



# UNOSAT

## Tropical Cyclone VAMCO

### Population Exposure Analysis in Philippines

#### 11 November 2020

Population Exposure Analysis  
11 November 2020

Geneva, Switzerland

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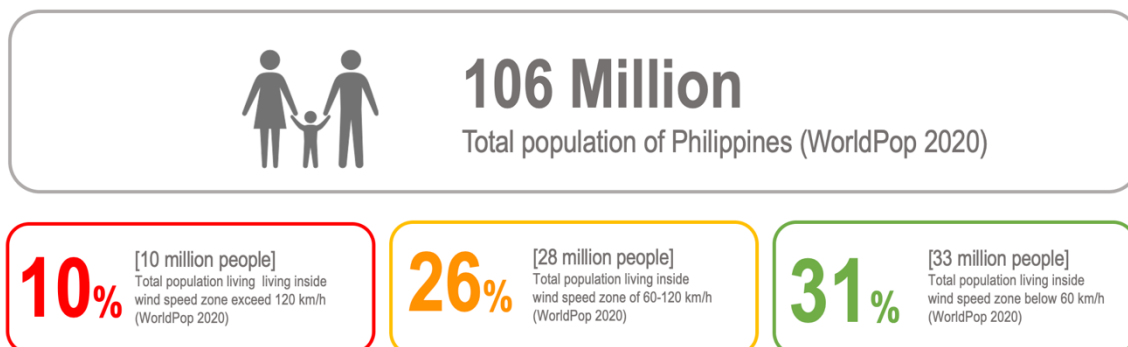


## Overview

Tropical Storm "Vamco" formed on November 9, 2020, as the 22<sup>nd</sup> named storm of the 2020 Pacific typhoon season. By 12:00 UTC on November 10, Vamco intensified into a Severe Tropical Storm. The Office of Civil Defense (OCD) of Philippines had raised a red alert status in Bicol Region (Region 5). According to PAGASA, the center of Vamco is more likely to make landfall over Quezon early Thursday morning, November 12, with a close approach of Catanduanes and Camarines Norte tomorrow afternoon and evening (LT), respectively. According to GDACS, Tropical Cyclone VAMCO-20 can have a medium humanitarian impact based on the maximum sustained wind speed, exposed population and vulnerability.

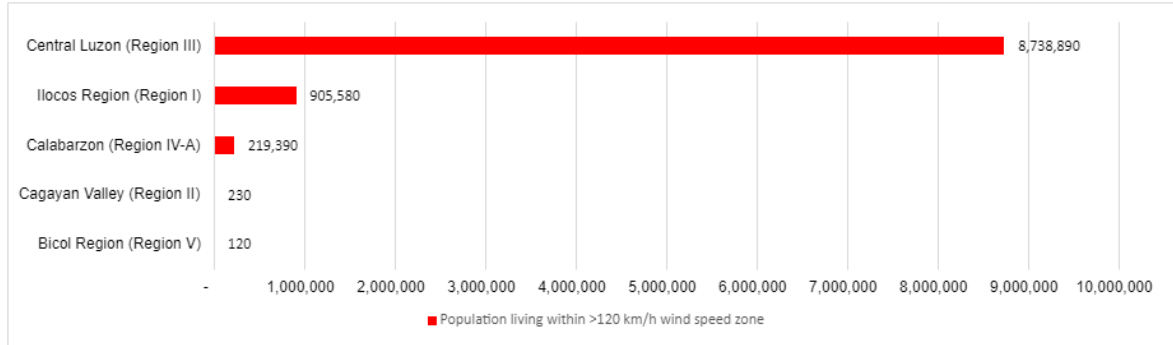
Based on data of the forecasted tropical cyclone path of wind speeds zones from Joint Research Centre (Issued on 11 November 2020 08:00 local time), and population data from the WorldPop 2020, UNITAR-UNOSAT has prepared a population exposure analysis for the Philippines. About 10% of population of the Philippines living inside wind speed zone exceed 120 km/h, 26% living inside wind speed zone of 60-120 km/h and 31% living inside wind speed zone below 60 km/h

### Population Exposure in Philippines as of 11 November 2020 at 08:00 (Local Time)

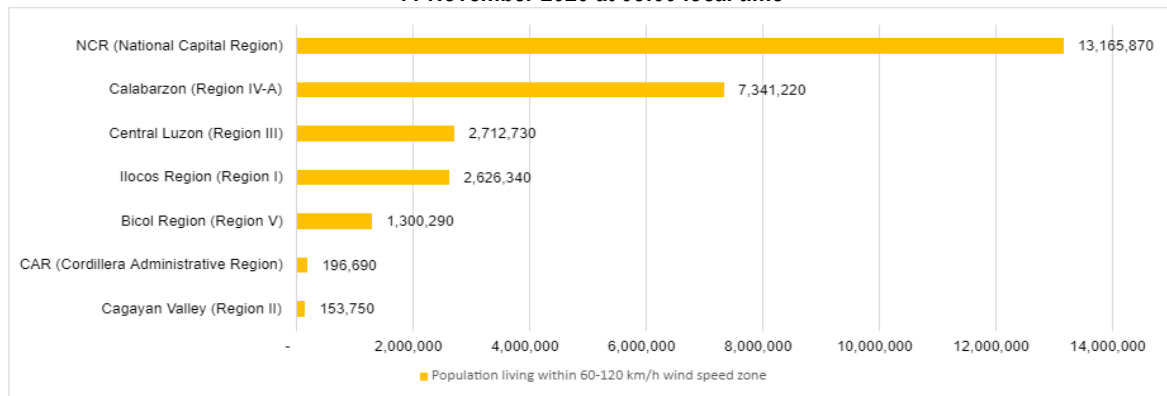


The population exposure has been calculated using a 100 m resolution WorldPop dataset.  
This is a preliminary analysis & has not yet been validated in the field.

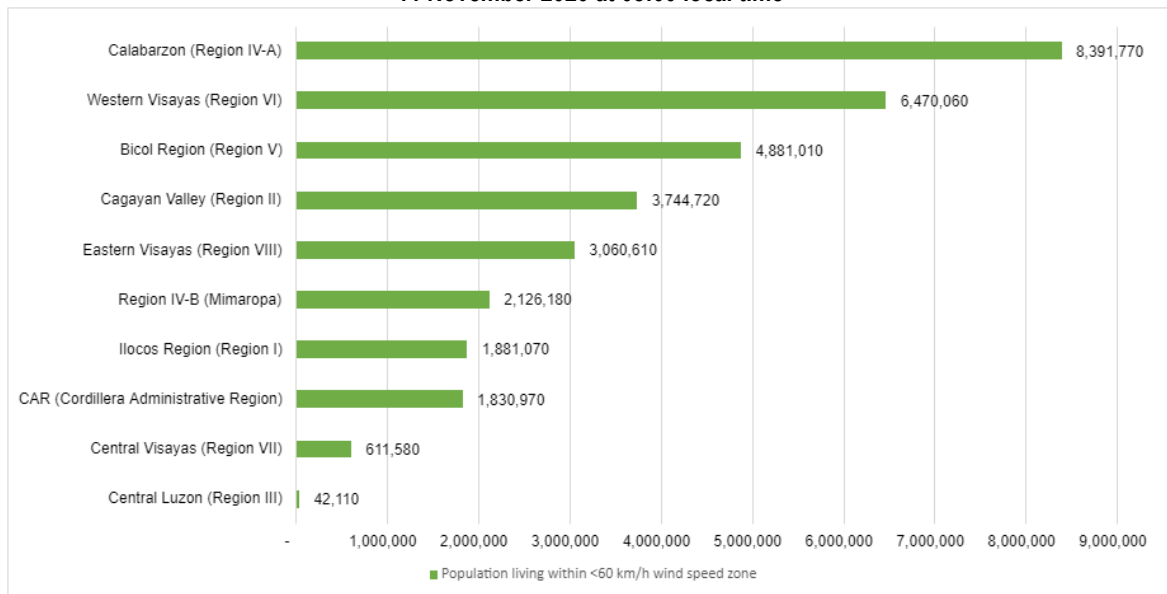
**The Philippines population living within the wind speed zone exceed 120 km/h  
11 November 2020 at 08:00 local time**



**The Philippines population living within 60-120 km/h wind speed zone  
11 November 2020 at 08:00 local time**



**The Philippines population living within the wind speed zone below 60 km/h  
11 November 2020 at 08:00 local time**



**Philippines Population Exposed to Sustained Wind Speed Zones Tropical Cyclone VAMCO  
(11 November 2020, 08:00 Local Time)**

Region / Province	Affected Population			Total Affected Population
	Wind Speed Zones			
	<60 km/h	60 - 120 km/h	>120 km/h	
<b>Philippines</b>	<b>33,040,095</b>	<b>27,496,872</b>	<b>9,864,213</b>	<b>70,401,180</b>
<b>CAR (Cordillera Administrative Region)</b>	<b>1,830,971</b>	<b>196,687</b>	<b>-</b>	<b>2,027,658</b>
Apayao	146,739	-	-	146,739
Mountain Province	179,337	-	-	179,337
Ifugao	230,576	-	-	230,576
Abra	254,337	-	-	254,337
Kalinga	289,318	-	-	289,318
Benguet	730,665	196,687	-	927,352
<b>NCR (National Capital Region)</b>	<b>-</b>	<b>13,165,865</b>	<b>-</b>	<b>13,165,865</b>
NCR, City of Manila, First District	-	1,725,296	-	1,725,296
NCR, Fourth District	-	3,373,619	-	3,373,619
NCR, Second District	-	5,032,769	-	5,032,769
NCR, Third District	-	3,034,181	-	3,034,181
<b>Ilocos Region (Region I)</b>	<b>1,881,066</b>	<b>2,626,336</b>	<b>905,583</b>	<b>5,412,985</b>
La Union	508,742	285,994	-	794,737
Ilocos Norte	632,691	-	-	632,691
Ilocos Sur	739,633	-	-	739,633
Pangasinan	-	2,340,341	905,583	3,245,925
<b>Cagayan Valley (Region II)</b>	<b>3,744,721</b>	<b>153,746</b>	<b>231</b>	<b>3,898,698</b>
Quirino	212,561	18,170	-	230,730
Nueva Vizcaya	376,179	135,577	231	511,987
Cagayan	1,314,564	-	-	1,314,564
Isabela	1,841,418	-	-	1,841,418
<b>Central Luzon (Region III)</b>	<b>42,114</b>	<b>2,712,727</b>	<b>8,738,889</b>	<b>11,493,731</b>
Aurora	42,114	124,448	68,492	235,054
Bataan	-	754,293	1,475	755,768
Bulacan	-	1,198,705	2,034,702	3,233,408
Nueva Ecija	-	122,993	2,280,248	2,403,241
Pampanga	-	94,666	2,542,552	2,637,218
Zambales	-	417,622	449,939	867,562
Tarlac	-	-	1,361,480	1,361,480
<b>Calabarzon (Region IV-A)</b>	<b>8,391,774</b>	<b>7,341,219</b>	<b>219,386</b>	<b>15,952,379</b>
Cavite	1,403,699	2,733,304	-	4,137,003
Quezon	1,961,083	141,382	155,566	2,258,031
Laguna	2,199,456	1,321,796	-	3,521,252

Batangas	2,827,536	-	-	2,827,536
Rizal		3,144,736	63,820	3,208,557
<b>Region IV-B (Mimaropa)</b>	<b>2,126,178</b>	-	-	<b>2,126,178</b>
Palawan	195,613	-	-	195,613
Marinduque	202,228	-	-	202,228
Romblon	245,497	-	-	245,497
Occidental Mindoro	548,427	-	-	548,427
Oriental Mindoro	934,413	-	-	934,413
<b>Bicol Region (Region V)</b>	<b>4,881,012</b>	<b>1,300,292</b>	<b>124</b>	<b>6,181,428</b>
Camarines Norte	-	619,282	124	619,406
Sorsogon	770,543	-	-	770,543
Masbate	944,141	-	-	944,141
Albay	1,332,125	-	-	1,332,125
Camarines Sur	1,834,203	421,716	-	2,255,919
Catanduanes	-	259,294	-	259,294
<b>Western Visayas (Region VI)</b>	<b>6,470,060</b>	-	-	<b>6,470,060</b>
Guimaras	179,209	-	-	179,209
Antique	583,801	-	-	583,801
Aklan	614,544	-	-	614,544
Capiz	769,764	-	-	769,764
Negros Occidental	1,748,802	-	-	1,748,802
Iloilo	2,573,940	-	-	2,573,940
<b>Central Visayas (Region VII)</b>	<b>611,584</b>	-	-	<b>611,584</b>
Cebu	611,584	-	-	611,584
<b>Eastern Visayas (Region VIII)</b>	<b>3,060,614</b>	-	-	<b>3,060,614</b>
Biliran	184,037	-	-	184,037
Eastern Samar	283,297	-	-	283,297
Northern Samar	676,059	-	-	676,059
Samar	755,629	-	-	755,629
Leyte	1,161,592	-	-	1,161,592

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

Sources:

Cyclone track: Joint Research Centre (JRC) as of 11 November 2020

Wind speed zones: Joint Research Centre (JRC) as of 11 November 2020 as of 00:00 UTC or 08:00 LT

Administrative Levels: OCHA ROAP, HDX

Spatial Demographic Data: WorldPop (2020), 100 m spatial resolution

Analysis: UNITAR-UNOSAT (11 November 2020)



### Tropical Cyclone VAMCO : Path and Wind Speed Zones

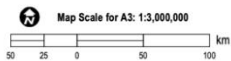
This map illustrates the tropical cyclone VAMCO path with wind impact zones observed and predicted between 9th November and 16th November 2020. The tropical storm path and wind speed zones were derived from Joint Research Centre (Warning 11th November 2020 at 08:00 local time). This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to UNITAR-UNOSAT

#### Legend

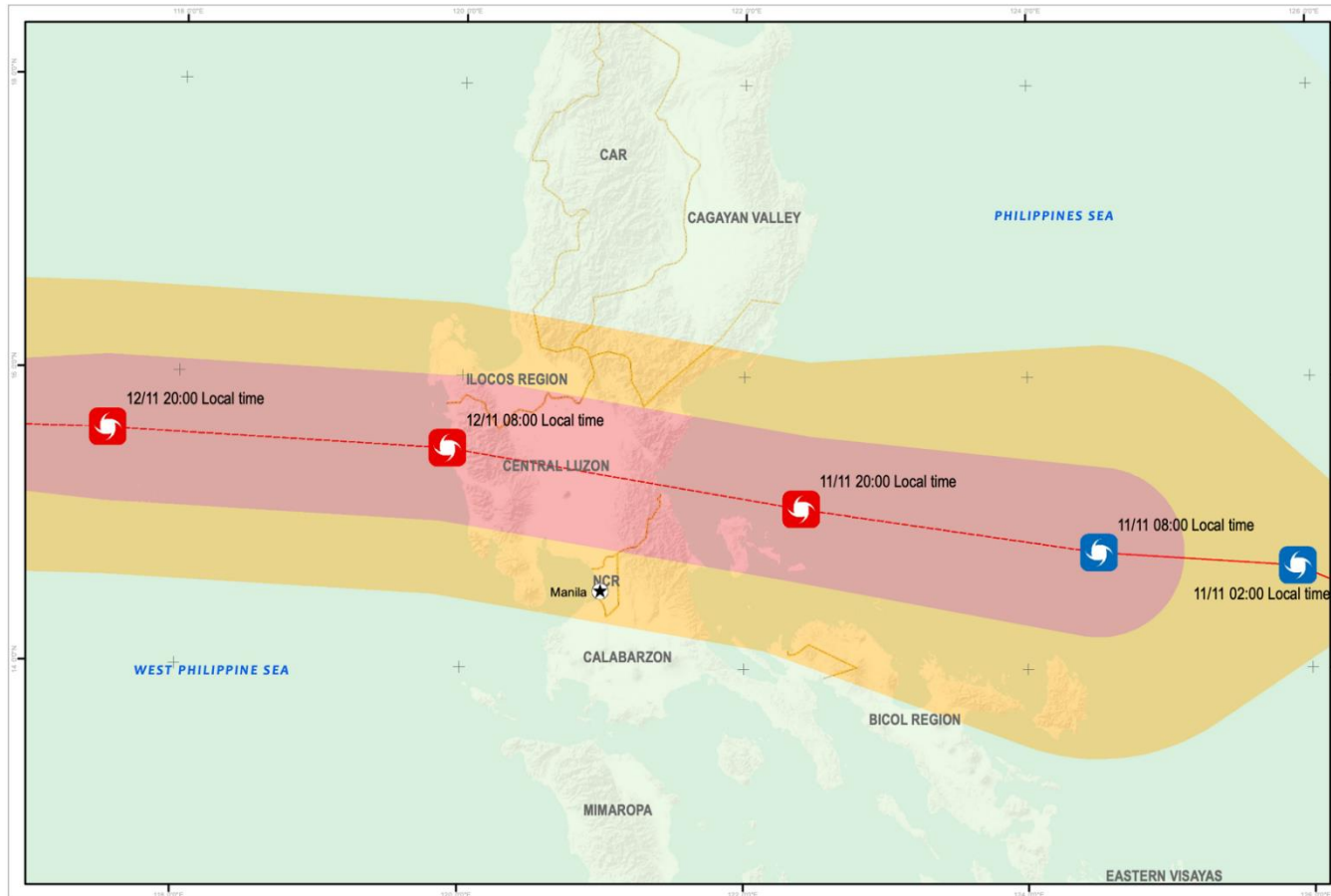
-  Previous position
-  Predicted position
-  Previous track
-  Predict track
-  Province Boundary

#### Wind Speed Zone

-  Low (<60 km/h)
-  Medium (60 - 120 km/h)
-  High (>120 km/h)



Analysis conducted with ArcGIS v10.7  
Coordinate System: WGS 1984 UTM Zone 51N  
Projection: Transverse Mercator  
Datum: WGS 1984  
Units: Meter



Wind Speed Data: Joint Research Centre (JRC)  
Tropical Storm Data Series: 9 – 16 November 2020  
Data Issued Date: 11 November 2020 at 00:00 UTC  
Copyright: JRC  
Source: JRC

Administrative boundaries: OCHA Philippines, HDX  
Background: World Terrain Base, ESRI  
Analysis: UNITAR - UNOSAT  
Production: UNITAR - UNOSAT

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