



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 29.11.2024

(UPDATED) SPECIAL TROPICAL WEATHER OUTLOOK FOR THE NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR THE NEXT 120 HOURS ISSUED AT 0730 UTC OF 29.11.2024 BASED ON 0300 UTC OF 29.11.2024.

SUB: DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL

THE DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF 8 KMPH DURING PAST 6 HOURS AND LAY CENTRED AT 0300 UTC OF TODAY, THE 29TH NOVEMBER 2024 OVER THE SAME REGION NEAR LATITUDE 10.6°N AND LONGITUDE 82.6°E, ABOUT 270 KM NORTH-NORTHEAST OF TRINCOMALEE (43418), 300 KM EAST OF NAGAPPATTINAM (43347), 340 KM EAST-SOUTHEAST OF PUDUCHERRY (43331) AND 380 KM SOUTHEAST OF CHENNAI (43279).

IT IS LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM DURING NEXT 06 HOURS. THEREAFTER, IT IS LIKELY TO CONTINUE TO MOVE NORTHWESTWARDS AND CROSS NORTH TAMIL NADU-PUDUCHERRY COASTS BETWEEN KARAİKAL AND MAHABALIPURAM CLOSE TO PUDUCHERRY AS A CYCLONIC STORM WITH A WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH AROUND 0900 UTC 30TH NOVEMBER.

THE SYSTEM IS BEING CONTINUOUSLY MONITORED.

AS PER LATEST SATELLITE IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERIZED AS T2.0. CLOUDS ARE ORGANISED IN SHEAR PATTERN. AREA OF INTENSE CONVECTION IS SEEN TO THE NORTH OF SYSTEM AREA. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH & ADJOINING CENTRAL BAY OF BENGAL AND NEIGHBORHOOD BETWEEN LATITUDE 7.0N TO 17.0N AND LONGITUDE 80.0E TO 90.0E WITH MINIMUM CLOUD TOP TEMPERATURE AS MINUS 80-93°C.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE

DATE/ TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
29.11.24/0300	10.6/82.6	55-65 gusting to 75	Deep Depression
29.11.24/0600	10.7/82.4	55-65 gusting to 75	Deep Depression
29.11.24/1200	11.0/81.9	60-70 gusting to 80	Cyclonic Storm
29.11.24/1800	11.3/81.2	65-75 gusting to 85	Cyclonic Storm
30.11.24/0000	11.7/80.4	70-80 gusting to 90	Cyclonic Storm
30.11.24/1200	12.2/79.3	55-65 gusting to 75	Deep Depression

REMARKS:

THE SYSTEM IS OVER AN AREA WITH SEA SURFACE TEMPERATURE (SST) ABOUT 29°C. THE SST IS LIKELY TO BE RELATIVELY LESS (28°C) ALONG & OFF THE TAMIL NADU COAST. THE TOTAL PRECIPITABLE WATER IMAGERY IS INDICATING WARM MOIST AIR AROUND SYSTEM AREA. HOWEVER, COLDER AIR INCURSION IS SEEN IN THE SOUTHWEST SECTOR. THE TROPICAL CYCLONE HEAT POTENTIAL IS 40-50 KJ/CM² OVER SOUTHWEST & ADJOINING WESTCENTRAL BOB ALONG & OFF SRI LANKA/TAMIL NADU/ ANDHRA PRADESH COASTS

MADDEN JULIAN OSCILLATION (MJO) IS IN PHASE 4 WITH AMPLITUDE MORE THAN 1 AND WOULD MOVE ACROSS PHASE 5 FROM 29TH TO 30TH NOVEMBER ONWARDS. PRESENCE OF

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

EQUATORIAL ROSSBY WAVES OVER SOUTH BOB, MJO, STRONG WESTERLY WIND ANOMALY OVER SOUTH BOB AND EASTERLY WIND ANOMALY TO ITS NORTH OVER SOUTH & ADJOINING CENTRAL BOB DURING 29TH - 30TH NOVEMBER INDICATE A FAVOURABLE ENVIRONMENT FOR FURTHER INTENSIFICATION OF SYSTEM INTO A CYCLONIC STORM.

LOW LEVEL POSITIVE CYCLONIC VORTICITY AT 850 HPA LEVEL HAS INCREASED DURING PAST 6 HOURS AND IS AROUND $150 \times 10^{-5} \text{ S}^{-1}$ OVER THE SYSTEM AREA WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. THE LOW LEVEL CONVERGENCE IS AROUND $15 \times 10^{-5} \text{ S}^{-1}$ AROUND SYSTEM AREA. UPPER LEVEL DIVERGENCE IS AROUND $30 \times 10^{-5} \text{ S}^{-1}$ TO THE NORTHEAST OF SYSTEM CENTRE. VERTICAL WIND SHEAR IS MODERATE (20 KT) OVER THE SYSTEM AREA.

VARIOUS ENVIRONMENTAL FEATURES ARE INDICATING FAVOURABLE ENVIRONMENT (HIGH SST, LOW WIND SHEAR, CONVERGENCE, DIVERGENCE AND POSITIVE VORTICITY) FOR FURTHER INTENSIFICATION OF SYSTEM INTO A CYCLONIC STORM.

MOST OF THE MODELS ARE TODAY INDICATING THE SYSTEM TO CROSS THE TAMIL NADU COAST AS A CYCLONIC STORM DURING 0600-1200 UTC OF 30TH NOVEMBER.

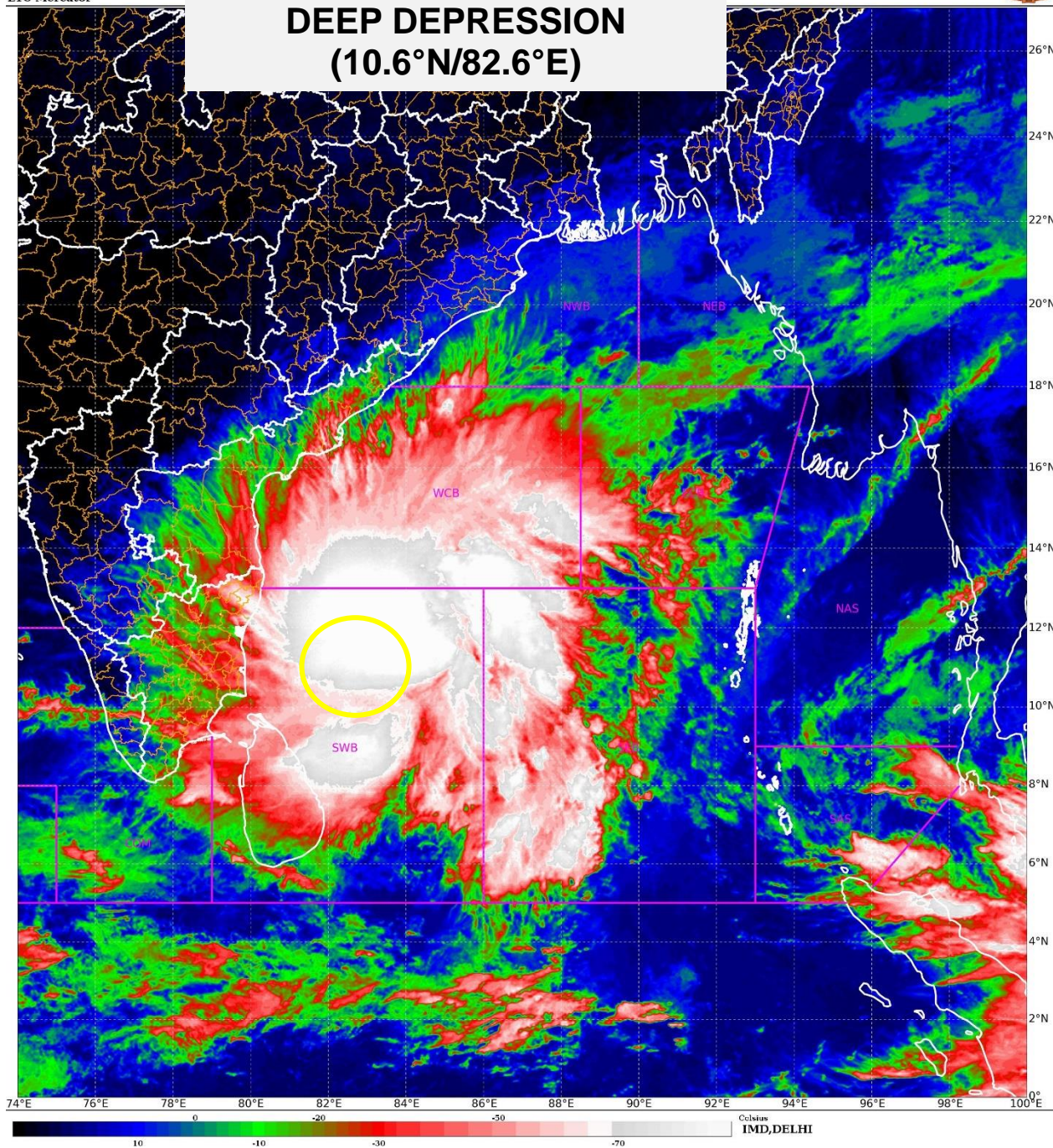
HENCE, IT IS INFERRED THAT THE DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL IS LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM DURING NEXT 06 HOURS. THEREAFTER, IT IS LIKELY TO CONTINUE TO MOVE NORTHWESTWARDS AND CROSS NORTH TAMIL NADU-PUDUCHERRY COASTS BETWEEN KARAİKAL AND MAHABALIPURAM CLOSE TO PUDUCHERRY AS A CYCLONIC STORM WITH A WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH AROUND 0900 UTC 30TH NOVEMBER.

NEXT BULLETIN WILL BE ISSUED AT 0900 UTC OF 29TH NOVEMBER, 2024.

(MONICA SHARMA)
SCIENTIST D, RSMC, NEW DELHI



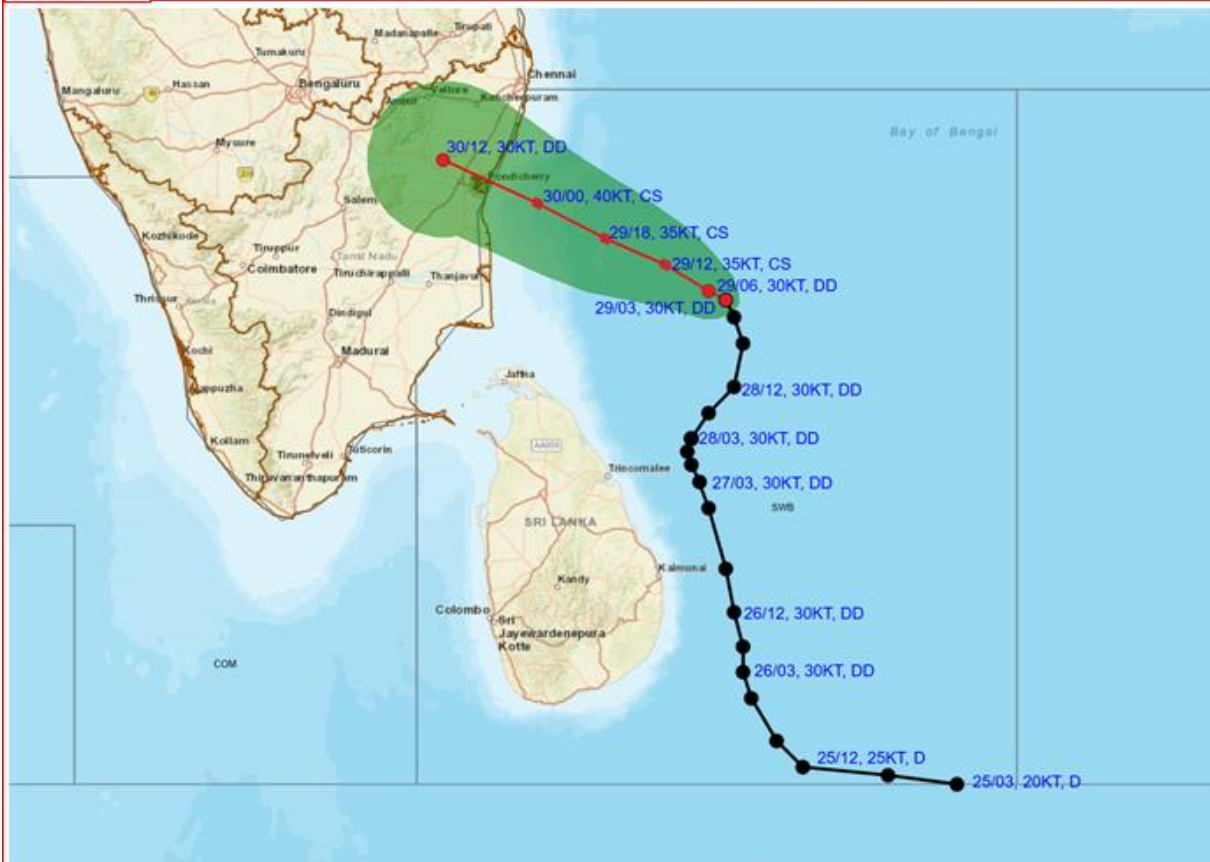
DEEP DEPRESSION (10.6°N/82.6°E)



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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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UPDATED OBSERVED AND FORECAST TRACK ALONG WITH CONE OF UNCERTAINTY OF DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 0300 UTC (0830 HRS. IST) OF 29TH NOVEMBER, 2024



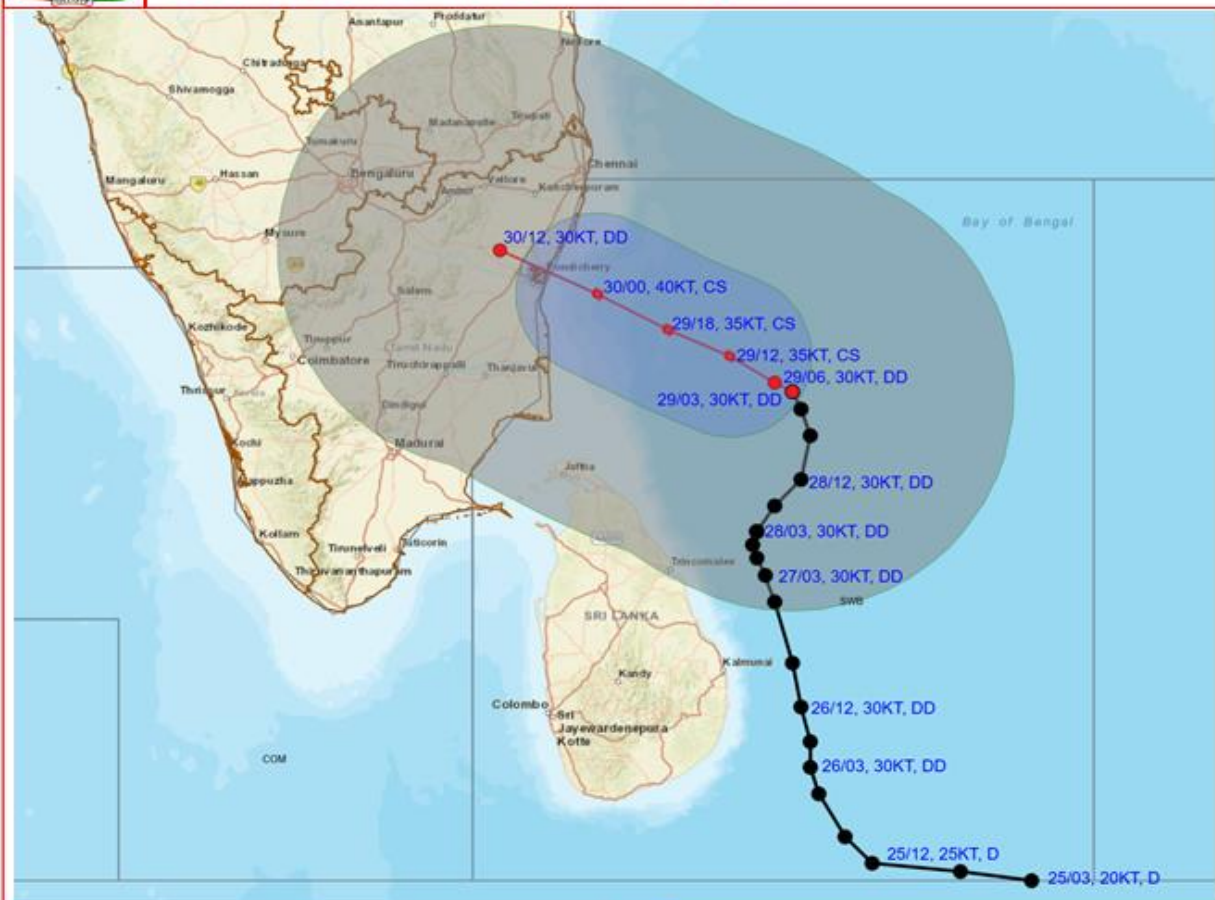
DATE/TIME : IN UTC
IST : UTC + 0530
KT : NAUTICAL MILE/ HOUR = 1.85 KM/HOUR
LPA : LOW PRESSURE AREA
WML : WELL MARKED LOW PRESSURE AREA
D : DEPRESSION (17-27 KT)
DD : DEEP DEPRESSION (28-33 KT)
CS : CYCLONIC STORM (34-47 KT)
SCS : SEVERE CYCLONIC STORM (48-63 KT)
VSCS : VERY SEVERE CYCLONIC STORM (64-89 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)	TRINCOMALEE	BATTICALOA	NAGAPPATTINAM	PUDUCHERRY	CHENNAI/MINAMBAKKAM
29.11.24/0300	270, NNE	340, NNE	300, E	340, ESE	380, SE
30.11.24/0000	360, NNW	470, NNW	120, NNE	70, ESE	150, S



UPDATED OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 0300 UTC (0830 HRS. IST) OF 29TH NOVEMBER, 2024.



DATE/TIME : IN UTC
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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

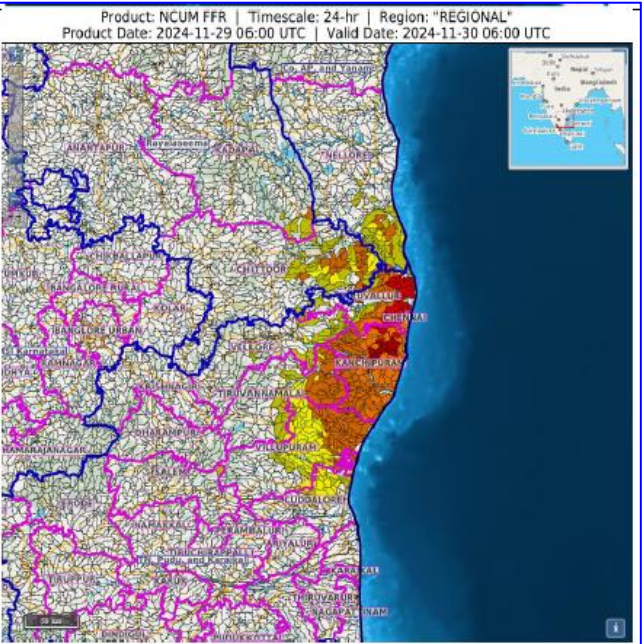
Flash Flood Guidance

24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 30-11-2024:

Moderate to high flash flood risk likely over few watersheds & neighbourhoods of following Meteorological subdivision in next 24 hours.

- Coastal Andhra Pradesh** – Thirupati and Nellore district
- Rayalaseema** – Chittoor, Annamaya and Kadapa district
- Tamil Nadu, Puducherry & Karaikal** - Chennai, Kanchipuram, Vellupuram, Cuddalore, Vellore, Tiruvannamalai and Tiruvallur districts.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over Area of Concern as shown in map due to expected rainfall occurrence in next 24 hours.



Flash Flood Risk

- High Risk (Take Action)**
- Moderate Risk (Be Prepared)**
- Low Risk (Be Updated)**

Fishermen Warning Graphics

