



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 9

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 12.05.2023

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. 9 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 12.05.2023 BASED ON 0000 UTC OF 12.05.2023

SUBJECT: SEVERE CYCLONIC STORM “MOCHA” OVER SOUTHEAST ADJOINING CENTRAL BAY OF BENGAL INTENSIFIED INTO A VERY SEVERE CYCLONIC STORM OVER CENTRAL ADJOINING SOUTHEAST BAY OF BENGAL

THE SEVERE CYCLONIC STORM “MOCHA” (PRONOUNCED AS “MOKHA”) OVER SOUTHEAST ADJOINING CENTRAL BAY OF BENGAL MOVED NORTHWARDS WITH A SPEED OF 09 KMPH DURING PAST 06 HOURS, INTENSIFIED INTO A VERY SEVERE CYCLONIC STORM AND LAY CENTERED AT 0000 UTC TODAY, THE 12TH MAY 2023 OVER CENTRAL ADJOINING SOUTHEAST BAY OF BENGAL NEAR LATITUDE 13.2°N AND LONGITUDE 88.1°E, ABOUT 520 KM WEST-NORTHWEST OF PORT BLAIR, 1010 KM SOUTH-SOUTHWEST OF COX’S BAZAR (BANGLADESH) AND 930 KM SOUTH-SOUTHWEST OF SITTWE (MYANMAR).

IT IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS AND INTENSIFY FURTHER OVER EASTCENTRAL BAY OF BENGAL. IT IS LIKELY TO CROSS SOUTHEAST BANGLADESH AND NORTH MYANMAR COASTS BETWEEN COX’S BAZAR (BANGLADESH) AND KYAUKPYU (MYANMAR), CLOSE TO SITTWE (MYANMAR) 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 |
|-----------------|----------------------------|---|----------------------------------|
| 12.05.23/0000 | 13.2/88.1 | 115-125 GUSTING TO 135 | VERY SEVERE CYCLONIC STORM |
| 12.05.23/0600 | 13.8/88.3 | 125-135 GUSTING TO 150 | VERY SEVERE CYCLONIC STORM |
| 12.05.23/1200 | 14.5/88.6 | 135-145 GUSTING TO 160 | VERY SEVERE CYCLONIC STORM |
| 12.05.23/1800 | 15.2/89.0 | 140-150 GUSTING TO 165 | VERY SEVERE CYCLONIC STORM |
| 13.05.23/0000 | 15.9/89.4 | 145-155 GUSTING TO 170 | VERY SEVERE CYCLONIC STORM |
| 13.05.23/1200 | 17.5/90.5 | 150-160 GUSTING TO 175 | VERY SEVERE CYCLONIC STORM |
| 14.05.23/0000 | 19.1/91.9 | 150-160 GUSTING TO 175 | VERY SEVERE CYCLONIC STORM |
| 14.05.23/1200 | 21.3/93.7 | 100-110 GUSTING TO 120 | SEVERE CYCLONIC STORM |
| 15.05.23/0600 | 23.5/95.5 | 40-50 GUSTING TO 60 | DEPRESSION |

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 65 KNOTS GUSTING TO 75 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 988 HPA. SEA CONDITION IS HIGH TO VERY HIGH OVER SOUTHEAST & ADJOINING EASTCENTRAL BAY OF BENGAL AND ADJOINING AREAS OF ANDAMAN SEA.

AS PER SATELLITE IMAGERY, INTENSITY IS T4. CLOUDS ASSOCIATED WITH THE SYSTEM ARE ORGANISED IN CURVED BAND PATTERN. ASSOCIATED BROKEN LOW/MED CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL AND ADJOINING BAY OF BENGAL BETWEEN LATITUDE 8.0N TO 18.0N AND LONG 80.0E TO 93.0E. MINIMUM CLOUD TOP TEMPERATURE (CTT) IS MINUS 93 DEG CELSIUS.

AT 0000 UTC A BUOY NEAR 10.7°N/94.0°E REPORTED MEAN SEA LEVEL PRESSURE OF 1007.7 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 180⁰/21.4 KTS. ANOTHER BUOY NEAR 16.2°N/88°E REPORTED MEAN SEA LEVEL PRESSURE OF 1001.2 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 300⁰/23.3 KTS. A SHIP NEAR 11.5°N/92.5°E REPORTED MEAN SEA LEVEL PRESSURE OF 1010.3 HPA.

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

STORM SURGE WITH HEIGHT OF ABOUT 2.0-2.7 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 TO AROUND 300X10⁻⁶S⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVELS. LOW LEVEL CONVERGENCE HAS INCREASED TO AROUND 30 X10⁻⁵ S⁻¹ OVER THE SOUTH-SOUTHWEST OF THE SYSTEM

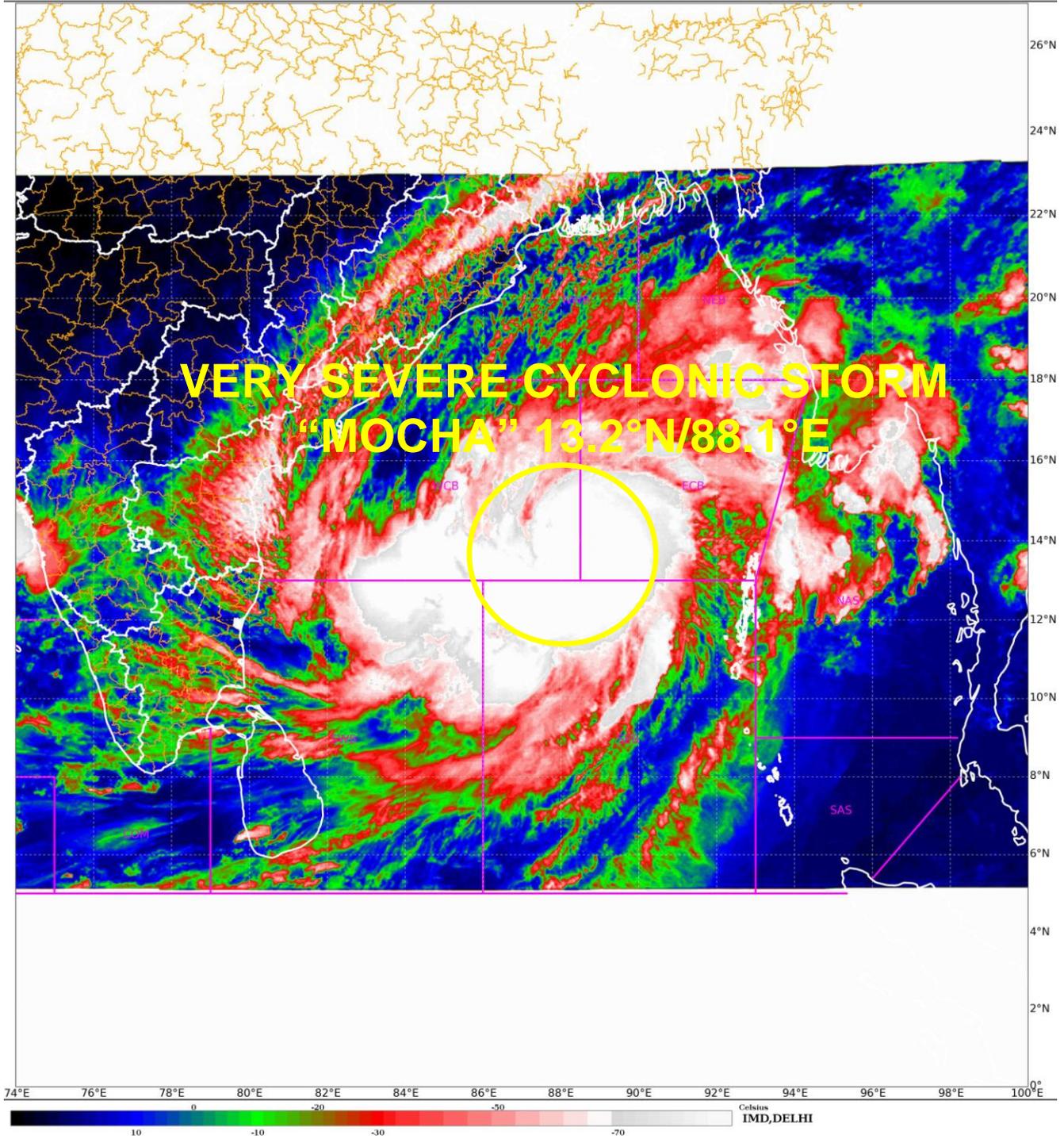
Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION): NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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CENTER. UPPER LEVEL DIVERGENCE IS ABOUT $30 \times 10^{-5} \text{S}^{-1}$ TO THE SOUTH AND THE ANOTHER ZONE OVER THE NORTHEAST OF THE SYSTEM CENTER IS ABOUT $40 \times 10^{-5} \text{S}^{-1}$. THE VERTICAL WIND SHEAR IS MODERATE (15-20 KNOTS) OVER THE SYSTEM AREA AND 5-10 KNOTS OVER THE NORTHEAST OF THE SYSTEM. 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 ANTICYCLONE LIES OVER MYANMAR. UNDER ITS INFLUENCE, THE SYSTEM IS UNDER THE PROCESSES OF RECURVATURE FROM NORTH-NORTHWEST TO NORTH-NORTHEASTWARDS DIRECTION AND IT IS EXPECTED TO MOVE 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 20.8N/92.8E. ECMWF IS INDICATING LANDFALL AROUND 14/0900 UTC NEAR 20.8N/92.2E. IMD MME IS INDICATING LANDFALL AROUND 14/0900 UTC NEAR 20.3N/92.8E.

IT IS CONCLUDED THAT THE VERY SEVERE CYCLONIC STORM "MOCHA" OVER CENTRAL ADJOINING SOUTHEAST BAY OF BENGAL IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS AND INTENSIFY FURTHER OVER EASTCENTRAL BAY OF BENGAL. IT IS LIKELY TO CROSS SOUTHEAST BANGLADESH AND NORTH MYANMAR COASTS BETWEEN COX'S BAZAR (BANGLADESH) AND KYAUKPYU (MYANMAR), CLOSE TO SITTWE (MYANMAR) 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.

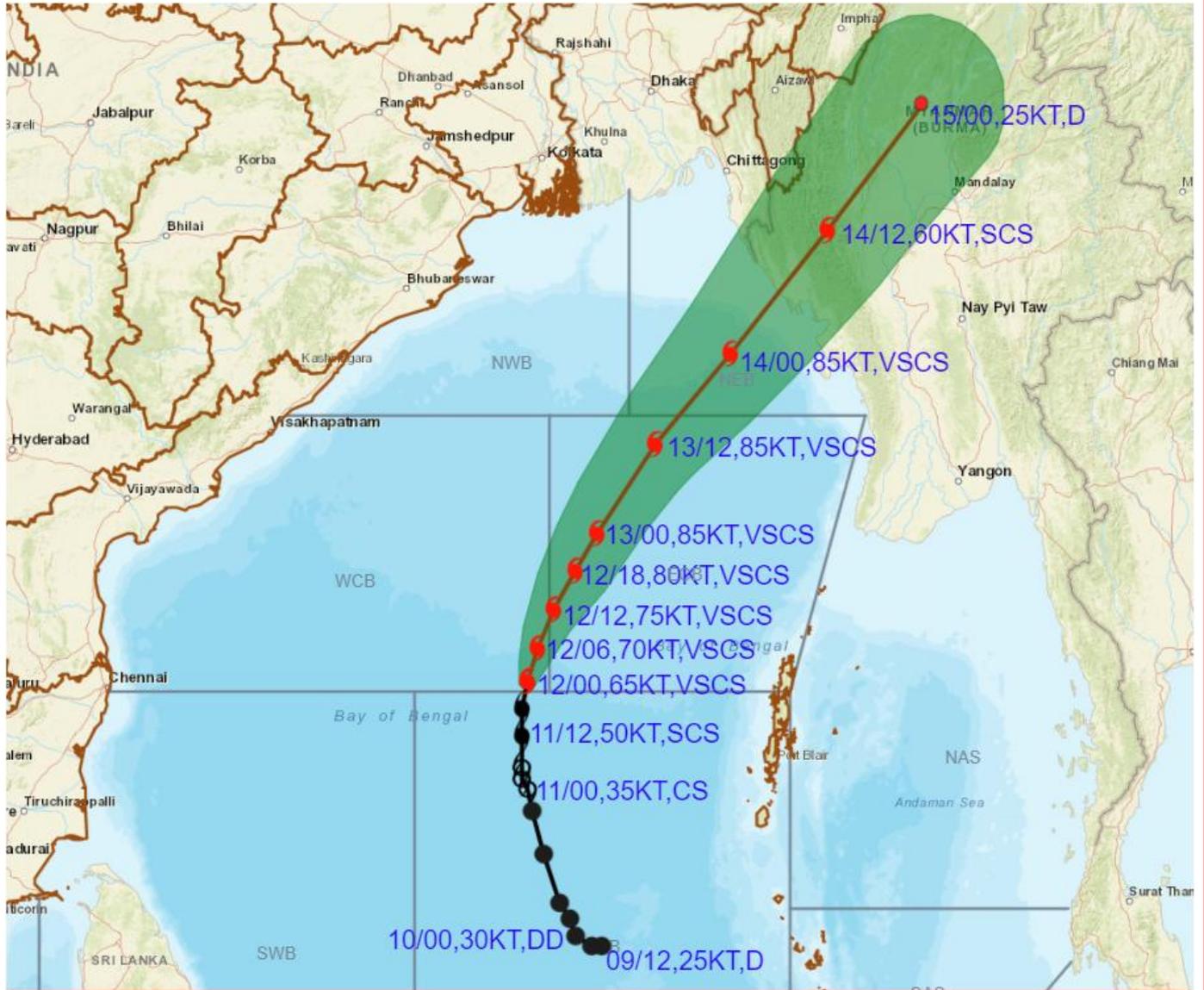
(M. T. BUSHAIR)
SCIENTIST-C
RSMC NEW DELHI



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OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM MOCHA OVER CENTRAL AND ADJOINING SOUTHEAST BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 12TH 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

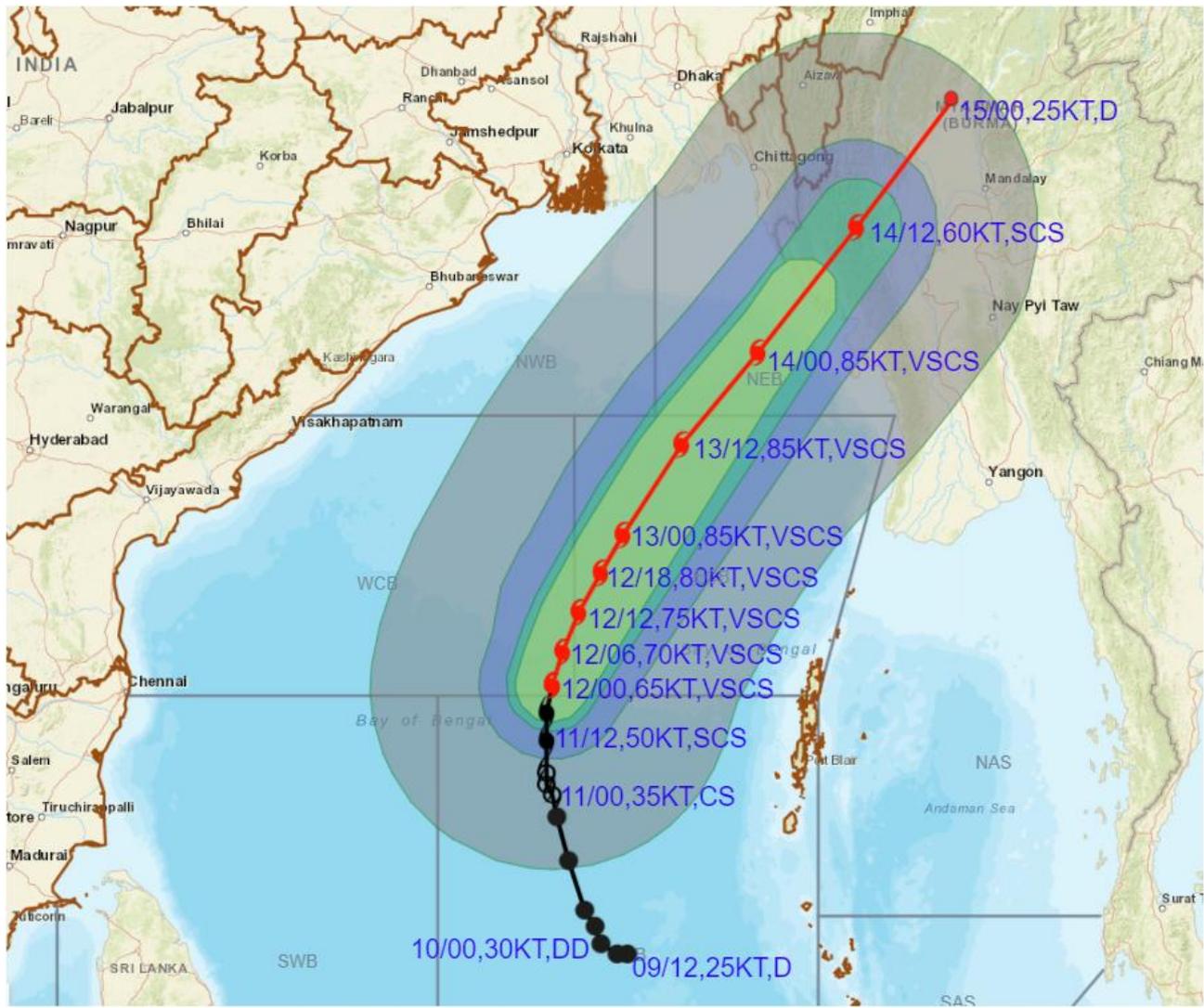
— OBSERVED TRACK

— FORECAST TRACK

▲ CONE OF UNCERTAINTY



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM MOCHA OVER CENTRAL AND ADJOINING SOUTHEAST BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 12TH MAY 2023.



DATE/TIME IN UTC
 IST=UTC + 0530
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 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
 SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

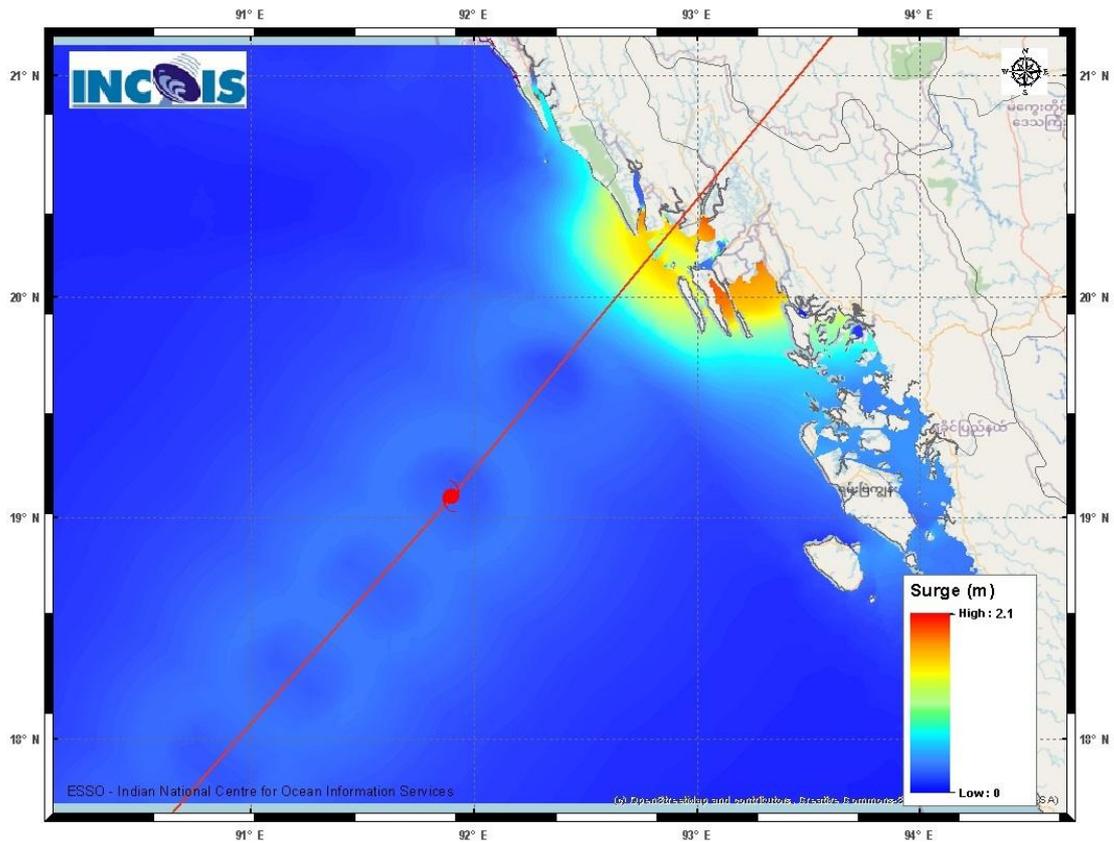
● LESS THAN 34 KT
 ○ 34-47 KT
 ● ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ▲ CONE OF UNCERTAINTY
 AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥118 KMPH)

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 |

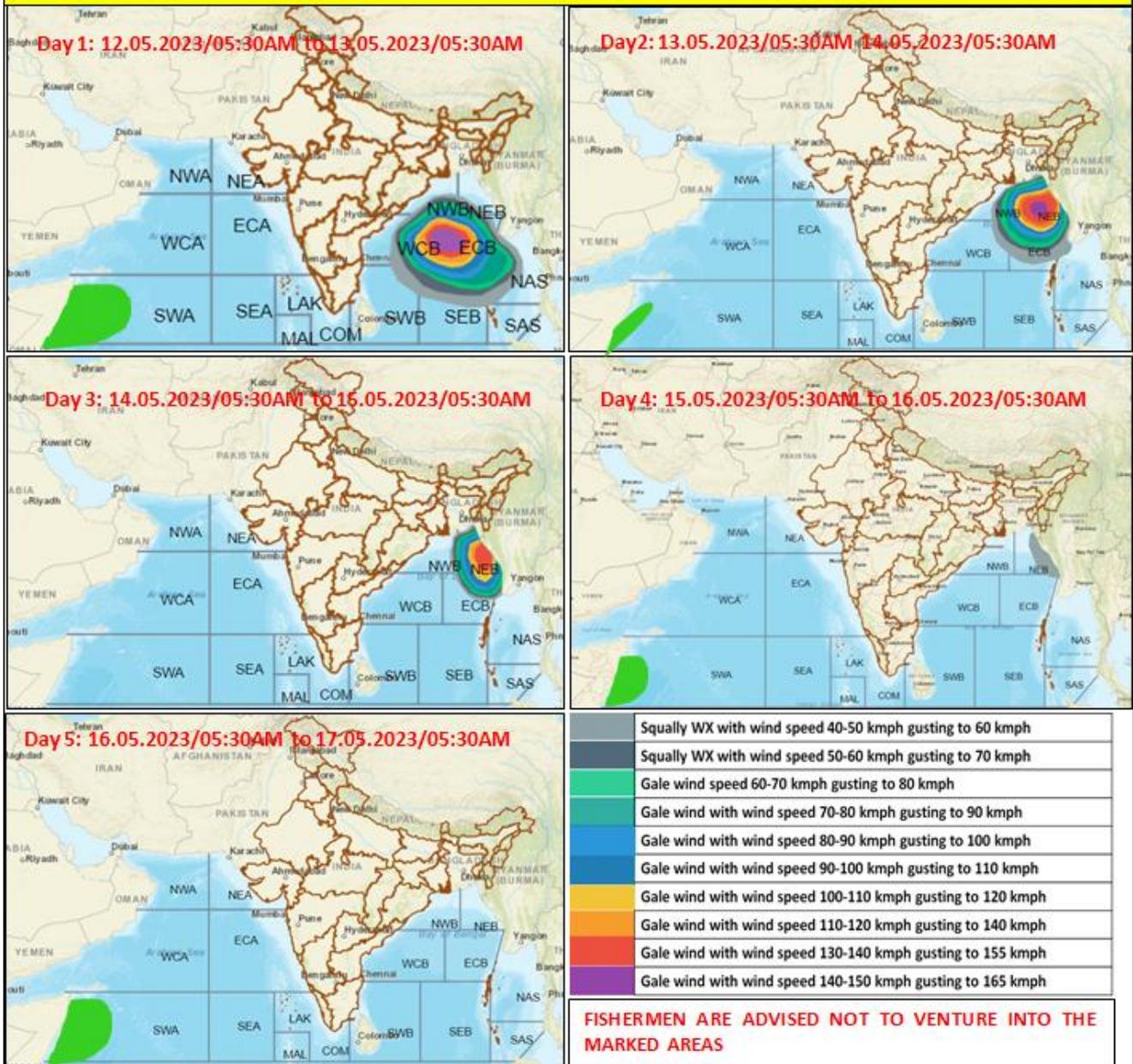
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Storm Surge Warning Graphics



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Fishermen warning graphics



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