

# Tropical Cyclone FANATALA-16

## Damage Assessment Report

### Farquhar Atoll, Seychelles,

### 25 April 2016

Prepared by  
**UNITAR/UNOSAT**



**25 April 2016**

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# Tropical Cyclone Fantala-16



## Overview

Tropical Cyclone FANTALA formed over the south-western Indian Ocean on 11 April. It then moved west, intensifying. It passed near Farquhar Atoll (Seychelles) on 17 April at 6.00 UTC with max. sustained wind speed of 241 km/h and on 19 April at 18.00 UTC with max. sustained wind speed of 157 km/h, causing widespread damage. On 21 April at 6.00 UTC its centre was located approx. 230 km southwest of the Agalega islands (Mauritius) and 640 km northeast of Madagascar and it had max. sustained wind speed of 167 km/h.

Significant damages were reported on Farquhar island on Monday 18<sup>th</sup> April after FANTALA made landfall on Sunday evening with winds up to 350km/h. No fatalities have been reported but preliminary reports indicated that almost all of the buildings on the island have been damaged or flattened by the storm's powerful winds, except for only four cyclone-proof facilities located on the island. On Wednesday 20<sup>th</sup> April Seychelles authorities declared Farquhar islands as disaster areas.

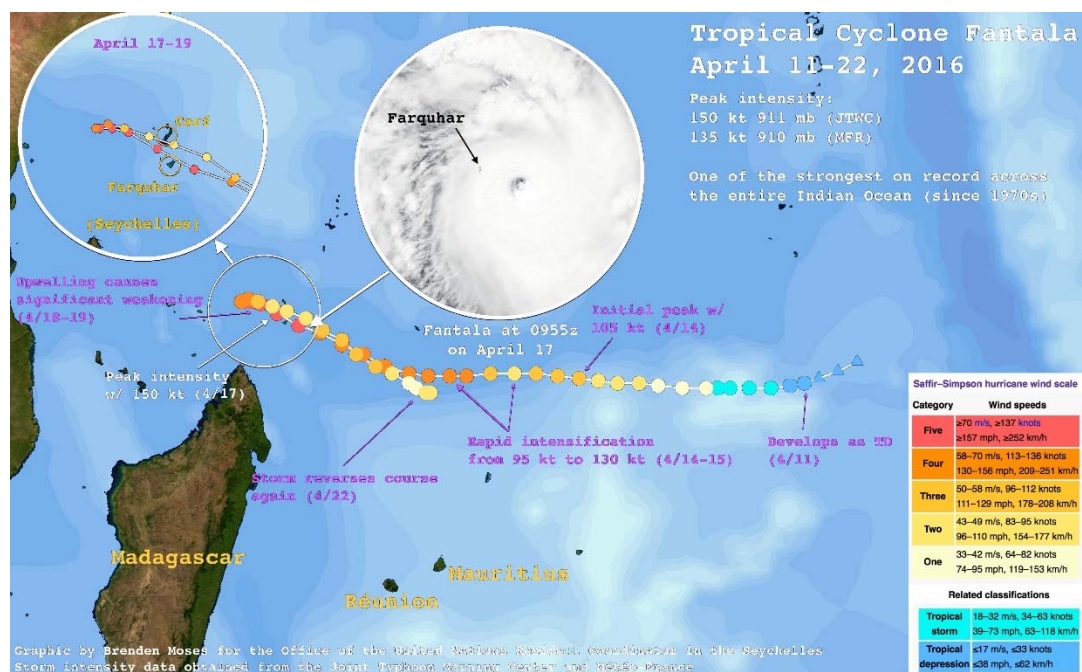
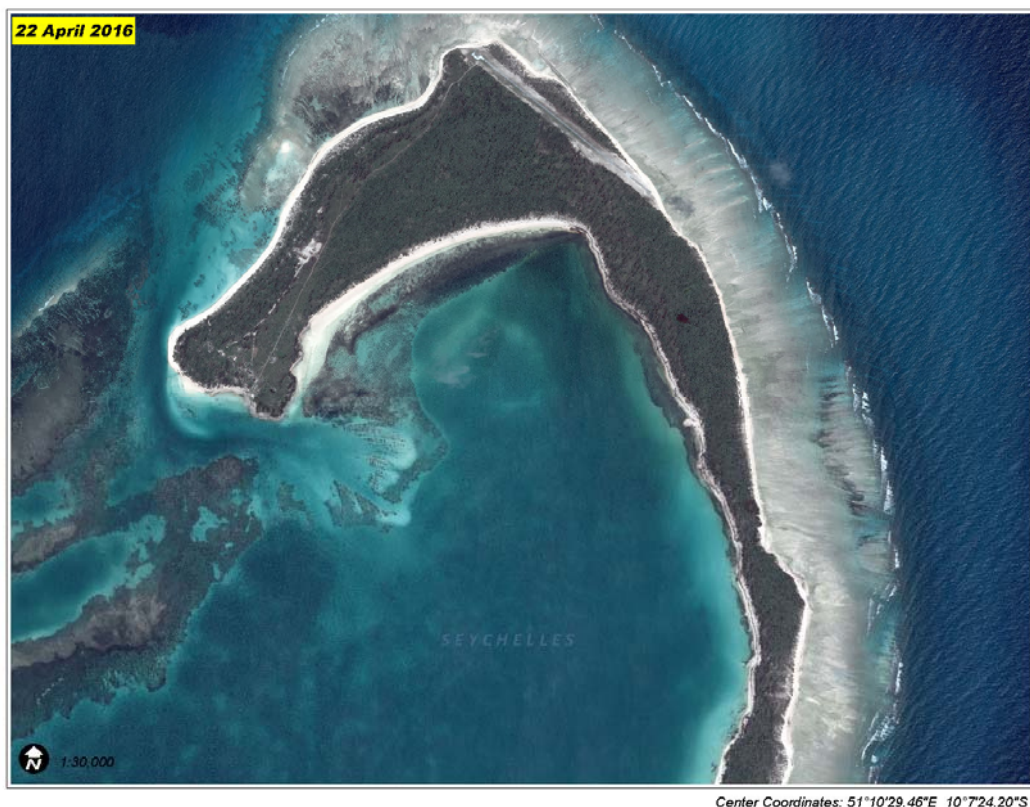


Figure 1: Storm intensity data obtained from JTWC and Météo-France (UNDP)

# UNOSAT Damage Assessment

On 19<sup>th</sup> April 2016, UNITAR/UNOSAT has triggered the [International Charter on Space and Major Disasters](#) on behalf of the UN Resident Coordinator Office (RCO - Seychelles & Mauritius) to support with satellite damage analysis on going emergency response operations within cyclone most affected areas in Farquhar Atoll.

First cloud free very high resolution satellite image covering Area of Interest (AOI) was acquired on 22<sup>nd</sup> April 2016 (07:30 UTC) and delivered the same day by the Space Charter to UNITAR/UNOSAT.



Farquhar Atoll in Seychelles as imaged by Pléiades satellite on 22 April 2016

Satellite Data (1): Pléiades  
Imagery Dates: 22 April 2016  
Resolution: 50cm  
Copyright: CNES (2016), Distribution AIRBUS DS  
Source: Airbus Defence and Space  
Other Data: USGS, UNCS, NASA, NGA  
Analysis: UNITAR / UNOSAT

Production: UNITAR / UNOSAT  
Analysis conducted with ArcGIS v10.1  
Coordinate System: WGS 1984 UTM Zone 39S  
Projection: Transverse Mercator  
Datum: WGS 1984  
Units: Meter

Disaster coverage by  
the International Charter  
"Space and Major  
Disasters". For more  
information on the  
Charter, which is about



The depiction and use of boundaries, geographic names and related data shown here are not warranted to be error-free nor do they imply official endorsement or acceptance by the United Nations. UNOSAT is a program of the United Nations Institute for Training and Research (UNITAR), providing satellite imagery and related geographic information, research and analysis to UN humanitarian and development agencies and their implementing partners.

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Figure 2: Pléiades image of 22 April 2016

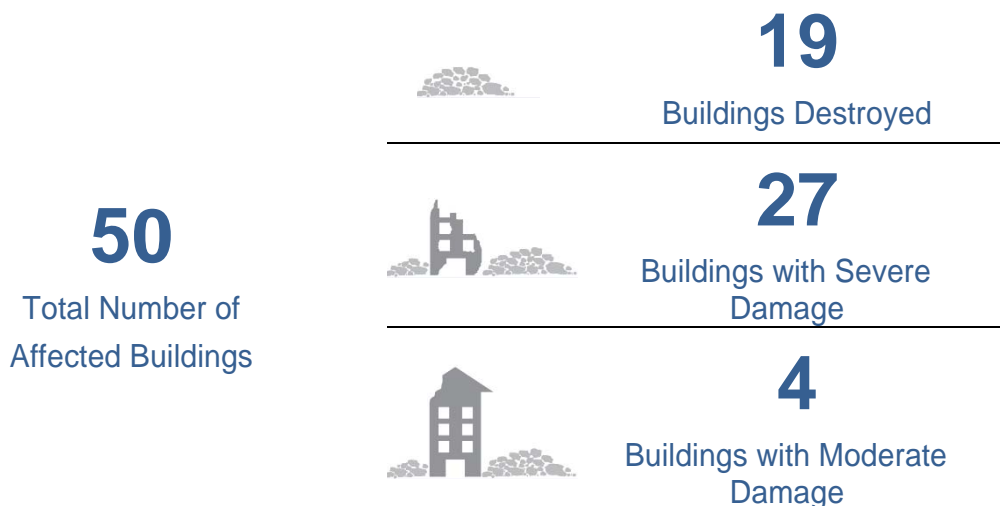
Hereafter a summary of satellite based analysis undertaken by UNITAR-UNOSAT using post disaster satellite image acquired on 22<sup>nd</sup> April 2016. The extent of damage is categorized into three main levels/classes: Destroyed, Severe Damage and Moderate Damage.

**Important Note:** Total number of affected buildings reported as well estimates of different level of building damages may have been underestimated. This is a preliminary analysis & has not yet been validated in the field.



Figure 3: Overview of identified damaged buildings location in Farquhar by level of damage

## Satellite derived Damage analysis- Summary



### Cyclone FANTALA, locations of different affected buildings, Farquhar Atoll, Seychelles

Bellow, three examples of post/pre images from the northern part of the Atoll. The numbers (1, 2 and 3) indicate their related locations illustrated in Figure 4.



Post-Event-Image – Damaged Structures  
*Pleiades - 22 April 2016*  
© (CNES 2016) - Distribution Airbus Defence and Space



Pre-Event-Image – Intact Structures  
*WorldView 3 - 15 January 2015*  
© DigitalGlobe, Inc.



**Post-Event-Image – Damaged Houses**  
*Pleiades - 22 April 2016*  
© (CNES 2016) - Distribution Airbus Defence and Space

**Pre-Event-Image – Intact Houses**  
WorldView 3 - 15 January 2015  
© DigitalGlobe, Inc.



Figure 4: Examples of damaged structures as observed from satellite image (Pléiades of 22 April 2016) and related ground pictures from UNDP