



UNOSAT

Tropical Cyclone OMA-19

Population Exposure Analysis in Vanuatu

13 February 2019

Population Exposure Analysis
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Geneva, Switzerland

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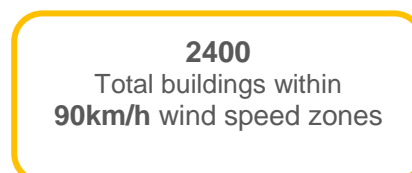
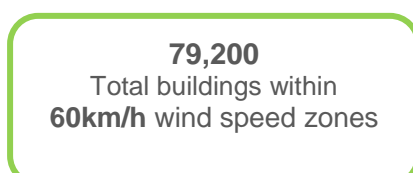
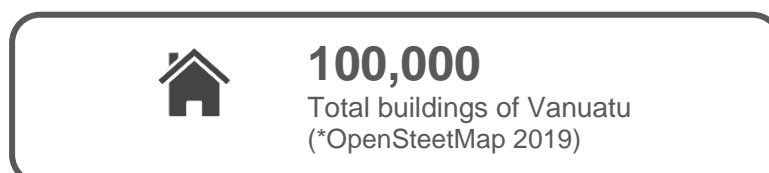
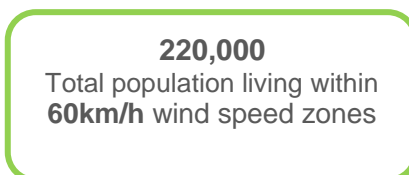
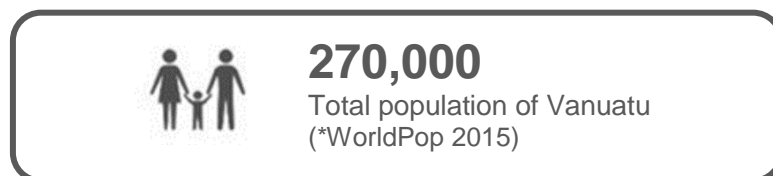


Overview

The tropical cyclone OMA-19 was originated on the 12 February 2019 on the Pacific and heading toward Vanuatu and New Caledonia. It became a tropical cyclone Category 2 on the 13 February 2019 according to Vanuatu's Meteorological Service. OMA-19 is currently slowly moving with an east-southeast direction. The number of provinces predicted to bear the brunt of cyclone Oma-19 includes Sanma, Torba,, Penma and Malampa which have been placed on red alert by the National Disaster Office of Vanuatu. The western part of Sanma is expected to experience sustained wind speed > 90km/h.

Based on data of the expected tropical cyclone path OMA, wind speeds zones from Joint Research Centre (Issued on 13 February 2019 06:00 UTC), and population data from WorldPop 2015, UNITAR-UNOSAT conducted a population exposure analysis for Vanuatu. About 4% of population of Vanuatu living inside wind speed zone of 90 km/h and 80% of population of Vanuatu living inside wind speed zone of 60 km/h. 2.5% of buildings in Vanuatu are expected to experience more than 90km/h sustained wind speed.

Population & Buildings Exposure in Vanuatu (TC OMA-19)



The population exposure has been calculated using a 100m resolution WorldPoP dataset and building footprints from OpenStreetMap.

This is a preliminary analysis & has not yet been validated in the field.

**Vanuatu Population Exposed to sustained wind speed zones:
Tropical Cyclone OMA-19 (13/02/2019, 06:00 UTC)**

Province/Municipality	Population		Total Population	Building footprints		Total Buildings
	Wind Speed Zones			Wind Speed Zones		
	60 km/h	90 km/h		60 km/h	90 km/h	
Vanuatu	220,284	11,168	231,452	79,233	2,415	81,648
Malampa	42,256		42,256	23,305		23,305
Central Malekula	6,547		6,547	4,854		4,854
North Ambrym	2,837		2,837	1,708		1,708
North East Malekula	3,098		3,098	5,396		5,396
North West Malekula	6,725		6,725	3,878		3,878
Paama	297		297	297		297
South East Ambrym	2,162		2,162	1,088		1,088
South East Malekula	2,323		2,323	1,462		1,462
South Malekula	2,908		2,908	1,200		1,200
South West Malekula	9,565		9,565	2,222		2,222
West Ambrym	5,795		5,795	1,200		1,200
Penama	35,308		35,308	12,404		12,404
Central Pentecost 1	1,410		1,410	802		802
Central Pentecost 2	3,512		3,512	1,456		1,456
East Ambae	1,523		1,523	1,349		1,349
North Ambae	4,762		4,762	2,025		2,025
North Maewo	2,966		2,966	637		637
North Pentecost	2,107		2,107	1,590		1,590
South Ambae	4,477		4,477	583		583
South Maewo	4,175		4,175	152		152
South Pentecost	4,261		4,261	1,425		1,425
West Ambae	6,115		6,115	2,385		2,385
Sanma	41,579	11,168	52,747	17,704	2,415	20,119
Canal - Fanafo	4,422		4,422	2,021		2,021
East Malo	1,383		1,383	210		210
East Santo	9,231		9,231	2,049		2,049
Luganville	290		290	641		641
North Santo	10,777	498	11,275	3,383		3,383
North West Santo	1,510	5,342	6,852	138	966	1,104
South East Santo	3,316		3,316	1,192		1,192
South Santo	5,154		5,154	5,710		5,710

West Malo	741		741	1,514		1,514
West Santo	4,755	5,328	10,083	846	1,449	2,295
Shefa	90,469		90,469	23,303		23,303
Emau	224		224	298		298
Erakor	8,470		8,470	1,905		1,905
Eratap	5,910		5,910	2,209		2,209
Eton	19,273		19,273	1,037		1,037
Ifira	3		3	403		403
Makimae	761		761	389		389
Malorua	18,434		18,434	1,096		1,096
Mele	5,884		5,884	1,214		1,214
Nguna	1,878		1,878	825		825
North Efate	4,734		4,734	906		906
North Tongoa	630		630	377		377
Pango	477		477	1,023		1,023
Port Vila	2,376		2,376	8,219		8,219
South Epi	2,150		2,150	310		310
Tongariki	569		569	251		251
Varisu	4,206		4,206	900		900
Vermali	2,505		2,505	1,266		1,266
Vermaul	11,984		11,984	675		675
Torba	10,671		10,671	2,517		2,517
Gaua	6,152		6,152	382		382
Merelava	153		153	260		260
Mota	38		38	18		18
Motalava	396		396	271		271
Torres	618		618	472		472
Ureparapara	458		458			
Vanua Lava	2,857		2,857	1,114		1,114
Total	220,284	11,168	231,452	79,233	2,415	81,648

Download full excel table from [here](#):

Sources:

Cyclone track: Joint Research Centre (JRC) as of 13/02/2019

Wind speed zones: Joint Research Centre (JRC) as of 13/02/2019, 06:00 UTC

Administrative Levels: OCHA ROP

Spatial Demographic Data: WorldPop (2015), 100 m spatial resolution

Building footprints: OpenStreetMap

Analysis: UNITAR-UNOSAT (13/02/2018)



VANUATU

Imagery analysis: 13 - 18 February 2019 | Published 13 February 2019 | Version 1.0



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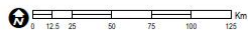
Tropical Storm Oma-19 : Path and Wind Speed Zones

This map illustrates the tropical storm Oma-17 path with wind impact zones observed and predicted between 13 and 18 February 2019. The tropical storm path and wind speed zones were derived from Joint Research Centre data (Warning 18 issued the 13 February 2019 at 06:00 UTC). This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to UNITAR-UNOSAT.

Legend

- Capital
 - Predicted position
 - Previous position
 - Predicted track
 - Previous track
- WindSpeed Zone**
- Medium (60 km/h)
 - High (90 km/h)

Map Scale for A3: 1:2,500,000



Analysis conducted with ArcGIS v10.4

Coordinate System: WGS 1984 UTM Zone SBN
 Projection: Transverse Mercator
 Datum: WGS 1984
 Units: Meter

Wind Speed Data: Joint Research Centre
 Date Series: 13 - 18 February 2019
 Administrative boundaries: OCHA ROP
 Copyright: JRC
 Source: JRC

Baseline Data: HDX
 Analysis: UNITAR - UNOSAT
 Production: UNITAR - UNOSAT
 Source: JRC

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Map1: Tropical cyclone OMA-19 track with low to medium wind speed zones. Download PDF map [here](#)