



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

**DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 15.09.2024**

**SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 1500 UTC OF 15.09.2024 BASED ON 1200 UTC OF 15.09.2024.**

**SUB: DEEP DEPRESSION OVER GANGETIC WEST BENGAL**

THE DEEP DEPRESSION OVER GANGETIC WEST BENGAL MOVED WEST-NORTHWESTWARD WITH A SPEED OF 5 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 1200 UTC OF TODAY, THE 15<sup>TH</sup> SEPTEMBER 2024, OVER THE SAME REGION NEAR LATITUDE 22.8° N AND LONGITUDE 87.2° E, ABOUT 120 KM WEST-NORTHWEST OF KOLKATA (42807), 70 KM SOUTH OF BANKURA (42706), 100 KM EAST OF JAMSHEDPUR (42799) AND 200 KM EAST-SOUTHEAST OF RANCHI (42701).

IT IS LIKELY TO MOVE SLOWLY, NEARLY WESTWARDS ACROSS GANGETIC WEST BENGAL AND MAINTAIN ITS INTENSITY OF DEEP DEPRESSION TILL 15<sup>TH</sup> SEPTEMBER. THEREAFTER, IT IS LIKELY TO WEAKEN GRADUALLY INTO A DEPRESSION AND MOVE NEARLY WESTWARDS ACROSS JHARKHAND AND NORTH CHHATTISGARH DURING SUBSEQUENT 48 HOURS.

THE DEEP DEPRESSION IS UNDER CONTINUOUS SURVEILLANCE BY THE DOPPLER WEATHER RADAR AT KOLKATA.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
15.09.24/1200	22.8/87.2	50-60 GUSTING TO 70	DEEP DEPRESSION
16.09.24/0000	23.0/86.4	45-55 GUSTING TO 65	DEPRESSION
16.09.24/1200	23.2/85.0	40-50 GUSTING TO 60	DEPRESSION
17.09.24/0000	23.5/83.3	35-45 GUSTING TO 55	DEPRESSION
17.09.24/1200	23.7/81.6	20-30 GUSTING TO 40	WELL MARKED LOW PRESSURE AREA

AT 1200 UTC, AS PER INSAT 3DR IMAGERY, SPIRAL BAND ORGANISATION OF CLOUDS CONTINUES. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH CHHATTISGARH, JHARKHAND, NORTH ODISHA, GANGETIC WEST BENGAL, BANGALADESH, MEGHALAYA, TRIPURA, MIZORM, AND NORTH BAY OF

BENGAL (MINIMUM CLOUD TOP TEMPERATURE MINUS 70-90 DEG CEL). MODERATE TO INTENSE CONVECTION LAY OVER BIHAR, WEST ASSAM, SUB-HIMALAYAN WEST BENGAL (MINIMUM CLOUD TOP TEMPERATURE IS MINUS 60-70 DEG CEL). TOTAL PRECIPITABLE WATER IMAGERY IS INDICATING WARM MOIST AIR ADVECTION FROM NORTH BAY OF BENGAL INTO THE SYSTEM AREA. THE INFRARED-WATER VAPOUR (IR-WV) IMAGERY IS INDICATING (-NEGATIVE OVER SYSTEM AREA) THE DEEP CONVECTION OVER THE REGION. IR-WV IMAGERY IS INDICATING MESOSCALE CONVECTIVE CLUSTERS OVER BANGLADESH, AROUND SYSTEM AREA AND OVER JHARKHAND.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED (MSW) IN ASSOCIATION WITH THE SYSTEM IS 30 KTS GUSTING TO 40 KTS. ESTIMATED CENTRAL PRESSURE IS 992HPA.

AT 1200 UTC, KOLKATA REPORTED LOWEST MEAN SEA LEVEL PRESSURE (MSLP) OF 992.7 HPA WITH MAXIMUM WIND SPEED (MSW) OF 200°/05KT. DIAMOND HARBOUR REPORTED LOWEST MEAN SEA LEVEL PRESSURE (MSLP) OF 992.9 HPA AND MAXIMUM WIND SPEED (MSW) OF 160°/06KT. BANKURA REPORTED LOWEST MEAN SEA LEVEL PRESSURE (MSLP) OF 990.7 HPA AND MAXIMUM WIND SPEED (MSW) OF 50°/03KT.

#### **WIND WARNING:**

SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH IS LIKELY TO PREVAIL OVER NORTH BAY OF BENGAL AND ALONG & OFF BANGLADESH, WEST BENGAL, AND NORTH ODISHA COASTS TILL NIGHT 15<sup>TH</sup> SEPTEMBER. IT IS LIKELY TO BECOME 40-50 KMPH GUSTING TO 60 KMPH TILL 1200 UTC OF 16<sup>TH</sup> SEPTEMBER AND DECREASE THEREAFTER.

#### **SEA CONDITION:**

ROUGH TO VERY ROUGH SEA CONDITION IS VERY LIKELY TO PREVAIL OVER NORTH BAY OF BENGAL AND ALONG & OFF WEST BENGAL-ODISHA COASTS TILL 1200 UT OF 15<sup>TH</sup> SEPTEMBER.

SUBSEQUENTLY, ROUGH SEA CONDITION IS LIKELY TO PREVAIL OVER NORTH BAY OF BENGAL AND ALONG & OFF WEST BENGAL-ODISHA COASTS TILL 0000 UTC OF 16<sup>TH</sup> SEPTEMBER AND IMPROVE THERAFTER.

#### **FISHERMEN WARNING:**

FISHERMEN ARE ADVISED NOT TO VENTURE INTO NORTH BAY OF BENGAL AND ALONG & OFF BANGLADESH, WEST BENGAL, AND ODISHA COASTS TILL 16<sup>TH</sup> SEPTEMBER.

#### **REMARKS:**

CURRENT ENVIRONMENTAL CONDITONS INDICATE THAT THE DEEP DEPRESSION OVER GANGETIC WEST BENGAL IS LYING IN A FAVOURABLE ENVIRONMENT. MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 5 WITH AMPLITUDE GREATER THAN 1. IT IS LIKELY TO CONTINUE IN SAME PHASE DURING NEXT 2 DAYS AND THEN LIKELY TO MOVE TO PHASE 6. THE NCICS BASED FORECAST INDICATES PERSISTENCE OF STRONG WESTERLY WINDS (5-7 MPS) OVER SOUTH-CENTRAL BAY WITH STRONG EASTERLY WINDS (5-7 MPS)

OVER EASTERN PARTS OF INDIA, PRESENCE OF EQUATORIAL ROSSBY WAVES, KELVIN WAVES AND MJ WAVES. ALL THESE FEATURES ARE SUPPORTING THE SYSTEM TO MAINTAIN ITS INTENSITY. WARM SEA SURFACE TEMPERATURE OVER HEAD BAY OF BENGAL IS CAUSING WARM MOIST AIR ADVECTION TOWARDS THE SYSTEM CENTRE.

THE LOW LEVEL CONVERGENCE IS AROUND  $10 \times 10^{-5} \text{ S}^{-1}$  AND IS ELONGATED SOUTH OF THE SYSTEM CENTER. UPPER LEVEL DIVERGENCE IS AROUND  $10 \times 10^{-5} \text{ S}^{-1}$  ORIENTED IN THE NORTHEAST–SOUTHWEST DIRECTION. THE WIND SHEAR IS LOW TO MODERATE (10-15 KT) OVER SYSTEM AREA AND ALONG THE FORECAST TRACK. VORTICITY AT 850 HPA LEVEL IS AROUND  $250 \times 10^{-5} \text{ S}^{-1}$  TO THE SOUTHWEST OF SYSTEM CENTRE AND EXTENDS UP TO 200 HPA ( $50 \times 10^{-5} \text{ S}^{-1}$ ). THESE FEATURES INDICATE THAT THE SYSTEM IS STILL LYING IN A FAVOURABLE ENVIRONMENT. SYSTEM IS EMBEDDED IN SOUTHWEST MONSOON WESTERLIES. DEEP LAYER MEAN WIND SUGGEST WEST-NORTHWESTWARD MOVEMENT UPTO  $80^{\circ}\text{E}$ . APPROACHING TROUGH IN WESTERLY WILL SLOW DOWN THE SYSTEM AND MAY LEAD TO NEAR NORTHWESTWARDS MOVEMENT OF SYSTEM ACROSS UTTAR PRADESH.

MOST OF THE NWP MODELS INDICATE THAT THE SYSTEM IS LIKELY TO MOVE SLOWLY NEARLY WESTWARDS AND MAINTAIN ITS INTENSITY OF DEEP DEPRESSION DURING NEXT 12 HOURS. MOST OF THE MODELS ARE INDICATING WEAKENING OF THE SYSTEM ON 16TH SEPTEMBER (BETWEEN 0000 TO 1200 UTC). IMD MME IS INDICATING GRADUAL WEAKENING INTO A DEPRESSION AT 0000 UTC OF 16<sup>TH</sup> SEPTEMBER. IT IS INDICATING INITIAL WESTWARDS MOVEMENT TILL 17<sup>TH</sup>/0000 UTC FOLLOWED BY NORTHWESTWARDS MOVEMENT THEREAFTER.

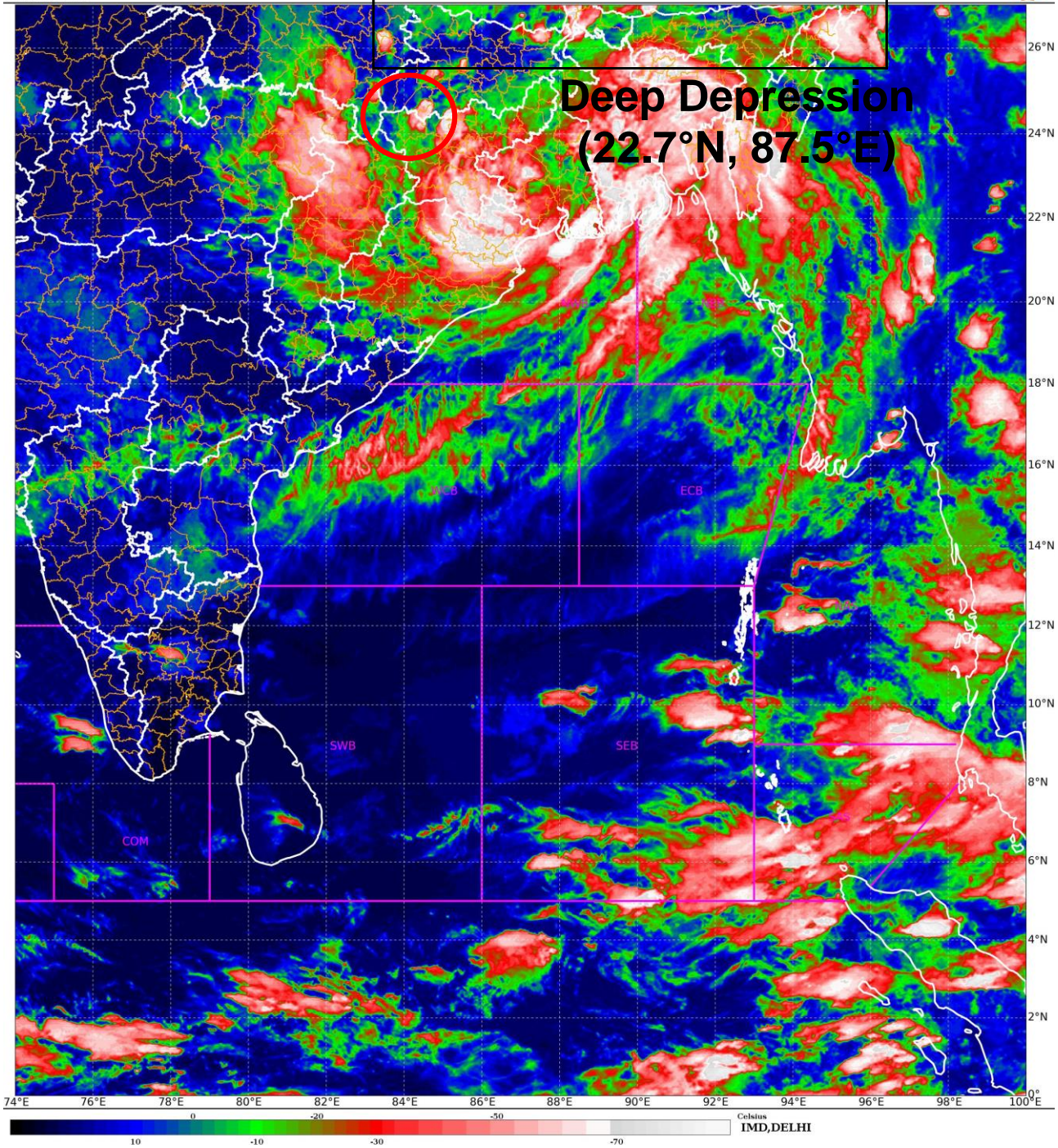
IN VIEW OF ALL THE ABOVE, THE DEEP DEPRESSION OVER GANGETIC WEST BENGAL IS LIKELY TO MOVE SLOWLY NEARLY WESTWARDS ACROSS GANGETIC WEST BENGAL AND MAINTAIN ITS INTENSITY OF DEEP DEPRESSION TILL 15<sup>TH</sup> SEPTEMBER. THEREAFTER, IT IS LIKELY TO WEAKEN GRADUALLY INTO A DEPRESSION AND MOVE NEARLY WESTWARDS ACROSS JHARKHAND AND NORTH CHHATTISGARH DURING SUBSEQUENT 48 HOURS..

DR. AMIT BHARDWAJ  
SC.-C, RSMC NEW DELHI



SAT : INSAT-3DR IMG  
IMG\_TIR1\_TEMP 10.8 um  
L1C Mercator

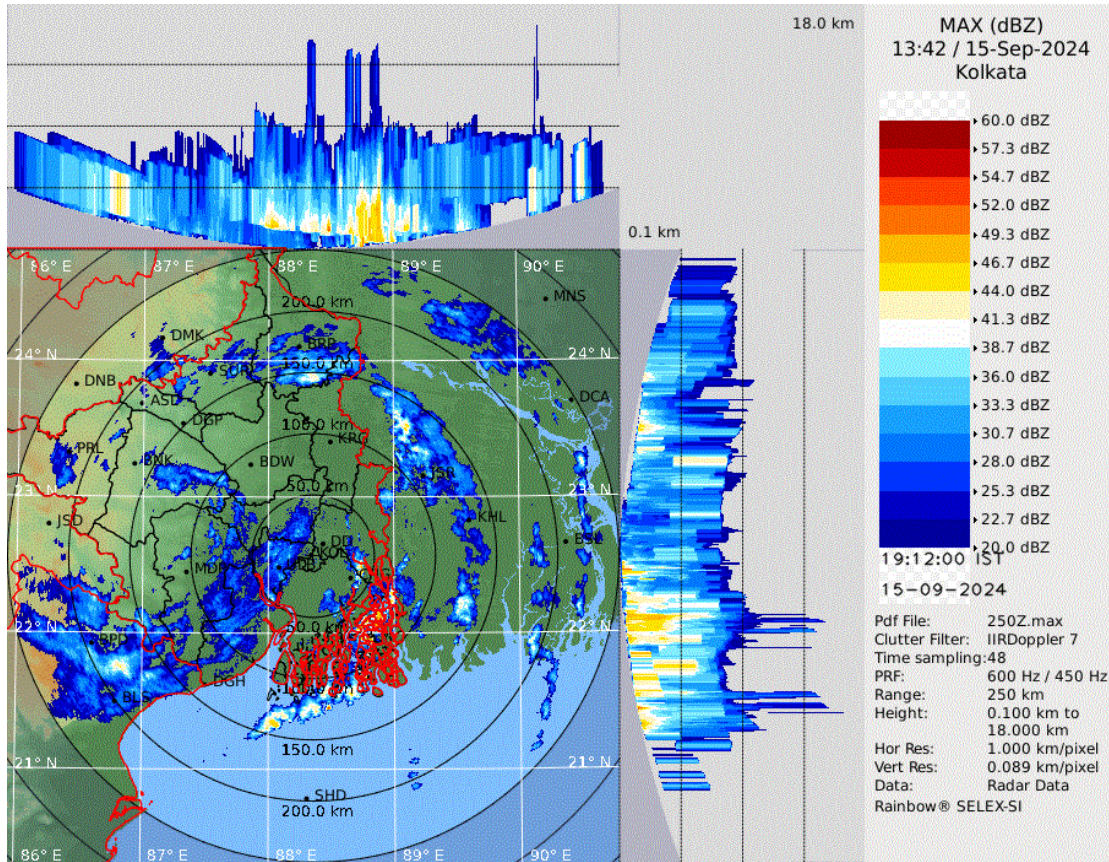
15-09-2024/(1315 to 1342) GMT  
15-09-2024/(1845 to 1912) IST



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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# Kolkata Radar Image

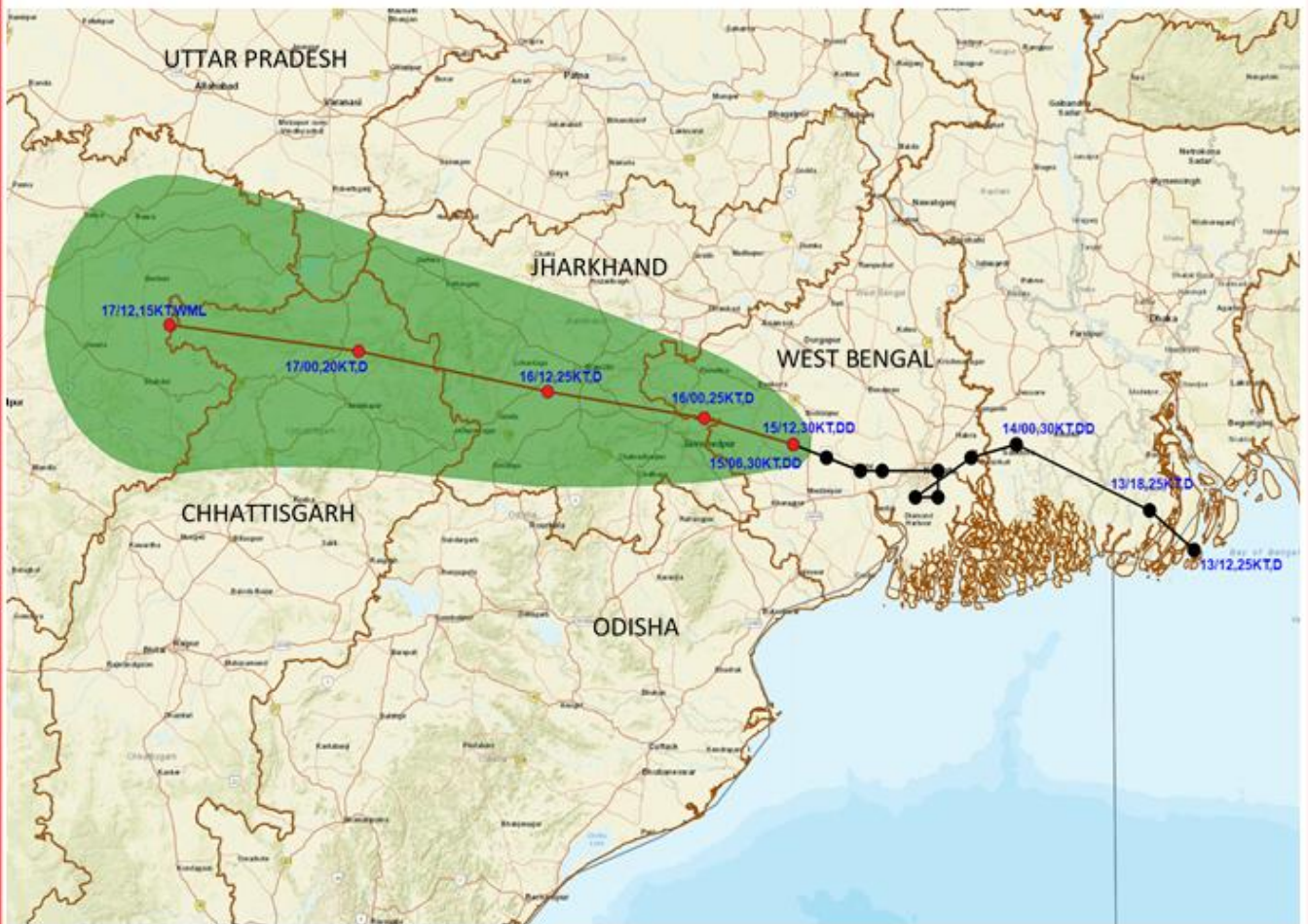


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**OBSERVED AND FORECAST TRACK OF DEEP DEPRESSION OVER GANGETIC WEST BENGAL BASED ON 1200 UTC (1730 IST) OF 15<sup>TH</sup> SEPTEMBER, 2024.**



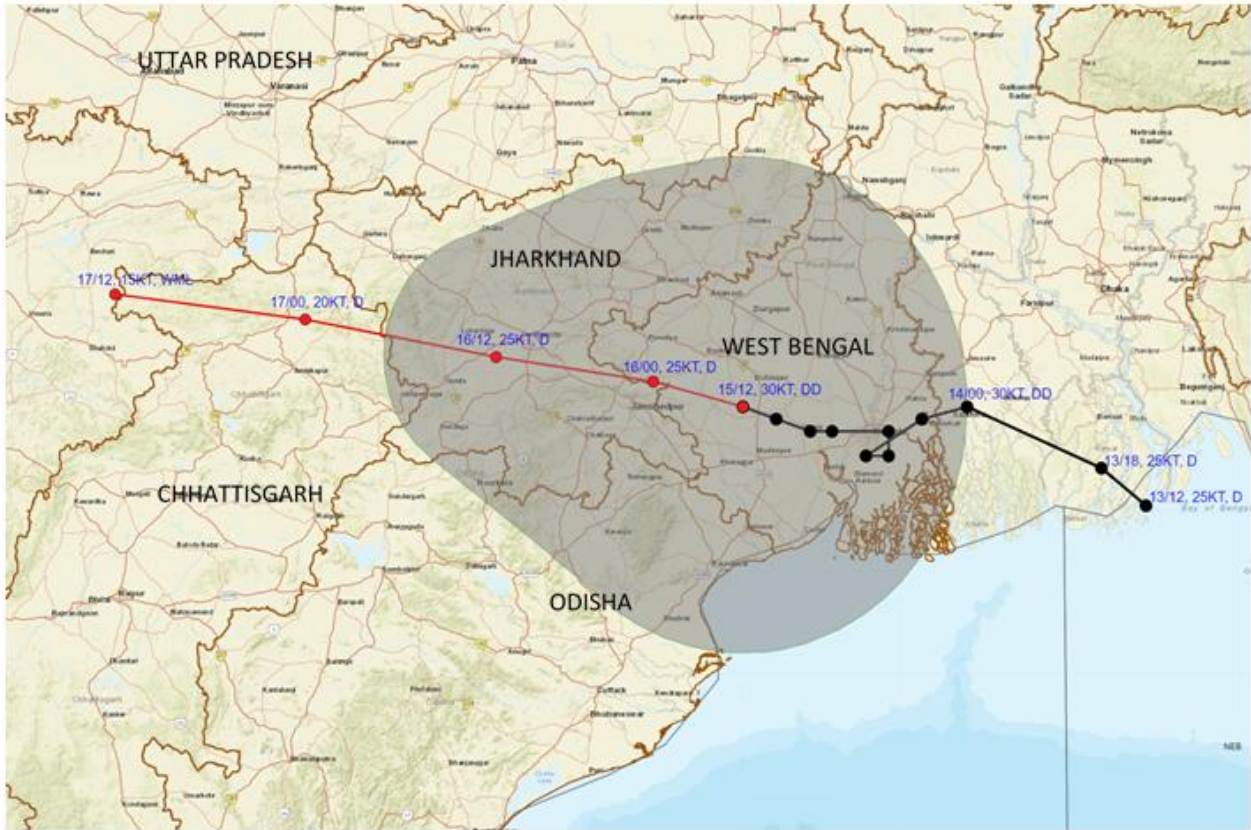
DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE 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





**OBSERVED AND FORECAST TRACK ALONG WITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER GANGETIC WEST BENGAL BASED ON 1200 UTC (1730 IST) OF 15<sup>TH</sup> SEPTEMBER, 2024.**

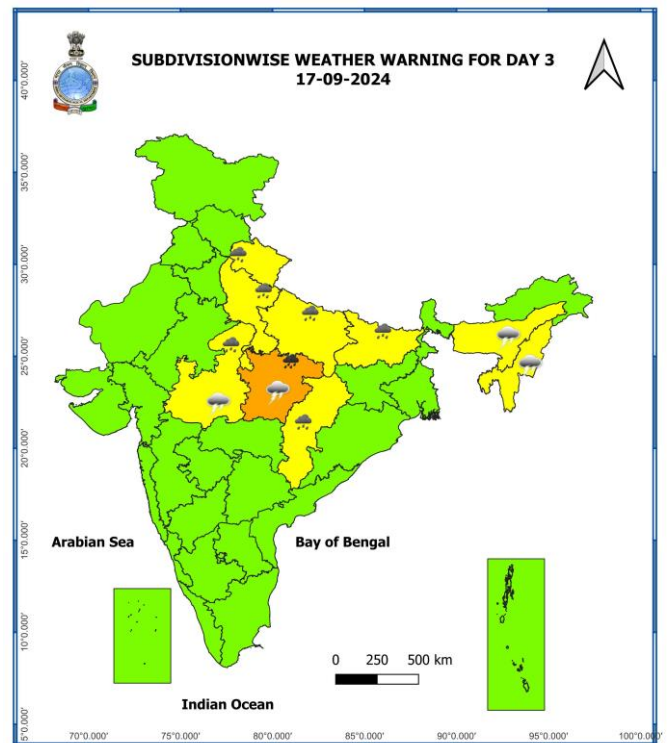
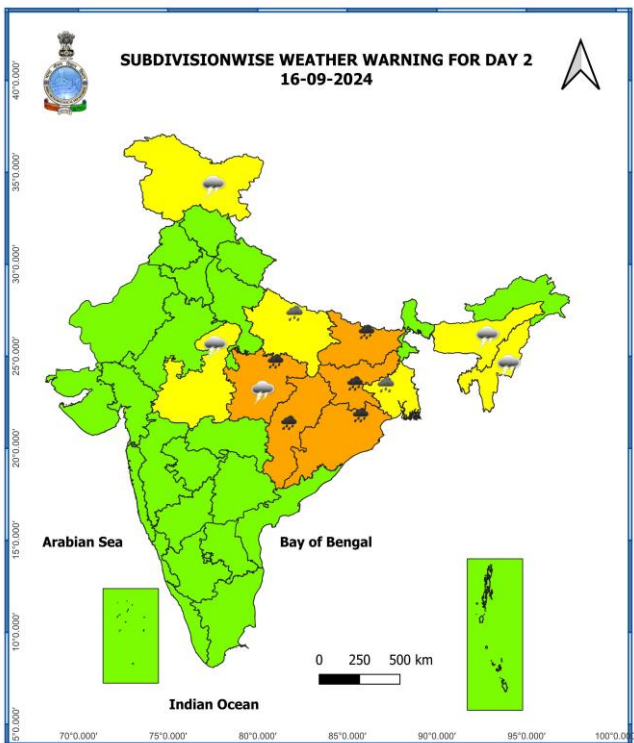
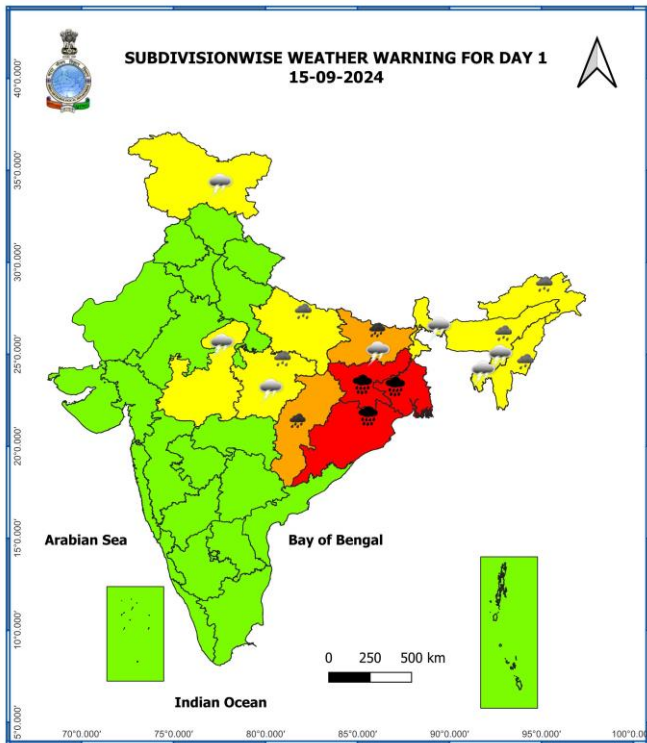


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 SuCS: SUPER CYCLONIC STORM ( $\geq 120$  KT)

● 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)

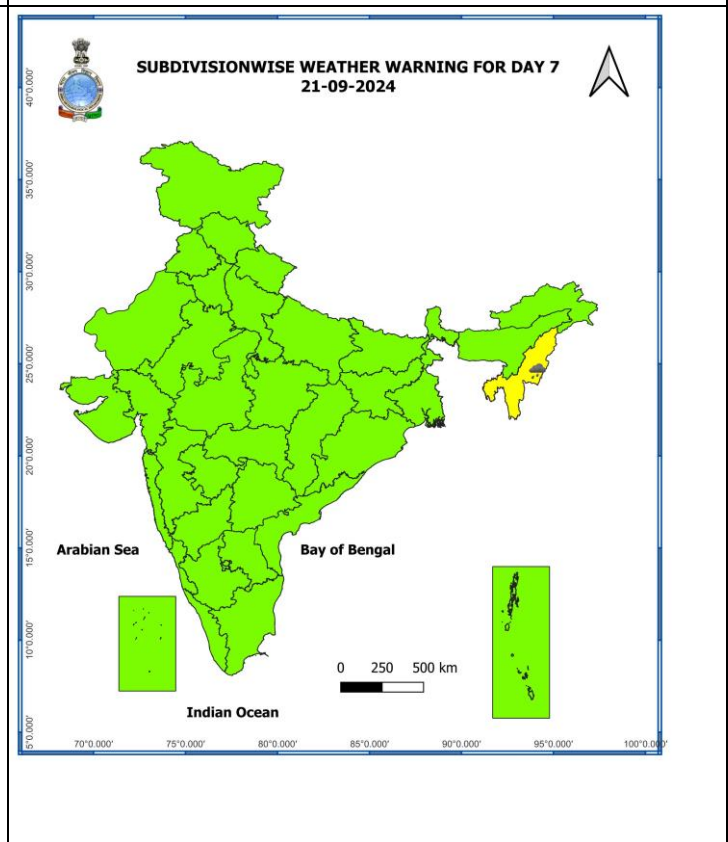
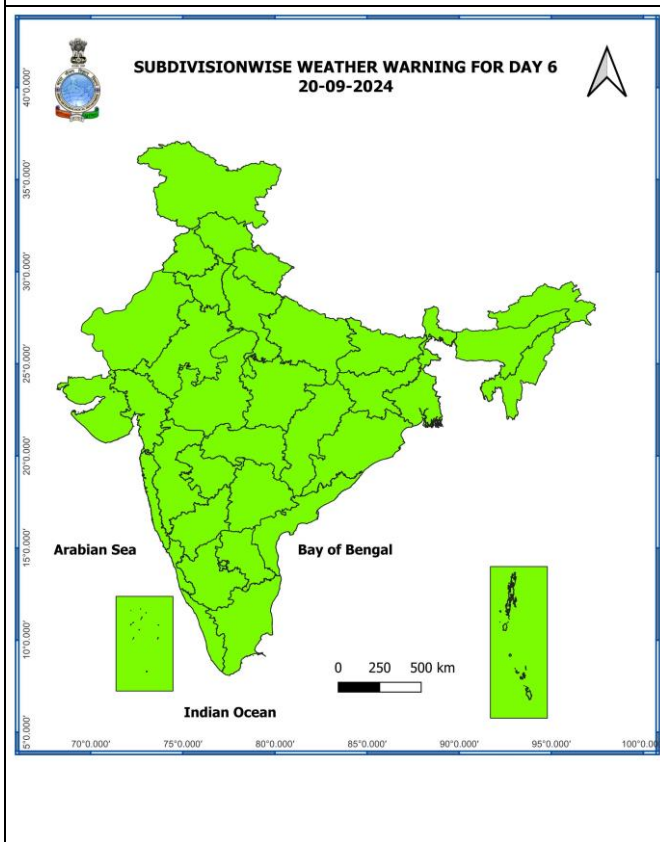
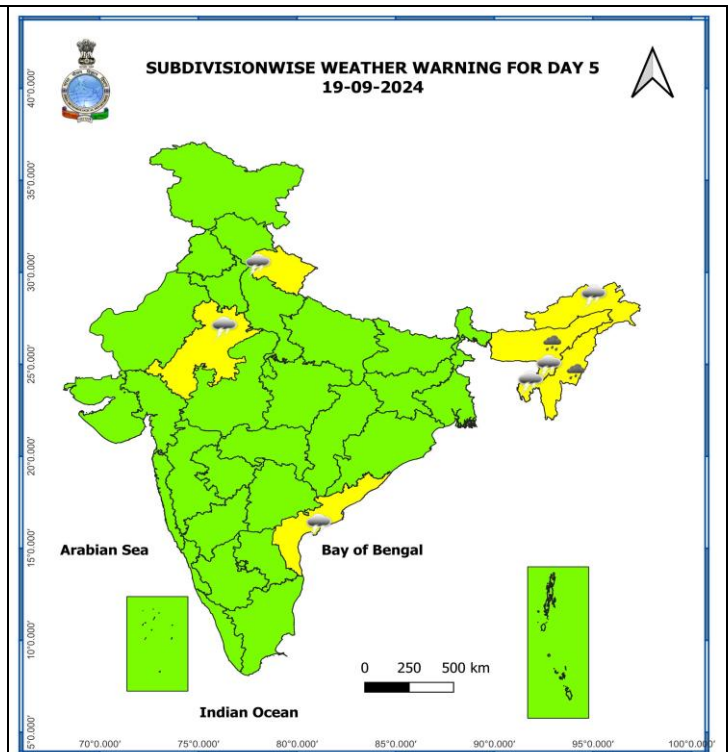
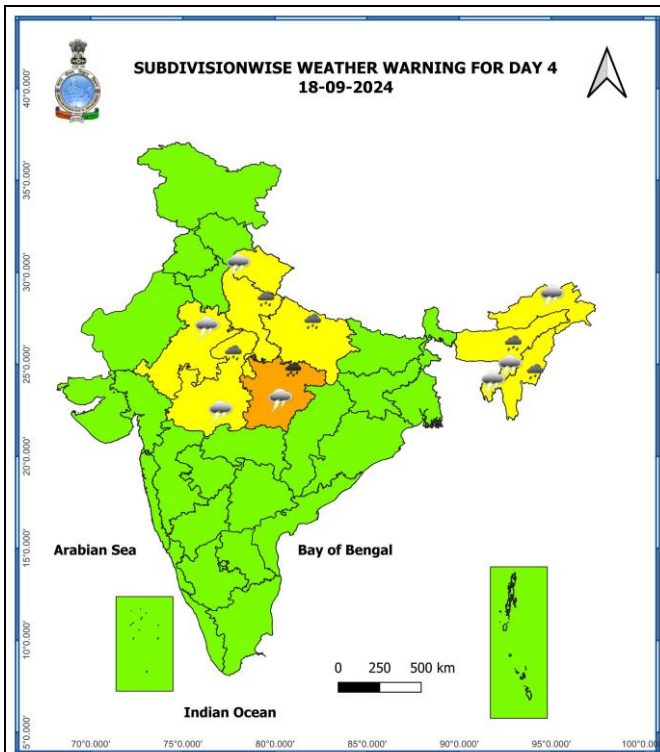
**IMPACT OVER THE SEA**

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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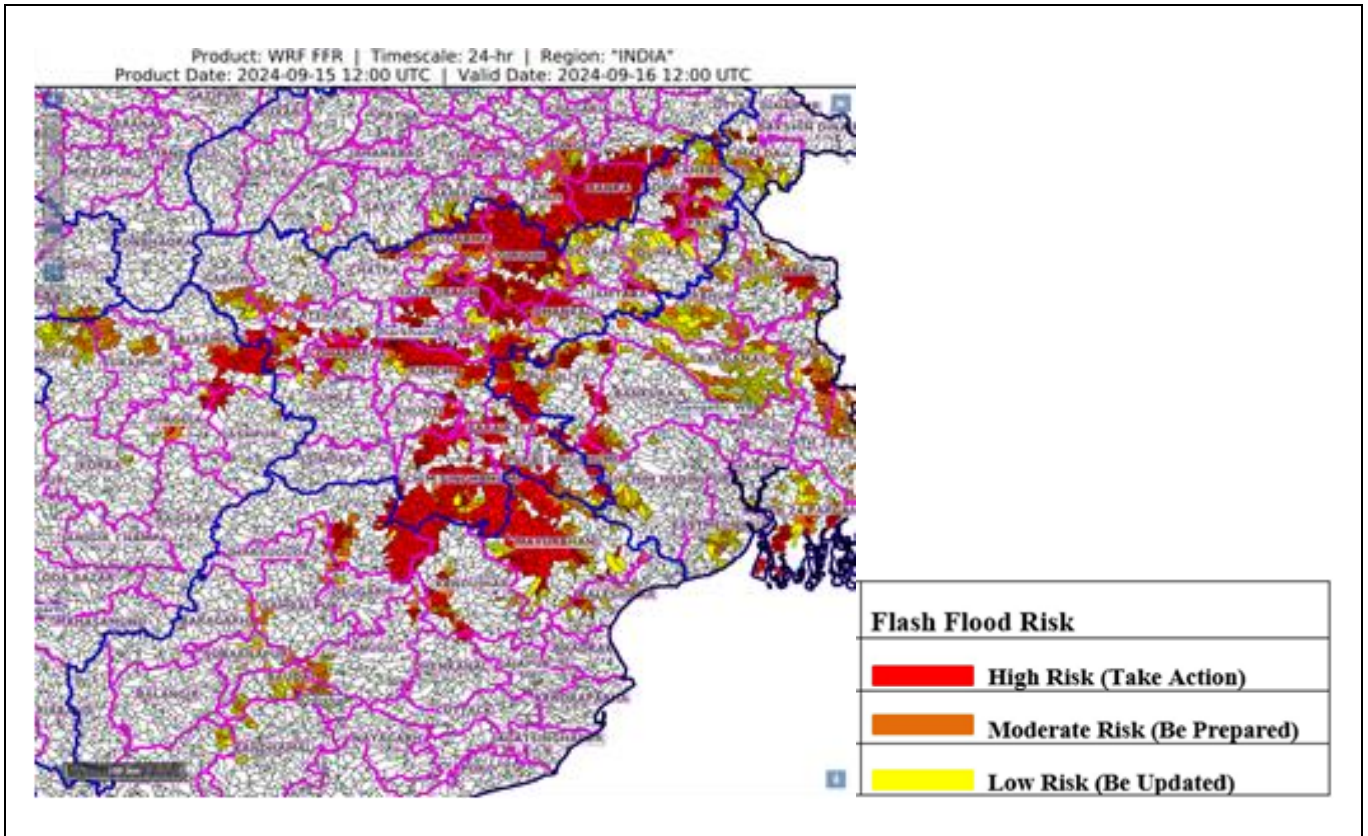




- Action may be taken based on **ORANGE AND RED** COLOUR warnings.
- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases

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## Flash Flood Guidance



**24 hours Outlook for the Flash Flood Risk (FFR) till 1730 IST of 16-09-2024:**

**Low to Moderate flash flood risk likely over few watersheds & neighborhoods of following Met Sub-divisions during next 24 hours.**

**Chhattisgarh** - Balarampur, Jashpur, Korea, Surajpur and Surguja districts.

**Bihar** - Banka, Bhagalpur, Jamui, Lakhisarai and Nawada **districts**.

**Odisha** - Anugul, Baleswar, Bauda, Kendujhar, Mayurbhanj, Sambalpur and Sundargarh districts.  
Gangetic West Bengal - Bardaman, Birbhum, Eastmednipur, Mursidabad, Nadia, North 24 Pragana, Pashchim Medinipur, Puruliya and South 24 Parganas districts.

**Jharkhand** - Bokaro, Chatra, Deoghar, Dhanbad, Dumka, East Singhbhum, Garhwa, Giridih, Godda, Gumla, Hazaribagh, Jamtara, Khunti, Koderma, Latehar, Lohardaga, Pakur, Palamu, Ramgarh, Ranchi, Sahebganj, Saraikela and West Singhbhum districts.

**Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.**



## Fishermen Warning Graphics

