REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI

TROPICAL CYCLONE ADVISORY NO. 6

FROM: RSMC TROPICAL CYCLONES NEW DELHI DATED 03.12.2023

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. 6 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1700 UTC OF 03.12.2023 BASED ON 1500 UTC OF 03.12.2023

SUB: CYCLONIC STORM "MICHAUNG" (PRONOUNCED AS "MIGJAUM") OVER SOUTHWEST BAY OF BENGAL

THE CYCLONIC STORM **"MICHAUNG" (PRONOUNCED AS "MIGJAUM")** OVER SOUTHWEST BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF 8 KMPH DURING PAST 06 HOURS, AND LAY CENTERED AT 1500 UTC OF TODAY, THE 3RD DECEMBER, 2023 OVER THE SAME REGION NEAR LATITUDE 12.4°N AND LONGITUDE 81.9°E, ABOUT 230 KM EAST-NORTHEAST OF PUDUCHERRY (43331), 190 KM EAST-SOUTHEAST OF CHENNAI (43279), 310 KM SOUTHEAST OF NELLORE (43245), 410 KM SOUTH-SOUTHEAST OF BAPATLA (43220) AND 430 KM SOUTH-SOUTHEAST OF MACHILIPATNAM (43185).

IT IS LIKELY TO CONTINUE TO MOVE NORTH-NORTHWESTWARDS, INTENSIFY FURTHER AND REACH WESTCENTRAL BAY OF BENGAL OFF SOUTH ANDHRA PRADESH AND ADJOINING NORTH TAMILNADU COASTS AROUND 0600 UTC OF 4TH DECEMBER. THEREAFTER, IT WOULD MOVE NEARLY NORTHWARDS ALMOST PARALLEL AND CLOSE TO SOUTH ANDHRA PRADESH COAST AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN NELLORE AND MACHILIPATNAM AROUND 0600 UTC OF 5TH DECEMBER AS A **SEVERE CYCLONIC STORM** WITH A MAXIMUM SUSTAINED WIND SPEED OF 90-100 KMPH GUSTING TO 110 KMPH.

TRACK AND INTENSITY FORECASTS:

DATE/TIME (UTC)	POSITION (LAT. ^{0}N/ LONG. ^{0}E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
03.12.23/1500	12.4/81.9	65-75 KMPH GUSTING TO 85 KMPH	CYCLONIC STORM
03.12.23/1800	12.6/81.7	70-80 KMPH GUSTING TO 90 KMPH	CYCLONIC STORM
04.12.23/0000	13.1/81.3	80-90 KMPH GUSTING TO 100 KMPH	CYCLONIC STORM
04.12.23/0600	13.7/80.8	85-95 KMPH GUSTING TO 105 KMPH	CYCLONIC STORM
04.12.23/1200	14.3/80.5	90-100 KMPH GUSTING TO 110 KMPH	SEVERE CYCLONIC STORM
05.12.23/0000	15.4/80.4	90-100 KMPH GUSTING TO 110 KMPH	SEVERE CYCLONIC STORM
05.12.23/1200	16.4/80.7	70-80 KMPH GUSTING TO 90 KMPH	CYCLONIC STORM
06.12.23/0000	17.2/81.7	50-60 KMPH GUSTING TO 70 KMPH	DEEP DEPRESSION
06.12.23/1200	18.0/82.8	30-40 KMPH GUSTING TO 50 KMPH	DEPRESSION

INSAT-3D IMAGERY AT 1500 UTC OF 3RD DECEMBER, INDICATES THE ORGANISATION OF CLOUD MASS. ASSOCIATED INTENSITY IS T2.5. ASSOCIATED SCATTERED TO BROKEN LOW/MEDIUM CLOUDS WITH EMBEDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH AND ADJOINING CENTRAL BAY OF BENGAL BETWEEN LATITUDE 9.0°N TO 18.0°N LONGITUDE 80.0E TO 89.0E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93 DEGREE CELSIUS.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. ESTIMATED CENTRAL PRESSURE IS 998 HPA. SEA CONDITION IS LIKELY TO BE VERY ROUGH OVER THE SOUTHWEST BAY OF BENGAL.

MADDEN JULIAN OSCILLATION (MJO) IS CURRENTLY IN PHASE 4 WITH AMPLITUDE GREATER THAN 1. SEA SURFACE TEMPERATURE IS 27^{0}C AROUND SYSTEM. TROPICAL CYCLONE HEAT POTENTIAL IS 60-70 KJ/CM^2 OVER SOUTHWEST BOB. THE NCICS BASED FORECASTS FOR EQUATORIAL WAVES INDICATE STRENGTHENING OF WESTERLY WINDS ALONGWITH PRESENCE OF EQUATORIAL ROSSBY WAVES & MJO OVER SOUTH BOB AND EASTERLY WINDS OVER CENTRAL BOB TILL 4TH DECEMBER. ALL THESE LARGE SCALE FEATURES ARE FAVOURABLE FOR FURTHER INTENSIFICATION OF THE SYSTEM.

CURRENT ENVIRONMENTAL FEATURES INDICATE, THE LOW LEVEL VORTICITY OF ABOUT 200X10^{-6}S^{-1} AROUND SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE VORTICITY FIELD SHOWS NO TILTING WITH HEIGHT. POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 30 X 10^{-5} S^{-1} TO THE EAST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 30 X 10^{-5} S^{-1} TO THE NORTHEAST OF THE SYSTEM CENTRE WITH LESS DIVERGENCE EQUATORWARD. THUS, EQUATORWARD OUTFLOW IS DECREASED AND POLEWARD OUTFLOW IS INCREASED. THERE IS MINIMAL CHANGE IN WIND SHEAR AND IS ABOUT 10-20 KNOTS OVER SOUTHWEST BOB. TOTAL PRECIPITABLE WATER IMAGERY IS INDICATING WARM MOIST AIR ADVECTION FROM NORTH AND NORTHEAST SECTOR.

UPPER TROPOSPHERIC RIDGE RUNS ALONG 14^{0}N. FROM 4TH DECEMBER/0000 UTC, THE SYSTEM WILL COME CLOSER TO THE RIDGE AND HENCE WOULD MOVE NEARLY NORTHWARDS AND BY 5TH /0000 UTC, IT WOULD CROSS RIDGE AND HENCE RECURVE NORTHEASTWARDS FROM 5TH DECEMBER/0000 UTC. UPPER TROPOSPHERIC WINDS ARE OF THE ORDER OF 50-60 KNOTS OVER NORTH ANDHRA PRADESH AND ODISHA COASTS. IT WOULD LEAD TO HIGHER WIND SHEAR.

MOST OF THE MODELS ARE INDICATING INTIAL NORTHWESTWARDS MOVEMENT TOWARDS ANDHRA PRADESH COAST. THE LANDFALL POINT IS VARYING BETWEEN LATITUDE 15.1-15.7^{0}N/80.0-80.3^{0}E. THE LANDFALL TIME IS VARYING BETWEEN 5TH/0000 UTC TO 5TH /0900 UTC.

CONSIDERING ALL THE ABOVE, THE CYCLONIC STORM IS LIKELY TO MOVE NORTH-NORTHWESTWARDS AND REACH WESTCENTRAL BAY OF BENGAL OFF SOUTH ANDHRA PRADESH AND ADJOINING NORTH TAMILNADU COASTS BY 0600 UTC OF 4TH DECEMBER. THEREAFTER, IT WOULD MOVE NEARLY NORTHWARDS ALMOST PARALLEL AND CLOSE TO SOUTH ANDHRA PRADESH COAST AND CROSS SOUTH ANDHRA PRADESH COAST BETWEEN NELLORE AND MACHILIPATNAM AROUND 0600 UTC OF 5TH DECEMBER AS A **SEVERE CYCLONIC STORM** WITH A MAXIMUM SUSTAINED WIND SPEED OF 90-100 KMPH GUSTING TO 110 KMPH.

(TRISANU BANIK)
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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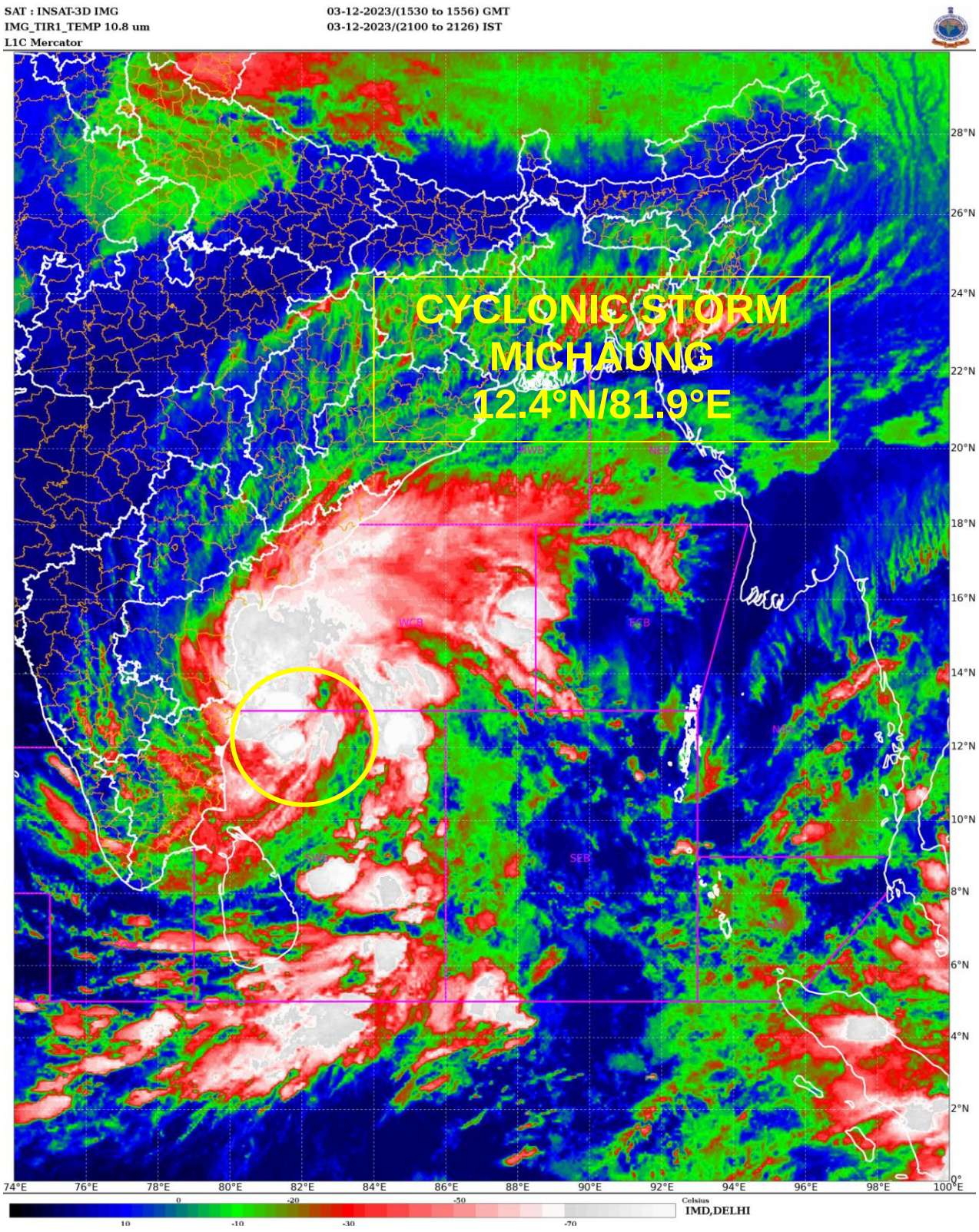

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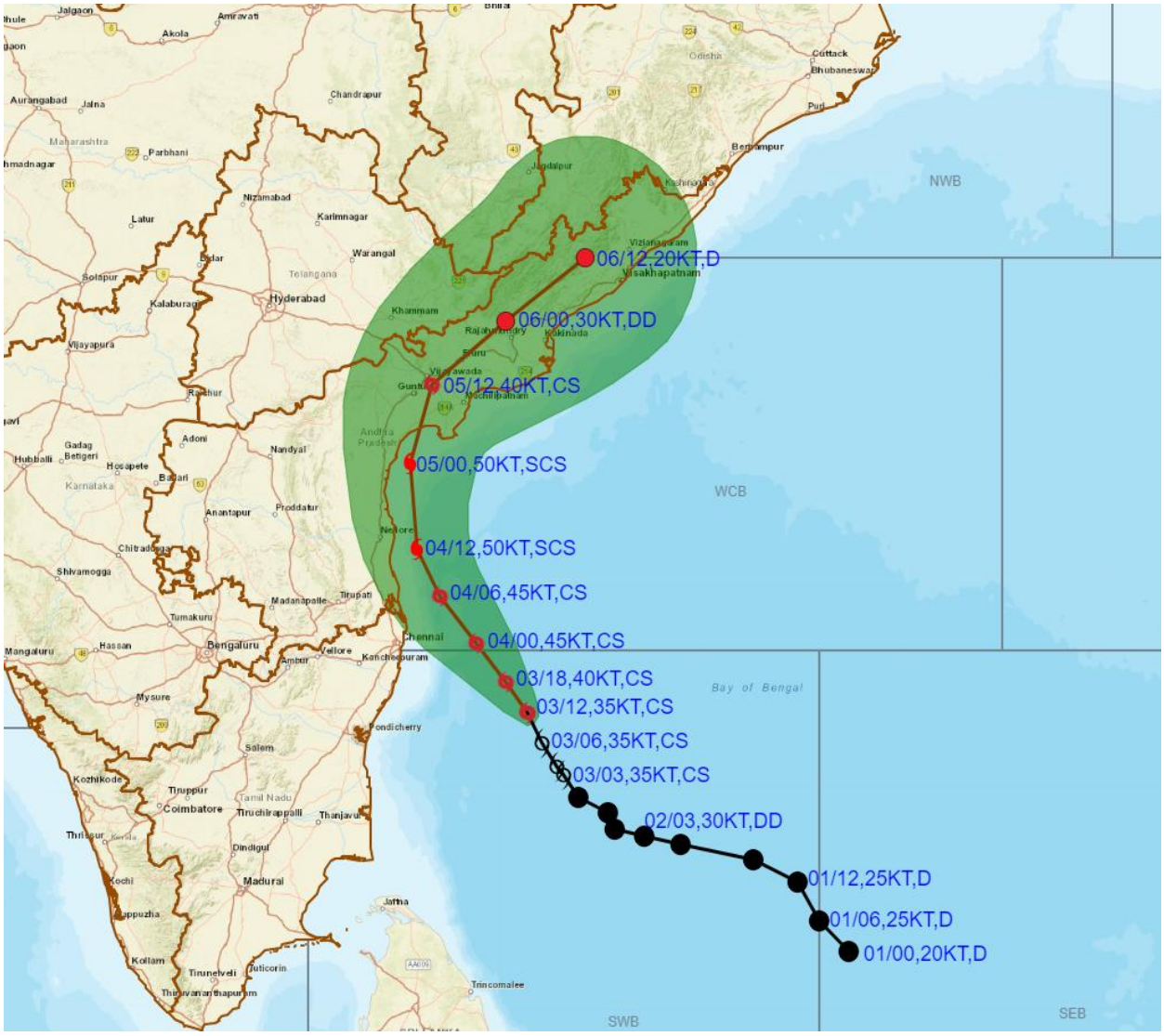
OBSERVED & FORECAST TRACK, MAXIMUM SUSTAINED WIND AND CONE OF UNCERTAINITY IN ASSOCIATION WITH CYCLONIC STORM "MICHAUNG" OVER SOUTHWEST BAY OF BENGAL BASED ON 1200 UTC (1730 IST) OF 03RD DECEMBER 2023.



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 FROM STATIONS				
Date and Time (UTC)	MO PONDICHERRY	CHENNAI/MINAMBAKKAM	NELLORE	BAPATLA	MACHILIPATNAM/ FRANCHPET
03.12.23/1200	240, E	210, ESE	330, SE	440, SSE	450, SSE
04.12.23/1200	280, NNE	150, NNE	60, ESE	170, S	220, SSW
05.12.23/1200	510, N	390, N	240, NNE	70, NNE	60, WNW
06.12.23/1200	750, NNE	630, NNE	500, NE	350, NE	270, NE

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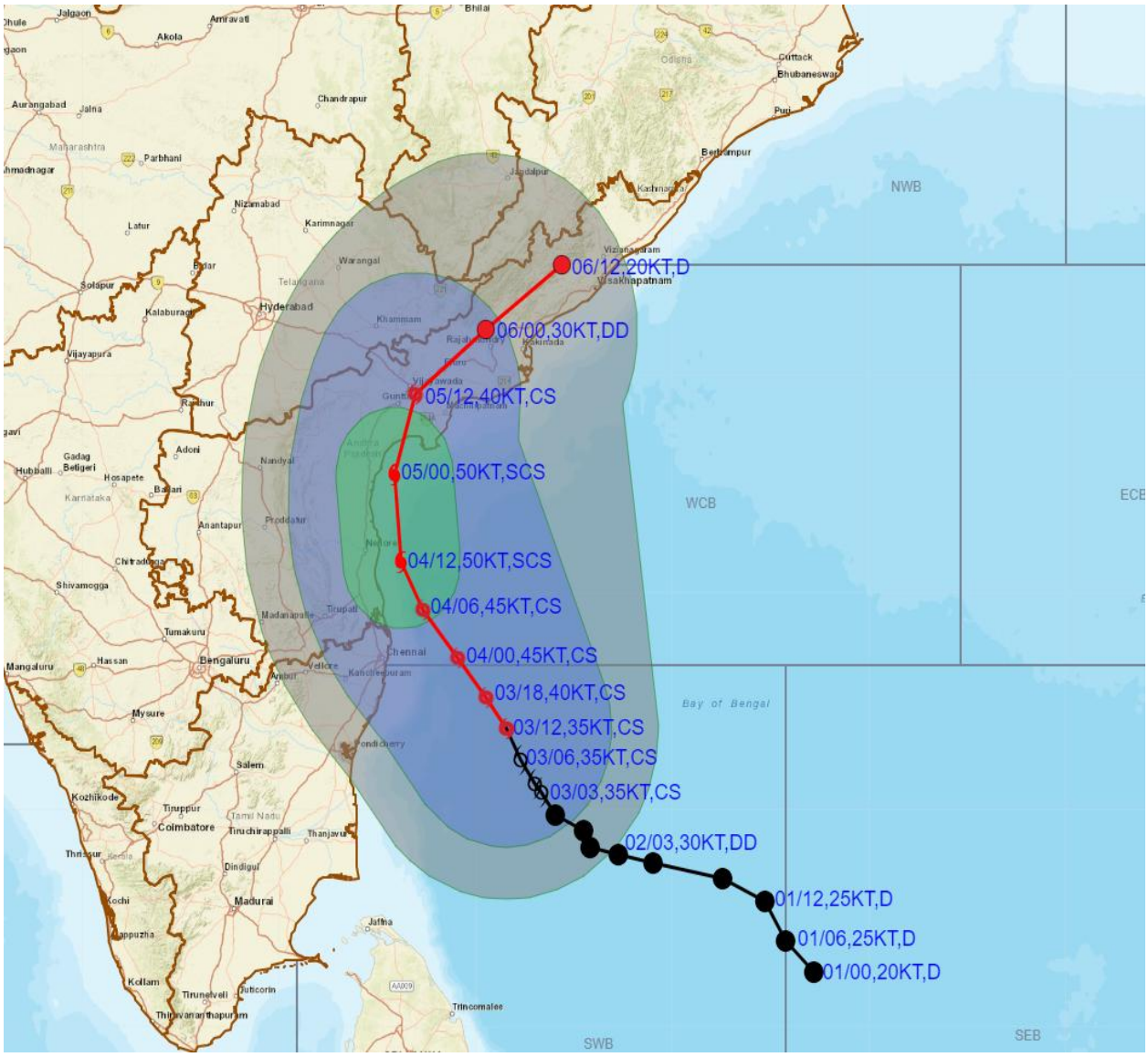
OBSERVED & FORECAST TRACK, MAXIMUM SUSTAINED WIND AND QUADRANT WIND IN ASSOCIATION WITH CYCLONIC STORM "MICHAUNG" OVER SOUTHWEST BAY OF BENGAL BASED ON 1200 UTC (1730 IST) OF 03RD DECEMBER 2023.



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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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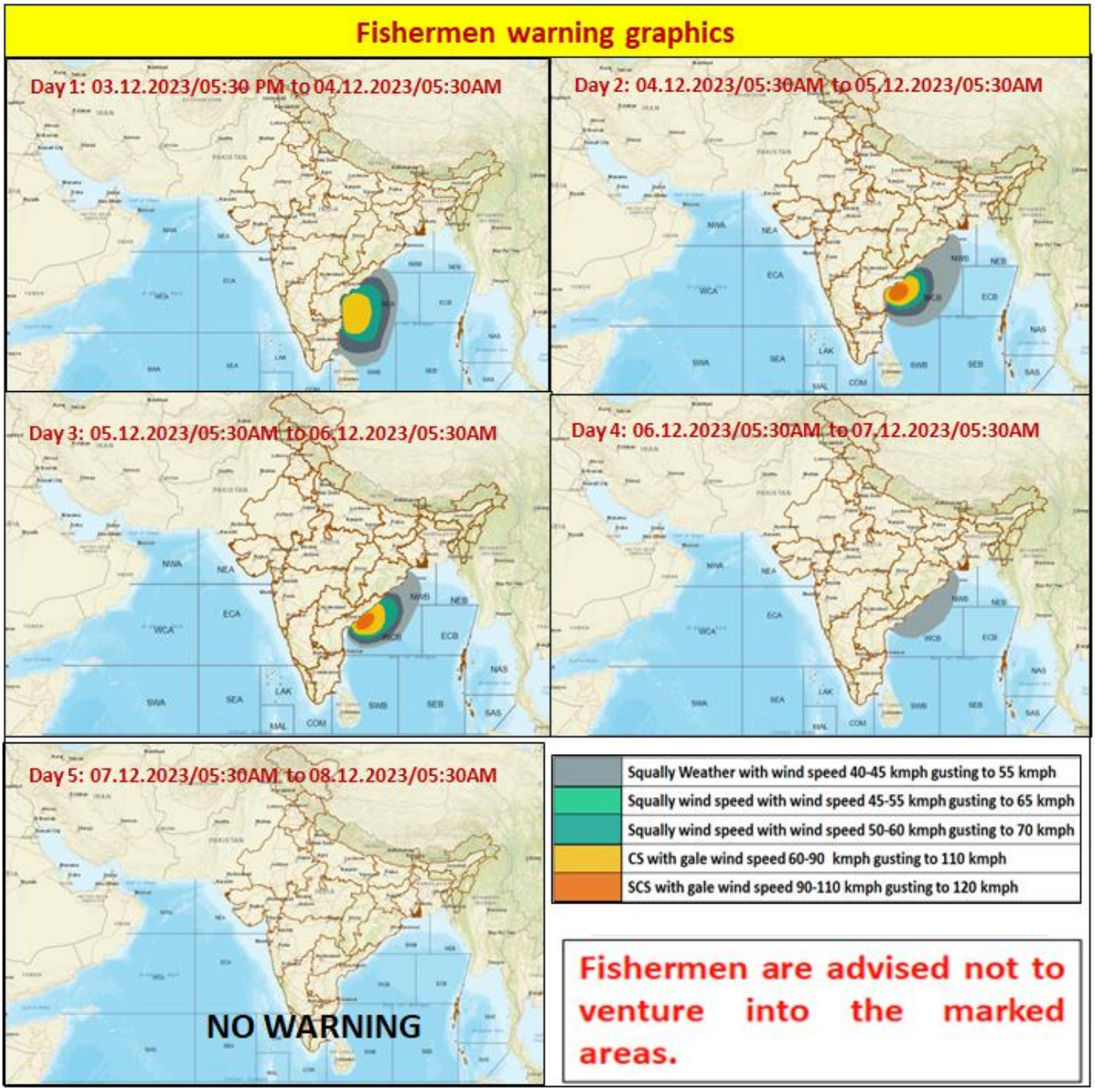
Fishermen warning graphics



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Storm Surge Warning Graphics based on Forecast Track

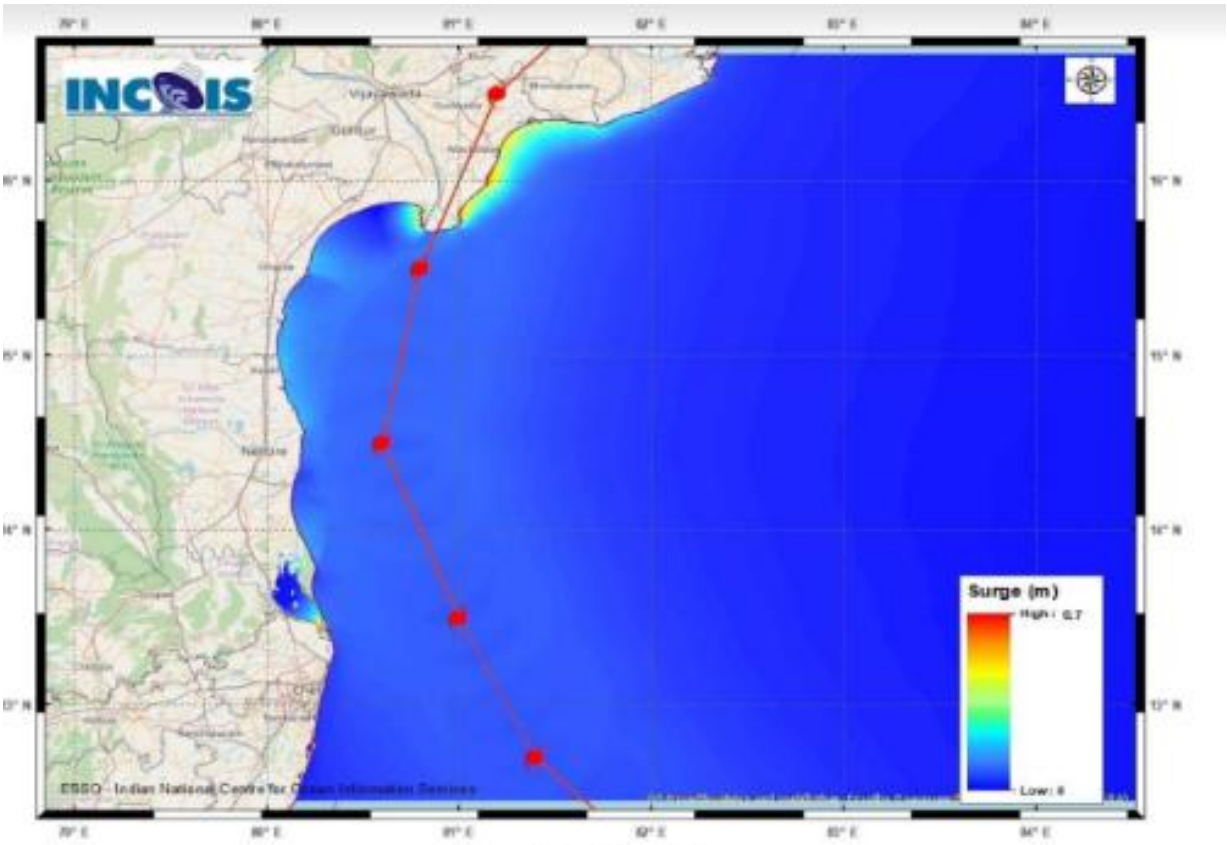

Figure: Storm Surge Map

STORM SURGE HEIGHT INFORMATION:

* The below listed surge heights are over and above astronomical tide.

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	STORM SURGE (m)	EXPECTED INUNDATION EXTENT (km)
Avanigadda	Krishna	Andhra Pradesh	Ramakrishnapuram	0.3-0.7	Upto 0.15
Machilipatnam	Krishna	Andhra Pradesh	Perupalem	0.3-0.6	Upto 0.17
Repalle	Guntur	Andhra Pradesh	Repalle	0.2-0.5	Upto 0.25
Ponneri	Thiruvallur	Tamil Nadu	Karimanal	0.2-0.5	Upto 0.15

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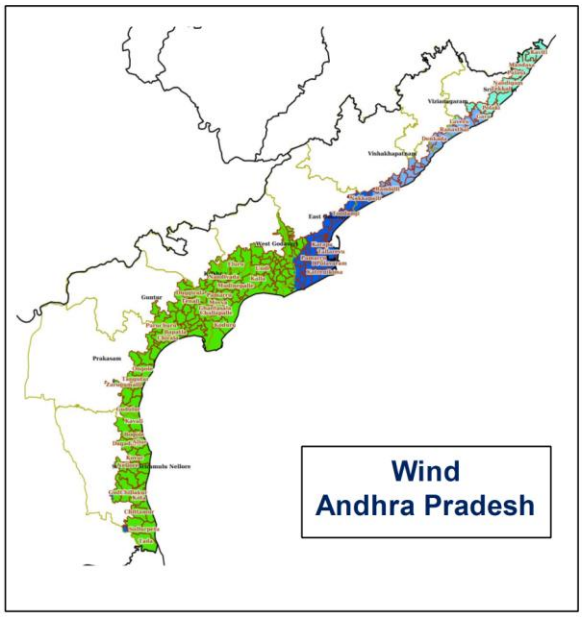
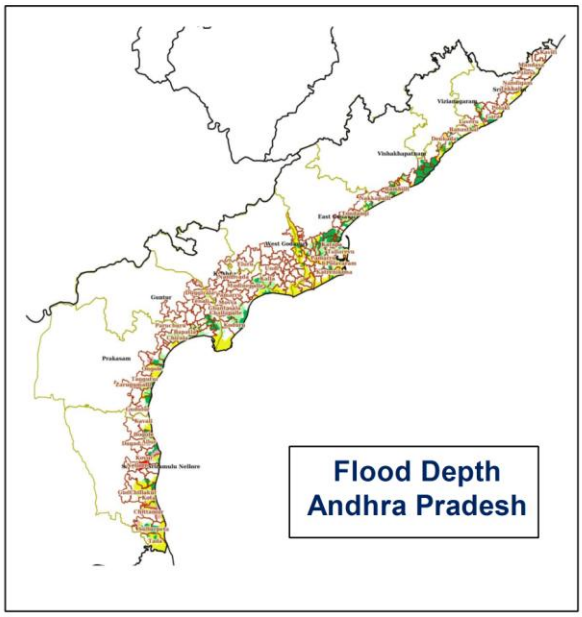
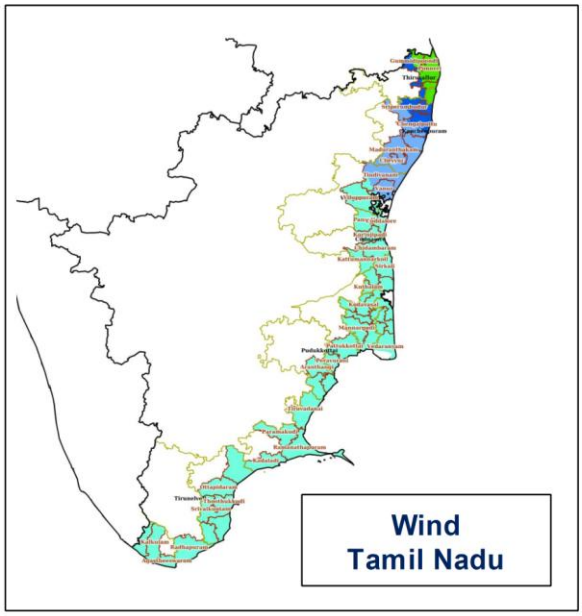
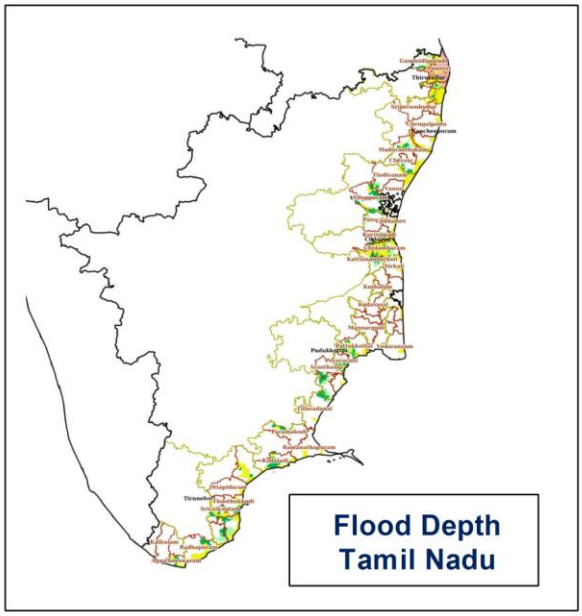
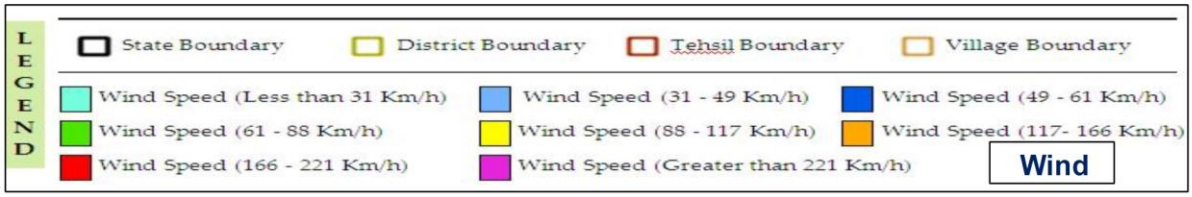
Hazard Map with CYCLONIC STORM “MICHAUNG” Over Southwest Bay of Bengal

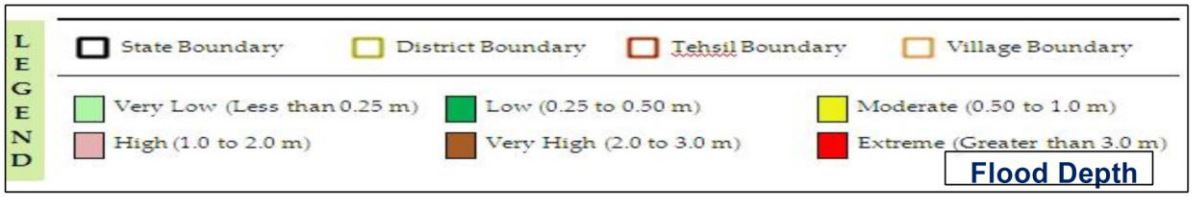












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