

UNOSAT

Tropical Cyclone MOCHA - 23

Population Exposure Analysis

in Bangladesh and Myanmar V2.



Population Exposure Analysis
15 May 2023
Geneva, Switzerland

UNOSAT Contact:
Email: unosat@unitar.org
T: +41 22 917 4720 (UNOSAT Operations)
Hotline: +41 75 411 4998

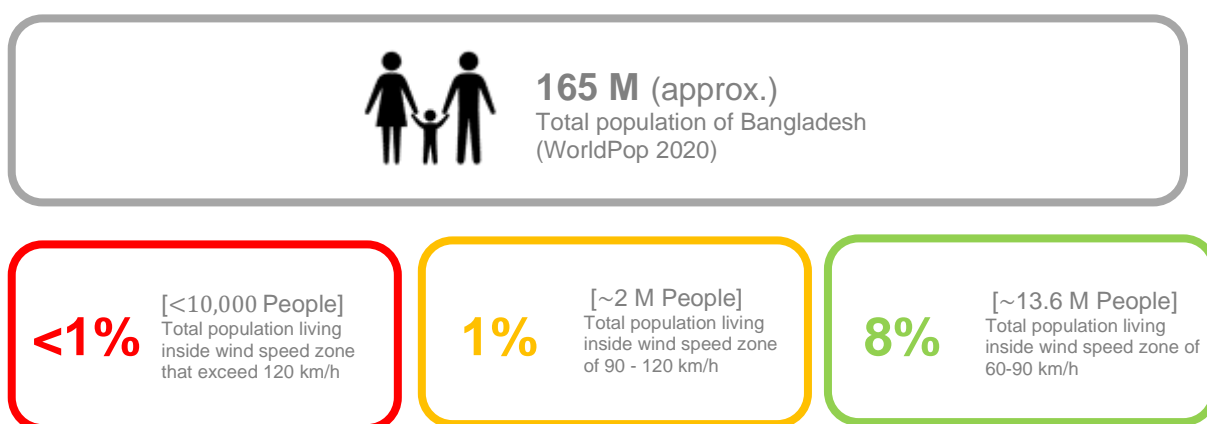
Postal Address:
UNITAR– UNOSAT
7 bis, Avenue de la Paix,
CH-1202 Geneva 2, Switzerland



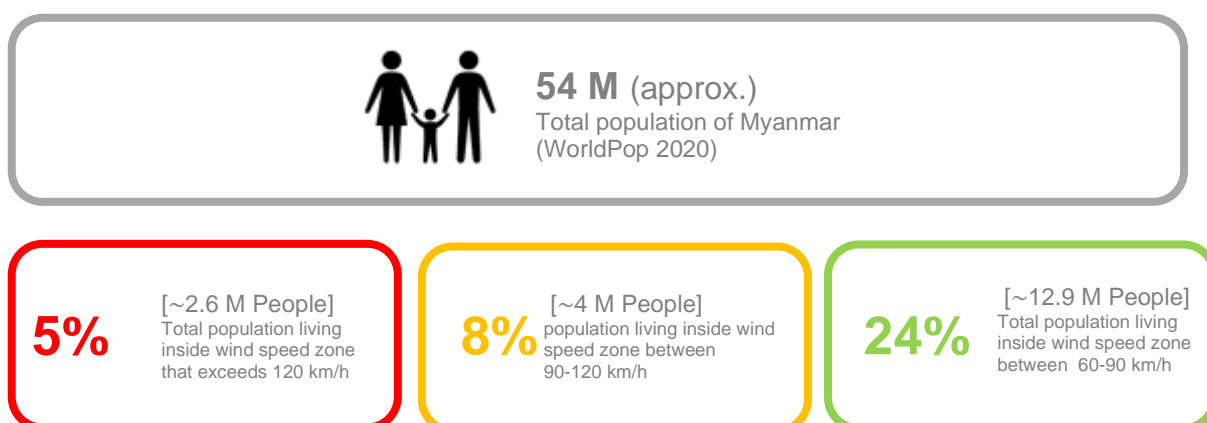
Overview

Tropical Cyclone MOCHA formed over the southern Bay of Bengal on 11 May 2023 and has since then continued to move towards western Myanmar and southern Bangladesh. On 14 May 2023 12:00 UTC, the centre of the cyclone was located approximatively 75km Northeast of Sittwe City (Rakhine State, western Myanmar), with maximum sustained winds of 259 km/h. According to the forecast by JTWC, tropical cyclone MOCHA had a significant impact particularly on the coastal parts of Rakhine State, Myanmar and Chittagong Division, Bangladesh.

Population Exposure in Bangladesh as of 14 May 2023



Population Exposure in Myanmar as of 14 May 2023



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

Bangladesh Population Exposed to Sustained Wind Speed Zones of TC MOCHA (14 May 2023, 18:00 Local Time)

| Division/District | Population | | | Total Population Exposed |
|-------------------|------------------|-------------|-----------|--------------------------------|
| | Wind Speed Zones | | | |
| | 60-90 km/h | 90-120 km/h | >120 km/h | |
| Bangladesh | 13,635,811 | 2,083,663 | <10,000 | 15,721,730 |
| Barishal | 1,124,167 | - | - | 1,124,167 |
| Bhola | 892,742 | | | 892,742 |
| Patuakhali | 231,425 | | | 231,425 |
| Chittagong | 12,511,644 | 2,083,663 | 2,256 | 14,597,564 |
| Bandarban | 217,012 | 311,869 | | 528,881 |
| Chittagong | 8,470,659 | | | 8,470,659 |
| Cox's Bazar | 987,225 | 1,767,009 | 2,256 | 2,756,490 |
| Feni | 495,921 | | | 495,921 |
| Khagrachhari | 646,862 | | | 646,862 |
| Lakshmipur | 29,938 | | | 29,938 |
| Noakhali | 978,493 | | | 978,493 |
| Rangamati | 685,533 | 4,786 | | 690,319 |

Sources:

Cyclone track: Joint Typhoon Warning Center as of 14 May 2023 12:00 UTC

Wind speed zones: Global Disaster Alert and Coordination System (GDACS) as of 14 May 2023 12:00 UTC

Administrative Levels: Bangladesh Bureau of Statistics (BBS)

Spatial Demographic Data: Worldpop unconstrained [2020]), 100 m spatial resolution

Analysis: The United Nations Satellite Centre (UNOSAT)

Myanmar Population Exposed to Sustained Wind Speed Zones of TC MOCHA (14 May 2023, 18:00 Local Time)

| Region or State / District | Population Wind Speed Zones | | | Total Population Exposed |
|-----------------------------|--------------------------------|------------------|------------------|--------------------------------|
| | 60-90 km/h | 90-120 km/h | >120 km/h | |
| Myanmar | 12,906,934 | 4,195,694 | 2,620,523 | 19,723,150 |
| Ayeyarwady | 122,324 | - | - | 122,324 |
| Hinthada | 122,324 | | | 122,324 |
| Bago (West) | 713,873 | - | - | 713,873 |
| Pyay | 710,946 | | | 710,946 |
| Thayawady | 2,927 | | | 2,927 |
| Chin | 97,049 | 236,994 | 191,465 | 525,508 |
| Falam | 87,884 | 95,399 | 545 | 183,828 |
| Hakha | 9,166 | 70,125 | 29,153 | 108,444 |
| Matupi | | 60,658 | 101,980 | 162,638 |
| Mindat | | 10,811 | 59,787 | 70,598 |
| Kachin | 998,512 | 213,081 | 293,807 | 1,505,400 |
| Bhamo | 203,915 | 3,669 | | 207,583 |
| Mohnyin | 338,006 | 188,519 | 293,807 | 820,331 |
| Myitkyina | 456,592 | 20,893 | | 477,485 |
| Magway | 2,989,632 | 730,265 | 199,528 | 3,919,425 |
| Gangaw | | 53,115 | 198,770 | 251,886 |
| Magway | 1,239,590 | | | 1,239,590 |
| Minbu | 540,598 | 149,795 | | 690,394 |
| Pakokku | 481,594 | 527,354 | 758 | 1,009,706 |
| Thayet | 727,849 | | | 727,849 |
| Mandalay | 5,267,537 | 17,830 | - | 5,285,367 |
| Kyaukse | 542,380 | | | 542,380 |
| Mandalay | 1,778,147 | | | 1,778,147 |
| Meiktila | 705,994 | | | 705,994 |
| Myingyan | 820,397 | | | 820,397 |
| Nyaung-U | 518,467 | | | 518,467 |
| Pyinoolwin | 743,792 | 17,830 | | 761,622 |
| Yamethin | 158,361 | | | 158,361 |
| Nay Pyi Taw | 3,752 | - | - | 3,752 |
| Det Khi Na | 170 | | | 170 |
| Oke Ta Ra | 3,582 | | | 3,582 |
| Rakhine | 497,649 | 385,626 | 1,057,250 | 1,940,525 |
| Kyaukpyu | 173,055 | 233,657 | | 406,712 |
| Maungdaw | | 37,702 | 52,826 | 90,528 |
| Mrauk-U | | 113,641 | 510,724 | 624,365 |
| Sittwe | | 627 | 493,700 | 494,327 |
| Thandwe | 324,594 | | | 324,594 |
| Sagaing | 2,108,340 | 2,611,453 | 878,473 | 5,598,266 |
| Hkamti | 251,344 | 20,299 | | 271,643 |
| Kale | | 349,309 | 204,299 | 553,609 |
| Kanbalu | 69,170 | 268,981 | 96,169 | 434,320 |
| Katha | 75,521 | 344,827 | 156,788 | 577,136 |
| Kawlin | | 88,571 | 270,814 | 359,385 |
| Mawlaik | 57,538 | 114,438 | 6,276 | 178,252 |
| Monywa | 333,561 | 489,516 | | 823,078 |
| Naga Self-Administered Zone | 861 | | | 861 |
| Sagaing | 565,722 | | | 565,722 |
| Shwebo | 639,912 | 427,333 | 56,164 | 1,123,408 |
| Tamu | 111,638 | 10,335 | | 121,973 |
| Yinmarbin | 3,074 | 497,844 | 87,963 | 588,881 |
| Shan (North) | 108,265 | 446 | - | 108,711 |
| Kyaukme | 8,842 | | | 8,842 |
| Mongmit | 99,423 | 446 | | 99,869 |

Sources:

Cyclone track: Joint Typhoon Warning Center as of 14 May 2023 12:00 UTC

Wind speed zones: Global Disaster Alert and Coordination System (GDACS) as of 14 May 2023 12:00 UTC





Administrative Levels: Myanmar Information Management Unit (MIMU)

Spatial Demographic Data: Worldpop unconstrained UN adjust (2020)), 100 m spatial resolution.

Analysis: The United Nations Satellite Centre (UNOSAT)

BANGLADESH & MYANMAR

IMAGERY ANALYSIS: 14/05/2023 PUBLISHED 15/05/2023 V2.

| | | | |
|------------|---|--|--|
| Bangladesh |  TOTAL POPULATION LIVING INSIDE WIND SPEED ZONE EXCEED 120 KM/H <10,000 |  TOTAL POPULATION LIVING INSIDE WIND SPEED ZONE OF 60-120 KM/H ~2 million |  TOTAL POPULATION LIVING INSIDE WIND SPEED ZONE BELOW 60 KM/H ~13.6 million |
| Myanmar |  TOTAL POPULATION LIVING INSIDE WIND SPEED ZONE EXCEED 120 KM/H ~2.6 million |  TOTAL POPULATION LIVING INSIDE WIND SPEED ZONE OF 60-120 KM/H ~4.2 million |  TOTAL POPULATION LIVING INSIDE WIND SPEED ZONE BELOW 60 KM/H ~12.9 million |



TROPICAL CYCLONE
TC20230510BGD
TC20230509MMR



Tropical Cyclone MOCHA: Path and Wind speed zones

This map illustrates the tropical cyclones paths for MOCHA-23 in Myanmar and Bangladesh with observed and predicted wind speed zones between the 11th the 15th of May 2023. The tropical storms paths and wind speed zones were derived from the Joint Typhoon Warning Center (JTWC) of the 14th of May 2023 at 12:00 UTC.

This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to United Nations Satellite Centre (UNOSAT).

Legend

- Capital
- City
- International boundary
- State/Region boundary
- District boundary
- Cyclone location
- Location
- Previous location
- Predict location
- Cyclone track
- Previous track
- Predict track
- Wind Speed Zone
- High (>120 km/h)
- Medium (90-120 km/h)
- Low (60-90 km/h)

