



## 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 2100 UTC OF 08.09.2024 BASED ON 1800 UTC OF 08.09.2024.**

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

THE DEPRESSION OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL MOVED SLOWLY NORTHWESTWARDS WITH A SPEED OF 7 KMPH DURING PAST 6 HOURS, INTENSIFIED INTO A **DEEP DEPRESSION** AND LAY CENTERED AT 1800 UTC OF THE 8TH SEPTEMBER, 2024 OVER THE SAME REGION NEAR LATITUDE 18.9°N AND LONGITUDE 86.3°E, ABOUT 110 KM SOUTH-SOUTHEAST OF PURI (43053), 150 KM EAST-SOUTHEAST OF GOPALPUR (43049), 160 KM SOUTH-SOUTHWEST OF PARADIP (42976), 210 KM SOUTH SOUTHWEST OF CHANDBALI (42973), 240 KM EAST NORTHEAST OF KALINGPATNAM (43105) AND 330 KM SOUTH-SOUTHWEST OF DIGHA (42901).

IT IS VERY LIKELY TO MOVE NEARLY NORTHWESTWARDS AND CROSS ODISHA COAST NEAR PURI BY 0600 UTC OF 9TH SEPTEMBER. IT WOULD THEN MOVE WEST-NORTHWESTWARDS ACROSS ODISHA & CHHATTISGARH DURING SUBSEQUENT 2 DAYS.

THE SYSTEM IS UNDER THE CONTINUOUS SURVEILLANCE OF DOPPLER WEATHER RADARS AT VISHAKHAPATNAM AND GOPALPUR.

AT 1800 UTC, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T2.0. INTENSE CLOUD MASS IS SEEN OVER WESTCENTRAL BAY OF BENGAL AND ADJOINING AREAS OF NORTH COASTAL ANDHRA PRADESH. AS PER INSAT 3DR IMAGERY AT 1715 UTC, ASSOCIATED SCATTERED TO BROKEN LOW & MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL & ADJOINING NORTHWEST BAY OF BENGAL, SOUTH COASTAL ODISHA & NORTH COASTAL ANDHRA PRADESH. MINIMUM CLOUD TOP TEMPERATURE IS -93°C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED (MSW) IN ASSOCIATION WITH THE SYSTEM IS 25 KTS GUSTING TO 35 KTS. ESTIMATED CENTRAL PRESSURE IS 993 HPA.

AT 1800 UTC, KALINGPATNAM REPORTED MEAN SEA LEVEL PRESSURE (MSLP) OF 998.3 HPA, AND MSW OF 270°/05KT. GOPALPUR REPORTED MSLP OF 997.1 HPA, AND MSW OF 320°/05KT. PURI REPORTED MSLP OF 995.8 HPA AND MSW OF 020°/10KT. A BUOY (17.8N/89.1) REPORTED MSLP OF 1001 HPA AND MSW OF 204°/10KT. ANOTHER BUOY (17.4N/89.1) REPORTED MSLP OF 1000.9 HPA AND MSW OF 232°/10KT

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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## **WIND WARNING**

SQUALLY WEATHER WITH WIND SPEED REACHING 55-65 KMPH GUSTING TO 75 KMPH PREVAILING OVER NORTHWEST AND ADJOINING NORTHEAST & CENTRAL BAY OF BENGAL AND ALONG & OFF ANDHRA PRADESH-ODISHA-WEST BENGAL COASTS, LIKELY TO CONTINUE TILL 0600 UTC OF 9<sup>TH</sup> SEPTEMBER. IT IS LIKELY TO DECREASE GRADUALLY BECOMING 45-55 KMPH GUSTING TO 65 KMPH BY 1200 UTC OF THE 9<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 COASTS TILL 1200 UTC OF THE 9<sup>TH</sup> SEPTEMBER AND ROUGH SEA CONDITION ON 10<sup>TH</sup> SEPTEMBER. IT IS LIKELY TO IMPROVE GRADUALLY THEREAFTER.

## **FISHERMEN WARNING**

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

## **REMARKS:**

CURRENT ENVIRONMENTAL CONDITIONS INDICATE THAT THE DEEP 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.

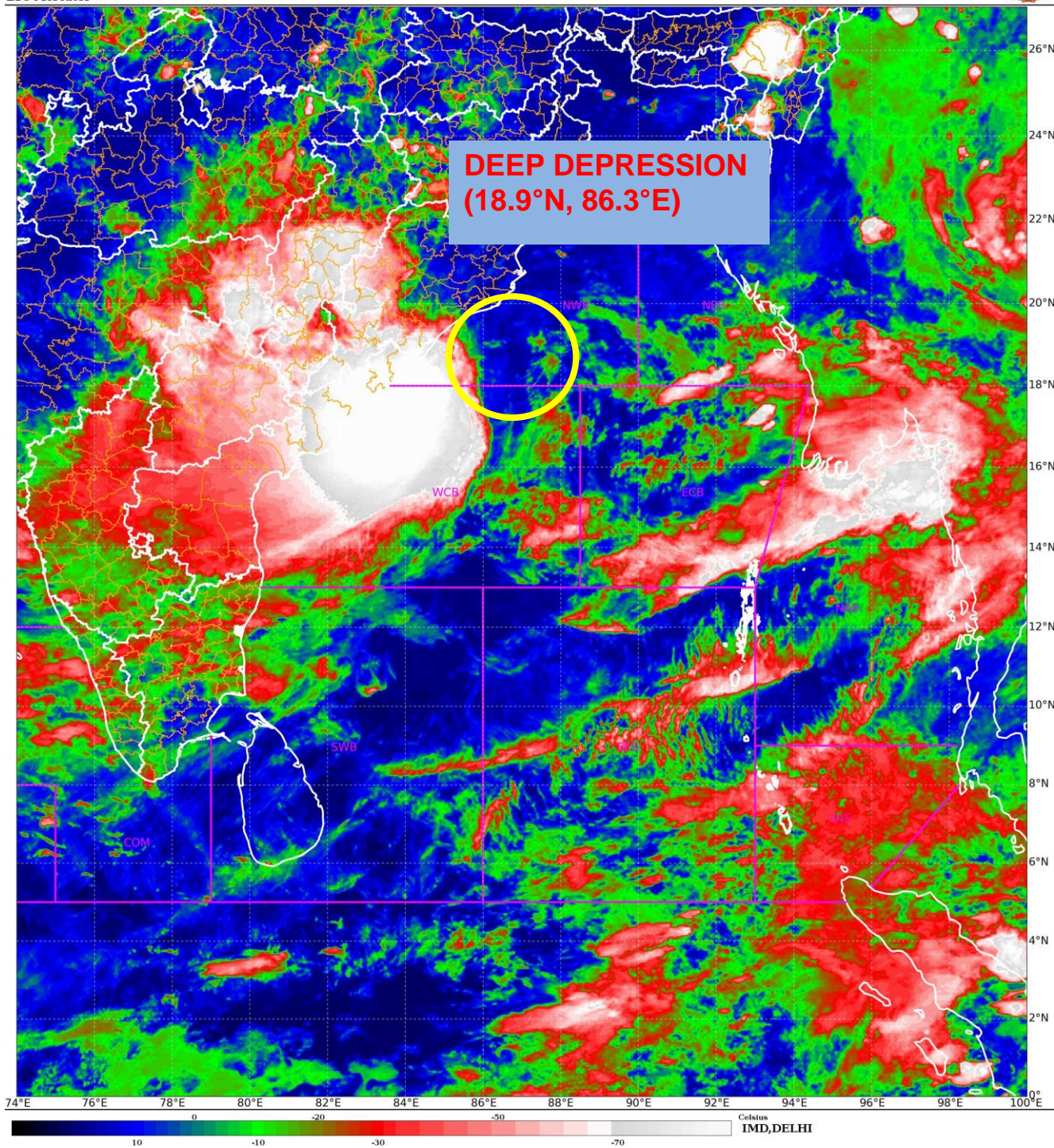
THE LOW LEVEL CONVERGENCE IS AROUND  $20 \times 10^{-5} \text{ S}^{-1}$  TO THE WEST OF SYSTEM CENTRE. UPPER LEVEL DIVERGENCE IS AROUND  $30 \times 10^{-5} \text{ S}^{-1}$  TO THE WEST AND ANOTHER ZONE OF  $10 \times 10^{-5} \text{ S}^{-1}$  TO THE EAST OF SYSTEM CENTRE. THE WIND SHEAR IS LOW (05-10 KT) OVER SYSTEM AREA AND ALONG THE FORECAST TRACK. VORTICITY AT 850 HPA LEVEL IS AROUND  $150 \times 10^{-5} \text{ S}^{-1}$  TO THE SOUTH OF SYSTEM AREA WITH EXTENSION UPTO 500 HPA LEVEL.

GUIDANCE FROM VARIOUS NUMERICAL WEATHER PREDICTION MODELS (IMD GFS, NCEP GFS, GEFS, ECMWF, AND NCUM) IS SHOWING INITIAL NORTHWARDS MOVEMENT TILL 0000 UTC 09TH SEPTEMBER, FOLLOWED BY WEST-NORHWESTWARDS MOVEMENT TOWARDS ODISHA COAST. NCEP GFS IS INDICATING NEARLY NORTHWARDS MOVEMENT AND CROSSING NEAR 20°N/86°E AROUND 0600 UTC OF 9TH SEPTEMBER. ECMWF 0000 UTC RUN IS INDICATING NEARLY NORTHWARDS MOVEMENT WITH

CROSSING NEAR 20.3°N/86.8°E AROUND 0600 UTC OF 9TH 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. IMD MME IS INDICATING THE SYSTEM TO CROSS ODISHA COAST NEAR PURI (19.9/86.1) AROUND 0400 UTC OF 9<sup>TH</sup> SEPTEMBER. HOWEVER, THERE IS CONSENSUS AMONG ALL MODELS REGARDING WEST-NORTHWESTWARDS MOVEMENT OF THE SYSTEM AFTER LANDFALL ACROSS ODISHA, CHHATTISGARH & NORTHEAST MADHYA PRADESH.

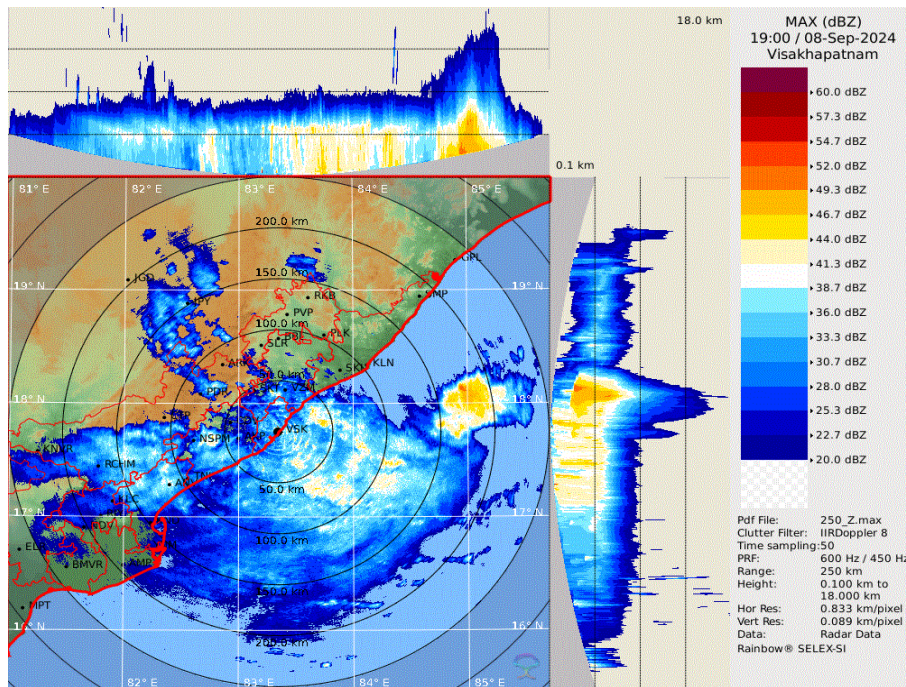
CONSIDERING ALL THE ABOVE, IT IS CONCLUDED THAT THE DEEP DEPRESSION OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL IS VERY LIKELY TO MOVE NEARLY NORTHWESTWARDS AND CROSS ODISHA COAST NEAR PURI BY 0600UTC OF 9TH SEPTEMBER. IT WOULD THEN MOVE WEST-NORTHWESTWARDS ACROSS ODISHA & CHHATTISGARH DURING SUBSEQUENT 2 DAYS.

(SHIBIN BALAKRISHNAN)  
RSMC NEW DELHI

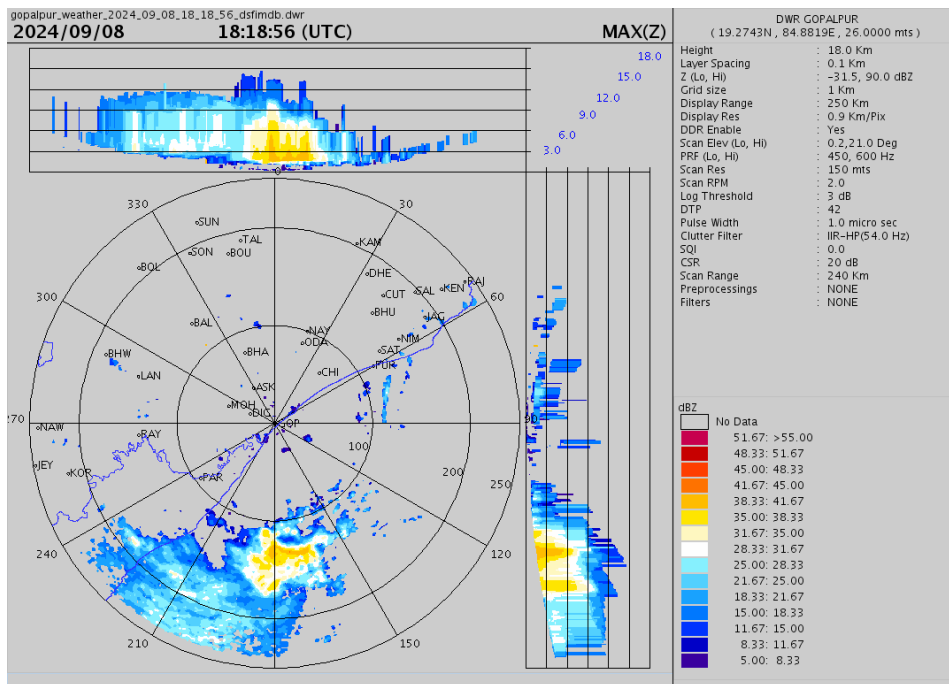


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Reflectivity imagery from **Doppler Weather Radar, Visakhapatnam**



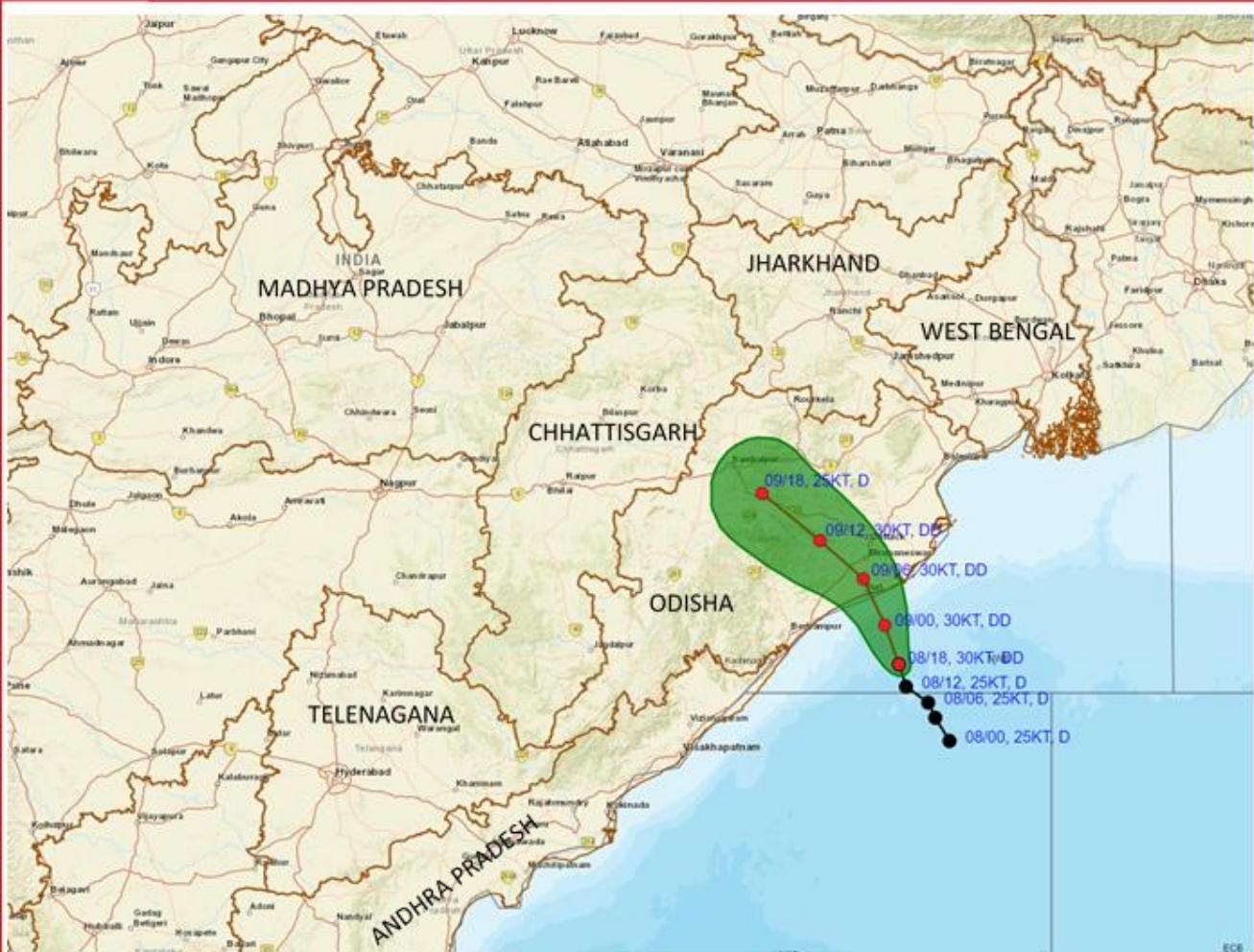
Maximum reflectivity imagery from Doppler Weather Radar, Gopalpur



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**OBSERVED AND FORECAST TRACK OF DEEP DEPRESSION OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 1800 UTC (2330 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  $\geq$  120 KT)

- LESS THAN 34 KT
- 34-47 KT
- $\geq$  48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

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**OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 1800 UTC (2330 IST) OF 8th SEPTEMBER, 2024.**



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 WML: WELL MARKED LOW PRESSURE AREA  
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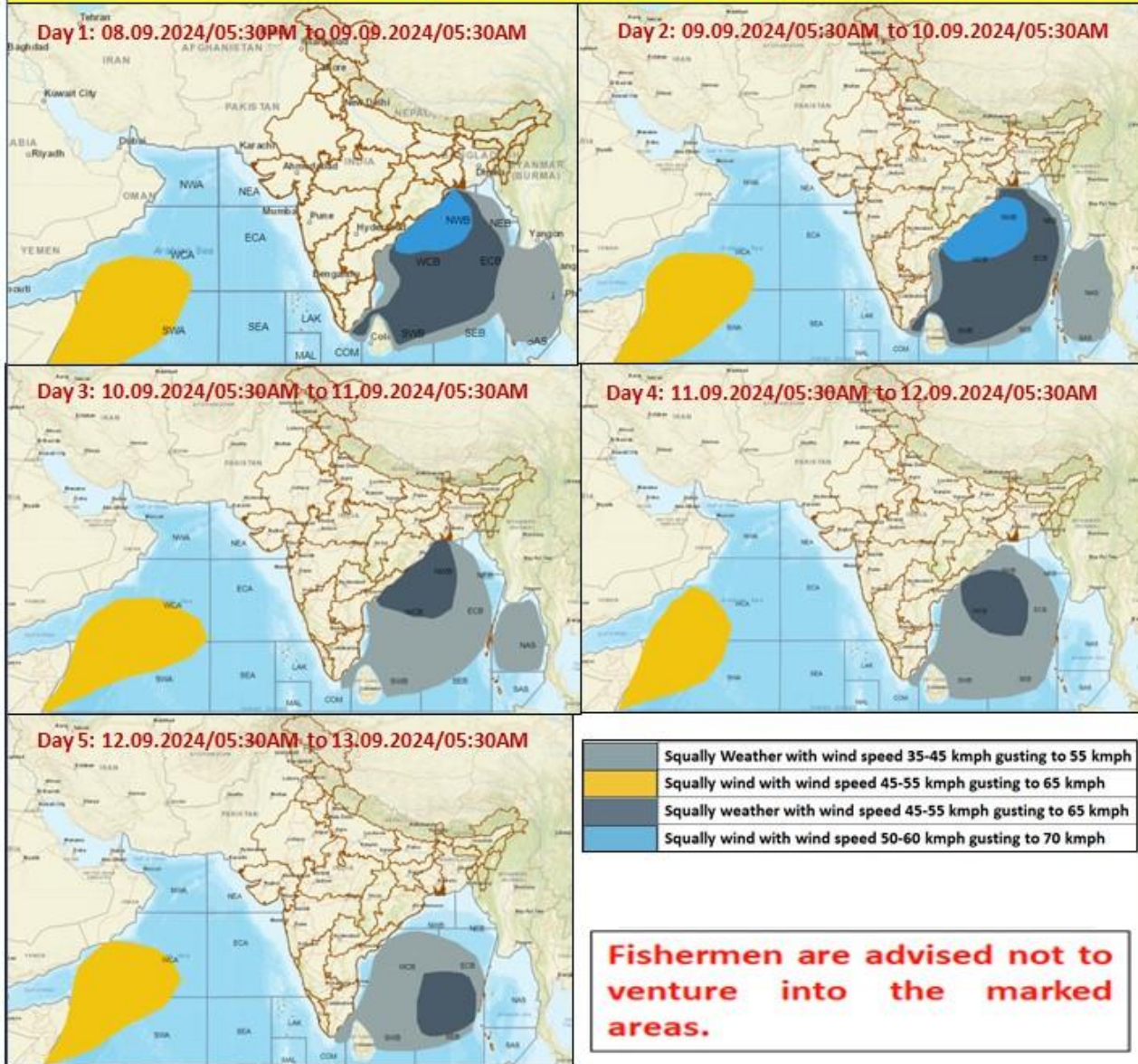
● LESS THAN 34 KT  
 ○ 34-47 KT  
 ○  $\geq$  48 KT  
 — OBSERVED TRACK  
 — FORECAST TRACK  
 — CONE OF UNCERTAINTY  
 AREA OF MAXIMUM SUSTAINED WIND SPEED:  
 ■ 28-33 KT (52-61 KMPH)  
 ■ 34-49 KT (62-91 KMPH)  
 ■ 50-63 KT (92-117 KMPH)  
 ■  $\geq$  64 KT ( $\geq$ 118 KMPH)

**IMPACT OVER THE SEA**

MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
$\geq$ 64 ( $\geq$ 118)	Phenomenal	Total suspension of fishing operations

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### Fishermen Warning Graphics



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