



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI**

**TROPICAL CYCLONE ADVISORY BULLETIN NO. 26**

**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. 26 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1800 UTC OF 19.05.2020 BASED ON 1500 UTC OF 19.05.2020.**

**SUB: SUPER CYCLONIC STORM 'AMPHAN' (PRONOUNCED AS **UM-PUN**) OVER WESTCENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL**

THE SUPER CYCLONIC STORM '**AMPHAN**' (PRONOUNCED AS **UM-PUN**) OVER WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHEASTWARDS WITH A SPEED OF 20 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1500 UTC OF 19<sup>TH</sup> MAY, 2020 AS AN EXTREMELY SEVERE CYCLONIC STORM OVER **NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL** NEAR LATITUDE 18.1°N AND LONGITUDE 87.1°E, ABOUT 250 KM NEARLY SOUTH OF PARADIP (42976), 390 KM SOUTH-SOUTHWEST OF DIGHA (42901) AND 540 KM SOUTH-SOUTHWEST OF KHEPUPARA (41984).

IT IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS ACROSS NORTHWEST BAY OF BENGAL AND CROSS WEST BENGAL – BANGLADESH COASTS BETWEEN DIGHA (WEST BENGAL) AND HATIYA ISLANDS (BANGLADESH) CLOSE TO SUNDARBANS DURING AFTERNOON TO EVENING HOURS OF 20<sup>TH</sup> MAY 2020 WITH MAXIMUM SUSTAINED WIND SPEED OF 155-165 KMPH GUSTING TO 185 KMPH.

THE SYSTEM IS NOW BEING CONTINUOUSLY TRACKED BY THE DOPPLER WEATHER RADAR (DWR) AT VISHAKHAPATNAM (ANDHRA PRADESH), PARADIP (ODISHA) AND GOPALPUR (ODISHA).

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
19.05.20/1500	18.1/87.1	185-195 gusting to 215	Extremely Severe Cyclonic Storm
19.05.20/1800	18.7/87.3	180-190 gusting to 210	Extremely Severe Cyclonic Storm
20.05.20/0000	19.8/87.5	170-180 gusting to 200	Extremely Severe Cyclonic Storm
20.05.20/0600	20.9/87.9	160-170 gusting to 190	Extremely Severe Cyclonic Storm

**PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)**

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

20.05.20/1200	22.1/88.3	150-160 gusting to 180	Very Severe Cyclonic Storm
21.05.20/0000	24.10/89.2	80-90 gusting to 100	Cyclonic Storm
21.05.20/1200	25.10/90.00	40-50 gusting to 60	Depression

## REMARKS:

AS PER INSAT-3D SATELLITE IMAGERY BASED ON 1500 UTC OF 19<sup>TH</sup> MAY, THE SYSTEM INTENSITY IS **T5.5** AND IS CDO PATTERN WITH WALL CLOUD TEMPERATURE IS - 93.0°C. MAIN CONVECTIVE BANDS LIES IN THE SOUTHERN PARTS OF THE CYCLONE. ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION PREVAILS BETWEEN LAT 15.0°N TO 20.5°N LONG 84.0°E TO 90.0°E.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 100 KNOTS GUSTING TO 110 KNOTS. THE SEA CONDITION IS PHENOMENAL AROUND THE SYSTEM CENTER. THE ESTIMATED CENTRAL PRESSURE IS **950** HPA.

THE CYCLONE IS TRACKED BY THE DOPPLER WEATHER RADAR (DWR) AT VISHAKHAPATANAM (43149). THE SYSTEM IS AT DISTANCE OF 415 KM FROM THE RADAR.

AT 1200 UTC OF 19<sup>TH</sup> MAY, THE BOUY (**23092**) AT 17.4°N/89.1°E REPORTED MEAN SEA LEVEL PRESSURE OF 989 HPA AND WIND DIRECTION/SPEED AS 210°/38.9 KNOTS.

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS IN PHASE 2 WITH AMPLITUDE MORE THAN 1 FOR NEXT TWO DAYS. IT WILL REMAIN IN PHASE 3 WITH AMPLITUDE MORE THAN 1 DURING SUBSEQUENT THREE DAYS. THUS MJO PHASE AND AMPLITUDE WILL SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER BAY OF BENGAL DURING NEXT 5 DAYS.

CONSIDERING THE SEA CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER ENTIRE BAY OF BENGAL, BUT SYSTEM IS ENTERING TO LOWER TROPICAL CYCLONE HEAT POTENTIAL OF 70-90 KJ/CM<sup>2</sup> AND IT IS FURTHER DECREASING TOWARDS NORTH BAY OF BENGAL ALONG THE SYSTEM TRACK.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE POSITIVE VORTICITY IS AROUND (250-300)X10<sup>-6</sup> SEC<sup>-1</sup> AROUND THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE ZONE IS 50 TO 60X10<sup>-5</sup> SEC<sup>-1</sup> LOCATED SOUTH OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS OF THE ORDER 10 TO 20X10<sup>-5</sup> SEC<sup>-1</sup> AROUND THE SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS MODERATE TO HIGH (20-25 KTS) AROUND THE SYSTEM CENTRE. IT IS INCREASING TO 25-30 KTS TO THE NORTH BETWEEN 15-20°N ALONG THE EXPECTED TRACK. THE UPPER TROPOSPHERIC RIDGE HAS FURTHER SHIFTED NORTH AND NOW LIES NEAR 21.0°N OVER BAY OF BENGAL. AT PRESENT THE SYSTEM IS MOVING NORTH-NORTHEASTWARD ALONG THE PERIPHERY OF THE ANTICYCLONE LIES OVER MAYNMAR.

VARIOUS NUMERICAL MODELS INCLUDING ECMWF, IMD GFS, NCEP GFS, GEFS, NEPS AND NCUM ARE INDICATING THE SYSTEM IS LIKELY TO MOVE TOWARDS WEST BENGAL AND BANGLADESH COASTS AS AN EXTREMELY SEVERE CYCLONIC STORM DURING 0900-1200 UTC OF 20<sup>TH</sup> MAY 2020. THE FORECAST IS BASED ON THE CONSENSUS FROM VARIOUS MODELS.

## STORM SURGE GUIDANCE

STORM SURGE OF ABOUT 4-5 METERS ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS OF SOUTH & NORTH 24 PARGANAS AND ABOUT 3-4 METERS OVER THE LOW LYING AREAS OF EAST MEDINIPUR DISTRICT OF WEST BENGAL DURING THE TIME OF LANDFALL (FIGURE ENCLOSED).

(D R PATTANAİK)  
SCIENTIST-F, RSMC, NEW DELHI

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## PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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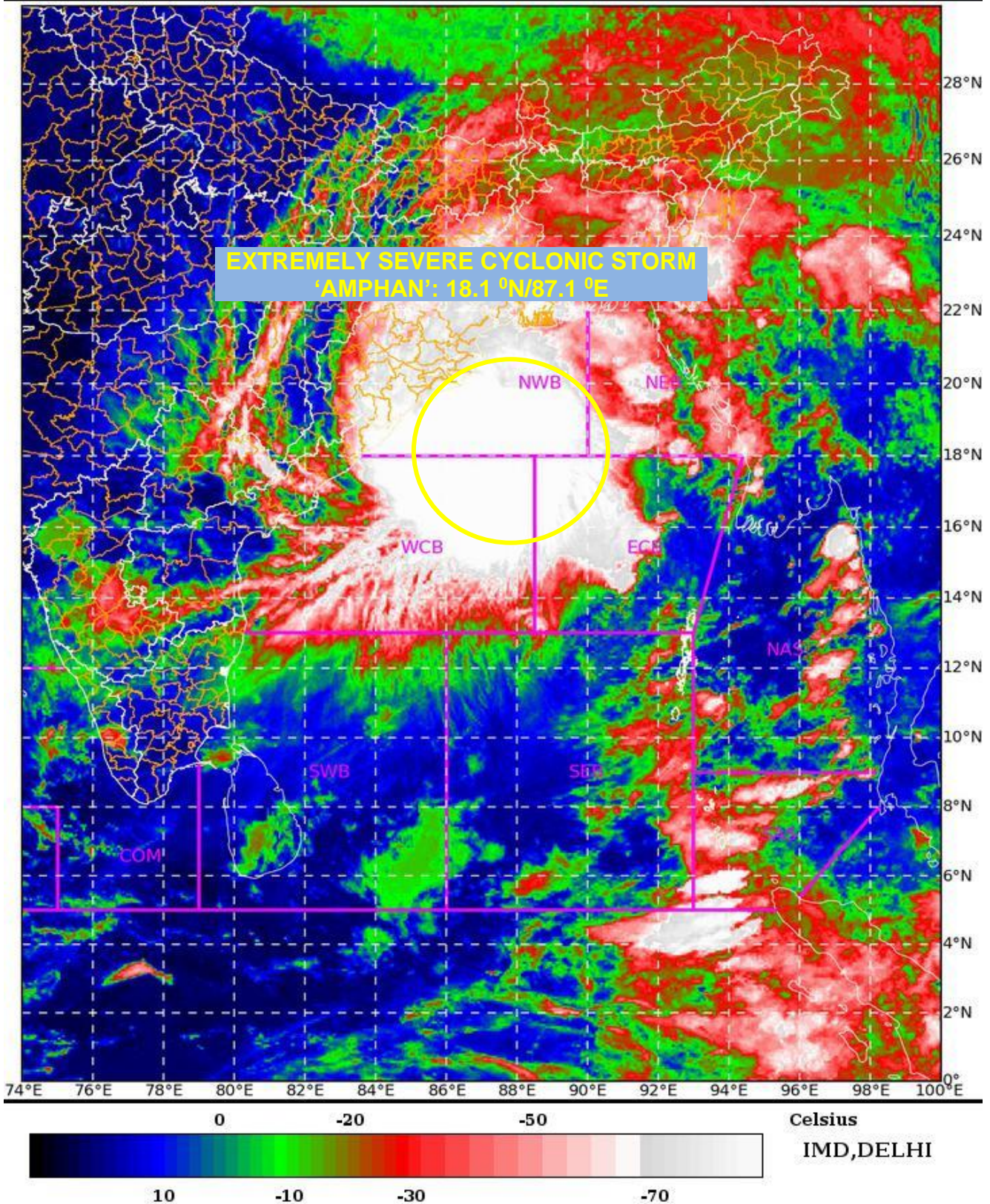
SAT : INSAT-3D IMG

19-05-2020/(1700 to 1726) GMT

IMG\_TIR1\_TEMP 10.8 um

19-05-2020/(2230 to 2256) IST

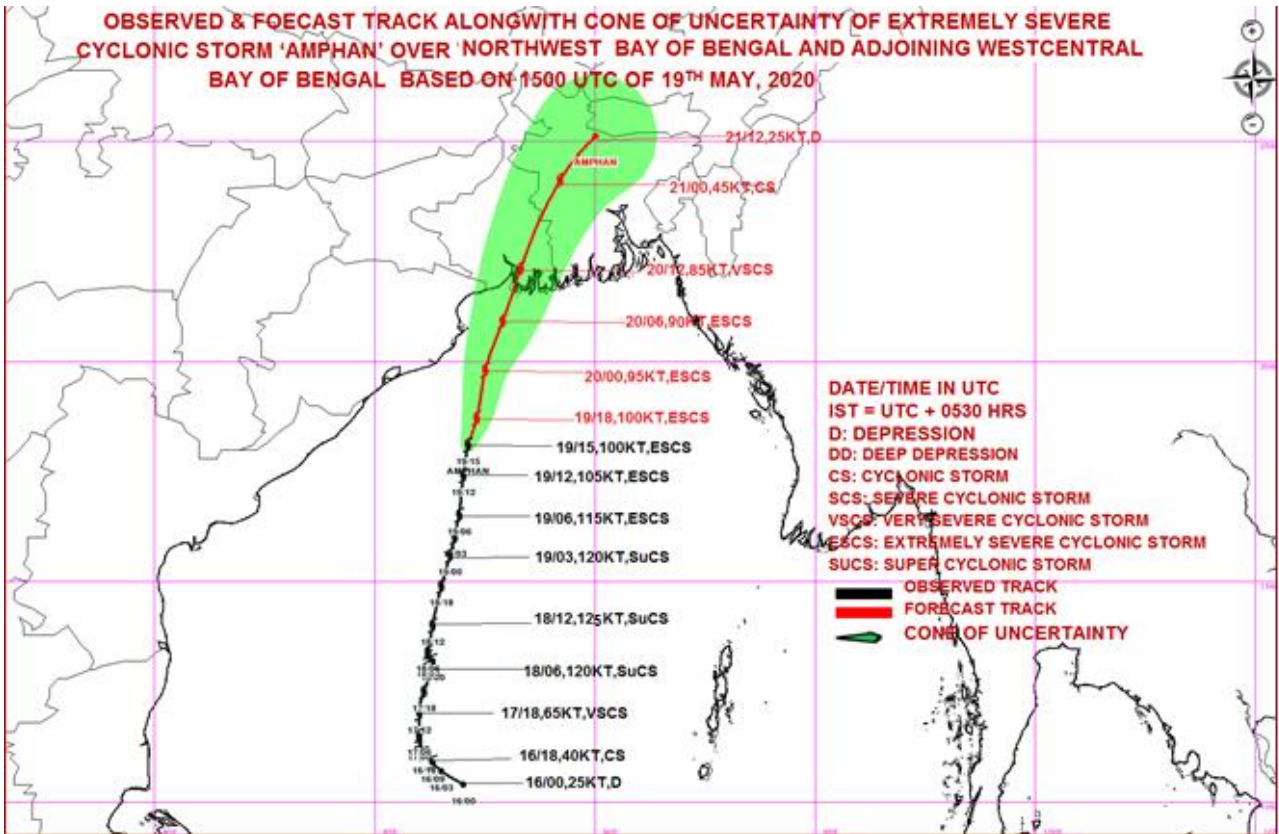
L1C Mercator



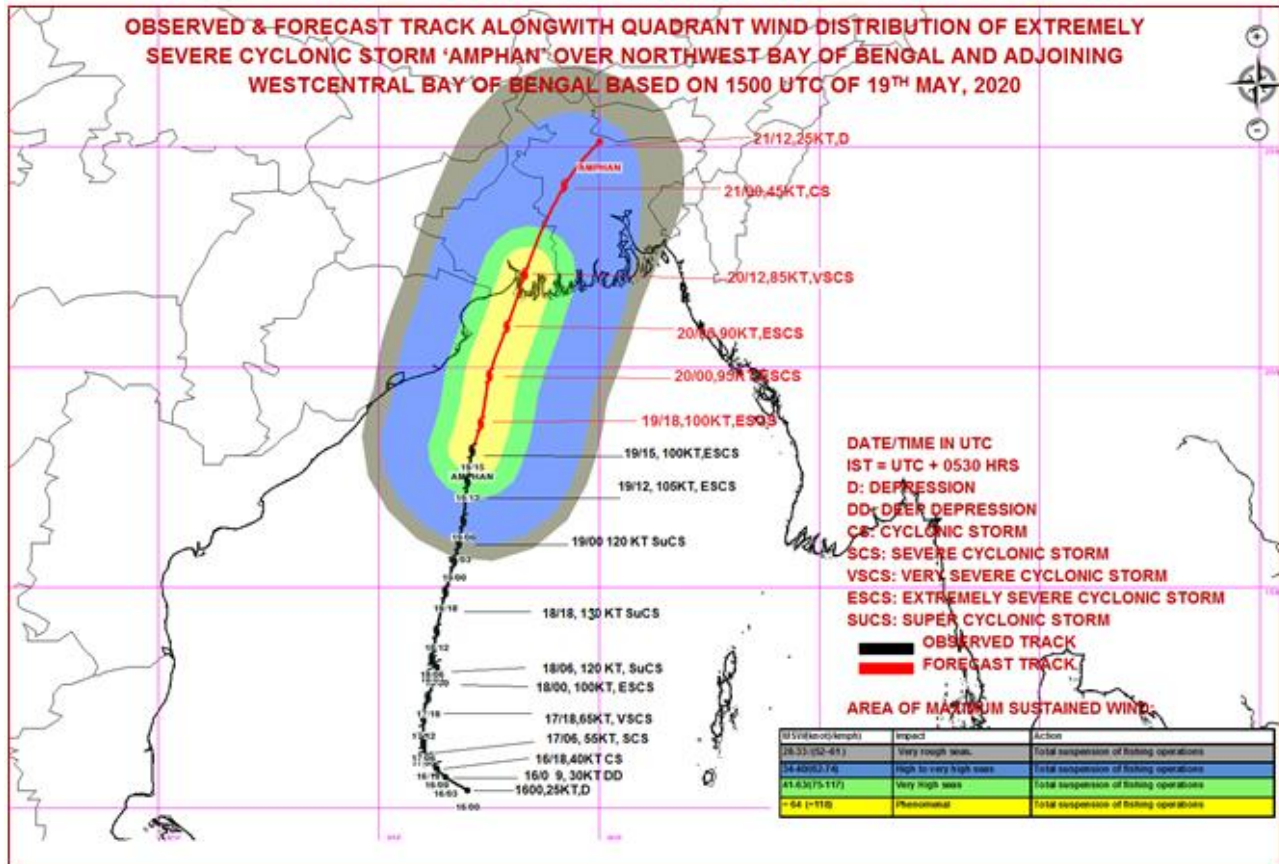
**PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)**

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

**OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF EXTREMELY SEVERE CYCLONIC STORM 'AMPHAN' OVER 'NORTHWEST BAY OF BENGAL AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 1500 UTC OF 19<sup>TH</sup> MAY, 2020**



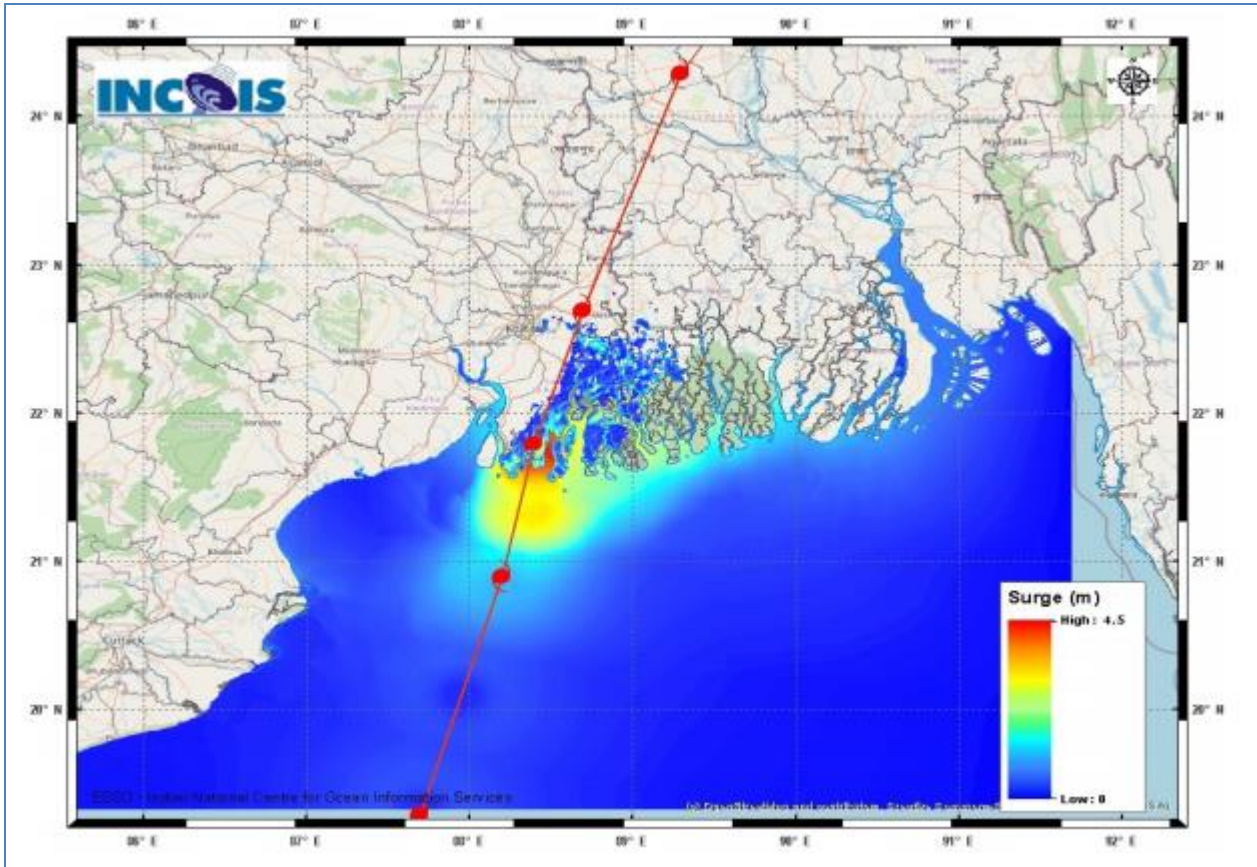
**OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF EXTREMELY SEVERE CYCLONIC STORM 'AMPHAN' OVER NORTHWEST BAY OF BENGAL AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 1500 UTC OF 19<sup>TH</sup> MAY, 2020**



**PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)**

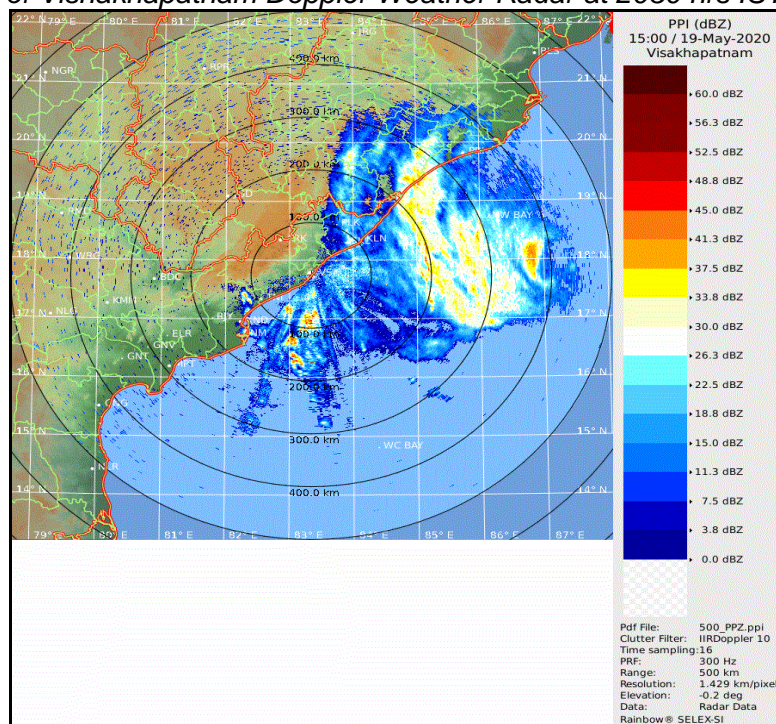
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Figure: Storm Surge forecast from INCOIS issued at 1800 IST of 19<sup>th</sup> May 2020



Storm Surge of about 4-5 meters above Astronomical Tide is likely to inundate low lying areas of south & north 24 Parganas and about 3-4 meters over the low lying areas of East Medinipur District of West Bengal during the time of Landfall.

Figure: Reflectivity of Vishakhapatnam Doppler Weather Radar at 2030 hrs IST of 19<sup>th</sup> May 2020



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