



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

**DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 10.05.2023**

**SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0930 UTC OF 10.05.2023 BASED ON 0600 UTC OF 10.05.2023.**

**BAY OF BENGAL:**

**SUB: DEEP DEPRESSION OVER SOUTHEAST BAY OF BENGAL**

THE DEEP DEPRESSION OVER SOUTHEAST BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF 12 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 0600 UTC OF TODAY, THE 10TH MAY 2023 OVER THE SAME REGION NEAR LATITUDE 9.1°N AND LONGITUDE 88.7°E, ABOUT 520 KM SOUTHWEST OF PORT BLAIR (INDIA, 43333), 1410 KM SOUTH-SOUTHWEST OF COX'S BAZAR (BANGLADESH, 41992) AND 1300 KM SOUTH-SOUTHWEST OF SITTWE (MYANMAR, 48062).

IT IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND INTENSIFY GRADUALLY INTO A CYCLONIC STORM OVER THE SAME REGION AROUND 1200 UTC. THEN CONTINUING TO MOVE NORTH-NORTHWESTWARDS, IT WILL GRADUALLY INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM BY 11TH MAY 0000 UTC AND VERY SEVERE CYCLONIC STORM AROUND 1800 UTC OF 11TH MAY OVER SOUTHEAST AND ADJOINING CENTRAL BAY OF BENGAL. THEREAFTER, IT IS LIKELY TO RECURVE GRADUALLY, MOVE NORTH-NORTHEASTWARDS FROM AROUND 12TH MAY 0000 UTC. IT IS LIKELY TO WEAKEN SLIGHTLY FROM AROUND 1200 UTC OF 13TH MAY AND CROSS SOUTHEAST BANGLADESH AND NORTH MYANMAR COASTS BETWEEN COX'S BAZAR (BANGLADESH) AND KYAUKPYU (MYANMAR) AROUND 0300-0600 UTC OF 14TH MAY, 2023 WITH MAXIMUM SUSTAINED WIND SPEED OF 110-120 KMPH GUSTING TO 130 KMPH.

Forecast track and intensity are given below:

DATE/TIME (UTC)	POSITION LAT. °N/ LONG. °E	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
10.05.23/0600	9.1 /88.7	55-65 GUSTING TO 75	DEEP DEPRESSION
10.05.23/1200	9.7/88.1	60-70 GUSTING TO 80	CYCLONIC STORM
10.05.23/1800	10.3/87.7	75-85 GUSTING TO 95	CYCLONIC STORM
11.05.23/0000	11.0/87.6	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
11.05.23/0600	11.4/87.5	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
11.05.23/1800	12.5/87.6	115-125 GUSTING TO 135	VERY SEVERE CYCLONIC STORM
12.05.23/0600	13.7/87.9	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
12.05.23/1800	15.1/88.7	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
13.05.23/0600	16.9/90.0	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
13.05.23/1800	19.0/91.5	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
14.05.23/0600	21.1/92.9	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
14.05.23/1800	23.1/94.2	50-60 GUSTING TO 70	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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INTENSE CONVECTION IS SEEN IN THE WESTERN SECTOR AND ALSO IN THE NORTHEAST SECTOR. BOTH POLLEWARD AND EQUATORWARD OUTFLOW IS INDICATED IN THE LATEST SATELLITE IMAGERY. INTENSITY OF THE SYSTEM IS CHARACTERISED AS T2.0. ASSOCIATED BROKEN LOW/MED CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH BAY OF BENGAL BETWEEN LATITUDE 5.0N TO 13.0N AND LONG 80.0E TO 93.0E. MINIMUM CLOUD TOP TEMPERATURE (CTT) IS MINUS 93 DEG CELSIUS.

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 999 HPA. SEA CONDITION IS ROUGH TO VERY ROUGH OVER SOUTHEAST BAY OF BENGAL AND ADJOINING AREAS OF ANDAMAN SEA.

AT 0600 UTC, A BUOY NEAR 10.4°N/94.1°E REPORTED MEAN SEA LEVEL PRESSURE OF 1007.2 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 170<sup>0</sup>/13.6 KTS. ANOTHER BUOY NEAR 13.9°N/87.0°E REPORTED MEAN SEA LEVEL PRESSURE OF 1005.3 HPA.

**STORM SURGE GUIDANCE (GRAPHICS ATTACHED) FOR NORTH MYANMAR AND ADJOINING SOUTHEAST BANGLADESH COASTS:**

STORM SURGE WITH HEIGHT OF ABOUT 1.5-2.0 M ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS OF NORTH MYANMAR AND ADJOINING SOUTHEAST BANGLADESH COASTS DURING THE TIME OF LANDFALL.

**REMARKS:**

INCREASED WESTERLY WINDS ARE PREVAILING OVER THE SOUTH BOB AND SOUTH ANDAMAN SEA WITH EASTERLY WINDS OVER CENTRAL & NORTH BOB DURING ALONGWITH MJO IN PHASE 5. THUS, THE ENHANCED WESTERLY WINDS AND MJO ARE LIKELY TO COLLECTIVELY CONTRIBUTE TOWARDS ENHANCEMENT OF CONVECTIVE ACTIVITY AND FURTHER INTENSIFICATION OF THE SYSTEM DURING NEXT 3 DAYS.

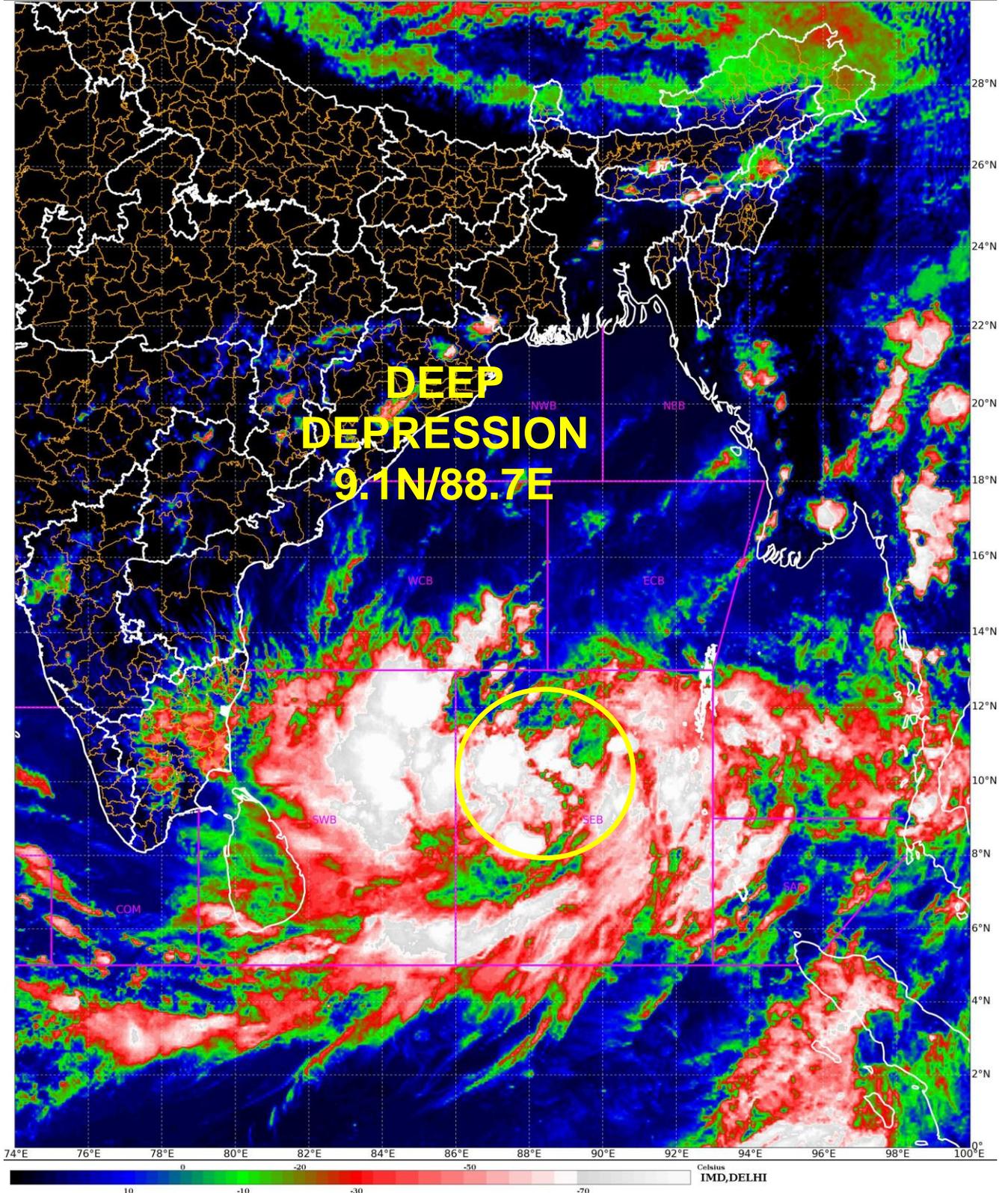
THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS MORE THAN 100 KJ/CM<sup>2</sup> OVER MAJOR PARTS OF SOUTHEAST AND CENTRAL BOB. IT IS INDICATING DECREASING TENDENCY ABOUT 60-70 KJ/CM<sup>2</sup> ALONG MYANMAR COAST. SEA SURFACE TEMPERATURE (SST) IS AROUND 30°C OVER SOUTHEAST BOB. IT IS SLIGHTLY HIGHER OVER EASTCENTRAL BOB AROUND 31°C AND LESS OFF MYANMAR COAST. THE SEA CONDITIONS OVER BOB ARE ALSO CONDUCIVE FOR FURTHER INTENSIFICATION OF SYSTEM OVER EASTCENTRAL BOB. TOTAL PRECIPITABLE WATER IMAGERY (TPW) INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM AREA FROM SOUTH.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE LOW LEVEL VORTICITY AT 850 HPA IS AROUND  $100 \times 10^{-6} \text{S}^{-1}$  TO THE EAST OF SYSTEM CENTRE. LOW LEVEL CONVERGENCE HAS INCREASED DURING PAST 6-HOURS AND IS AROUND  $40 \times 10^{-5} \text{S}^{-1}$  TO THE WEST OF THE SYSTEM CENTER. UPPER LEVEL DIVERGENCE IS ABOUT  $30 \times 10^{-5} \text{S}^{-1}$  TO THE SOUTHWEST & ANOTHER ZONE TO THE SOUTHEAST OF SYSTEM CENTRE. GOOD POLEWARD AND EQUATORWARD OUFLOW ARE FAVOURABLE FOR FURTHER INTENSIFICATION OF THE SYSTEM. THE VERTICAL WIND IS LOW TO MODERATE (15-20 KNOTS) OVER THE SYSTEM AREA AND IT IS DECREASING ALONG THE EXPECTED TRACK. THE SEA CONDITIONS AND ENVIRONMENTAL FEATURES INDICATE FAVOURABLE ENVIRONMENT FOR FURTHER INTENSIFICATION OVER THE REGION. THE SYSTEM IS LYING IN THE PERIPHERY OF UPPER TROPOSPHERIC RIDGE NEAR 15.0N IN ASSOCIATION WITH ANTI CYCLONIC CIRCULATION OVER ESATCENTRAL BOB. THE SYSTEM IS EXPECTED TO MOVE NORTH-NORTHWESTWARDS ALONG IT'S PERIPHERY. ONCE IT CROSSES. 15.0N, IT WILL GRADUALLY RECURVE NORTH-NORTHEASTWARDS, TOWARDS MYANMAR-BANGLADESH COASTS.

GUIDANCE FROM VARIOUS NUMERICAL MODELS INCLUDING IMD GFS, NCEP GFS, ECMWF, NCUM, UKMO AND IMD MME ARE NOW CONSISTENT WRT TRACK AND LANDFALL POINT. HOWEVER, THERE IS VARIATION AMONG VARIOUS MODELS WRT LANDFALL TIME AND INTENSITY OF THE SYSTEM. BUT, THERE IS CONSENSUS AMONG VARIOUS MODELS WRT SLIGHT WEAKENING OF THE SYSTEM BEFORE LANDFALL. IMD GFS IS INDICATING LANDFALL AROUND 14/0600 UTC NEAR 20.1N/93.2E. ECMWF IS INDICATING CROSSING AROUND 14/0300 UTC NEAR 20.4N/92.7E. IMD MME IS INDICATING CROSSING AROUND 14/0300 UTC NEAR 20.0N/93.1E. PEAK INTENSITY BY VARIOUS MODELS IS VARYING BETWEEN 60 KT-110 KT. ACCORDINGLY, OPERATIONALLY THE PEAK INTENSITY HAS BEEN TAKEN AS 80 KTS BASED ON MME.

HENCE IT IS CONCLUDED THAT, THE DEEP DEPRESSION OVER SOUTHEAST BAY OF BENGAL IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND INTENSIFY GRADUALLY INTO A CYCLONIC STORM OVER THE SAME REGION AROUND 1200 UTC. THEN CONTINUING TO MOVE NORTH-NORTHWESTWARDS, IT WILL GRADUALLY INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM BY 11TH MAY 0000 UTC AND VERY SEVERE CYCLONIC STORM BY 11TH MAY, 1800 UTC OVER SOUTHEAST AND ADJOINING CENTRAL BAY OF BENGAL. THEREAFTER, IT IS LIKELY TO RECURVE GRADUALLY, MOVE NORTH-NORTHEASTWARDS FROM 12TH MAY, 0000 UTC. IT IS LIKELY TO WEAKEN SLIGHTLY FROM 13TH MAY, 1200 UTC AND CROSS SOUTHEAST BANGLADESH AND NORTH MYANMAR COASTS BETWEEN COX'S BAZAR (BANGLADESH) AND KYAUKPYU (MYANMAR) AROUND 0600 UTC OF 14TH MAY, 2023 WITH MAXIMUM SUSTAINED WIND SPEED OF 110-120 KMPH GUSTING TO 130 KMPH.

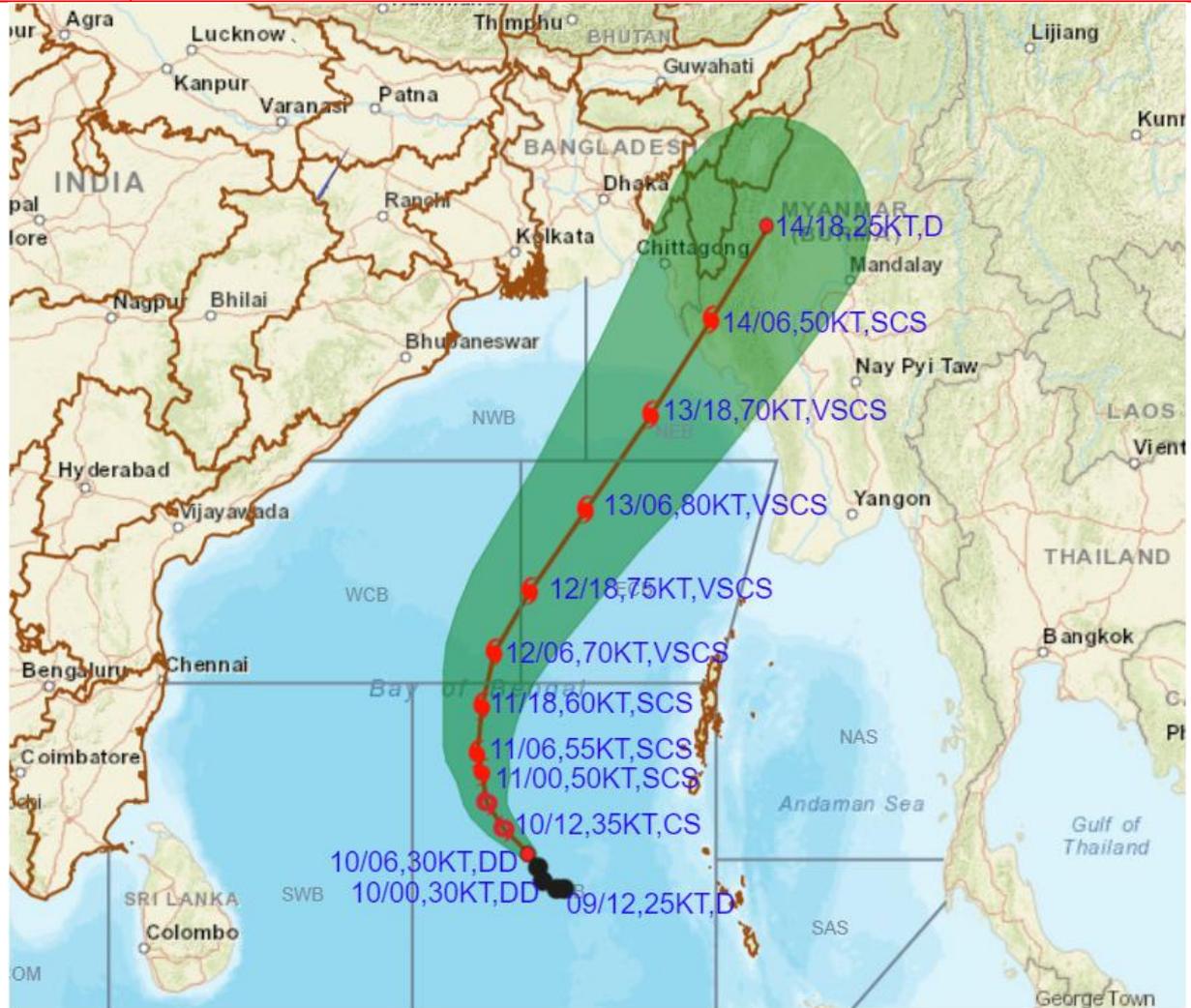
(M SHARMA)  
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RSMC NEW DELHI



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 SOUTHEAST BAY OF BENGAL BASED ON 0600 UTC (1130 IST) OF 10<sup>TH</sup> MAY 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 ( $\geq 120$  KT)

● LESS THAN 34 KT

⊙ 34-47 KT

⊙  $\geq 48$  KT

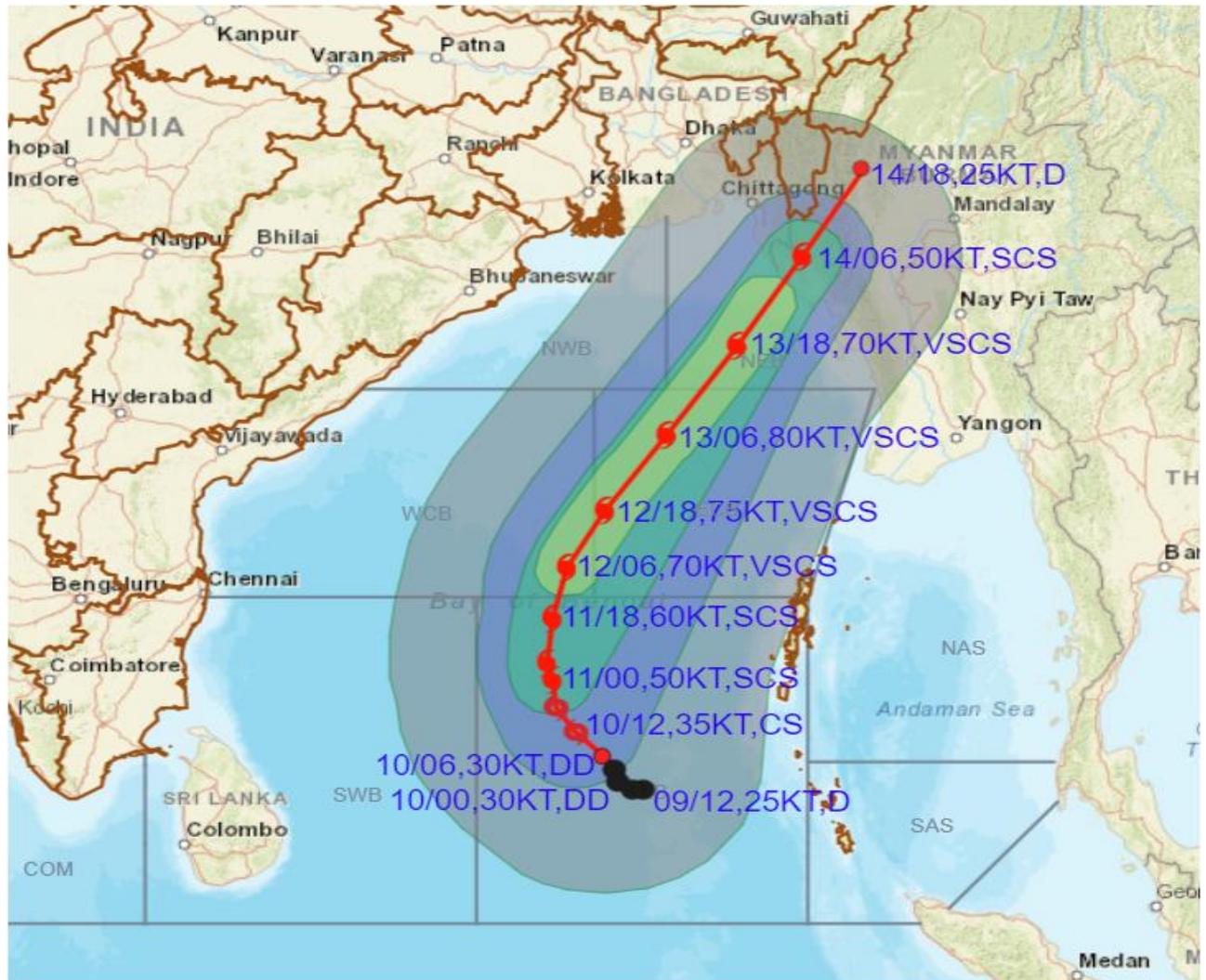
— OBSERVED TRACK

— FORECAST TRACK

▲ CONE OF UNCERTAINTY



## OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER SOUTHEAST BAY OF BENGAL BASED ON 0600 UTC (1130 IST) OF 10<sup>TH</sup> MAY 2023



**DATE/TIME IN UTC**

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VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)

ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)

SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

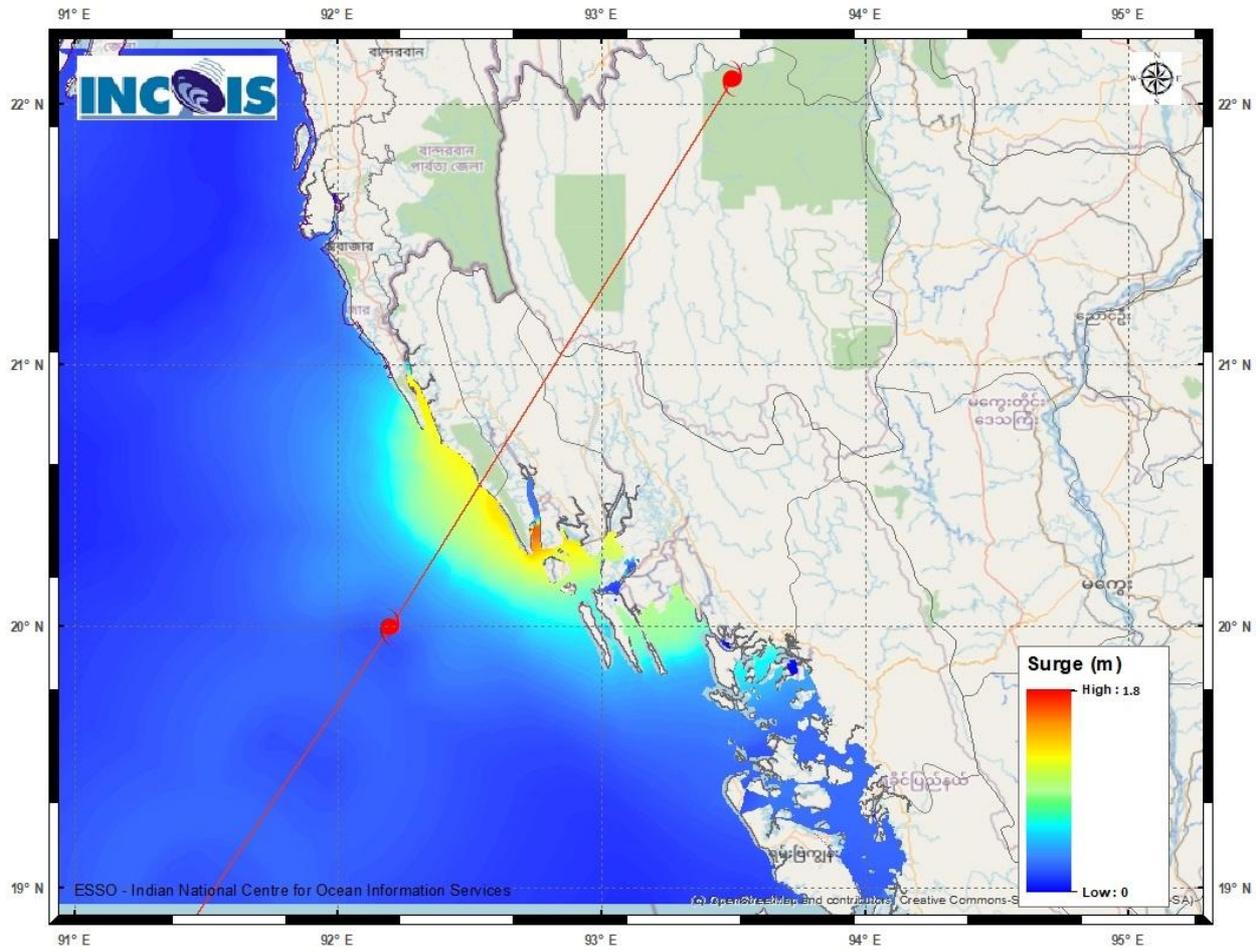
- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY
- AREA OF MAXIMUM SUSTAINED WIND SPEED:
- 28-33 KT (52-61 KMPH)
- 34-49 KT (62-91 KMPH)
- 50-63 KT (92-117 KMPH)
- ≥ 64 KT (≥118 KMPH)

**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

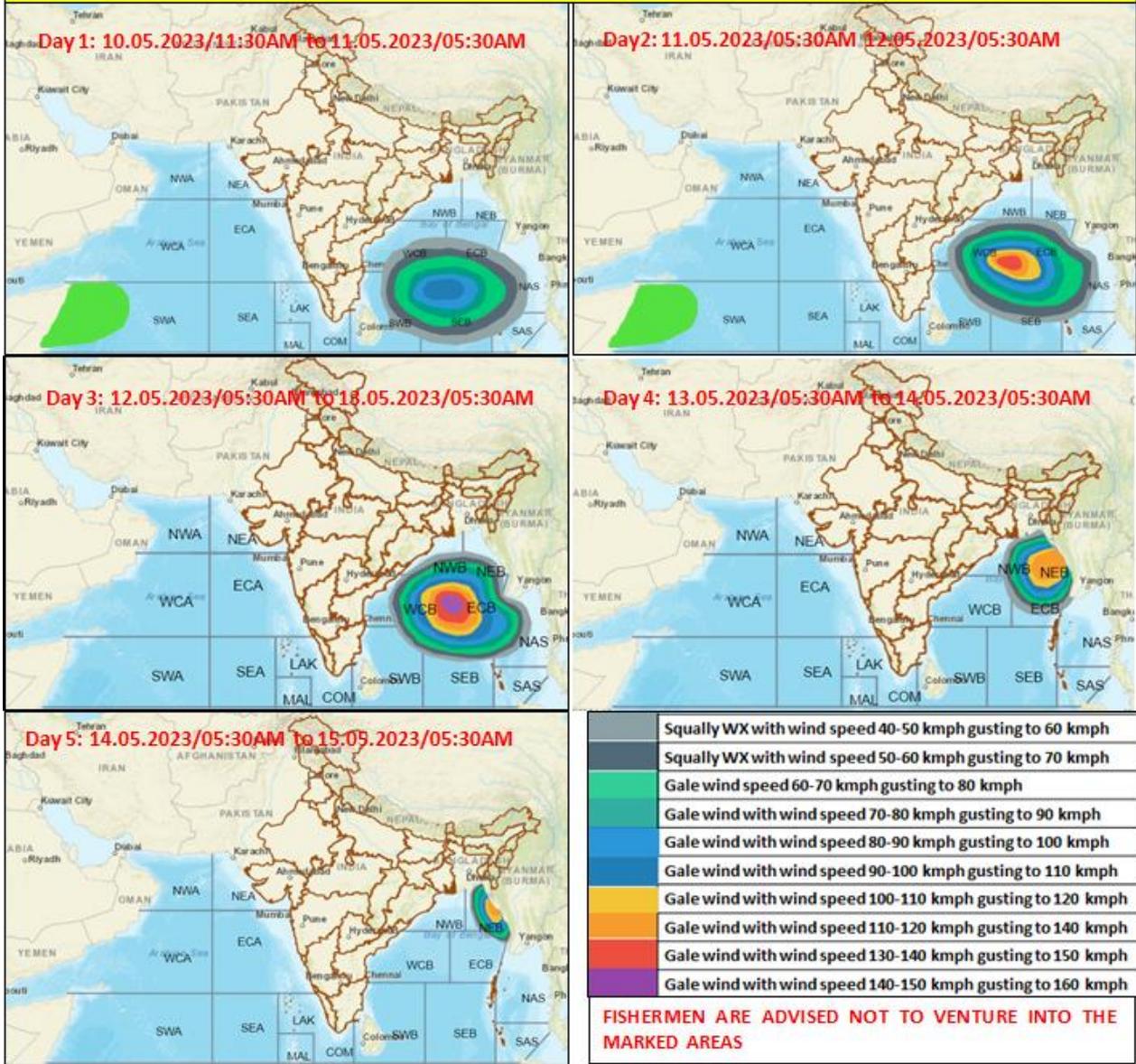
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## Storm Surge Warning Graphics based on 0300 UTC (0830 IST) Track OF IMD



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## Fishermen warning graphics



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