



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 12.10.2024

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0600 UTC OF 12.10.2024 BASED ON 0300 UTC OF 12.10.2024.

BAY OF BENGAL:

YESTERDAY'S CYCLONIC CIRCULATION OVER SOUTH TAMIL NADU & NEIGHBOURHOOD MERGED WITH THE TROUGH EXTENDING FROM THE CENTRE OF A WELL MARKED LOW PRESSURE AREA UP TO NORTH SRI LANKA AT 0300 UTC OF TODAY, THE 12TH OCTOBER, 2024.

YESTERDAY'S CYCLONIC CIRCULATION LAY OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL LAY OVER SOUTHWEST BAY OF BENGAL AT 0300 UTC OF TODAY, THE 12TH OCTOBER, 2024 AND EXTENDED UPTO 3.1 KM ABOVE MEAN SEA LEVEL.

ANOTHER FRESH CYCLONIC CIRCULATION LAY OVER SOUTHEAST AND ADJOINING NORTH EQUATORIAL INDIAN OCEAN AT 0300 UTC OF TODAY, THE 12TH OCTOBER, 2024 AND EXTENDED UPTO 1.5 KM ABOVE MEAN SEA LEVEL. UNDER ITS INFLUENCE, A LOW PRESSURE AREA IS LIKELY TO FORM OVER SOUTHWEST BAY OF BENGAL AROUND 14TH OCTOBER.

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH BAY OF BENGAL, SOUTH OF LATITUDE 10° NORTH AND ADJOINING EQUATORIAL INDIAN OCEAN & SOUTH ANDAMAN SEA (MINIMUM CTT MINUS 80-93 DEGREE CELCIUS). SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER EASTCENTRAL BAY OF BENGAL & NORTH ANDAMAN SEA.

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	LOW	NIL	NIL	NIL

***NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY**

ARABIAN SEA:

YESTERDAY'S WELL MARKED LOW PRESSURE AREA OVER EASTCENTRAL ARABIAN SEA OFF MAHARSHTRA COAST MOVED WEST-NORTHWESTWARDS AND LAY OVER EASTCENTRAL ARABIAN SEA AT 0300 UTC OF TODAY, THE 12TH OCTOBER 2024 WITH ASSOCIATED CYCLONIC CIRCULATION EXTENDING UPTO 5.8 KM ABOVE MEAN SEA LEVEL. IT IS LIKELY TO CONTINUE TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION OVER CENTRAL ARABIAN SEA BY MORNING OF 13TH OCTOBER, 2024.

A TROUGH IS EXTENDING FROM THE CENTRE OF WELL MARKED LOW PRESSURE AREA OVER EASTCENTRAL ARABIAN SEA TO NORTH SRILANKA ACROSS COASTAL KARNATAKA AND TAMIL NADU AND EXTENDING UPTO 1.5 KM ABOVE MEAN SEA LEVEL.

LATEST SATELLITE IMAGERY INDICATES SLIGHT DISORGANISATION OF THE CLOUD MASS ASSOCIATED WITH THE SYSTEM AND CLOUD MASS IS EAST-WEST ORIENTED. ASSOCIATED SCATTERED TO BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER AN AREA BETWEEN LATITUDE 12.0⁰ N TO 21.0⁰ N EAST OF LONGITUDE 61.0⁰ E WITH MINIMUM CLOUD TOP TEMPERATURE 90EASTCENTRAL & SOUTHEAST ARABIAN SEA, LAKSHADWEEP ISLANDS AREA, MALDIVES & COMORIN AREA (MINIMUM CTT MINUS 70-93 DEGREE CELCIUS).

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL, ADJOINING NORTHEAST ARABIAN SEA, GULF OF CAMBAY, LAKSHADWEEP ISLANDS AREA, MALDIVES & COMORIN AREA (MINIMUM CTT MINUS 70-90 DEGREE CELCIUS). SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER SOUTH ARABIAN SEA AND WEAK TO MODERATE CONVECTION LAY OVER REST NORTH ARABIAN SEA.

ASSOCIATED ESTIMATED CENTRAL PRESSURE IS 1004 HPA WITH MAXIMUM SUSTAIND WIND SPEED OF 15 KTS.

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
MOD	MOD	-	-	NIL	NIL	NIL

*NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY
 "-." INDICATE GENESIS HAS ALREADY OCCURRED

REMARKS:

THE MADDEN-JULIAN OSCILLATION (MJO) IS CURRENTLY IN PHASE 4, WITH AMPLITUDE MORE THAN 1, AND IS EXPECTED TO MOVE ACROSS PHASE 4 DURING NEXT 5 DAYS WITH FURTHER INCREASING AMPLITUDE. THUS, MJO WOULD SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER BAY OF BENGAL DURIG NEXT 5 DAYS. IMD GFS IS INDICATING PRESENCE OF EQUATORIAL ROSSBY WAVES OVER THE SOUTHEAST ARABIAN SEA AND KELVIN

WAVES DURING NEXT 3 DAYS. IT IS ALSO INDICATING THE PRESENCE OF KELVIN WAVES AND ROSSBY WAVES OVER SOUTHWEST BOB DURING 13TH TO 15TH OCTOBER. THE MODEL IS ALSO INDICATING ENHANCED WESTERLY WINDS OVER SOUTH ARABIAN SEA & ADJOINING SOUTHWEST BOB DURING NEXT 2 DAYS.

BAY OF BENGAL (BOB)

THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER ENTIRE BOB. THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS GREATER THAN 100 KJ/CM² OVER THE NORTHERN AND OFF THE COASTS OF WEST BENGAL, BANGLADESH & MYANMAR, OVER WESTCENTRAL & ADJOINING SOUTHWEST BOB AND SOUTH ANDAMAN SEA, 80-100 KJ/CM² OVER SOUTHEAST BOB & ADJOINING EQUATORIAL INDIAN OCEAN WHILE IT IS BELOW 50 KJ/CM² OVER REMAINING PARTS OF THE BOB. A ZONE OF POSITIVE CYCLONIC VORTICITY OF 60-80 X 10⁻⁵ IS SEEN OVER SOUTHWEST BOB & ADJOINING EQUATORIAL INDIAN OCEAN. POSITIVE LOW-LEVEL CONVERGENCE HAS INCREASED IN PAST 24 HOURS AND IS AROUND 15-20X10⁻⁵ S⁻¹ OVER SOUTHWEST BOB & ADJOINING EQUATORIAL INDIAN OCEAN. POSITIVE UPPER-LEVEL DIVERGENCE IS AROUND 30X10⁻⁵ S⁻¹ OVER SOUTHWEST BOB & ADJOINING EQUATORIAL INDIAN OCEAN. VERTICAL WIND SHEAR (VWS) IS LOW (05-10 KNOTS) OVER ENTIRE BOB AND ANDAMAN SEA. UPPER TROPOSPHERIC RIDGE RUNS ALONG 15°N IN ASSOCIATION WITH ANTICYCLONIC CIRCULATION OVER NORTH ANDAMAN SEA IN 100-250 HPA LEVELS. ENVIRONMENTAL FEATURES ARE VERY SUPPORTIVE FOR ENHANCEMENT OF CONVECTIVE ACTIVITY OVER SOUTHWEST BOB.

IMD GFS IS PREDICTING THE EVOLUTION OF THE UPCOMING LOW PRESSURE SYSTEM VERY DIFFERENTLY FROM OTHER MODELS. THE MODEL FORECASTS INDICATE FORMATION OF A LOW PRESSURE AREA OVER SOUTHEAST BOB AROUND 14TH OCTOBER. THEREAFTER, THE SYSTEM IS LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY RAPIDLY INTO A WELL MARKED LOW PRESSURE AREA/DEPRESSION ON 15TH AND A CYCLONIC STORM ON 16TH. IT IS LIKELY TO INTENSIFY FURTHER AND CROSS TAMIL NADU COAST ON 17TH OCTOBER AS A SEVERE CYCLONIC STORM. THE OTHER MODELS E.G., NCEP-GFS, ECMWF AND NCUM ALTHOUGH INDICATE A LOW PRESSURE SYSTEM IS LIKELY TO DEVELOP OVER SOUTHEAST/CENTRAL PARTS OF SOUTH BAY OF BENGAL BUT NO SUCH RAPID INTENSIFICATION OF THE SYSTEM IS PORTRAYED. BOTH ECMWF AND NCEP-GFS PREDICTED THE SYSTEM IS REACHING NORTH TAMIL NADU COAST ON 16TH AND CROSS SOUTH ANDHRA PRADESH COAST ON 17TH OCTOBER. IN THE ECMWF FORECASTS THE LOW PRESSURE AREA DO NOT INTENSIFY BUT NCEP-GFS FORECASTS SUGGESTS THAT THE SYSTEM IS LIKELY TO BECOME WELL MARKED LOW PRESSURE AREA ON 15TH OCTOBER.

GFS GROUP OF MODELS AND ECMWF INDICATE THAT THE LOW PRESSURE SYSTEM IS LIKELY TO EMERGE OVER ARABIAN SEA MOVING ACROSS PENINSULAR INDIA. THERE IS VARIATION IN THE TIME OF EMERGENCE BETWEEN 18TH AND 19TH. AFTER IT EMERGES OVER EASTCENTRAL AS, IMD-GFS MODEL SUGGESTS THAT THE SYSTEM IS LIKELY TO PERSIST AND RE-INTENSIFY FURTHER INTO DEPRESSION OVER EASTCENTRAL AS ALONG WITH ITS NORTHWESTWARDS MOVEMENT. OTHER MODELS DO NOT INDICATE SIMILAR TYPE OF INTENSIFICATION OVER AS.

ARABIAN SEA (AS)

THE SEA SURFACE TEMPERATURE (SST) IS 28-30°C OVER EASTCENTRAL AS. AROUND 27°C OVER THE WESTCENTRAL AND SOUTHWEST PARTS OF AS. THE TROPICAL CYCLONE HEAT POTENTIAL IS 60-70KJ/CM² OVER EASTCENTRAL AS AND IT IS LESS THAN 50 KJ/CM² OVER WESTCENTRAL AS & OFF OMAN COAST. TOTAL PRECIPITABLE WATER IMAGERY INDICATE CONTINUOUS WARM MOIST AIR INTRUSION INTO THE CORE. HOWEVER, AS THE SYSTEM ENTERS, WESTCENTRAL AS, COLD DRY AIR INTRUSION WOULD COMMENCE.

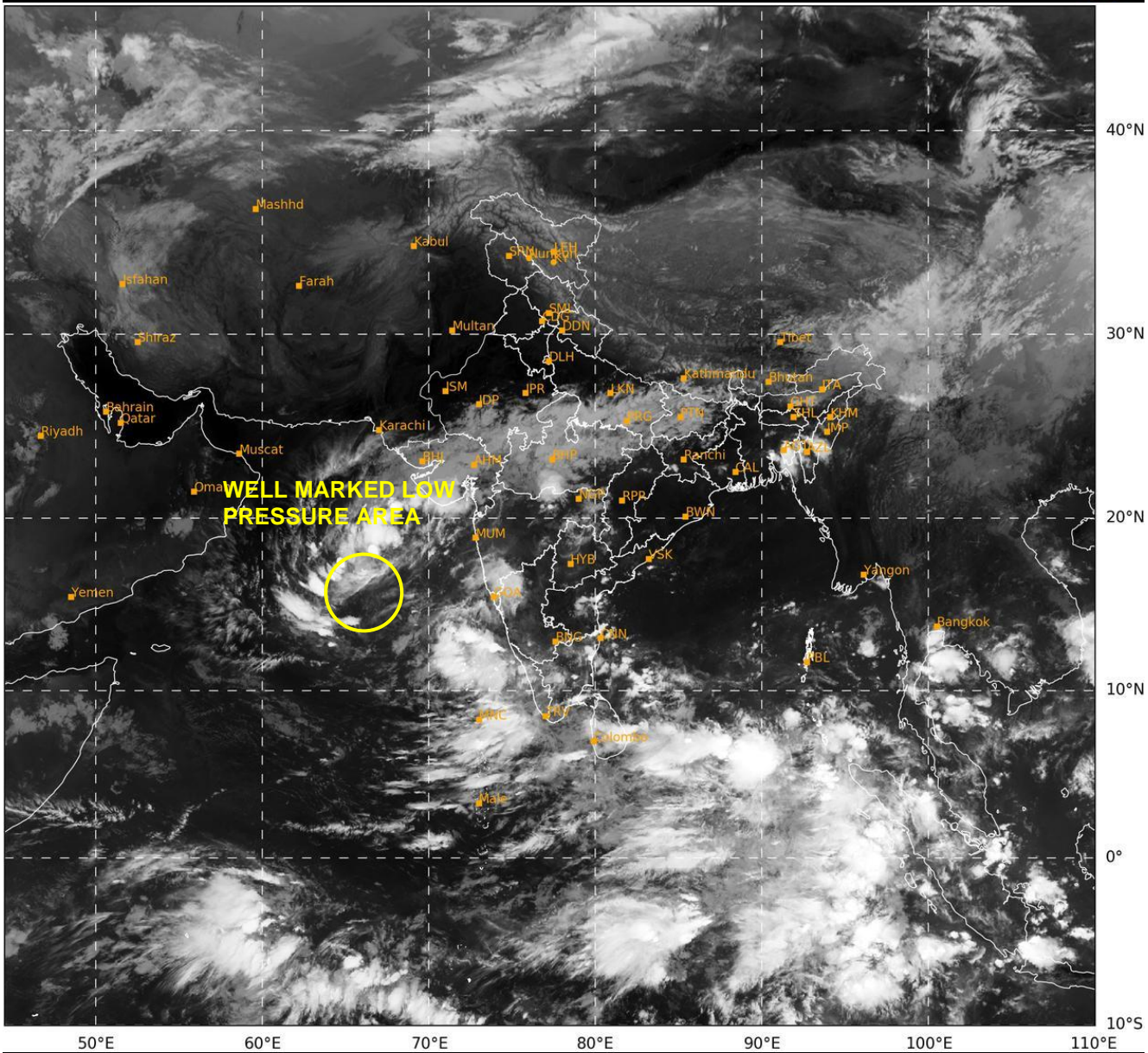
LOW-LEVEL VORTICITY IS THE SAME DURING PAST 24 HOURS AND IS AROUND 50 X 10⁻⁵ OVER SYSTEM AREA WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. POSITIVE SOUTHWEST-NORTHEAST ORIENTED LOW-LEVEL CONVERGENCE (05-10 X10⁻⁵ S⁻¹) IS SEEN OVER EASTCENTRAL AS. POSITIVE UPPER-LEVEL DIVERGENCE AROUND 10X10⁻⁵ S⁻¹ LAY OVER SYSTEM AREA. DEEP LAYER WIND SHEAR (VWS) IS LOW TO MODERATE (05-15 KNOTS) OVER SYSTEM AREA AND ALONG THE EXPECTED PATH. MID LAYER SHEAR IS 05-10 KNOTS AND ANTICYCLONIC. UPPER TROPOSPHERIC RIDGE RUNS ALONG 19°N IN 250-350 HPA LEVEL, IN ASSOCIATION WITH ANTICYCLONIC CIRCULATION OVER NORTH MAHARASHTRA COAST. THE SYSTEM IS LIKELY TO MOVE WEST-NORTHWESTWARDS UNDER THE INFLUENCE OF EAST-SOUTHEASTERLY WINDS PREVAILING OVER THE SYSTEM AREA.

VARIOUS ENVIRONMENTAL FEATURES INDICATE MODERATELY FAVOURABLE ENVIRONMENT FOR MAINTENANCE OF INTENSITY OF SYSTEM.

VARIOUS MODELS INCLUDING (IMD GFS, NCEP GFS, NCUM AND ECMWF) ARE INDICATING LIKELY FORMATION OF DEPRESSION BY 13TH OCTOBER OVER CENTRAL AS. HOWEVER, THERE ARE VARIATIONS IN THE INTENSITIES PREDICTED BY THE MODELS. NCEP GFS, IMD GFS ARE PREDICTING COMPARATIVELY HIGHER INTENSITY THAN ECMWF AND NCUM MODELS. THERE IS A CONSENSUS AMONG ALL MODELS ABOUT THE MOVEMENT OF THE SYSTEM AFTER IT BECOMES DEPRESSION. AS PER MODEL PREDICTION IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS ACROSS CENTRAL AS TOWARDS OMAN-YEMEN COAST WITH GRADUAL WEAKENING NEAR OMAN-YEMEN COAST AS A WELL MARKED LOW PRESSURE AREA. THIS FEATURE IS ALSO SUPPORTED BY LOW SST & LOW TCHP OVER WESTCENTRAL ARABIAN SEA AND ALONG & OFF OMAN COAST.

CONSIDERING ALL THE ABOVE, THE WELL LOW-PRESSURE AREA OVER EASTCENTRAL AS IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION OVER CENTRAL ARABIAN SEA BY MORNING (0000 UTC) OF 13TH OCTOBER, 2024 AS PER THE GFS GROUP OF MODELS. AS ENVIRONMENT IS MODERATELY SUPPORTIVE AND ECMWF & NCUM MODELS ARE NOT SUPPORTING FURTHER INTENSIFICATION, THE PROBABILITY OF

CYCLOGENESIS (FORMATION OF DEPRESSION) IS TAKEN AS MODERATE DURING NEXT 2 DAYS.



450

944

IMD, 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