



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 16.11.2023

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 16.11.2023 BASED ON 0000 UTC OF 16.11.2023.

BAY OF BENGAL:

SUB: DEPRESSION INTENSIFIED INTO A DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL

THE DEPRESSION OVER WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHWARDS WITH A SPEED OF 18 KMPH DURING PAST 6 HOURS, INTENSIFIED INTO A DEEP DEPRESSION AND LAY CENTRED AT 0000 UTC OF TODAY, THE 16TH NOVEMBER OVER WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 16.9°N AND LONGITUDE 86.8°E, ABOUT 380 KM EAST-SOUTHEAST OF VISAKHAPATNAM (43149), 380 KM SOUTH OF PARADIP (42976), 530 KM SOUTH-SOUTHWEST OF DIGHA (42901) AND 670 KM SOUTHWEST OF KHEPUPARA (41984).

IT IS LIKELY TO CONTINUE TO MOVE NORTH-NORTHEASTWARDS, INTENSIFY FURTHER AND CROSS BANGLADESH COAST BETWEEN MONGLA AND KHEPUPARA WITH WIND SPEED 55-65 KMPH GUSTING TO 75 KMPH AROUND 00 UTC OF 18TH NOVEMBER 2023.

FORECAST TRACK & INTENSITY IS GIVEN BELOW:

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
16.11.23/0000	16.9/86.8	50-60 KMPH GUSTING TO 70 KMPH	DEEP DEPRESSION
16.11.23/0600	17.6/87.1	50-60 KMPH GUSTING TO 70 KMPH	DEEP DEPRESSION
16.11.23/1200	18.3/87.4	55-65 KMPH GUSTING TO 75 KMPH	DEEP DEPRESSION
16.11.23/1800	19.0/87.8	55-65 KMPH GUSTING TO 75 KMPH	DEEP DEPRESSION
17.11.23/0000	19.7/88.2	60-70 KMPH GUSTING TO 80 KMPH	CYCLONIC STORM
17.11.23/1200	20.9/89.0	60-70 KMPH GUSTING TO 80 KMPH	CYCLONIC STORM
18.11.23/0000	22.0/89.8	55-65 KMPH GUSTING TO 75 KMPH	DEEP DEPRESSION
18.11.23/1200	23.1/90.3	40-50 KMPH GUSTING TO 60 KMPH	DEPRESSION
19.11.23/0000	24.1/90.5	20-30 KMPH GUSTING TO 40 KMPH	WELL MARKED LOW

THE ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE WINDS ARE RELATIVELY STRONGER IN NORTHEAST SECTOR DUE TO NORTHEAST MONSOON CONDITIONS. THE ESTIMATED CENTRAL PRESSURE IS 1004 HPA. SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH OVER WESTCENTRAL BAY OF BENGAL AND ADJOINING NORTHWEST BAY OF BENGAL ON 16TH NOVEMBER AND OVER NORTHWEST BAY OF BENGAL AND ADJOINING NORTHEAST BAY OF BENGAL ON 17TH & 18TH.

INTENSITY OF THE SYSTEM IS CHARACTERISED AS T2.0. CLOUDS ASSOCIATED WITH THE DEEP DEPRESSION ARE ORGANISED IN SHEAR PATTERN. BROKEN LOW & MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL &

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

ADJOINING NORTH BAY OF BENGAL BETWEEN 16.0N & 22.0N AND LONGITUDE 86.0E & 92.0E. MINIMUM CLOUD TOP TEMPERATURE IS -93°C . THE CONVECTION IS HIGHER OVER NORTHEAST SECTOR.

Remarks:

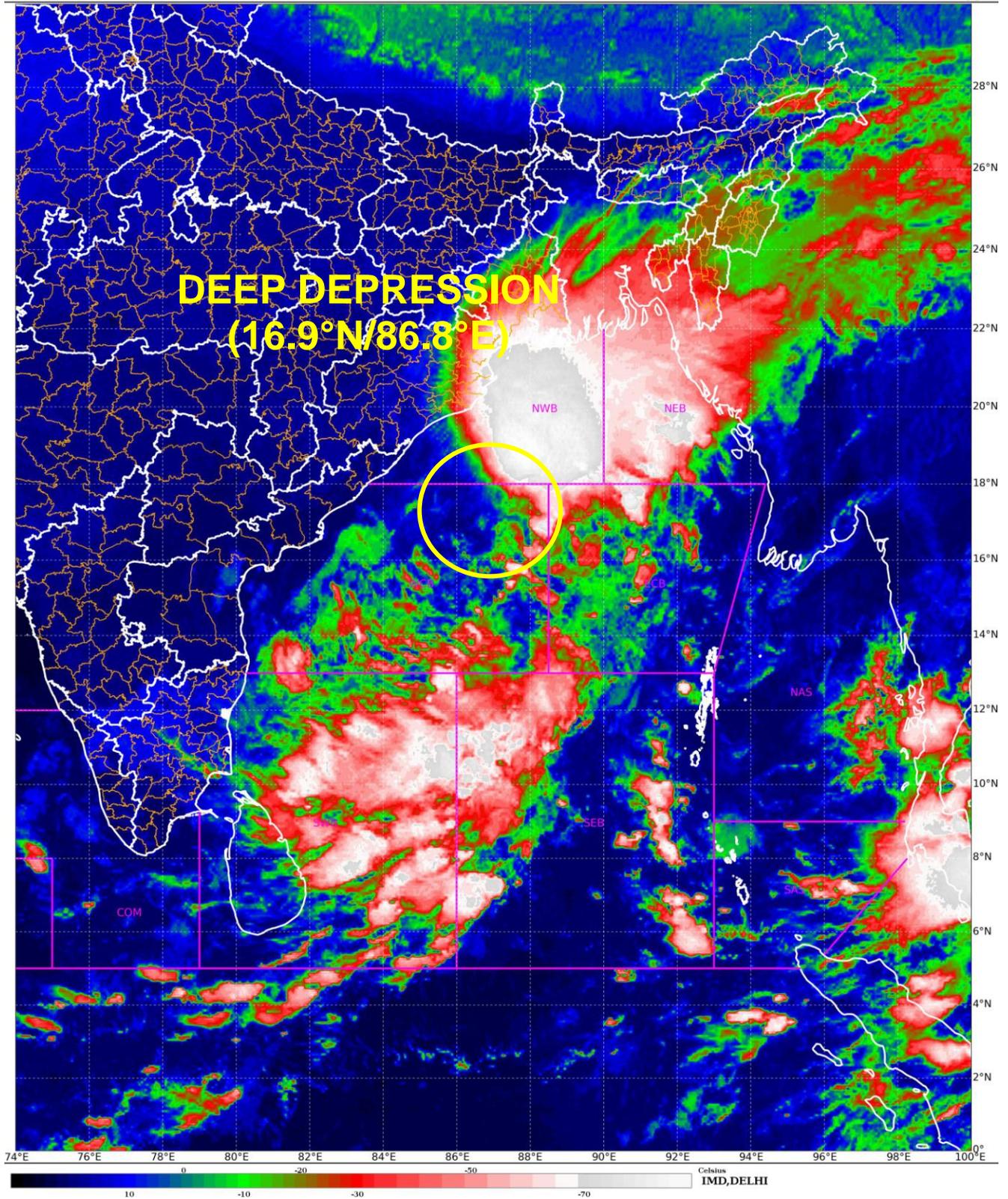
MADDEN JULIAN OSCILLATION INDEX IS IN PHASE 8 WITH AMPLITUDE CLOSE TO 1. IT WOULD MOVE TO PHASE 1 FROM 16TH NOVEMBER ONWARDS, WITH AMPLITUDE BECOMING MORE THAN 1. SEA SURFACE TEMPERATURE IS AROUND 29°C OVER WESTCENTRAL BOB AND SLIGHTLY LESS AROUND $27-28^{\circ}\text{C}$ OVER SEA AREAS OF NORTH BOB AND ALONG & OFF ANDHRA PRADESH – ODISHA COASTS. THE TROPICAL CYCLONE HEAT POTENTIAL IS $80-100 \text{ KJ}/\text{CM}^2$ OVER SEA AREAS OF WESTCENTRAL BOB & NORTH BOB AND ALONG & OFF ANDHRA PRADESH – ODISHA COASTS.

THE LOW LEVEL RELATIVE POSITIVE VORTICITY IS AROUND $150 \times 10^{-6} \text{S}^{-1}$ AROUND SYSTEM AREA WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT $50 \times 10^{-5} \text{S}^{-1}$ TO THE NORTHEAST OF SYSTEM AREA. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT $40 \times 10^{-5} \text{S}^{-1}$ TO THE NORTHEAST OF SYSTEM AREA. WIND SHEAR IS MODERATE (15-25 KNOTS) OVER SYSTEM AREA AND WIND SHEAR IS HIGH OVER NORTH BOB AND ALSO ALONG & OFF WEST BENGAL-BANGLADESH COASTS. UPPER TROPOSPHERIC RIDGE RUNS ALONG 15°N . ALL THESE FEATURES ARE LIKELY TO SUPPORT GRADUAL INTENSIFICATION OF THE SYSTEM FURTHER DURING NEXT 24-HOURS.

THE GUIDANCE FROM VARIOUS NUMERICAL MODELS (IMD GFS, NCEP GFS, ECMWF AND IMD MME) IS INDICATING NORTH-NORTHEASTWARDS MOVEMENT TOWARDS BANGLADESH COASTS. PEAK INTENSIFICATION IS SUGGESTED UPTO MARGINAL CYCLONE STAGE AROUND 0000 UTC OF 16TH NOVEMBER.

CONSIDERING ALL THESE, THE DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL IS LIKELY TO MOVE NORTH-NORTHEASTWARDS AND INTENSIFY FURTHER AND CROSS BANGLADESH COAST BETWEEN MONGLA AND KHEPUPARA WITH WIND SPEED 55-65 KMPH GUSTING TO 75 KMPH AROUND 0000 UTC OF 18TH NOVEMBER.

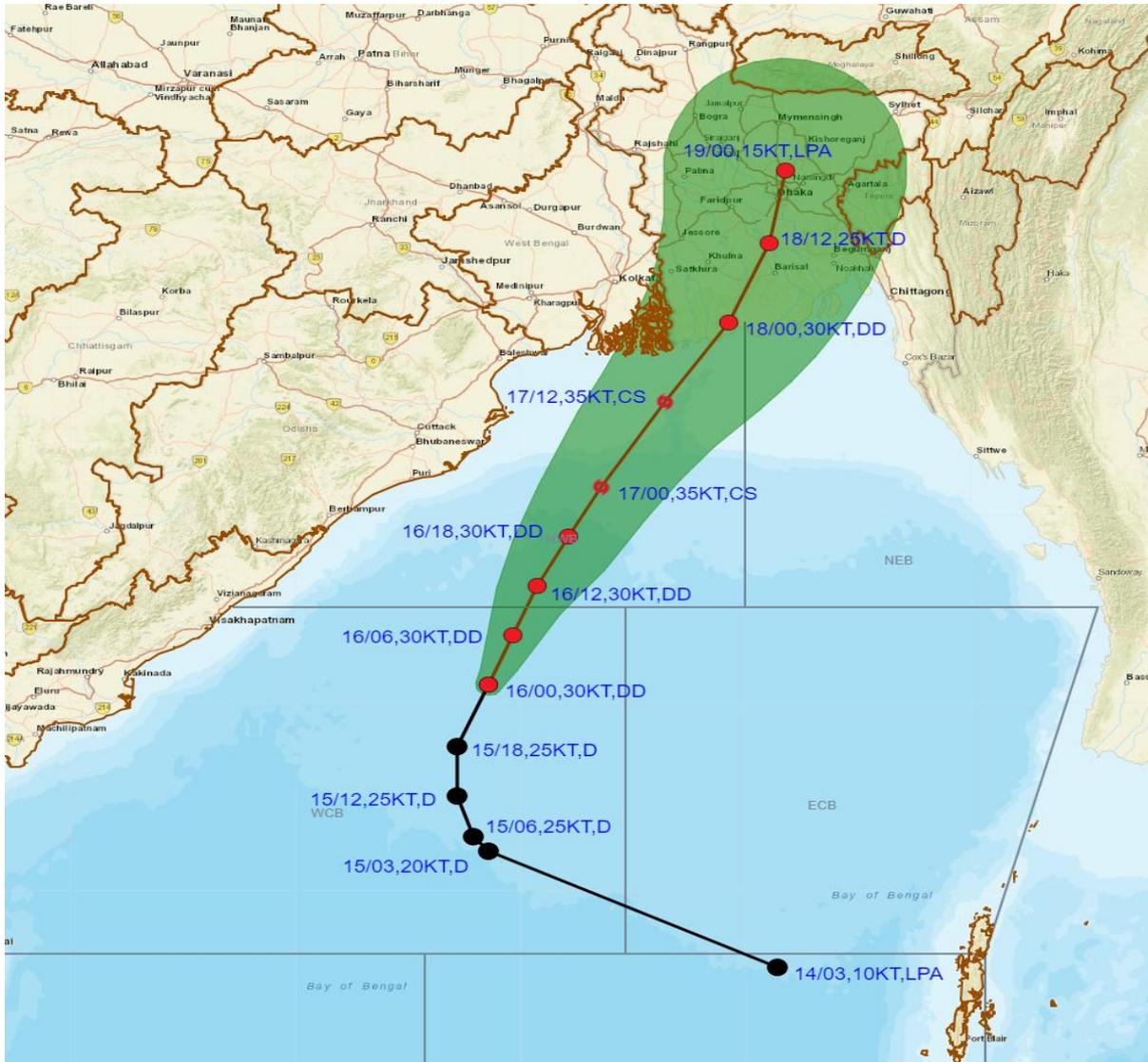
(R. K. JENAMANI)
SCIENTIST-G



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



OBSERVED AND FORECAST TRACK AND INTENSITY ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 16TH NOVEMBER 2023.



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

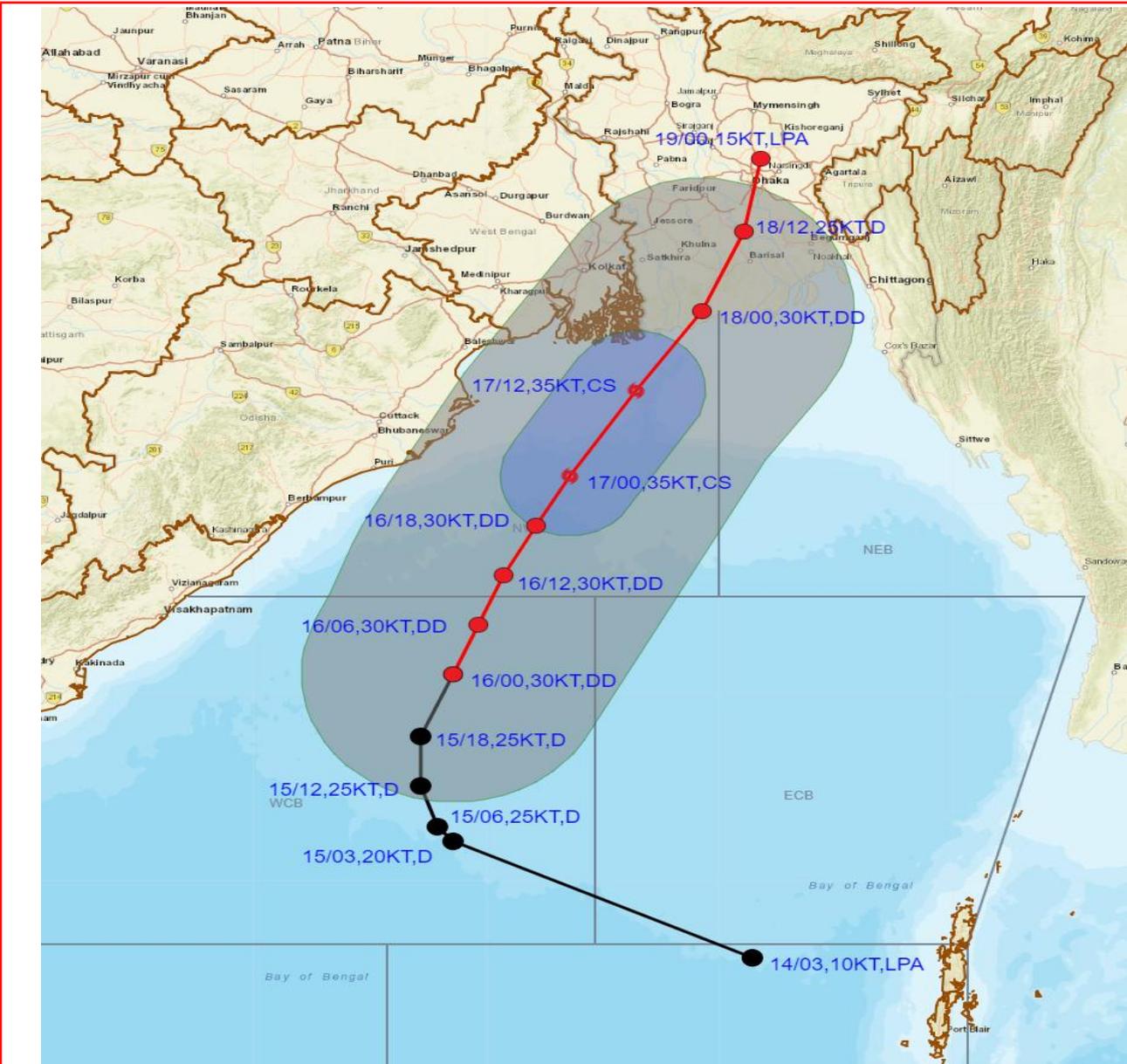
▲ CONE OF UNCERTAINTY

Forecast	DISTANCE(KM) AND DIRECTION FROM STATIONS			
Date and Time	PARADIP	DIGHA	KHEPUPARA	CHITTAGONG (AMBAGAN)
17.11.23/0000	180, ESE	220, SSE	330, SW	470, SW
17.11.23/1200	260, ENE	180, ESE	170, SW	330, WSW
18.11.23/0000	370, ENE	240, E	40, W	210, W

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



OBSERVED AND FORECAST TRACK AND INTENSITY ALONG WITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 16TH NOVEMBER 2023.



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)

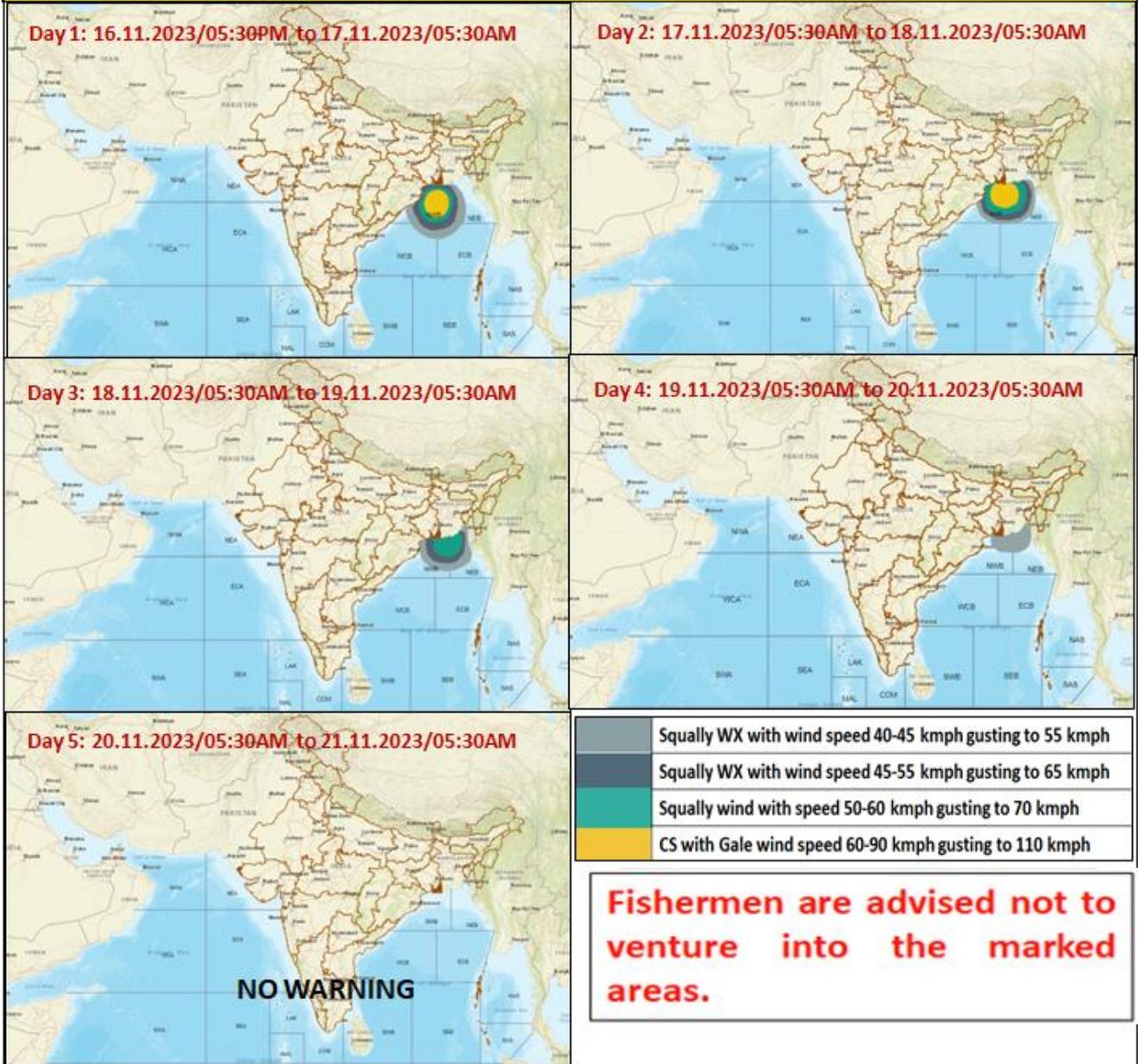
● LESS THAN 34 KT
 ⚡ 34.47 KT
 ⚡ ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ▲ CONE OF UNCERTAINTY
 AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥118 KMPH)

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

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

Fishermen warning graphics



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