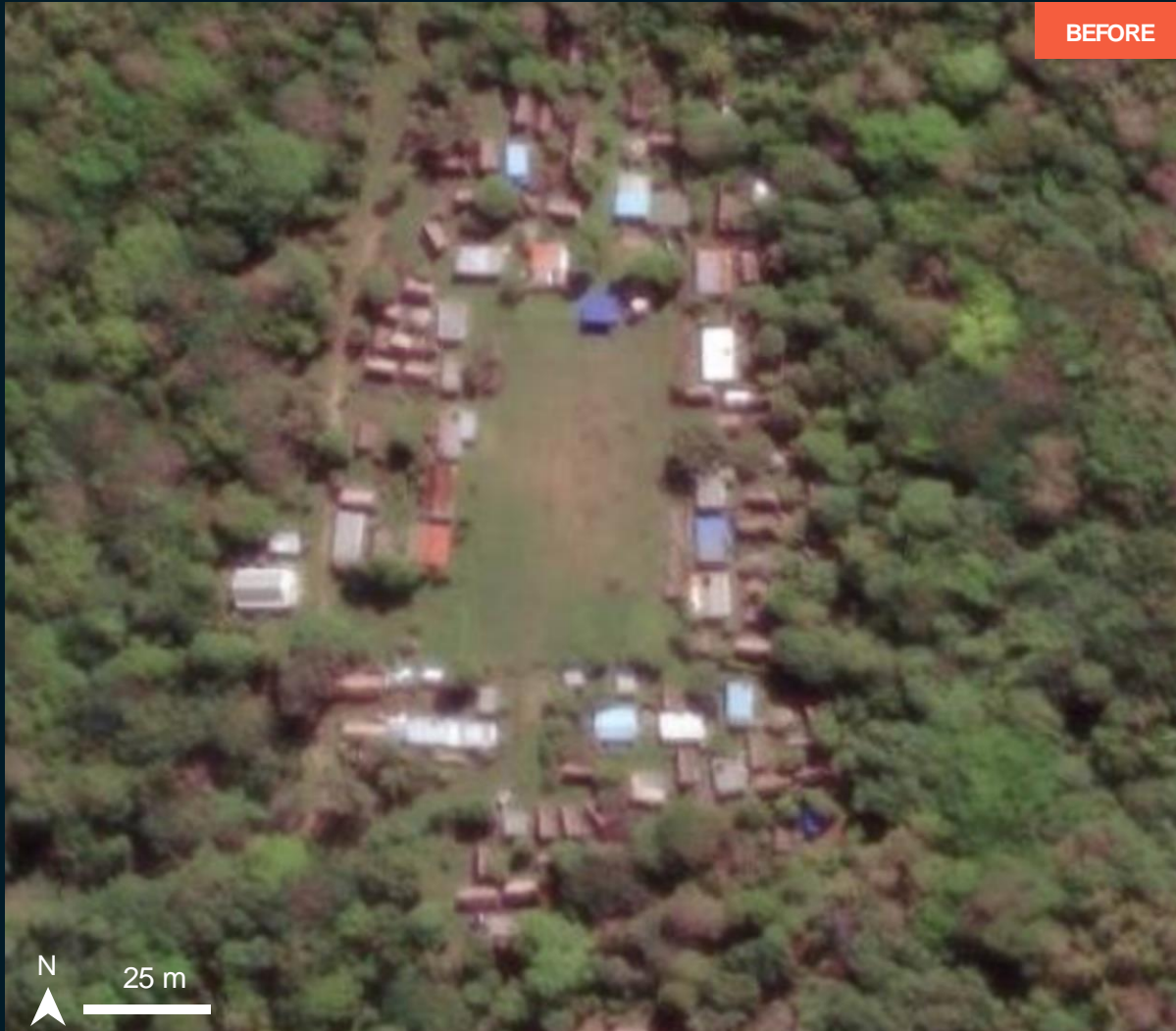
Pleiades / 4 March 2023

# AOI 6 ISAVAI HAMLET, ANIWA ISLAND - TAFEA PROVINCE

Image center:  
169°35'59"E  
19°15'21"S

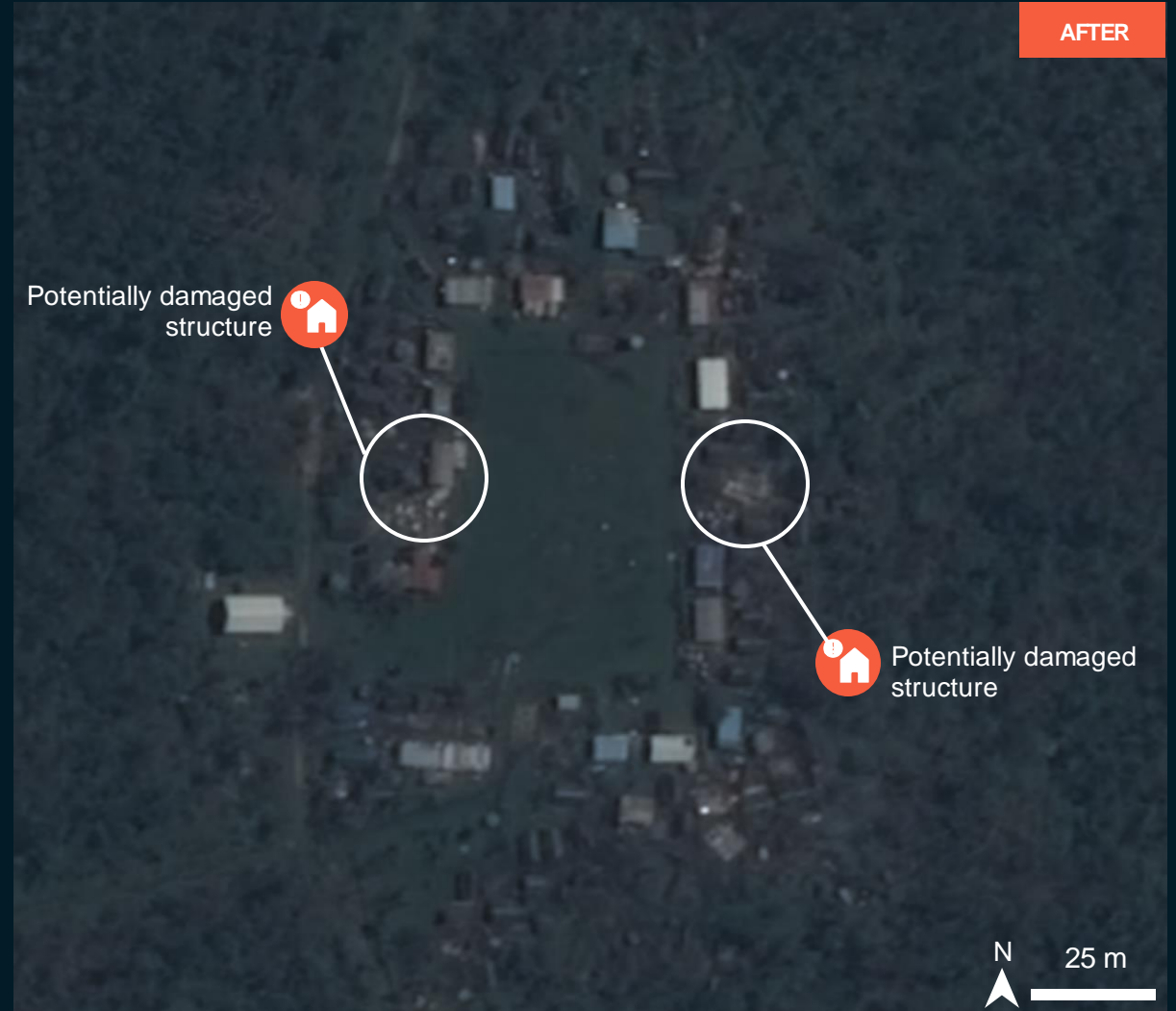


## Potentially damaged structures observed



BEFORE

WorldView-2 / 11 July 2022



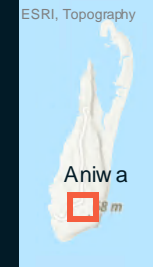
AFTER

Pleiades / 4 March 2023

# AOI 6 IFANGAWE HAMLET, ANIWA ISLAND, TAFEA PROVINCE

Damaged and potentially damaged structures observed

Image center:  
169°36'00"E  
19°15'58"S



WorldView-2 / 11 July 2022



Pleiades / 4 March 2023

# SUMMARY OF FINDINGS

---

From the images acquired on 04<sup>th</sup> of March 2023, the findings are the following:

- Widespread damaged structures observed in Port Vila, Efate Island - Shefa Province;
- Potentially damaged structures by the storm surge observed along the western shoreline of Efate Island;
- Damaged structures observed in Unponkor village, Erromango Island - Tafea province
- Potentially damaged structures observed in Lenakel and Lenus villages;
- No visible damage observed in Lowanatom village on Tanna Island - Tafea province;
- No visible damage observed in Luganville city on Espiritu Santo Island - Sanma province and Litslits village on Malakula Island - Malampa province ;
- Damaged and potentially damaged structures observed in Ifangawe and Isavai hamlets on Aniwa Island - Tafea province.



# COPYRIGHTS AND SOURCES

## Data sources:

### (1) Satellite Image (Post-event)

WORLDVIEW-3 : 11 Feb 2022  
Resolution: 50 cm  
Copyright:© DigitalGlobe, Inc. (2022)  
Source: USGS

Sentinel-2 : 14 Feb 2022  
Resolution: 10 m  
Copyright: Contains modified Copernicus Sentinel Data [2022]  
Source: ESA

### (2) Satellite Image (Pre-event)

Sentinel-2 : 13 Jan 2022  
Resolution: 10 m  
Copyright: Contains modified Copernicus Sentinel Data [2022]  
Source: ESA  
Google Earth

### (3) Ancillary data

Administrative boundaries: PopGIS2: Secretariat of the Pacific Community (SPC), Statistics for Development Division

Analysis: United Nations Satellite Centre (UNOSAT)  
Production: United Nations Satellite Centre (UNOSAT)

***NOTE: This is a preliminary analysis and has not yet been validated in the field.***

 **@UNOSAT**

 **@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](mailto:unosat@unitar.org)  
[www.unosat.org](http://www.unosat.org)