



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 22.10.2024

SPECIAL TROPICAL WEATHER OUTLOOK FOR THE NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR THE NEXT 168 HOURS ISSUED AT 1500 UTC OF 22.10.2024 BASED ON 1200 UTC OF 22.10.2024.

BAY OF BENGAL:

SUB: DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL

THE DEPRESSION OVER EASTCENTRAL BAY OF BENGAL MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 7 KMPH DURING PAST 6 HOURS, INTENSIFIED INTO A DEEP DEPRESSION AND LAY CENTRED AT 1200 UTC OF TODAY, THE 22ND OCTOBER, OVER THE SAME REGION NEAR LATITUDE 15.6° N AND LONGITUDE 90.9°E, ABOUT 690 KM SOUTHEAST OF PARADIP (42976, ODISHA), 740 KM SOUTH-SOUTHEAST OF SAGAR ISLAND (42903, WEST BENGAL) AND 710 KM SOUTH-SOUTHEAST OF KHEPUPARA (41984, BANGLADESH).

IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM BY 23RD OCTOBER, 2024 OVER EASTCENTRAL BAY OF BENGAL. THEREAFTER, CONTINUING TO MOVE NORTHWESTWARDS, IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM OVER NORTHWEST BAY OF BENGAL AROUND 0300 UTC OF 24TH AND CROSS NORTH ODISHA AND WEST BENGAL COASTS BETWEEN PURI AND SAGAR ISLAND DURING 1800 UTC OF 24TH AND 0000 UTC TO 25TH OCTOBER, 2024 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 100-110 KMPH GUSTING 120 KMPH.

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 |
|-----------------|------------------------------|---|----------------------------------|
| 22.10.24/1200 | 15.6/90.9 | 50-60 gusting to 70 | Deep Depression |
| 22.10.24/1800 | 15.8/90.2 | 55-65 gusting to 75 | Deep Depression |
| 23.10.24/0000 | 16.1/89.7 | 60-70 gusting to 80 | Cyclonic Storm |
| 23.10.24/0600 | 16.7/89.0 | 70-80 gusting to 90 | Cyclonic Storm |
| 23.10.24/1200 | 17.2/88.6 | 80-90 gusting to 100 | Cyclonic Storm |
| 24.10.24/0000 | 18.6/87.9 | 95-105 gusting to 115 | Severe Cyclonic Storm |
| 24.10.24/1200 | 19.9/87.4 | 100-110 gusting 120 | Severe Cyclonic Storm |
| 25.10.24/0000 | 20.9/86.8 | 100-110 gusting 120 | Severe Cyclonic Storm |
| 25.10.24/1200 | 21.5/86.0 | 55-65 gusting to 75 | Deep Depression |
| 26.10.24/0000 | 21.7/85.0 | 40-50 gusting to 60 | Depression |

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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THE CLOUD MASS SHOWS FURTHER ORGANISATION IN PAST SIX HOURS. BANDING FEATURES ARE SEEN IN CLOUD ORGANISATION. THE INTENSITY IS CHARACTERISED AS T2.0. SCATTERED TO BROKEN LOW & MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL & ADJOINING NORTH BAY OF BENGAL, NORTH ANDAMAN SEA & NEIGHBOURHOOD. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80-93 DEG CEL. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN NORTHEAST SECTOR. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE CORE. IR/WV DIFFERENCE INDICATES DEEP CONVECTION UPTO UPPER TROPOSPHERIC LEVELS. ASCAT PASS INDICATES STRONGER WINDS IN NORTHEAST SECTOR.

ESTIMATED CENTRAL PRESSURE IS 1002 HPA AND MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. SEA CONDITION IS VERY ROUGH OVER EASTCENTRAL BAY OF BENGAL.

UNDER IT'S INFLUENCE:

(II) WIND WARNING:

EASTCENTRAL BAY OF BENGAL: SQUALLY WIND SPEED REACHING 50-60 GUSTING TO 70 KMPH IS PREVAILING AND IS LIKELY TO GRADUALLY INCREASE BECOMING 70-90 KMPH GUSTING TO 100 KMPH FROM 23RD/ 1200 UTC TILL 24TH/ 0000 UTC.

ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL: SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY TO COMMENCE FROM 22ND/ 1200 UTC, 70-80 GUSTING TO 90 KMPH FROM 23RD/ 0000 UTC TO 24TH/ 0600 UTC.

NORTHWEST BAY OF BENGAL: SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY TO COMMENCE FROM 23RD/ 0000 UTC. IT WOULD GRADUALLY INCREASE BECOMING GALE WIND SPEED REACHING 70-90 GUSTING TO 100 KMPH FROM 23RD/ 1800 TO 24TH/ 0000 UTC AND 100-110 KMPH GUSTING TO 120 KMPH FROM 24TH OCT/ 1200 UTC TO 25TH OCT/ 0000 UTC AND DECREASE GRADUALLY THEREAFTER.

ADJOINING AREAS OF NORTHEAST BAY OF BENGAL: SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY TO COMMENCE FROM 23RD/ 1800 UTC TILL 25TH/ 0000 UTC AND DECREASE GRADUALLY THEREAFTER.

ALONG & OFF ODISHA-WEST BENGAL COASTS: SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY TO COMMENCE FROM 23RD OCT/1200 UTC. IT WOULD GRADUALLY INCREASE BECOMING GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH FROM 24TH/ 0000 UTC AND REACHING 100-110 KMPH GUSTING TO 120 KMPH FROM 24TH/ 1200 UTC TILL 25TH OCT/ 0000 UTC AND DECREASE GRADUALLY THEREAFTER.

(III) SEA CONDITION:

EASTCENTRAL BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH ON 22ND OCTOBER, BECOMING VERY ROUGH TO HIGH FROM 23RD/ 0000 UTC TILL 24TH OCTOBER/0000 UTC.

ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH ON 23RD AND 24TH OCTOBER.

NORTHWEST BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE **ROUGH TO VERY ROUGH FROM 23RD/ 0000 UTC** AND WOULD BECOME **HIGH TO VERY HIGH FROM 23RD/ 1800 UTC TILL 25TH/ 0000 UTC** AND IMPROVE GRADUALLY THEREAFTER.

ADJOINING AREAS OF NORTHEAST BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE **ROUGH TO VERY ROUGH FROM 23RD/ 1800 UTC TILL 25TH/ 0000 UTC** AND IMPROVE GRADUALLY THEREAFTER.

ALONG & OFF ODISHA-WEST BENGAL COASTS: SEA CONDITION IS LIKELY TO BE **ROUGH TO VERY ROUGH FROM 23RD/ 1200 UTC** AND WOULD BECOME **HIGH TO VERY HIGH FROM 24TH OCTOBER/0000 UTC TO 25TH OCT/ 0600 UTC** AND IMPROVE GRADUALLY THEREAFTER.

(IV) FISHERMEN WARNING:

TOTAL SUSPENSION OF FISHING OPERATION IS ADVISED TILL 25TH OCTOBER
FISHERMEN ARE ADVISED NOT TO VENTURE INTO:

- EASTCENTRAL BAY OF BENGAL DURING 22ND-24TH OCTOBER.
- **ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL ON 23RD AND 24TH OCT.**
- **NORTH BAY OF BENGAL AND ALONG & OFF ODISHA, WEST BENGAL AND BANGLADESH COASTS DURING 23RD TO 25TH OCTOBER.**

ARABIAN SEA:

LOW PRESSURE AREA OVER WESTCENTRAL ARABIAN SEA PERSISTED OVER THE SAME REGION AT 1200 UTC OF TODAY, THE 22ND OCTOBER, 2024. IT IS LIKELY TO MOVE WEST-NORTHWESTWARDSS TOWARDS YEMEN-OMAN COASTS AND WEAKEN FURTHER DURING NEXT 12 HOURS.

SQUALLY WEATHER WIND SPEED REACHING 20-30 GUSTING TO 40 KMPH WITH MODERATE SEA CONDITION IS VERY LIKELY OVER WESTCENTRAL ARABIAN SEA DURING NEXT 12 HOURS AND IMPROVE THEREAFTER.

SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL ARABIAN SEA BETWEEN LATITUDE 11.0N & 16.0N AND LONGITUDE 51.0E & 56.0E IN ASSOCIATION WITH LOW LEVEL CIRCULATION OVER THE AREA. MIMIMUM CTT IS MINUS 80-85 DEGREE CELSIUS.

***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 | 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 5, WITH AMPLITUDE MORE THAN 1, AND IS EXPECTED TO MOVE ACROSS PHASE 5 DURING NEXT 7 DAYS WITH FURTHER INCREASING AMPLITUDE. THUS, MJO WOULD SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER CENTRAL AND NORTH BAY OF BENGAL DURING NEXT 5 DAYS.

THE GUIDANCE FROM NCICS BASED FORECAST OVER BOB INDICATES EASTWARD MOVING MJO & KELVIN WAVES ALONG WITH EQUATORIAL ROSSBY WAVES OVER THE CENTRAL BAY OF BENGAL DURING NEXT 5 DAYS. THESE FEATURES INDICATE HIGHLY FAVOURABLE ENVIRONMENT FOR INTENSIFICATION OF SYSTEM OVER THE CENTRAL & NORTH PARTS OF THE BAY OF BENGAL.

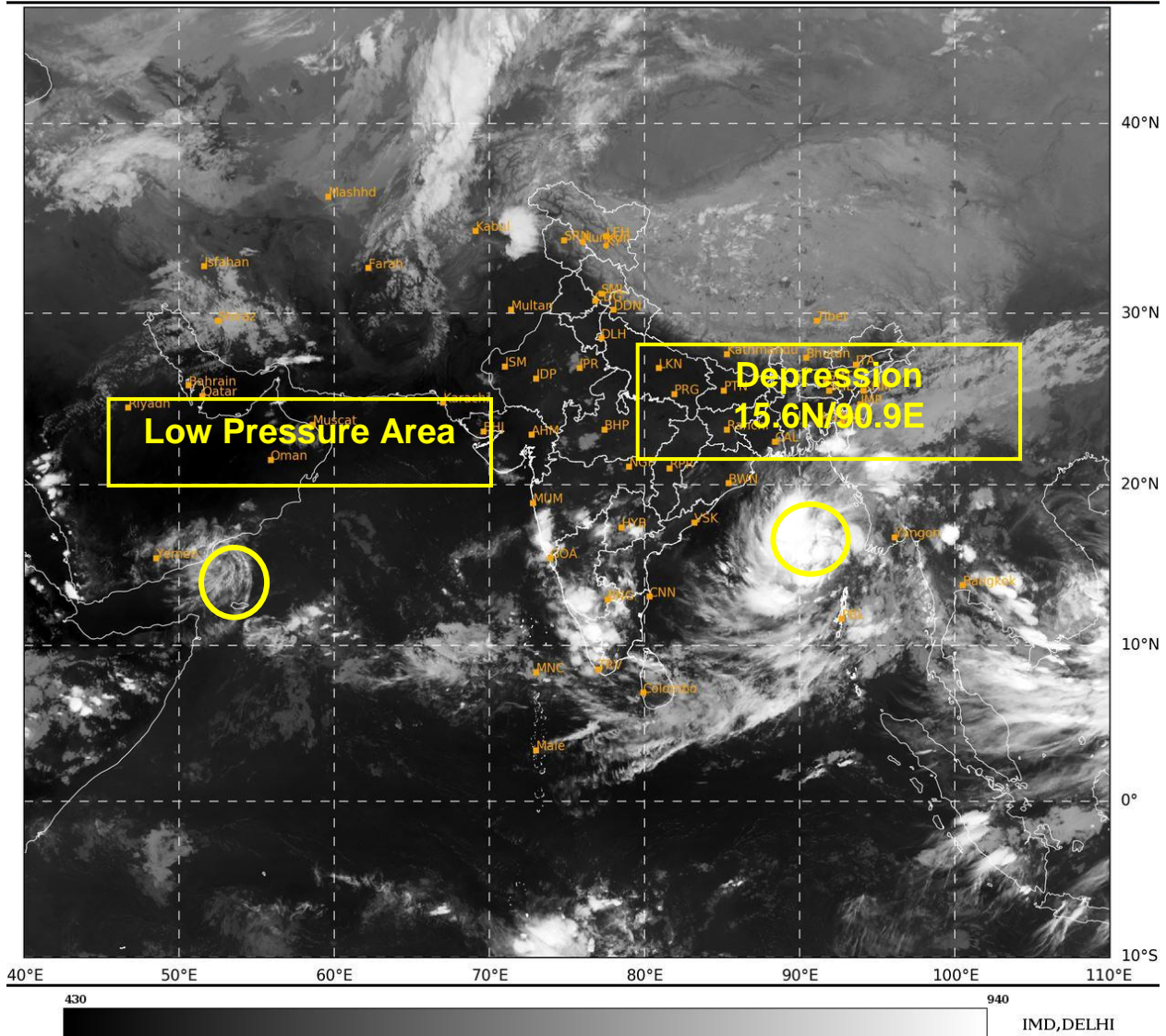
THE SEA SURFACE TEMPERATURE (SST) IS 30°C OVER CENTRAL & NORTH BOB. THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS >100 KJ/CM² OVER WESTCENTRAL BOB, <80 KJ/CM² OVER NORTHWEST. VORTICITY AT LOW LEVEL HAS INCREASED IN PAST 6 HOURS AND IS 150X 10⁵S⁻¹ AROUND SYSTEM CENTRE OVER EASTCENTRAL BAY OF BENGAL WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. POSITIVE LOW-LEVEL CONVERGENCE HAS INCREASED AND IS 30 X10⁻⁵S⁻¹ TO THE NORTH OF SYSTEM AREA. POSITIVE UPPER-LEVEL DIVERGENCE IS 20X10⁻⁵S⁻¹ TO THE NORTHEAST OF SYSTEM AREA. VERTICAL WIND SHEAR (VWS) IS LOW TO MODERATE (05-15 KT) OVER CENTRAL BOB.

MOST OF THE NWP MODELS ARE INDICATING LANDFALL OVER NORTH ODISHA-WEST BENGAL COASTS. HOWEVER, NCU (REGIONAL) IS INDICATING CROSSING OVER SOUTH ODISHA COAST. THERE IS ALSO DIVERGENCE AMONG VARIOUS MODELS WRT PEAK INTENSIFICATION WITH IMD GFS & NCU INDICATING INTENSIFICATION UPTO 90 KTS. NCU, NCEP, CMC & IMD MME ARE INDICATING INTENSIFICATION UPTO 50-60 KT.

MOST OF THE MODELS ARE INDICATING NEARLY WESTWARDS MOVEMENT AND WEAKENING OF THE LOW PRESSURE AREA OVER WESTCENTRAL ARABIAN BY 23/00 UTC.

CONSIDERING ALL THE ABOVE, THE DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM BY 23RD OCTOBER, 2024 OVER EASTCENTRAL BAY OF BENGAL. THEREAFTER, CONTINUING TO MOVE NORTHWESTWARDS, IT IS VERY LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM OVER NORTHWEST BAY OF BENGAL AROUND 0300 UTC OF 24TH AND CROSS NORTH ODISHA AND WEST BENGAL COASTS BETWEEN PURI AND SAGAR ISLAND DURING 1800 UTC OF 24TH AND 0000 UTC TO 25TH OCTOBER, 2024 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 100-110 KMPH GUSTING 120 KMPH.

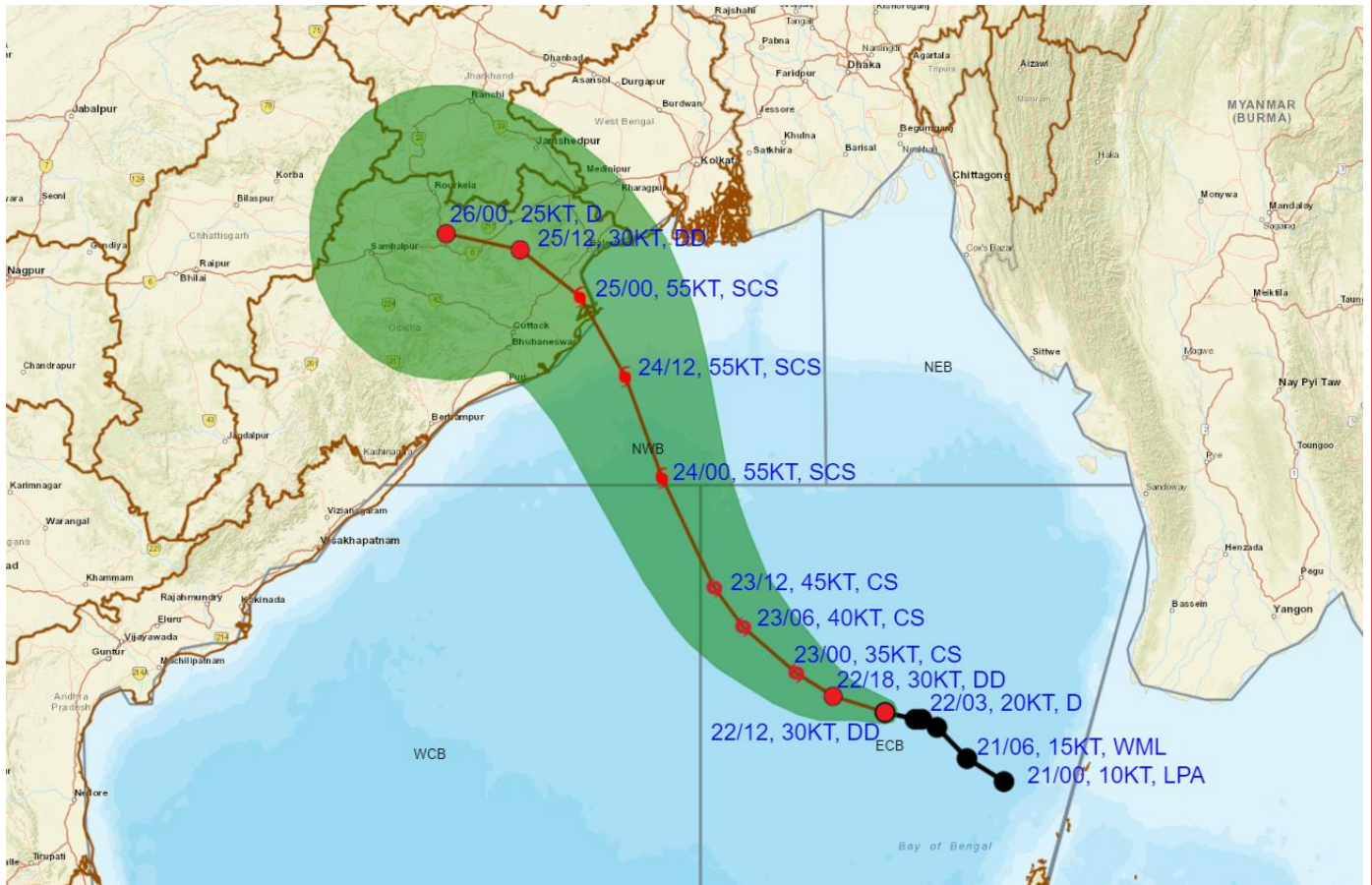
(M. SHARMA)
SCIENTIST-D
RSMC NEW DELHI



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
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OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL BASED ON 1200 UTC (1730 Hrs. IST) OF 22ND OCTOBER 2024



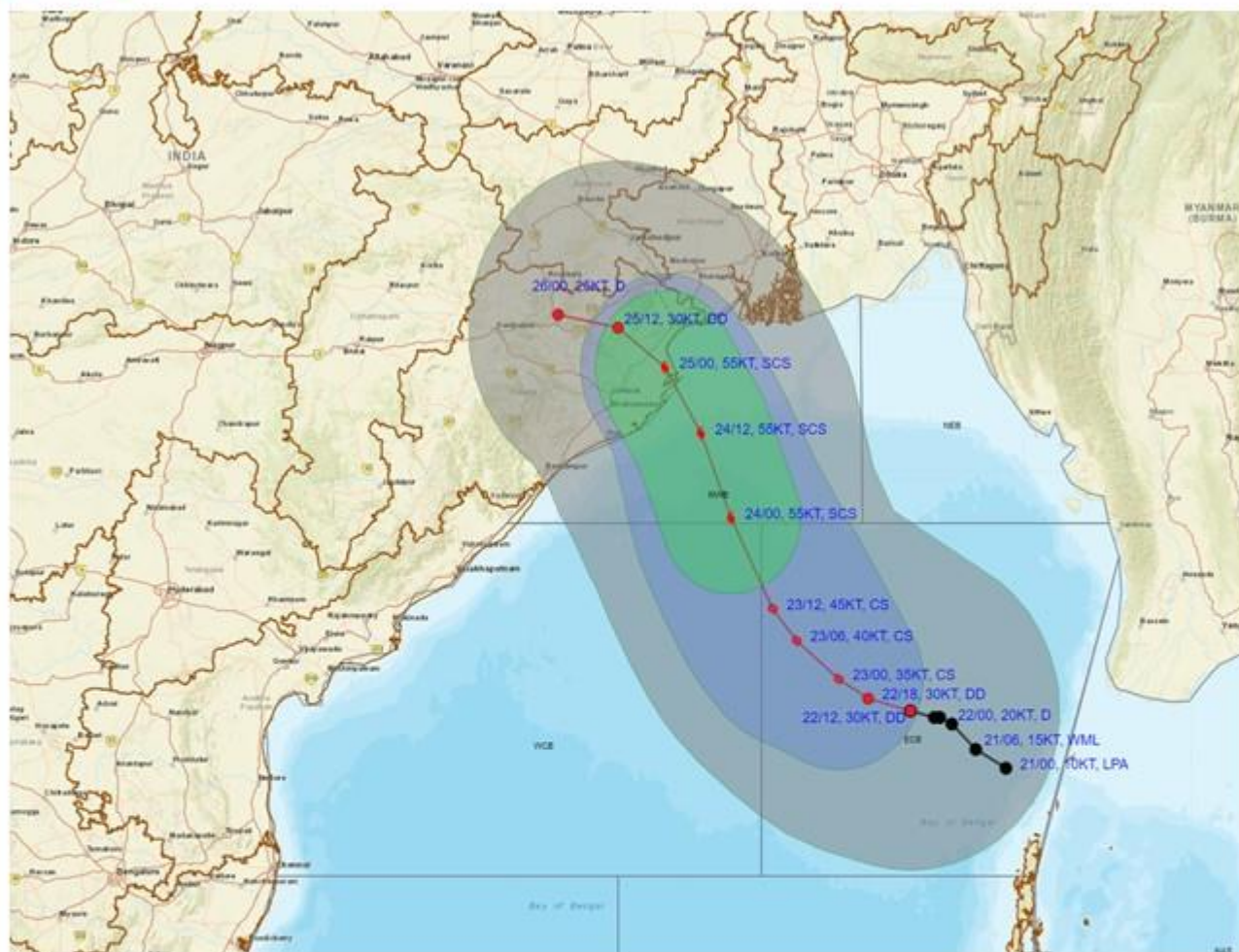
| | |
|-----------|---|
| DATE/TIME | : IN UTC |
| IST | : UTC + 0530 |
| KT | : NAUTICAL MILE S/HOUR = 1.85 KM/HOUR |
| LPA | : LOW PRESSURE AREA |
| WML | : WELL MARKED LOW PRESSURE AREA |
| D | : DEPRESSION (17-27 KT) |
| DD | : DEEP DEPRESSION (28-33 KT) |
| CS | : CYCLONIC STORM (34-47 KT) |
| SCS | : SEVERE CYCLONIC STORM (48-63 KT) |
| 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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OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL BASED ON 1200 UTC (1730 Hrs. IST) OF 22ND OCTOBER 2024



DATE/TIME : IN UTC
 IST : UTC + 0530
 KT : NAUTICAL MILE S/HOUR = 1.85 KM/HOUR
 LPA : 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 (48-63 KT)
 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
 AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥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 |
| ≥ 64 (≥118) | Phenomenal | Total suspension of fishing operations |

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Fishermen Warning Graphics

