



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 11

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. 11 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0900 UTC OF 12.05.2023 BASED ON 0600 UTC OF 12.05.2023

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

Sub: Very Severe Cyclonic storm “Mocha” (pronounced as “Mokha”) over Central Bay of Bengal

THE **VERY SEVERE CYCLONIC STORM “MOCHA”** (PRONOUNCED AS “MOKHA”) OVER CENTRAL AND ADJOINING SOUTHEAST BAY OF BENGAL MOVED NEARLY NORTH-NORTHEASTWARDS WITH A SPEED OF 15 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 0600 UTC OF TODAY, THE 12TH MAY 2023 OVER CENTRAL BAY OF BENGAL NEAR LATITUDE 14.0°N AND LONGITUDE 88.3°E, ABOUT 540 KM WEST-NORTHWEST OF PORT BLAIR (INDIA, 43333), 900 KM SOUTH-SOUTHWEST OF COX'S BAZAR (BANGLADESH, 41992) AND 830 KM SOUTH-SOUTHWEST 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 DURING NIGHT OF TODAY, THE 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. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
12.05.23/0600	14.0/88.3	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
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
13.05.23/1800	18.4/91.3	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
14.05.23/0600	20.2/92.8	150-160 GUSTING TO 175	VERY SEVERE CYCLONIC STORM
14.05.23/1800	22.2/94.5	70-80 GUSTING TO 90	CYCLONIC STORM

THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 75 KNOTS GUSTING TO 85 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS ABOUT 976 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 T4.5. RAGGED EYE WAS FIRST SEEN AT 0430 UTC. RAGGED EYE IS BEING SEEN DISCONTINUOUSLY SINCE THEN. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAYOVER CENTRAL AND ADJOINING SOUTH BAY OF BENGAL BETWEEN 10N & 17N AND 82E & 92E. MINIMUM CLOUD TOP TEMPERATURE (CTT) IS MINUS 93 DEG CELSIUS. GOOD STRONG POLEWARD AND EQUATORWARD OUTFLOW IS SEEN.

AT 0600 UTC A BUOY NEAR 14.0°N/87.0°E REPORTED MEAN SEA LEVEL PRESSURE OF 994.7 HPA. ANOTHER BUOY NEAR 16.2°N/88°E REPORTED MEAN SEA LEVEL PRESSURE OF 999 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 330⁰/27 KTS. A SHIP NEAR 17.5°N/89.1°E REPORTED MEAN SEA LEVEL PRESSURE OF 1003.0 HPA AND MAXIMUM SUSTAINED WIND SPEED OF 320⁰/23 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 UPTO 10N. THEREAFTER, IT WILL DECREASE SLIGHTLY OFF MYANMAR-BANGLADESH COASTS. TOTAL PRECIPITABLE WATER IMAGERY (TPW) INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM AREA TILL LANDFALL. THESE FEATURES INDICATE FURTHER INTENSIFICATION OF THE SYSTEM TILL 1800 UTC OF 13TH MAY.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE LOW LEVEL VORTICITY AT 850 HPA IS AROUND 300X10⁻⁶S⁻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 30X10⁻⁵S⁻¹ OVER THE NORTHEAST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS

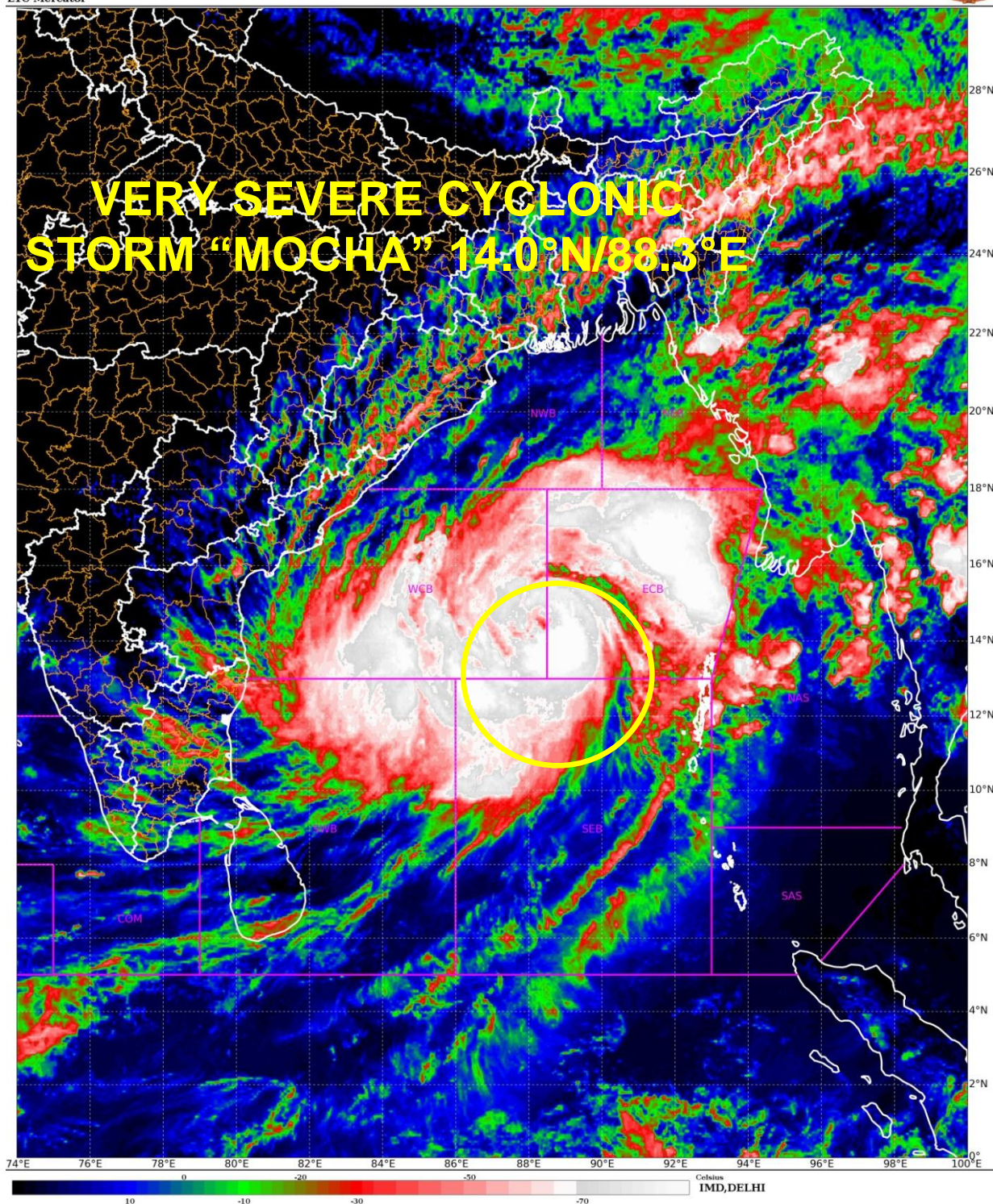
Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION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

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. A DEEP TROUGH UPTO 88E IS SEEN IN MID AND UPPER TROPOSPHERIC LEVELS. DEEP LAYER MEAN WINDS INDICATE THAT THE SYSTEM IS EMBEDDED IN THE WESTERLY FLOW. THUS, 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.

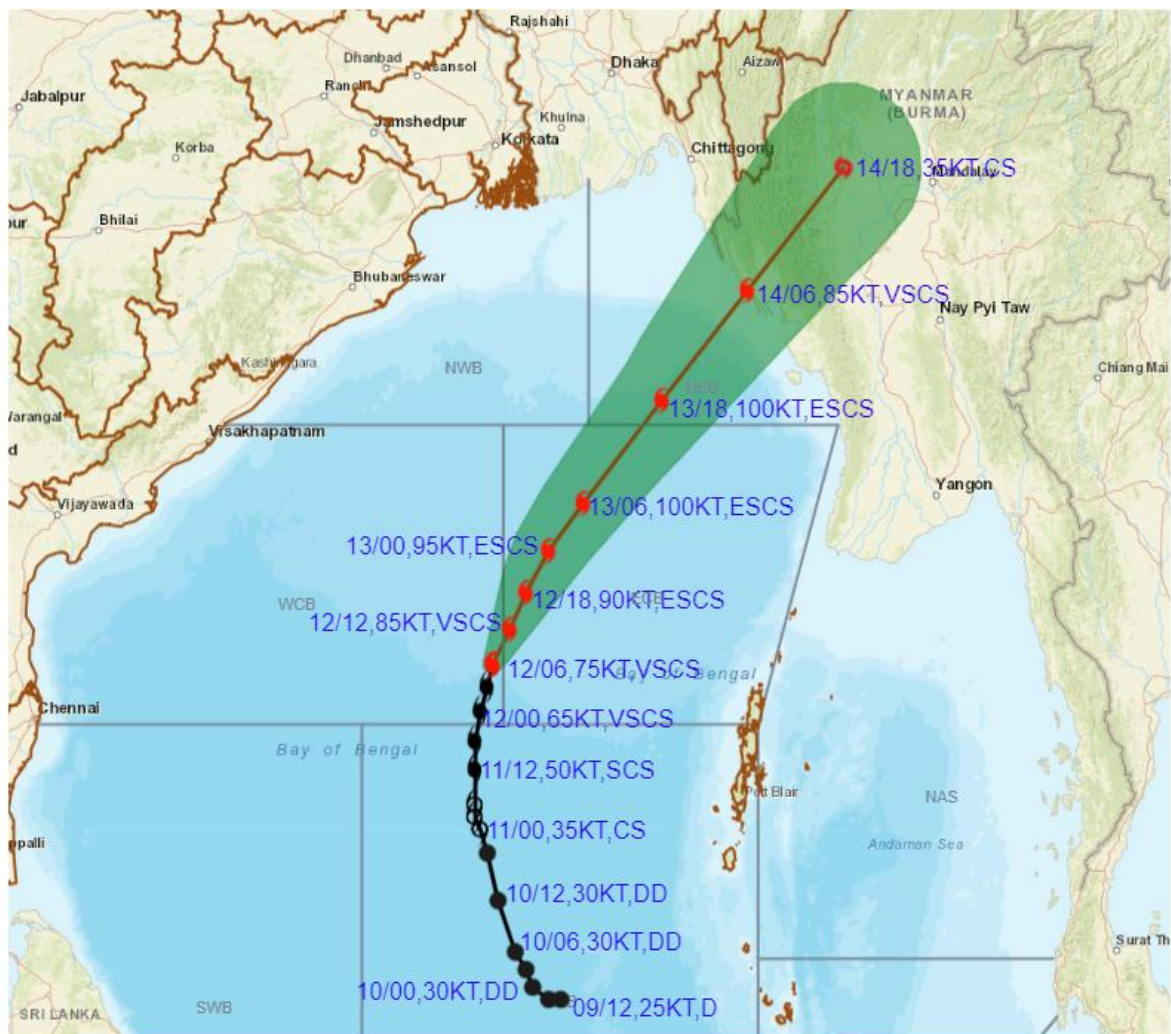
IT IS CONCLUDED THAT THE VERY SEVERE CYCLONIC STORM "MOCHA" OVER CENTRAL BAY OF BENGAL IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS AND INTENSIFY FURTHER INTO AN EXTREMELY SEVERE CYCLONIC STORM OVER EASTCENTRAL BAY OF BENGAL DURING NIGHT OF TODAY, THE 12TH MAY 2023. IT IS LIKELY TO CROSS SOUTHEAST BANGLADESH 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.**

(M. SHARMA)
SCIENTIST-D
RSMC NEW DELHI





OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM MOCHA OVER CENTRAL BAY OF BENGAL BASED ON 0600 UTC (1130 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

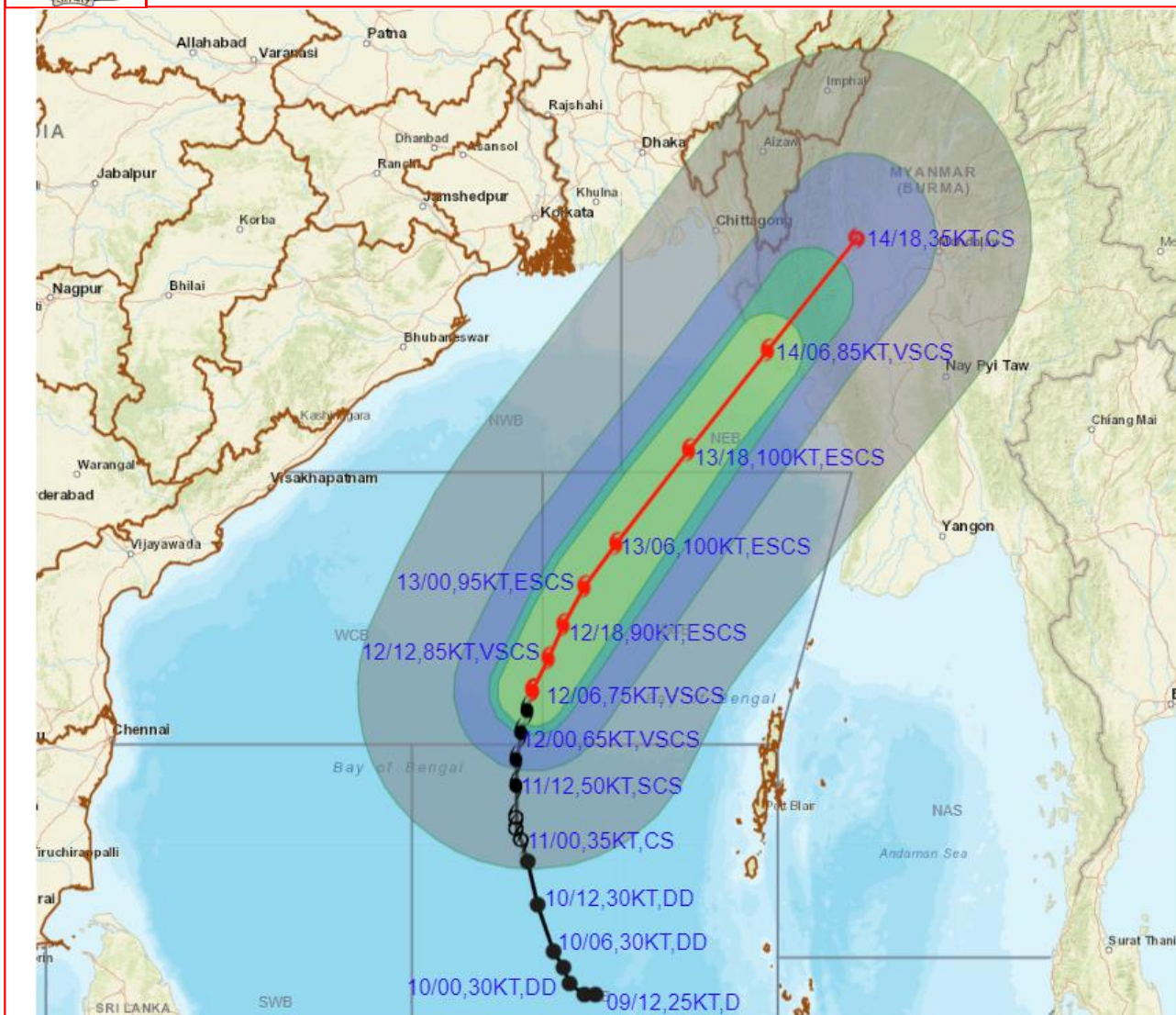
Forecast distance (km) and direction of the centre from nearest 5 coastal stations

Forecast Date and Time	Lead Period	Lat	Lon	Station 1	Station 2	Station 3	Station 4	Station 5
12.05.23/0600	0	14.0	88.3	MAYA BANDAR (514,WNW)	LONG ISLAND (532,WNW)	PORT BLAIR (545,WNW)	COCO ISLAND (547,W)	HUT BAY (599,NW)
13.05.23/0600	24	16.7	89.9	COCO ISLAND (470,NW)	MANAUNG (472,WSW)	KYAUKPYU (491,SW)	SANDHEADS (494,SSE)	SITTWE (495,SW)
14.05.23/0600	48	20.2	92.8	SITTWE (11,NW)	KYAUKTAW (74,SSE)	TEKNAF (91,SE)	KYAUKPYU (117,NW)	COX'S BAZAR (164,SSE)

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 VERY SEVERE CYCLONIC STORM MOCHA OVER CENTRAL BAY OF BENGAL BASED ON 0600 UTC (1130 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

AREA OF MAXIMUM SUSTAINED WIND SPEED:

— 28-33 KT (52-61 KMPH)

— 34-49 KT (62-91 KMPH)

— 50-63 KT (92-117 KMPH)

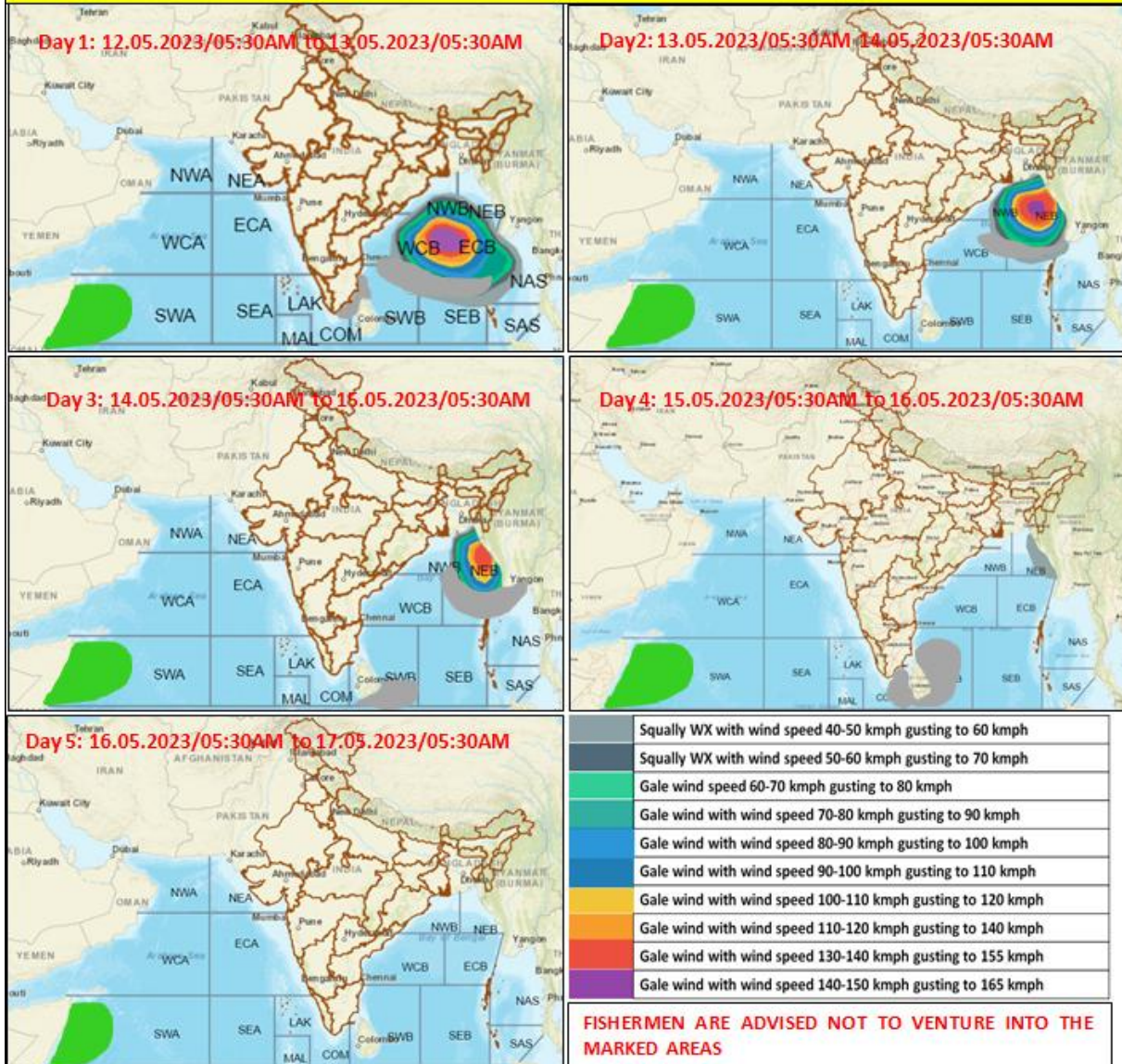
— ≥ 64 KT (≥118 KMPH)

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

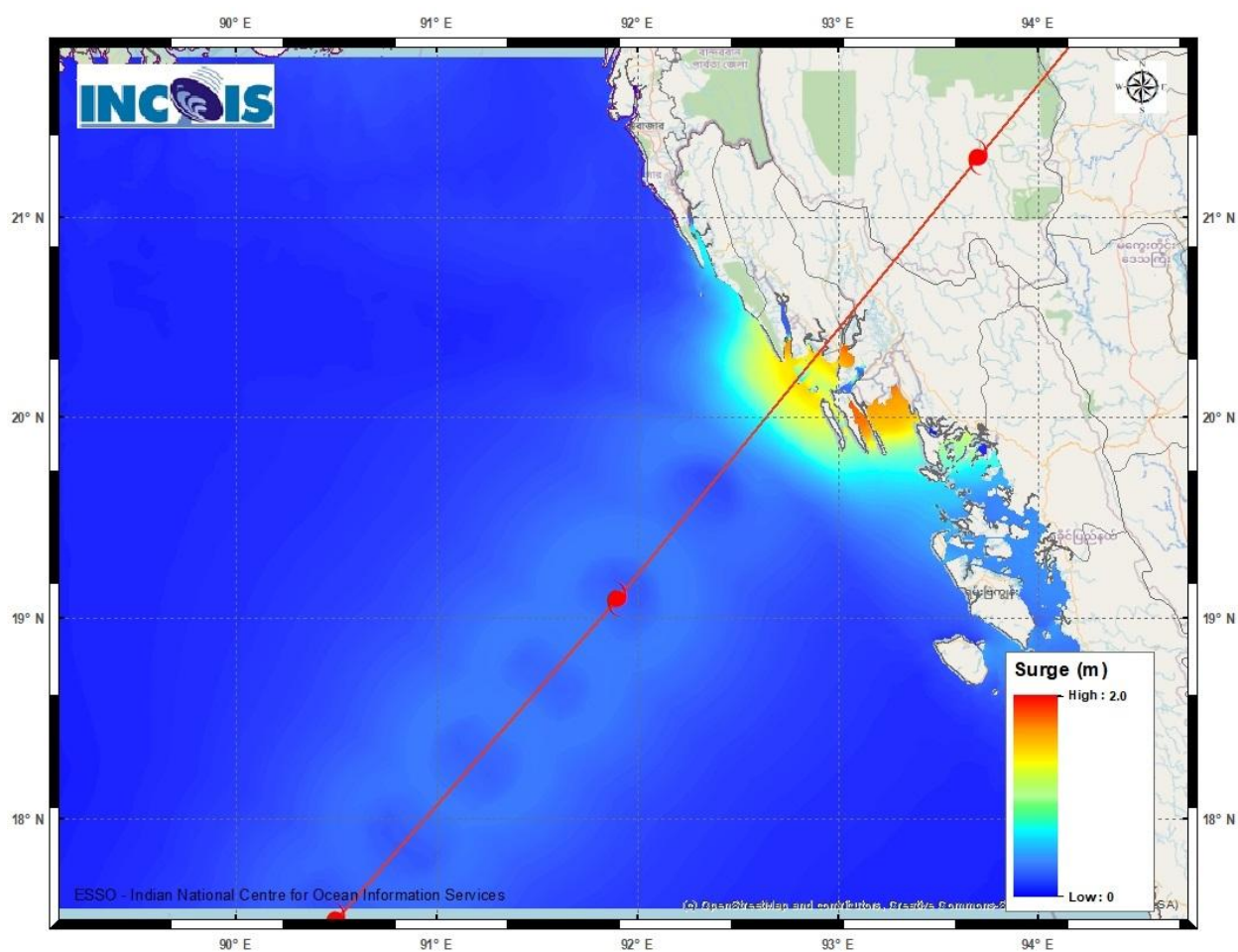
Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION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