



India Meteorological Department  
(Ministry of Earth Sciences)

BULLETIN NO. 23 (BOB/09/2022)

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DATED: 10.12.2022

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

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**Sub: Cyclonic Storm “Mandous” pronounced as “Man-Dous” over Southwest Bay of Bengal close to North Tamil Nadu-Puducherry coasts (Cyclone Warning for north Tamil Nadu, Puducherry and south Andhra Pradesh coasts): Red Message**

The cyclonic storm “Mandous” pronounced as “Man-Dous” over Southwest Bay of Bengal off north Tamil Nadu and Puducherry coasts moved northwestwards with a speed of 12 kmph during past 06 hours and lay centered at 2330 hours IST of yesterday, the 09<sup>th</sup> December, 2022 over Southwest Bay of Bengal close to north Tamil Nadu-Puducherry coasts near latitude 12.5°N and longitude 80.3°E, about 15 km southeast of Mamallapuram (Mahabalipuram) and about 60 km south-southeast of Chennai. **The landfall process continues and will be completed within a few hours.** The cyclone is being monitored by Doppler Weather Radar Karaikal and Chennai.

It is very likely to move nearly northwestwards and cross north Tamil Nadu-Puducherry coasts around Mamallapuram (Mahabalipuram) as a cyclonic storm with a maximum sustained wind speed of 65-75 kmph gusting to 85 kmph during next 2 hours. Thereafter, it would move west-northwestwards and gradually weaken into a Deep Depression by early morning and into a Depression by noon of 10<sup>th</sup> December.

**Forecast track and intensity are given below:**

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.12.22/2330	12.5/80.3	65-75 gusting to 85	Cyclonic Storm
10.12.22/0530	12.7/80.0	55-65 gusting to 75	Deep Depression
10.12.22/1130	12.9/79.5	40-50 gusting to 60	Depression
10.12.22/1730	13.1/79.0	25-35 gusting to 45	Low Pressure Area

## **Warnings:**

### **(i) Rainfall (warning graphics enclosed)**

- ❖ **10<sup>th</sup> December:-** Light to moderate rainfall at most places with **heavy to very heavy rainfall** at isolated places over north Tamil Nadu and Rayalaseema and adjoining south Andhra Pradesh.

### **(ii) Wind warning:**

- ❖ **Southwest Bay of Bengal:-** Gale wind, speed reaching 65-75 gusting to 85 kmph prevails over southwest Bay of Bengal. It would decrease gradually becoming 55-65 kmph gusting to 75 kmph by 10<sup>th</sup> December early morning and 30-40 kmph gusting to 50 kmph by 10<sup>th</sup> December evening.
- ❖ **Along & off Tamil Nadu, Puducherry and south Andhra Pradesh coasts:-** Gale wind, speed reaching 65-75 kmph gusting to 85 kmph very likely to prevail till early hours of 10<sup>th</sup> December. It is likely to reduce gradually thereafter becoming 55-65 kmph gusting to 75 kmph by morning of 10<sup>th</sup> December and then to 30-40 kmph gusting to 50 kmph by 10<sup>th</sup> December evening.
- ❖ **Gulf of Mannar:-** Squally wind, speed reaching 45-55 kmph gusting to 65 kmph likely to prevail over Gulf of Mannar till early hours of 10<sup>th</sup> December and reduce thereafter becoming 40-50 kmph gusting to 60 kmph by 10<sup>th</sup> December morning.
- ❖ **Westcentral Bay of Bengal:-** Squally wind, speed reaching 55-65 kmph gusting to 75 kmph is likely to prevail over adjoining areas of Westcentral Bay of Bengal off south Andhra Pradesh coast till 10<sup>th</sup> December early morning and reduce thereafter gradually becoming 30-40 kmph gusting to 50 kmph by 10<sup>th</sup> December evening.

### **(iii) Sea condition**

- ❖ **Sea condition** likely to be **high** over Southwest Bay of Bengal till early hours of 10<sup>th</sup> December and would improve thereafter becoming very rough to rough from 10<sup>th</sup> December early morning to evening. The sea condition would be rough to very rough over adjoining areas of Westcentral Bay of Bengal till afternoon of 10<sup>th</sup> December.
- ❖ **Sea condition very likely to be high** along & off north Tamil Nadu and adjoining areas of south Andhra Pradesh and Puducherry coasts and rough to very rough along and off Srilanka and south Tamilnadu coasts till early morning of 10<sup>th</sup> morning. It will gradually improve thereafter, becoming rough to very rough over these regions till 10<sup>th</sup> December afternoon.

### **(iv) Storm Surge Warning**

**The storm surge of about 0.5 m height above the astronomical tide likely to inundate low lying areas of north coastal Tamilnadu and Puducherry during the time of landfall.**

### **(v) Fishermen Warning (warning graphics enclosed)**

Fishermen are advised not to venture into:

- ❖ Southwest Bay of Bengal till 10<sup>th</sup> December evening.
- ❖ Along & off north Sri Lanka coast till 10<sup>th</sup> December forenoon.
- ❖ Along & off Tamilnadu, Puducherry and South Andhra Pradesh coasts and Gulf of Mannar till 10<sup>th</sup> December evening.

### **(vi) Adverse Weather Warning for onshore and off-shore operations**

- ❖ Regulate on-shore and off-shore operations over Southwest Bay of Bengal; along & off Tamil Nadu-Puducherry-South Andhra Pradesh coasts and Gulf of Mannar till 10th December.

**(vii) Damage expected over north Coastal Tamilnadu, Puducherry and adjoining south coastal Andhra Pradesh during Landfall.**

- ❖ Damage to thatched houses/ huts. Unattached metal sheets may fly.
- ❖ Minor damage to power and communication lines leading to partial disruption in power and communication.
- ❖ Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- ❖ Breaking of tree branches, uprooting of small trees. Dead limbs blown from trees.
- ❖ Damage to banana, papaya trees and near coastal agriculture due to salt spray.
- ❖ Damage to paddy, other standing crops and horticulture crops.
- ❖ Inundation/localized flooding in low lying areas due to heavy rains
- ❖ Traffic may be disrupted due to poor visibility in association with heavy rain

**(viii) Action suggested over north Coastal Tamil Nadu, Puducherry and adjoining south coastal Andhra Pradesh**

- ❖ People in north coastal Tamilnadu and Puducherry to remain in safe places till 10<sup>th</sup> December morning.
- ❖ Total suspension of fishing operations till 10<sup>th</sup> December evening.
- ❖ Regulate onshore and off-shore operations till 10<sup>th</sup> December evening.
- ❖ People are advised to be cautious while going outside.
- ❖ Regulate traffic.
- ❖ People should not move nearby to vulnerable structures.

**(ix) Post landfall outlook for interior districts of north Tamilnadu and adjoining south Andhra Pradesh**

The cyclonic storm Mandous is very likely to weaken into a deep depression within 3 hours after landfall. Hence, any structural damage is not expected over the interior districts of Tamilnadu and Andhra Pradesh. However, the heavy to very heavy rainfall is likely at isolated places over districts of north interior Tamilnadu, Rayalaseema and adjoining districts of South Interior Karnataka on 10<sup>th</sup> December.

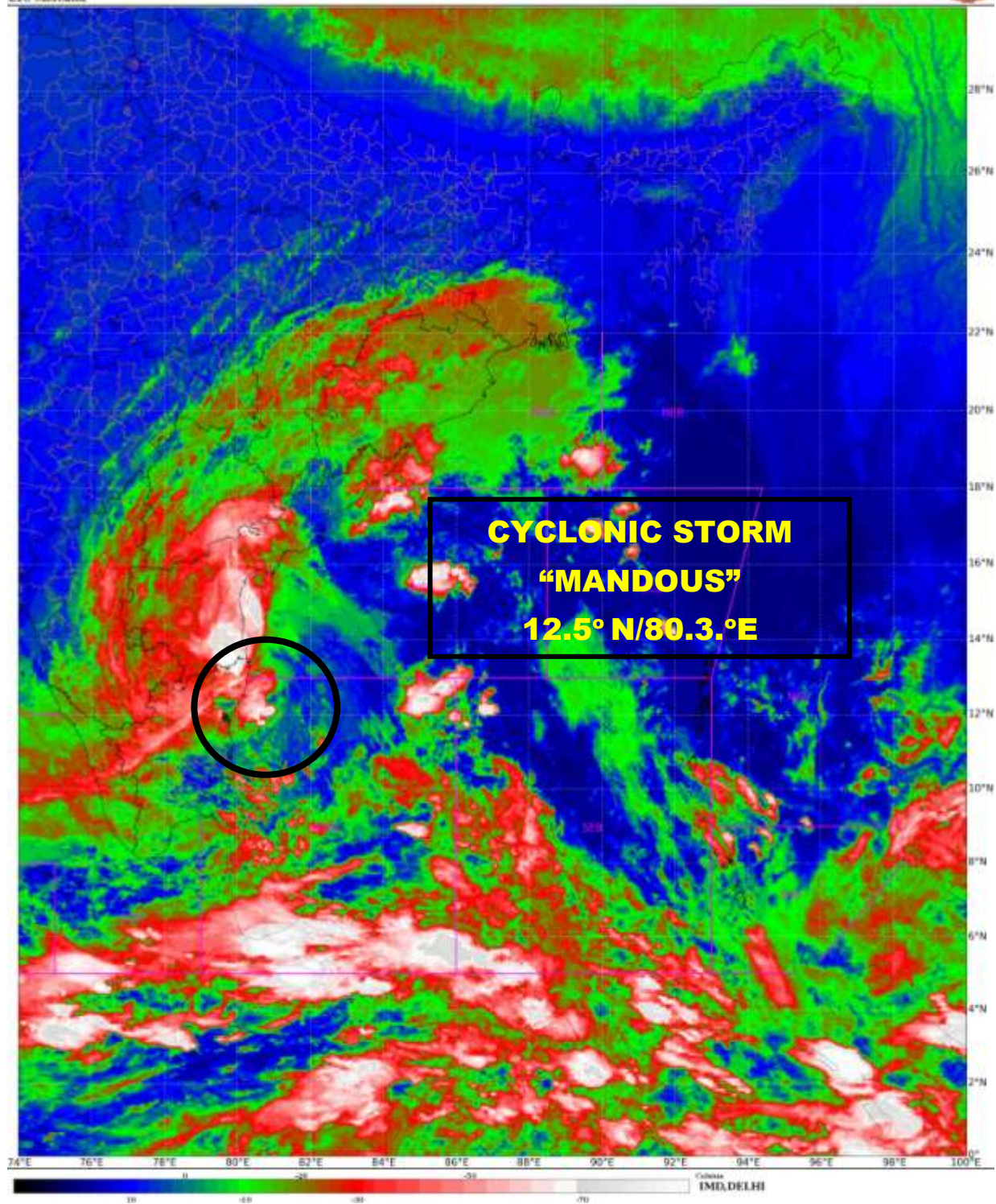
**System is under continuous surveillance and the next bulletin will be issued at 0400 hours IST of 10<sup>th</sup> Dec, 2022.**

**(R K JENAMANI)**  
**Scientist F, Cyclone Warning Division, New Delhi**

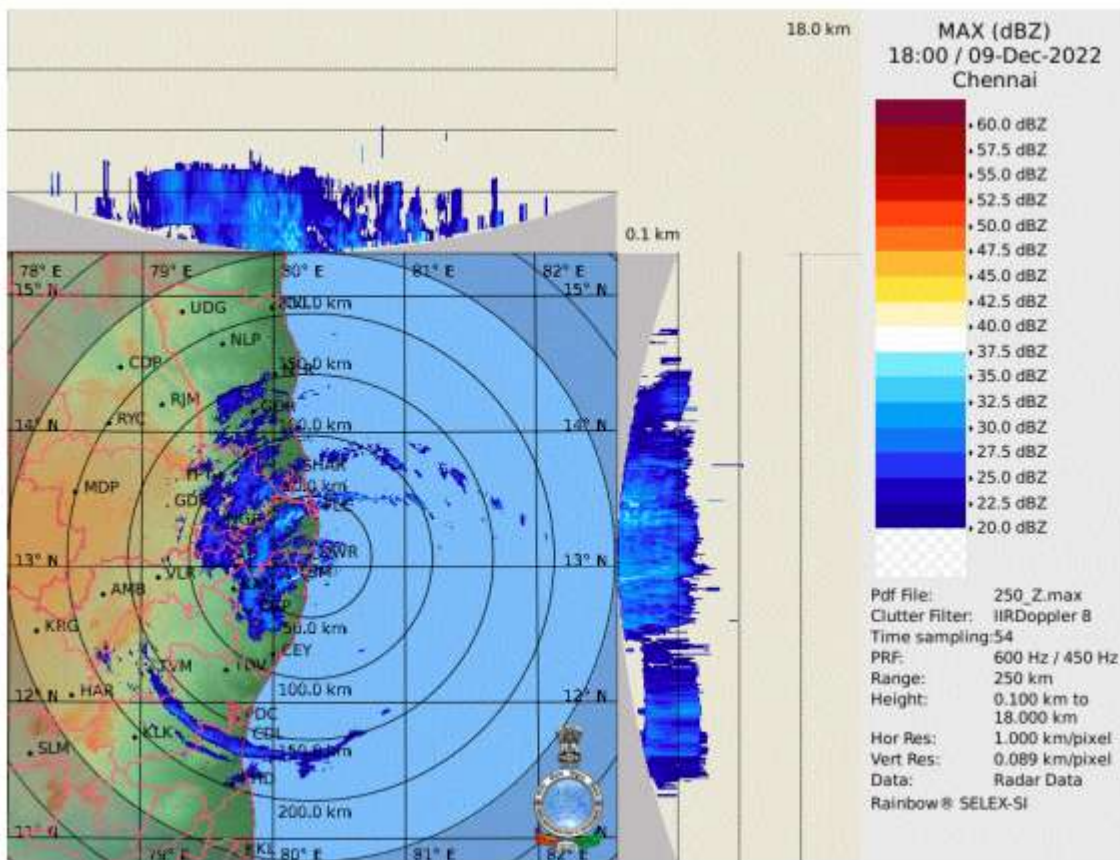
*Copy to: ACWC Kolkata/ ACWC Chennai/ CWC Bhubaneswar/CWCVisakhapatnam/MO Port Blair*

SAT : INSAT-3D IMG  
IMG\_TIR1\_TEMP 10.8 um  
LIC Mercator

09-12-2022(1730 to 1756) GMT  
09-12-2022(2300 to 2326) IST

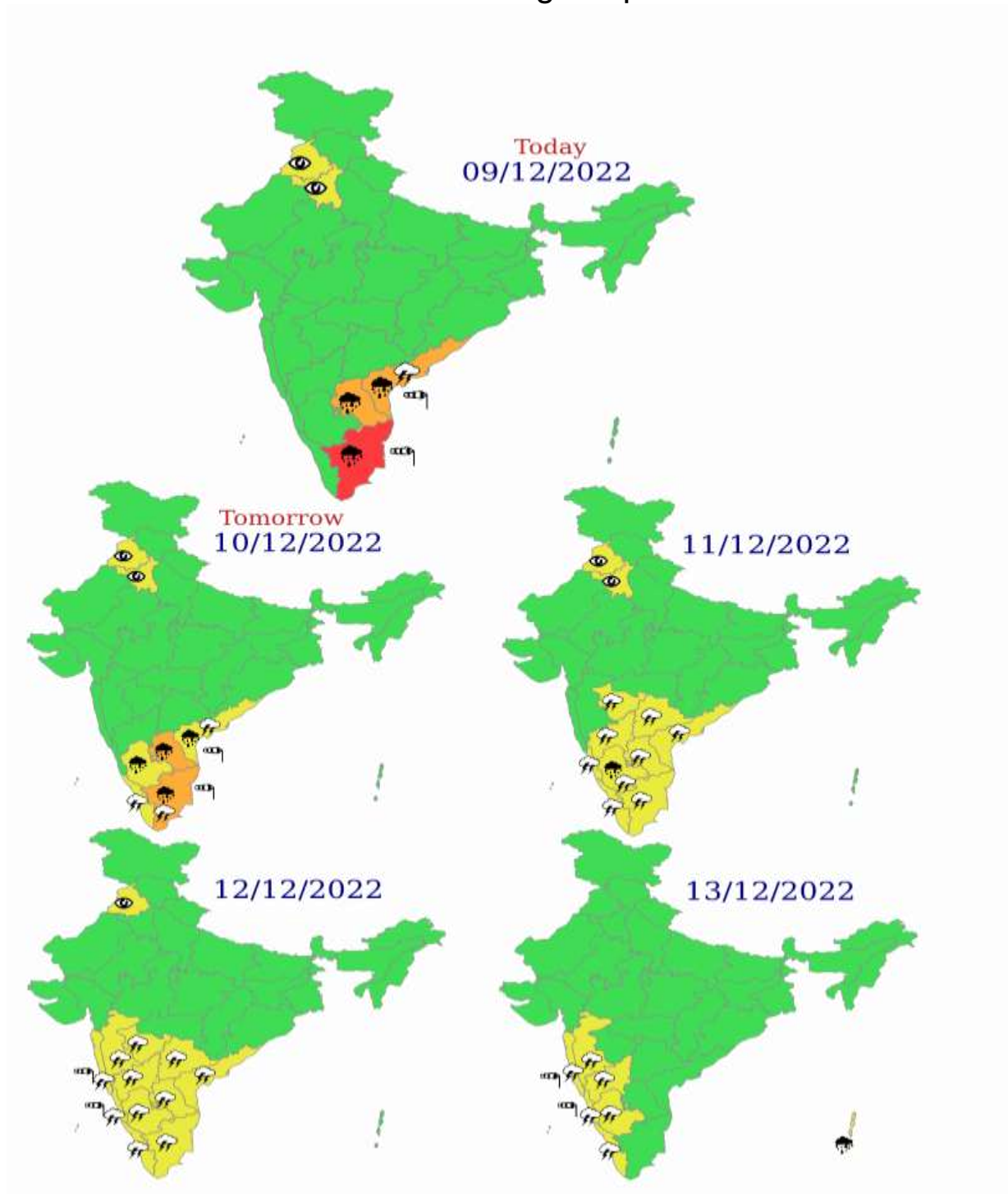






***Radar Image from Doppler Weather Radar Chennai of 1800 UTC of 9<sup>th</sup> December 2022.***

## Multi hazard Warning Graphics



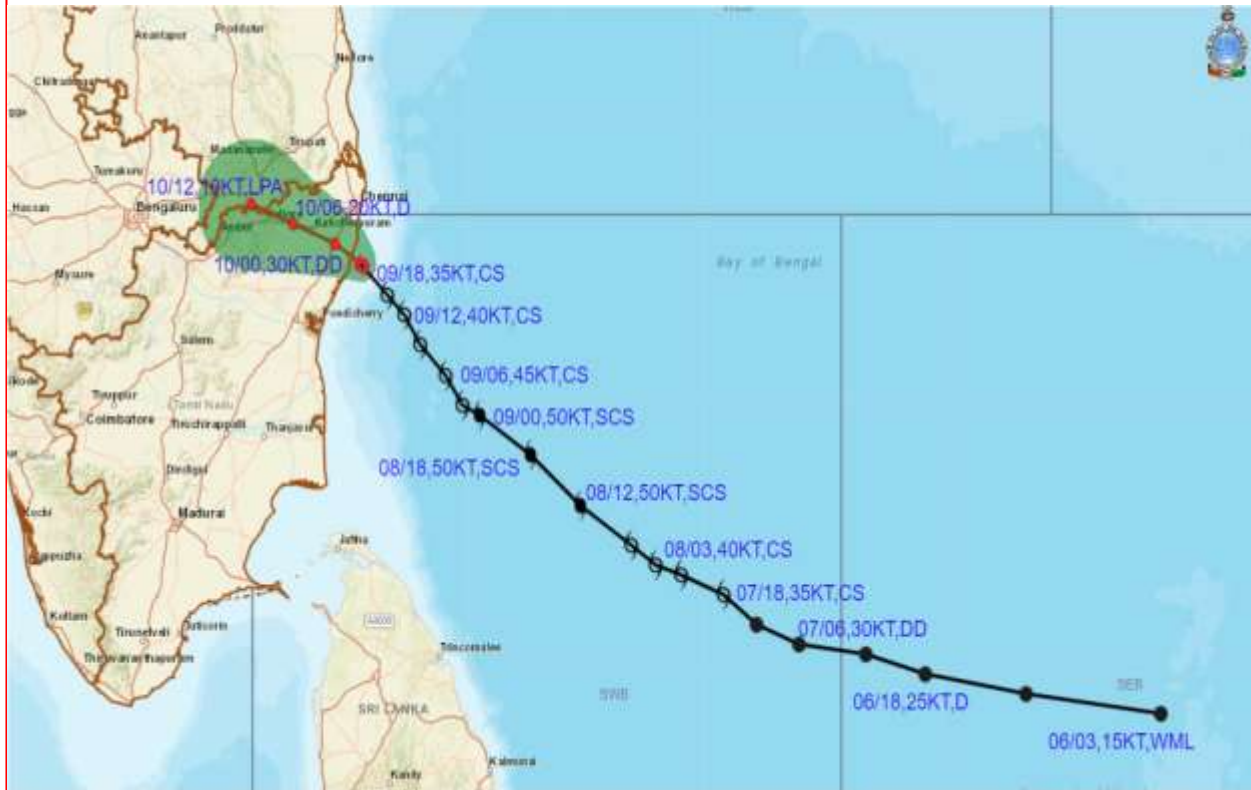
**LEGEND:** Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

WARNING		Probabilistic Forecast		Heavy Rain		Heavy Snow		Thunderstorm		Dust Storm	
WARNING (TAKE ACTION)		Terms	Probability of Occurrence (%)	Strong Winds		Visibility		Cyclone		Squall/ Hail	
ALERT (BE PREPARED)		Isolated	< 25	Frost		Cold Wave		Heat Wave		Sea State	
WATCH (BE UPDATED)		Likely	25 - 50								
BE WARNED (NO ACTION)		Very Likely	51 - 75								
		Most Likely	> 75								



**OBSERVED AND FORECAST TRACK OF CYCLONIC STORM 'MANDOUS' OVER SOUTHWEST BAY OF BENGAL CLOSE TO NORTH TAMIL NADU COAST BASED ON 1800 UTC OF 09<sup>th</sup> DECEMBER, 2022.**



DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)  
 SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

- LESS THAN 34 KT
- 34-47 KT
- ⦿ ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- ▲ CONE OF UNCERTAINTY



**OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM 'MANDOUS' OVER SOUTHWEST BAY OF BENGAL CLOSE TO NORTH TAMIL NADU COAST BASED ON 1800 UTC OF 09<sup>th</sup> DECEMBER, 2022.**



**DATE/TIME IN UTC**

IST=UTC + 0530

L: LOW PRESSURE AREA

WML: WELL MARKED LOW PRESSURE AREA

D: DEPRESSION (17-27 KT)

DD: DEEP DEPRESSION (28-33 KT)

CS: CYCLONIC STORM (34-47 KT)

SCS: SEVERE CYCLONIC STORM (48-63KT)

VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)

ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)

SuCS: SUPER CYCLONIC STORM (≥120 KT)

● LESS THAN 34 KT

○ 34-47 KT

● ≥ 48 KT

— OBSERVED TRACK

— FORECAST TRACK

— CONE OF UNCERTAINTY

AREA OF MAXIMUM SUSTAINED WIND SPEED:

28-33 KT (52-61 KMPH)

34-49 KT (62-91 KMPH)

50-63 KT (92-117 KMPH)

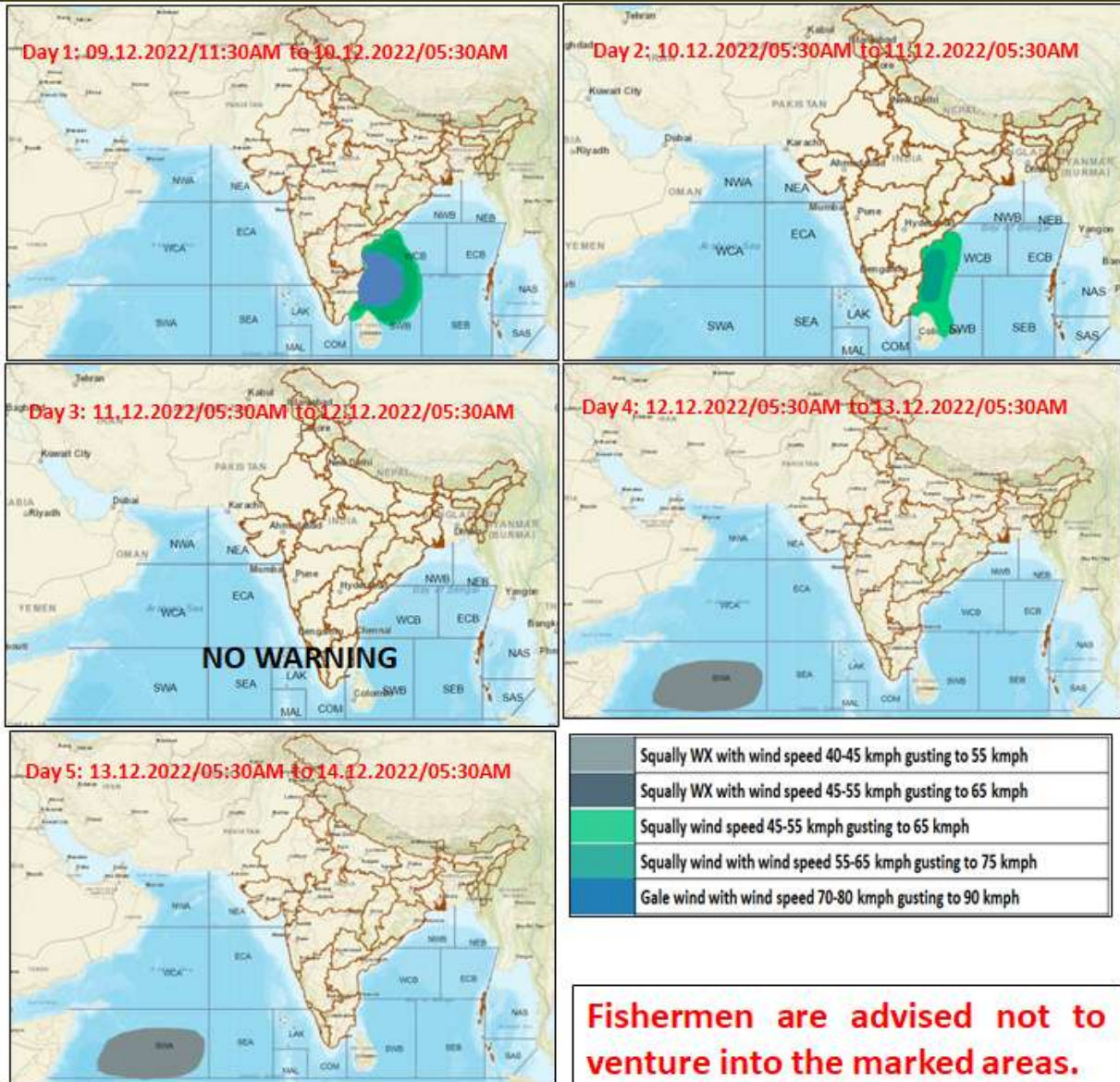
≥ 64 KT (≥118 KMPH)

**IMPACT OVER THE SEA**

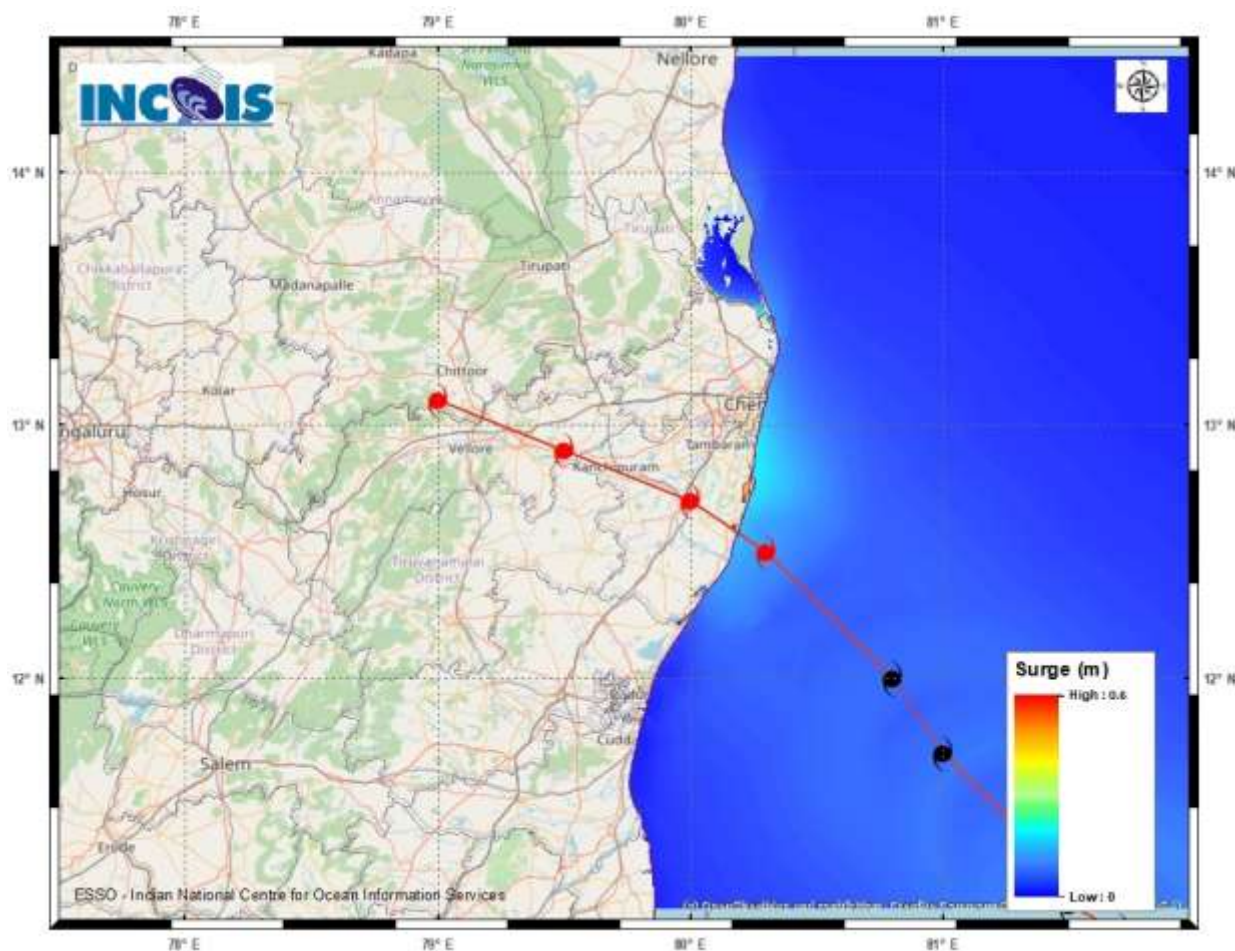
MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations



## Fishermen warning graphics



## Storm Surge Guidance



### STORM SURGE HEIGHT INFORMATION:

\* The below listed surge heights are over and above astronomical tide.

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	STORM SURGE (m) *	EXPECTED INUNDATION EXTENT (km)
Chengalpattu	Kancheepuram	Tamil Nadu	Muthukadu	0.3-0.7	Upto 0.13