

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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 31.01.2023

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 31.01.2023 BASED ON 0000 UTC OF 31.01.2023.

BAY OF BENGAL:

THE DEPRESSION OVER SOUTHWEST & ADJOINING SOUTHEAST BAY OF BENGAL MOVED NEARLY WEST-NORTHWESTWARDS WITH A SPEED OF 11 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 0000 UTC OF 31ST JANUARY, 2023 OVER SOUTHWEST BAY OF BENGAL NEAR LATITUDE 8.2°N AND LONGITUDE 84.7°E, ABOUT 380 KM EAST-SOUTHEAST OF TRINCOMALEE (SRI LANKA, 43418) AND 610 KM EAST-SOUTHEAST OF KARAIKAL (INDIA 43346).

IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS TILL 0900 UTC OF 31ST JANUARY. THEREAFTER, IT IS LIKELY TO RECURVE GRADUALLY WEST-SOUTHWESTWARDS AND CROSS SRI LANKA COAST BETWEEN LATITUDE 7°N TO 8°N AROUND 0600 UTC OF 01ST FEBRUARY 2023.

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 |
|----------------|------------------------------|---|----------------------------------|
| 31.01.23/0000 | 8.2/84.7 | 45-55 GUSTING TO 65 | DEPRESSION |
| 31.01.23/1200 | 8.1/83.5 | 45-55 GUSTING TO 65 | DEPRESSION |
| 01.02.23/0000 | 7.8/82.3 | 45-55 GUSTING TO 65 | DEPRESSION |
| 01.02.23/1200 | 7.1/81.3 | 40-50 GUSTING TO 60 | DEPRESSION |
| 02.02.23/0000 | 6.4/80.3 | 40-50 GUSTING TO 60 | DEPRESSION |

ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH ADJOINING CENTRAL BAY OF BENGAL BETWEEN LAT 6.5°N TO 14.0°N LONG 81.0°E TO 87.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1004 HPA. SEA CONDITION IS ROUGH TO VERY ROUGH OVER SOUTHWEST AND ADJOINING SOUTHEAST BOB.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX CURRENTLY LIES IN PHASE 3 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE WITH SIMILAR INCREASED AMPLITUDE DURING NEXT 7 DAYS. MJO INDEX IS THUS CONDUCIVE FOR ENHANCEMENT OF CONVECTIVE ACTIVITY OVER BAY OF BENGAL (BOB) AND INTENSIFICATION OF THE

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PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION): NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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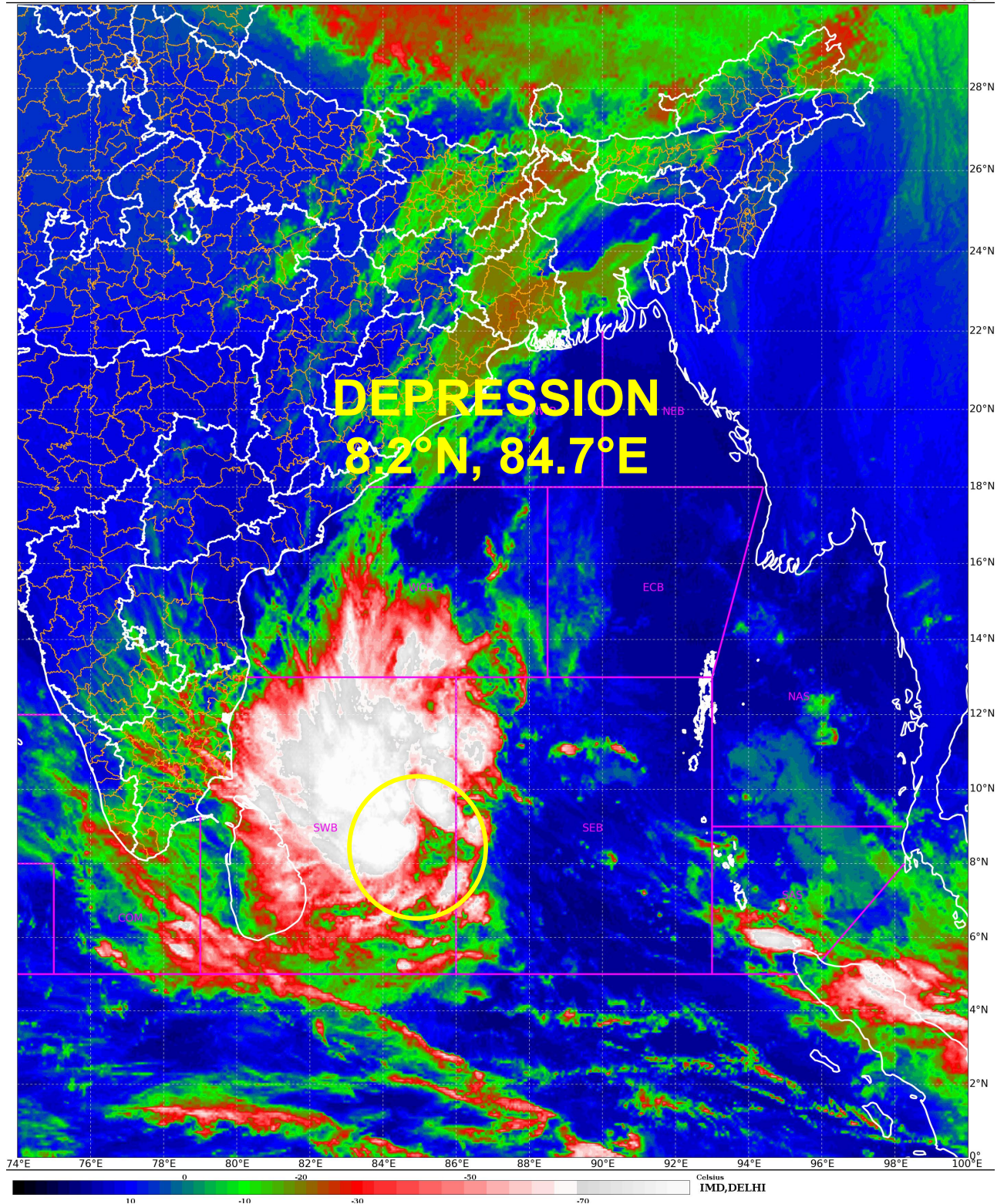
SYSTEM. THE CFS BASED FORECAST FOR EQUATORIAL WAVES INDICATE STRONG EASTERLY WINDS (5-7 MPS) OVER SOUTH BOB, STRONG WESTERLY WINDS (5-7 MPS) OVER EQUATORIAL INDIAN OCEAN (EIO) AND ADJOINING SOUTH BOB ALONGWITH KELVIN WAVES, MJO AND EQUATORIAL ROSSBY WAVES OVER EIO AND ADJOINING SOUTH BOB ON 30TH JANURAY. ALL THESE WAVES CONTRIBUTED TOWARDS ORGANIZATION OF CIRCULATION AND ENHANCEMENT OF CONVECTION OVER SOUTHEAST & ADJOINING SOUTHWEST BOB.

SEA SURFACE TEMPERATURE (SST) IS AROUND 27-28°C OVER SOUTH BOB AND ADJOINING EQUATORIAL INDIAN OCEAN (EIO). TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE CORE OF THE SYSTEM. LOW LEVEL VORTICITY OF $100 \times 10^{-6} \text{ S}^{-1}$ LIES AROUND THE SYSTEM CENTER. LOW LEVEL CONVERGENCE IS AROUND $10 \times 10^{-5} \text{ S}^{-1}$ TO THE NORTHWEST OF THE SYSTEM CENTER AND ANOTHER ZONE OF $05 \times 10^{-5} \text{ S}^{-1}$ TO THE EAST OF SYSTEM CENTRE. UPPER LEVEL DIVERGENCE IS ALSO AROUND $10 \times 10^{-5} \text{ S}^{-1}$ TO THE NORTHEAST OF THE SYSTEM CENTER. WIND SHEAR IS MODERATE (15-20 KNOTS) AROUND SYSTEM CENTRE OVER SOUTHEAST & ADJOINING SOUTHWEST BAY OF BENGAL. THE UPPER TROPOSPHERIC RIDGE IS SEEN ALONG 15.0°N OVER THE BOB. THE SYSTEM IS LIKELY TO BE STEERED WEST-NORTHWESTWARDS UNDER THE INFLUENCE OF EAST-SOUTHEASTERLY WINDS ALONG THE PERIPHERY OF RIDGE TILL 1200 UTC OF 31ST JANUARY. AS THE SYSTEM WOULD REACH NEAR COAST, DRY COLD AIR WOULD INTRUDE INTO THE SYSTEM AREA FROM SOUTH AND EASTERLY WIND SHEAR WOULD LEAD TO WEAKENING OF THE SYSTEM. THEREAFTER, THE STEERING LEVEL WOULD CHANGE AND THE SYSTEM WILL BE SHEARED SOUTHWESTWARDS.

MOST OF THE MODELS INCLUDING GFS, NCUM AND ECMWF ARE INDICATING INITIAL WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM FOLLOWED BY SOUTH-SOUTHWESTWARDS RECURVATURE TOWARDS SRI LANKA COAST. IMD GFS IS INDICATING CROSSING OVER SOUTH SRI LANKA, NCUM IS INDICATING WEAKENING OVER SEA AND ECMWF IS INDICATING THE SYSTEM TO RECURVE SOUTH-SOUTHWESTWARDS TOWARDS THE SOUTH OF SRI LANKA COAST. IMD MME IS INDICATING CROSSING OVER SRI LANKA AROUND 0900 UTC OF 1ST FEBRUARY.

IN VIEW OF ALL THE ABOVE, THE SYSTEM IS LIKELY TO MAINTAIN THE INTENSITY OF DEPRESSION TILL CROSSING. FURTHER, IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS TILL 0900 UTC OF 31ST, RECURVE SOUTH-SOUTHWESTWARDS THEREAFTER AND CROSS SRI LANKA COAST AROUND 0600 UTC OF 01ST FEBRUARY.

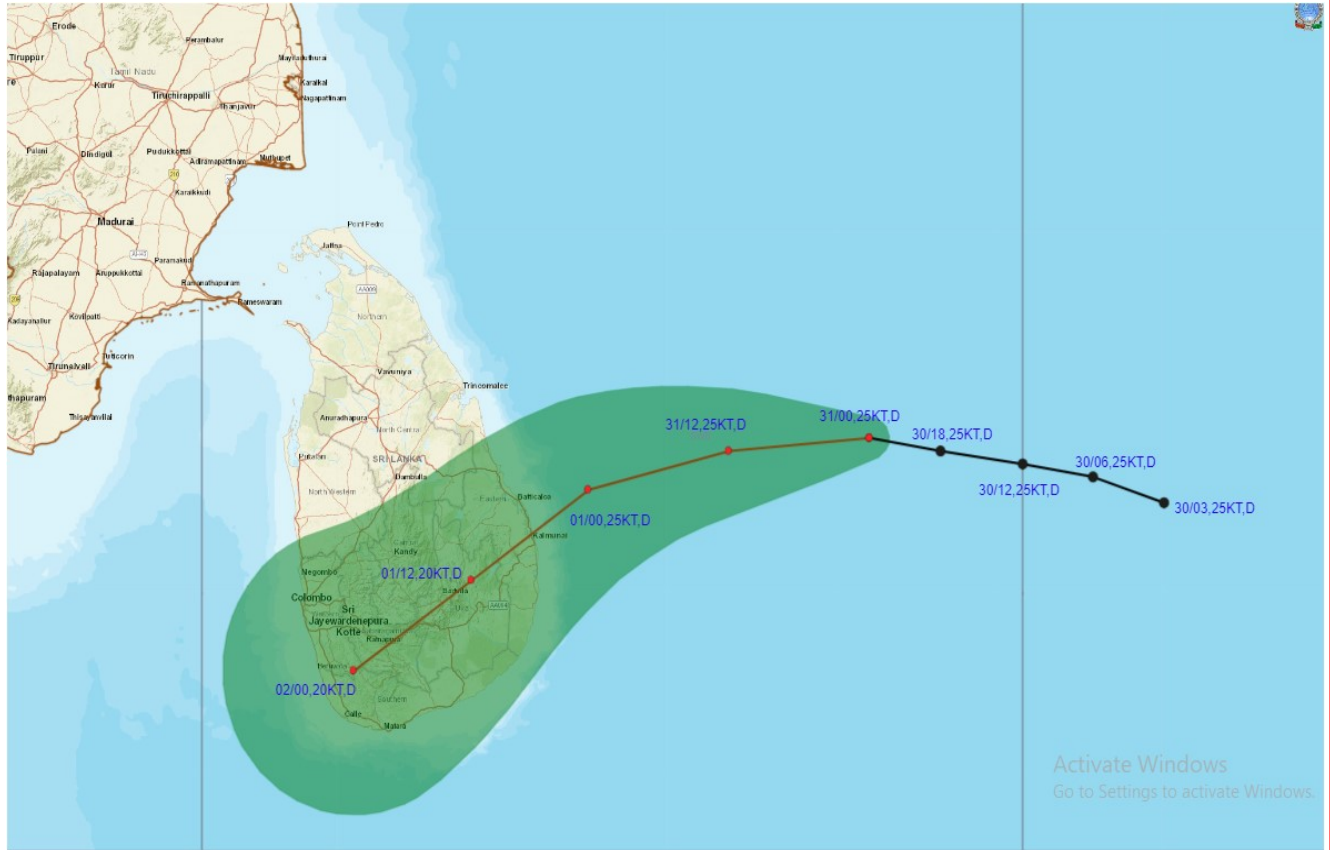
(S.P. SINGH)
SCIENTIST-C
RSMC, NEW DELHI



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OBSERVED AND FORECAST TRACK OF DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 0000 UTC OF 31st JANUARY, 2023.

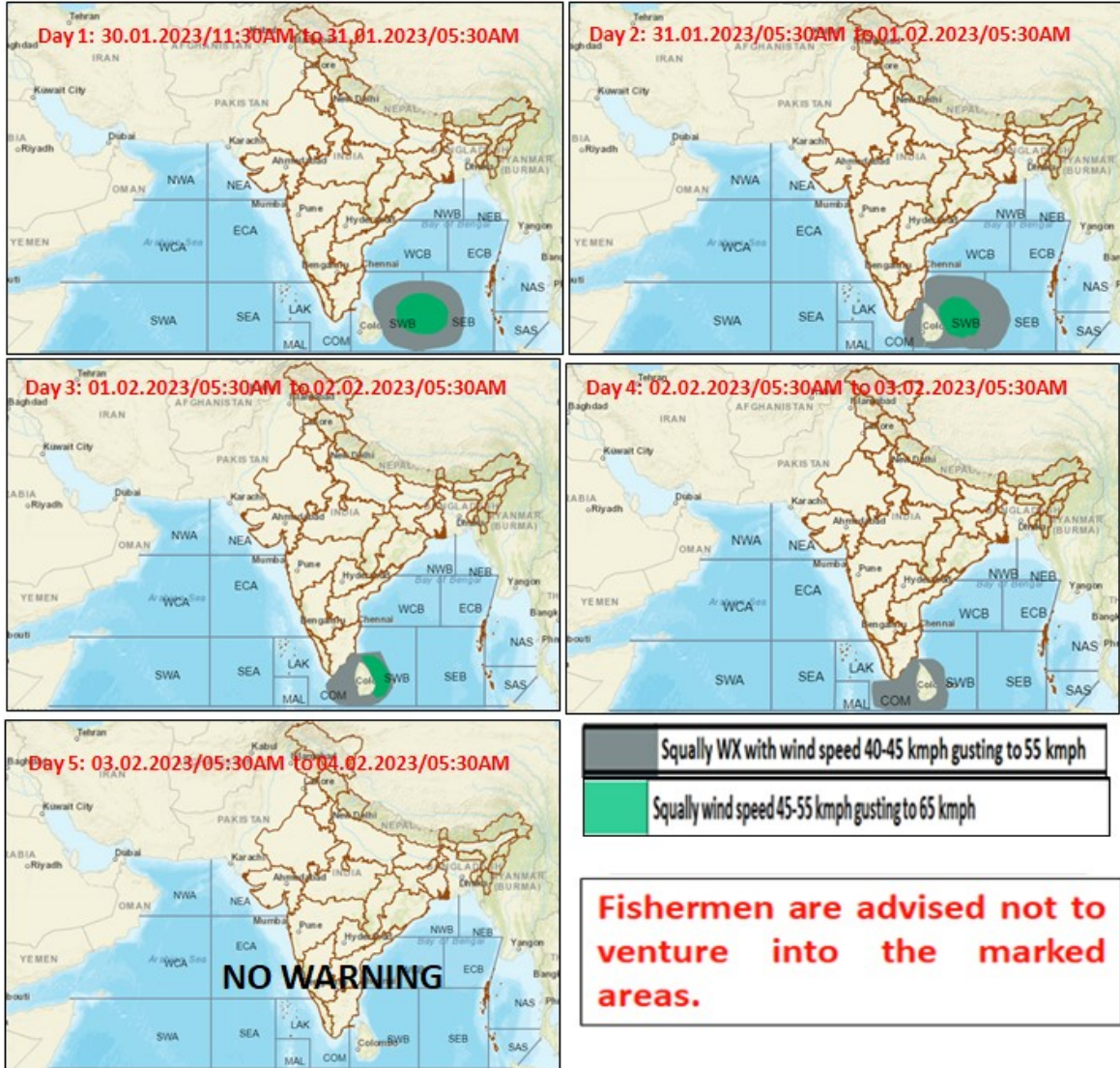


DATE/TIME IN UTC
IST=UTC + 0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119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

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Fishermen warning graphics



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Fishermen warning graphics



| Probability of exceedence | |
|---------------------------|-------------------|
| | Low (1-33%) |
| | Moderate (34-67%) |

Fishermen are advised not to venture into the marked areas.

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