



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI**  
**TROPICAL CYCLONE ADVISORY NO. 1**

**DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 11.05.2023**

**FROM: RSMC –TROPICAL CYCLONES, NEW DELHI**

**TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)**  
**STORM WARNING CENTRE, BANGKOK (THAILAND)**  
**STORM WARNING CENTRE, COLOMBO (SRILANKA)**  
**STORM WARNING CENTRE, DHAKA (BANGLADESH)**  
**STORM WARNING CENTRE, KARACHI (PAKISTAN)**  
**METEOROLOGICAL OFFICE, MALE (MALDIVES)**  
**OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)**  
**YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)**  
**NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)**  
**PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)**  
**IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)**  
**QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)**

**TROPICAL CYCLONE ADVISORY NO. 1 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0330 UTC OF 11.05.2023 BASED ON 0000 UTC OF 11.05.2023**

**SUBJECT: DEEP DEPRESSION OVER SOUTHEAST BAY OF BENGAL INTENSIFIED INTO A CYCLONIC STORM “MOCHA” PRONOUNCED AS “MOKHA”**

THE DEEP DEPRESSION OVER SOUTHEAST BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF 8 KMPH DURING PAST 06 HOURS, INTENSIFIED INTO A CYCLONIC STORM “**MOCHA**” PRONOUNCED AS “**MOKHA**” AND LAY CENTERED AT 0000 UTC OF 11<sup>TH</sup> MAY 2023 OVER THE SAME REGION NEAR LATITUDE 11.2°N AND LONGITUDE 88.1°E, ABOUT 510 KM WEST-SOUTHWEST OF PORT BLAIR(INDIA, 43333), 1210 KM SOUTH-SOUTHWEST OF COX’S BAZAR (BANGLADESH, 41992) AND 1120 KM SOUTH-SOUTHWEST OF SITTWE (MYANMAR, 48062).

IT IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND GRADUALLY INTENSIFY INTO A SEVERE CYCLONIC STORM AROUND 1800 UTC OF 11<sup>TH</sup> MAY 2023. THEREAFTER, IT IS LIKELY TO RECURVE GRADUALLY, MOVE NORTH-NORTHEASTWARDS FROM 0000 UTC OF 12<sup>TH</sup> MAY AND INTENSIFY FURTHER INTO A VERY SEVERE CYCLONIC STORM AROUND 1200 UTC OF 12<sup>TH</sup> MAY OVER CENTRAL BAY OF BENGAL. IT WOULD REACH ITS PEAK INTENSITY AROUND 1200 UTC OF 13<sup>TH</sup> MAY. THEREAFTER, IT IS LIKELY TO WEAKEN SLIGHTLY FROM 0000 UTC OF 14<sup>TH</sup> MAY AND CROSS SOUTHEAST BANGLADESH AND NORTH MYANMAR COASTS BETWEEN COX’S BAZAR (BANGLADESH) AND KYAUKPYU (MYANMAR) AROUND 0300-0600 UTC OF 14<sup>TH</sup> MAY, 2023 WITH MAXIMUM SUSTAINED WIND SPEED OF 120-130 KMPH GUSTING TO 145 KMPH.

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

**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
11.05.23/0000	11.2/88.1	60-70 GUSTING TO 80	CYCLONIC STORM
11.05.23/0600	11.7/88.0	70-80 GUSTING TO 90	CYCLONIC STORM
11.05.23/1200	12.2/87.9	80-90 GUSTING TO 100	CYCLONIC STORM
11.05.23/1800	12.7/87.9	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
12.05.23/0000	13.2/88.0	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
12.05.23/1200	14.3/88.5	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
13.05.23/0000	15.9/89.4	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
13.05.23/1200	17.5/90.6	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
14.05.23/0000	19.4/92.2	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
14.05.23/1200	22.0/94.4	60-70 GUSTING TO 80	CYCLONIC STORM

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA. SEA CONDITION IS VERY ROUGH TO HIGH OVER SOUTHEAST BAY OF BENGAL AND ADJOINING AREAS OF ANDAMAN SEA.

AS PER SATELLITE IMAGERY, INTENSITY IS T2.5. ASSOCIATED BROKEN LOW/MED CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH BAY OF BENGAL BETWEEN LATITUDE 9.0N TO 14.0N AND LONG 83.0E TO 90.0E. MINIMUM CLOUD TOP TEMPERATURE (CTT) IS MINUS 93 DEG CELSIUS. INTENSE TO VERY INTENSE CONVECTION LIES OVER WEST SECTOR OF THE SYSTEM CENTRE.

AT 0000 UTC, A BUOY NEAR 10.45°N/94.1°E REPORTED MEAN SEA LEVEL PRESSURE OF 1007 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 160<sup>0</sup>/17.5 KTS.

**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:**

THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS MORE THAN 100 KJ/CM<sup>2</sup> OVER MAJOR PARTS OF SOUTHEAST AND CENTRAL BAY OF BENGAL (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.

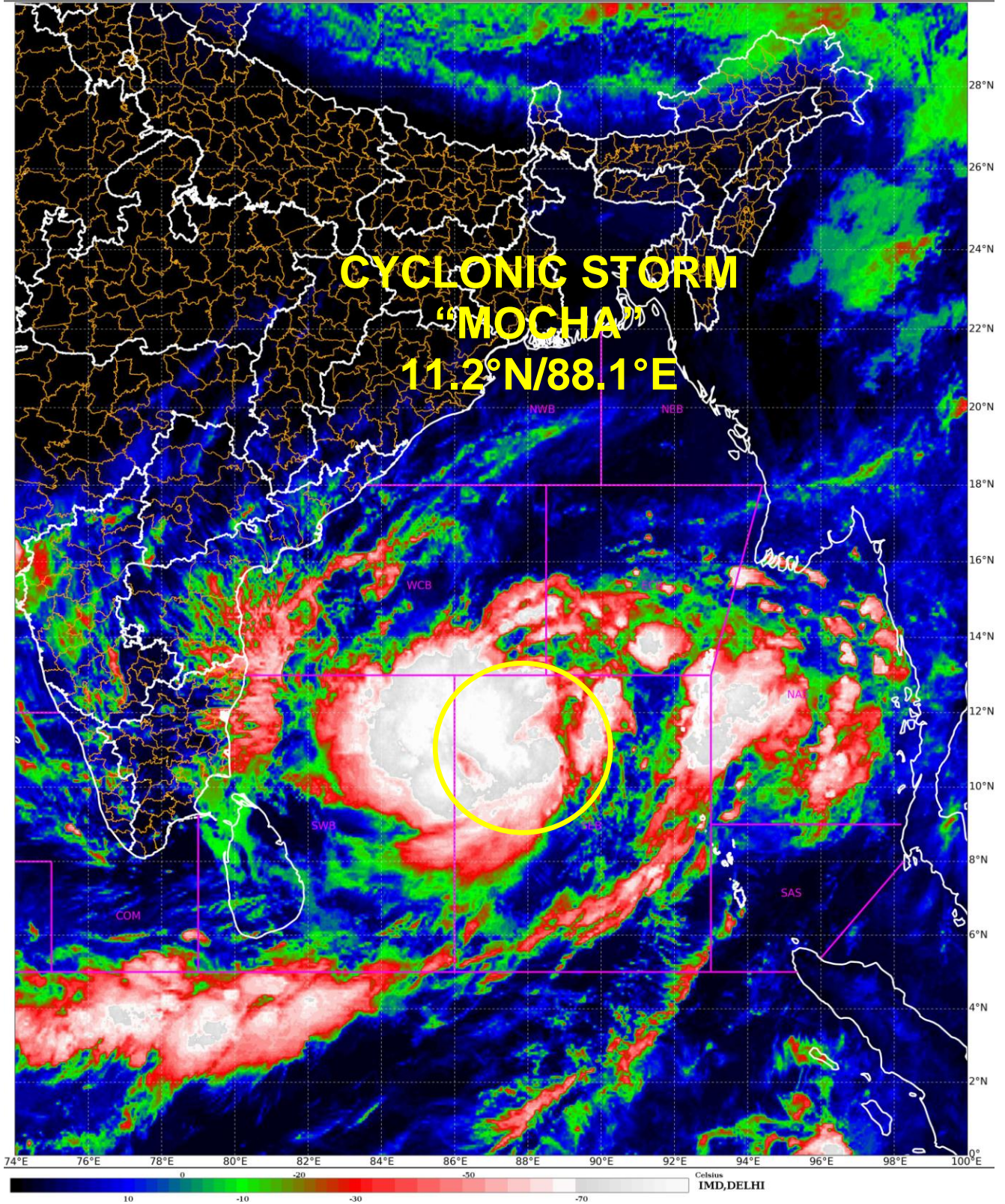
CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE LOW LEVEL VORTICITY AT 850 HPA IS AROUND 200X10<sup>-6</sup>S<sup>-1</sup> TO THE SOUTH WEST OF THE SYSTEM CENTRE. LOW LEVEL CONVERGENCE IS AROUND 30 X10<sup>-5</sup> S<sup>-1</sup> TO THE SOUTH WEST OF THE SYSTEM CENTER. UPPER LEVEL DIVERGENCE IS ABOUT 30X10<sup>-5</sup>S<sup>-1</sup> TO THE SOUTH WEST AND NORTH EAST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODRATE (10-15 KNOTS) OVER THE SYSTEM AREA AND IT REMAINS SAME ALONG THE EXPECTED TRACK OVER CENTRAL BOB. 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 LANDFALL AROUND 14/0300 UTC NEAR 20.4N/92.7E. IMD MME IS INDICATING LANDFALL AROUND 14/1000 UTC NEAR 20.15N/92.88E. 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.

IT IS CONCLUDED THAT, THE CYCLONIC STORM "**MOCHA**" PRONOUNCED AS "**MOKHA**" OVER SOUTHEAST BAY OF BENGAL IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND GRADUALLY INTENSIFY INTO A SEVERE CYCLONIC STORM AROUND 1800 UTC OF 11<sup>TH</sup> MAY 2023. THEREAFTER, IT IS LIKELY TO RECURVE GRADUALLY, MOVE NORTH-NORTHEASTWARDS FROM 0000 UTC OF 12<sup>TH</sup> MAY AND INTENSIFY FURTHER INTO A VERY SEVERE CYCLONIC STORM AROUND 1200 UTC OF 12<sup>TH</sup> MAY OVER CENTRAL BAY OF BENGAL. IT WOULD REACH ITS PEAK INTENSITY AROUND 1200 UTC OF 13<sup>TH</sup> MAY. THEREAFTER, IT IS LIKELY TO WEAKEN SLIGHTLY FROM 0000 UTC OF 14<sup>TH</sup> MAY AND CROSS SOUTHEAST BANGLADESH AND NORTH MYANMAR COASTS BETWEEN COX'S BAZAR (BANGLADESH) AND KYAUKPYU (MYANMAR) AROUND 0300-0600 UTC OF 14<sup>TH</sup> MAY, 2023 WITH MAXIMUM SUSTAINED WIND SPEED OF 120-130 KMPH GUSTING TO 145 KMPH.

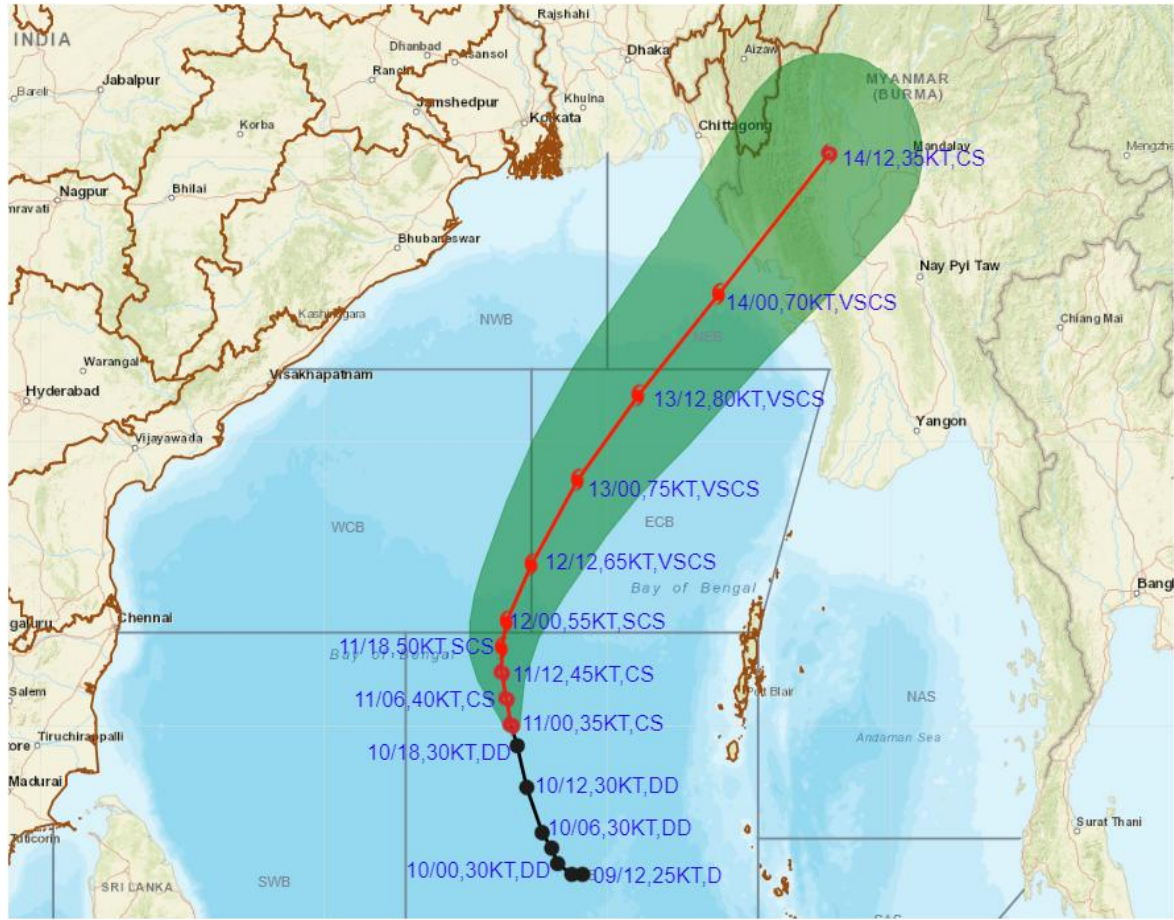
(ARULALAN T)  
SCIENTIST-C  
RSMC NEW DELHI



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  
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 ALONGWITH CONE OF UNCERTAINTY OF CYCLONE MOCHA OVER SOUTHEAST BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 11<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 (≥ 120 KT)

● LESS THAN 34 KT

○ 34-47 KT

○ ≥ 48 KT

— OBSERVED TRACK

— FORECAST TRACK

▲ CONE OF UNCERTAINTY

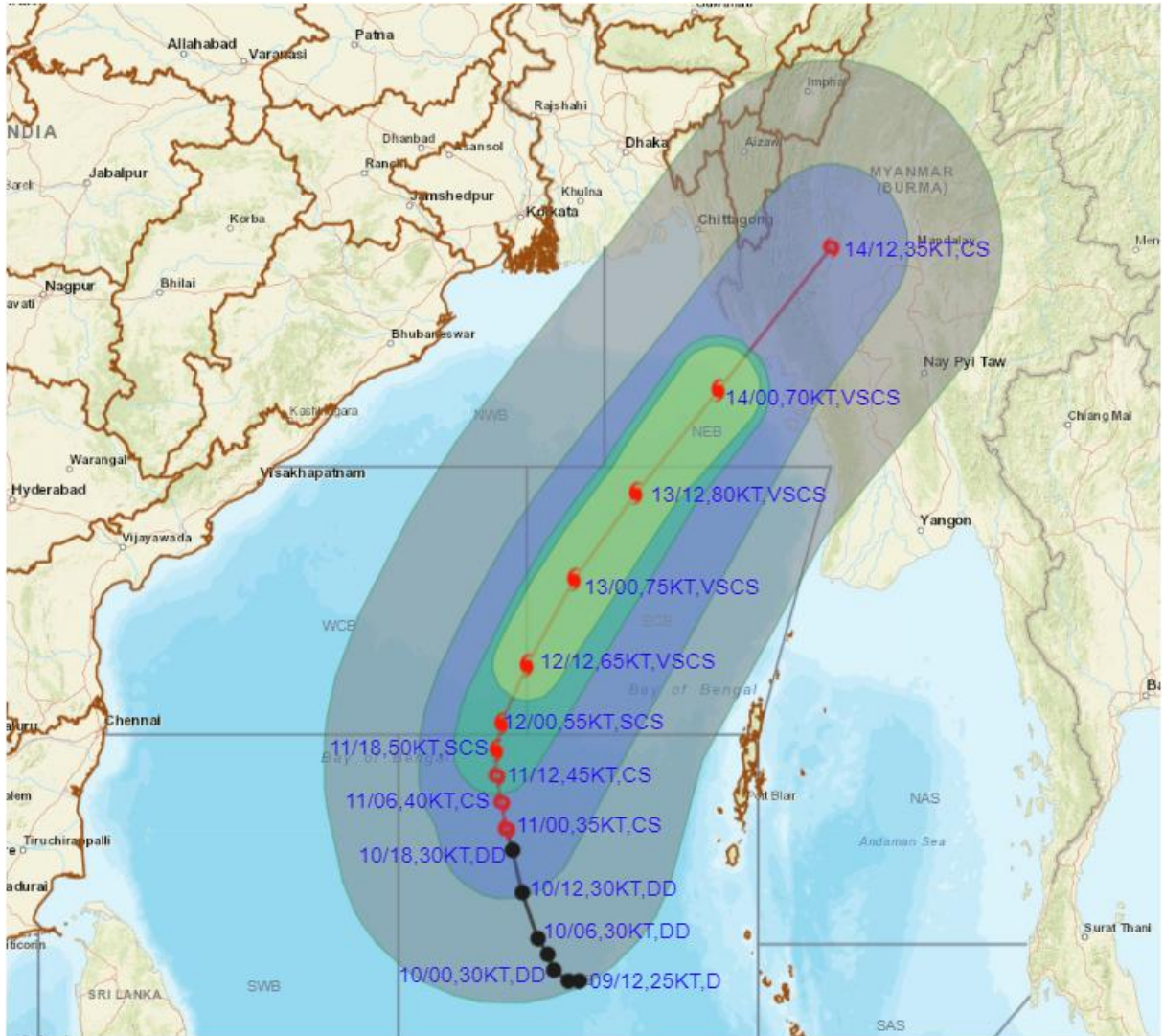
**Forecast distance (km) and direction of the centre from nearest 5 coastal stations**

Forecast Date and Time	Lead Period	Lat	Lon	Station 1	Station 2	Station 3	Station 4	Station 5
11.05.23/0000	0	11.2	88.1	HUT BAY (491,W)	PORT BLAIR (506,W)	LONG ISLAND (544,WSW)	MAYA BANDAR (558,WSW)	CAR NICOBAR (566,WNW)
12.05.23/0000	24	13.2	88.0	MAYA BANDAR (534,W)	PORT BLAIR (540,WNW)	LONG ISLAND (543,W)	HUT BAY (575,WNW)	COCO ISLAND (589,W)
13.05.23/0000	48	15.9	89.4	COCO ISLAND (470,WNW)	MAYA BANDAR (504,NW)	LONG ISLAND (544,NW)	SANDHEADS (564,SSE)	MANAUNG (565,SW)
14.05.23/0000	72	19.4	92.2	SITTWE (109,SW)	KYAUKPYU (142,W)	TEKNAF (164,S)	KYAUKTAW (168,SSW)	MANAUNG (172,WNW)

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 ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONE MOCHA OVER SOUTHEAST BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 11<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 (≥ 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)

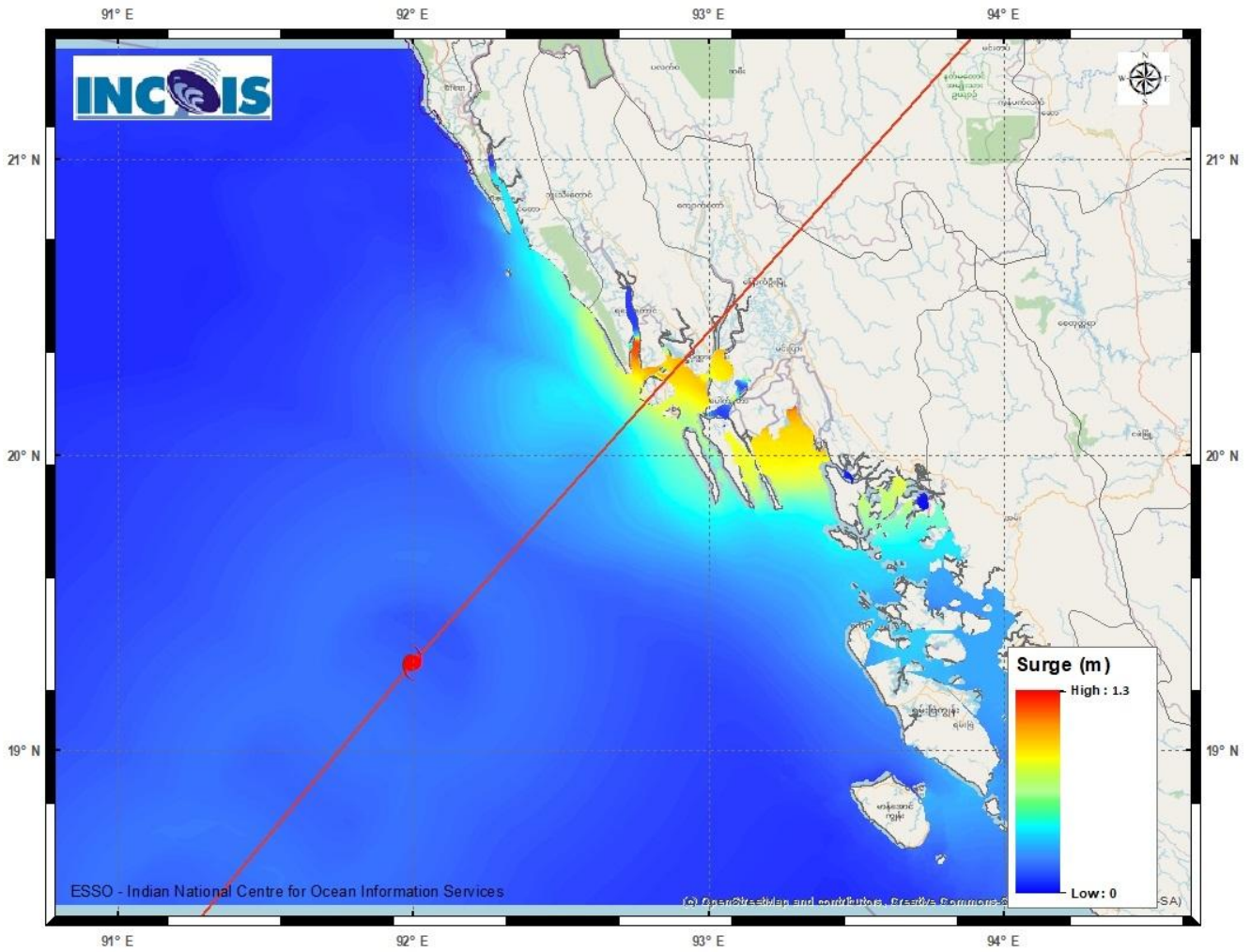
■ ≥ 64 KT (≥118 KMPH)

**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

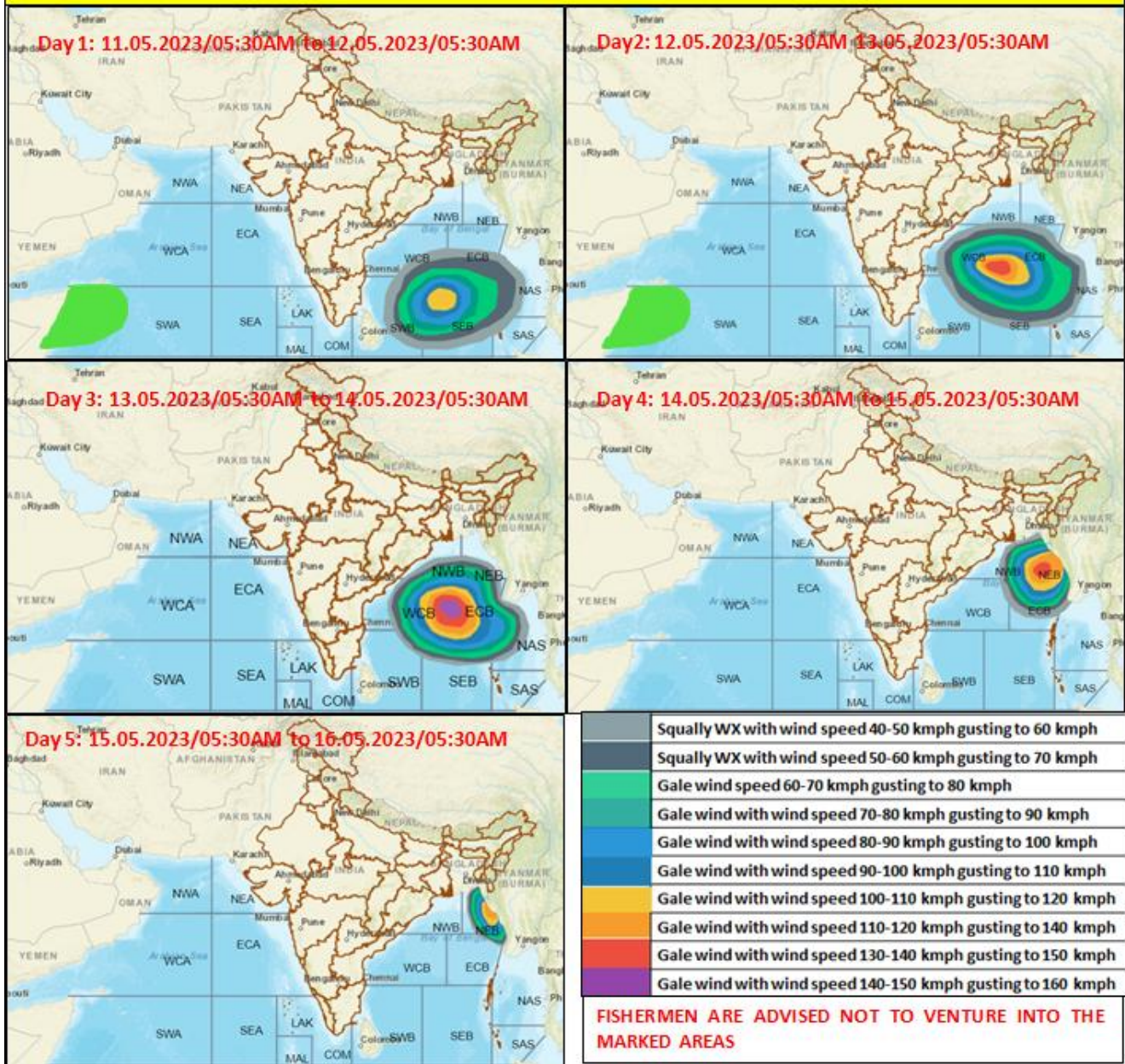
Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C  
**PROBABILITY OF CYCLOGENESIS (FORMATION 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

## Storm Surge 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

## 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