



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 13

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. 13 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0330 UTC OF 24.11.2020 BASED ON 0000 UTC OF 24.11.2020.

A. DEEP DEPRESSION INTENSIFIED INTO A CYCLONIC STORM “NIVAR” OVER SOUTHWEST BAY OF BENGAL—(CYCLONE ALERT FOR TAMILNADU AND PUDUCHERRY COASTS- YELLOW MESSAGE)

THE DEEP DEPRESSION OVER SOUTHWEST BAY OF BENGAL MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 05 KMPH DURING PAST 06 HOURS, INTENSIFIED INTO A CYCLONIC STORM “NIVAR” AND LAY CENTRED AT 0000 UTC OF 24TH NOVEMBER, 2020 OVER SOUTHWEST BAY OF BENGAL NEAR LATITUDE 10.0°N AND LONGITUDE 83.0°E, ABOUT 410 KM EAST-SOUTHEAST OF PUDUCHERRY AND 450 KM SOUTHEAST OF CHENNAI. IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS FOR NEXT 12 HOURS AND THEN NORTHWESTWARDS. IT IS VERY LIKELY TO CROSS TAMIL NADU AND PUDUCHERRY COASTS BETWEEN KARAİKAL AND MAMALLAPURAM AROUND PUDUCHERRY DURING 25TH NOVEMBER 2020 EVENING AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 100-110 KMPH GUSTING TO 120 KMPH.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
24.11.20/0000	10.0/83.0	65-75 GUSTING TO 85	CYCLONIC STORM
24.11.20/0600	10.1/82.7	75-85 GUSTING TO 95	CYCLONIC STORM
24.11.20/1200	10.2/82.4	85-95 GUSTING TO 105	CYCLONIC STORM
24.11.20/1800	10.4/81.9	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
25.11.20/0000	10.9/81.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
25.11.20/1200	11.7/80.0	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
26.11.20/0000	12.5/79.0	80-90 GUSTING TO 100	CYCLONIC STORM
26.11.20/1200	13.5/77.8	50-60 GUSTING TO 70	DEEP DEPRESSION
27.11.20/0000	14.3/76.9	30-40 GUSTING TO 50	DEPRESSION

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

AS PER SATELLITE IMAGERY, THE INTENSITY T2.5. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH AND ADJOINING CENTRAL BAY OF BENGAL, BETWEEN LATITUDE 8.0°N & 14.0°N AND LONGITUDE 79.0°E & 84.0°E IN ASSOCIATION WITH THE SYSTEM. MINIMUM CLOUD TOP TEMPERATURE IS -93.0°C.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 996 HPA.

B. DEEP DEPRESSION WEAKENED INTO A DEPRESSION OVER GULF OF ADEN AND ADJOINING SOMALIA

THE DEEP DEPRESSION OVER GULF OF ADEN AND ADJOINING SOMALIA MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF ABOUT 09 KMPH DURING PAST 06 HOURS, WEAKENED INTO A DEPRESSION AND LAY CENTERED AT 0000 UTC OF 24TH NOVEMBER 2020 OVER THE GULF OF ADEN AND ADJOINING SOMALIA NEAR LATITUDE 11.6°N AND LONGITUDE 47.0°E, ABOUT 460 KM WEST-NORTHWEST OF RAS BINNAH (SOMALIA). IT IS VERY LIKELY TO MOVE NEARLY WEST-SOUTHWESTWARDS AND WEAKEN INTO A WELL MARKED LOW PRESSURE AREA DURING NEXT 12 HOURS.

AS PER SATELLITE IMAGERY, INTENSITY IS WITH T1.5. CONVECTIVE CLOUDS HAVE SHEARED AWAY TO THE NORTH-WEST OF THE SYSTEM. ASSOCTATED SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH SOMALIA AND ADJOINING GULF OF ADEN AND NEIGHBOURHOOD. MINIMUM CLOUD TOP TEMPERATURE IS -75.0°C.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1000 HPA.

REMARKS:

CONSIDERING THE SEA CONDITIONS, SST IS AROUND 29-30°C OVER SOUTHWEST BAY OF BENGAL (BOB). THE TROPICAL CYCLONE HEAT POTENTIAL IS ABOUT 80-100 KJ/CM² OVER SOUTHWEST BOB. LOWER LEVEL POSITIVE RELATIVE VORTICITY ($200 \times 10^{-6} \text{S}^{-1}$) PREVAILS AROUND SYSTEM CENTRE. UPPER LEVEL POSITIVE DIVERGENCE OF $40 \times 10^{-5} \text{S}^{-1}$ PREVAILS AROUND THE SYSTEM CENTRE. THE LOWER LEVEL POSITIVE CONVERGENCE IS $30 \times 10^{-5} \text{S}^{-1}$ AROUND SYSTEM CENTRE. THE VERTICAL WIND SHEAR (VWS) IS LOW (05-15 KTS) OVER THE REGION. THE UPPER TROPOSPHERIC RIDGE AT UPPER AND MIDDLE TROPOSPHERIC LEVELS RUNS ALONG 13.0°N OVER THE BOB IN ASSOCIATION WITH AN ANTICYCLONIC CIRCULATION TO THE NORTHEAST OF SYSTEM CENTRE THE SYSTEM LIES IN THE SOUTHERN PERIPHERY OF THE ABOVE RIDGE. ASA RESULT, IT IS MOVING WEST NORTHWESTWARDS. IT IS EXPECTED TO BE STEERED BY THE ABOVE RIDGE RESULTING IN WEST-NORTHWESTWARD MOVEMENT FOR NEXT 12 HRS AND THEN NORTHWESTWARD MOVEMENT . THE ABOVE ENVIRONMENTAL CONDITIONS ARE FAVOURABLE FOR INTENSIFICATION OF THE SYSTEM DURING NEXT 24 HRS INTO A SEVERE CYCLONIC STORM.

NWP MODELS LIKE ECMWF, IMD GFS, NCEP GFS, GEFS, NCUM AND NEPS ARE INDICATING INTENSIFICATION OF THE SYSTEM INTO A SEVERE CYCLONIC STORM OVER SOUTHWEST BOB DURING NEXT 24 HOURS AND MOVEMENT TOWARDS TAMIL NADU-PUDUCHERRY COASTS SKIRTING NORTHEAST SRILANKA COAST.

(SHOBHIT KATIYAR)
SCIENTIST- C
RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT : INSAT-3D IMG

24-11-2020/(0030 to 0057) GMT

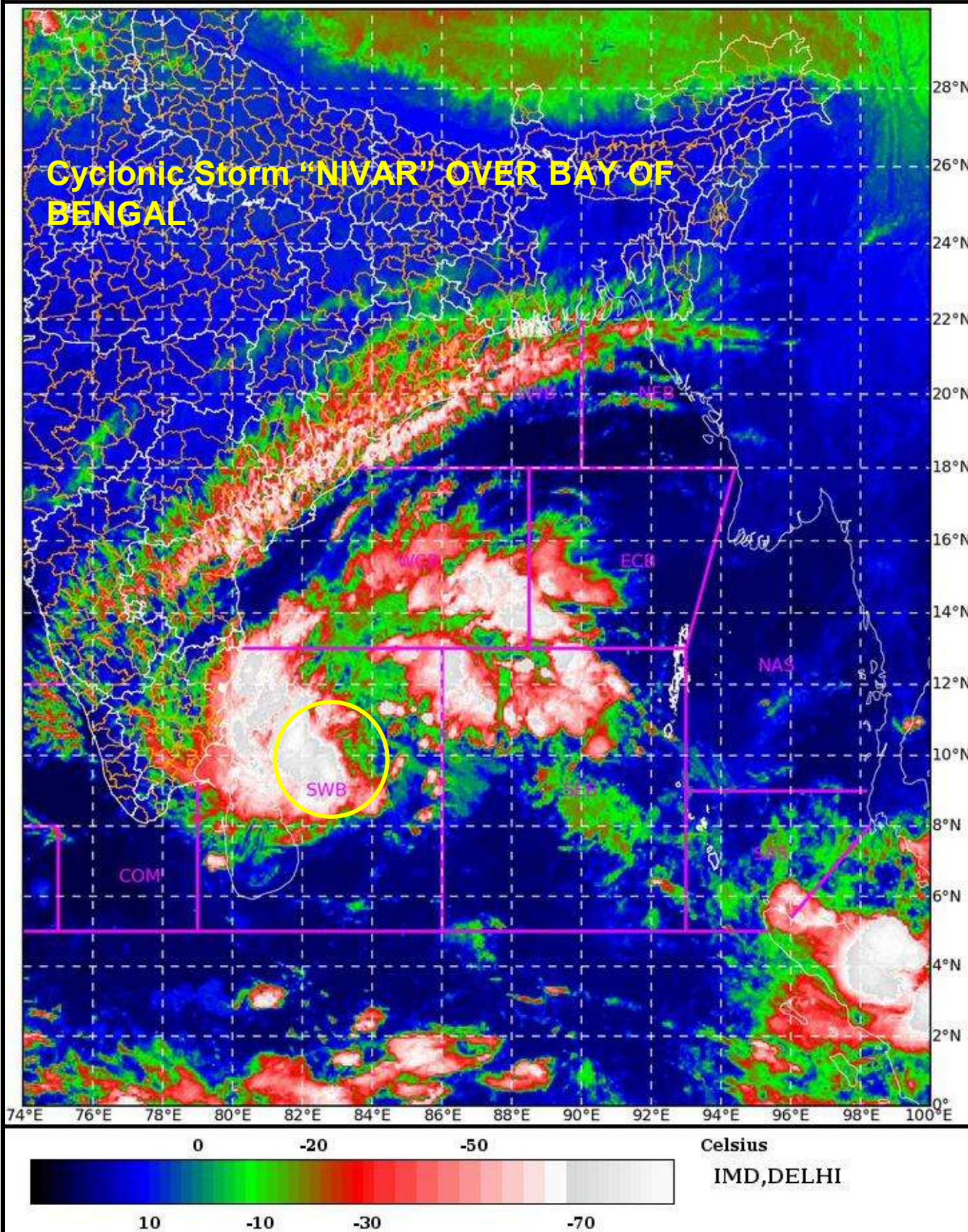
IMG_TIR1_TEMP 10.8 um

24-11-2020/(0600 to 0627) IST

L1C Mercator



Cyclonic Storm "NIVAR" OVER BAY OF BENGAL

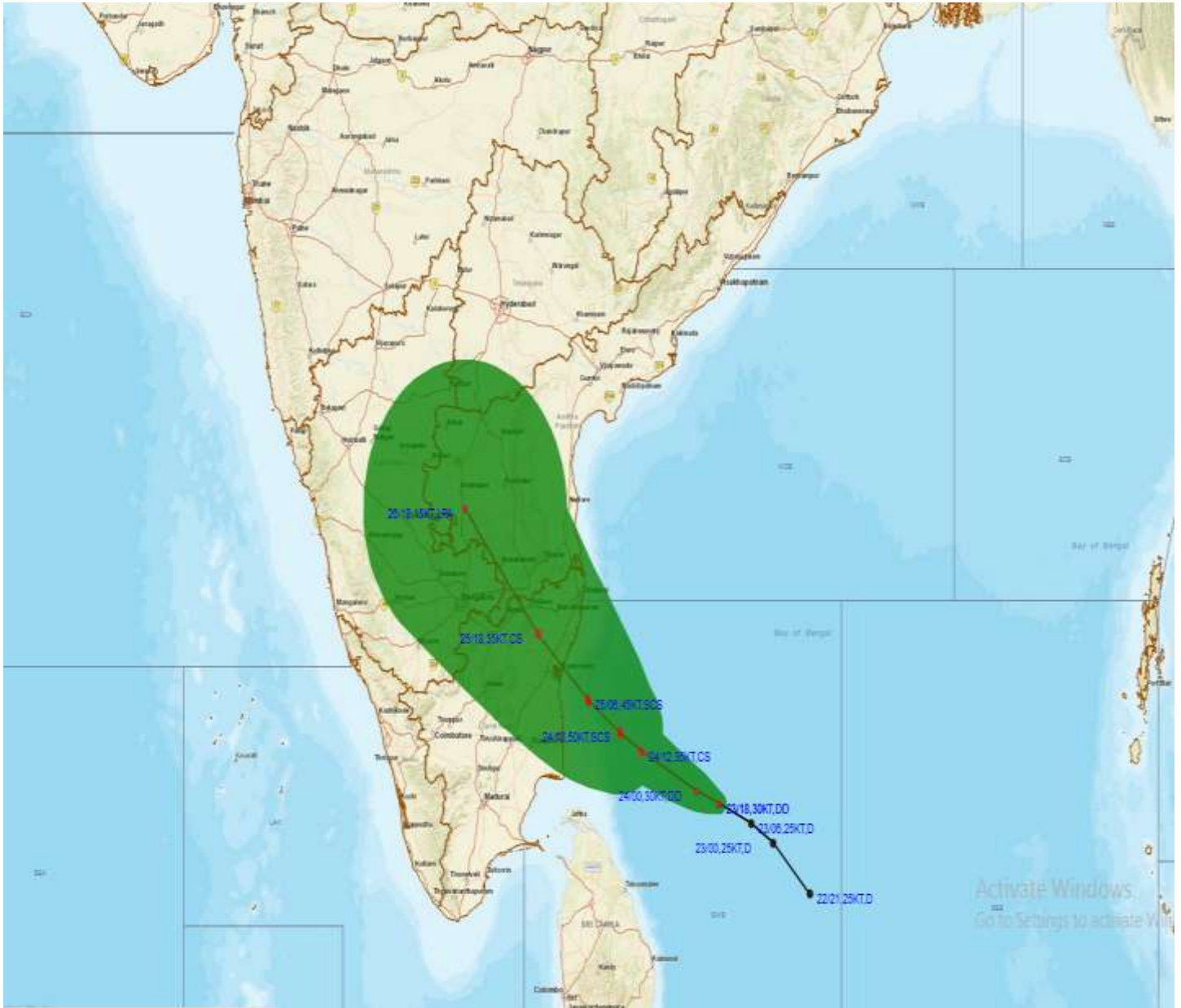


PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF CYCLONIC STORM "NIVAR" OVER SOUTHWEST BAY OF BENGAL BASED ON 0000 UTC OF 24TH NOVEMBER, 2020.

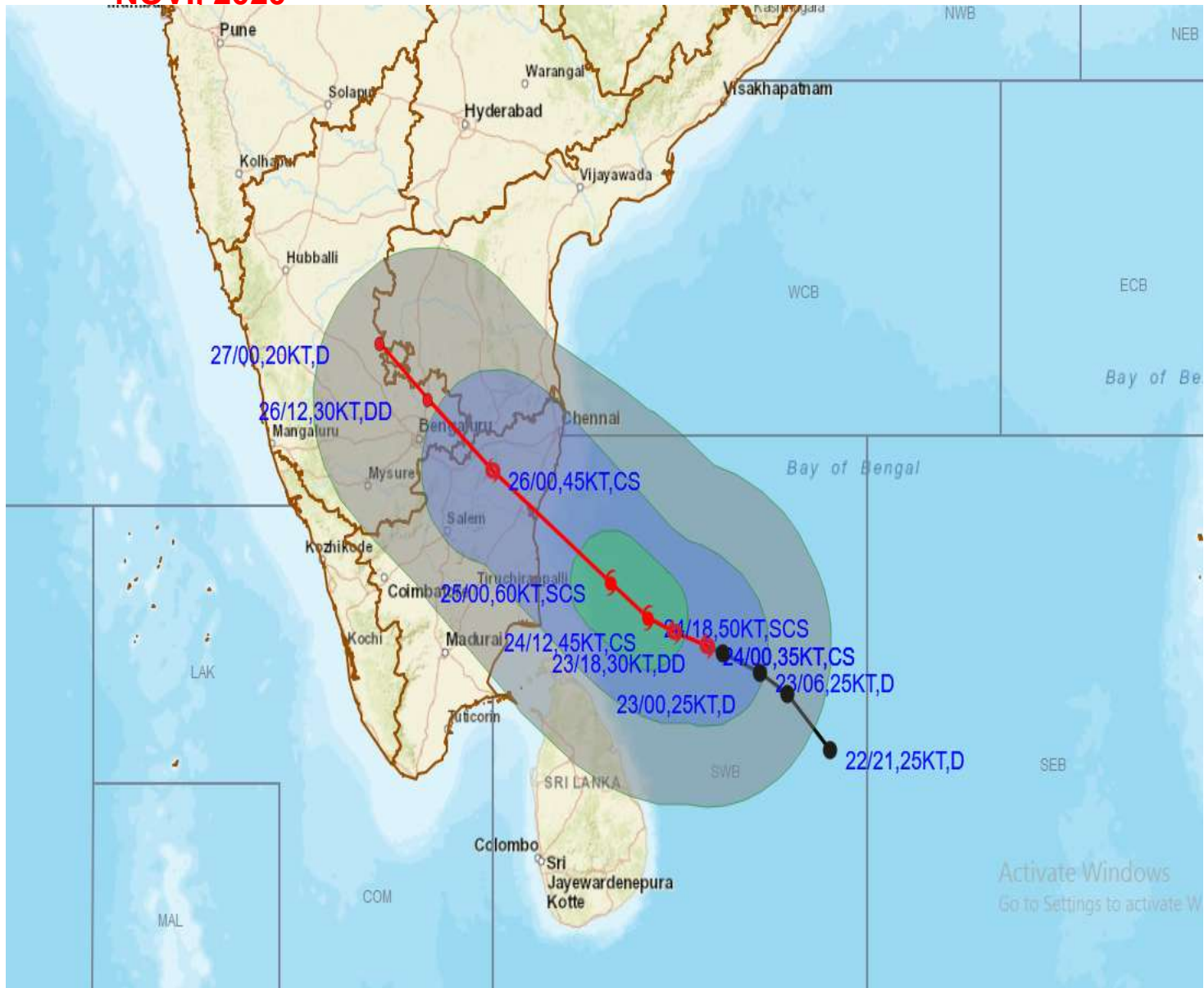


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OBSERVED AND FORECAST TRACK OF CYCLONIC STORM "NIVAR" OVER SOUTHWEST BAY OF BENGAL ALONGWITH QUADRANT WIND DISTRIBUTION BASED ON 0000 UTC OF 24TH NOV., 2020



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 (≥20 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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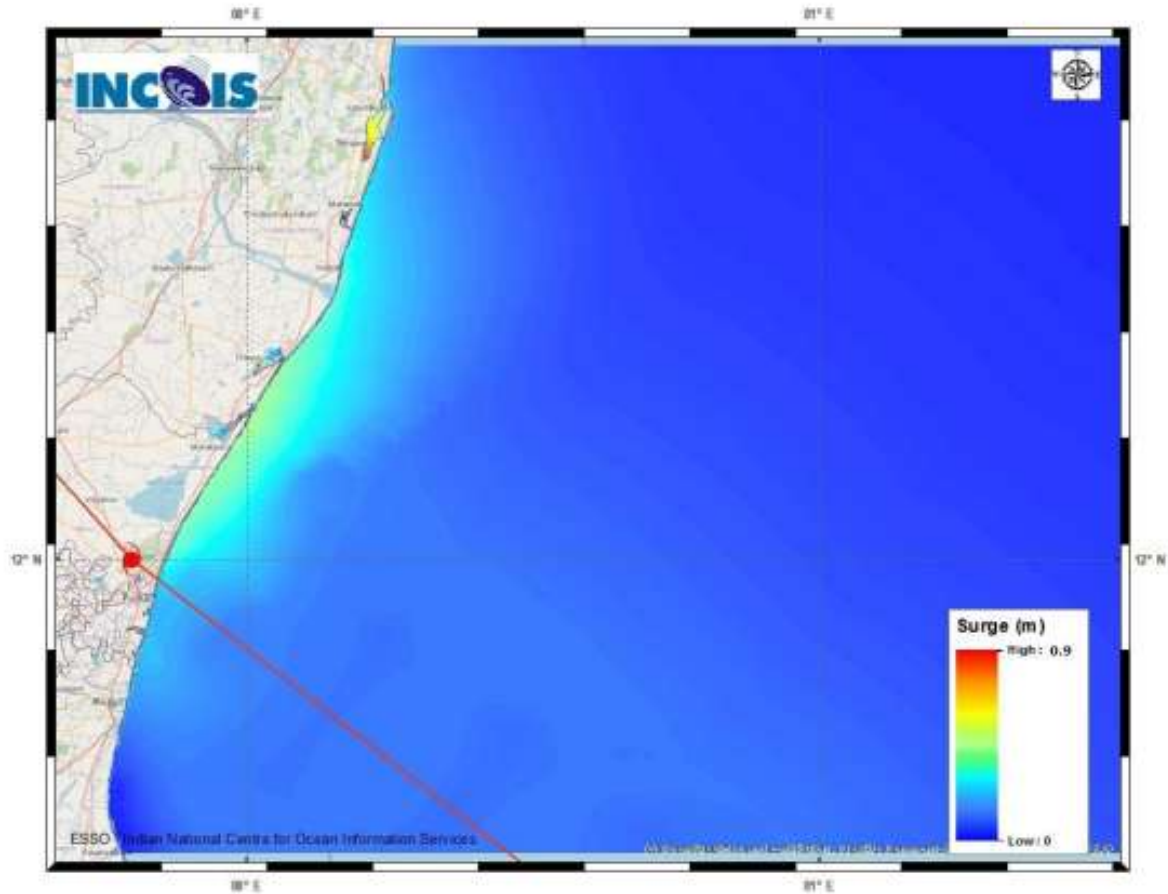


Figure: Storm surge map

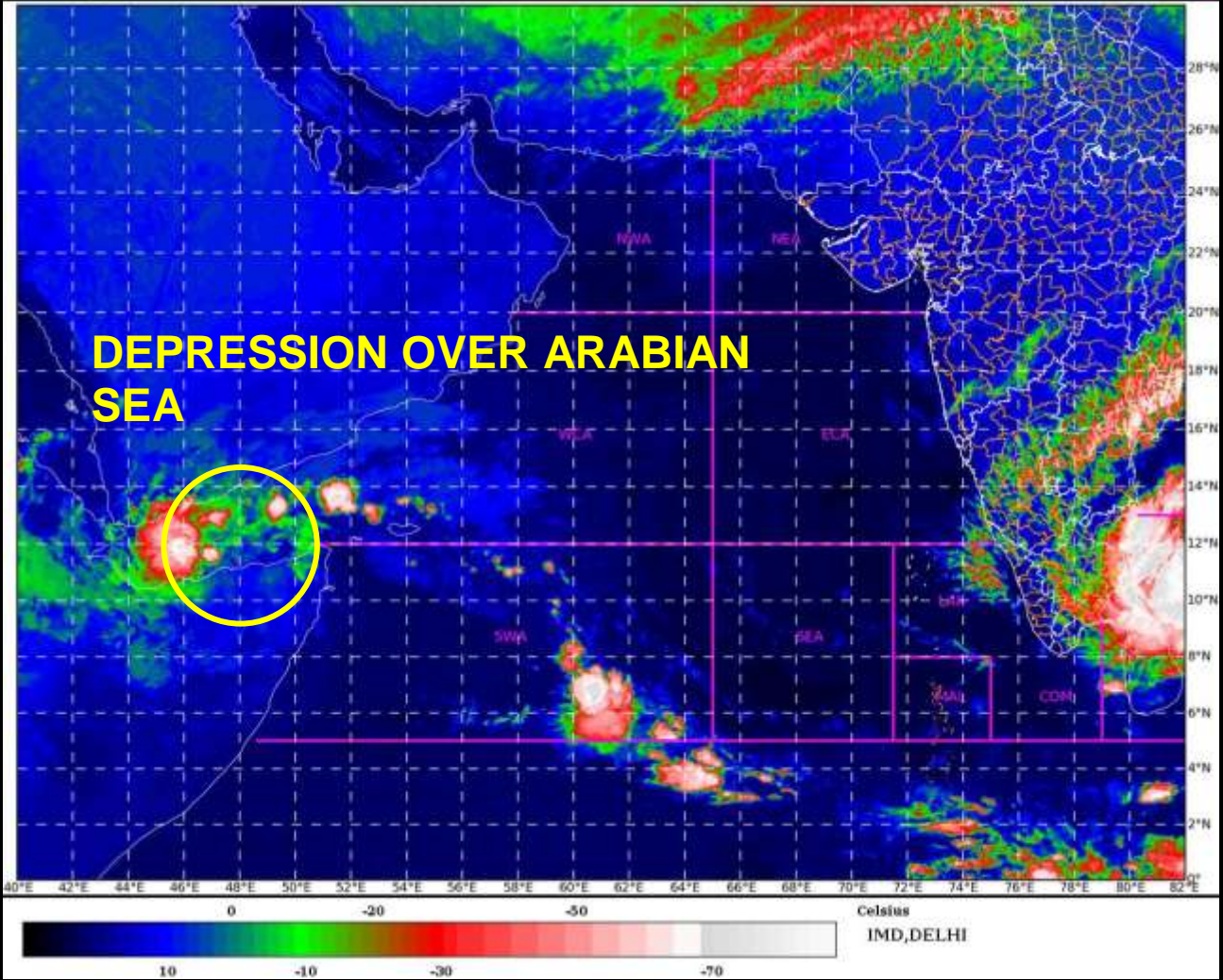
STORM SURGE HEIGHT INFORMATION:

* 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	0.5-0.9	Upto 0.20
Cheyyur	Kancheepuram	Tamil Nadu	Kadalur	0.3-0.4	Nil
Cuddalore	Cuddalore	Tamil Nadu	Cuddalore	0.3-0.4	Nil
Tindivanam	Viluppuram	Tamil Nadu	OZHUKARAI MUNICIPALITY	0.3-0.6	Upto 0.11
Tirutturaippundi	Nagappattinam	Tamil Nadu	Vaimedu west	0.3-0.5	Upto 0.11

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OBSERVED TRACK OF DEPRESSION OVER GULF OF ADEN BASED ON 0000 UTC OF 24TH NOV., 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)

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SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

● LESS THAN 34 KT

⊙ 34-47 KT

⊙ ≥ 48 KT

■ OBSERVED TRACK

■ FORECAST TRACK

▲ CONE OF UNCERTAINTY

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