



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 10**

DEMS-RSMCSPECIAL TROPICAL CYCLONES NEW DELHI DATED 30.11.2024

**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. 10 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 30.11.2024 BASED ON 1200 UTC OF 30.11.2024

SUB: CYCLONIC STORM “FENGAL” [PRONOUNCED AS FEINJAL] OVER SOUTHWEST BAY OF *BENGAL*

THE CYCLONIC STORM “FENGAL” [PRONOUNCED AS FEINJAL] OVER SOUTHWEST BAY OF BENGAL MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF 7 KMPH DURING PAST 6 HOURS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 30TH NOVEMBER 2024 OVER THE SOUTHWEST BAY OF BENGAL OFF NORTH TAMIL NADU COAST NEAR LATITUDE 12.2°N AND LONGITUDE 80.3°E, ABOUT 40 KM AWAY FROM THE COAST, 50 KM SOUTH-SOUTHEAST OF MAHABALIPURAM (TAMIL NADU), 60 KM EAST-NORTHEAST OF PUDUCHERRY (43331) AND 90 KM SOUTH OF CHENNAI (43279).

LATEST OBSERVATIONS INDICATE THAT THE FORWARD SECTOR OF SPIRAL BANDS ASSOCIATED WITH THE CYCLONE HAS ENTERED INTO THE LAND. IT IS LIKELY TO MOVE WEST-SOUTHWESTWARDS 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 NEXT 3 TO 4 HOURS.

THE SYSTEM IS BEING CONTINUOUSLY MONITORED BY THE DOPPLER WEATHER RADAR AT CHENNAI.

ESTIMATED CENTRAL PRESSURE IN ASSOCIATION WITH THE SYSTEM IS 993 HPA

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

AND ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 40 KTS GUSTING TO 50 KTS. VERY ROUGH TO HIGH SEA CONDITIONS IS VERY LIKELY OVER SOUTHWEST BAY OF BENGAL AND ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL, GULF OF MANNAR AND ALONG & OFF TAMIL NADU-PUDUCHERRY, SOUTH ANDHRA PRADESH AND NORTH SRI LANKA COASTS TILL 1500 UTC OF 30TH NOVEMBER. IT WILL GRADUALLY IMPROVE BECOMING VERY ROUGH TO ROUGH FROM 1800 UTC OF 30TH NOVEMBER.

AS PER LATEST SATELLITE IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERIZED AS T2.5/C.I. 3.0. AREA OF INTENSE CONVECTION IS SEEN TO THE NORTHWEST 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 8.0N TO 18.0N AND LONGITUDE 80.0E TO 90.0E WITH MINIMUM CLOUD TOP TEMPERATURE AS MINUS 80-93°C. MODERATE TO INTENSE CONVECTION LAY OVER COASTAL ANDHRA PRADESH, TELANGANA, KARNATAKA, CENTRAL TAMILNADU.

MAHABALIPURAM REPORTED MEAN SEA LEVEL PRESSURE OF 993.2 HPA AT 30/1200 UTC.

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 |
|---------------------|---------------------------------|---|--|
| 30.11.24/1200 | 12.2/80.3 | 70-80 gusting to 90 | Cyclonic Storm |
| 30.11.24/1800 | 12.1/79.8 | 55-65 gusting to 75 | Deep Depression |
| 01.12.24/0000 | 12.0/79.5 | 50-60 gusting to 70 | Deep Depression |

STORM SURGE WARNING:

STORM SURGE OF ABOUT 1 METRE HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY INUNDATE THE LOW LYING AREAS OF THE COASTAL DISTRICTS OF NORTH TAMIL NADU, PUDUCHERRY AND ADJOINING SOUTH ANDHRA PRADESH DURING THE TIME OF LANDFALL.

FISHERMAN WARNING:

- TOTAL SUSPENSION OF FISHING OPERATIONS.
- FISHERMEN ARE ADVISED NOT VENTURE INTO 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 TILL 30TH NOVEMEBR.
- FISHERMEN OUT AT SEA ARE ADVISED TO RETURN TO COAST.

REMARKS:

THE SYSTEM IS OVER AN AREA WITH SEA SURFACE TEMPERATURE (SST) ABOUT 27⁰C. THE TOTAL PRECIPITABLE WATER IMAGERY IS INDICATING WARM MOIST AIR AROUND SYSTEM AREA. HOWEVER, COLD DRY AIR INCURSION FROM SOUTHWEST IS REACHING UPTO SOUTHEAST 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

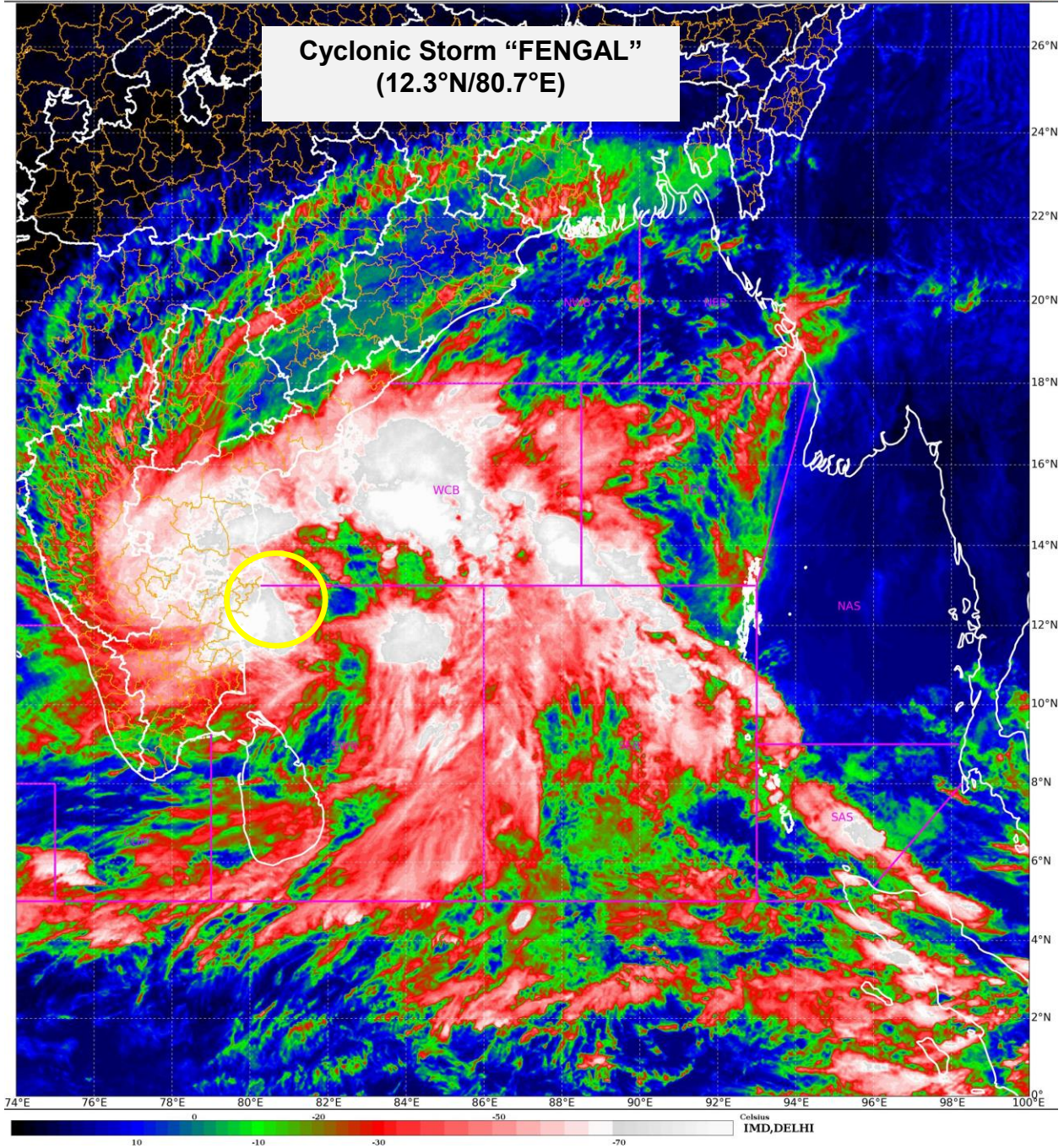
LOW LEVEL POSITIVE CYCLONIC VORTICITY AT 850 HPA LEVEL HAS DECREASED DURING PAST 3 HOURS AND IS AROUND $150 \times 10^{-5} \text{ S}^{-1}$ OVER THE SYSTEM AREA WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE AREA OF POSITIVE VORTICITY HAS ALSO DECREASED. THE LOW LEVEL CONVERGENCE IS AROUND $20 \times 10^{-5} \text{ S}^{-1}$ AROUND SYSTEM AREA. UPPER LEVEL DIVERGENCE HAS DECREASED AND IS AROUND $40 \times 10^{-5} \text{ S}^{-1}$ TO THE NORTHEAST OF SYSTEM AREA. VERTICAL WIND SHEAR IS MODERATE (15-20 KT) OVER THE SYSTEM AREA. THE EAST-NORTHEASTERLY WINDS PREVAILING OVER SYSTEM AREA ARE STEERING THE SYSTEM WEST-SOUTHWESTWARDS. THE SYSTEM HAS STARTED WEAKENING DUE TO LAND INTERACTIONS, DECREASE IN VARIOUS FEATURES LIKE LOW LEVEL VORTICITY.

THERE IS CONVERGENCE AMONG VARIOUS MODELS WRT TRACK. HOWEVER, THERE IS LARGE VARIATION AMONG VARIOUS MODELS WRT INTENSITY. MOST OF THE MODELS ARE ALSO INDICATING THE SYSTEM TO MOVE VERY SLOW NEAR TO COAST.

HENCE, IT IS INFERRED THAT THE CYCLONIC STORM "FENGAL" OVER SOUTHWEST BAY OF BENGAL IS LIKELY TO MOVE WEST-SOUTHWESTWARDS 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 NEXT 3 TO 4 HOURS.

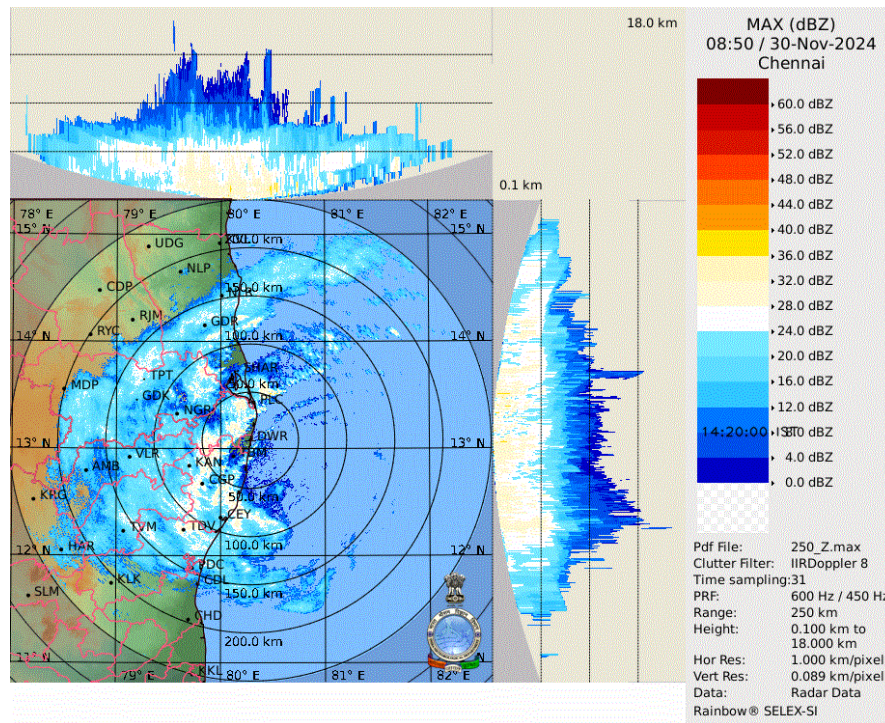
NEXT BULLETIN WILL BE ISSUED AT 2000 UTC OF 30TH NOVEMBER, 2024.

**(MONICA SHARMA)
SCIENTIST D, 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%
This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

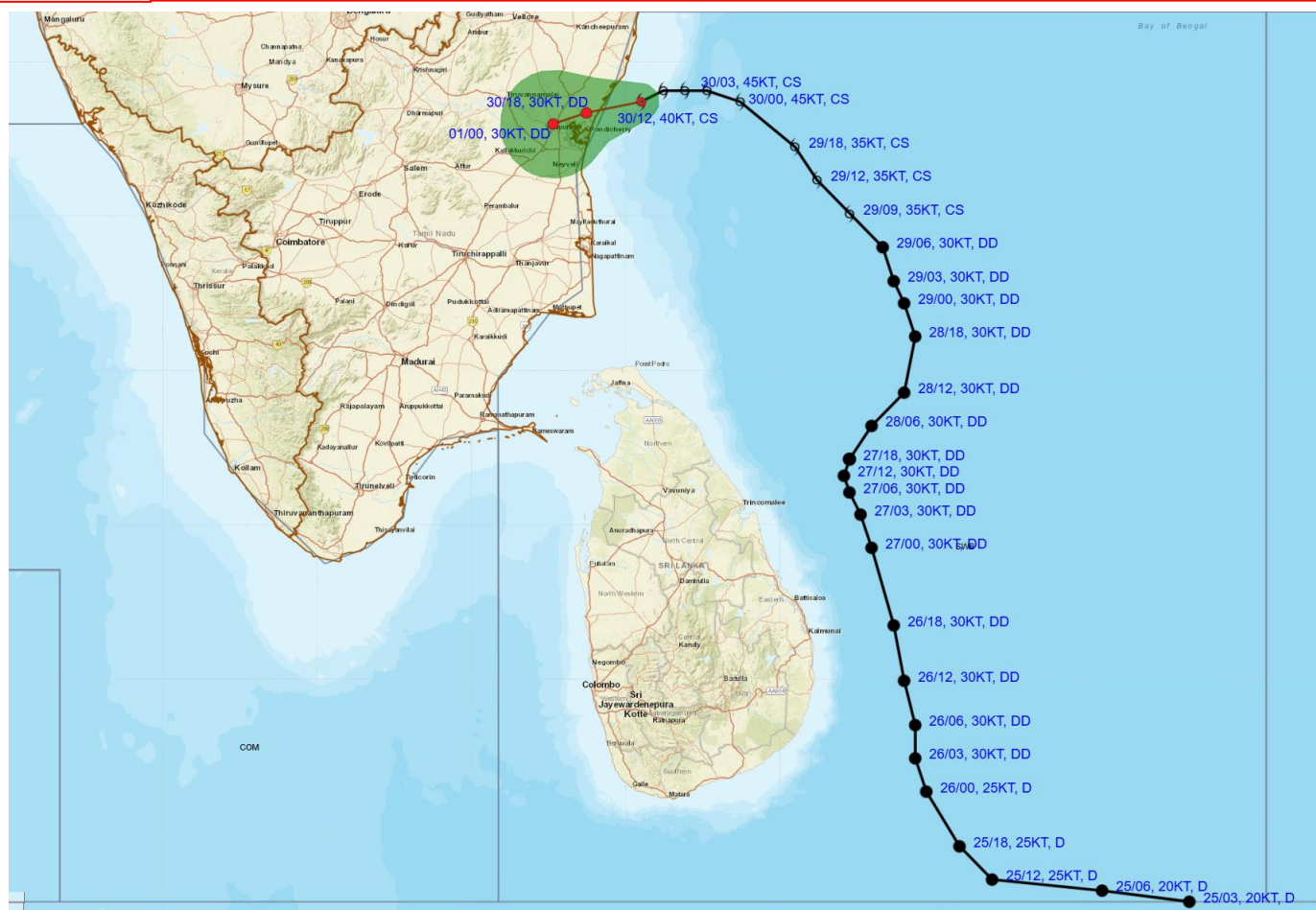
MAXIMUM REFLECTIVITY IMAGERY FROM DOPPLER WEATER RADAR, CHENNAI



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



OBSERVED AND FORECAST TRACK ALONG WITH CONE OF UNCERTAINTY OF CYCLONIC STORM "FENGAL" OVER SOUTHWEST BAY OF BENGAL BASED ON 1200 UTC (1730 HRS. IST) OF 30TH 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)

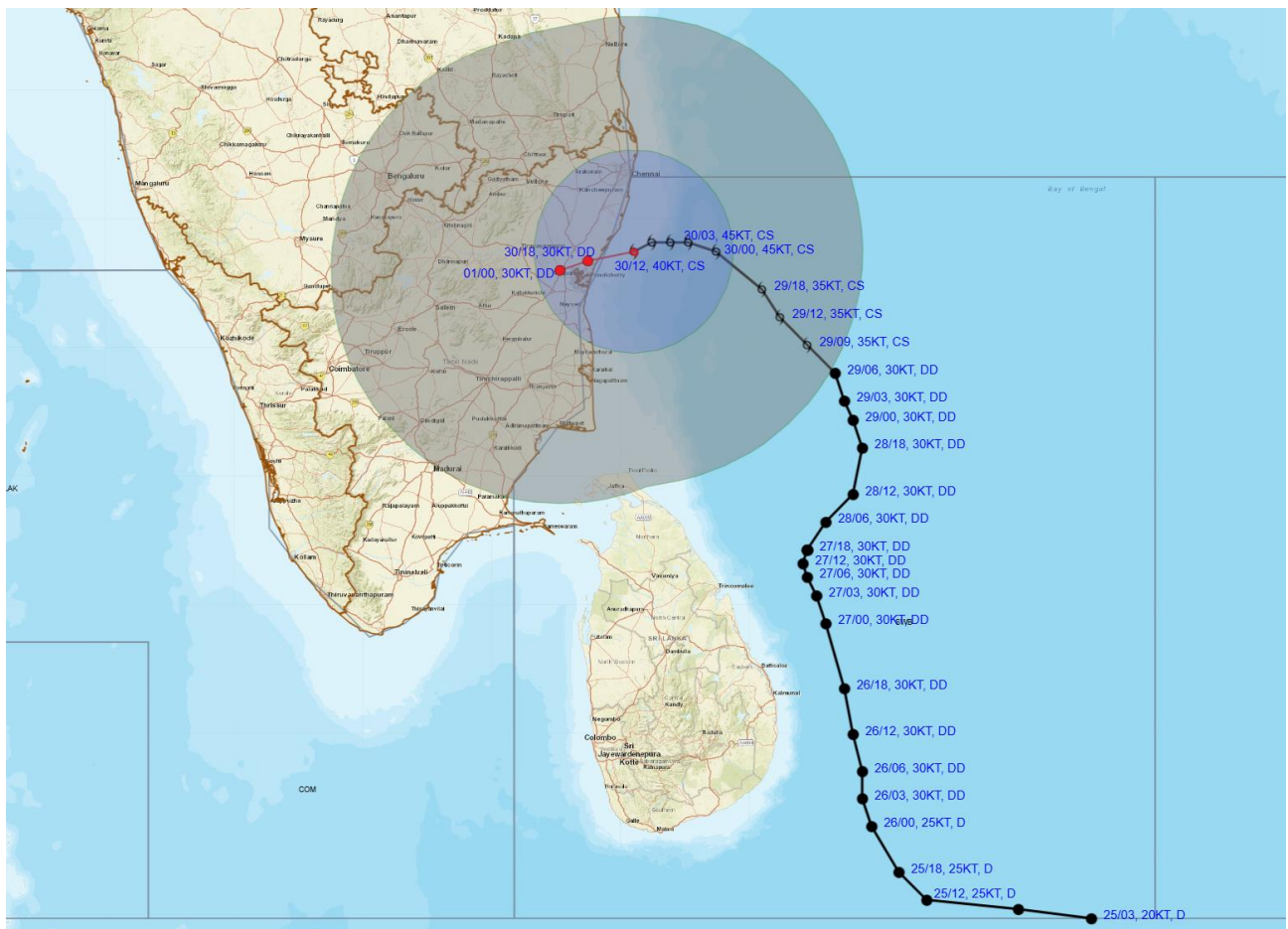
● LESS THAN 34 KT
 ○ 34-47 KT
 ⊙ ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ▲ CONE OF UNCERTAINTY

| Forecast | DISTANCE (KM) AND DIRECTION FROM STATIONS | | |
|---------------------|---|----------------|----------------------|
| Date and Time (UTC) | MAHABALIPURAM | MO PONDICHERRY | CHENNAI/MINAMB AKKAM |
| 30.11.24/1200 | 50, SSE | 60, ENE | 90, S |
| 30.11.24/1800 | 70, SW | 10, N | 110, SSW |
| 01.12.24/0000 | 100, SW | 30, W | 130, SW |

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



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM "FENGAL" OVER SOUTHWEST BAY OF BENGAL BASED ON 1200 UTC (1730 HRS. IST) OF 30TH 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)

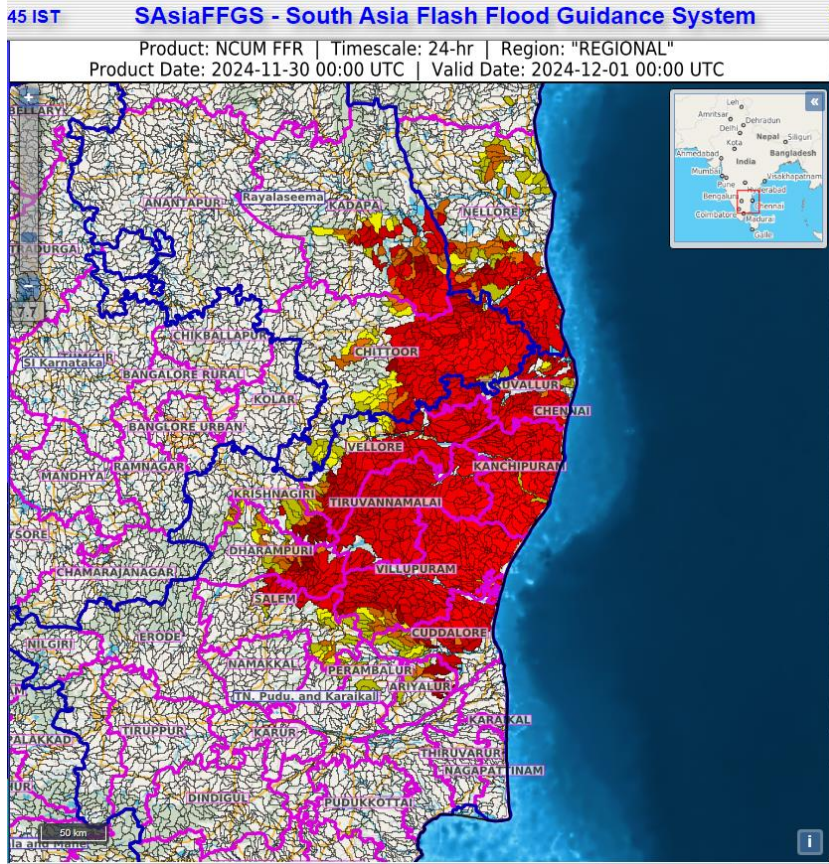
● LESS THAN 34 KT
 ⚡ 34-47 KT
 ⚡ ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ▲ CONE OF UNCERTAINTY
 AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥118 KMPH)




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

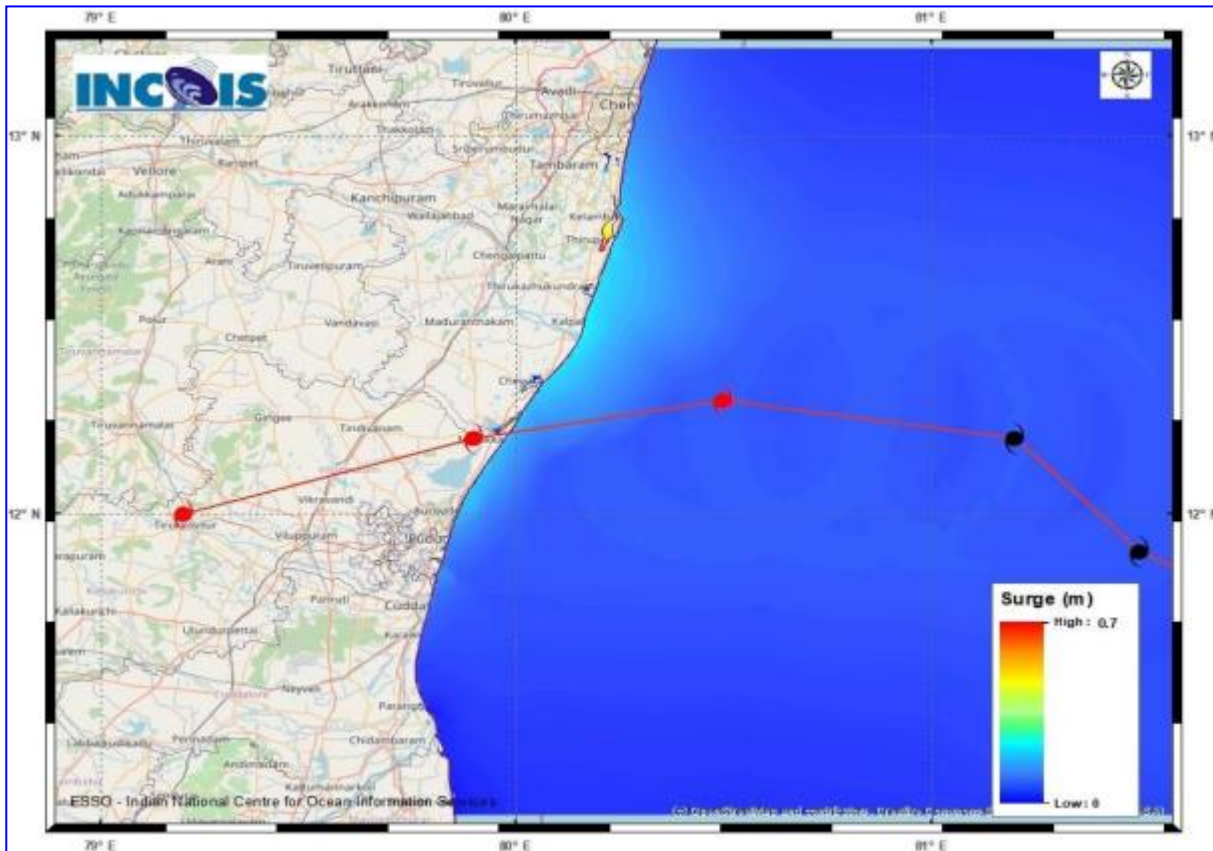
Flash Flood Guidance



| Flash Flood Risk | |
|---|------------------------------------|
|  | High Risk (Take Action) |
|  | Moderate Risk (Be Prepared) |
|  | Low Risk (Be Updated) |

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

Storm Surge Guidance

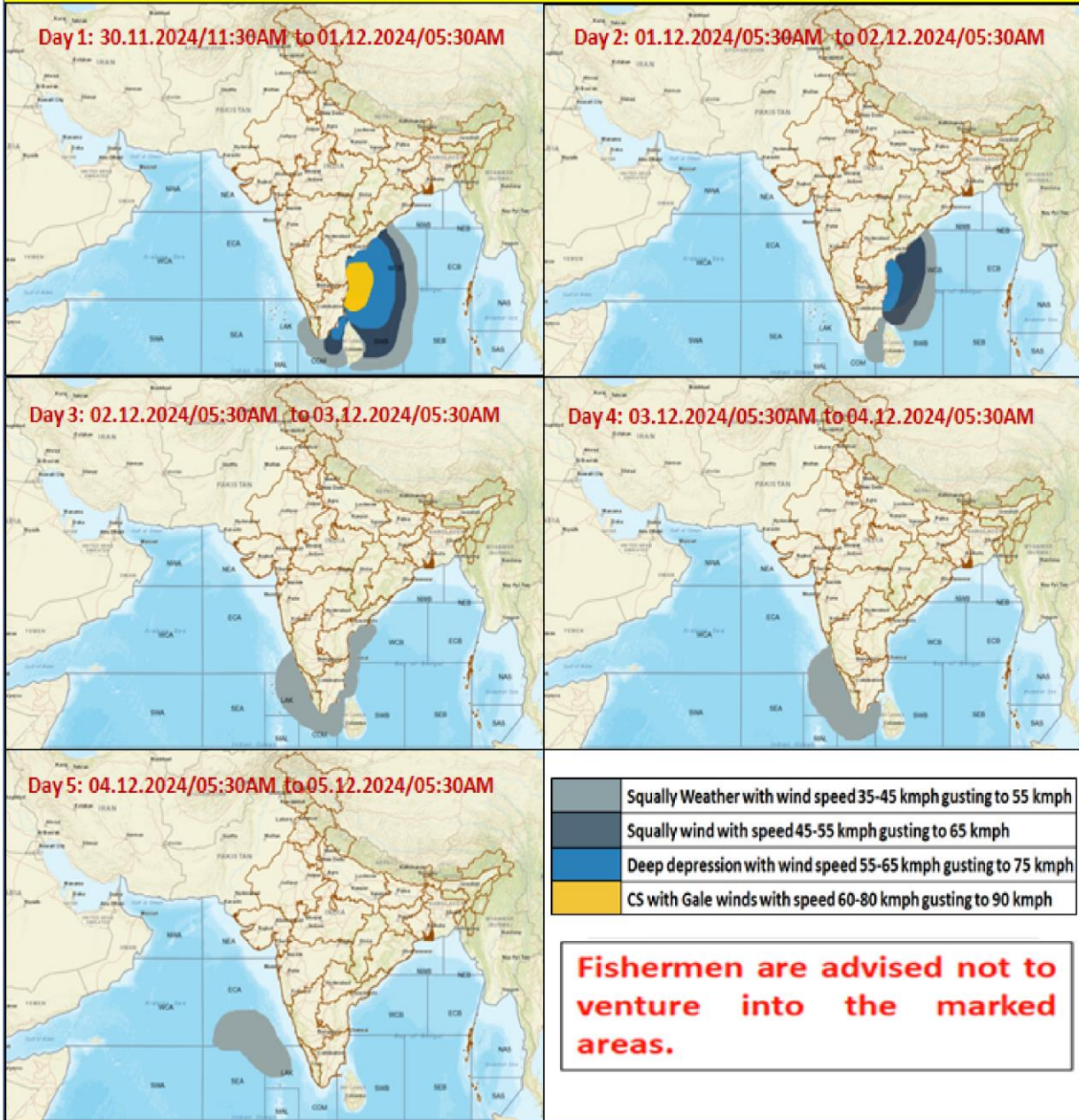


STORM SURGE HEIGHT INFORMATION:

* 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) |
|------------------|--------------|----------------------------|--------------------------------|---------------------|---------------------------------------|
| Chengalpattu | Kancheepuram | Tamil Nadu | Muthukadu | 0.2-0.7 | Upto 0.13 |

Fishermen Warning Graphics



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