



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 10

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. 10 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0700 UTC OF 12.05.2023 BASED ON 0300 UTC OF 12.05.2023

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

THE VERY SEVERE CYCLONIC STORM “MOCHA” (PRONOUNCED AS “MOKHA”) OVER CENTRAL AND ADJOINING SOUTHEAST BAY OF BENGAL MOVED NEARLY NORTHWARDS WITH A SPEED OF 13 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 0300 UTC OF TODAY, THE 12TH MAY 2023 OVER THE SAME REGION NEAR LATITUDE 13.6°N AND LONGITUDE 88.2°E, ABOUT 530 KM WEST-NORTHWEST OF PORT BLAIR (INDIA, 43333), 950 KM SOUTH-SOUTHWEST OF COX’S BAZAR (BANGLADESH, 41992) AND 870 KM SOUTH-SOUTHWEST OF SITTWE (MYANMAR, 48062).

IT IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS AND INTENSIFY FURTHER OVER EASTCENTRAL BAY OF BENGAL. IT IS VERY 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. °N/ LONG. °E) | MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH) | CATEGORY OF CYCLONIC DISTURBANCE |
|------------------------|-------------------------------------|--|---|
| 12.05.23/0300 | 13.6/88.2 | 120-130 GUSTING TO 145 | VERY SEVERE CYCLONIC STORM |
| 12.05.23/0600 | 13.9/88.3 | 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 |

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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| | | | |
|---------------|-----------|------------------------|----------------------------|
| 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 | 21.4/93.8 | 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 982 HPA. SEA CONDITION IS VERY HIGH TO PHENOMENAL OVER CENTRAL AND ADJOINING SOUTHEAST BAY OF BENGAL AND VERY ROUGH TO ROUGH OVER NORTH ANDAMAN SEA.

AS PER SATELLITE IMAGERY, INTENSITY IS T4.0. RAGGED EYE IS SEEN IN CLOUD IMAGERY. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION AROUND SYSTEM AREA WITH MAXIMUM INTENSE CONVECTION IN THE SOUTHWEST SECTOR. MINIMUM CLOUD TOP TEMPERATURE (CTT) IS MINUS 93 DEG CELSIUS. GOOD POLEWARD AND EQUATORWARD OUTFLOW IS SEEN.

AT 0300 UTC A BUOY NEAR 14.0°N/87.0°E REPORTED MEAN SEA LEVEL PRESSURE OF 995.4 HPA. ANOTHER BUOY NEAR 16.2°N/88°E REPORTED MEAN SEA LEVEL PRESSURE OF 1001.8 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 340⁰/12 KTS. A SHIP NEAR 17.5°N/89.1°E REPORTED MEAN SEA LEVEL PRESSURE OF 1004.8 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 290⁰/19 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.

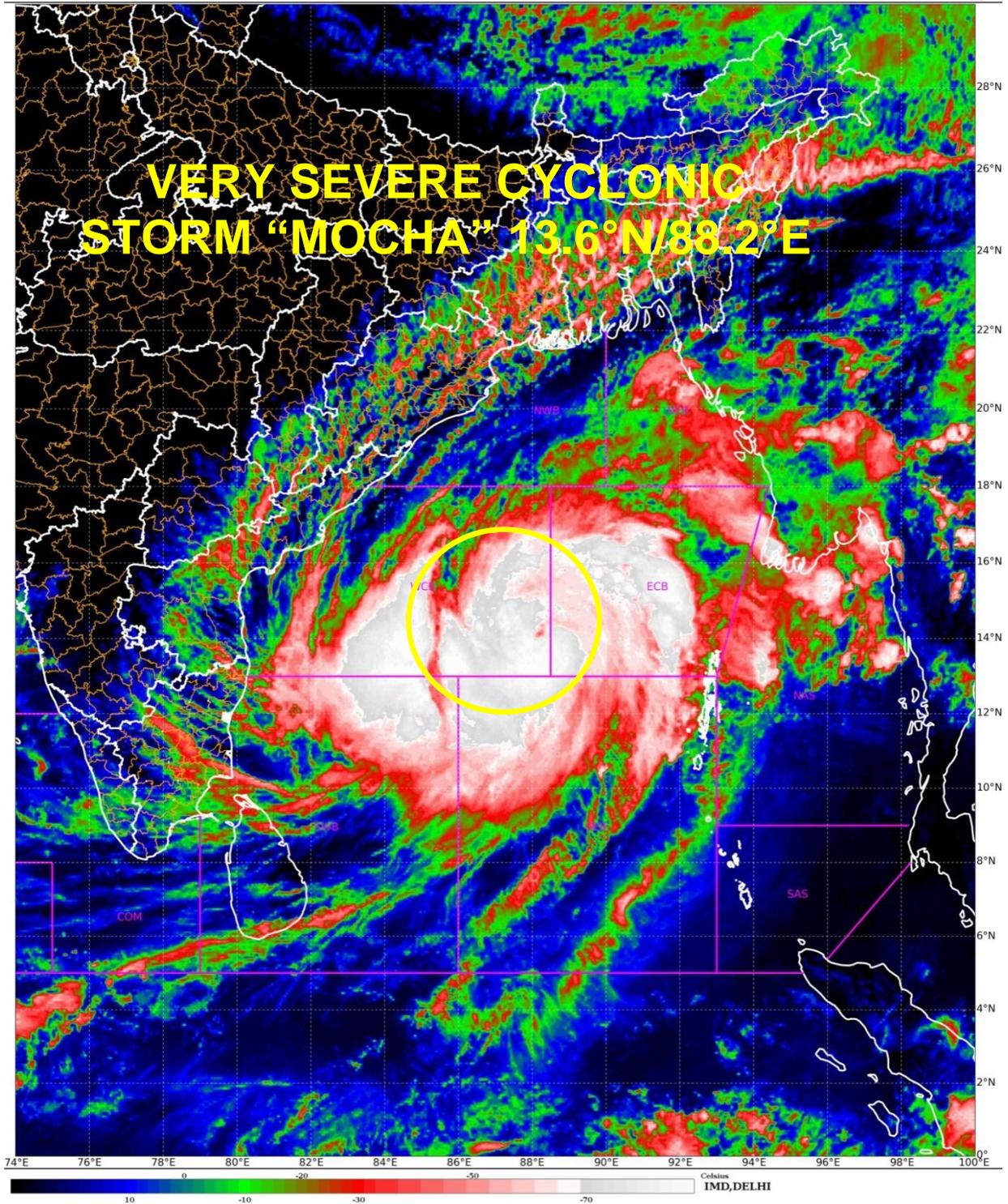
CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE LOW LEVEL VORTICITY AT 850 HPA IS AROUND 300X10⁻⁶S⁻¹ TO THE SOUTH OF THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVELS. LOW LEVEL CONVERGENCE HAS INCREASED AND IS AROUND 50 X10⁻⁵ S⁻¹ OVER THE SOUTH-SOUTHWEST OF THE SYSTEM CENTER. UPPER LEVEL DIVERGENCE IS ABOUT 30X10⁻⁵S⁻¹ TO THE SOUTH AND ANOTHER ZONE OF 40X10⁻⁵S⁻¹ OVER THE NORTHEAST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODRATE (15-20 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 ANTICYCLONE EASTCENTRAL BAY OF BENGAL OFF MYANMAR COAST. UNDER ITS INFLUENCE, THE SYSTEM RECURVE 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 ADJOINING SOUTHEAST BAY OF BENGAL IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS AND INTENSIFY FURTHER OVER EASTCENTRAL BAY OF BENGAL. IT IS VERY 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.

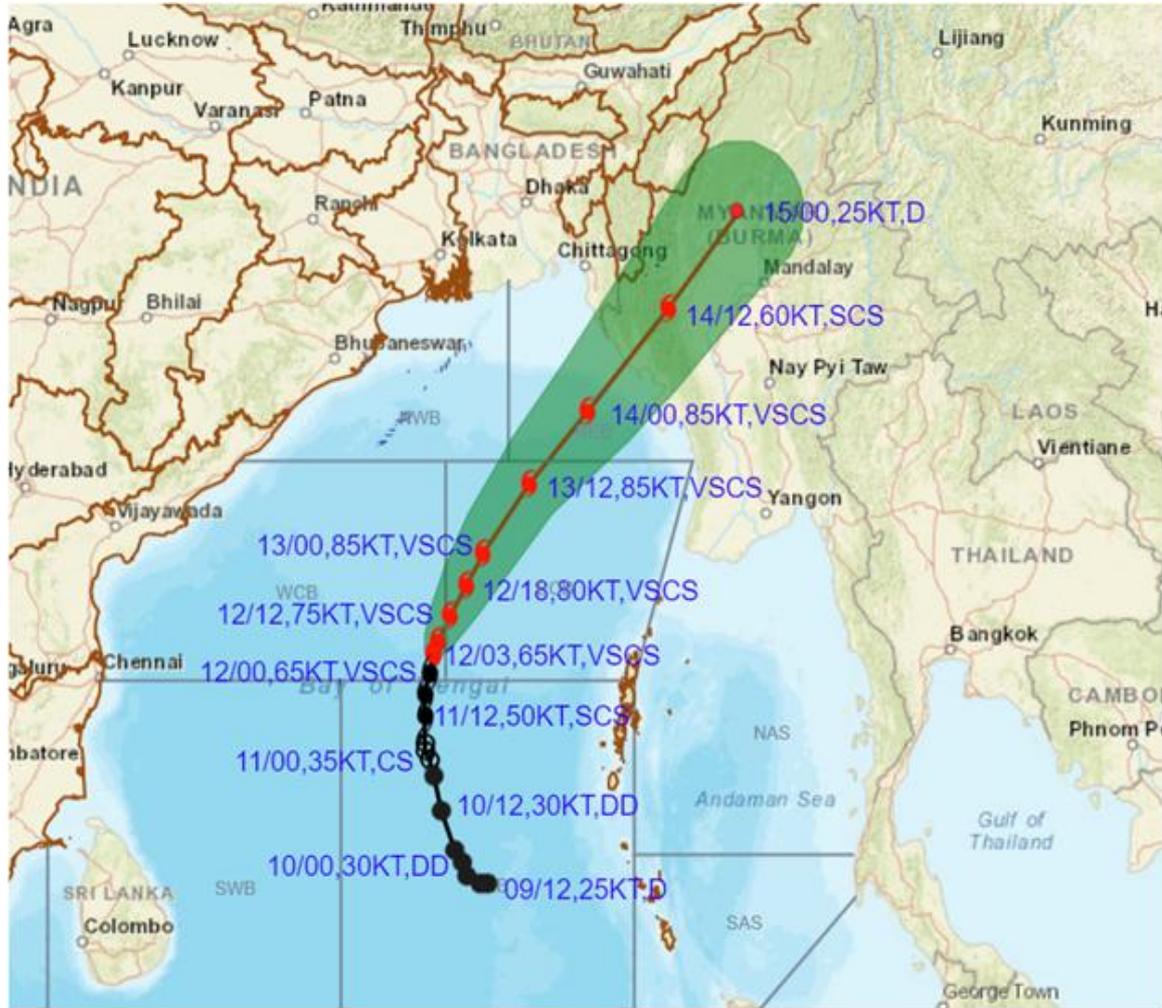
(M. SHARMA)
SCIENTIST-D
RSMC NEW DELHI



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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 0300 UTC (0830 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

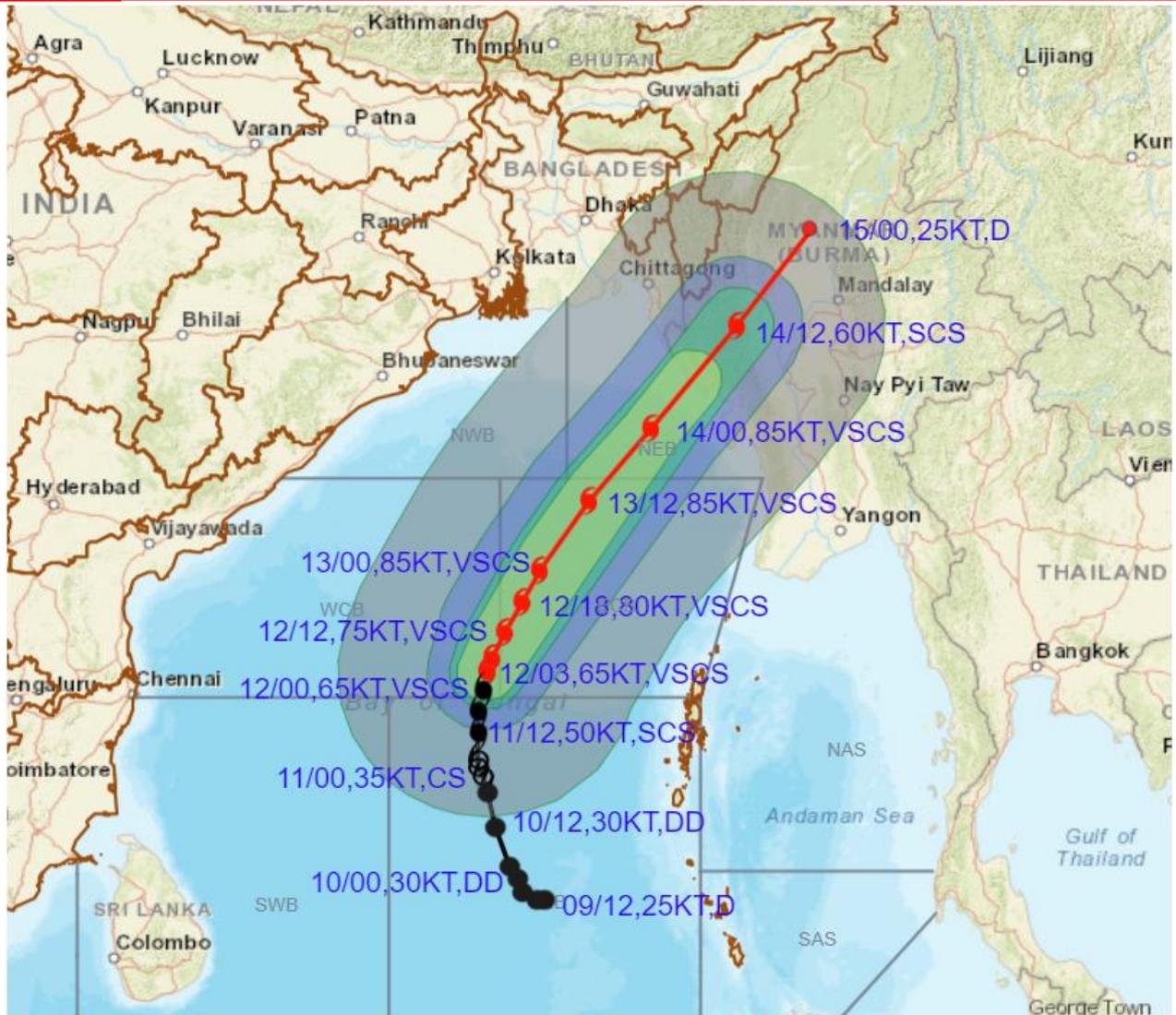
Forecast distance (km) and direction of the centre from nearest 5 coastal stations

| Forecast Date and Time | Lead Period | Lat | Lon | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 |
|------------------------|-------------|------|------|-----------------------|-----------------------|----------------------|---------------------|--------------------|
| 12.05.23/0300 | 0 | 13.6 | 88.2 | MAYA BANDAR (517,W) | LONG ISLAND (530,WNW) | PORT BLAIR (536,WNW) | COCO ISLAND (561,W) | HUT BAY (580,NW) |
| 13.05.23/0000 | 21 | 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 | 45 | 19.1 | 91.9 | SITTWE (154,SW) | KYAUKPYU (177,W) | MANAUNG (195,W) | TEKNAF (201,SSW) | KYAUKTAW (209,SSW) |
| 15.05.23/0000 | 69 | 23.5 | 95.5 | PINLEBU (66,SSE) | SHWEBO (104,NNW) | MAWLAIK (112,E) | KATHA (113,SW) | KALEWA (127,ENE) |

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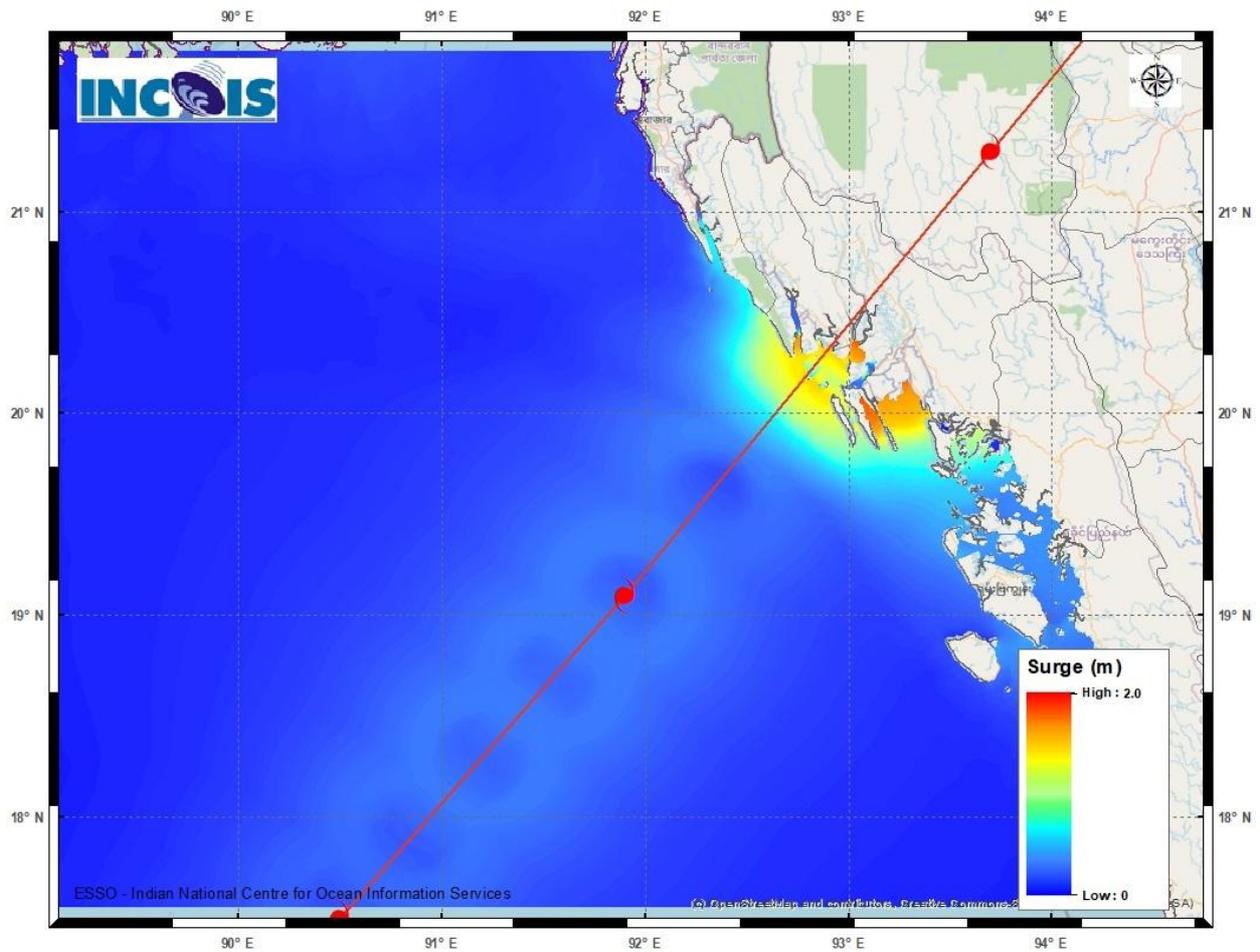
● LESS THAN 34 KT
○ 34-47 KT
● ≥ 48 KT
— OBSERVED TRACK
— FORECAST TRACK
● CONE OF UNCERTAINTY
AREA OF MAXIMUM SUSTAINED WIND SPEED:
— 28-33 KT (52-61 KMPH)
— 34-49 KT (62-91 KMPH)
— 50-63 KT (92-117 KMPH)
— ≥ 64 KT (≥118 KMPH)

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 |

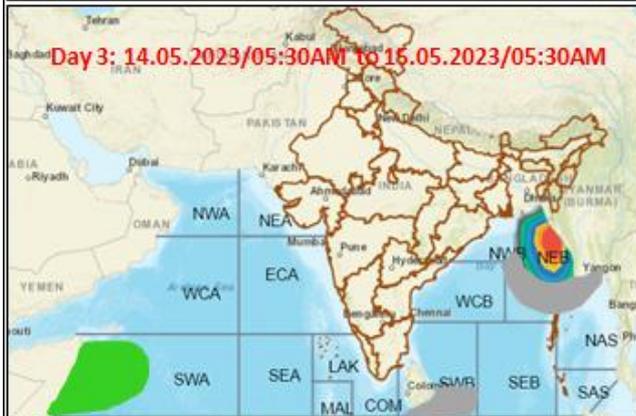
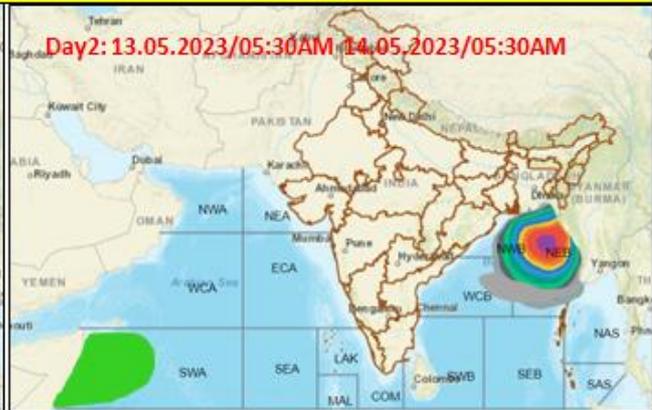
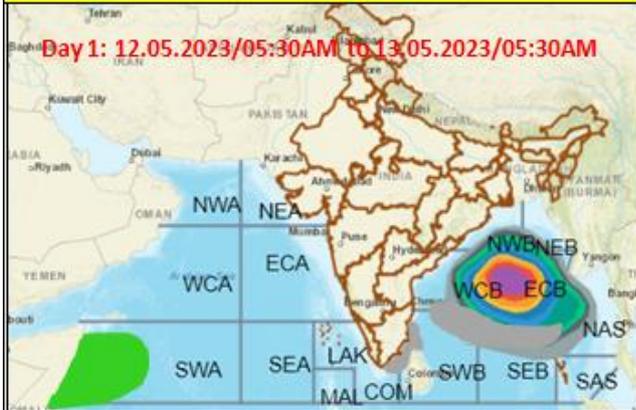
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Storm Surge Warning Graphics



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Fishermen warning graphics

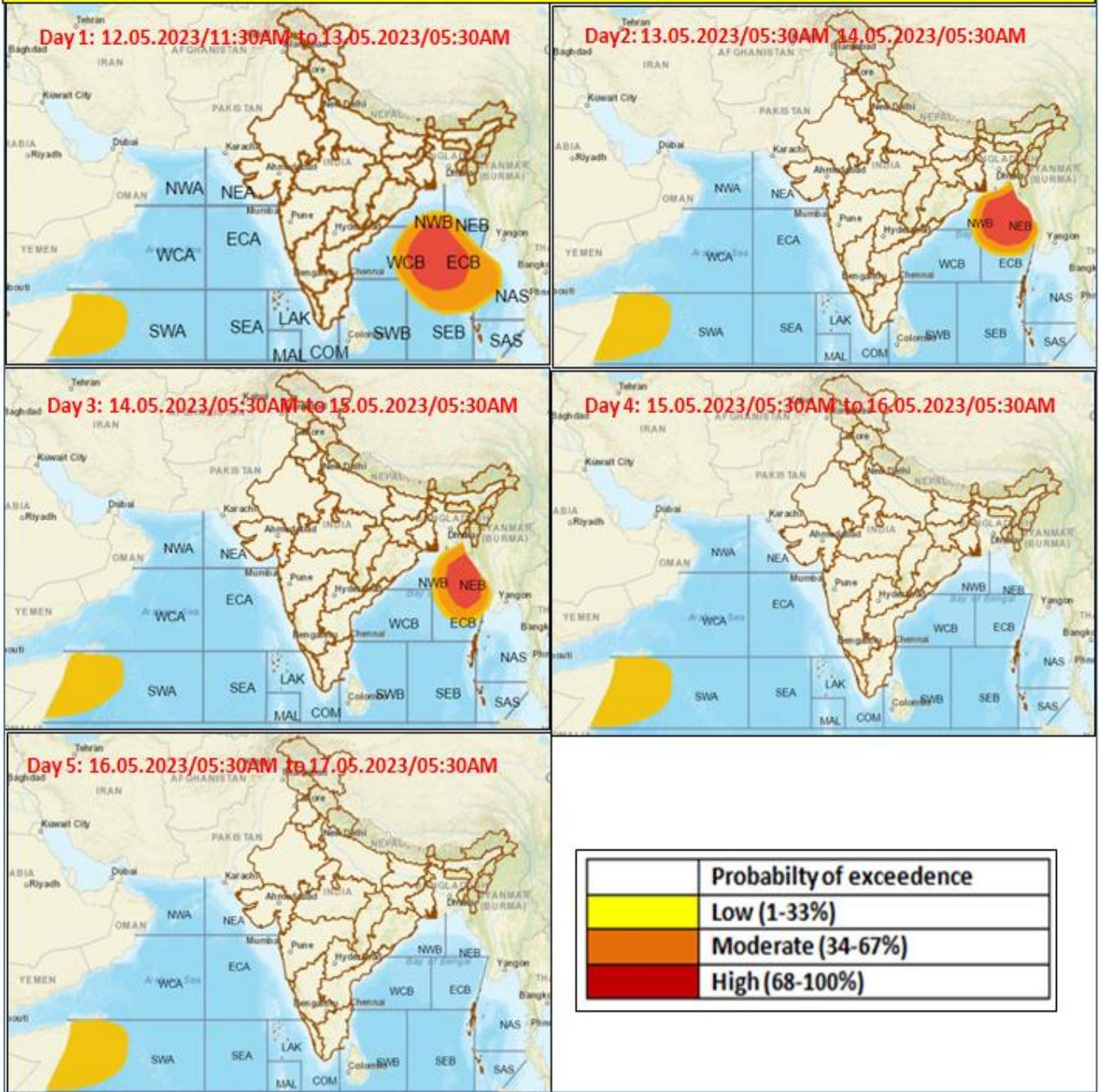


| | |
|--|--|
| | Squally WX with wind speed 40-50 kmph gusting to 60 kmph |
| | Squally WX with wind speed 50-60 kmph gusting to 70 kmph |
| | Gale wind speed 60-70 kmph gusting to 80 kmph |
| | Gale wind with wind speed 70-80 kmph gusting to 90 kmph |
| | Gale wind with wind speed 80-90 kmph gusting to 100 kmph |
| | Gale wind with wind speed 90-100 kmph gusting to 110 kmph |
| | Gale wind with wind speed 100-110 kmph gusting to 120 kmph |
| | Gale wind with wind speed 110-120 kmph gusting to 140 kmph |
| | Gale wind with wind speed 130-140 kmph gusting to 155 kmph |
| | Gale wind with wind speed 140-150 kmph gusting to 165 kmph |

FISHERMEN ARE ADVISED NOT TO VENTURE INTO THE MARKED AREAS

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Probability of exceedance of maximum sustained winds ≥ 45 kmph



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