REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI

TROPICAL CYCLONE ADVISORY NO. 13

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. 13 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 12.05.2023 BASED ON 1200 UTC OF 12.05.2023

SUBJECT: VERY SEVERE CYCLONIC STORM "MOCHA" OVER CENTRAL BAY OF BENGAL

THE **VERY *SEVERE CYCLONIC STORM* "MOCHA"** (PRONOUNCED AS **"MOKHA")** OVER CENTRAL BAY OF BENGAL MOVED NEARLY NORTH-NORTHEASTWARDS WITH A SPEED OF 12 KMPH DURING PAST 06 HOURS AND LAY CENTERED 1200 UTC OF 12TH MAY 2023 OVER THE SAME REGION NEAR LATITUDE 14.6°N AND LONGITUDE 88.6°E, ABOUT 550 KM NORTH-WEST OF PORT BLAIR (INDIA, 43333), 730 KM SOUTH-SOUTHWEST OF COX'S BAZAR (BANGLADESH, 41992) AND 760 KM SOUTH-WEST OF SITTWE (MYANMAR, 48062).

IT IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS AND INTENSIFY FURTHER INTO AN EXTREMELY SEVERE CYCLONIC STORM OVER EASTCENTRAL BAY OF BENGAL AROUND 1800 UTC OF 12TH MAY 2023. 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 0600 UTC 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. ^{0}N/ LONG. ^{0}E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
12.05.23/1200	14.6/88.6	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
12.05.23/1800	15.2/88.9	160-170 GUSTING TO 185	EXTREMELY SEVERE CYCLONIC STORM
13.05.23/0000	15.9/89.3	170-180 GUSTING TO 200	EXTREMELY SEVERE CYCLONIC STORM
13.05.23/0600	16.7/89.9	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
13.05.23/1200	17.5/90.5	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
14.05.23/0000	19.2/91.9	170-180 GUSTING TO 200	EXTREMELY SEVERE CYCLONIC STORM
14.05.23/0600	20.2/92.7	150-160 GUSTING TO 175	EXTREMELY SEVERE CYCLONIC STORM
14.05.23/1200	21.2/93.6	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
15.05.23/0000	23.5/95.5	55-65 GUSTING TO 75	DEEP DEPRESSION

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 80 KNOTS GUSTING TO 95 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 972 HPA. SEA CONDITION IS PHENOMENAL OVER CENTRAL AND ADJOINING SOUTHEAST BAY OF BENGAL.

AS PER SATELLITE IMAGERY, INTENSITY IS CI 4.5 AND BANDING EYE IS OBSERVED IN IR IMAGERY AND EYE TEMPERATURE IS -40 DEGREES. CLOUD BANDING IS THICK AND WELL DEFINED IN IR IMAGERY. MICROWAVE IMAGERY SHOWS INTENSE CONVECTION IN THE SOUTH WEST SECTOR OF THE SYSTEM CENTRE (.)ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL AND ADJOINING SOUTH BAY OF BENGAL BETWEEN 10.0^{0}N & 19.0^{0}N AND 82.0^{0}E & 93.7^{0}E. MINIMUM CLOUD TOP TEMPERATURE (CTT) IS MINUS 93 DEG CELSIUS.

AT 1200 UTC A BUOY NEAR 13.9°N/87.0°E REPORTED MEAN SEA LEVEL PRESSURE OF 994.5 HPA. ANOTHER BUOY NEAR 16.2°N/88°E REPORTED MEAN SEA LEVEL PRESSURE OF 996.2 HPA.

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/CM^2 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 UPTO 10N. THEREAFTER, IT WILL DECREASE SLIGHTLY OFF MYANMAR-BANGLADESH COASTS. TOTAL PRECIPITABLE WATER IMAGERY (TPW) INDICATES WARM MOIST AIR INCURSION FROM SOUTH-SOUTHWEST SECTOR INTO THE SYSTEM AREA TILL LANDFALL. THESE FEATURES INDIACTE FURTHER INTENSIFICATION OF THE SYSTEM TILL 1800 UTC OF 13TH MAY.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE LOW LEVEL VORTICITY AT 850 HPA IS AROUND 300X10^{-6}S^{-1} TO THE SOUTH OF THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVELS. LOW LEVEL CONVERGENCE IS AROUND 40 X10^{-5} S^{-1} OVER THE SYSTEM CENTER. UPPER LEVEL DIVERGENCE IS ABOUT 30X10^{-5}S^{-1} OVER THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODRATE (15-20 KNOTS) OVER THE SYSTEM AREA. IT IS HIGH ABOUT 30-40 KTS OVER NORTHEAST BAY OF BENGAL OFF BANGLADESH-MYANMAR COASTS. HIGHER SEA SURFACE TEMPERATURE, POLEWARD & EQUATORWARD OUTFLOW AND MODERATE WIND SHEAR ARE FAVOURABLE CONDITIONS

FOR FURTHER INTENSIFICATION OF THE SYSTEM UPTO 13/1800 UTC. THERE IS AN ANTICYCLONIC CIRCULATION OVER SOUTH MYANMAR. A DEEP TROUGH UPTO 88E IS SEEN IN MID AND UPPER TROPSPHERIC LEVELS. DEEP LAYER MEAN WINDS INDICATE THAT THE SYSTEM IS EMBEDDED IN THE WESTERLY FLOW. UNDER THE INFLUENCE OF THESE SYSTEMS, IT IS LIKELY TO MOVE NORTH-NORTHEASTWARDS.

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 14/0300 UTC NEAR 20.5N/92.4E. ECMWF IS INDICATING LANDFALL AROUND 14/1800 UTC NEAR 21.6N/92.0E. IMD MME IS INDICATING LANDFALL AROUND 14/0000 UTC NEAR 20.4N/92.8E, NCUM (G) AROUND 14/0900 UTC NEAR 19.7N/93.6E.

IT IS CONCLUDED THAT THE VERY SEVERE CYCLONIC STORM “MOCHA” OVER CENTRAL BAY OF BENGAL IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS AND INTENSIFY FURTHER INTO AN EXTREMELY SEVERE CYCLONIC STORM OVER EASTCENTRAL BAY OF BENGAL AROUND 1800 UTC OF 12TH MAY 2023. 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 0600 UTC OF 14TH MAY, 2023 AS A ***VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 150-160 KMPH GUSTING TO 175 KMPH.***

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(S P SINGH)
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%
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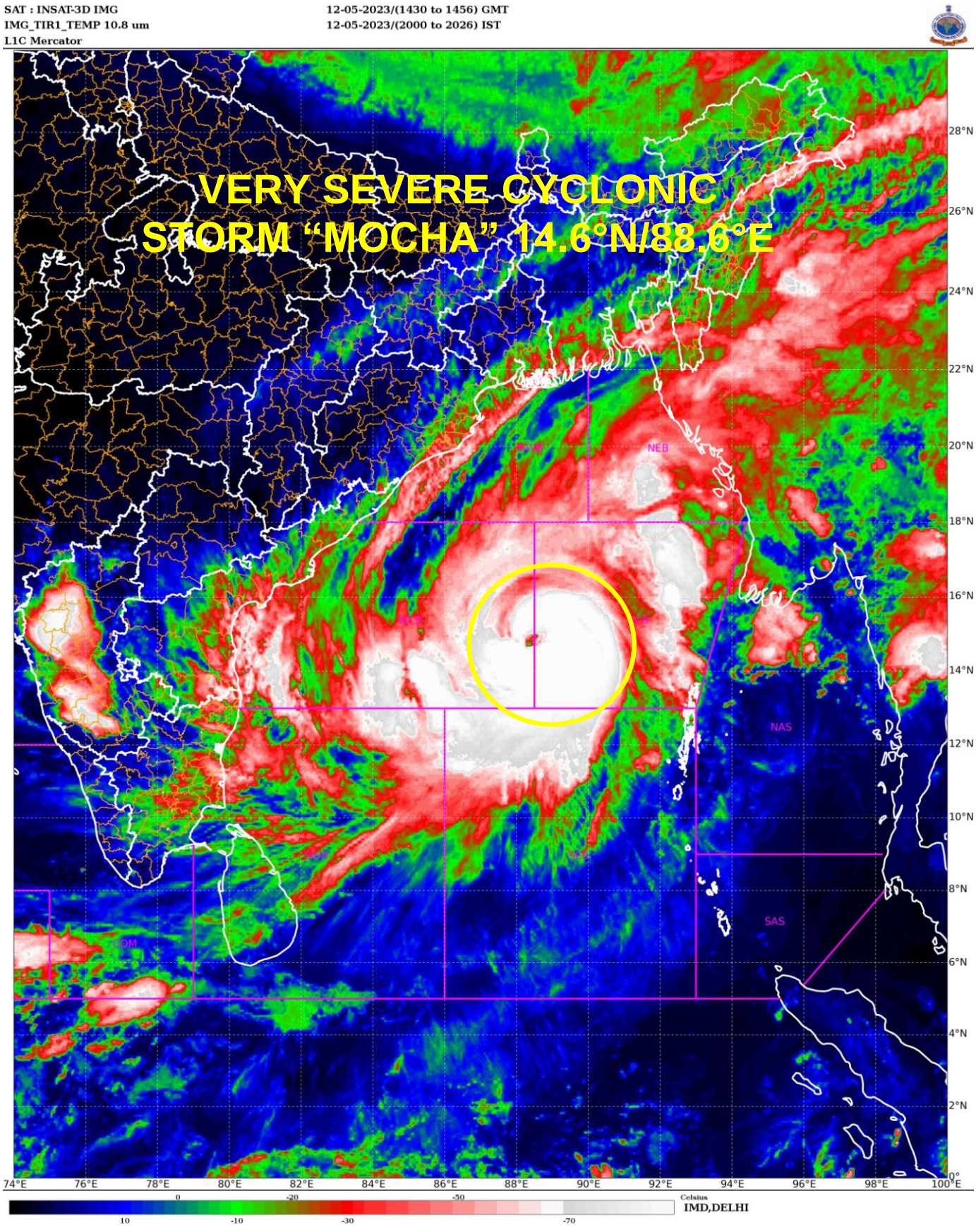

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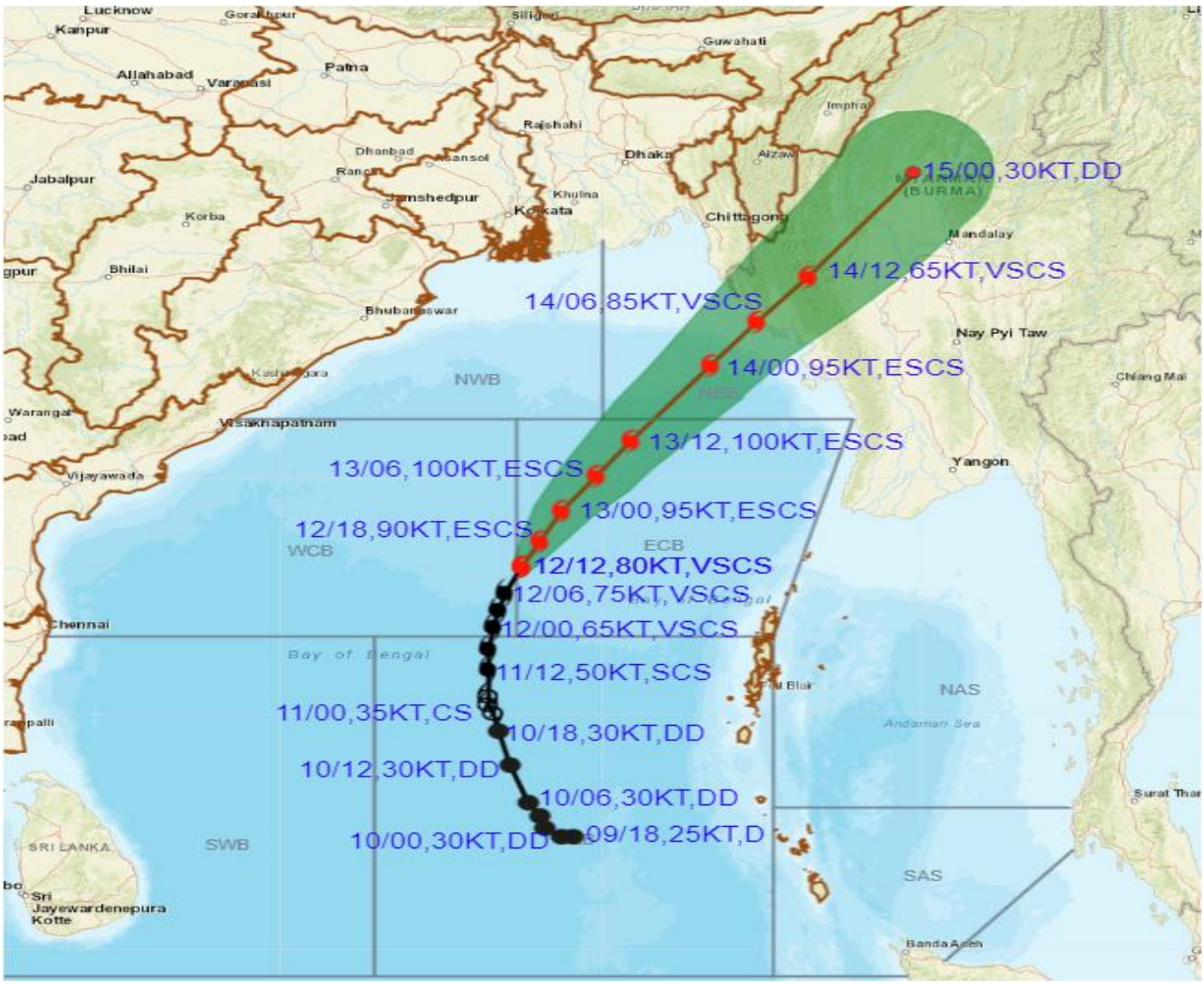
OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF VERY SEVERE CYCLONIC STORM MOCHA OVER CENTRAL BAY OF BENGAL BASED ON 1200 UTC (1730 IST) OF 12TH MAY 2023.



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 (≥ 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
12.05.23/1200	0	14.6	88.6	MAYA BANDAR (503,WNW)	COCO ISLAND (517,W)	LONG ISLAND (528,WNW)	PORT BLAIR (553,NW)	HUT BAY (620,NW)
13.05.23/1200	24	17.5	90.5	MANAUNG (374,WSW)	SITTWE (386,SW)	KYAUKPYU (386,WSW)	TEKNAF (420,SSW)	SANDOWAY (422,WSW)
14.05.23/1200	48	21.2	93.6	MINDAT (42,WSW)	KYAUKTAW (108,ENE)	GANGAW (121,SSW)	NYAUNG-U (137,W)	TEKNAF (140,ENE)

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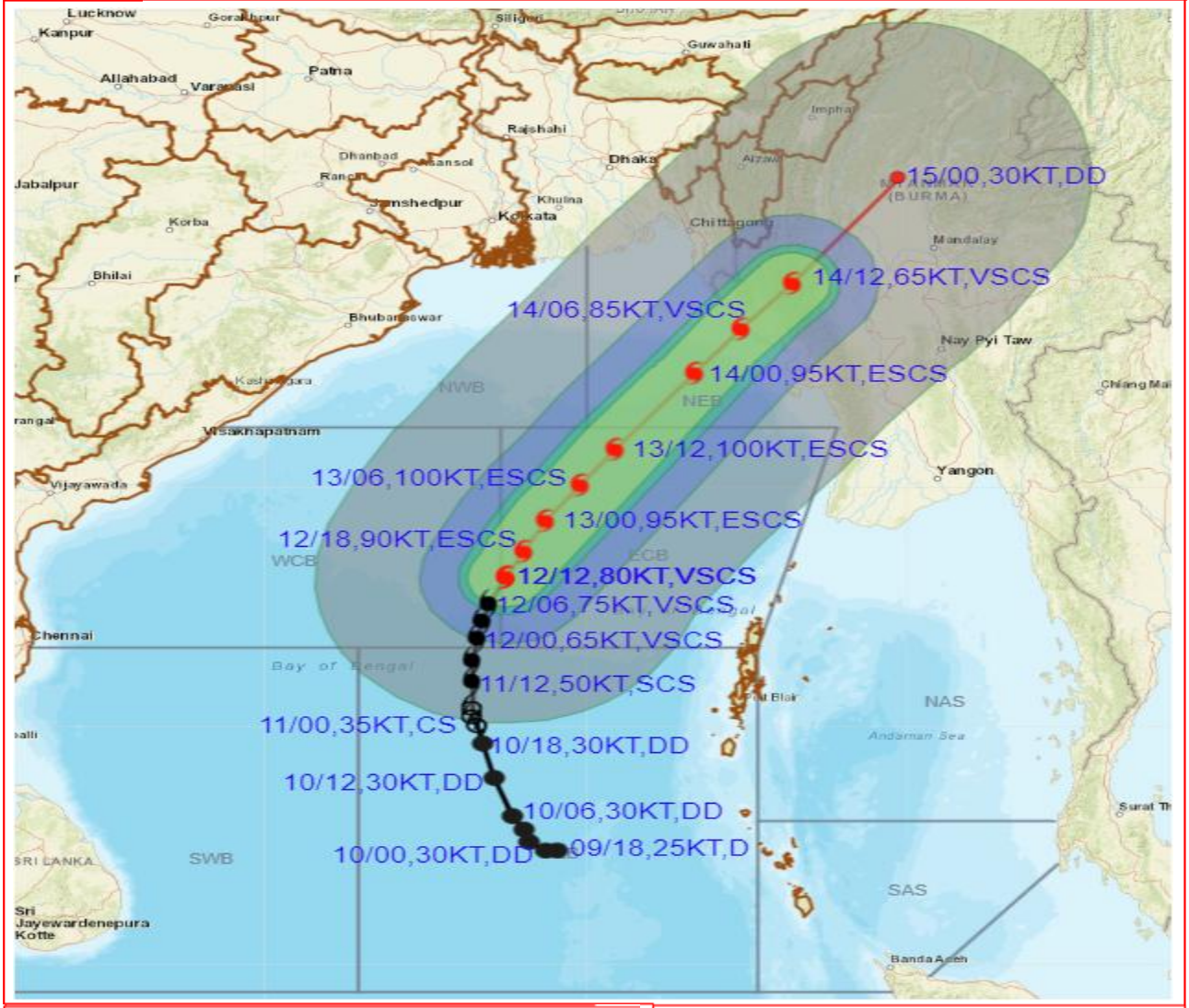

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- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

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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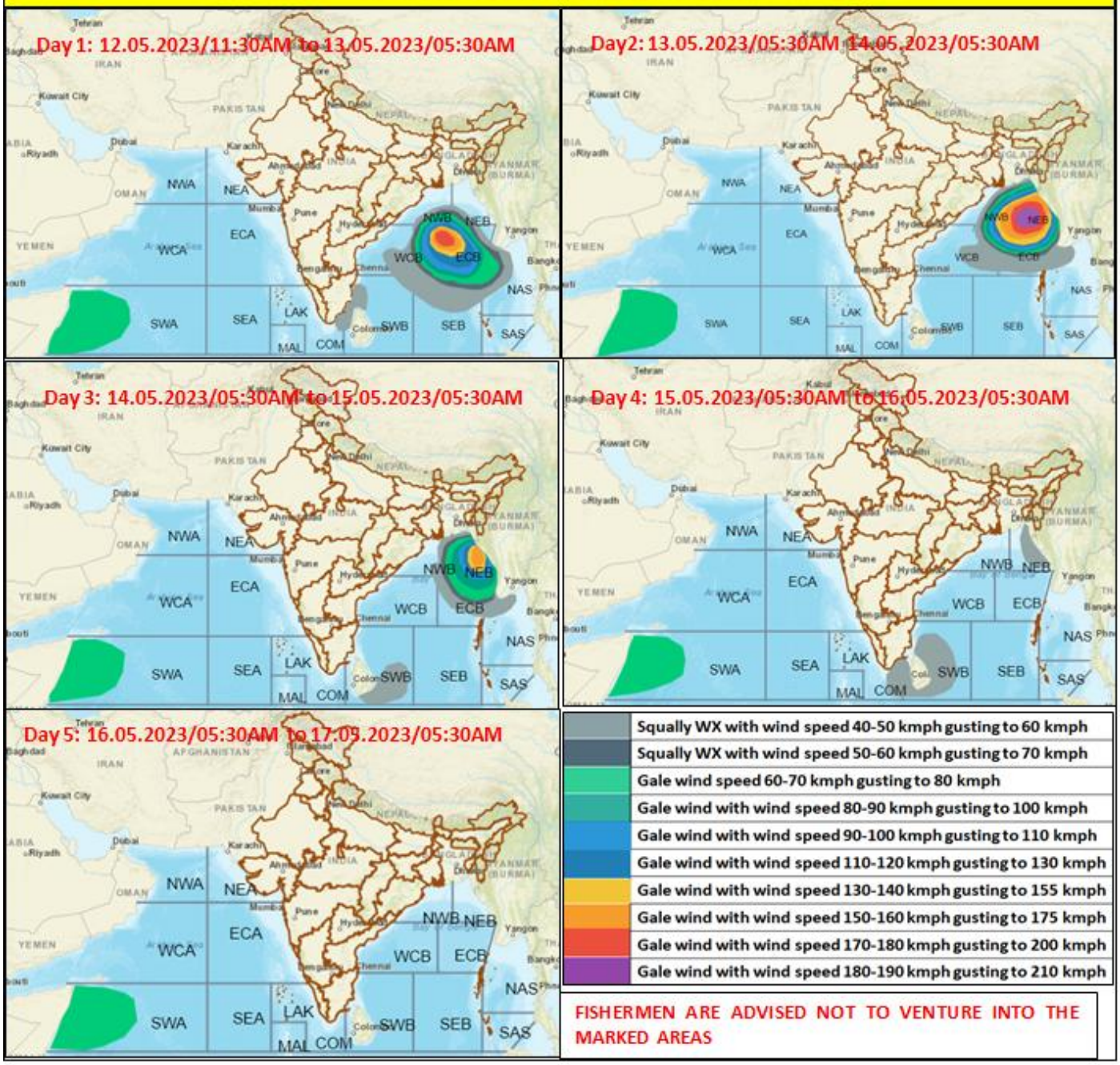
Fishermen warning graphics



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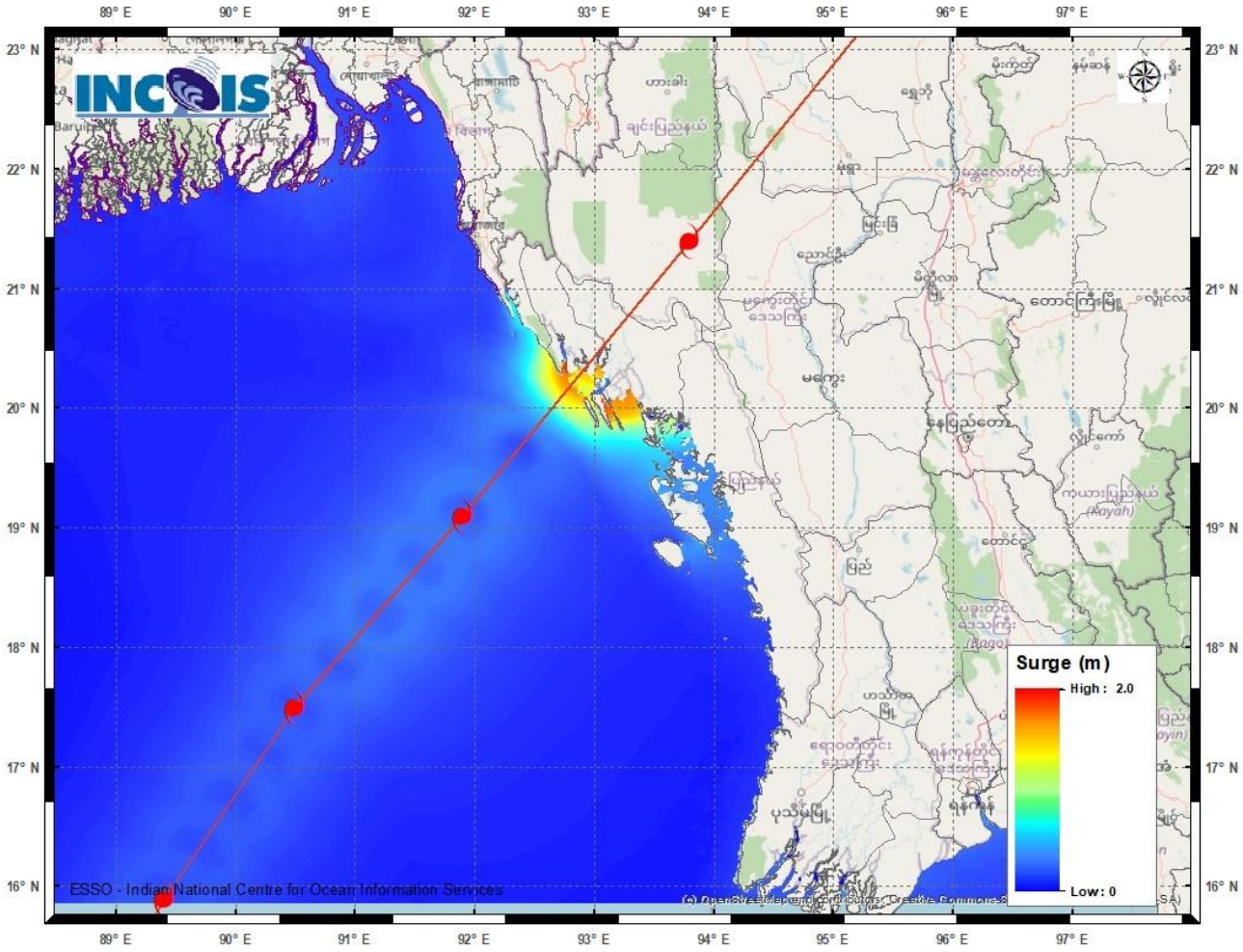
Storm Surge Warning Graphics



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