



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

**DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 13.10.2024**

**TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0700 UTC OF 13.10.2024 BASED ON 0300 UTC OF 13.10.2024.**

**BAY OF BENGAL:**

YESTERDAY'S CYCLONIC CIRCULATION OVER SOUTHWEST BAY OF BENGAL LAY OVER NORTH INTERIOR TAMILNADU AT 0300 UTC OF TODAY, THE 13<sup>TH</sup> OCTOBER, 2024 AND EXTENDED UPTO 3.1 KM ABOVE MEAN SEA LEVEL & TILTING SOUTHWESTWARDS WITH HEIGHT.

YESTERDAY'S CYCLONIC CIRCULATION OVER SOUTHEAST AND ADJOINING NORTH EQUATORIAL INDIAN OCEAN MOVED WEST-NORTHWESTWARDS AND LAY OVER SOUTHEAST BAY OF BENGAL AT 0300 UTC OF TODAY, THE 13<sup>TH</sup> OCTOBER, 2024 AND EXTENDED UPTO 1.5 KM ABOVE MEAN SEA LEVEL. UNDER ITS INFLUENCE A LOW-PRESSURE AREA IS LIKELY TO FORM OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL AROUND 14<sup>TH</sup> OCTOBER. IT IS LIKELY TO BECOME WELL MARKED LOW PRESSURE AREA AND MOVE WEST-NORTHWESTWARDS TOWARDS NORTH TAMILNADU-PUDUCHERRY & ADJOINING SOUTH ANDHRA PRADESH COASTS DURING SUBSEQUENT 48 HOURS.

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL BAY OF BENGAL, SOUTH BAY OB BENGAL AND ADJOINING EQUATORIAL INDIAN OCEAN (MINIMUM CTT MINUS 75-93 DEG CEL). SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER ANDAMAN SEA GULF OF MARTABAN & TENASSERIM COAST.

**\*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	LOW	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 LAY OVER EASTCENTRAL AND ADJOINING WESTCENTRAL ARABIAN SEA AT 0000 UTC AND PERSISTED OVER THE SAME REGION AT 0300 UTC OF TODAY, THE 13<sup>TH</sup> OCTOBER, 2024. THE ASSOCIATED CYCLONIC CIRCULATION EXTENDED UPTO 5.8 KM ABOVE MEAN SEA LEVEL. IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION DURING NEXT 12 HOURS.

A TROUGH EXTENDED FROM THE CENTRE OF WELL MARKED LOW PRESSURE AREA OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA TO COMORIN AREA ACROSS SOUTH KERALA & CYCLONIC CIRCULATION OVER TAMILNADU BETWEEN 3.1 & 5.8 KM ABOVE MEAN SEA LEVEL.

LATEST SATELLITE IMAGERY AT 0300 UTC, INDICATED ORGANISATION OF THE CLOUD MASS. THE CLOUD CLUSTERS HAVE MERGED INTO ONE CLUSTER NEAR LOW LEVEL CYCLONIC CIRCULATION. INTENSITY OF THE SYSTEM IS CHARACTERISED AS T1.0. ASSOCIATED SCATTERED LOW/MED CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL ARSEA BETWEEN LATITUDE 13.0N & 20.0N AND LONGITUDE 60.0E & 70.0E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80-90 DEG CELSIUS. MULTI-SATELLITE BASED WINDS INDICATE STRONGER WINDS IN THE SOUTHWEST AND NORTHWEST SECTOR.

MODERATE TO INTENSE CONVECTION LAY OVER NORTH ARABIAN SEA. SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER GULF OF CAMBAY, CENTRAL ARABIAN SEA, SOUTHEAST ARABIAN SEA & LAKSHDWEEP ISLANDS AREA (MINIMUM CTT MINUS 70-85 DEG CEL). SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER NORTH ARABIAN SEA, MALDIVES & COMORIN AREA AND ISOLATED WEAK TO MODERATE CONVECTION LAY OVER GULF OF KUTCH & SOUTHWEST ARABIAN SEA.

THE CENTRE IS LOCATED NEAR 15.7°N/ 65.9°E OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA. ASSOCIATED ESTIMATED CENTRAL PRESSURE IS 1006 HPA WITH MAXIMUM SUSTAINED 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	LOW	NIL	NIL	NIL	NIL	NIL

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

**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 4 DAYS WITH FURTHER INCREASING AMPLITUDE. THUS, MJO WOULD SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER BAY OF BENGAL DURING NEXT 5 DAYS. THE GUIDANCE FROM CICS MODEL INDICATE PRESENCE OF STRONG WESTERLY WINDS (7-9 MPS) OVER SOUTH ARABIAN SEA AND STRONG EASTERLY WINDS (7-9 MPS) OVER CENTRAL ARABIAN SEA ALONGWITH EASTWARD MOVING KELWIN WAVES & MJO AND WESTWARDS MOVING LARGE EQUATORIAL ROSSBY WAVE EXTENDING FROM SOUTH BAY OF BENGAL TO SOUTH ARABIAN SEA DURING NEXT 3 DAYS. THESE FEATURES ARE SUPPORTIVE FOR MAINTENANCE OF INTENSITY/MARGINAL INTENSIFICATION OF THIS SYSTEM.

SIMILARLY, OVER THE BAY OF BENGAL, CICS BASED FORECAST INDICATES STRONG WESTERLY WINDS (5-7 MPS) OVER SOUTH BOB AND ADJOINING EQUATORIAL INDIAN OCEAN AND STRONG EASTERLY WINDS (5-7 MPS) OVER WESTCENTRAL BAY OF BENGAL. MJO& KELWIN WAVES ALONGWITH ROSSBY WAVES ARE ALSO LIKELY OVER THE BAY OF BENGAL DURING NEXT 8-10 DAYS. THESE FEATURES INDICATE FAVOURABLE ENVIRONMENT FOR GENESIS OVER THE BAY OF BENGAL

## **BAY OF BENGAL (BOB)**

THE SEA SURFACE TEMPERATURE (SST) IS 29-31°C OVER ENTIRE BOB. THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) OVER WESTCENTRAL & ADJOINING SOUTHWEST BOB AND SOUTH ANDAMAN SEA, 80-100 KJ/CM<sup>2</sup> OVER SOUTHEAST BOB & ADJOINING EQUATORIAL INDIAN OCEAN. A ZONE OF POSITIVE CYCLONIC VORTICITY OF 60-80 X 10<sup>-5</sup> IS SEEN OVER SOUTHEAST BOB & ADJOINING EQUATORIAL INDIAN OCEAN. POSITIVE LOW-LEVEL CONVERGENCE IS AROUND 10-15X10<sup>-5</sup> S<sup>-1</sup> OVER SOUTHWEST BOB. POSITIVE UPPER-LEVEL DIVERGENCE IS AROUND 10X10<sup>-5</sup> S<sup>-1</sup> OVER SOUTHWEST & ADJOINING SOUTHEAST BOB. VERTICAL WIND SHEAR (VWS) IS LOW TO MODERATE (10-15 KNOTS) OVER SOUTH BAY OF BENGAL. UPPER TROPOSPHERIC RIDGE RUNS ALONG 20°N. THE EAST-SOUTHEASTERLY WINDS PREVAILING OVER SOUTH BAY OF BENGAL ARE INDICATING WEST-NORTHWESTWARDS MOVEMENT OF SYSTEM. CURRENT ENVIRONMENTAL FEATURES ARE VERY SUPPORTIVE FOR ENHANCEMENT OF CONVECTIVE ACTIVITY OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL.

MOST OF THE MODELS INCLUDING IMD GFS, NCEP GFS, ECMWF AND NCUM ARE INDICATING LOW PRESSURE AREA OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL AROUND 14<sup>TH</sup> OCTOBER. MOST OF THE MODELS ARE INDICATING INTENSIFICATION INTO A WELL MARKED LOW PRESSURE AREA AND WEST-NORTHWESTWARDS MOVEMENT OF SYSTEM TOWARDS NORTH TAMIL NADU & ADJOINING SOUTH ANDHRA PRADESH COASTS BY 16<sup>TH</sup> OCTOBER. MODELS ARE ALSO INDICATING SYSTEM TO CROSS COAST AROUND EARLY MORNING HOURS OF 17<sup>TH</sup> (AROUND 2100 UTC OF 16<sup>TH</sup> OCTOBER). HOWEVER, IMD GFS IS INDICATING SLIGHTLY HIGHER INTENSIFICATION (UPTO CYCLONIC STORM STAGE). THERE IS ALSO CONSENSUS AMONG MODELS WRT EMERGENCE OF THIS SYSTEM INTO EASTCENTRAL ARABIAN SEA.

## **ARABIAN SEA (AS)**

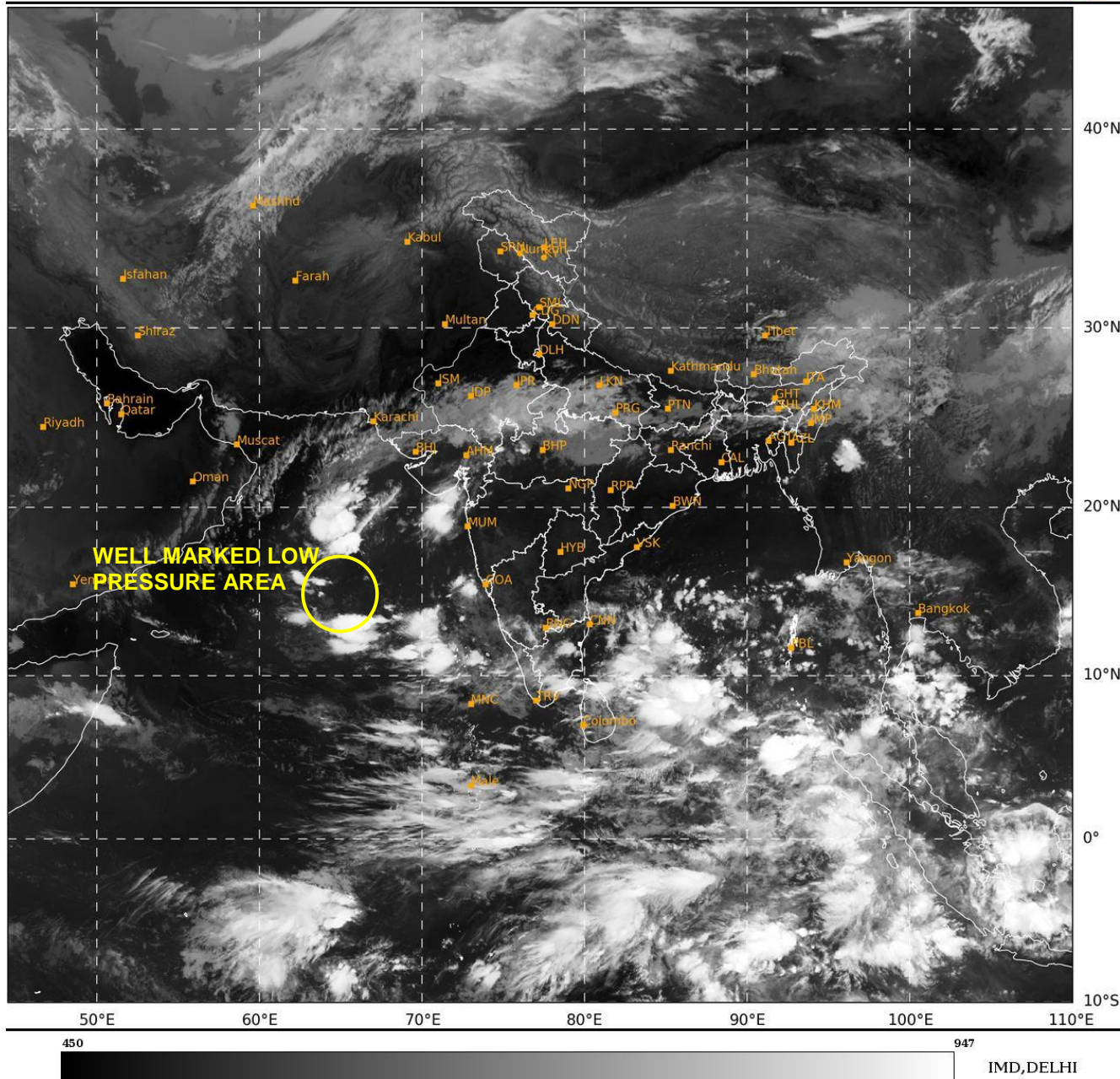
THE SEA SURFACE TEMPERATURE (SST) IS 28-30°C OVER EASTCENTRAL AS. AROUND 27°C OVER THE WESTCENTRAL AND SOUTHWEST PARTS OF AS. THE TROPICAL CYCLONE HEAT POTENTIAL IS 60-70KJ/CM<sup>2</sup> OVER EASTCENTRAL AS AND IT IS LESS THAN 50 KJ/CM<sup>2</sup> OVER WESTCENTRAL AS & OFF OMAN COAST. TOTAL PRECIPITABLE WATER IMAGERY INDICATE CONTINUOUS WARM MOIST AIR INTRUSION INTO THE CORE. HOWEVER, AS THE SYSTEM ENTERS, WESTCENTRAL AS, COLD DRY AIR INTRUSION WOULD COMMENCE AND TROPICAL CYCLONE HEAT POTENTIAL WOULD ALSO BECOME LESS THAN 50 KJ/CM<sup>2</sup>.

LOW-LEVEL VORTICITY IS THE SAME DURING PAST 24 HOURS AND IS AROUND 50-60 X 10<sup>-5</sup> OVER THE SYSTEM AREA WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. LOW-LEVEL CONVERGENCE HAS DECREASED IN PAST 24 HOURS AND IS AROUND 05X10<sup>-5</sup>S<sup>-1</sup> OVER EASTCENTRAL ARABIAN SEA. POSITIVE UPPER-LEVEL DIVERGENCE IS SAME & AROUND 10X10<sup>-5</sup> S<sup>-1</sup> OVER SYSTEM AREA. DEEP LAYER WIND SHEAR (VWS) IS LOW TO MODERATE (05-15 KNOTS) OVER SYSTEM AREA AND ALONG THE EXPECTED PATH. UPPER TROPOSPHERIC RIDGE RUNS ALONG 20°N. 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/ FURTHER INTENSIFICATION OF SYSTEM.

VARIOUS MODELS INCLUDING (IMD GFS, NCEP GFS, NCUM AND ECMWF) ARE INDICATING THE SYSTEM TO MAINTAIN INTENSITY AS WELL MARKED LOW-PRESSURE AREA OR marginally intensify into a depression by 14<sup>TH</sup> OCTOBER/0000 UTC. HOWEVER, AS COMPARED TO YESTERDAY, IMD GFS IS INDICATING SLIGHTLY HIGHER INTENSITY IN THE ANALYSIS FIELD. SIMILARLY, ECMWF IS ALSO INDICATING MARGINAL DEPRESSION. THERE IS A CONSENSUS AMONG ALL MODELS ABOUT THE MOVEMENT OF THE SYSTEM TOWARDS OMAN-YEMEN COASTS. ALL MODELS ARE INDICATING WEAKENING FROM 15<sup>TH</sup> OCTOBER ONWARDS. THIS FEATURE IS ALSO SUPPORTED BY LOW SST & LOW TCHP OVER WESTCENTRAL ARABIAN SEA AND ALONG & OFF OMAN COAST.

CONSIDERING ALL THE ABOVE,

- (I) A LOW-PRESSURE AREA IS LIKELY TO FORM OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL AROUND 14<sup>TH</sup> OCTOBER. IT IS LIKELY TO BECOME WELL MARKED LOW PRESSURE AREA AND MOVE WEST-NORTHWESTWARDS TOWARDS NORTH TAMILNADU AND ADJOINING SOUTH ANDHRA PRADESH COASTS DURING SUBSEQUENT 48 HOURS. THE PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) IS TAKEN AS LOW DURING 15<sup>TH</sup>-17<sup>TH</sup> OCTOBER.
- (II) THE WELL LOW-PRESSURE AREA OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION DURING NEXT 12 HOURS. THE PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) IS TAKEN AS MODERATE TO LOW DURING NEXT 48 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%  
This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins