

Tropical Cyclone Winston

UNOSAT Damage Assessment

Activities in Viti Levu Island, Fiji

09 March 2016 - Report



9 March 2016

Geneva, Switzerland

UNOSAT Contact:

Email: unosat@unitar.org

T: +41 22 767 4020 (UNOSAT Operations)

24/7 hotline: +41 75 411 4998

Postal Address:

UNITAR – UNOSAT, IEH
Chemin des Anémones 11,
CH-1219, Genève, Suisse

Tropical Cyclone Winston in Fiji

(19 February 2016 – 9 March 2016)



Overview

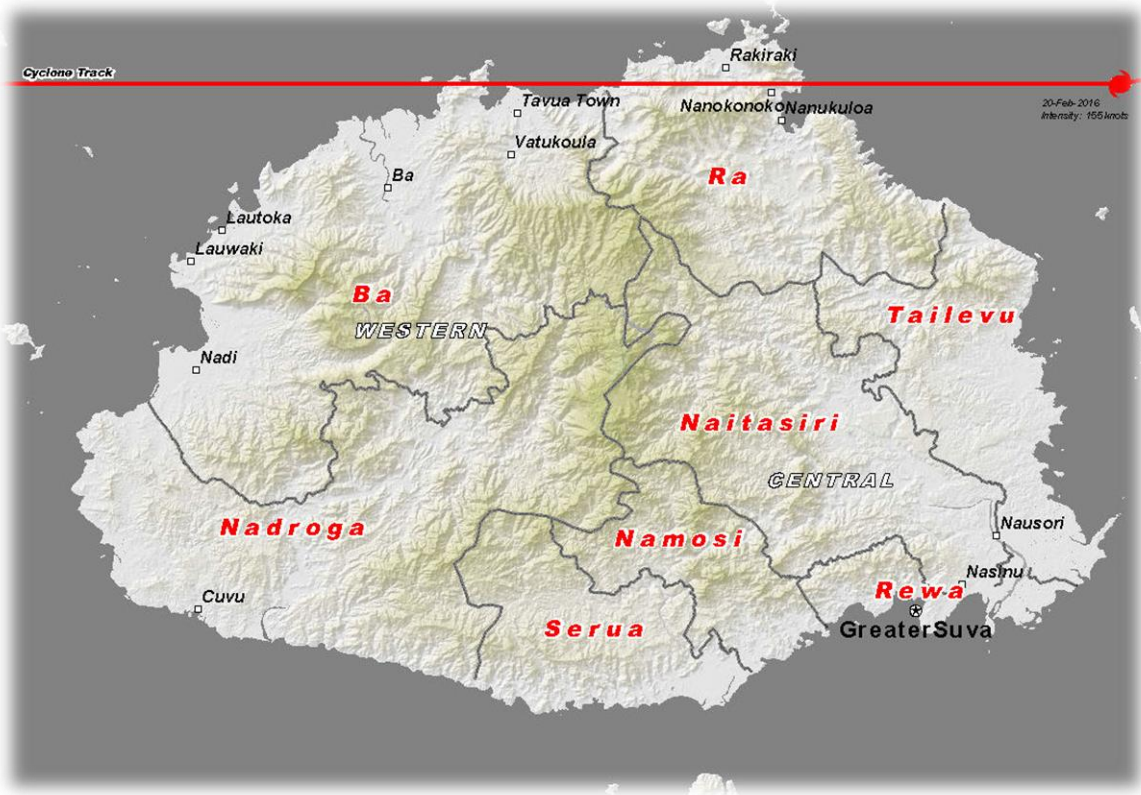
A powerful tropical cyclone named “Winston” struck the Southern Pacific and was heading towards the coasts of Fiji. UNITAR - UNOSAT on behalf of UN OCHA activated the [International Space Charter](#) on 19 February 2016. On the 20th of February 2016, the cyclone made landfall at 06:30 UTC (18:30 local time) over the north-eastern coast of Viti Levu (Fiji), the main island of the archipelago. The cyclone tracked west across the country, causing damage in four divisions (Western, Central, Eastern and Northern) with more concerns on the Western and Central divisions.

According to [FIJI Flash Appeal Tropical Cyclone Winston](#) published by [UNOCHA](#) on 4 March 2016, 350,000 people living in the cyclone’s path could have been affected (170,000 female and 180,000 male) - equivalent to 40 per cent of Fiji’s population. This includes 120,000 children under the age of 18 (58,000 female and 62,000 male) and more than 3,100 people with disabilities.

UNOSAT Damage Assessment

UNOSAT triggered the space charter on behalf of UNOCHA the 19th of February 2016 and requested satellite imagery over the areas defined by UNOCHA based on the proximity to the cyclone track, wind speed values and related potential population exposure. The areas planned to be imaged and analysed were visible through the [GDACS Satellite Mapping Coordination System – SMCS](#) for Fiji with related Glide Number: TC-2016-000014-FJI and allowed to follow the potential next analysed zones. On the 22 February 2016 UNITAR – UNOSAT has conducted assessment of standing waters in Savu area (Naitasiri Province, Central Division) using radar imagery. Due to the cloud cover conditions over Viti Levu island (Fiji), the two first days of the activation no satellite imagery was successfully acquired to conduct building damage assessment over the areas of interest. On the 23 February 2016, the first suitable very high resolution satellite images for damage assessment were delivered to UNITAR-UNOSAT and started the analysis and assessment of damage in the areas of interest

in Ra and Ba provinces in the northern part of Viti Levu island including areas of Lauwaki, Lautoka and Ba (Ba province); Rakiraki and Nanokonoko (Ra province). In this document a summary of main findings and related statistics are summarized and presented in different tables by island, division and province.



The table below summarizes the analysed divisions and related provinces and Tikinas:



Analyzed Areas – Viti Levu Island

Division Analyzed (2)	Province Analyzed (3)	Tikina Analyzed (6)
Western	Ba	Ba Tavua Vuda
	Ra	Rakiraki Saivou
Central	Rewa	Bau

Example of Cyclone Winston Related Damage in Rakiraki, Ra Province, Western Division, Fiji



Post-Event-Image – Damaged Houses

Pleiades - 28 February 2016

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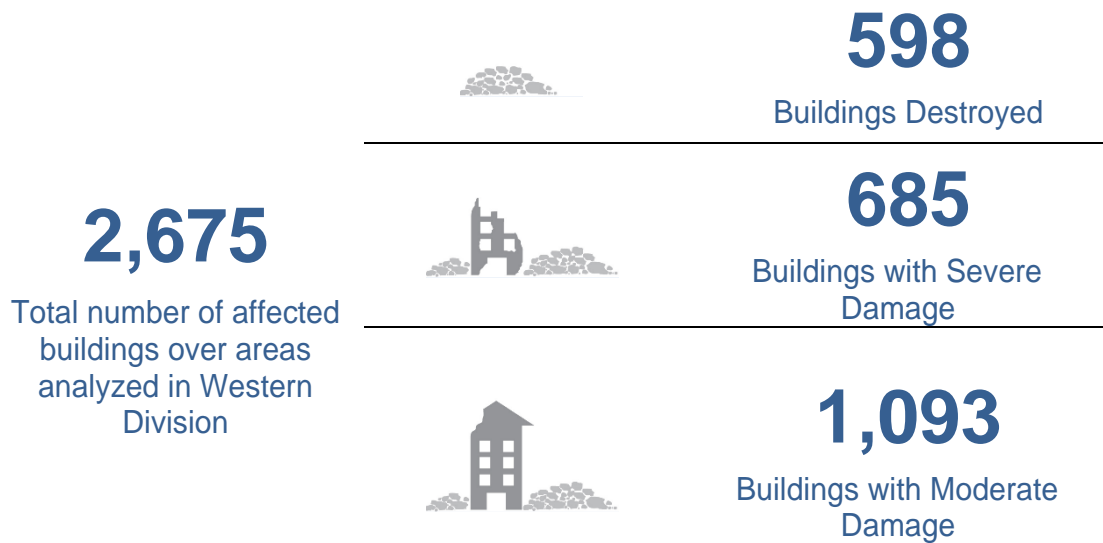
Pre-Event-Image – Intact Houses

WorldView 3 - 25 March 2016

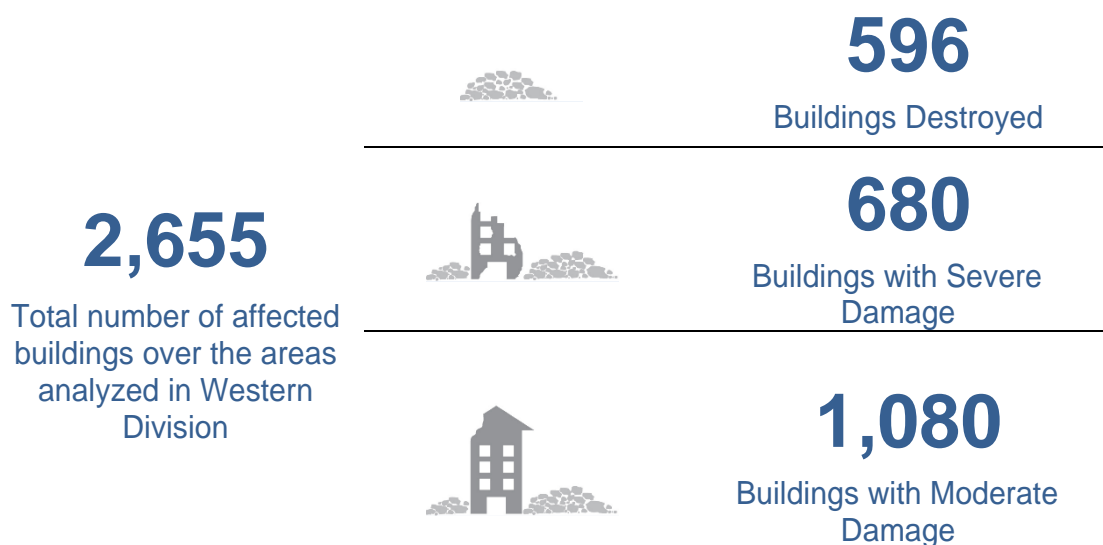
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The tables below summarize the number of total identified damaged buildings within the analysed areas in Viti Levu Island.

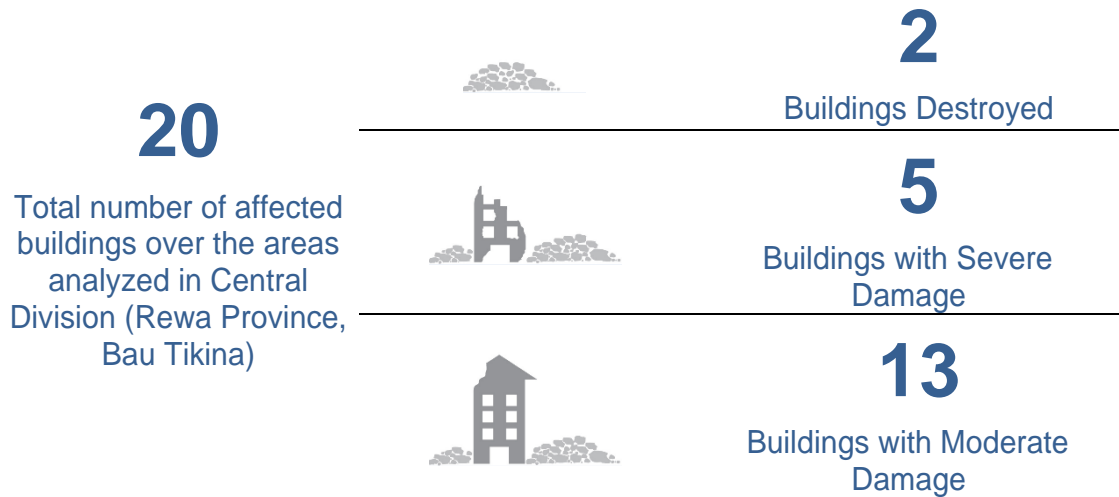
Viti Levu Island



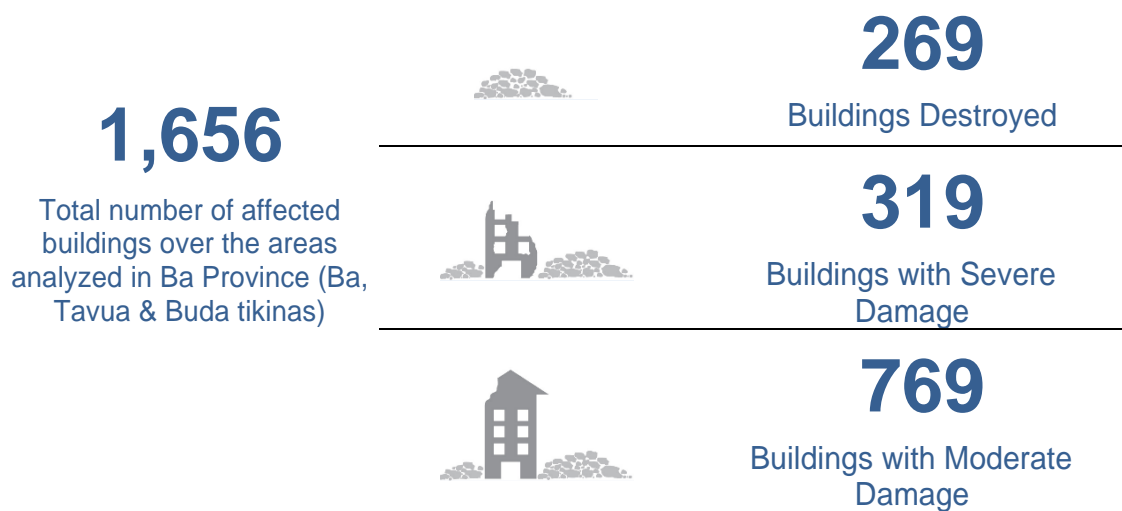
Western Division



Central Division



Ba Province (Western Division)

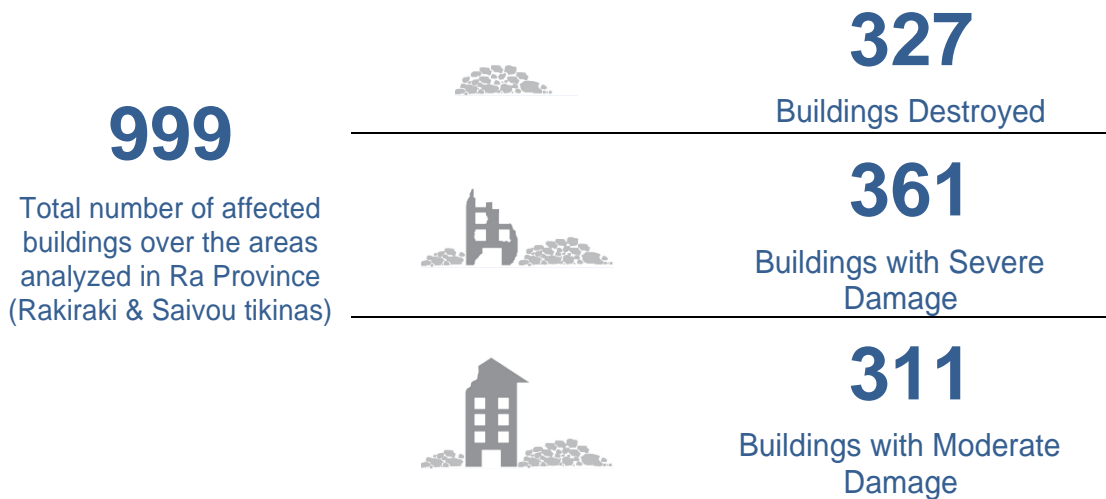


The produced maps and related products in the Western division are summarized in table below with their related URL links:

Derived Analysis by Tikinas in Ba Province

Ba	http://www.unitar.org/unosat/node/44/2358 http://www.unitar.org/unosat/node/44/2357
Tavua	http://www.unitar.org/unosat/node/44/2354 http://www.unitar.org/unosat/node/44/2347
Vuda	http://www.unitar.org/unosat/node/44/2350 http://www.unitar.org/unosat/node/44/2351 http://www.unitar.org/unosat/node/44/2353

Ra Province (Western Division)



The maps and products produced in Ra division are summarized in the table below:

Derived Analysis by Tikinas in Ra Province

Rakiri	http://www.unitar.org/unosat/node/44/2355
Saivou	http://www.unitar.org/unosat/node/44/2356

UNITAR – UNOSAT made also an estimate of potential population within the areas of wind speeds of 90 and 120 km/h by using the population data from WorldPOP 2010 as of 19 February 2016 and as of 24 February 2016 using the expected and the observed cyclone track (JTWC), sustained wind speeds for each respective date.

Population Exposure Estimates for Fiji Islands

19 February 2016	http://www.unitar.org/unosat/node/44/2373
24 February 2016	http://www.unitar.org/unosat/node/44/2372

The map below illustrates the areas covered in Viti Levu Island (Fiji), the cyclone track and the related conducted analysis:

