



**India Meteorological Department  
(Ministry of Earth Sciences)**

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**FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)**

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**Sub: Cyclonic Storm “NIVAR” over southwest Bay of Bengal—(Cyclone Warning for Tamilnadu and Puducherry coasts- Orange Message)**

The **cyclonic storm ‘NIVAR’** over southwest Bay of Bengal moved westwards with a speed of 05 kmph during past six hours and lay centred at 1730 hrs IST of 24<sup>th</sup> November, 2020 over southwest Bay of Bengal near latitude 10.0°N and longitude 82.4°E, about 320 km east-southeast of Cuddalore, about 350 km southeast of Puducherry and 410 km east southeast of Chennai. It is very likely to intensify further into a severe cyclonic storm during next 06 hours and into a very severe cyclonic storm during subsequent 12 hours.

**It is very likely to move west-northwestwards for next 06 hours and then northwestwards. It is very likely to cross Tamil Nadu and Puducherry coasts between Karaikal and Mamallapuram around Puducherry during 25<sup>th</sup> November 2020 late evening as a very severe cyclonic storm with a wind speed of 120-130 kmph gusting to 145 kmph.**

**Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%  
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.**

Forecast track and intensity are given below:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
24.11.20/1730	10.0/82.4	85-95 gusting to 105	Cyclonic Storm
24.11.20/2330	10.1/82.0	95-105 gusting to 115	Severe Cyclonic Storm
25.11.20/0530	10.4/81.4	110-120 gusting to 135	Severe Cyclonic Storm
25.11.20/1130	11.0/80.7	120-130 gusting to 145	Very Severe Cyclonic Storm
25.11.20/1730	11.5/80.1	120-130 gusting to 145	Very Severe Cyclonic Storm
26.11.20/0530	12.3/79.2	70-80 gusting to 90	Very Severe Cyclonic Storm
26.11.20/1730	13.1/78.3	50-60 gusting to 70	Deep Depression
27.11.20/0530	13.9/77.4	35-45 gusting to 55	Depression

## Warnings:

### (i) Rainfall

Fairly widespread to widespread rainfall/thunderstorm activity very likely over coastal and north interior Tamilnadu, Puducherry & Karaikal during 24<sup>th</sup> to 26<sup>th</sup> November and over south coastal Andhra Pradesh, Rayalaseema during 25<sup>th</sup> to 26<sup>th</sup> and southeast Telangana during 26<sup>th</sup> November, 2020. Isolated extremely heavy rainfall activity also very likely over coastal & north interior Tamilnadu & Puducherry (**Pudukottai, Thanjavur, Tiruvarur, Karaikal, Nagapattinam, Cuddalore, Chennai, Kanchipuram, Chengalpattu, Myladuthirai, Ariyalur & Perambalur** districts during 24<sup>th</sup> and **Kadalur, Kallakurchi, Puducherry, Villupuram, Tiruvannamalai, Myladuthirai, Chennai, Kanchipuram, Chengalpattu, Ariyalur, Perambalur and Karaikal** districts during 25<sup>th</sup>; over **Nellore and Chittoor** districts of Andhra Pradesh on 25<sup>th</sup> and over Rayalaseema & southeast Telangana on 26<sup>th</sup> November, 2020.

Sub-Divisions	24 Nov 2020*	25 Nov 2020*	26 Nov 2020*	27 Nov 2020*
<b>South Coastal Andhra Pradesh</b>	Rainfall at a few places with heavy rainfall at isolated places	Rainfall at most places with isolated heavy to very heavy and extremely heavy falls	Rainfall at most places with isolated heavy to very heavy and extremely heavy falls	Rainfall at many places
<b>Coastal &amp; North Interior Tamilnadu, Puducherry &amp; Karaikal</b>	Rainfall at most places with heavy to very heavy rainfall and extremely heavy falls at isolated places	Rainfall at most places with heavy to very heavy rainfall at a few places and extremely heavy falls at isolated places	Rainfall at many places with heavy rainfall at isolated places	Rainfall at many places
<b>South Interior Karnataka</b>	Rainfall at a few places	Rainfall at many places with heavy rainfall at isolated places	Rainfall at many places with heavy rainfall at isolated places	Rainfall at many places
<b>Rayalaseema</b>	Rainfall at many places with isolated heavy falls	Rainfall at most places with heavy to very heavy rainfall with extremely heavy falls at isolated places	Rainfall at most places with heavy to very heavy rainfall at a few places and extremely heavy falls at isolated places	Rainfall at many places
<b>Telangana</b>	Rainfall at isolated places	Rainfall at a few places	Rainfall at most places with heavy to very heavy rainfall and extremely heavy falls at isolated places over southeast Telangana	Rainfall at many places

### (ii) Wind warning

- Gale wind speed reaching 85-95 kmph gusting to 105 kmph is prevailing over Southwest Bay of Bengal. It would further increase becoming 110-120 kmph gusting to 135 kmph over the southwest Bay of

**Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%**

**Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.**

Bengal from 25<sup>th</sup> November morning increasing to 120-130 kmph gusting to 145 kmph during noon to night of 25<sup>th</sup> November.

- Squally wind speed reaching 35-45 kmph gusting to 55 kmph is prevailing along & off Tamil Nadu, Puducherry and adjoining South Andhra Pradesh coast and over Gulf of Mannar. It will gradually increase and become gale wind speed reaching 65-75 kmph gusting to 85 kmph from morning of 25<sup>th</sup> November and 120-130 kmph gusting to 145 kmph along & off coastal districts of north Tamil Nadu and Puducherry (**Nagapattinam, Karaikal, Myladuthurai, Cuddalore, Puducherry, Villupuram & Chengalpattu districts**; 80-90 gusting to 100 kmph very likely over Tiruvarur, Kanchipuram, Chennai, Tiruvallur districts) during noon to night of 25<sup>th</sup> November, 2020.
- Gale wind speed reaching 65-75 kmph gusting to 85 kmph very likely over adjoining westcentral Bay of Bengal and along & off South Andhra Pradesh (Nellore & Chittoor districts), Gulf of Mannar and along and off south coastal districts of Tamil Nadu during forenoon to night of 25<sup>th</sup> November, 2020.

#### **(iii) Sea condition**

- Sea condition is high over Southwest Bay of Bengal and rough to very rough along & off Tamil Nadu, Puducherry, south Andhra Pradesh coasts and over Gulf of Mannar. It would gradually become very high over the southwest Bay of Bengal from 24th November night and phenomenal over the same area from noon to night of 25<sup>th</sup> November.

#### **(iv) Storm Surge Warning**

- Tidal wave of about 1-1.5m height above the astronomical tide is very likely to inundate the low lying areas of north coastal districts of Tamilnadu & Puducherry near the place of landfall.

#### **(v) (a) Damage expected over Nagapattinam, Myladuthurai, Cuddalore, , Villupuram & Chengalpattu districts of Tamilnadu and Karaikal & Puducherry:**

- Total destruction of thatched houses/ extensive damage to kutcha houses. Some damage to old pucca houses. Potential threat from flying objects.
- Bending/ uprooting of power and communication poles.
- Major damage to Kutcha and Pucca roads. Flooding of escape routes. Disruption of railways, overhead powerlines and signalling systems.
- Widespread damage to standing crops, plantations, orchards, falling of green coconuts and tearing of palm fronds. Blowing down of bushy trees like mango.
- Small boats, country crafts may get detached from moorings.
- Visibility severely affected.

#### **(v) (b) Damage expected over Tiruvarur, Kanchipuram, Chennai, Tiruvallaur districts of Tamilnadu and adjoining Andhra Pradesh:**

- Damage to thatched houses/ huts with possibility of roof tops being blown off and unattached metal sheets may fly.
- Damage to power and communication lines.
- Damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Severe damage to banana and papaya trees, horticulture and crops & orchards. Large dead limbs blown from trees.
- Major damage to coastal crops. Damage to embankments/ salt pans.

#### **(vi) Fishermen Warning & Action Suggested:**

- Total suspension of fishing operations.
- Mobilise evacuation from coastal areas. Coastal hutment dwellers to be moved to safer places.
- People in affected areas to remain in safe places and indoors.
- Judicious regulation of rail, road and air traffic.
- Movement in motor boats and small ships unsafe.

***The next bulletin will be issued at 2330 hrs IST of 24<sup>th</sup> November, 2020.***

(R.K. Jenamani)  
Scientist-F, RSMC, New Delhi

**Copy to: ACWC Kolkata/Chennai/CWC Bhubaneswar/CWC Visakhapatnam/CWC Thiruvananthapuram**

**Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%**  
**Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.**



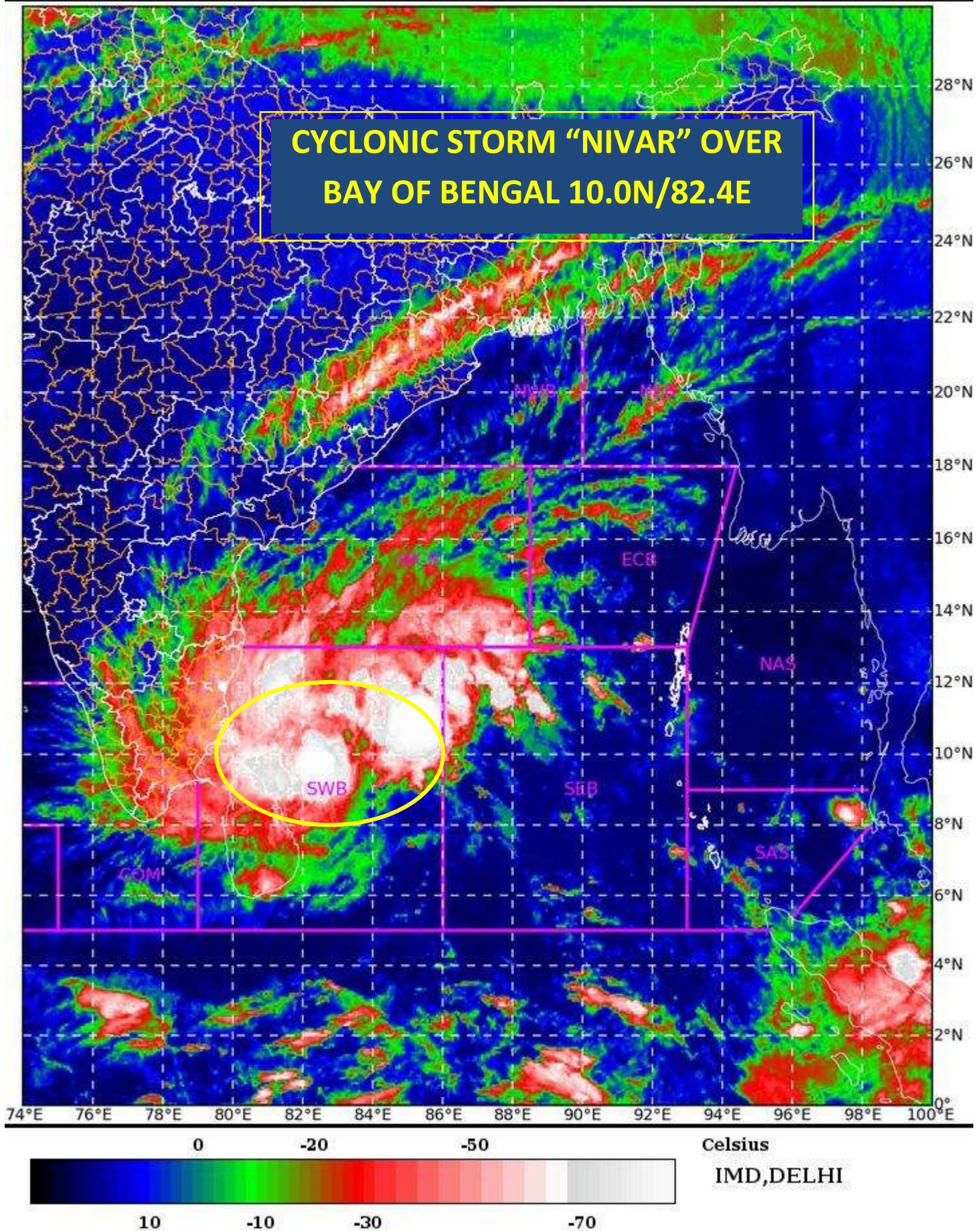
SAT : INSAT-3D IMG

24-11-2020/(1230 to 1256) GMT

IMG\_TIR1\_TEMP 10.8 um

24-11-2020/(1800 to 1826) IST

L1C Mercator



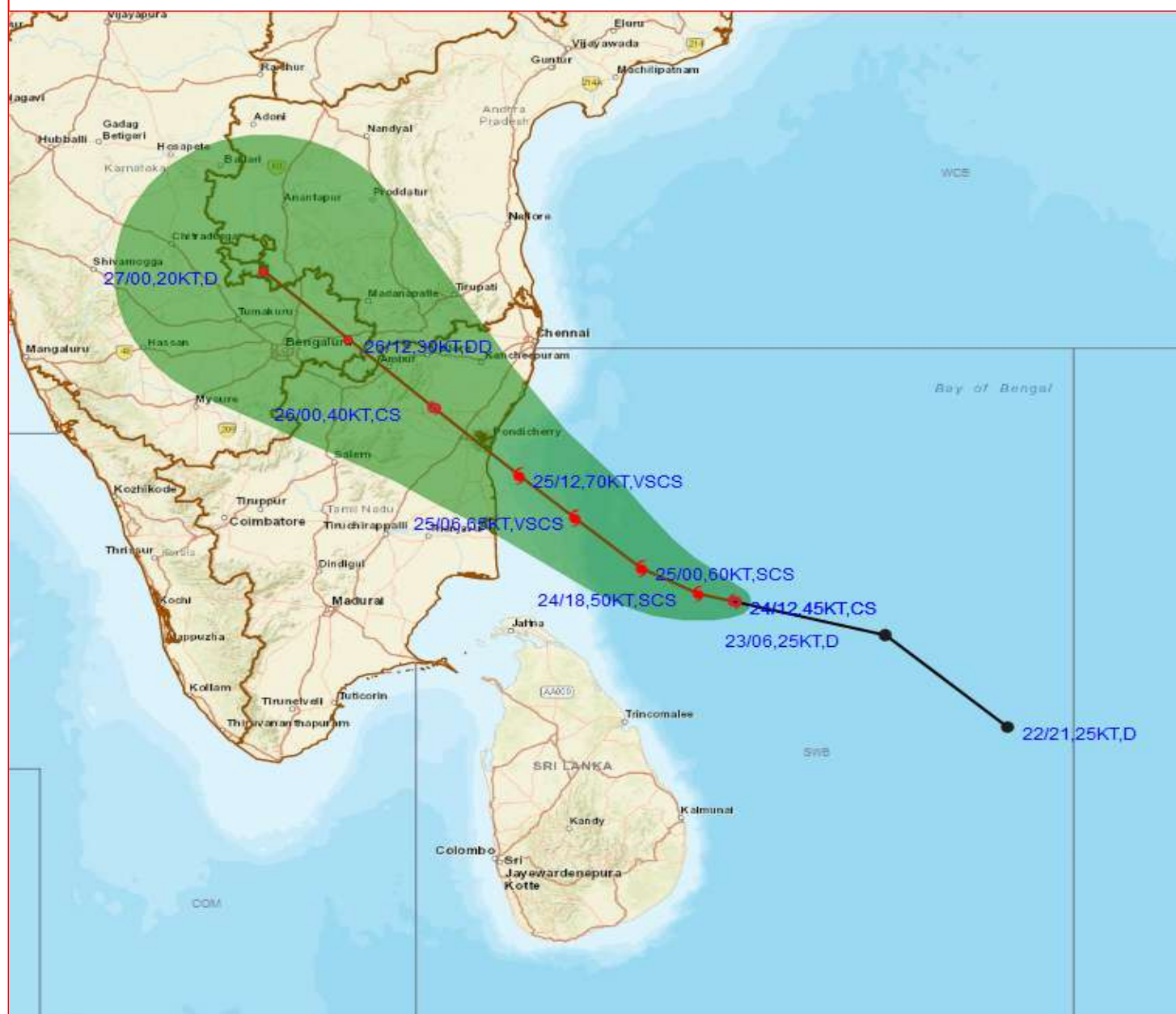
Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.





# OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF CYCLONIC STORM NIVAR OVER SOUTHWEST BAY OF BENGAL BASED ON 1200UTC OF 24<sup>TH</sup> NOVEMBER, 2020.



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 ( $\geq$  120 KT)

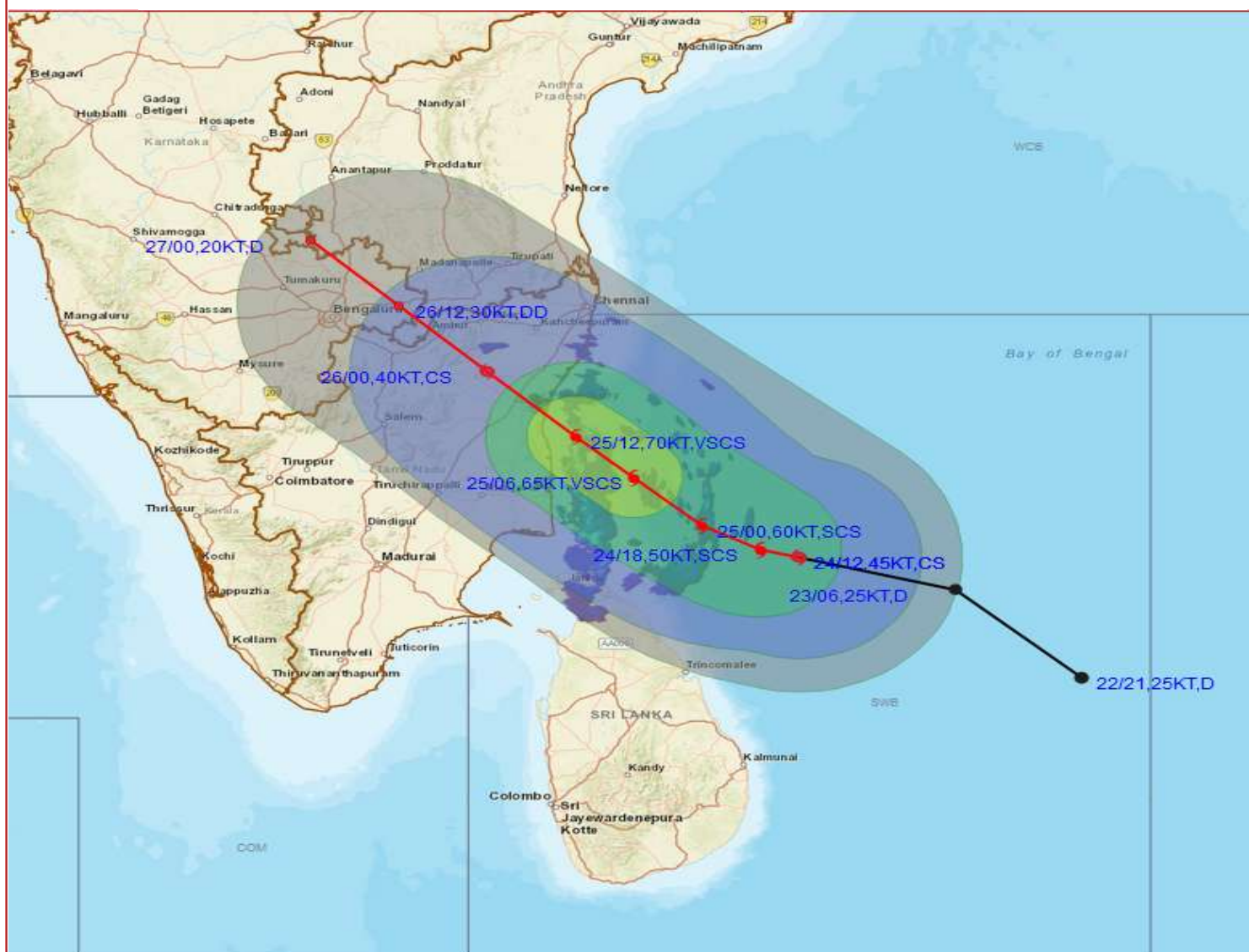
- LESS THAN 34 KT
- ⬮ 34-47 KT
- ⬮  $\geq$  48 KT
- OBSERVED TRACK
- FORECAST TRACK
- ▲ CONE OF UNCERTAINTY

Spatial rainfall distribution: Isolated:  $\leq$ 25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



# OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM NIVAR OVER SOUTHWEST BAY OF BENGAL BASED ON 1200UTC OF 24<sup>TH</sup> NOVEMBER, 2020



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

Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%  
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



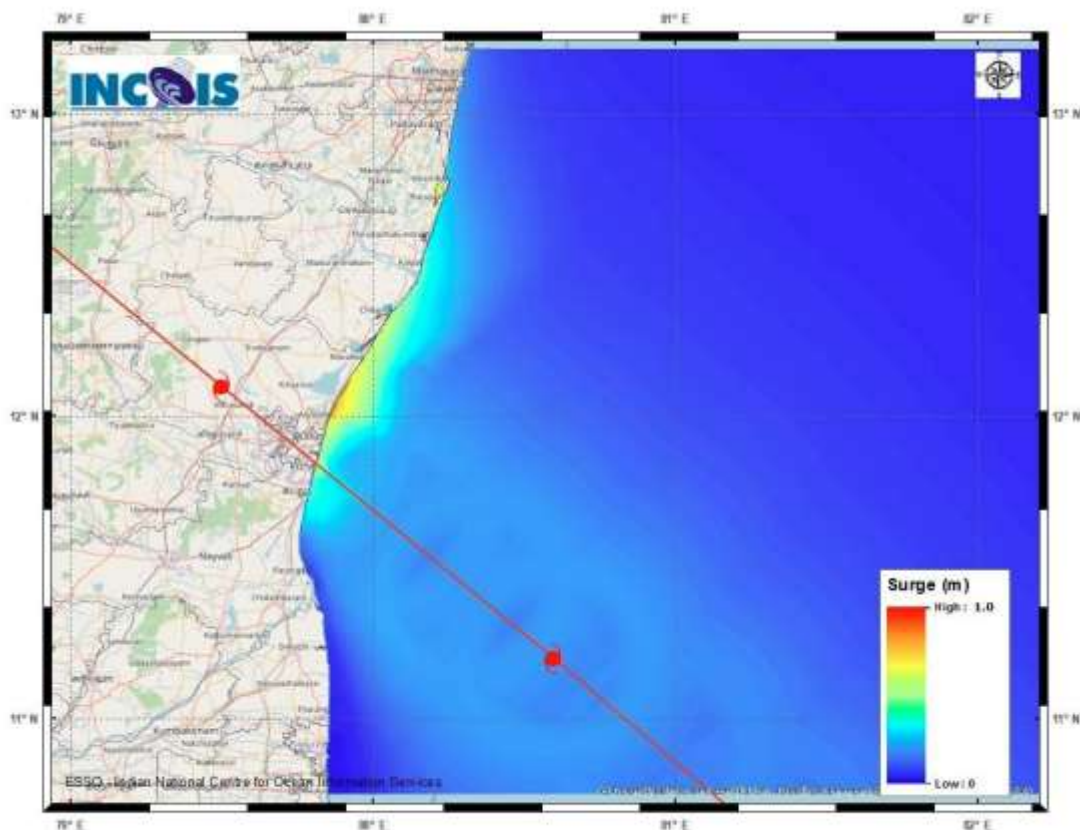


Figure: Storm surge map

### Storm Surge Guidance based on 1200 UTC observations of 24<sup>th</sup> November

#### 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	Thiruporur	0.4-1.0	Upto 0.13
Cheyyur	Kancheepuram	Tamil Nadu	Kadalur	0.4-0.8	Nil
Cuddalore	Cuddalore	Tamil Nadu	Cuddalore	0.3-0.5	Nil
Mannargudi	Thiruvarur	Tamil Nadu	Idumbavanam	0.2-0.5	Upto 0.14
Puducherry	Puducherry	Puducherry	Bahour Commune Panchayat	0.5-0.6	Nil
Tindivanam	Viluppuram	Tamil Nadu	Ozhukarai Municipality	0.6-1.0	Upto 0.20
Tirutturaippundi	Nagapattinam	Tamil Nadu	Vaimedu west	0.3-0.7	Upto 0.30

Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.