



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 18

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 13.05.2023

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. 18 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0700 UTC OF 13.05.2023 BASED ON 0300 UTC OF 13.05.2023

SUBJECT: EXTREMELY SEVERE CYCLONIC STORM “MOCHA” (PRONOUNCED AS “MOKHA”) OVER EASTCENTRAL BAY OF BENGAL

THE EXTREMELY SEVERE CYCLONIC STORM “MOCHA” (PRONOUNCED AS “MOKHA”) OVER EASTCENTRAL BAY OF BENGAL MOVED NEARLY NORTHEASTWARDS WITH A SPEED OF 14 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 0300 UTC OF TODAY, THE 13TH MAY 2023 OVER THE SAME REGION NEAR LATITUDE 15.7°N AND LONGITUDE 89.5°E, ABOUT 560 KM NORTH-NORTHWEST OF PORT BLAIR (INDIA, 43333), 680 KM SOUTH-SOUTHWEST OF COX’S BAZAR (BANGLADESH, 41992) AND 600 KM SOUTHWEST OF SITTWE (MYANMAR, 48062).

IT IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS AND 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 |
|-----------------|------------------------------|---|----------------------------------|
| 13.05.23/0300 | 15.7/89.5 | 180-190 GUSTING TO 210 | EXTREMELY SEVERE CYCLONIC STORM |
| 13.05.23/0600 | 16.0/89.8 | 190-200 GUSTING TO 220 | EXTREMELY SEVERE CYCLONIC STORM |
| 13.05.23/1200 | 16.8/90.5 | 190-200 GUSTING TO 220 | EXTREMELY SEVERE CYCLONIC STORM |
| 13.05.23/1800 | 17.9/91.2 | 180-190 GUSTING TO 210 | EXTREMELY SEVERE CYCLONIC STORM |
| 14.05.23/0000 | 19.1/91.8 | 170-180 GUSTING TO 200 | EXTREMELY 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%
This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

| | | | |
|---------------|-----------|------------------------|----------------------------|
| 14.05.23/0600 | 20.2/92.6 | 150-160 GUSTING TO 175 | VERY SEVERE CYCLONIC STORM |
| 14.05.23/1200 | 21.3/93.5 | 115-125 GUSTING TO 140 | VERY SEVERE CYCLONIC STORM |
| 15.05.23/0000 | 23.3/95.3 | 55-65 GUSTING TO 75 | DEEP DEPRESSION |
| 15.05.23/1200 | 25.4/97.2 | 40-50 GUSTING TO 60 | DEPRESSION |

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 100 KNOTS GUSTING TO 110 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 952 HPA. SEA CONDITION IS PHENOMENAL OVER EAST CENTRAL AND ADJOINING WESTCENTRAL BAY OF BENGAL.

AS PER SATELLITE IMAGERY, INTENSITY IS T 5.5. RAGGED EYE PATTERN IS SEEN. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL AND ADJOINING SOUTH BAY OF BENGAL BETWEEN 12.0⁰N & 17.0⁰N AND 86.0⁰E & 92.0⁰E. MINIMUM CLOUD TOP TEMPERATURE (CTT) IS MINUS 93 DEG CELSIUS. COMPARISON OF MICROWAVE PASSES (0044 UTC AT 85 GHZ AND ANOTHER AT 0203 UTC AT 183 GHZ) IS INDICATING REMARKABLE SOUTHWESTWARDS TILTING OF THE SYSTEM WITH HEIGHT. ADT GUIDANCE SHOWS WEAKENING IN PAST 6 HOURS FROM T5.9 TO T5.2.

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

STORM SURGE WITH HEIGHT OF ABOUT 2.5-3.0 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/CM² OVER CENTRAL PARTS OF BAY OF BENGAL (BOB). IT IS INDICATING DECREASING TENDENCY AS THE SYSTEM MOVES FURTHER NORTH-NORTHEASTWARDS TOWARDS THE COAST. SEA SURFACE TEMPERATURE (SST) HAS DECREASED AND IS AROUND 30°C OVER EASTCENTRAL BOB AND ALONG FORECAST TRACK. TOTAL PRECIPITABLE WATER IMAGERY IS INDICATING DRY AIR FROM INDIA REACHING THE SOUTHERN SECTOR IN THE OUTER CORE OF THE SYSTEM.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE LOW LEVEL VORTICITY AT 850 HPA IS AROUND 300X10⁻⁶S⁻¹ CLOSE TO SOUTHEAST OF SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVELS. LOW LEVEL CONVERGENCE IS AROUND 30 X10⁻⁵ S⁻¹ AROUND SYSTEM CENTER AND IS EAST-NORTHEAST ORIENTED. UPPER LEVEL DIVERGENCE IS ABOUT 30X10⁻⁵S⁻¹ CLOSE TO SOUTHWEST OF SYSTEM CENTER AND IS ORIENTED NORTH-NORTHEASTWARDS. THE VERTICAL WIND SHEAR IS MODRATE (15-20 KNOTS) AROUND SYSTEM CENTER. IT IS HIGH ABOUT 25-35 KTS OVER NORTHEAST BAY OF BENGAL AND ALONG & OFF BANGLADESH-MYANMAR COASTS.

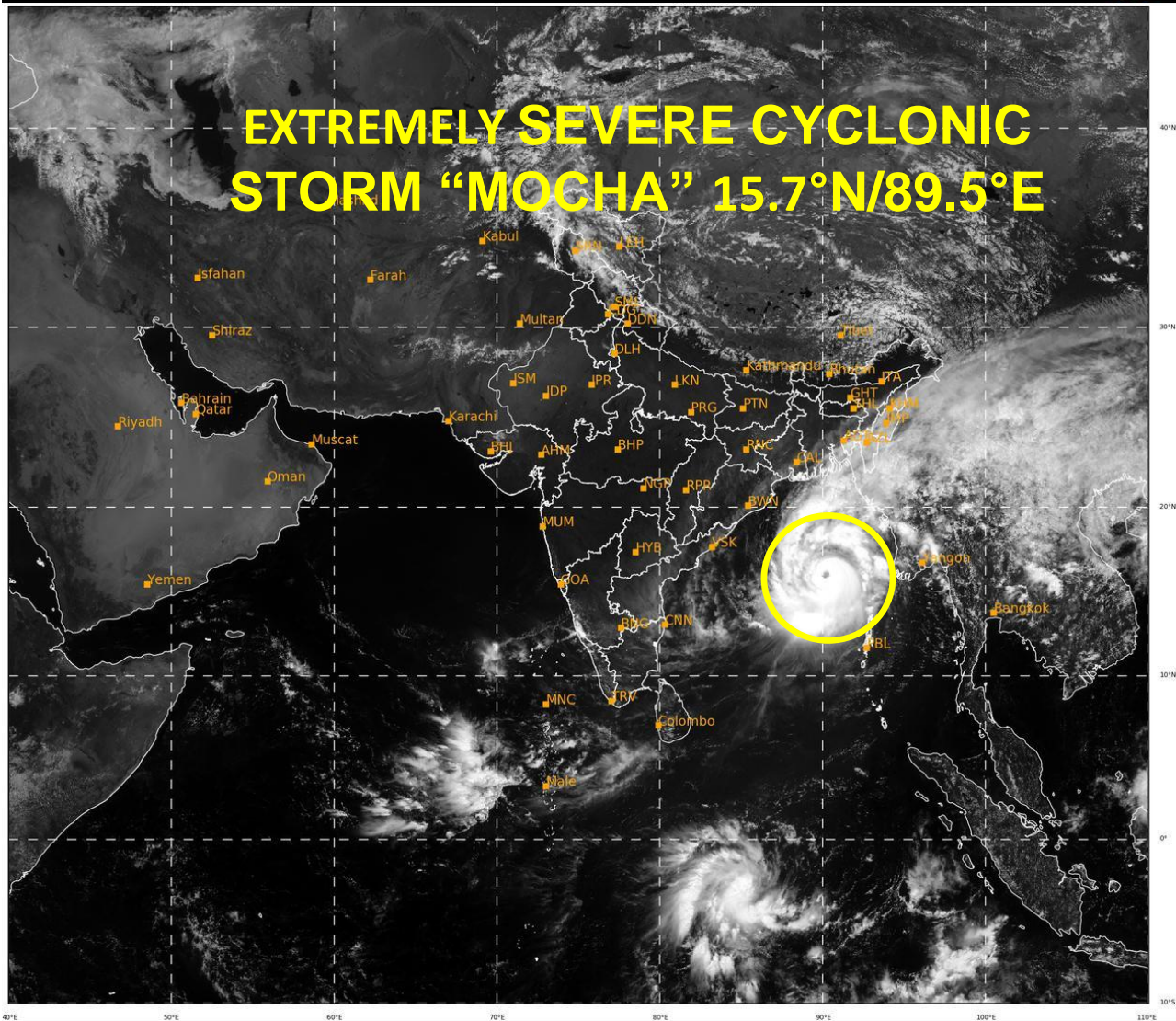
THERE IS AN ANTICYCLONIC CIRCULATION OVER NORTH ANDAMAN SEA AND ADJOINING AREAS. DEEP LAYER MEAN WINDS INDICATE THAT THE SYSTEM IS EMBEDDED IN THE WESTERLY FLOW. UNDER THE INFLUENCE OF THESE SYSTEMS, IT IS LIKELY TO MOVE NORTH-NORTHEASTWARDS.

THERE HAS BEEN RAPID INTENSIFICATION OF THE SYSTEM FOR CONSECUTIVE TWO DAYS SINCE 0000 UTC OF 11TH MAY TO 13TH. THE MAXIMUM SUSTAINED WIND SPEED (MSW) INCREASED FROM 35 KTS AT 0000 UTC OF 11TH TO 65 KTS AT 0000 UTC OF 12TH AND TO 100 KTS AT 0000 UTC OF 13TH MAY. THUS MSW

INCREASED BY 65 KNOTS DURING PAST 48 HOURS ENDING AT 0000 UTC OF 13TH MAY. IT WAS MAINLY BECAUSE OF LOW VERTICAL WIND SHEAR, HIGHER SEA SURFACE TEMPERATURE & HIGHER OCEAN HEAT CONTENT AND INCREASED WARM MOIST AIR INCURSION IN THE CORE OF SYSTEM. HOWEVER, TODAY, DUE TO SLIGHT INCREASE IN VERTICAL WIND SHEAR AND FURTHER THE SYSTEM BEING EXPECTED TO MOVE TOWARDS HIGHER WIND SHEAR ZONE AND WITH DRY AIR INCURSION FROM INDIAN LANDMASS INTO THE SOUTHERN SECTOR, NO FURTHER RAPID INTENSIFICATION IS LIKELY.

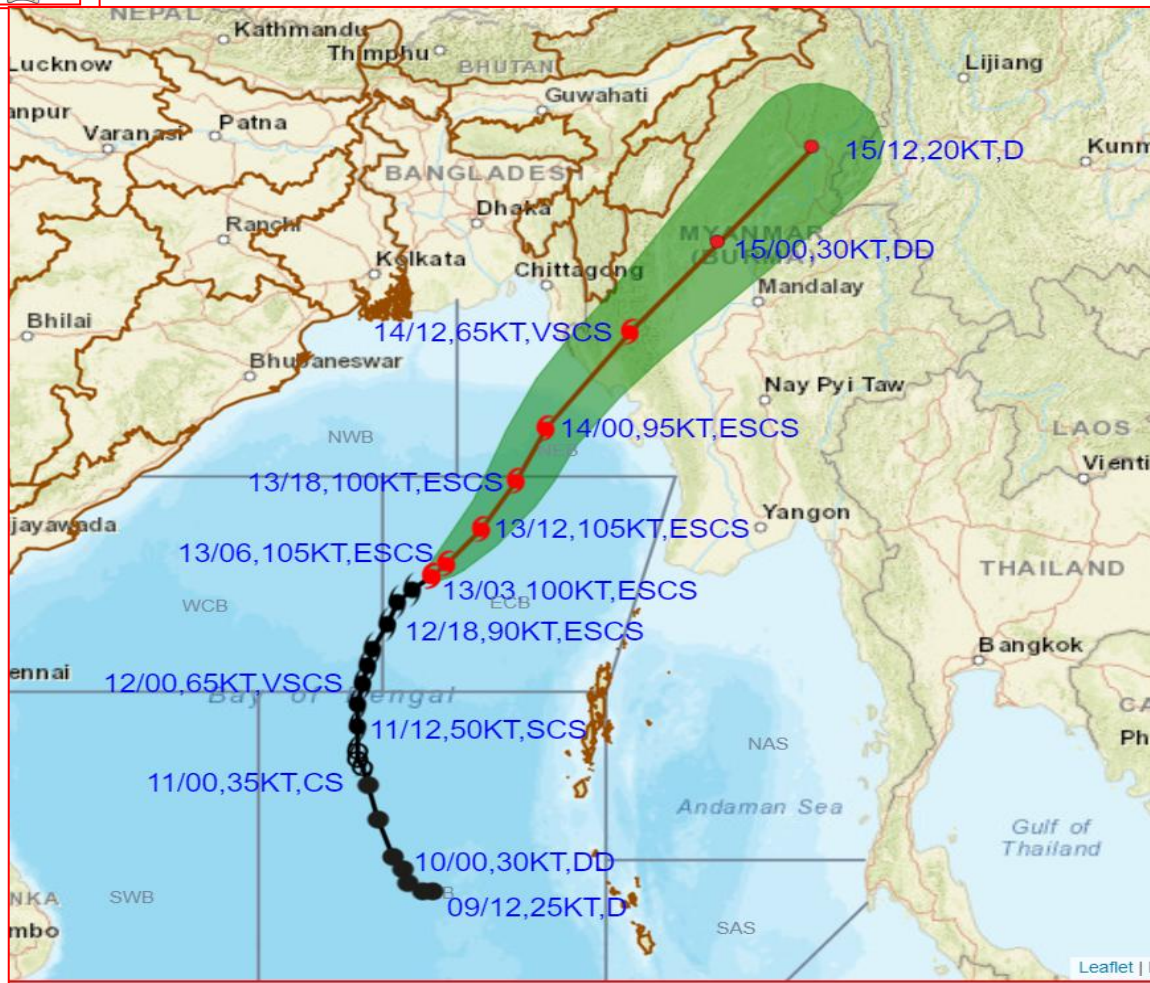
IN VIEW OF ALL THE ABOVE, THE EXTREMELY SEVERE CYCLONIC STORM "MOCHA" IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS AND CROSS SOUTHEAST BANGLADESH AND NORTH MYANMAR COASTS BETWEEN COX'S BAZAR (BANGLADESH, 41992) AND KYAUKPYU (MYANMAR, 48071), CLOSE TO SITTWE (MYANMAR, 48062) AROUND NOON OF 14TH MAY, 2023 AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 150-160 KMPH GUSTING TO 175 KMPH.

(M. SHARMA)
SCIENTIST-D
RSMC NEW DELHI





OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF EXTREMELY SEVERE CYCLONIC STORM MOCHA OVER EASTCENTRAL BAY OF BENGAL BASED ON 0300 UTC (0830 IST) OF 13TH 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

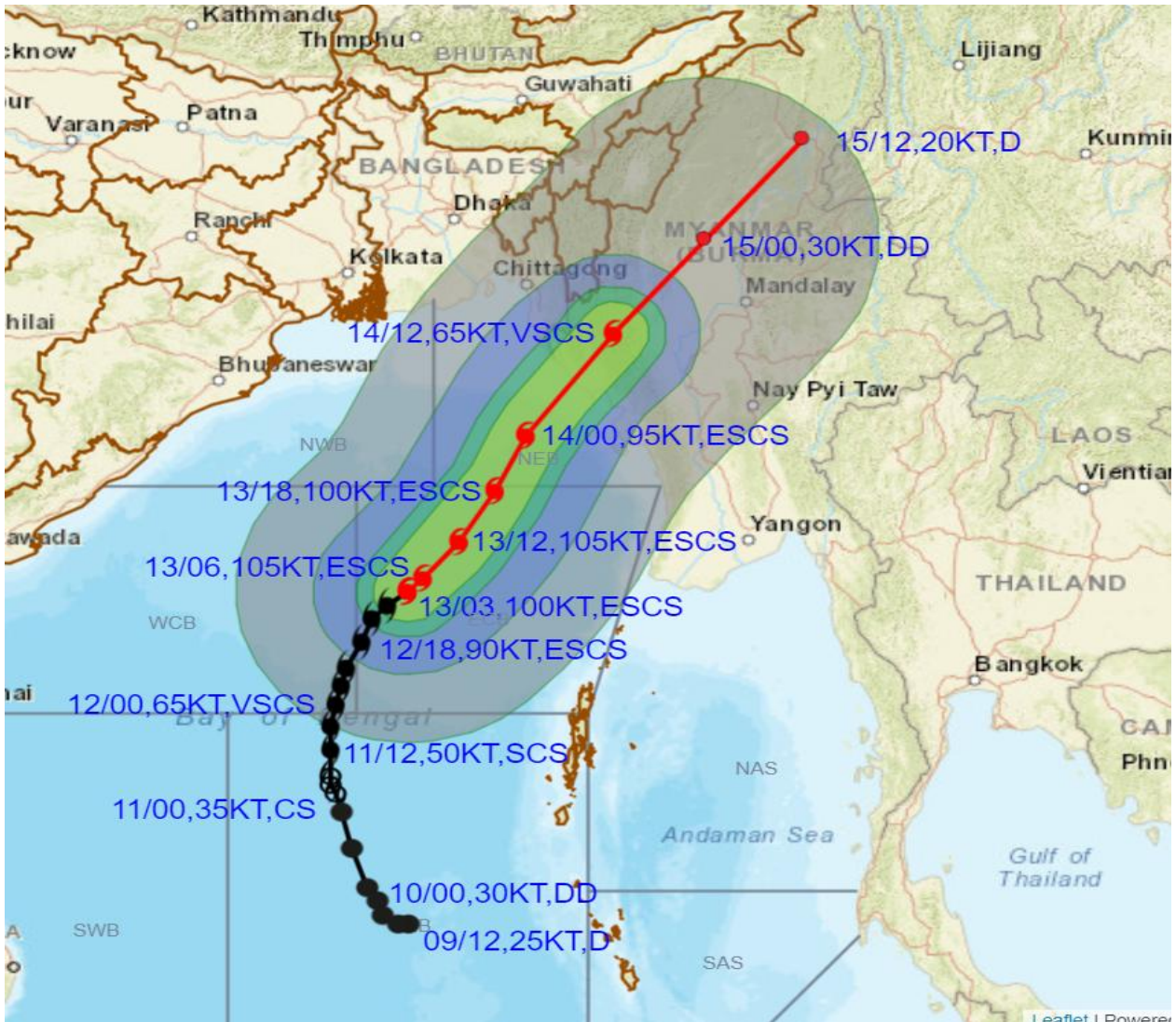
Forecast distance (km) and direction of the centre from nearest 5 coastal stations

| Forecast Date and Time | Lead Period | Lat | Lon | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 |
|------------------------|-------------|------|------|-----------------------|----------------------|----------------------|---------------------|--------------------|
| 13.05.23/0300 | 0 | 15.7 | 89.5 | COCO ISLAND (452,WNW) | MAYA BANDAR (481,NW) | LONG ISLAND (521,NW) | PORT BLAIR (568,NW) | MANAUNG (570,SW) |
| 14.05.23/0000 | 21 | 19.1 | 91.8 | SITTWE (162,SW) | KYAUKPYU (187,W) | TEKNAF (204,SSW) | MANAUNG (205,W) | KYAUKTAW (213,SSW) |
| 15.05.23/0000 | 45 | 23.3 | 95.3 | PINLEBU (87,S) | SHWEBO (90,NNW) | MAWLAIK (98,ESE) | KALEWA (103,E) | KALEMYO (127,E) |

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 EXTREMELY SEVERE CYCLONIC STORM MOCHA OVER EASTCENTRAL BAY OF BENGAL BASED ON 0300 UTC (0830 IST) OF 13TH 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

AREA OF MAXIMUM SUSTAINED WIND SPEED:

■ 28-33 KT (52-61 KMPH)

■ 34-49 KT (62-91 KMPH)

■ 50-63 KT (92-117 KMPH)

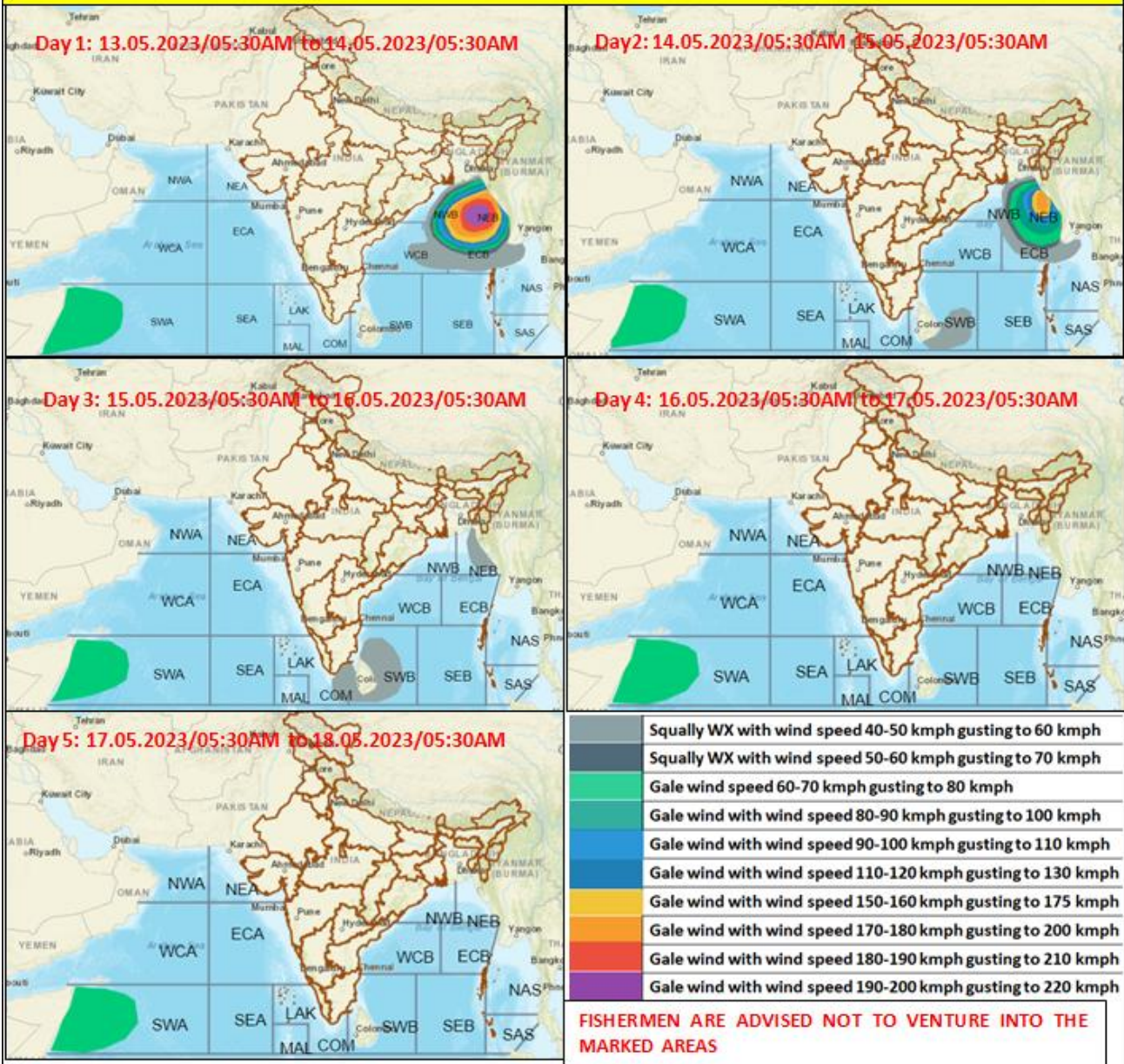
■ \geq 64 KT (\geq 118 KMPH)

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 |

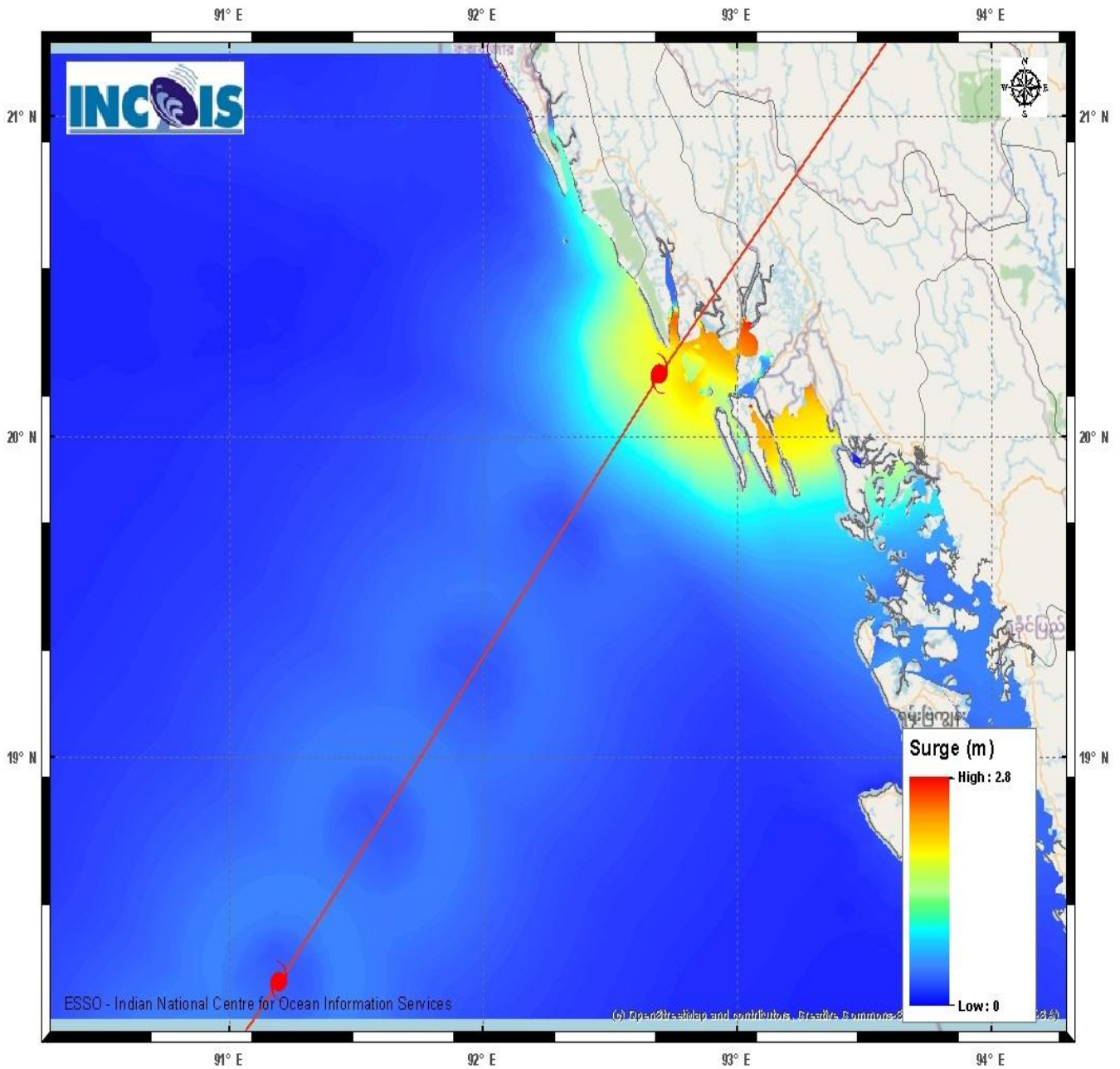
Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
 PROBABILITY OF CYCLOGENESIS (FORMATION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

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