



**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 0530 UTC OF 29.11.2024 BASED ON 0000 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 7 KMPH DURING PAST 6 HOURS AND LAY CENTRED AT 0000 UTC OF TODAY, THE 29TH NOVEMBER 2024 OVER THE SAME REGION NEAR LATITUDE 10.4°N AND LONGITUDE 82.7°E, ABOUT 260 KM NORTHEAST OF TRINCOMALEE (43418, SRILANKA), 310 KM EAST OF NAGAPPATTINAM (43347, INDIA), 360 KM EAST-SOUTHEAST OF PUDUCHERRY (43331, INDIA) AND 400 KM SOUTHEAST OF CHENNAI (43279, INDIA)

IT IS LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM DURING NEXT 12 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 DURING AFTERNOON 30TH NOVEMBER.

ESTIMATED CENTRAL PRESSURE IN ASSOCIATION WITH THE SYSTEM IS 999 HPA AND ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KTS GUSTING TO 40 KTS. ROUGH TO VERY ROUGH SEA CONDITIONS IS VERY LIKELY OVER SOUTHWEST BAY OF BENGAL ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL, GULF OF MANNAR AND ALONG & OFF TAMIL NADU-PUDUCHERRY, SOUTH ANDHRA PRADESH AND EAST SRI LANKA COASTS

AS PER LATEST SATELLITE IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERIZED AS T2.0. 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. MODERATE TO INTENSE CONVECTION LAY OVER SRI LANKA, PALK STRAIT, GULF OF MANNAR, COASTAL TAMIL NADU AND COASTAL ANDHRA PRADESH WITH MINIMUM CLOUD TOP TEMPERATURE AS MINUS 20-70°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
29.11.24/0000	10.4/82.7	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	12.2/79.2	55-65 GUSTING TO 75	DEEP DEPRESSION

REMARKS:

THE SYSTEM IS OVER AN AREA WITH SEA SURFACE TEMPERATURE (SST) ABOUT 29°C. FURTHER THE SST IS LIKELY TO BE RELATIVELY LESS 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 LESS THAN 40 KJ/CM² OVER

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

SOUTHWEST & ADJOINING WESTCENTRAL BOB ALONG & OFF SRI LANKA/TAMIL NADU/ ANDHRA PRADESH COASTS. THE INCREASE IN BARRIER LAYER DEPTH OVER THE SOUTHWEST BOB MAY ALSO LEAD TO MARGINAL WEAKENING NEAR COAST. THE LAND INTERACTIONS WITH SRI LANKA COAST IS ALSO INHIBITING INTENSIFICATION OF SYSTEM.

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 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 MAINTENANCE OF THE INTENSITY OF SYSTEM AS A DEEP DEPRESSION/ DEPRESSION.

THERE IS A TROUGH IN WESTERLY OVER NORTH AND CENTRAL INDIA EXTENDING BETWEEN 18°N/70°E TO 35°N/82°E. IN ITS ASSOCIATION, THERE IS A JET STREAM OVER CENTRAL AND NORTHEAST INDIA. THERE IS ALSO AN ANTICYCLONIC CIRCULATION OVER MYANMAR. AS A RESULT THE UPPER LEVEL DIVERGENCE IS SEEN IN NORTHEAST SECTOR AND THE CLOUD MASS IS ALSO SEEN TO THE NORTHEAST OF SYSTEM AREA. LOW LEVEL POSITIVE CYCLONIC VORTICITY AT 850 HPA LEVEL IS INTENSIFIED 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 INTENSIFIED DURING PAST 6 HOURS AND AROUND $30 \times 10^{-5} \text{ S}^{-1}$ TO THE NORTHWEST OF SYSTEM AREA. UPPER LEVEL DIVERGENCE IS INTENSIFIED DURING PAST 6 HOURS AND AROUND $40 \times 10^{-5} \text{ S}^{-1}$ TO THE NORTHEAST OF SYSTEM CENTRE. VERTICAL WIND SHEAR IS MODERATE (15 KT) OVER THE SYSTEM AREA WHICH IS FAVORABLE FOR INTENSIFICATION AND NEIGHBORHOOD AREA IS HIGH (25 KT) WHICH IS UNFAVORABLE FOR MORE INTENSE. THEREAFTER, IT WILL BECOME HIGH TO THE NORTH OF 10°N AND ALONG THE TAMIL NADU COAST LEADING TO WEAKENING OF THE SYSTEM AS IT MOVES TOWARDS THE TAMIL NADU COAST. THE SYSTEM IS BEING STEERED NORTH-NORTHWESTWARDS ALONG THE PERIPHERY OF UPPER TROPOSPHERIC RIDGE NEAR 12°N IN ASSOCIATION WITH ANTICYCLONIC CIRCULATION OVER MYANMAR. THE TROUGH IN WESTERLY IS BLOCKING FURTHER NORTHWESTWARDS MOVEMENT OF THE SYSTEM.

VARIOUS ENVIRONMENTAL FEATURES ARE INDICATING FAVOURABLE ENVIRONMENT (HIGH SST, LOW WIND SHEAR, CONVERGENCE, DIVERGENCE AND VORTICITY) FOR INCREASING THE INTENSITY OF SYSTEM AS A CYCLONIC STORM. HOWEVER, VARIOUS FEATURES LIKE LAND INTERACTIONS, HIGH WIND SHEAR, LOWER SST, LOWER THERMAL ENERGY, COLD DRY AIR INCURSION INTO THE SYSTEM AREA FROM INDIAN MAINLAND WOULD LEAD TO GRADUAL WEAKENING AS IT MOVES TOWARDS TAMIL NADU COAST.

THERE IS STILL LACK OF CONSENSUS AMONG VARIOUS MODELS WITH RESPECT TO INTENSITY. SOME OF THE MODELS ARE INDICATING INTENSIFICATION INTO MARGINAL CYCLONIC STORM AROUND 29TH 1200 UTC. HOWEVER, MOST OF THE MODELS ARE INDICATING GRADUAL WEAKENING OF THE SYSTEM THEREAFTER AS IT MOVES TOWARDS THE COAST.

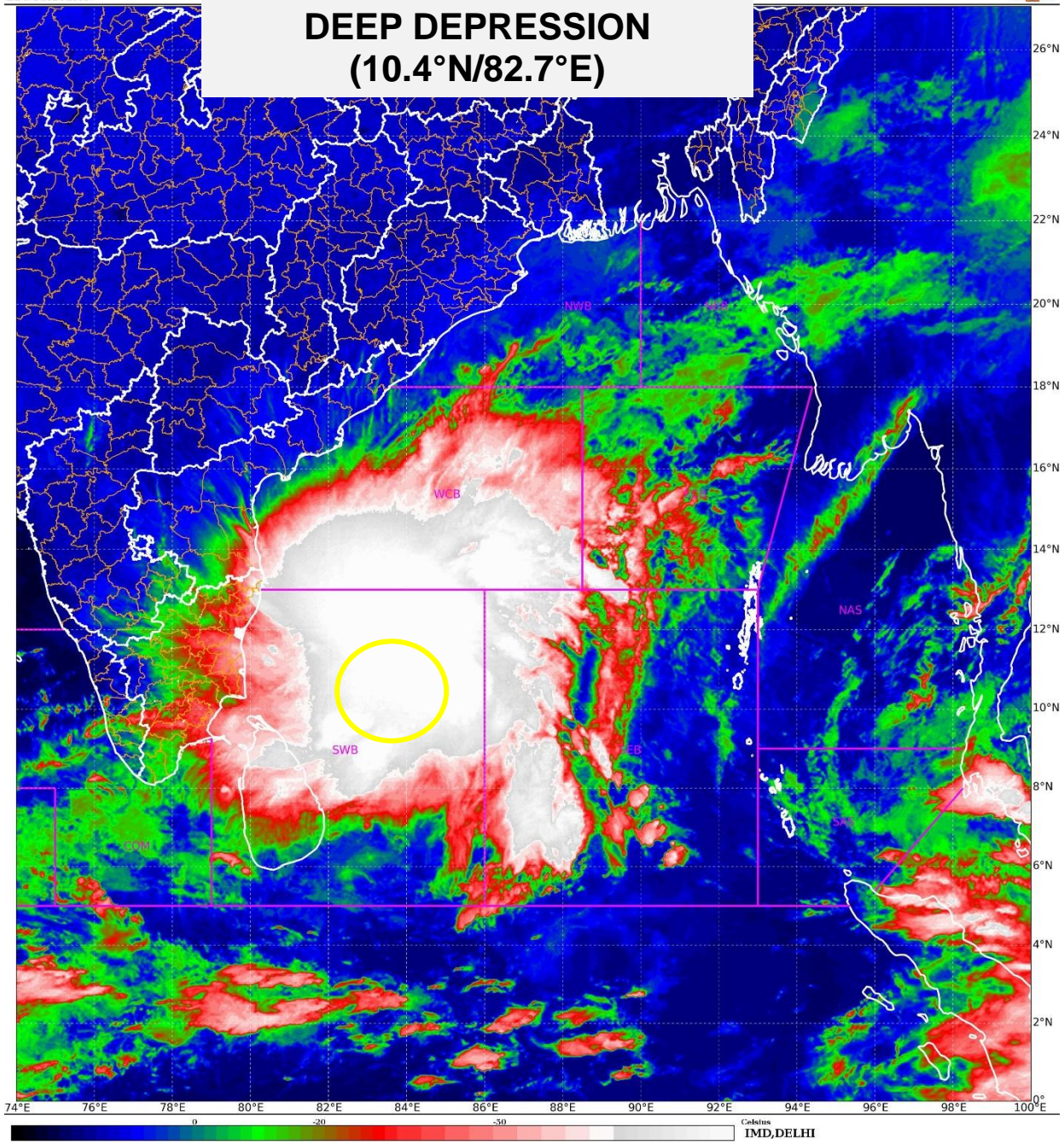
IT IS INFERRED THAT THE DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL IS LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM DURING NEXT 12 HOURS. THEREAFTER, IT IS LIKELY TO CONTINUE TO MOVE NORTHWESTWARDS AND CROSS NORTH TAMIL NADU-PUDUCHERRY COASTS BETWEEN KARAIKAL AND MAHABALIPURAM CLOSE TO PUDUCHERRY AS A CYCLONIC STORM WITH A WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH DURING AFTERNOON 30TH NOVEMBER.

NEXT BULLETIN WILL BE ISSUED AT 0700 UTC OF 29TH NOVEMBER, 2024.

**(DR. Dr. Pattanaik)
SCIENTIST F, RSMC, NEW DELHI**



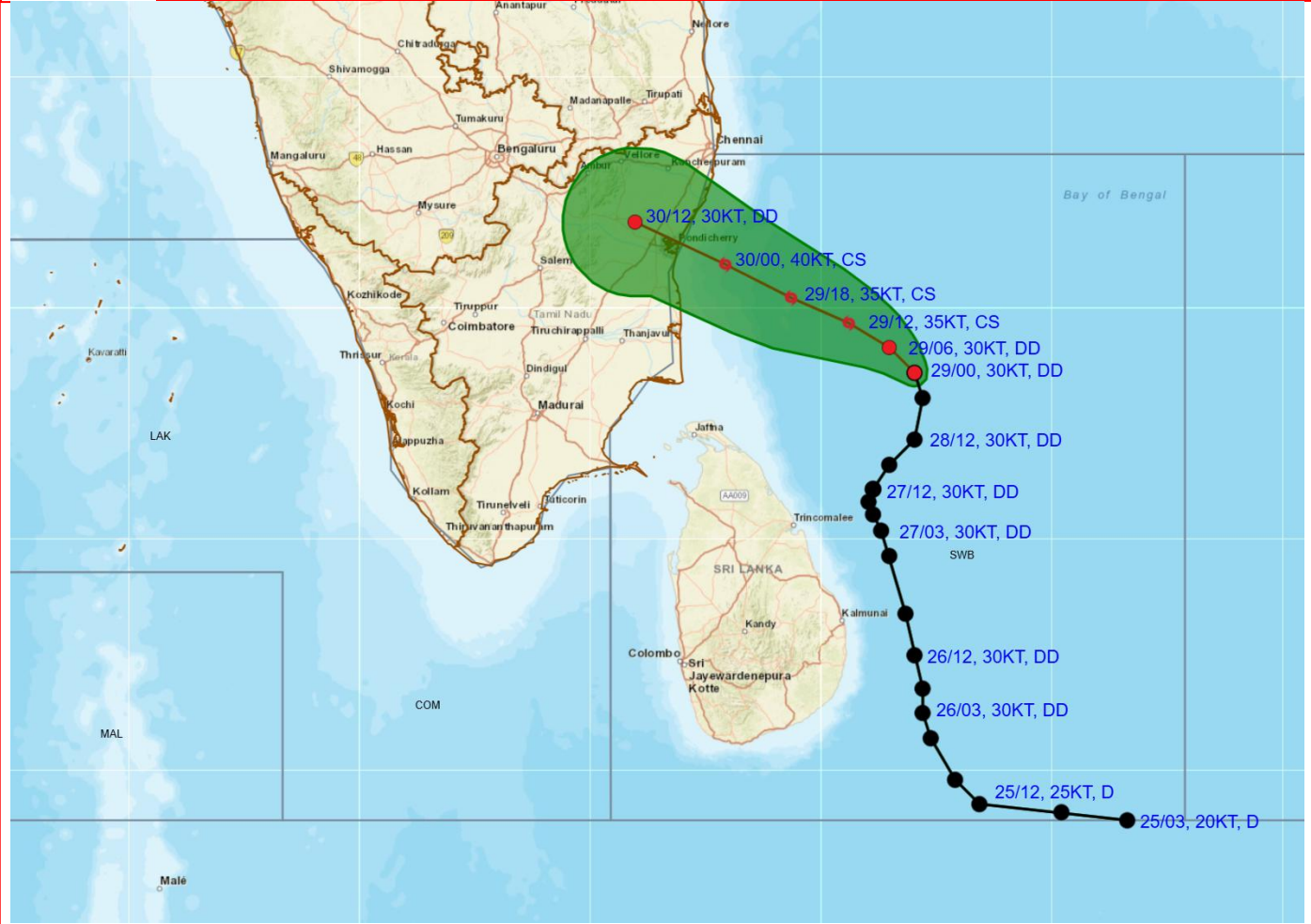
DEEP DEPRESSION (10.4°N/82.7°E)



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



UPDATED OBSERVED AND FORECAST TRACK ALONG WITH CONE OF UNCERTAINTY OF DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 0000 UTC (0530 HRS. IST) OF 29TH NOVEMBER, 2024



DATE/TIME : IN UTC
 IST : UTC + 0530
 KT : NAUTICAL MILE S/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)

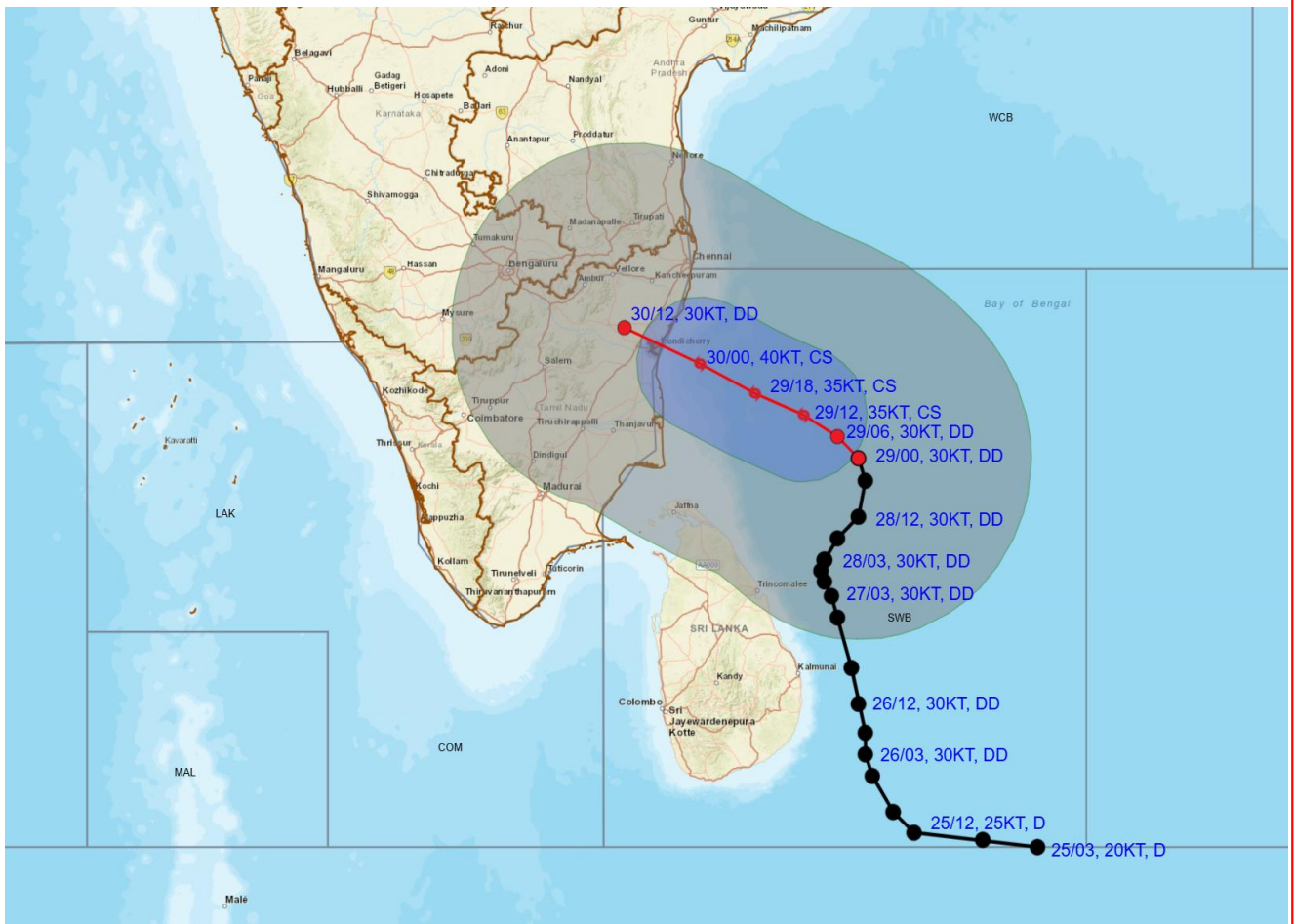
LESS THAN 34 KT
 34-47 KT
 ≥ 48 KT
 OBSERVED TRACK
 FORECAST TRACK
 CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS				
	TRINCOMALEE	BATTICALOA	NAGAPPATTINAM	PUDUCHERRY	CHENNAI/MINAMBAKKAM
29.11.24/0000	260, NE	320, NNE	310, E	360, ESE	400, SE
30.11.24/0000	360, NNW	470, NNW	120, NNE	70, ESE	150, S

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



UPDATED OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 0000 UTC (0530 HRS. IST) OF 29TH NOVEMBER, 2024.



DATE/TIME : IN UTC
 IST : UTC + 0530
 KT : NAUTICAL MILE S/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
 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

Flash Flood Guidance

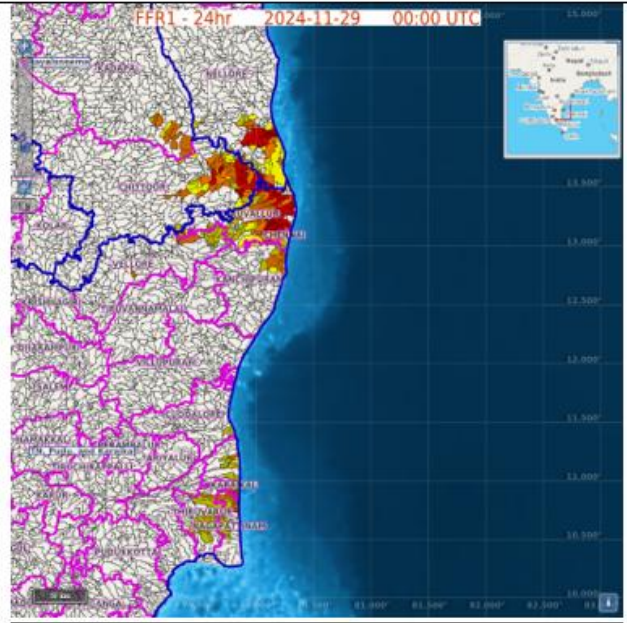
National Flash Flood Guidance Bulletin

24 hours Outlook for the Flash Flood Risk (FFR) till 0530 IST of 30-11-2024:

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of following Met-subdivision in next 24 hours.

Coastal Andhra Pradesh – Thirupati and Nellore district
Royalaseema – Chittoor and Kadapa district
Tamil Nadu, Puducherry & Karaikal - Chennai, Kanchipuram, Vellore 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

