REGIONALSPECIALISEDMETEOROLOGICALCENTRE-
TROPICALCYCLONES,NEWDELHISPECIAL TROPICALWEATHEROUTLOOK

DEMS-RSMCSPECIAL TROPICAL CYCLONES NEW DELHI DATED 30.09.2023

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGALANDTHE ARABIANSEA) VALID FOR NEXT 120 HOURS ISSUED AT 2000 UTC OF 30.09.2023 BASED ON 1800 UTC OF 30.09.2023.

SUB: A) DEPRESSION CROSSED SOUTH KONKAN COAST
B) WELL MARKED LOW PRESSURE AREA OVER COASTAL WEST BENGAL AND ADJOINING AREAS OF NORTH COASTAL ODISHA & NORTHWEST BAY OF BENGAL

A) DEPRESSION CROSSED SOUTH KONKAN COAST

THE DEPRESSION OVER EASTCENTRAL ARABIAN SEA CLOSE TO SOUTH KONKAN COAST MOVED NORTHEASTWARDS WITH A SPEED OF 6 KMPH DURING PAST 6 HOURS, CROSSED SOUTH KONKAN COAST BETWEEN PANJIM (43192, GOA) AND RATNAGIRI (43110, MAHARASHTRA) DURING 1500-1700 UTC OF OF 30TH SEPTEMBER AND LAY CENTERED AT 1800 UTC OF 30TH SEPTEMBER, 2023 OVER SOUTH KONKAN, NEAR LATITUDE 16.8°N AND LONGITUDE 73.5°E, ABOUT 25 KM SOUTHEAST OF RATNAGIRI (43110, MAHARASHTRA), 100 KM NORTH-NORTHWEST OF VENGRULA (43193, MAHARASHTRA) AND 150 KM NORTH-NORTHWEST OF PANJIM (43192, GOA).

IT IS VERY LIKELY TO MOVE NORTHEASTWARDS AND WEAKEN INTO A WELL MARKED LOW PRESSURE AREA DURING NEXT 24 HOURS.

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 EASTCENTRAL ARABIAN SEA OFF MAHARASHTRA COAST (CLOUD TOP TEMPERATURE IS -93°C), NORTH KONKAN COAST (CLOUD TOP TEMPERATURE IS -80°C).

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 102 HPA. SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH OVER EASTCENTRAL ARABIAN SEA ALONG & OFF MAHARSHTRA-GOA-KARNATAKA COASTS DURING NEXT 12 HOUTS AND GRADUALLY IMPROVE THEREAFTER.

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 COASTAL WEST BENGAL AND ADJOINING AREAS OF NORTH COASTAL ODISHA & NORTHWEST BAY OF BENGAL LIES OVER THE SAME REGION AT 1800 UTC OF 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 SOUTH GANGETIC WEST BENGAL & NEIGHBOURHOOD. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER EAST JHARKHAND, NORTHJ CHHATTISGARH, ODISHA, GANGETIC WEST BENGAL AND NORTHWEST BAY OF BENGAL (CLOUD TOP TEMPERATURE IS -93°C) AND MODERATE TO INTENSE CONVECTION OVER SOUTH BIHAR AND WEST JHARKHAND.

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 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 ($100X10^{-6}$ 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 $10X10^{-5}$ S^{-1} OVER THE SYSTEM CENTRE AND, POSITIVE UPPER LEVEL DIVERGENCE HAS REDUCED AND IS ABOUT $05X10^{-5}S^{-1}$ 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 SOUTH KONKAN IS LIKELY TO WEAKEN GRADUALLY DURING NEXT 24 HOURS.

MOST OF THE MODELS SUCH AS ECMWF, IMDGFS, NCEP GFS AND NCUM ARE INDICATING GRADUAL EAST-NORTHEASTWARDS MOVEMENT OF DEPRESSION AND WEAKENING DURING NEXT 24 HOURS.

CONSIDERING ALL THESE, THE DEPRESSION OVER SOUTH KONKAN VERY LIKELY TO MOVE NORTHEASTWARDS AND WEAKEN INTO A WELL MARKED LOW PRESSURE AREA DURING NEXT 24 HOURS.

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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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 ($100X10^{-6}$ 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 $10X10^{-5}S^{-1}$ LIES TO THE SOUTH OF SYSTEM CENTRE, POSITIVE UPPER LEVEL DIVERGENCE OF ABOUT 05-$10X10^{-5}S^{-1}$ 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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SHOBHIT KATIYAR
SCIENTIST-D
RSMC NEW, DELHI

OBSERVED AND FORECAST TRACK OF DEPRESSION OVER SOUTH KONKAN AND LOCATION OF WELL MARKED LOW PRESSURE AREA OVER COASTAL WEST BENGAL AND ADJOINING AREA BASED ON 1800 UTC (2330 IST) OF 30Th SEPTEMEBER, 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 (≥ 120 KT)

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

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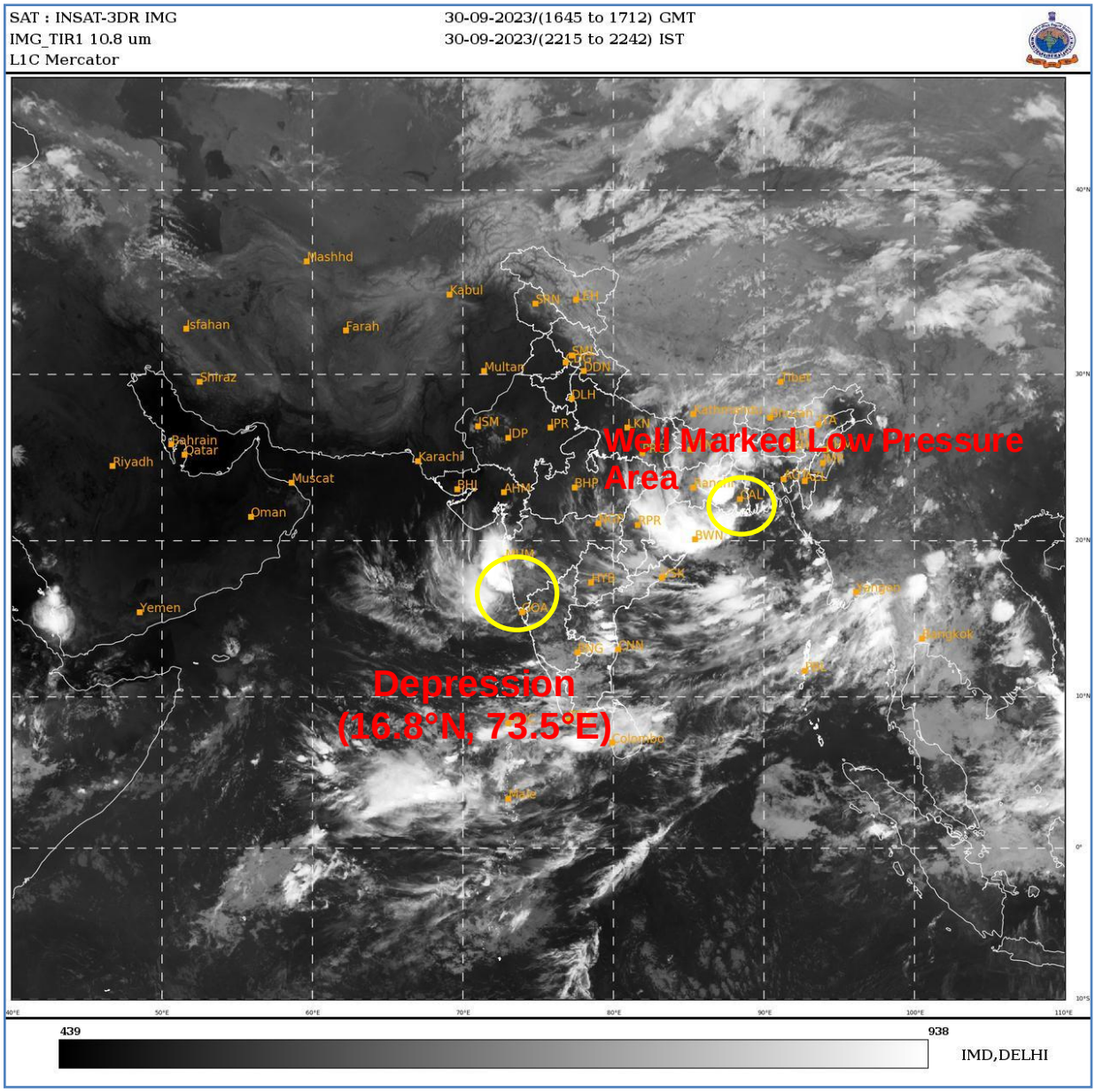

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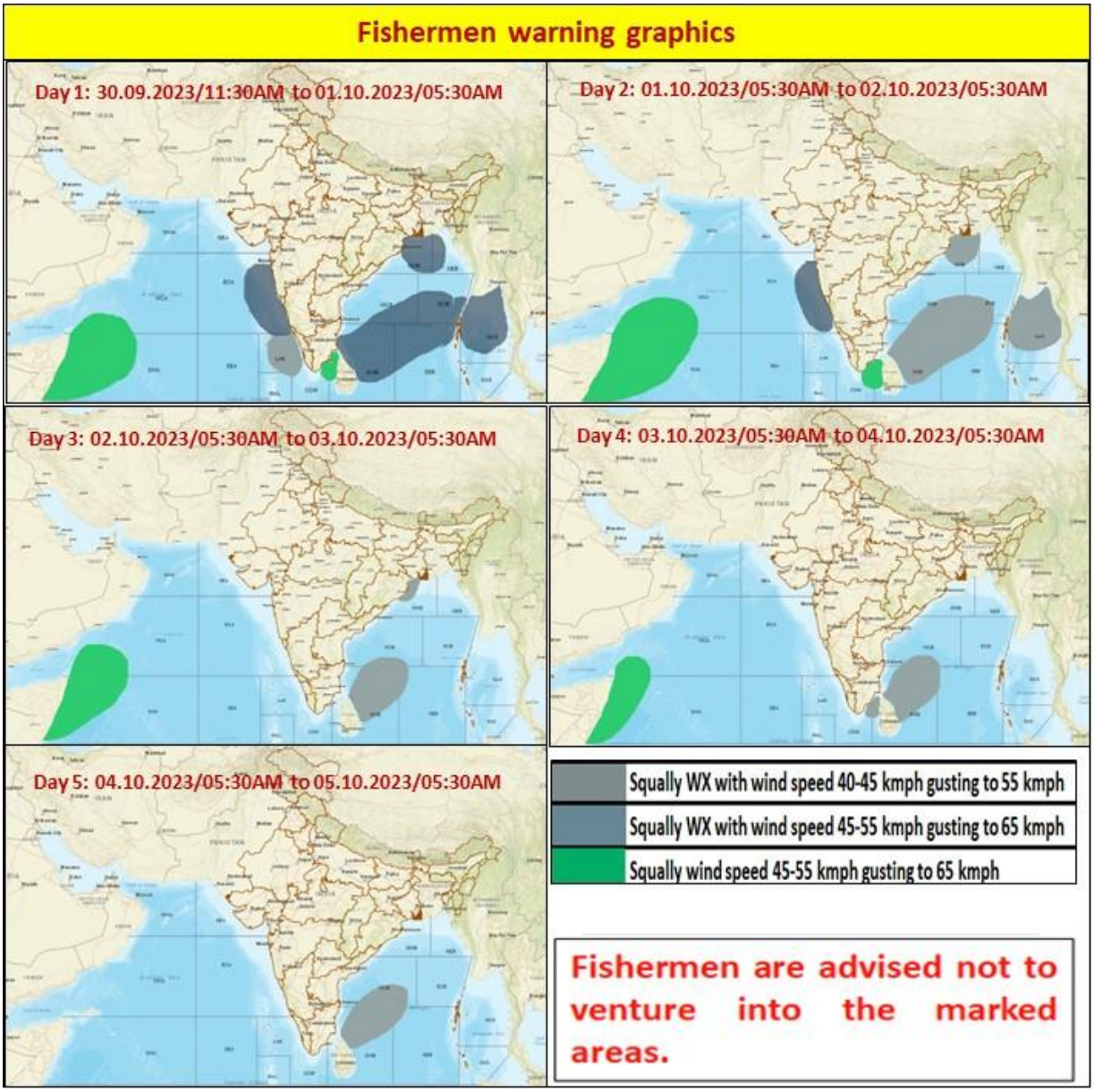

Well Marked Low Pressure Area

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DEPRESSION

Depression