



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
SPECIAL TROPICAL WEATHER OUTLOOK**

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 06.12.2022

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2100 UTC OF 06.12.2022 BASED ON 1800 UTC OF 06.12.2022.

BAY OF BENGAL:

THE DEPRESSION OVER SOUTHEAST BAY OF BENGAL MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 22 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1800 UTC OF TODAY, THE 06TH DEC, 2022 OVER SOUTHEAST BAY OF BENGAL, NEAR LATITUDE 8.4°N AND LONGITUDE 87.0°E, ABOUT 640 KM EAST OF TRINCOMALEE (43418), ABOUT 780 KM EAST-SOUTHEAST OF JAFFNA (43404), ABOUT 840 KM EAST-SOUTHEAST OF KARAIKAL (43346) AND ABOUT 900 KM SOUTHEAST OF CHENNAI (43279).

IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY FURTHER GRADUALLY INTO A CYCLONIC STORM AROUND 07TH DECEMBER EVENING AND REACH SOUTHWEST BAY OF BENGAL OFF NORTH TAMIL NADU-PUDUCHERRY & ADJOINING SOUTH ANDHRA PRADESH COASTS BY 08TH DECEMBER MORNING. IT WILL CONTINUE TO MOVE WEST-NORTHWESTWARDS TOWARDS NORTH TAMIL NADU-PUDUCHERRY & ADJOINING SOUTH ANDHRA PRADESH COASTS DURING SUBSEQUENT 48 HOURS.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
06.12.22/1800	8.4/87.0	40-50 GUSTING TO 60	DEPRESSION
07.12.22/0600	8.9/85.8	50-60 GUSTING TO 70	DEEP DEPRESSION
07.12.22/1800	9.6/84.6	60-70 GUSTING TO 80	CYCLONIC STORM
08.12.22/0600	10.3/83.4	70-80 GUSTING TO 90	CYCLONIC STORM
08.12.22/1800	11.0/82.3	80-90 GUSTING TO 100	CYCLONIC STORM
09.12.22/0600	11.8/81.2	70-80 GUSTING TO 90	CYCLONIC STORM
09.12.22/1800	12.4/80.4	60-70 GUSTING TO 80	CYCLONIC STORM
10.12.22/0600	13.2/79.6	40-50 GUSTING TO 60	DEPRESSION

CONVECTION HAS FURTHER ORGANISED DURING LAST 6 HRS AND IT SHOWS SHEAR PATTERN. CONVECTIVE CLOUDS ARE SHEARED TO THE WEST OF THE SYSTEM CENTER. AS PER INSAT 3D IMAGERY, ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIES OVER SOUTH AND ADJOINING CENTRAL BAY OF BENGAL. MINIMUM CLOUD TOP TEMPERATURE (CTT) -93⁰ C.

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1003 HPA. SEA CONDITION IS ROUGH TO VERY ROUGH OVER SOUTHEAST & ADJOINING SOUTHWEST BAY OF BENGAL.

AT 1800 UTC, A SHIP NEAR 5.8°N/82.4°E REPORTED MEAN SEA LEVEL PRESSURE OF 1009.4HPA AND MAXIMUM SUSTAINED WIND SPEED OF 310⁰/15 KTS. ANOTHER SHIP NEAR 6.0°N/92.5°E REPORTED MEAN SEA LEVEL PRESSURE OF 1007.5 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 220⁰/21 KTS. ONE MORE SHIP NEAR 6.0°N/93.8°E REPORTED MEAN SEA LEVEL PRESSURE OF 1007.9 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 190⁰/23 KTS.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX CURRENTLY LIES IN PHASE 2 WITH AMPLITUDE LESS THAN 1. IT WILL MOVE TO PHASE 3 FROM 7TH AND REMAIN THERE TILL 9TH DECEMBER. MJO INDEX IS THUS CONDUCIVE FOR ENHANCEMENT OF CONVECTIVE ACTIVITY OVER BAY OF BENGAL AND INTENSIFICATION OF THE SYSTEM. SEA SURFACE TEMPERATURE (SST) IS AROUND 29°C OVER SOUTHEAST AND ADJOINING PARTS OF CENTRAL BOB, SOUTHWEST BOB. It DECREASES TO 28°C OVER SOUTHWEST BOB AND ALONG AND OFF TAMILNADU AND WESTERN PARTS OF THE COAST. ALSO THE OCEAN HEAT CONTENT (OHC) IS 90-110 KJ/CM² OVER SOUTHEAST BOB AND ADJOINING SOUTH ANDAMAN SEA AND LESS THAN 50 KJ/CM² OVER WESTCENTRAL AND SOUTHWEST BOB ALONG EAST COAST OF INDIA. THERE IS WARM AIR ADVECTION TO THE SYSTEM FROM THE SOUTHERN SECTOR. IT WOULD CONTINUE SO TILL 9TH DECEMBER MORNING.

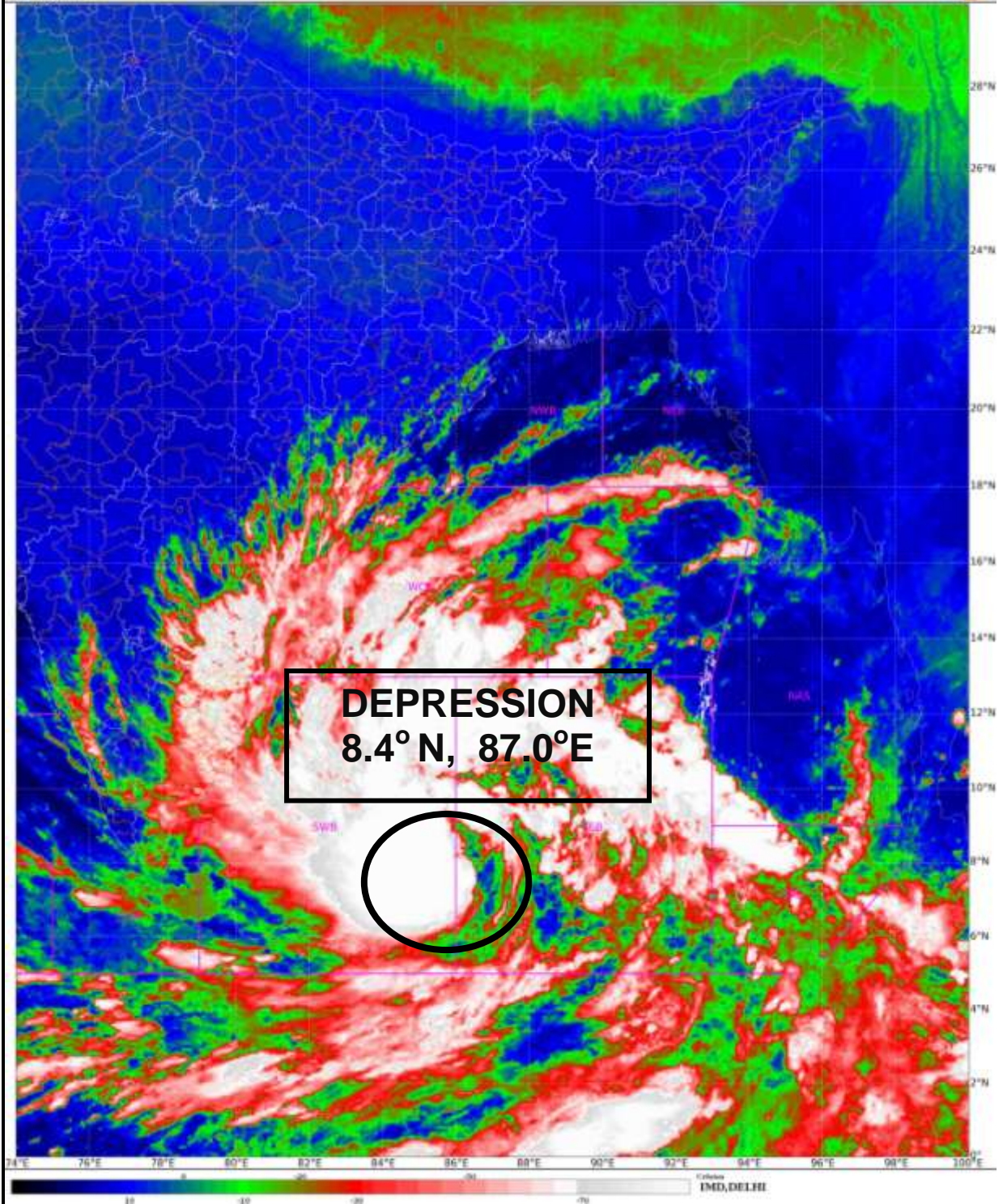
LOW LEVEL VORTICITY OF 100 X10⁻⁶ S⁻¹ LIES AROUND THE SYSTEM CENTER. LOW LEVEL CONVERGENCE AND UPPER LEVEL DIVERGENCE ARE ABOUT 30 X10⁻⁵ S⁻¹ & 40 X10⁻⁵ S⁻¹ RESPECTIVELY TO THE NORTHWEST OF THE SYSTEM CENTER.

WIND SHEAR HAS DECREASED AND IS LOW (05-15 KNOTS) OVER & AROUND THE SYSTEM CENTER AND HIGH (20-30 KNOTS) ALONG THE EXPECTED TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ROUGHLY ALONG 15.0°N OVER THE BOB. THE SYSTEM IS UNDER THE INFLUENCE OF EAST SOUTHEASTERLY STEERING WINDS AT MIDDLE TROPOSPHERIC LEVELS AND HENCE THE PRESENT SYSTEM IS LIKELY TO BE STEERED TOWARDS WEST-NORTHWEST TILL 8TH DECEMBER. THERAFTER, AS THE SYSTEM WILL COME CLOSER TOWARDS THE RIDGE, THE NORTHERLY COMPONENT IS LIKELY TO INCREASE LEADING TO NORTHWESTWARD MOVEMENT AND ALSO THE RELATIVELY SLOWER MOVEMENT FROM 9TH DECEMBER ONWARDS. THE INTENSIFICATION PARAMETERS AS MENTIONED ABOVE WILL CONTINUE TO BE FAVOURABLE FOR INTENSIFICATION OF THE SYSTEM TILL 9TH DECEMBER MORNING. THEREAFTER, DUE TO SLOW MOVEMENT OF THE SYSTEM, COLD AND DRY AIR INTRUSION FROM SOUTH PENINSULAR INDIA, THE SYSTEM WOULD SHOW SLIGHTLY WEAKENING TREND WHILE MOVING TOWARDS COAST.

THE NWP MODELS ARE DIVERGING WITH RESPECT TO THE LANDFALL TIMING, LOCATION AND INTENSITY. HOWEVER, THERE IS A CONSENSUS AMONG THE MODELS REGARDING ITS LIKELY WEST-NORTHWESTWARDS MOVEMENT AND INTENSIFYING INTO A CYCLONIC STORM TOWARDS NORTH TAMIL NADU-PUDUCHERRY & ADJOINING SOUTH ANDHRA PRADESH COASTS AND SLIGHT WEAKENING WHILE NEARING THE COAST.

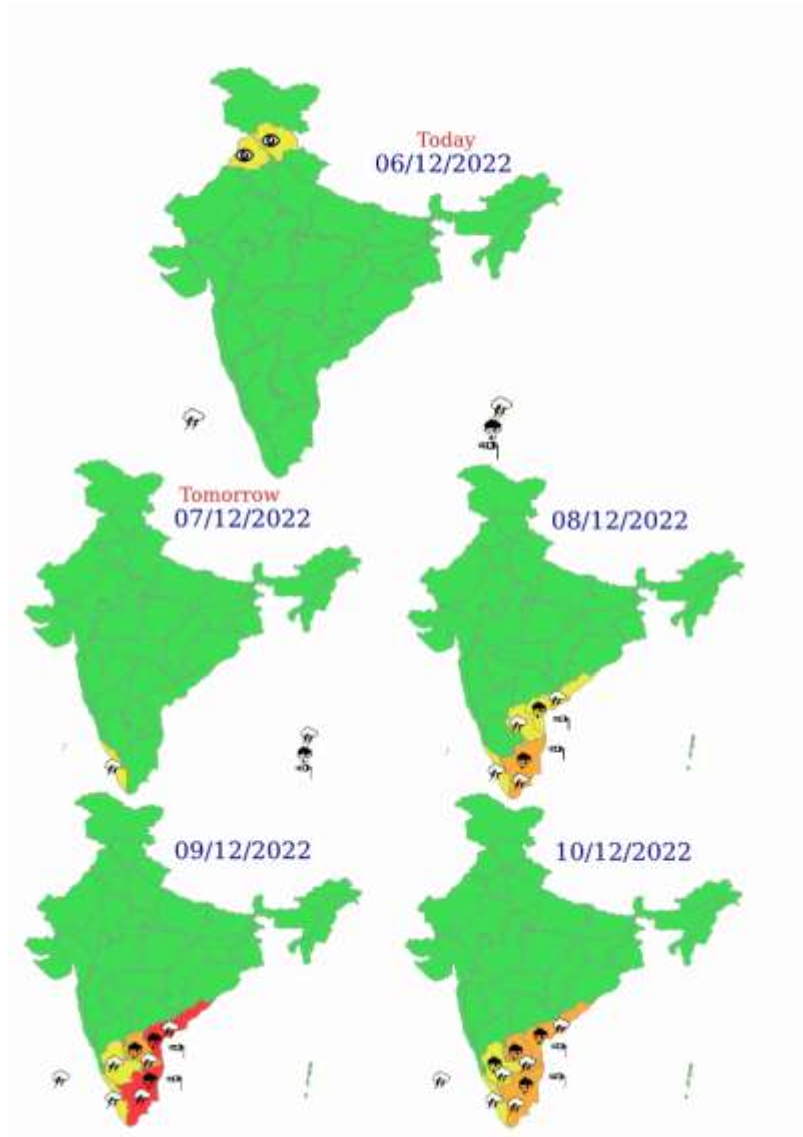
IN VIEW OF ALL THE ABOVE, IT IS INFERRED THAT THE DEPRESSION OVER SOUTHEAST BAY OF BENGAL IS LIKELY TO MOVE MOVE WEST-NORTHWESTWARDS AND INTENSIFY FURTHER GRADUALLY INTO A CYCLONIC STORM BY 7TH DECEMBER EVENING AND REACH SOUTHWEST BAY OF BENGAL NEAR NORTH TAMIL NADU-PUDUCHERRY & ADJOINING SOUTH ANDHRA PRADESH COASTS BY 08TH DECEMBER MORNING. IT WILL CONTINUE TO MOVE WEST-NORTHWESTWARDS TOWARDS NORTH TAMIL NADU-PUDUCHERRY & ADJOINING SOUTH ANDHRA PRADESH COASTS DURING SUBSEQUENT 48 HOURS.

**Krishna Mishra
Scientist-C, RSMC, New Delhi**



Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION): NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

MULTI HAZARD WARNING GRAPHICS

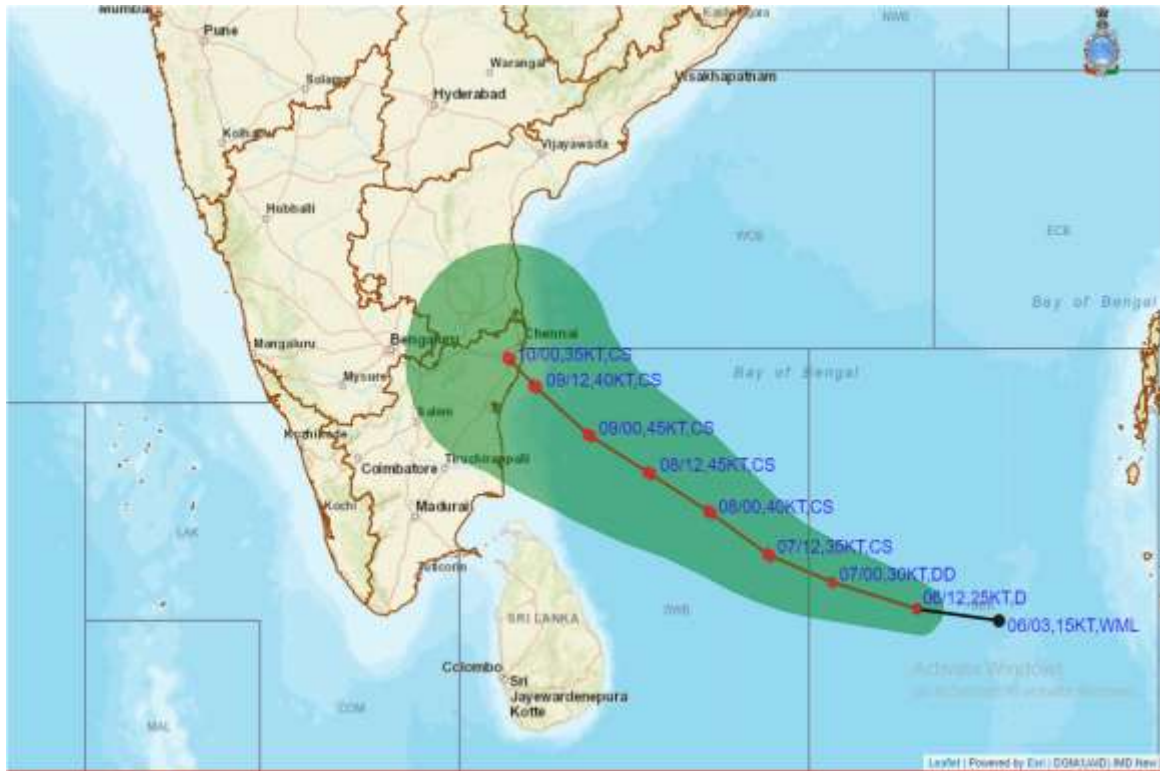


LEGEND: Heavy Rainfall: 64.5 to 115.5mm, Very Heavy Rainfall: 115.6 to 204.4mm Most Places: more than 75% of total stations, Isolated Places: Less than 25% of total stations

 Heavy Rain	 Heavy Snow	 Thunderstorm	 Dust Storm
 Strong Winds	 Visibility	 Cyclone	 Squall/ Hail
 Frost	 Cold Wave	 Heat Wave	 Sea State



OBSERVED AND FORECAST TRACK OF DEPRESSION OVER SOUTHEAST BAY OF BENGAL BASED ON 1200 UTC OF 06th DECEMBER, 2022.

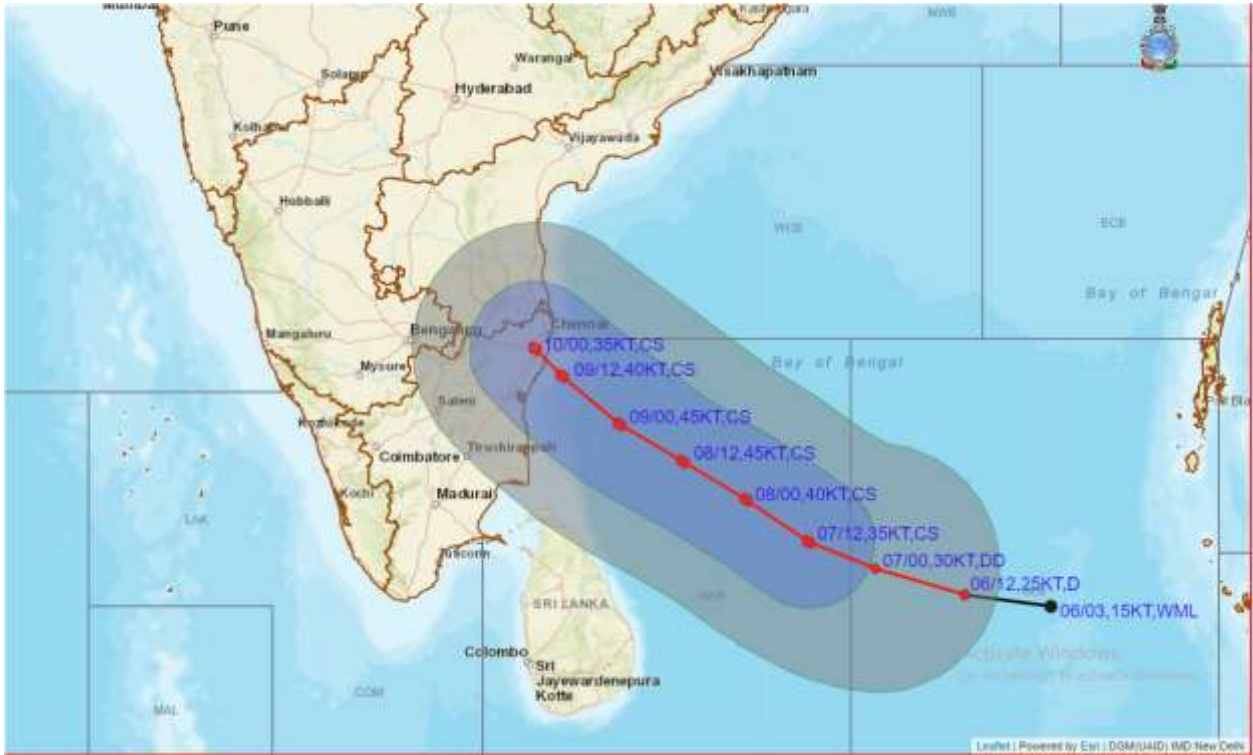


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM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

- LESS THAN 34 KT
- 34-47 KT
- \geq 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEPRESSION OVER SOUTHEAST BAY OF BENGAL BASED ON 1200 UTC OF 06th 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 (≥20 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

Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
 PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION): NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
 This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins