



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

### DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 08.09.2024

**SPECIAL 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 08.09.2024 BASED ON 0300 UTC OF 08.09.2024.**

### DEPRESSION OVER WESTCENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL:

THE DEPRESSION OVER WESTCENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF 13 KMPH DURING PAST 3 HOURS AND LAY CENTERED AT 0300 UTC OF TODAY, THE 8<sup>TH</sup> SEPTEMBER, 2024 OVER THE SAME REGION NEAR LATITUDE 18.2°N AND LONGITUDE 86.8°E, ABOUT 280 KM EAST OF KALINGAPATNAM (43105), 230 KM EAST-SOUTHEAST OF GOPALPUR(43049), 260 KM SOUTH-SOUTHEAST OF PARADIP (42976) AND 390 KM SOUTH OF DIGHA (42901).

IT IS VERY LIKELY TO MOVE NEARLY NORTHWARDS TOWARDS NORTH ODISHA-WEST BENGAL COASTS AND INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 24 HOURS. THEREAFTER, IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS ODISHA AND ADJOINING WEST BENGAL COASTS BETWEEN PURI AND DIGHA AROUND 1500 UTC OF 9<sup>TH</sup> SEPTEMBER. CONTINUING TO MOVE FURTHER WEST-NORTHWESTWARDS, IT IS LIKELY TO MOVE ACROSS ODISHA & ADJOINING GANGETIC WEST BENGAL AND JHARKHAND & ADJOINING NORTH CHHATTISGARH DURING SUBSEQUENT 2 DAYS.

THE DOPPLER WEATHER RADARS AT VISAKHAPATNAM AND GOPALPUR ARE CONTINUOUSLY MONITORING THE SYSTEM.

### BAY OF BENGAL:

AT 0300 UTC, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T1.5. CLOUDS ARE ORGANISED IN SHEAR PATTERN. AREA OF INTENSE CONVECTION IS SHEARED TO THE SOUTHWEST OF SYSTEM CENTRE. INSAT SATELLITE IMAGERY DETECTS ASSOCIATED SCATTERED TO BROKEN LOW & MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL & ADJOINING NORTHWEST BAY OF BENGAL, COASTAL ODISHA & NORTH COASTAL ANDHRA PRADESH. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 85-93°C. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM CORE FROM SOUTHERN SECTOR.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED (MSW) IN ASSOCIATION WITH THE SYSTEM IS 25 KTS GUSTING TO 35 KTS. ESTIMATED CENTRAL PRESSURE IS 998 HPA. AT 0300 UTC, KALINGPATNAM REPORTED MEAN SEA LEVEL PRESSURE (MSLP) OF 1001.3 HPA, DEPARTURE FROM NORMAL (DEP) AS -4.6 HPA AND MSW OF 290°/03KT. GOPALPUR REPORTED MSLP OF 1001.2 HPA, DEP AS -5.2 HPA AND MSW OF 360°/05KT.

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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PURI REPORTED MSLP OF 1000.9 HPA, DEP AS -5.0 HPA & PRESSURE CHANGE IN PAST 24 HRS (P24) AS -1.0 HPA AND MSW OF 50°/05KT. PARADIP REPORTED MSLP OF 1001.5 HPA, DEP AS -4.4 HPA & N PAST 24 HRS (P24) AS -1.0 HPA AND MSW OF 70°/04KT. A BUOY (17.8N/89.2) REPORTED MSLP OF 1001.9 HPA AND MSW OF 180°/10KT. ANOTHER BUOY (17.4N/89.0) REPORTED MSLP OF 1001.7 HPA AND MSW OF 237°/08KT

## **WIND WARNING**

SQUALLY WEATHER WITH WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH IS CURRENTLY PREVAILING OVER NORTHWEST AND ADJOINING NORTHEAST & CENTRAL BAY OF BENGAL AND ALONG & OFF ANDHRA PRADESH-ODISHA-WEST BENGAL AND ADJOINING BANGLADESH COASTS. IT IS LIKELY TO INCREASE BECOMING 50-60 KMPH GUSTING TO 70 KMPH OVER THE SAME REGION FROM 1500 UTC OF TODAY, THE 8<sup>TH</sup> SEPTEMBER TILL 0000 UTC OF 10<sup>TH</sup> SEPTEMBER AND DECREASE GRADUALLY THEREAFTER.

**SEA CONDITION:** ROUGH TO VERY ROUGH SEA CONDITION IS LIKELY OVER NORTHWEST AND ADJOINING NORTHEAST & CENTRAL BAY OF BENGAL AND ALONG & OFF ANDHRA PRADESH-ODISHA-WEST BENGAL AND ADJOINING BANGLADESH COASTS FROM TODAY, THE 8<sup>TH</sup> SEPTEMBER TILL 0000 UTC OF 10<sup>TH</sup>. SEA CONDITIONS WOULD GRADUALLY IMPROVE BECOMING ROUGH ON 11<sup>TH</sup> SEPTEMBER.

## **(V) FISHERMEN WARNING**

FISHERMEN ARE ADVISED NOT TO VENTURE INTO NORTHWEST AND ADJOINING NORTHEAST & CENTRAL BAY OF BENGAL; ALONG & OFF ANDHRA PRADESH-ODISHA-WEST BENGAL AND ADJOINING BANGLADESH COASTS TILL 0600 UTC OF 11<sup>TH</sup> SEPTEMBER.

## **REMARKS:**

CURRENT ENVIRONMENTAL CONDITIONS INDICATE THAT THE DEPRESSION OVER WESTCENTRAL BAY OF BENGAL (BOB) IS LYING IN A FAVOURABLE ENVIRONMENT. SEA SURFACE TEMPERATURE IS 29-30°C OVER WESTCENTRAL & ADJOINING EASTCENTRAL BOB. IT IS HIGHER AROUND 32°C OVER NORTHWEST BOB OFF ODISHA COAST. TROPICAL CYCLONE HEAT POTENTIAL IS 60-80KJ/CM<sup>2</sup> NEAR SYSTEM LOCATION. IT IS SLIGHTLY HIGHER OVER NORTHWEST BOB (100 KJ/CM<sup>2</sup>). THUS, DURING ITS NORTH-NORTHWESTWARDS MOVEMENT, IT WILL ENTER INTO WARM OCEANIC AREA.

MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 5 WITH AMPLITUDE LESS THAN 1. IT IS LIKELY TO CONTINUE IN SAME PHASE DURING NEXT 4 DAYS. THUS, MJO WOULD SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER NORTH BOB. NCICS BASED GUIDANCE ON EQUATORIAL WAVES INDICATE, STRONG WESTERLY WINDS (5-7 MPS) ALONGWITH ROSSBY WAVES OVER SOUTH BOB AND STRONG EASTERLY WINDS (5-7MPS) OVER NORTH BOB. THESE FEATURES WOULD SUPPORT FURTHER INTENSIFICATION OF SYSTEM.

THE LOW LEVEL CONVERGENCE HAS INCREASED AND IS AROUND  $30 \times 10^{-5} \text{ S}^{-1}$  TO THE SOUTHWEST OF SYSTEM CENTRE. UPPER LEVEL DIVERGENCE HAS ALSO INCREASED AND IS AROUND  $20 \times 10^{-5} \text{ S}^{-1}$  TO THE SOUTH WEST OF SYSTEM CENTRE. THE WIND SHEAR IS LOW (05-10 KT) OVER SYSTEM AREA AND ALONG THE FORECAST TRACK.

VORTICITY AT 850 HPA LEVEL HAS INCREASED IN PAST 3 HOURS AND IS AROUND  $200 \times 10^{-5} \text{ S}^{-1}$  TO THE SOUTHWEST OF SYSTEM AREA.

GUIDANCE FROM VARIOUS NUMERICAL WEATHER PREDICTION MODELS (IMD GFS, NCEP GFS, GEFS, ECMWF, AND NCUM) IS SHOWING INITIAL NORTHWARDS MOVEMENT TILL 0000 UTC 09<sup>TH</sup> SEPTEMBER, FOLLOWED BY WEST-NORTHWESTWARDS MOVEMENT TOWARDS ODISHA COAST. NCEP GFS IS INDICATING NEARLY NORTHWARDS MOVEMENT AND CROSSING NEAR 20°N/86°E AROUND 0600 UTC OF 9<sup>TH</sup> SEPTEMBER. ECMWF IS INDICATING NEARLY NORTHWARDS MOVEMENT WITH CROSSING NEAR 20.3°N/86.8°E AROUND 1200 UTC OF 9<sup>TH</sup> SEPTEMBER. IMD GFS IS INDICATING NEAR NORTHWARDS MOVEMENT AND CROSSING NEAR 19.5°N/86.2°E AROUND 0000 UTC OF 9<sup>TH</sup> SEPTEMBER. NCUM IS INDICATING CROSSING NEAR 20°N/85°E AROUND 0600 UTC OF 9<sup>TH</sup> SEPTEMBER. HOWEVER, THERE IS CONSENSUS AMONG ALL MODELS REGARDING WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM AFTER LANDFALL.

CONSIDERING ALL THE ABOVE, IT IS CONCLUDED THAT THE DEPRESSION OVER WESTCENTRAL & ADJOINING NORTHWEST BAY OF BENGAL IS VERY LIKELY TO MOVE NEARLY NORTHWARDS TOWARDS NORTH ODISHA-WEST BENGAL COASTS AND INTENSIFY INTO A DEEP DEPRESSION DURING NEXT 24 HOURS. THEREAFTER, IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND CROSS ODISHA AND ADJOINING WEST BENGAL COASTS BETWEEN PURI AND DIGHA AROUND 1500 UTC OF 9<sup>TH</sup> SEPTEMBER. CONTINUING TO MOVE FURTHER WEST-NORTHWESTWARDS, IT IS LIKELY TO MOVE ACROSS ODISHA & ADJOINING GANGETIC WEST BENGAL AND JHARKHAND & ADJOINING NORTH CHHATTISGARH DURING SUBSEQUENT 2 DAYS.

(MONICA SHARMA)  
RSMC NEW DELHI









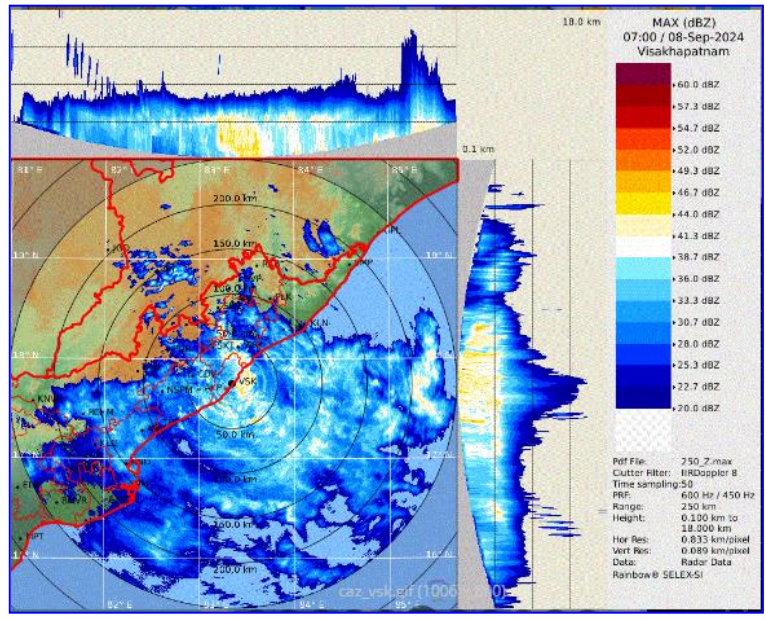
**OBSERVED AND FORECAST TRACK OF DEPRESSION OVER WESTCENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL BASED ON 0300 UTC (0830 IST) OF 8th SEPTEMBER, 2024.**



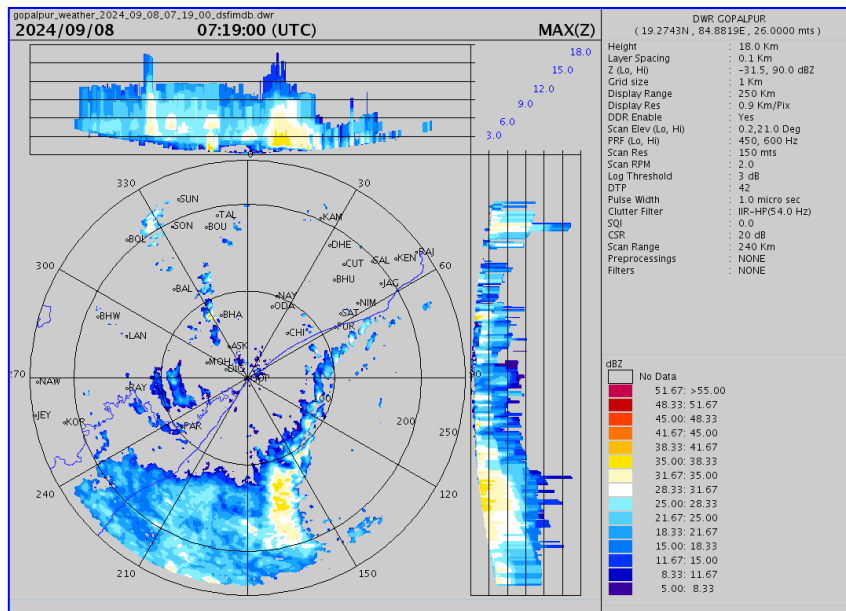
DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE 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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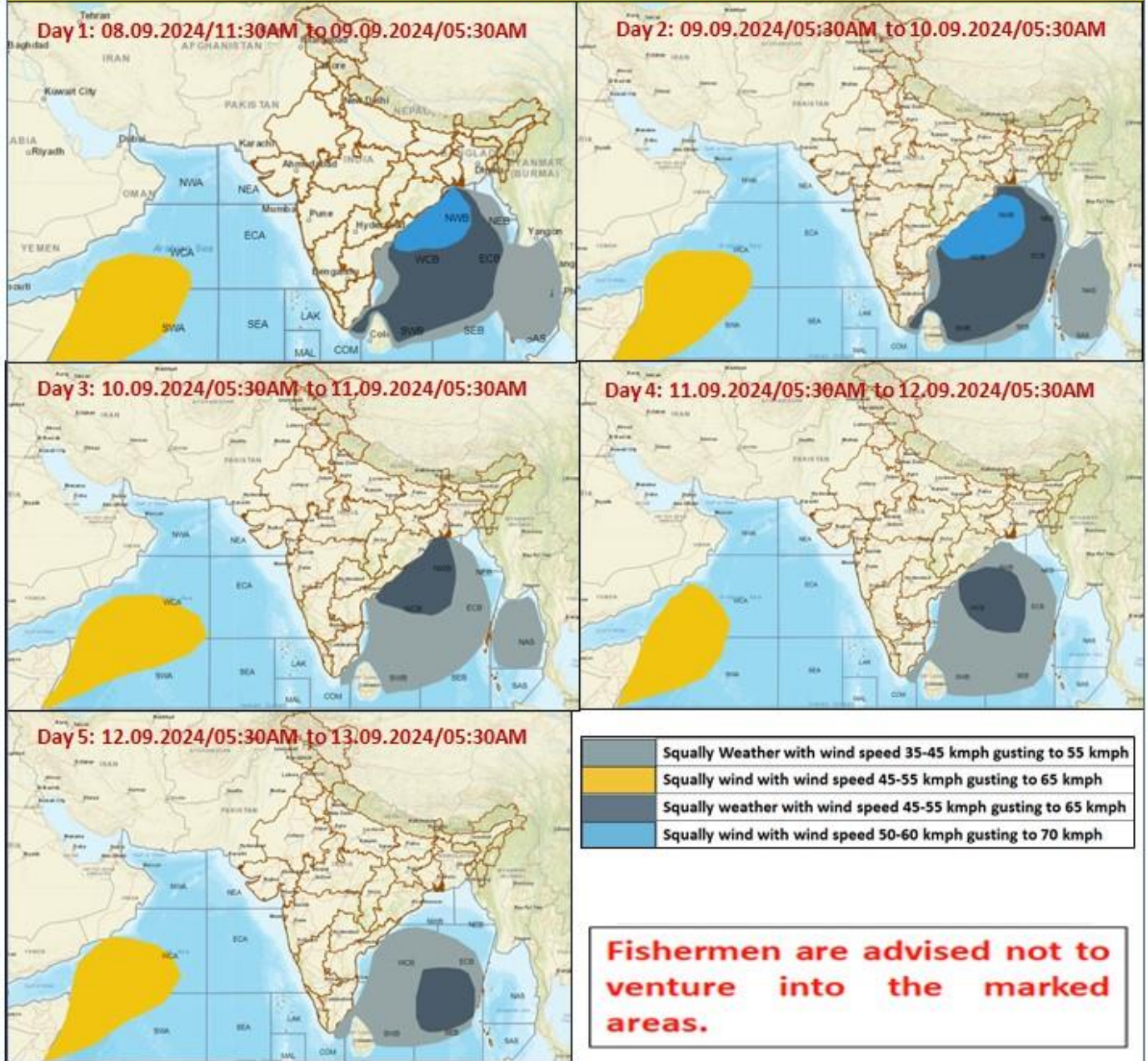
DOPPLER WEATHER RADAR VISAKHAPATNAM IMAGERY AT 0700 UTC OF 8<sup>TH</sup> SEPTEMBER



DOPPLER WEATHER RADAR GOPALPUR IMAGERY AT 0719 UTC OF 8<sup>TH</sup> SEPTEMBER



## Fishermen Warning Graphics



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