



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

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 24.12.2022

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1930 UTC OF 24.12.2022 BASED ON 1800 UTC OF 24.12.2022.

BAY OF BENGAL:

SUB: DEPRESSION OVER SOUTHWEST BAY OF BENGAL

THE DEPRESSION OVER SOUTHWEST BAY OF BENGAL MOVED NEARLY WEST-SOUTHWESTWARDS WITH A SPEED OF 12 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 1800 UTC OF 24TH DECEMBER OVER THE SAME REGION NEAR LATITUDE 9.3°N AND LONGITUDE 82.5°E ABOUT 160 KM EAST-NORTHEAST OF TRINCOMALEE (SRI LANKA, 43418), 160 KM EAST-SOUTHEAST OF JAFFNA (SRI LANKA, 43404), 330 KM EAST-SOUTHEAST OF NAGAPPATTINAM (INDIA, 43347) AND 480 KM SOUTH-SOUTHEAST OF CHENNAI (INDIA, 43279).

IT IS LIKELY TO WEAKEN SLIGHTLY, MOVE WEST-SOUTHWESTWARDS AND REACH NEAR SRI LANKA COAST BY 0000 UTC OF 25TH DECEMBER. THEREAFTER, IT WOULD CONTINUE TO MOVE WEST-SOUTHWESTWARDS ACROSS SRI LANKA AND REACH COMORIN AREA AND NEIGHBOURHOOD BY 0000 UTC OF 26TH DECEMBER.

AS PER INSAT-3D IMAGERY, INTENSITY OF THE SYSTEM IS T1.0/1.5. THE CENTER OF THE SYSTEM IS POORLY DEFINED IN SATELLITE IMAGERY. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHWEST BAY OF BENGAL AND ADJOINING SRI LANKA BETWEEN LAT 6.0°N TO 10.0°N LONG 80.5°E TO 84.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 1004 HPA. SEA CONDITION IS ROUGH TO VERY ROUGH OVER SOUTHWEST BAY OF BENGAL AND ALONG & OFF TAMILNADU & SRILANKA COASTS.

ARABIAN SEA:

THE EXISTING DEPRESSION IS LIKELY TO EMERGE INTO COMORIN AREA AROUND 26TH DECEMBER AND MOVE WEST-NORTHWESTWARDS THEREAFTER TOWARDS SOUTHEAST ARABIAN SEA.

SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION OVER SOUTH PARTS OF SOUTHWEST ARABIAN SEA.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 120 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
NIL	LOW	LOW	NIL	NIL

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%
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REMARKS:

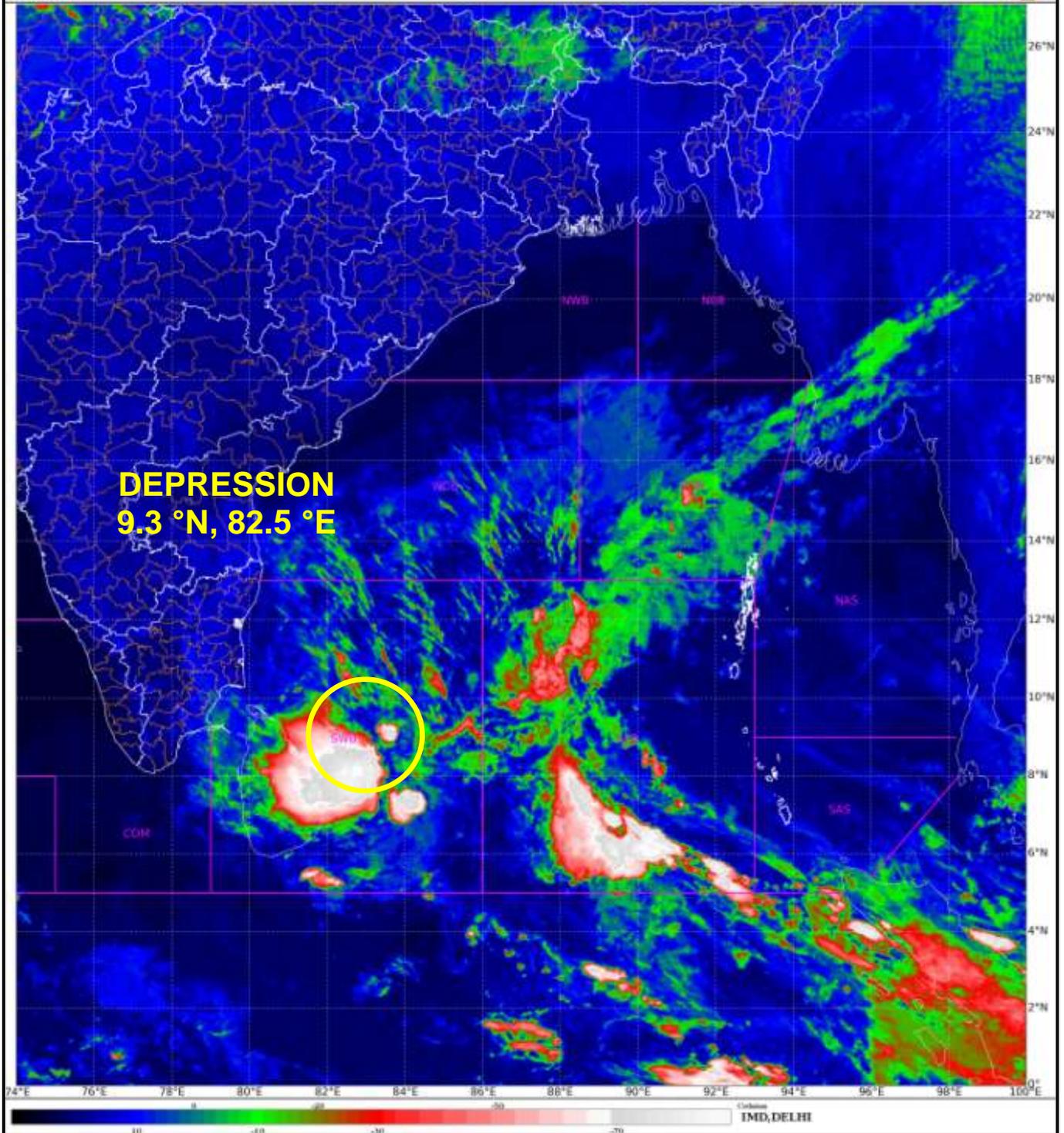
SEA SURFACE TEMPERATURE IS ABOUT 26-27°C OVER SOUTHWEST BOB. MADDEN JULIAN OSCILLATION INDEX IS IN PHASE 5 WITH AMPLITUDE MORE THAN 1. IT WOULD MOVE TO PHASE 6 FROM 26TH ONWARDS. MJO WOULD SUPPORT CONVECTIVE ACTIVITY OVER THE BAY OF BENGAL ONLY DURING NEXT 2 DAYS. LOW LEVEL RELATIVE VORTICITY IS AROUND $(100) \times 10^{-6} \text{ S}^{-1}$ OVER THE SYSTEM CENTRE. LOW LEVEL CONVERGENCE IS ABOUT $(10) \times 10^{-5} \text{ S}^{-1}$ TO THE FAR SOUTHEAST OF SYSTEM CENTRE. UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{ S}^{-1}$ CLOSE AND EAST OF SYSTEM CENTRE. VERTICAL WIND SHEAR OF 10-20 KNOTS AROUND THE SYSTEM CENTRE BUT HIGH (AROUND 25-30 KNOTS) WIND SHEAR IS PREVAILING TO THE WEST AND SOUTHWEST OF THE SYSTEM. CURRENT CONDITIONS INDICATE THAT THE DYNAMICAL PARAMETERS PORTRAYING DIURNAL VARIATION WHICH IS NOT VERY MUCH SIGNIFICANT AND HENCE THE SYSTEM MAINTAINED IT'S INTENSITY DURING PAST 24 HOURS.

GRADIENT WIND HAS DECREASED IN PAST 24 HOURS. YESTERDAY, IT WAS MAXIMUM AT LOWER TROPOSPHERIC LEVELS AND TODAY, IT IS IN MIDDLE TROPOSPHERIC LEVELS. TEMPERATURE ANOMALY PLOTS INDICATE, THAT THERE IS COLD ANOMALY IN THE MIDDLE TROPOSPHERIC LEVELS, UNLIKE YESTERDAY. THUS, VARIOUS DYNAMICAL FEATURES LIKE TEMPERATURE ANOMALY, GRADIENT WIND AND VORTICITY AT 500 HPA LEVELS INDICATE THAT THE VERTICAL EXTENSION OF DEEP CONVECTIVE CLOUD MASS IS DECREASING GRADUALLY. THE SYSTEM IS LOSING IT'S WARM CORE CHARACTERISTICS. HENCE THE SYSTEM IS LIKELY TO WEAKEN GRADUALLY. ALONG WITH THE WEAKENING OF THE SYSTEM, THE STEERING LEVEL CHANGED FROM DEEP LAYER TO MIDDLE /LOWER TROPOSPHERIC LAYERS. THUS, THE SYSTEM WOULD BE STEERED SOUTHWESTWARDS UNDER THE INFLUENCE OF NORTHEASTERLY WINDS PREVAILING OVER THE REGION IN ASSOCIATION WITH NORTHEAST MONSOON. FURTHER, AS THE SYSTEM WOULD MOVE TOWARDS SRI LANKA COAST, IT WOULD ENCOUNTER HIGH VERTICAL WIND SHEAR, COLDER SEA SURFACE TEMPERATURE AND DECREASE IN CORIOLIS PARAMETER. ALL THESE WOULD LEAD TO GRADUAL WEAKENING OF THIS SYSTEM WHILE MOVING SOUTHWESTWARDS TOWARDS COMORIN AREA ACROSS SRI LANKA COAST.

MOST OF THE MODELS (IMD GFS & NCUM GROUP, IMD MME AND ECMWF) ARE INDICATING EXISTING DEPRESSION OVER SOUTHWEST BAY OF BENGAL TO MOVE GRADUALLY WEST-SOUTHWESTWARDS REACHING COMORIN AREA BY 26TH/0000 UTC ACROSS NORTH PARTS OF SRI LANKA. MODELS ARE NOT INDICATING FURTHER INTENSIFICATION OF THE SYSTEM. THE MODELS ARE ALSO PREDICTING POSSIBLE EMERGENCE OF THE SYSTEM OVER THE ARABIAN SEA AND INDICATING THE WEST-NORTHWESTWARDS MOVEMENT AND GRADUAL WEAKENING.

IN VIEW OF ALL THE ABOVE, THE DEPRESSION OVER SOUTHWEST BAY OF BENGAL IS LIKELY TO MOVE WEST-SOUTHWESTWARDS AND REACH NEAR SRI LANKA COAST BY 25TH MORNING (0000 UTC). THEREAFTER, IT WOULD CONTINUE TO MOVE WEST-SOUTHWESTWARDS ACROSS SRI LANKA AND REACH COMORIN AREA AND NEIGHBOURHOOD BY 26TH MORNING (0000 UTC).

SHOBHIT KATIYAR
SCIENTIST-C
RSMC, NEW DELHI



**DEPRESSION
9.3 °N, 82.5 °E**

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OBSERVED AND FORECAST TRACK OF DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 1800 UTC OF 24th 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

Fishermen warning graphics

Day 1: 24.12.2022/11:30AM to 25.12.2022/05:30AM



Day 2: 25.12.2022/05:30AM to 26.12.2022/05:30AM



Day 3: 26.12.2022/05:30AM to 27.12.2022/05:30AM



Day 4: 27.12.2022/05:30AM to 28.12.2022/05:30AM



Day 5: 28.12.2022/05:30AM to 29.12.2022/05:30AM



Squally WX with wind speed 40-50 kmph gusting to 60 kmph

Squally wind speed 45-55 kmph gusting to 65 kmph

Fishermen are advised not to venture into the marked areas.