



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI**

**TROPICAL CYCLONE ADVISORY NO. 20**

**FROM: RSMC TROPICAL CYCLONES NEW DELHI DATED 05.12.2023**

**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. 20 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1100 UTC OF 05.12.2023 BASED ON 0900 UTC OF 05.12.2023**

**SUB: SEVERE CYCLONIC STORM “MICHAUNG” (PRONOUNCED AS MIGJAUM) OVER WESTCENTRAL BAY OF BENGAL CROSSED SOUTH ANDHRA PRADESH COAST CLOSE TO SOUTH OF BAPTILA (43220). (CYCLONE WARNING FOR ANDHRA PRADESH COAST: **RED MESSAGE**)**

THE SEVERE CYCLONIC STORM “MICHAUNG” (PRONOUNCED AS MIGJAUM) OVER WESTCENTRAL BAY OF BENGAL NEAR SOUTH ANDHRA PRADESH COAST MOVED NORTHWARDS WITH A SPEED OF 11 KMPH DURING PAST 06 HOURS AND CROSSED SOUTH ANDHRA PRADESH COAST CLOSE TO SOUTH OF BAPATLA (43220), DURING 0700 TO 0900 UTC OF TODAY, THE 5TH DECEMBER 2023 AS A SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 90-100 KMPH. THE CURRENT MAXIMUM SUSTAINED WIND SPEED IS 85-95 KMPH GUSTING TO 105 KMPH.

IT LAY CENTERED AT 0900 UTC OF TODAY, THE 5TH DECEMBER, 2023 OVER SOUTH COASTAL ANDHRA PRADESH NEAR LATITUDE 15.8°N AND LONGITUDE 80.3°E, ABOUT 15 KM SOUTHWEST OF BAPATLA (43220), AND 40 KM NORTHEAST OF ONGOLE (43221).

THE SYSTEM IS LIKELY TO MOVE NEARLY NORTHWARDS AND WEAKEN INTO A CYCLONIC STORM DURING NEXT 2 HOURS.

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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**TRACK AND INTENSITY FORECASTS:**

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
05.12.23/0900	15.80/80.30	85-95 KMPH GUSTING TO 105KMPH	SEVERE CYCLONIC STORM
05.12.23/1200	16.10/80.40	65-75 KMPH GUSTING TO 85 KMPH	CYCLONIC STORM
05.12.23/1800	16.60/80.80	55-65 KMPH GUSTING TO 75 KMPH	DEEP DEPRESSION
06.12.23/0000	17.20/81.40	40-50 KMPH GUSTING TO 60 KMPH	DEPRESSION
06.12.23/0600	17.70/82.10	20-30 KMPH GUSTING TO 40 KMPH	LOW PRESSURE

**INSAT-3D IMAGERY AT 0900 UTC OF 5<sup>TH</sup> DECEMBER**, INDICATES IT CROSSED ANDHRA PRADESH COAST. THE ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL BAY OF BENGAL AND COASTAL ANDHRA PRADESH BETWEEN LATITUDE 13.5°N TO 18.5°N LONGITUDE 77.5E TO 82.5E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 90 DEGREE CELSIUS.

**RADAR PICTURE OF MACHILIPATNAM(43185) AT 0900 UTC** SHOWS THE SYSTEM IS OVER LAND AND CROSSED COASTAL ANDHRA PRADESH

**COASTAL SURFACE OBSERVATIONS AT 0900UTC OF TODAY 5<sup>TH</sup> DEC 2023:** ONGOLE (43221) WITH MEAN SEA LEVEL PRESSURE 994.1 HPA WIND 270°/10 KNOTS; AND BAPATLA (43220) WITH MEAN SEA LEVEL PRESSURE 998.1 HPA, WIND 140°/38 KNOTS

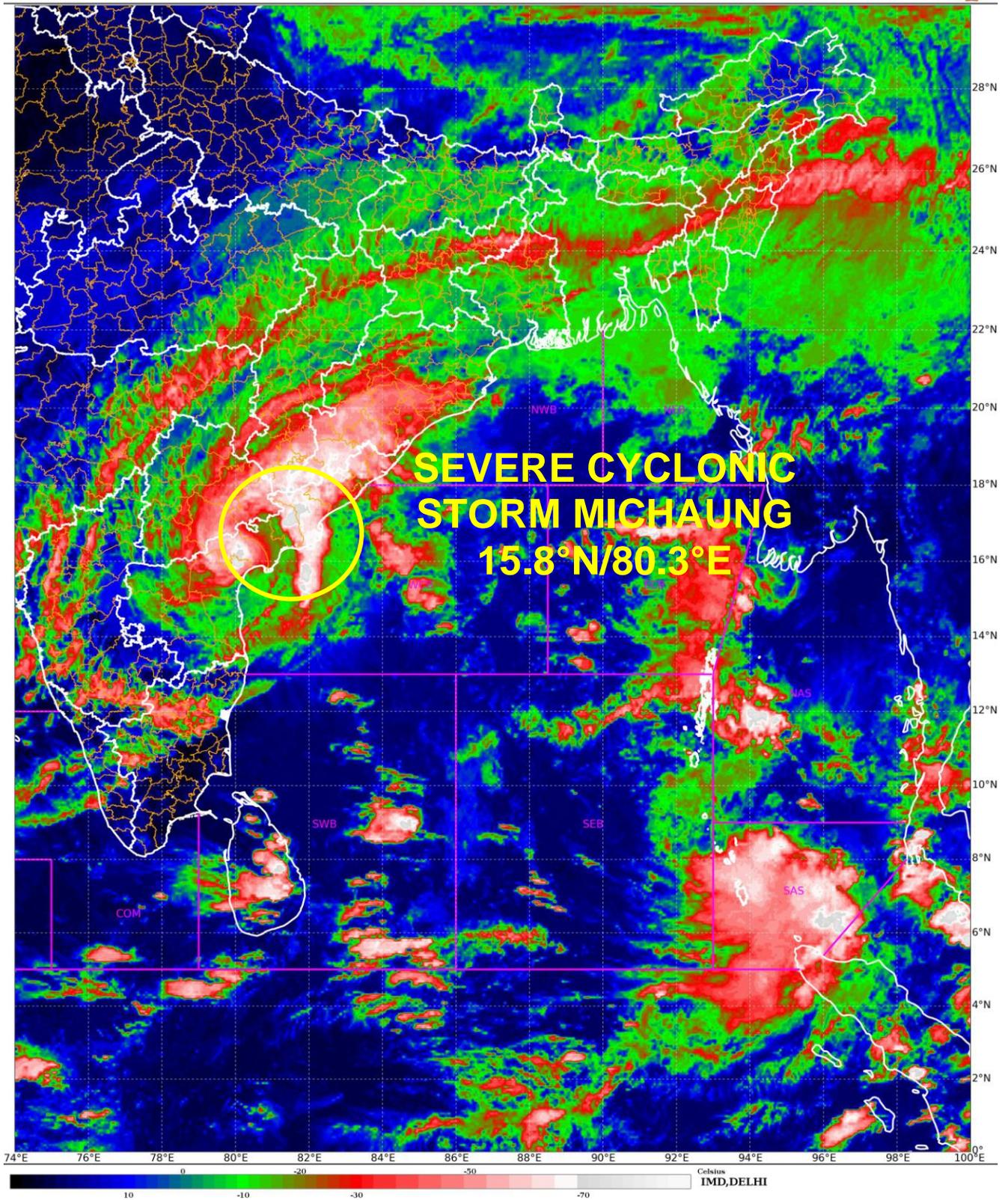
ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 50 KNOTS GUSTING TO 60 KNOTS. IT IS LIKELY TO DECREASE AND BECOME 40-50KT DURING NEXT 6 HOURS. ESTIMATED CENTRAL PRESSURE IS 994 HPA. SEA CONDITION IS **HIGH TO VERY HIGH SEA CONDITION** IS PREVAILING OVER **WESTCENTRAL BAY OF BENGAL AND ALONG & OFF SOUTH ANDHRA PRADESH COAST.**

CURRENT ENVIRONMENTAL FEATURES INDICATE, THE LOW LEVEL VORTICITY OF ABOUT  $200 \times 10^{-6} \text{S}^{-1}$  AROUND SYSTEM CENTRE. POSITIVE LOW LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT  $10 \times 10^{-5} \text{S}^{-1}$  TO THE EAST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT  $20 \times 10^{-5} \text{S}^{-1}$  TO

THE SYSTEM CROSSED SOUTH ANDHRA PRADESH COAST CLOSE TO SOUTH OF BAPATLA (43220), DURING 0700 TO 0900 UTC OF TODAY, THE 5TH DECEMBER 2023 AS A SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 90-100 KMPH. THE CURRENT MAXIMUM SUSTAINED WIND SPEED IS 85-95 KMPH GUSTING TO 105 KMPH.

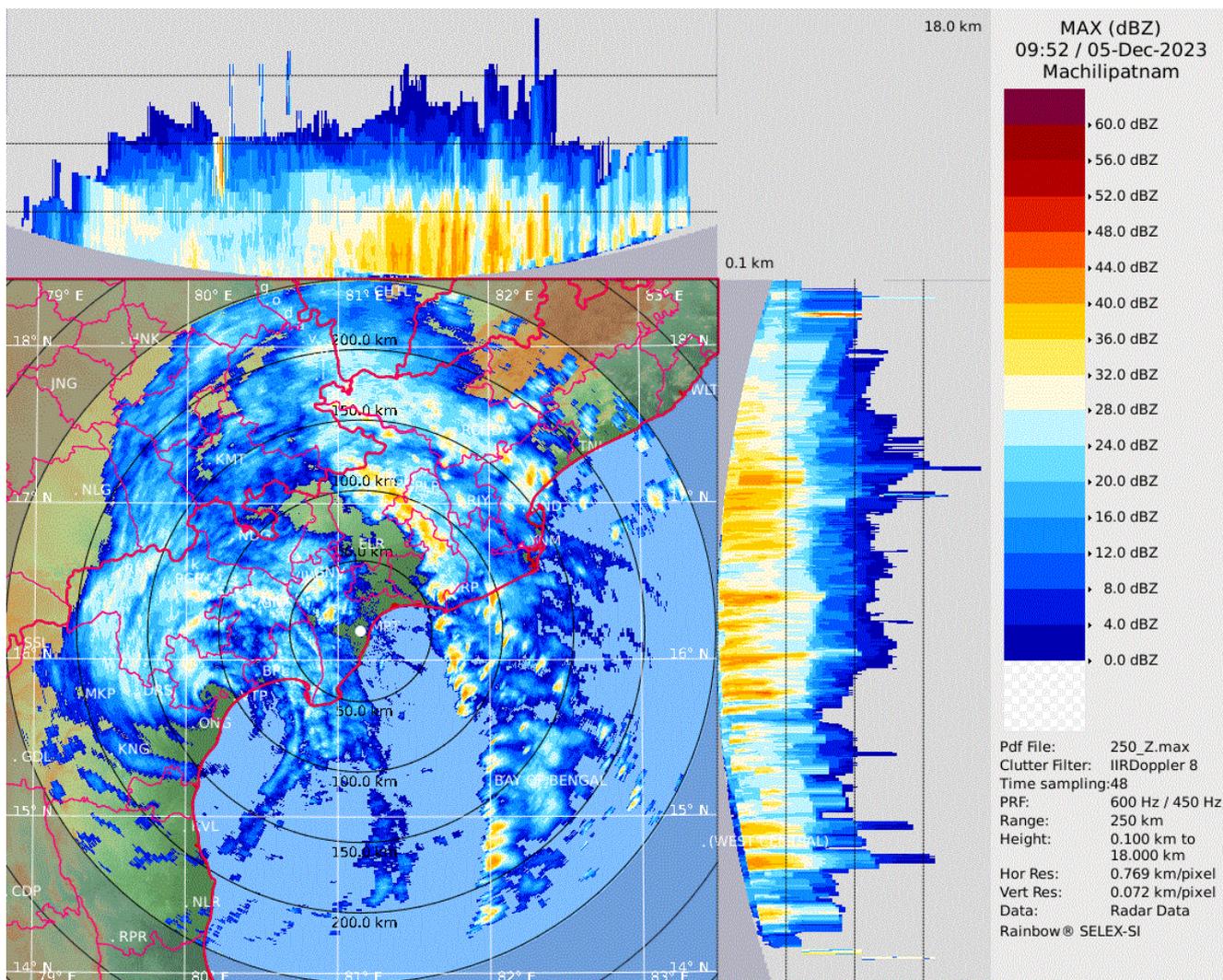
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(DR TRISANU BANIK)  
RSMC NEW DELHI



*INSAT 3D Image based on 0900 UTC (1430 hrs IST) of 05th Dec 2023*

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PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%  
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***Maximum Reflectivity from DWR Machilipatnam based on 0952 UTC  
(1522 hrs IST) of 05th December 2023***

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**OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH SEVERE CYCLONIC STORM "MICHAUNG" OVER SOUTH COASTAL ANDHRA PRADESH BASED ON 0900 UTC (1430 IST) OF 5<sup>TH</sup> DECEMBER 2023.**

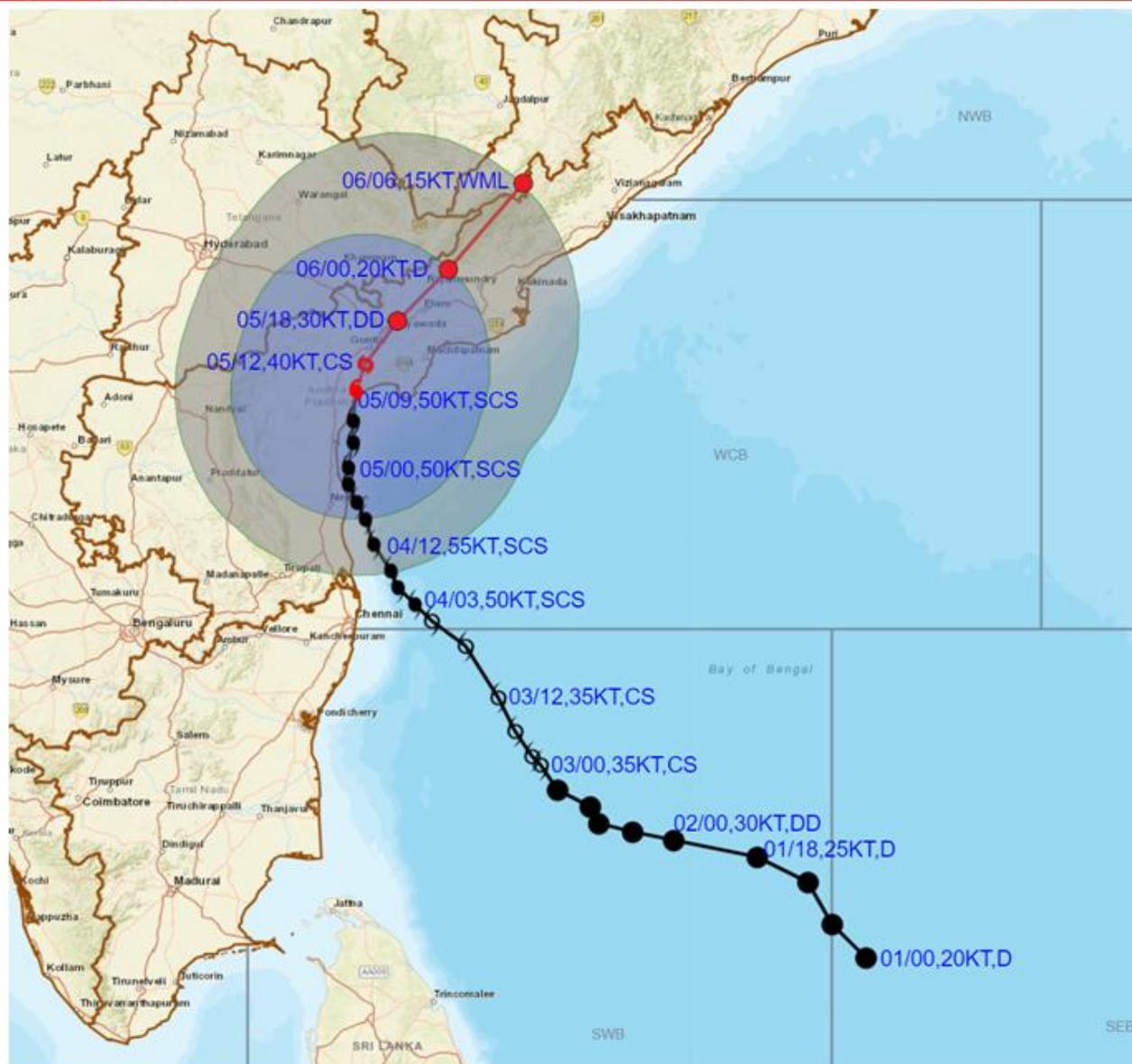


DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)  
 SuCS: SUPER CYCLONIC STORM (≥20 KT)

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



**OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND IN ASSOCIATION WITH SEVERE CYCLONIC STORM "MICHAUNG" OVER SOUTH COASTAL ANDHRA PRADESH BASED ON 0900 UTC (1430 IST) OF 5<sup>TH</sup> 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)

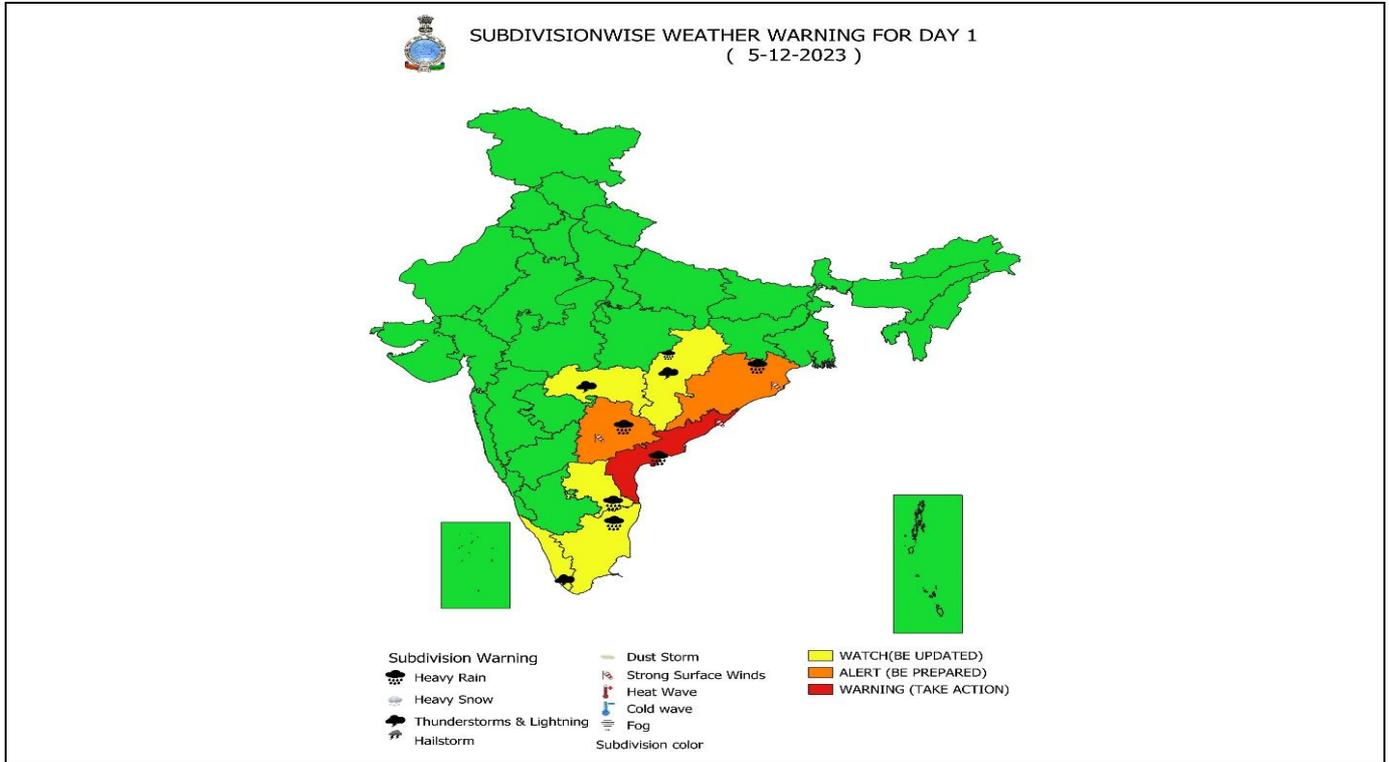
● LESS THAN 34 KT  
 ○ 34-47 KT  
 ● ≥ 48 KT  
 — OBSERVED TRACK  
 — FORECAST TRACK  
 — CONE OF UNCERTAINTY  
 AREA OF MAXIMUM SUSTAINED WIND SPEED:  
 ■ 28-33 KT (52-61 KMPH)  
 ■ 34-49 KT (62-91 KMPH)  
 ■ 50-63 KT (92-117 KMPH)  
 ■ ≥ 64 KT (≥118 KMPH)

**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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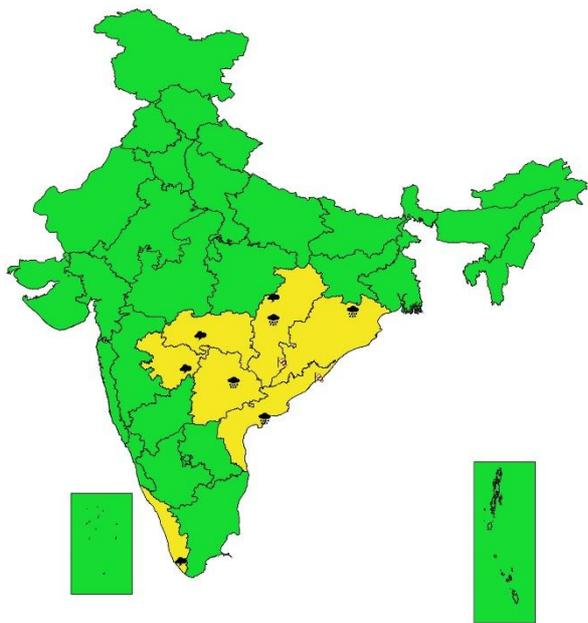
# Weather Warning Graphics



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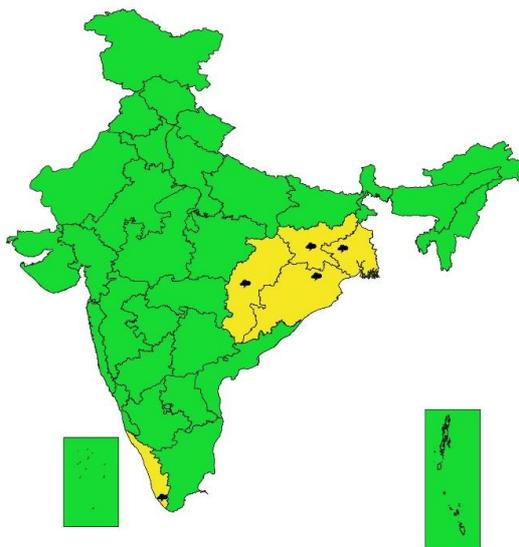
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 2  
( 6-12-2023)**



- |                             |                        |                         |
|-----------------------------|------------------------|-------------------------|
| Subdivision Warning         | Dust Storm             | Subdivision color       |
| ☁ Heavy Rain                | 🌪 Strong Surface Winds | 🟢 NO WARNING            |
| ❄ Heavy Snow                | 🔥 Heat Wave            | 🟡 WATCH (BE UPDATED)    |
| ⚡ Thunderstorms & Lightning | ❄ Cold wave            | 🟠 ALERT (BE PREPARED)   |
| 🌨 Hailstorm                 | 🌫 Fog                  | 🔴 WARNING (TAKE ACTION) |



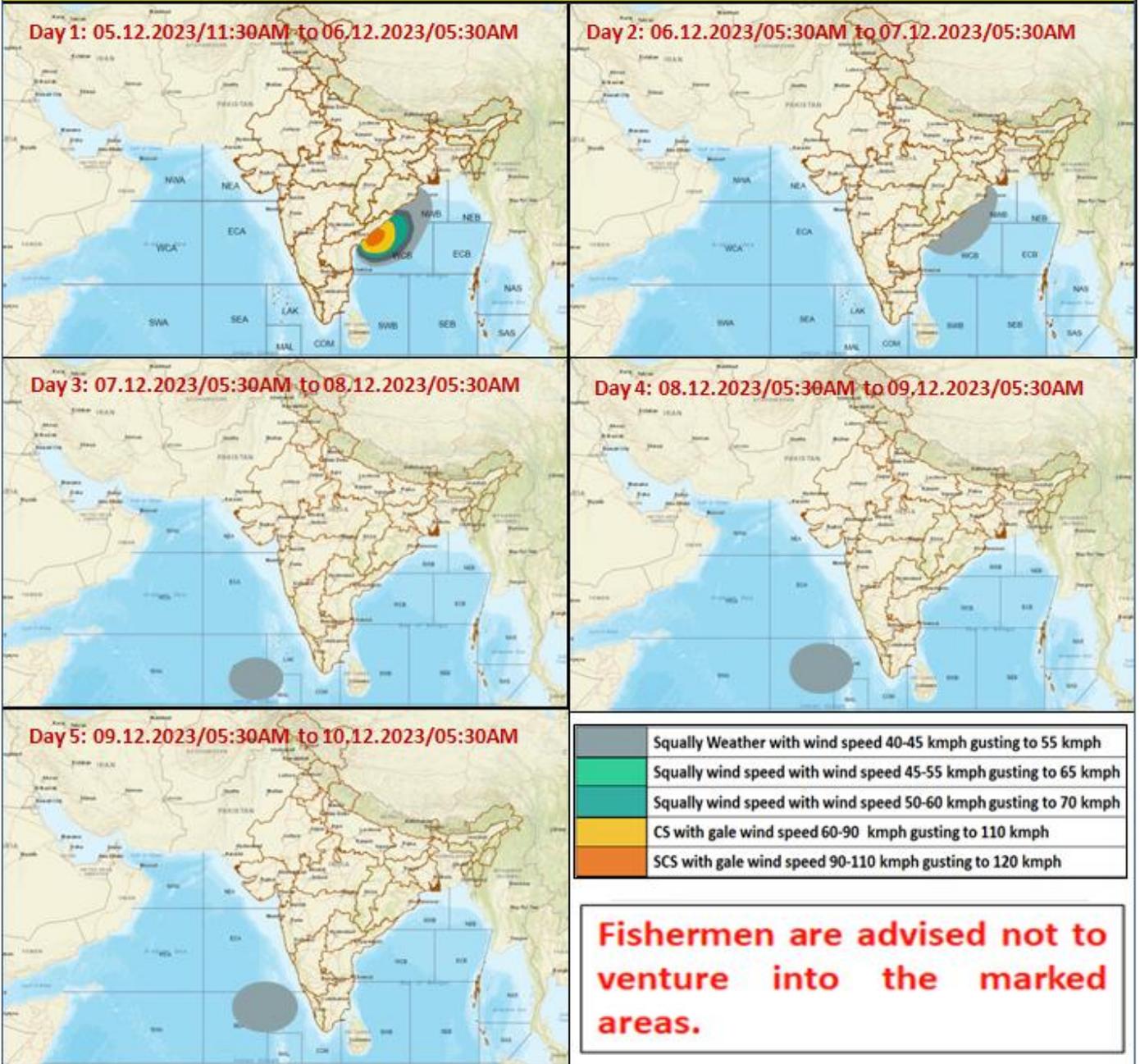
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 3  
( 7-12-2023)**



- |                             |                        |                         |
|-----------------------------|------------------------|-------------------------|
| Subdivision Warning         | Dust Storm             | Subdivision color       |
| ☁ Heavy Rain                | 🌪 Strong Surface Winds | 🟢 NO WARNING            |
| ❄ Heavy Snow                | 🔥 Heat Wave            | 🟡 WATCH (BE UPDATED)    |
| ⚡ Thunderstorms & Lightning | ❄ Cold wave            | 🟠 ALERT (BE PREPARED)   |
| 🌨 Hailstorm                 | 🌫 Fog                  | 🔴 WARNING (TAKE ACTION) |

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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)
Repalle	Guntur	Andhra Pradesh	Forest	0.5-1.1	Upto 0.23
Sullurpeta	Nellore	Andhra Pradesh	Duggaraja Patnam	0.5-0.8	Upto 0.24
Bapatla	Guntur	Andhra Pradesh	Forest	0.5-0.8	Upto 0.19
Ongole	Prakasam	Andhra Pradesh	Kanuparthi	0.4-0.8	Upto 0.16
Chirala	Prakasam	Andhra Pradesh	Kotha Peta (Rural)	0.5-0.7	Upto 0.17
Kovvur	Nellore	Andhra Pradesh	Isakapalle	0.4-0.5	Upto 0.13

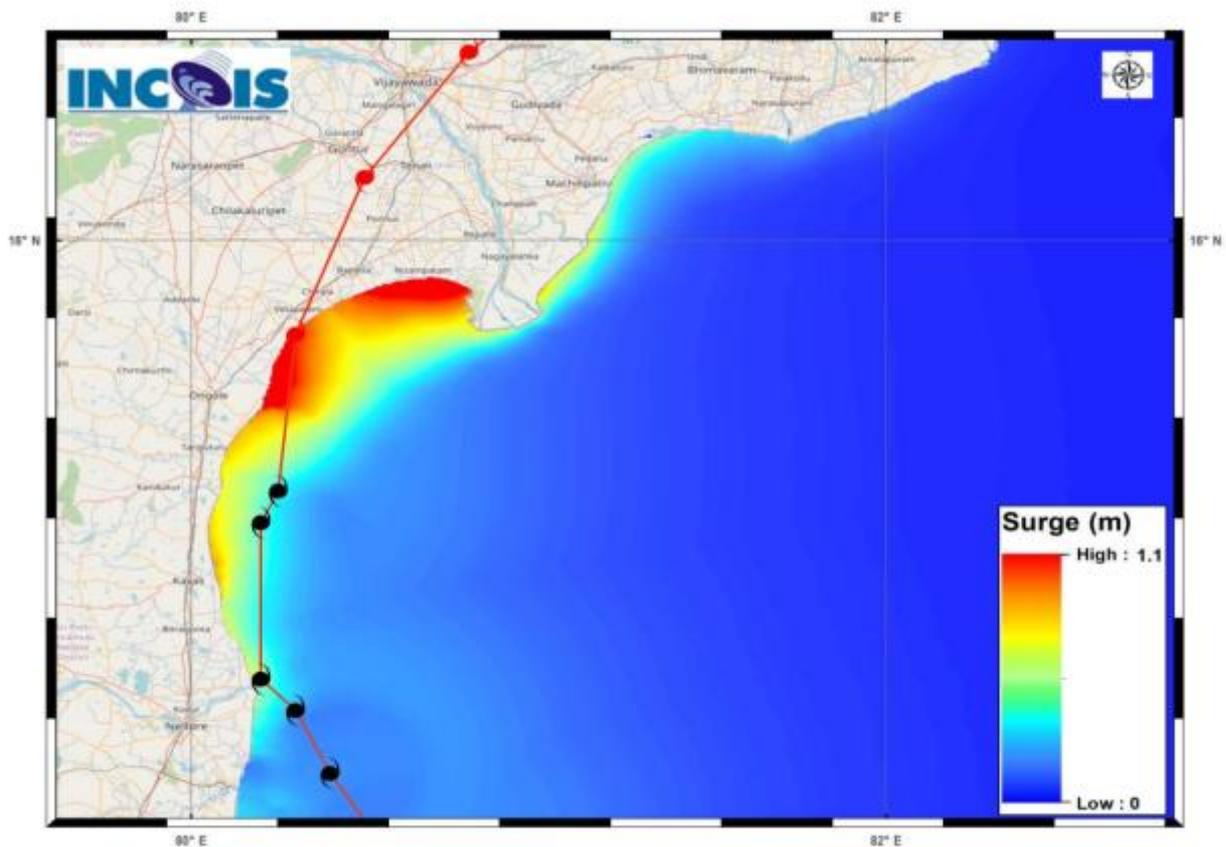


Figure:Storm Surge Map

## Storm Surge Map

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# Flash Flood Guidance

**24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 06-12-2023 :**

**High flash flood risk** likely over few watersheds & neighbourhoods of following coastal districts of **Andhra Pradesh**

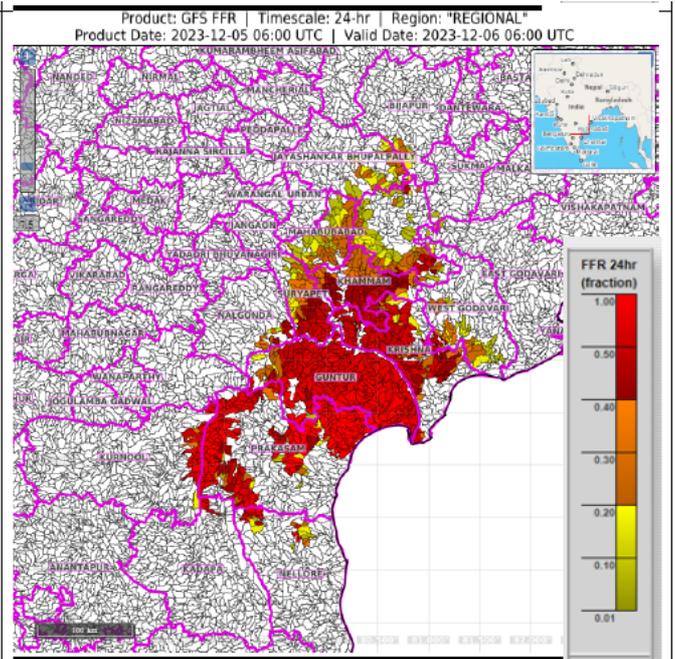
Guntur, Prakasam and Krishna (>50%) districts of **Andhra Pradesh**;

**Moderate flash flood risk** likely over few watersheds & neighbourhoods of following coastal districts (>20% - <50%) of **Andhra Pradesh and Telangana** during next 24 hours.

West Godavari, Guntur, Kumool, Prakasam and Nellore (>20% - <50%) districts of **Andhra Pradesh**;

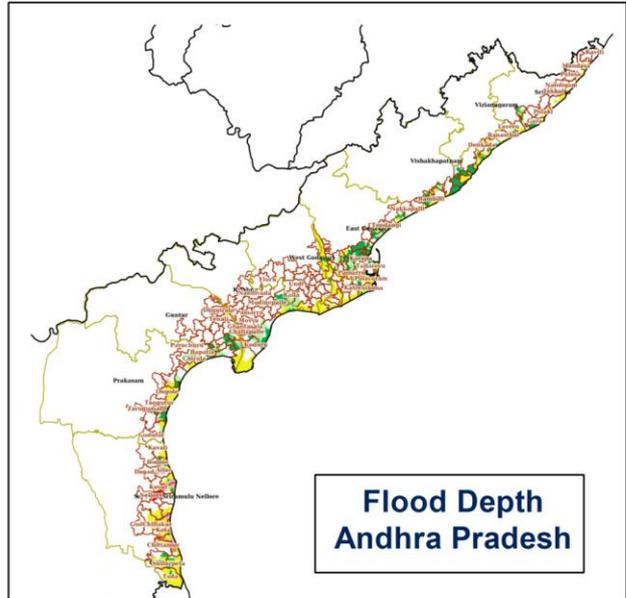
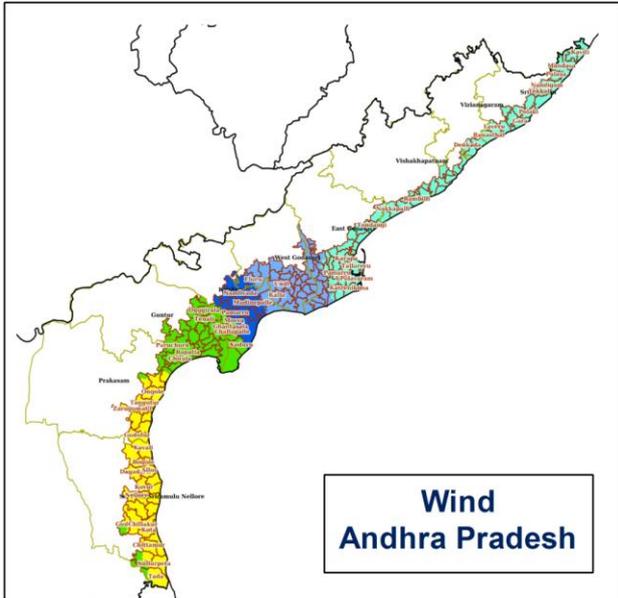
Nalgonda, Suryapet, Khammam, Bharadri kothagudem and Mahabubabad (>20% - <50%) districts of **Telangana**.

Surface runoff/ Inundation may occur at some fully saturated watersheds & low-lying areas over AoC as depicted in map due to Severe Cyclonic Storm 'Michaung' during next 24 hours.



<b>Flash Flood Risk</b>	
	<b>High Risk (Take Action)</b>
	<b>Moderate Risk (Be Prepared)</b>
	<b>Low Risk (Be Updated)</b>

# Hazard Map with Severe Cyclonic Storm MICHAUNG over Westcentral & adjoining off south Andhra Pradesh coast



<b>LEGEND</b>	State Boundary	District Boundary	Tehsil Boundary	Village Boundary
	Wind Speed (Less than 31 Km/h)	Wind Speed (31 - 49 Km/h)	Wind Speed (49 - 61 Km/h)	
	Wind Speed (61 - 88 Km/h)	Wind Speed (88 - 117 Km/h)	Wind Speed (117- 166 Km/h)	
	Wind Speed (166 - 221 Km/h)	Wind Speed (Greater than 221 Km/h)		
	<b>Wind</b>			

<b>LEGEND</b>	State Boundary	District Boundary	Tehsil Boundary	Village Boundary
	Very Low (Less than 0.25 m)	Low (0.25 to 0.50 m)	Moderate (0.50 to 1.0 m)	
	High (1.0 to 2.0 m)	Very High (2.0 to 3.0 m)	Extreme (Greater than 3.0 m)	
	<b>Flood Depth</b>			

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