



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI

TROPICAL CYCLONE ADVISORY NO. 8

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. 8 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0000 UTC OF 04.12.2023 BASED ON 2100 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 14 KMPH DURING PAST 06 HOURS, AND LAY CENTERED AT 2100 UTC OF TODAY, THE 3RD DECEMBER, 2023 OVER THE SOUTHWEST AND ADJOINING BAY OF BENGAL LATITUDE 13.0°N AND LONGITUDE 81.4°E, ABOUT 200 KM EAST-NORTHEAST OF PUDUCHERRY (43331), 130 KM EAST OF CHENNAI (43279), 220 KM SOUTHEAST OF NELLORE (43245), 330 KM SOUTH-SOUTHEAST OF BAPATLA (43220) AND 350 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 0500 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 0500 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. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
03.12.23/2100	13.0/81.4	75-85 KMPH GUSTING TO 95 KMPH	CYCLONIC STORM
04.12.23/0000	13.3/81.2	80-90 KMPH GUSTING TO 100 KMPH	CYCLONIC STORM
04.12.23/0600	13.8/80.8	85-95 KMPH GUSTING TO 105 KMPH	SEVERE CYCLONIC STORM
04.12.23/1200	14.3/80.5	90-100 KMPH GUSTING TO 110 KMPH	SEVERE CYCLONIC STORM
04.12.23/1800	14.9/80.4	90-100 KMPH GUSTING TO 110 KMPH	SEVERE CYCLONIC STORM
05.12.23/0600	15.9/80.5	85-95 KMPH GUSTING TO 105 KMPH	SEVERE CYCLONIC STORM
05.12.23/1800	16.8/81.1	60-70 KMPH GUSTING TO 80 KMPH	CYCLONIC STORM
06.12.23/0600	17.6/82.2	40-50 KMPH GUSTING TO 60 KMPH	DEPRESSION
06.12.23/1800	18.4/83.3	20-30 KMPH GUSTING TO 40 KMPH	WELL MARKED LOW PRESSURE AREA

INSAT-3D IMAGERY AT 2100 UTC OF 3RD DECEMBER, INDICATES THE ORGANISATION OF CLOUD MASS. ASSOCIATED INTENSITY IS T3.0. ASSOCIATED SCATTERED TO BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH-WEST AND ADJOINING WEST-CENTRAL BAY OF BENGAL BETWEEN LATITUDE 7.0°N TO 18.0°N LONGITUDE 80.0E TO 86.5E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93 DEGREE CELSIUS.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 45 KNOTS GUSTING TO 55 KNOTS. ESTIMATED CENTRAL PRESSURE IS 996 HPA. SEA CONDITION IS LIKELY TO BE HIGH OVER THE SOUTHWEST BAY OF BENGAL.

MADDEN JULIAN OSCILLATION (MJO) IS CURRENTLY IN PHASE 4 WITH AMPLITUDE GREATER THAN 1. SEA SURFACE TEMPERATURE IS 28°C AROUND SYSTEM. TROPICAL CYCLONE HEAT POTENTIAL IS 60-70 KJ/CM² OVER SOUTHWEST BOB. THE NCICS BASED FORECASTS FOR EQUATORIAL WAVES INDICATE STRENGTHENING OF WESTERLY WINDS ALONG WITH 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.

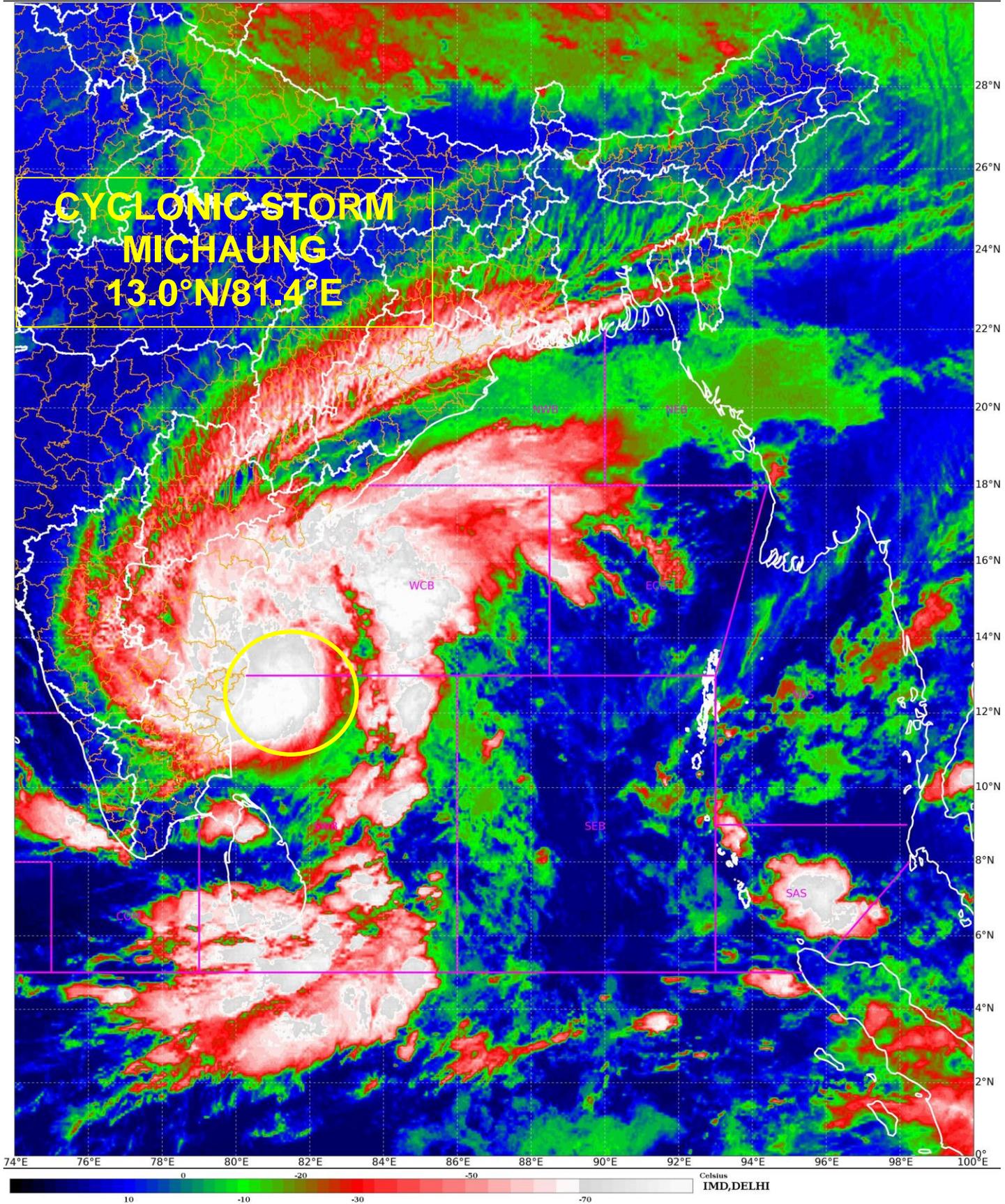
CURRENT ENVIRONMENTAL FEATURES INDICATE, THE LOW LEVEL VORTICITY OF ABOUT 250X10⁻⁶S⁻¹ AROUND SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE VORTICITY FIELD SHOWS NO TILTING WITH HEIGHT. POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 30 X 10⁻⁵ S⁻¹ TO THE EAST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 40 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°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.

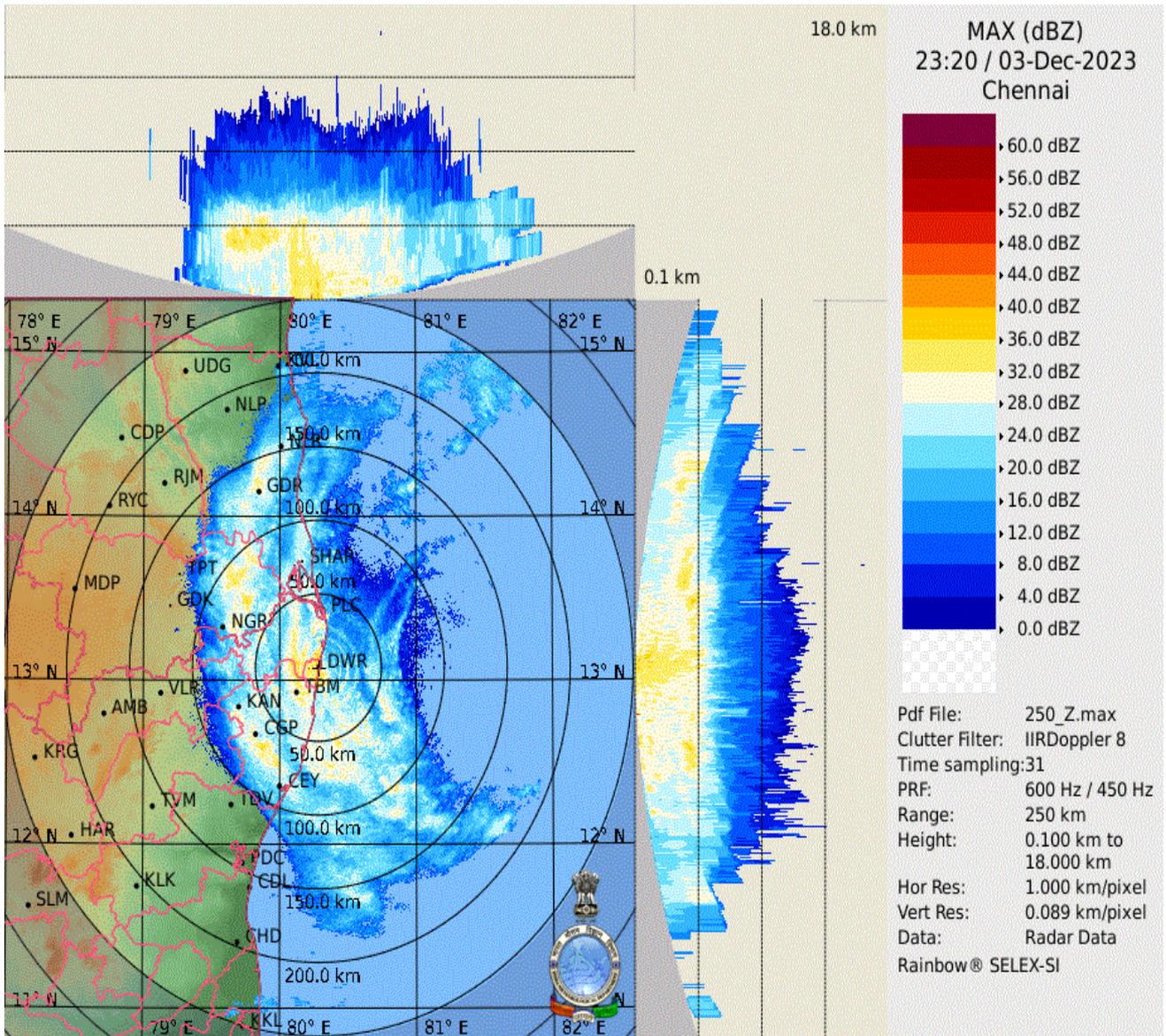
MOST OF THE MODELS ARE INDICATING INITIAL NORTHWESTWARDS MOVEMENT TOWARDS ANDHRA PRADESH COAST. THE LANDFALL POINT IS VARYING BETWEEN LATITUDE 15.1-15.7°N/80.0-80.3°E. THE LANDFALL TIME IS VARYING BETWEEN 5TH/0000 UTC TO 5TH /0900 UTC.

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 0500 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 0500 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)
SCIENTIST-C
RSMC NEW DELHI



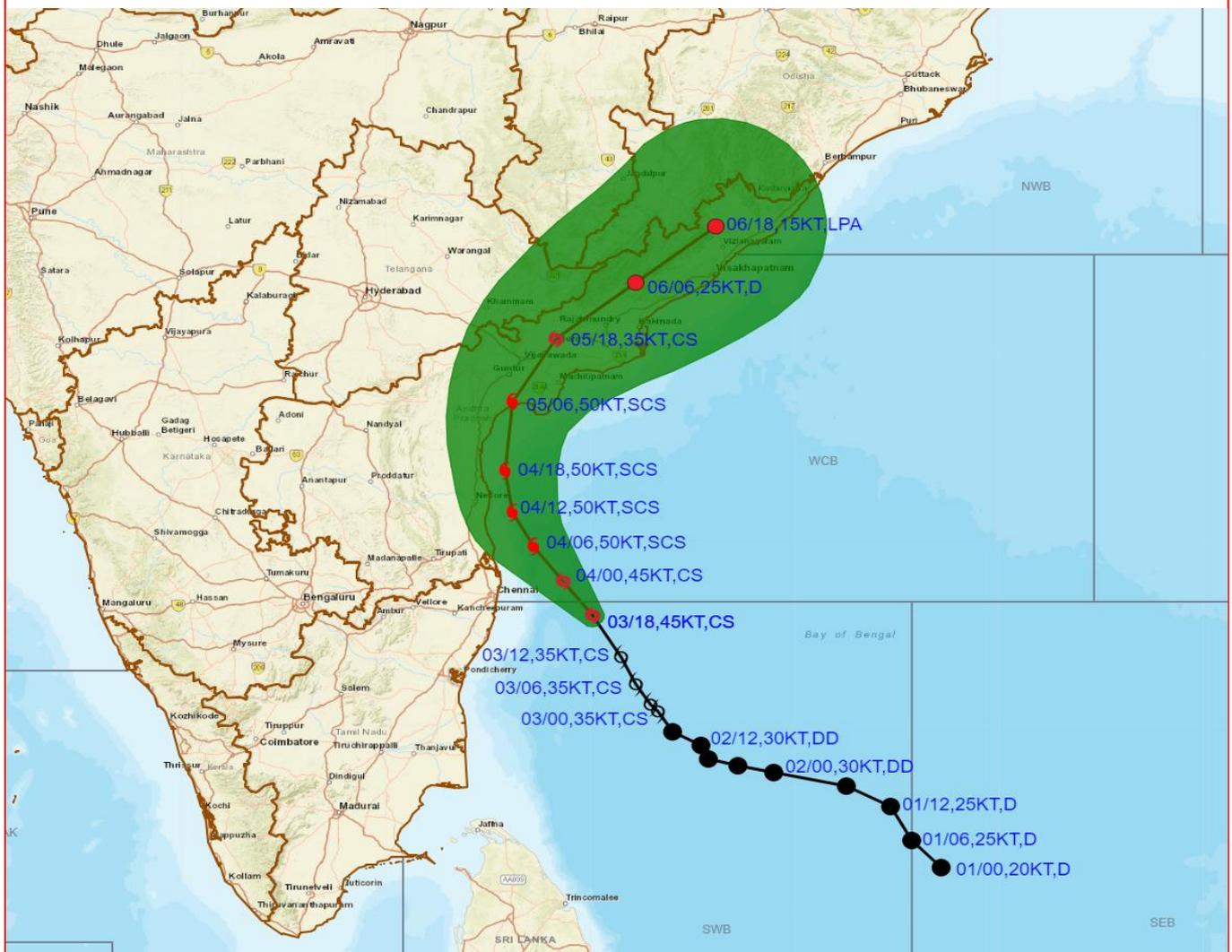
Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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OBSERVED & FORECAST TRACK, MAXIMUM SUSTAINED WIND AND CONE OF UNCERTAINTY IN ASSOCIATION WITH CYCLONIC STORM "MICHAUNG" OVER SOUTHWEST AND ADJOINING BAY OF BENGAL BASED ON 1800 UTC (2330 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)

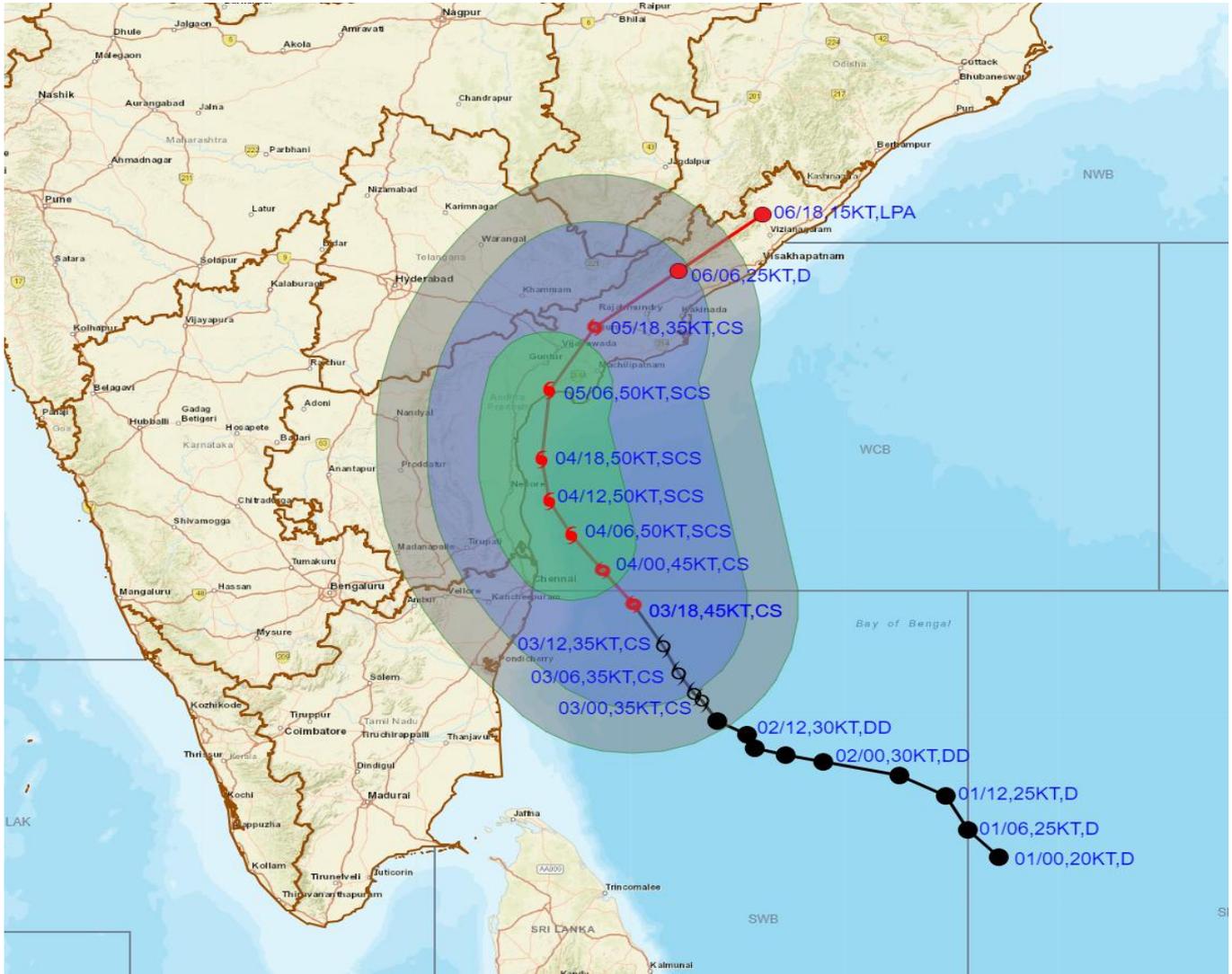
- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS				
	MO PONDICHERRY	CHENNAI/ MINAMBAKKAM	NELLORE	BAPATLA	MACHILIPATNAM /FRANCHPET
03.12.23/1800	220, ENE	160, E	250, SE	360, SSE	380, S
04.12.23/1800	340, N	220, N	70, NE	120, S	160, SSW
05.12.23/1800	560, NNE	440, NNE	290, NNE	130, NE	70, N
06.12.23/1800	810, NNE	690, NNE	570, NE	420, NE	340, NE

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OBSERVED & FORECAST TRACK, MAXIMUM SUSTAINED WIND AND QUADRANT WIND IN ASSOCIATION WITH CYCLONIC STORM "MICHAUNG" OVER SOUTHWEST AND ADJOINING BAY OF BENGAL BASED ON 1800 UTC (2330 IST) OF 03RD DECEMBER 2023.



DATE/TIME IN UTC
IST=UTC + 0530

L: LOW PRESSURE AREA

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D: DEPRESSION (17-27 KT)

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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 (≥20 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)

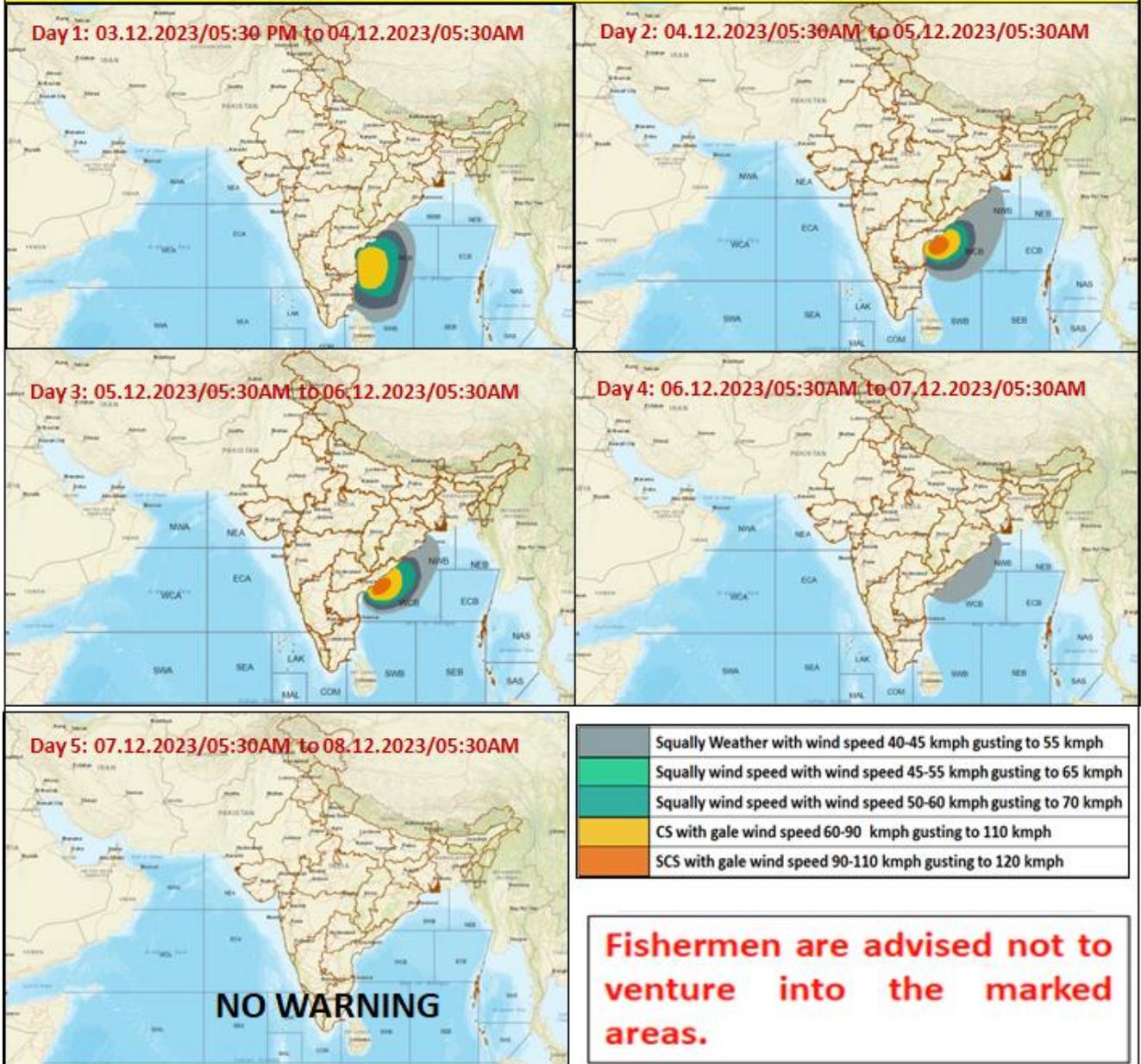
— ≥ 64 KT (≥118 KMPH)

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

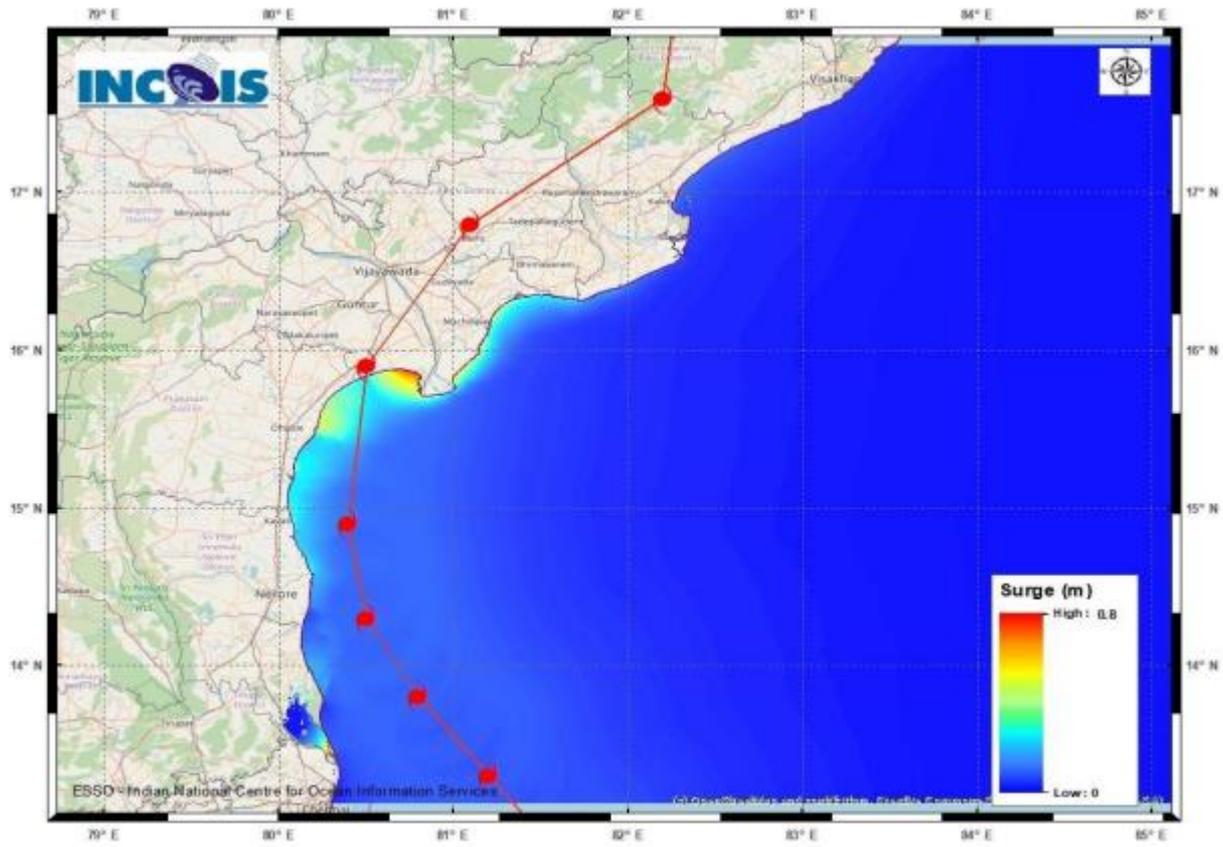
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Fishermen warning graphics



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Storm Surge Warning Graphics based on Forecast Track



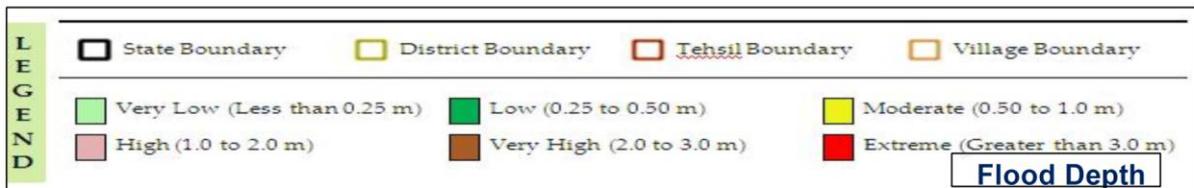
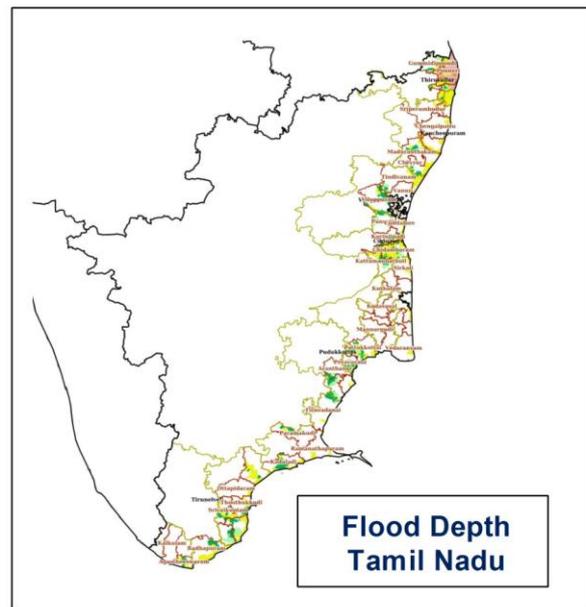
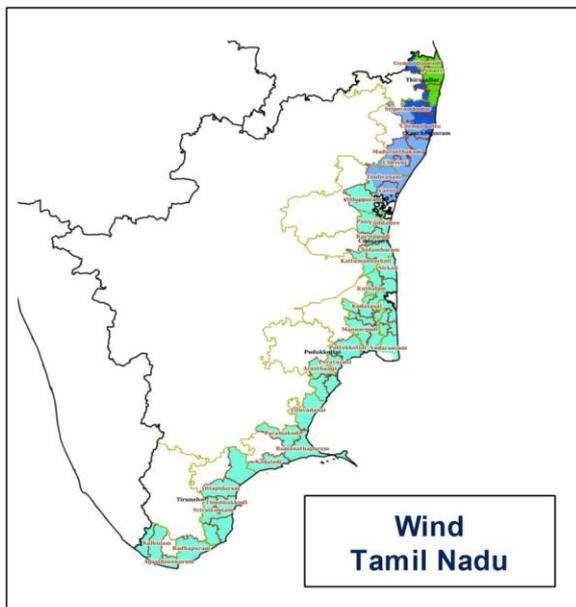
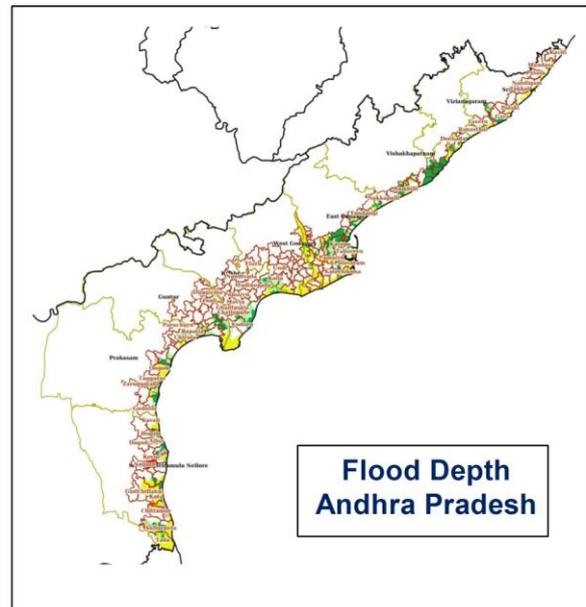
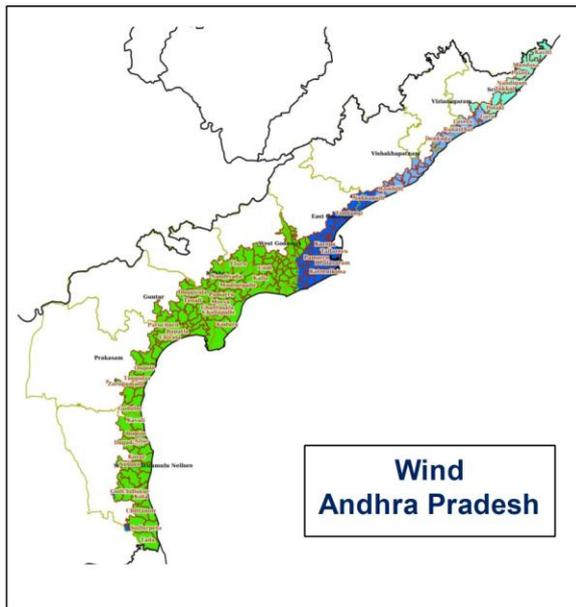
STORM SURGE HEIGHT INFORMATION:

* 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	0.3-0.6	Upto 0.25
Machilipatnam	Krishna	Andhra Pradesh	Perupalem	0.3-0.5	Upto 0.17
Ongole	Prakasam	Andhra Pradesh	Kanuparthi	0.2-0.5	Upto 0.15
Ponneri	Thiruvallur	Tamil Nadu	Karimanal	0.2-0.7	Upto 0.27
Repalle	Guntur	Andhra Pradesh	Repalle	0.4-0.8	Upto 0.25
Sullurpeta	Nellore	Andhra Pradesh	Pudilayadoruvu	0.2-0.6	Upto 0.18

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Hazard Map with CYCLONIC STORM "MICHAUNG" Over Southwest Bay of Bengal



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