



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 4

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. 4 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1100 UTC OF 11.05.2023 BASED ON 0900 UTC OF 11.05.2023

SUBJECT: CYCLONIC STORM “MOCHA” PRONOUNCED AS “MOKHA” over SOUTHEAST BAY OF BENGAL

THE CYCLONIC STORM “MOCHA” PRONOUNCED AS “MOKHA” OVER SOUTHEAST BAY OF BENGAL MOVED NORTHWARDS WITH A SPEED OF 06 KMPH DURING PAST 06 HOURS, AND LAY CENTERED AT 0900 UTC OF TODAY, THE 11TH MAY 2023 OVER THE SAME REGION NEAR LATITUDE 11.8°N AND LONGITUDE 88.0°E, ABOUT 510 KM WEST OF PORT BLAIR (INDIA, 43333), 1140 KM SOUTHWEST OF COX’S BAZAR (BANGLADESH, 41992) AND 1060 KM SOUTH-SOUTHWEST OF SITTWE (MYANMAR, 48062).

IT IS VERY LIKELY TO MOVE NEARLY NORTHWARDS AND GRADUALLY INTENSIFY INTO A SEVERE CYCLONIC STORM AROUND 1200 UTC OF TODAY, THE 11TH MAY AND FURTHER INTO A VERY SEVERE CYCLONIC STORM AROUND 0000 UTC OF 12TH MAY OVER CENTRAL BAY OF BENGAL. THEREAFTER, IT IS LIKELY TO RECURVE GRADUALLY AND MOVE NORTH-NORTHEASTWARDS WITH FURTHER INTENSIFICATION. IT IS LIKELY TO CROSS SOUTHEAST BANGLADESH AND NORTH MYANMAR COASTS BETWEEN COX’S BAZAR (BANGLADESH, 41992) AND KYAUKPYU (MYANMAR, 48071), CLOSE TO SITTWE (MYANMAR, 48062) AROUND NOON OF 14TH MAY, 2023 AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 150-160 KMPH GUSTING TO 175 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
11.05.23/0900	11.8/88.0	80-90 GUSTING TO 100	CYCLONIC STORM
11.05.23/1200	12.2/87.9	85-95 GUSTING TO 105	SEVERE CYCLONIC STORM
11.05.23/1800	12.7/87.9	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM

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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12.05.23/0000	13.2/88.0	115-125 GUSTING TO 135	VERY SEVERE CYCLONIC STORM
12.05.23/0600	13.8/88.3	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
12.05.23/1800	15.0/88.9	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
13.05.23/0600	16.6/89.9	150-160 GUSTING TO 175	VERY SEVERE CYCLONIC STORM
13.05.23/1800	18.3/91.2	150-160 GUSTING TO 175	VERY SEVERE CYCLONIC STORM
14.05.23/0600	20.1/92.7	150-160 GUSTING TO 175	VERY SEVERE CYCLONIC STORM
14.05.23/1800	22.3/94.5	85-95 GUSTING TO 105	SEVERE CYCLONIC STORM
15.05.23/0600	24.5/96.4	45-55 GUSTING TO 65	DEPRESSION

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 45 KNOTS GUSTING TO 55 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 996 HPA. SEA CONDITION IS VERY ROUGH TO HIGH OVER SOUTHEAST & ADJOINING EASTCENTRAL BAY OF BENGAL AND ADJOINING AREAS OF ANDAMAN SEA.

AS PER SATELLITE IMAGERY, INTENSITY IS T3.0. CLOUDS ASSOCIATED WITH THE SYSTEM ARE ORGANISED IN CURVED BAND PATTERN. INTENSE TO VERY INTENSE CONVECTION LAY OVER THE WESTERN SECTOR OF SYSTEM CENTRE. ASSOCIATED BROKEN LOW/MED CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH BAY OF BENGAL BETWEEN LATITUDE 7.0N TO 17.5N AND LONG 80.0E TO 91.0E. MINIMUM CLOUD TOP TEMPERATURE (CTT) IS MINUS 93 DEG CELSIUS.

AT 0900 UTC THE OBSERVATIONS FROM BUOYS OVER THE CENTRAL BAY OF BENGAL ARE INDICATING STRENGTHENING OF THE SYSTEM. BUOY1 NEAR 13.9°N/87.0°E REPORTED MEAN SEA LEVEL PRESSURE OF 1000.6 HPA. BUOY2 NEAR 16.3°N/87.9°E REPORTED MEAN SEA LEVEL PRESSURE OF 1003.8 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 290⁰/19.4 KTS. BUOY3 NEAR 17.4°N/89.1°E REPORTED MEAN SEA LEVEL PRESSURE OF 1004.9 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 320⁰/17.5 KTS.

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

STORM SURGE WITH HEIGHT OF ABOUT 2.0-2.5 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/CM² OVER MAJOR PARTS OF SOUTHEAST AND CENTRAL BAY OF BENGAL (BOB). IT IS INDICATING DECREASING TENDENCY ABOUT 60-70 KJ/CM² 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.

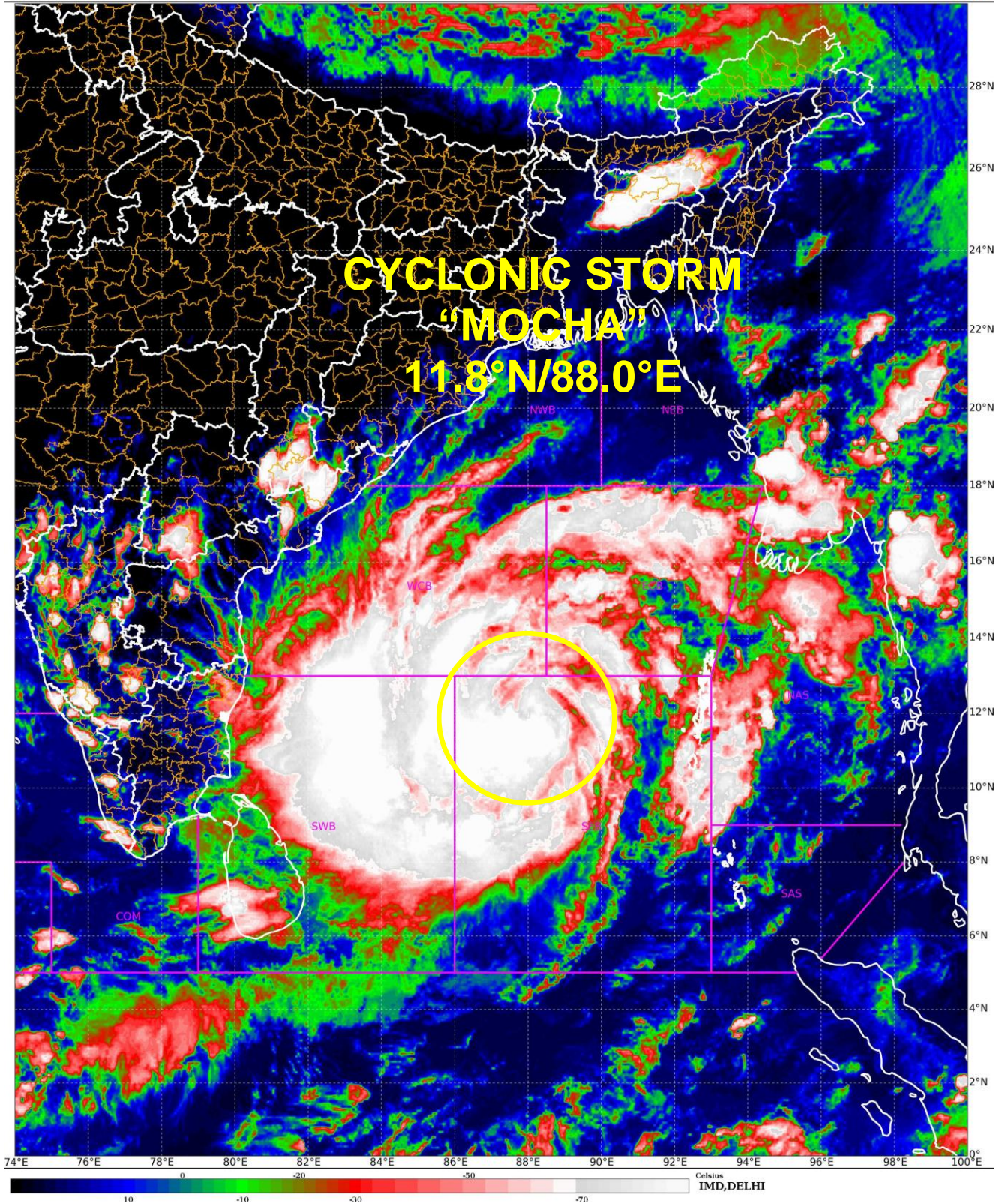
CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE LOW LEVEL VORTICITY AT 850 HPA HAS INCREASED DURING PAST 6 HOURS AND IS AROUND 250X10⁻⁶S⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVELS. LOW LEVEL CONVERGENCE IS AROUND 30 X10⁻⁵ S⁻¹ TO THE SOUTH OF THE SYSTEM CENTER. UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT 40X10⁻⁵S⁻¹ TO THE SOUTHWEST AND ANOTHER ZONE OF 20X10⁻⁵S⁻¹ TO THE NORTHEAST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS LOW TO MODRATE (10-15 KNOTS) OVER THE SYSTEM AREA. STRONG POLEWARD AND EQUATORWARD OUTFLOW IS SEEN. HIGHER SEA SURFACE TEMPERATURE, POLEWARD & EQUATORWARD OUTFLOW AND MODERATE WIND SHEAR ARE FAVOURABLE CONDITIONS FOR FURTHER INTENSIFICATION OF THE SYSTEM. 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. CURRENT MODEL GUIDANCE IS NOT INDICATING WEAKENING OF THE SYSTEM BEFORE LANDFALL. IMD GFS IS INDICATING LANDFALL AROUND 14/0600 UTC NEAR 20.0N/93.6E. ECMWF IS INDICATING LANDFALL AROUND 14/0900 UTC NEAR 20.5N/92.2E. IMD MME IS INDICATING LANDFALL AROUND 14/1000 UTC NEAR 20.2N/92.9E.

IT IS CONCLUDED THAT THE CYCLONIC STORM "MOCHA" OVER SOUTHEAST BAY OF BENGAL IS VERY LIKELY TO MOVE NEARLY NORTHWARDS AND GRADUALLY INTENSIFY INTO A SEVERE CYCLONIC STORM AROUND 1200 UTC OF TODAY, THE 11TH MAY AND FURTHER INTO A VERY SEVERE CYCLONIC STORM AROUND 0000 UTC OF 12TH MAY OVER CENTRAL BAY OF BENGAL. THEREAFTER, IT IS LIKELY TO RECURVE GRADUALLY AND MOVE NORTH-NORTHEASTWARDS WITH FURTHER INTENSIFICATION. IT IS LIKELY TO CROSS SOUTHEAST BANGLADESH AND NORTH MYANMAR COASTS BETWEEN COX'S BAZAR (BANGLADESH, 41992) AND KYAUKPYU (MYANMAR, 48071), CLOSE TO SITTWE (MYANMAR, 48062) AROUND NOON OF 14TH MAY, 2023 AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 150-160 KMPH GUSTING TO 175 KMPH.

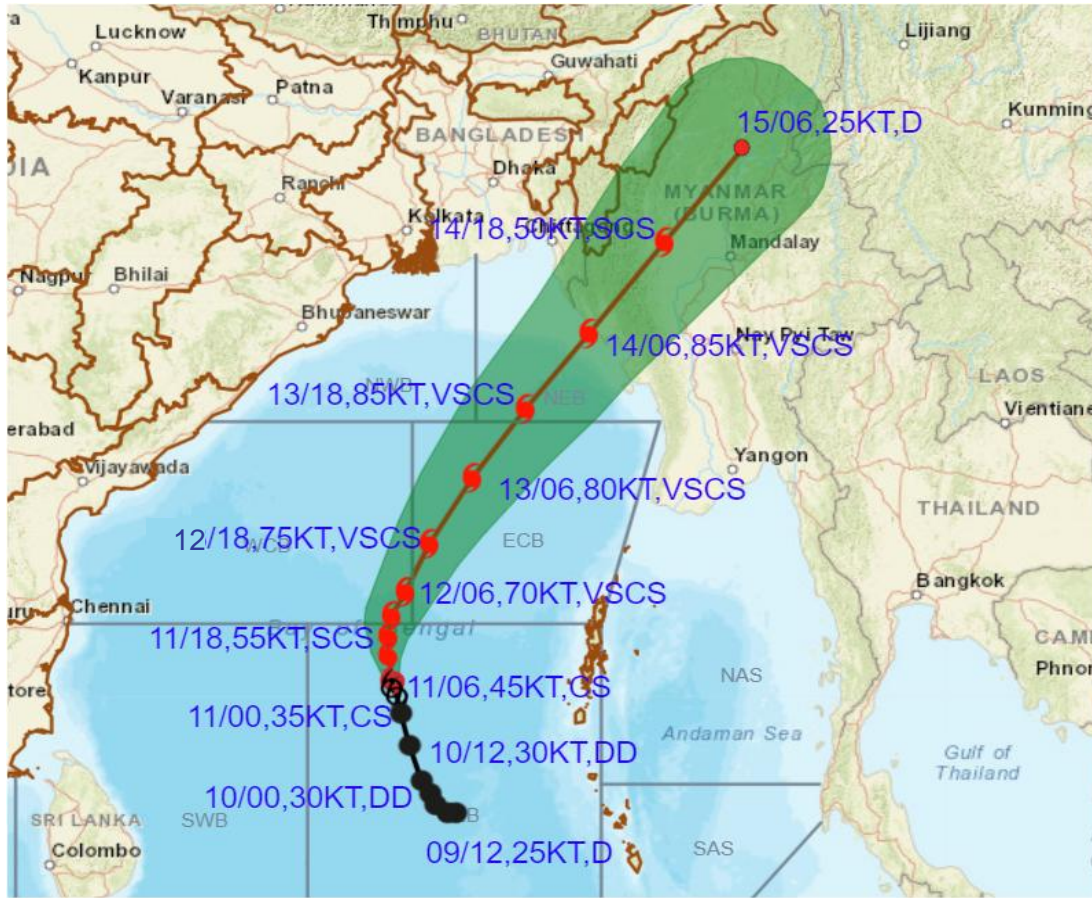
(M SHARMA)
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RSMC NEW DELHI



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OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF CYCLONE MOCHA OVER SOUTHEAST BAY OF BENGAL BASED ON 0600 UTC (1130 IST) OF 11TH 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

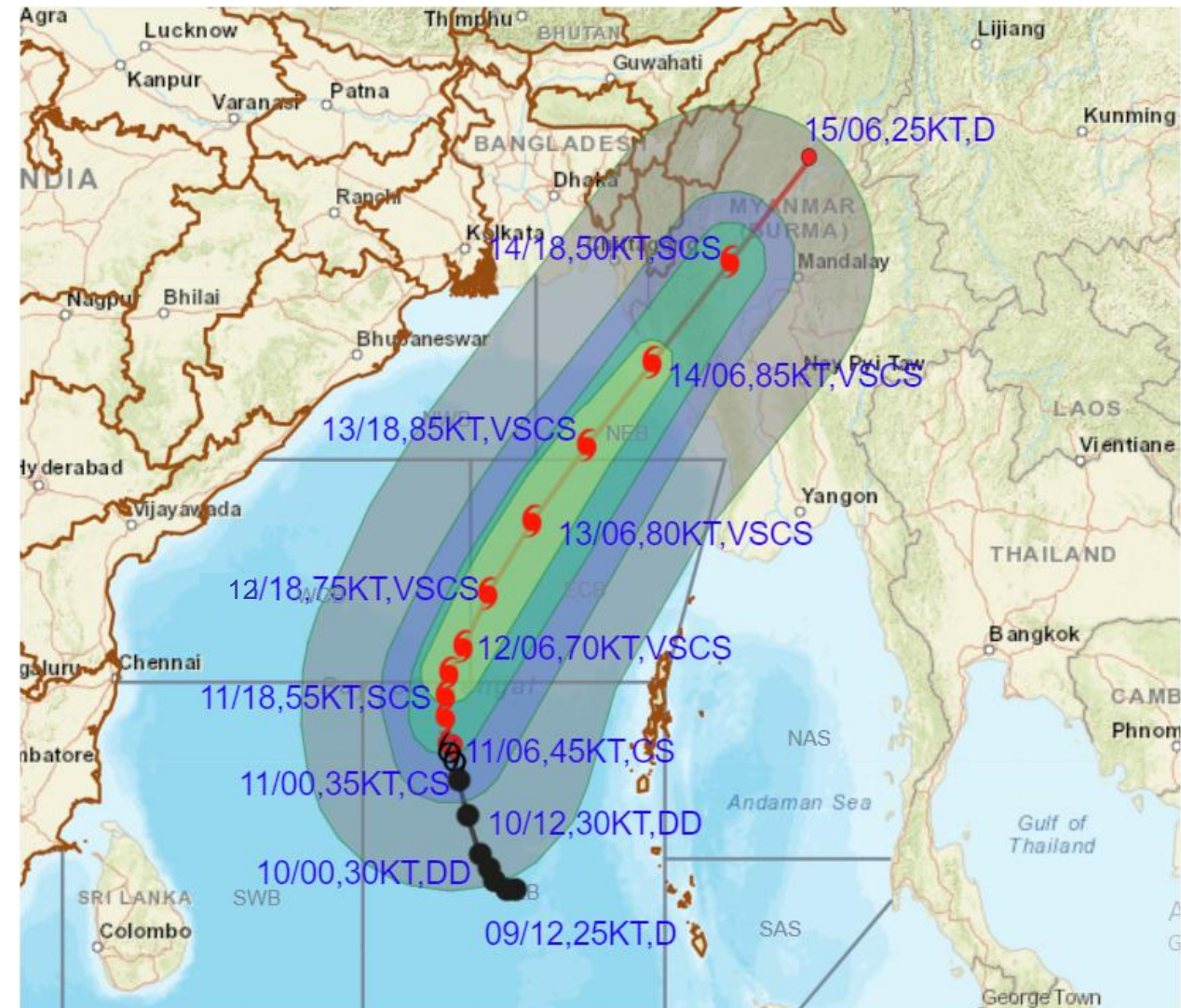
Forecast distance (km) and direction of the centre from nearest 5 coastal stations

Forecast Date and Time	Lead Period	Lat	Lon	Station 1	Station 2	Station 3	Station 4	Station 5
11.05.23/0600	0	11.6	88.0	HUT BAY (510,WNW)	PORT BLAIR (514,W)	LONG ISLAND (545,W)	MAYA BANDAR (555,WSW)	CAR NICOBAR (594,WNW)
12.05.23/0600	24	13.8	88.3	MAYA BANDAR (510,WNW)	LONG ISLAND (525,WNW)	PORT BLAIR (535,WNW)	COCO ISLAND (548,W)	HUT BAY (585,NW)
13.05.23/0600	48	16.6	89.9	COCO ISLAND (464,NW)	MANAUNG (477,WSW)	KYAUKPYU (498,SW)	SITTWE (504,SW)	SANDHEADS (504,SSE)
14.05.23/0600	72	20.1	92.7	SITTWE (20,W)	KYAUKTAW (84,S)	TEKNAF (95,SSE)	KYAUKPYU (117,NW)	COX'S BAZAR (169,SSE)
15.05.23/0600	96	24.5	96.4	KATHA (38,N)	BHAMO (85,WNW)	PINLEBU (115,ENE)	MYITKYINA (140,SW)	HOMALIN (155,ESE)

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OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONE MOCHA OVER SOUTHEAST BAY OF BENGAL BASED ON 0600 UTC (1130 IST) OF 11TH MAY 2023



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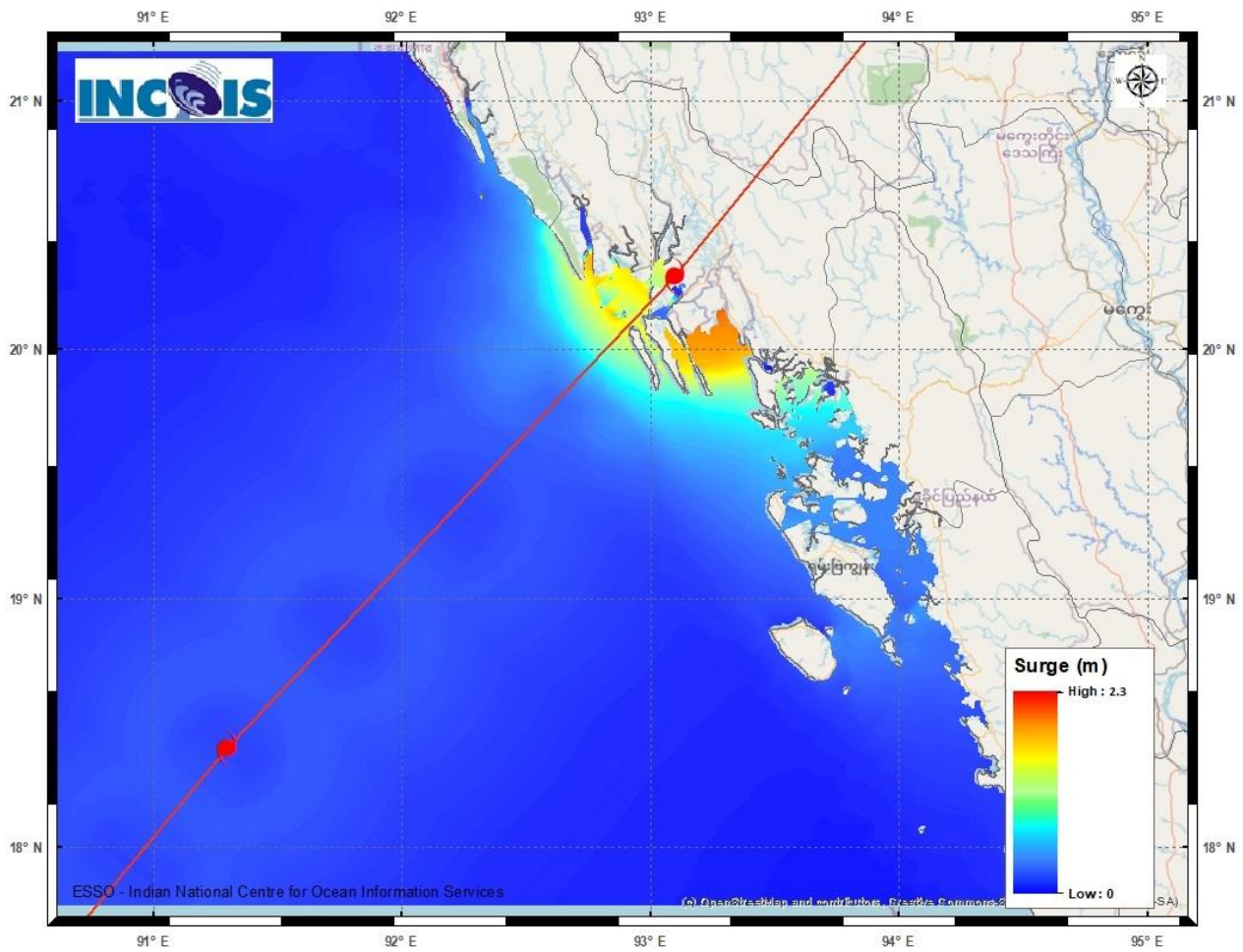
- LESS THAN 34 KT
- 34-47 KT
- \geq 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY
- AREA OF MAXIMUM SUSTAINED WIND SPEED:
- 28-33 KT (52-61 KMPH)
- 34-49 KT (62-91 KMPH)
- 50-63 KT (92-117 KMPH)
- \geq 64 KT (\geq 118 KMPH)

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

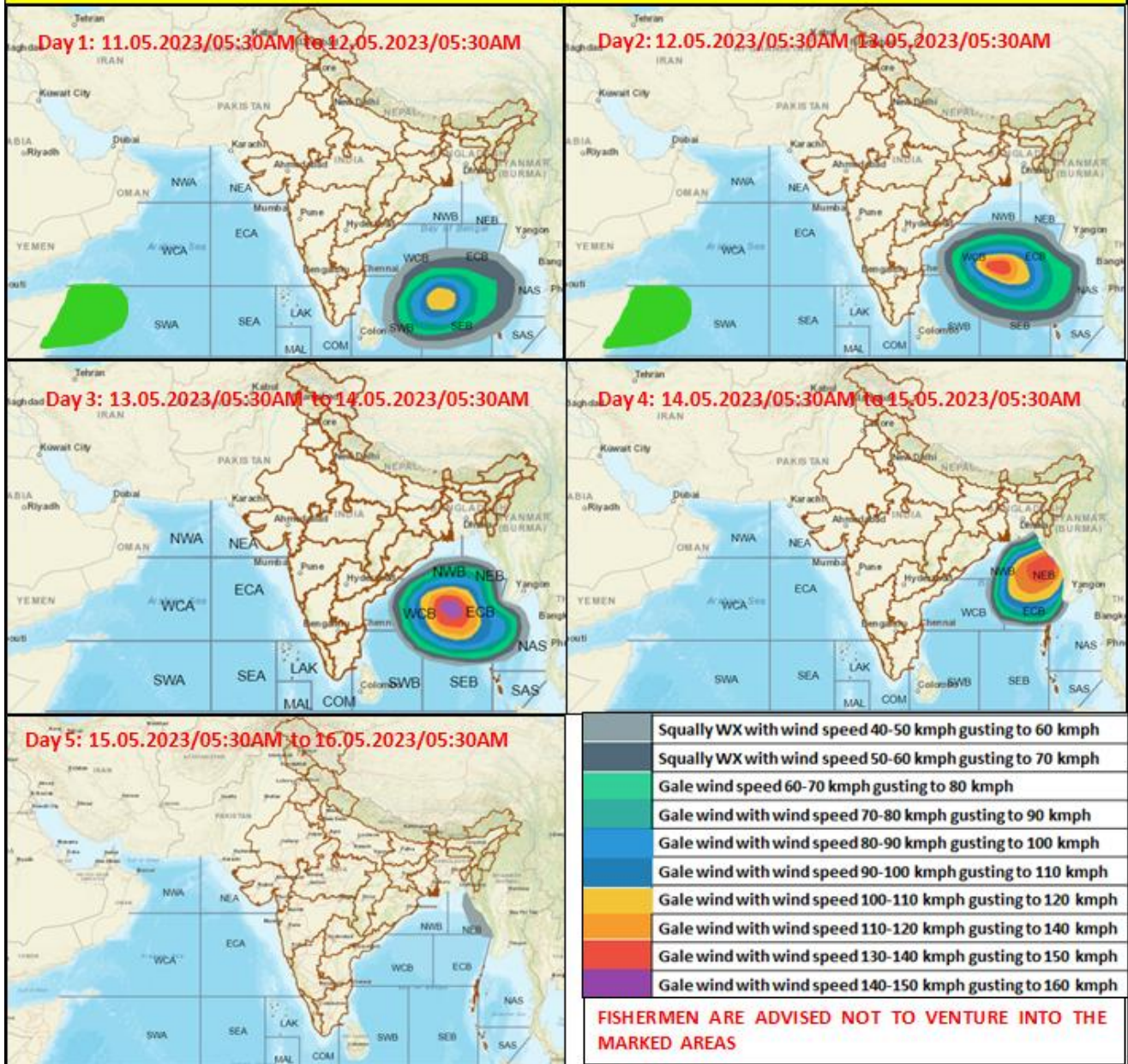
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Storm Surge Warning Graphics



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Fishermen warning graphics



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