



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

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 30.09.2023

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 30.09.2023 BASED ON 1200 UTC OF 30.09.2023.

SUB: A) DEPRESSION OVER EAST CENTRAL ARABIAN SEA CLOSE TO SOUTH KONKAN COAST AND B) WELL MARKED LOW PRESSURE AREA OVER COASTAL WEST BENGAL AND ADJOINING AREAS OF NORTH COASTAL ODISHA & NORTHWEST BAY OF BENGAL

A) DEPRESSION OVER EAST CENTRAL ARABIAN SEA CLOSE TO SOUTH KONKAN COAST

THE DEPRESSION OVER EAST CENTRAL ARABIAN SEA OFF SOUTH KONKAN-GOIA COASTS MOVED NORTH-NORTHEASTWARDS WITH A SPEED OF 6 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 1200 UTC OF TODAY, THE 30TH SEPTEMBER, 2023 OVER EAST CENTRAL ARABIAN SEA CLOSE TO SOUTH KONKAN COAST, NEAR LATITUDE 16.6°N AND LONGITUDE 73.2°E, ABOUT 40 KM SOUTH-SOUTHWEST OF RATNAGIRI (MAHARASHTRA, 43110), 90 KM NORTH-NORTHWEST OF VENGRULA (MAHARASHTRA, 43193) AND 140 KM NORTH-NORTHWEST OF PANJIM (GOA, 43192).

IT IS LIKELY TO MOVE NORTHEASTWARDS AND CROSS KONKAN-GOIA COASTS BETWEEN PANJIM AND RATNAGIRI BETWEEN 1500-1800 UTC.

AS PER INSAT 3D IMAGERY INTENSITY OF THE SYSTEM IS T1.5. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER EAST CENTRAL ARABIAN SEA BETWEEN LATITUDE 15.0N TO 19.0N AND LONGITUDE 69.0E TO 73.0E. MINIMUM CLOUD TOP TEMPERATURE IS -93°C AND MODERATE TO INTENSE CONVECTION LAY OVER SOUTH KONKAN AND GOA. MULTI-SATELLITE WINDS INDICATE STRONGER WINDS IN THE SOUTHEAST SECTOR AS THE SYSTEM HAS COME CLOSER TO WESTERN GHATS LEADING TO INCREASED WIND CONVERGENCE IN THE SOUTHEAST SECTOR.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1000 HPA. SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH OVER EAST CENTRAL ARABIAN SEA ALONG & OFF MAHARASHTRA-GOIA-KARNATAKA COASTS ON 30TH SEPTEMBER AND 1ST OCTOBER, 2023.

B) WELL MARKED LOW PRESSURE AREA OVER COASTAL WEST BENGAL AND ADJOINING AREAS OF NORTH COASTAL ODISHA & NORTHWEST BAY OF BENGAL

THE WELL MARKED LOW PRESSURE AREA OVER NORTHWEST BAY OF BENGAL MOVED WEST-NORTHWESTWARDS AND LAY CENTERED OVER COASTAL WEST BENGAL AND ADJOINING AREAS OF NORTH COASTAL ODISHA & NORTHWEST BAY OF BENGAL AT 1200 UTC OF TODAY, THE 30TH SEPTEMBER, 2023. IT IS LIKELY TO MOVE FURTHER WEST-NORTHWESTWARDS ACROSS GANGETIC WEST BENGAL AND ADJOINING NORTH ODISHA & JHARKHAND DURING NEXT 12 HOURS.

AS PER INSAT 3D IMAGERY, THE WELL MARKED LOW PRESSURE AREA OVER LAY COASTAL GANGETIC WEST BENGAL & NEIGHBOURHOOD IS CENTERED WITHIN HALF A DEG OF 21.7N/88.2E. INTENSITY OF THE SYSTEM IS CHARACTERIZED AS T1.0. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH ODISHA, JHARKHAND AND GANGETIC WEST BENGAL. MINIMUM CLOUD TOP TEMPERATURE IS -93°C AND MODERATE TO INTENSE CONVECTION LAY OVER NORTHWEST BAY OF BENGAL.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 10-15 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 998 HPA. SEA CONDITION IS LIKELY TO BE ROUGH OVER NORTH BAY OF BENGAL ALONG & OFF NORTH ODISHA-WEST BENGAL AND ADJOINING BANGLADESH COASTS ON 30TH SEPTEMBER AND 1ST OCTOBER, 2023.

REMARKS:

ARABIAN SEA:

SEA SURFACE TEMPERATURE IS AROUND 28°C OVER EASTCENTRAL ARABIAN SEA. THE EQUATORIAL WAVES FORECAST INDICATES STRONG WESTERLY WINDS (5-7 MPS) OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA, EASTERLY WINDS (1-3 MPS) OVER NORTHEAST ARABIAN SEA AND EQUATORIAL ROSSBY WAVES OVER SOUTHEAST ARABIAN SEA ARE LIKELY TO PREVAIL DURING NEXT 2 DAYS.

THE ENVIROMENTAL FEATURES INDICATE POSITIVE LOW LEVEL VORTICITY ($100 \times 10^{-6} \text{ S}^{-1}$) TO THE SOUTH OF SYSTEM CENTRE WITH EXTENSION UPTO 500 HPA. THE SYSTEM IS BEING STEERED NORTH-NORTHEASTWARDS BY THE MEAN WIND FLOW IN THE LOWER TO MIDDLE TROPOSPHERIC LEVELS IN ASSOCIATION WITH LARGE SCALE SOUTHWEST MONSOON FLOW. THE POSITIVE CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{ S}^{-1}$ OVER THE SYSTEM CENTRE AND, POSITIVE UPPER LEVEL DIVERGENCE HAS REDUCED AND IS ABOUT $05 \times 10^{-5} \text{ S}^{-1}$ AROUND SYSTEM CENTRE. WIND SHEAR IS MODERATE OVER SYSTEM AREA (15-20 KNOTS) AND TO THE NORTHEAST OF SYSTEM AREA. UNDER THESE FAVOURABLE CONDITIONS, THE DEPRESSION OVER EASTCENTRAL ARABIAN SEA IS LIKELY TO WEAKEN GRADUALLY AFTER LANDFALL.

MOST OF THE MODELS SUCH AS ECMWF, IMDGFS, NCEP GFS AND NCUM ARE INDICATING GRADUAL EAST-NORTHEASTWARDS MOVEMENT OF THE SYSTEM WITH SUSTAINED INTENSITY TILL 1200 UTC AND CROSSING AROUND 1800 UTC AND WEAKENING THEREAFTER.

CONSIDERING ALL THESE, THE DEPRESSION OVER EASTCENTRAL ARABIAN SEA CLOSE TO SOUTH KONKAN COAST IS LIKELY TO MOVE NORTHEASTWARDS AND CROSS KONKAN-GOA COASTS BETWEEN PANJIM AND RATNAGIRI BY TODAY EVENING/NIGHT (BETWEEN 1500-1800 UTC).

BAY OF BENGAL:

SEA SURFACE TEMPERATURE IS AROUND 29-30°C OVER NORTH BAY OF BENGAL WITH HIGHER SST OVER NORTHWEST BAY OF BENGAL. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE CORE OF SYSTEM. MADDEN JULIAN OSCILLATION INDEX IS IN PHASE 5 WITH AMPLITUDE LESS THAN 1. THE EQUATORIAL WAVES FORECAST INDICATES STRONG WESTERLY WINDS (5-7 MPS) OVER SOUTH BAY OF BENGAL, EASTERLY WINDS (1-3 MPS) OVER NORTH BAY OF BENGAL AND EQUATORIAL ROSSBY WAVES (ERW) OVER SOUTH BAY OF BENGAL ARE LIKELY TO PREVAIL DURING NEXT 2 DAYS. ALL THESE FEATURES INDICATE A FAVOURABLE ENVIRONMENT FOR THE MAINTENANCE OF INTENSITY OF THIS SYSTEM. THUS, MJO IS FAVOURABLE AND ERW IS NOT FAVOURABLE FOR FURTHER INTENSIFICATION OF THIS SYSTEM.

THE ENVIROMENTAL FEATURES INDICATE POSITIVE LOW LEVEL VORTICITY ($100 \times 10^{-6} \text{ S}^{-1}$) AROUND SYSTEM CENTRE WITH EXTENSION UPTO 500 HPA. THE SYSTEM IS BEING STEERED WEST-NORTHWESTWARDS BY THE EAST-SOUTHEASTERLY WINDS IN THE LOWER TO MIDDLE TROPOSPHERIC LEVELS. POSITIVE CONVERGENCE OF ABOUT $10 \times 10^{-5} \text{ S}^{-1}$ LIES TO THE SOUTH OF SYSTEM CENTRE, POSITIVE UPPER LEVEL DIVERGENCE OF ABOUT $05-10 \times 10^{-5} \text{ S}^{-1}$ LIES TO THE NORTH OF SYSTEM CENTRE. EQUATOR OUTFLOW IS ALSO INDICATED. WIND SHEAR IS MODERATE OVER SYSTEM AREA (10-15 KNOTS) AND TO THE WEST OF SYSTEM AREA.

THE GLOBAL MODELS ARE ARE IN AGREEMENT THAT THE SYSTEM WOULD MOVE WEST-NORTHWESTWARDS ACROSS ODISHA-WEST BENGAL COASTS DURING NEXT 24 HOURS.

CONSIDERING ALL THESE, THE WELL MARKED LOW PRESSURE AREA OVER GANGETIC WEST BENGAL AND NEIGHBOURHOOD AREAS IS LIKELY TO MOVE WEST-NORTHWESTWARDS ACROSS WEST BENGAL AND ADJOINING NORTH ODISHA & JHARKHAND DURING NEXT 12 HOURS.

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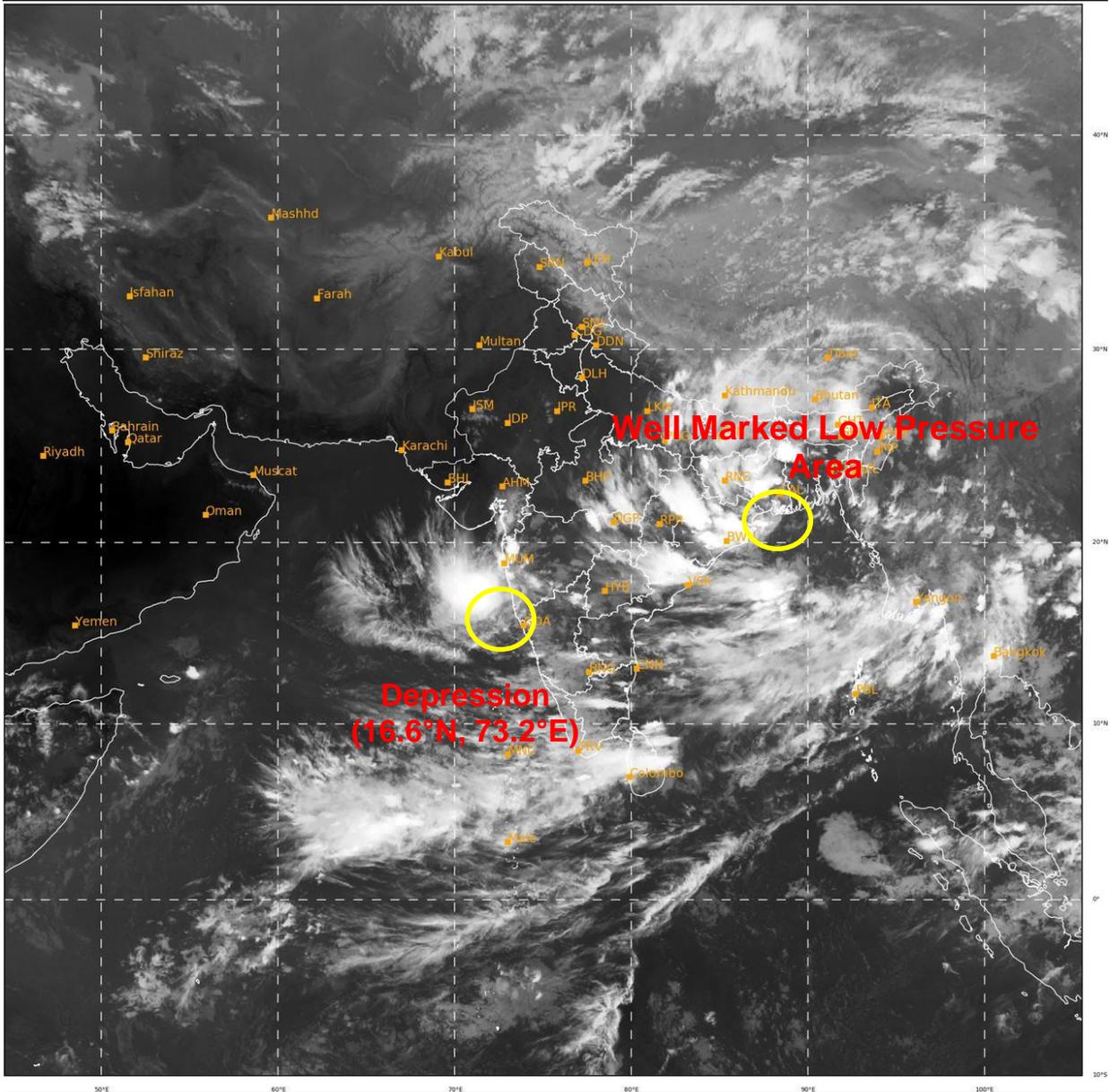
OBSERVED AND FORECAST TRACK OF DEPRESSION OVER EASTCENTRAL ARABIAN SEA AND LOCATION OF WELL MARKED LOW PRESSURE AREA OVER COASTAL WEST BENGAL AND ADJOINING AREA BASED ON 1200 UTC (1730 IST) OF 30TH SEPTEMBER, 2023.



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

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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Fishermen warning graphics

