



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI

TROPICAL CYCLONE ADVISORY BULLETIN NO. 25

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. 25 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 19.05.2020 BASED ON 1200 UTC OF 19.05.2020.

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

THE EXTREMELY SEVERE CYCLONIC STORM 'AMPHAN' (PRONOUNCED AS **UM-PUN**) OVER WESTCENTRAL BAY OF BENGAL MOVED NEARLY NORTHWARDS WITH A SPEED OF 17 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1200 UTC OF 19TH MAY, 2020 OVER **WESTCENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL NEAR** LATITUDE 17.4°N AND LONGITUDE 87.0°E ABOUT 320 KM NEARLY SOUTH OF PARADIP (ODISHA), 470 KM SOUTH-SOUTHWEST OF DIGHA (42901) AND 610 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 (42901) AND HATIYA ISLANDS (41963) CLOSE TO SUNDARBANS DURING 0900-1200 UTC OF 20TH 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).

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
19.05.20/1200	17.4/87.0	190-200 GUSTING TO 220	EXTREMELY SEVERE CYCLONIC STORM
19.05.20/1800	18.4/87.2	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/0000	19.4/87.4	170-180 GUSTING TO 200	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/0600	20.6/87.8	160-170 GUSTING TO 190	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/1200	21.8/88.3	150-160 GUSTING TO 180	VERY SEVERE CYCLONIC STORM
21.05.20/0000	23.8/89.2	80-90 GUSTING TO 100	CYCLONIC STORM
21.05.20/1200	25.0/90.0	40-50 GUSTING TO 60	DEPRESSION

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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

REMARKS:

AS PER INSAT-3D SATELLITE IMAGERY BASED ON 1200 UTC OF 19TH MAY, THE SYSTEM INTENSITY IS **T5.5/6.0** 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 13.0°N TO 19.5°N LONG 83.0°E TO 90.0°E.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 105 KNOTS GUSTING TO 115 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 405 KM FROM THE RADAR AND THE EYE DIAMETER IS MEASURED AS 20 KM.

AT 1200 UTC OF 19TH MAY, THE BOUY (**23091**) AT 17.6°N/89.3°E REPORTED MEAN SEA LEVEL PRESSURE OF 987.6 HPA AND WIND DIRECTION/SPEED AS 170°/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/CM² 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)X10⁻⁶ SEC⁻¹ AROUND THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE ZONE IS 50 TO 60X10⁻⁵ SEC⁻¹ LOCATED SOUTH OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS OF THE ORDER 10 TO 20X10⁻⁵ SEC⁻¹ 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 SYSSTEM IS LIKELY TO MOVE TOWARDS WEST BENGAL AND BANGLADESH COASTS AS AN EXTREMELY SEVERE CYCLONIC STORM DURING 0900-1200 UTC OF 20TH MAY 2020. THE FORECAST IS BASED ON THE CONCENSUS 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).

(RK JENAMANI)
SCIENTIST-F, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

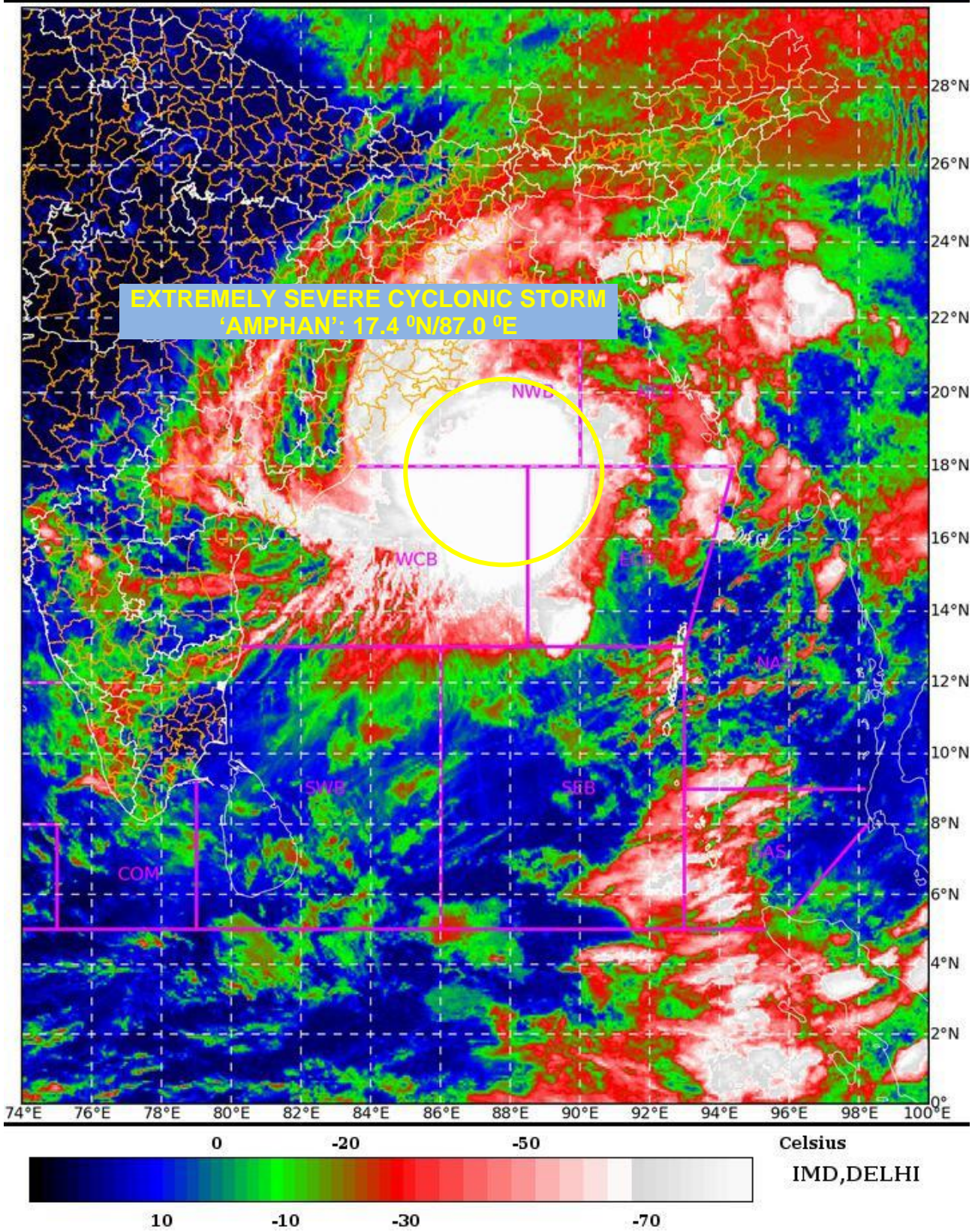
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT : INSAT-3D IMG 19-05-2020/(1330 to 1356) GMT

IMG_TIR1_TEMP 10.8 um 19-05-2020/(1900 to 1926) IST



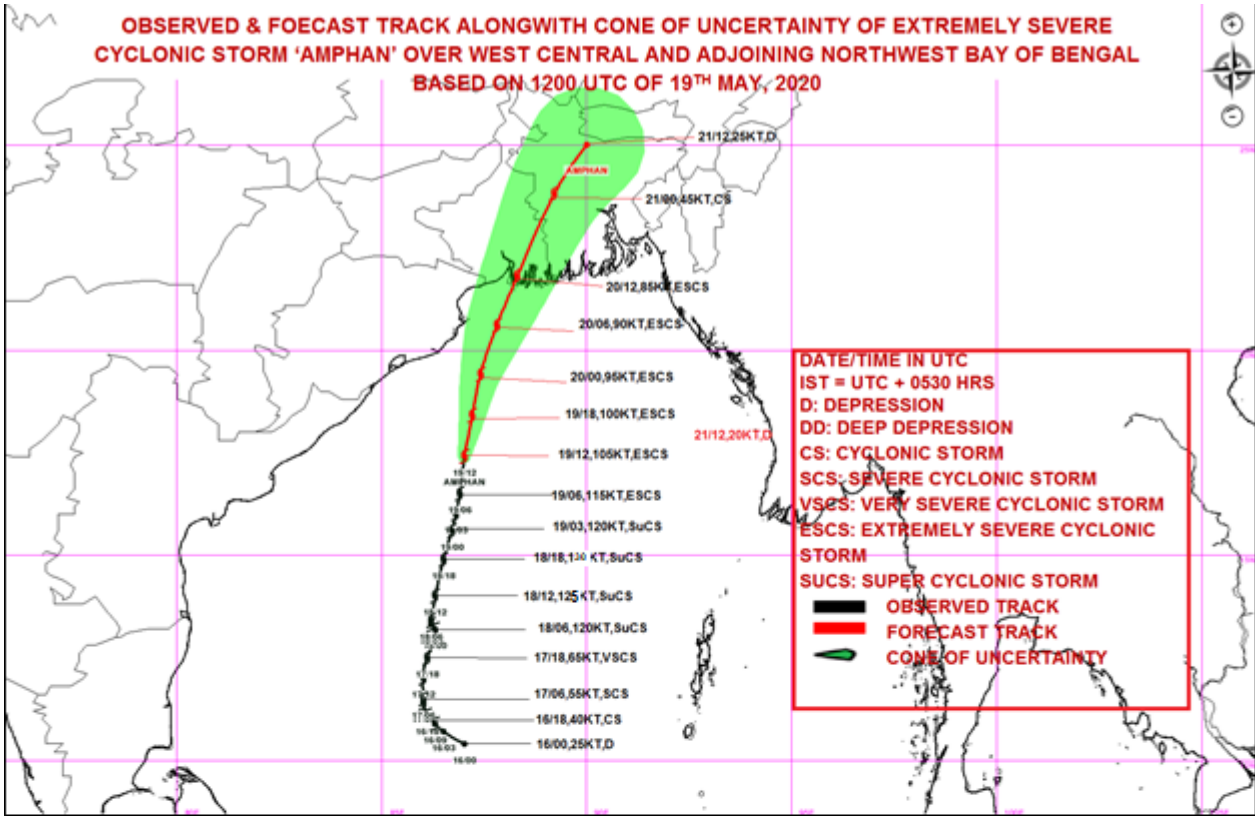
L1C Mercator



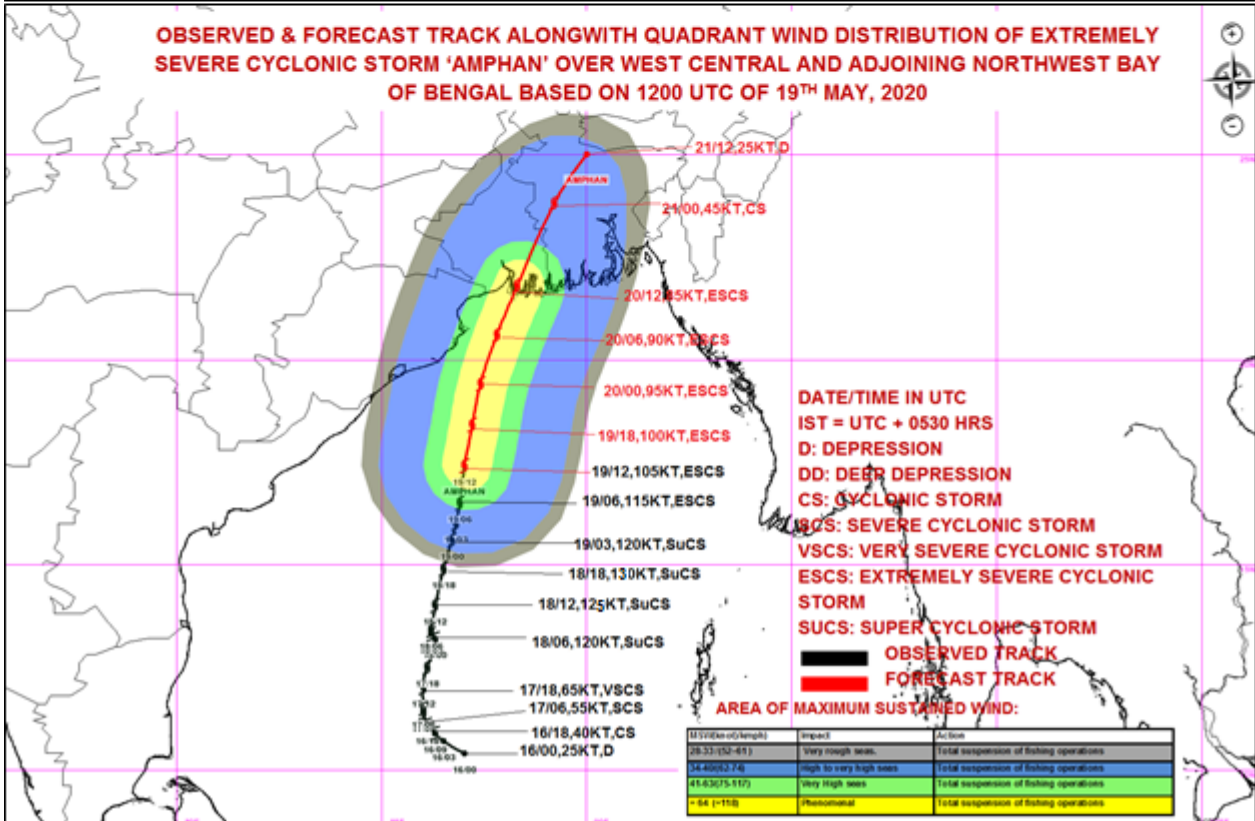
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OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF EXTREMELY SEVERE CYCLONIC STORM 'AMPHAN' OVER WEST CENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL BASED ON 1200 UTC OF 19TH MAY, 2020



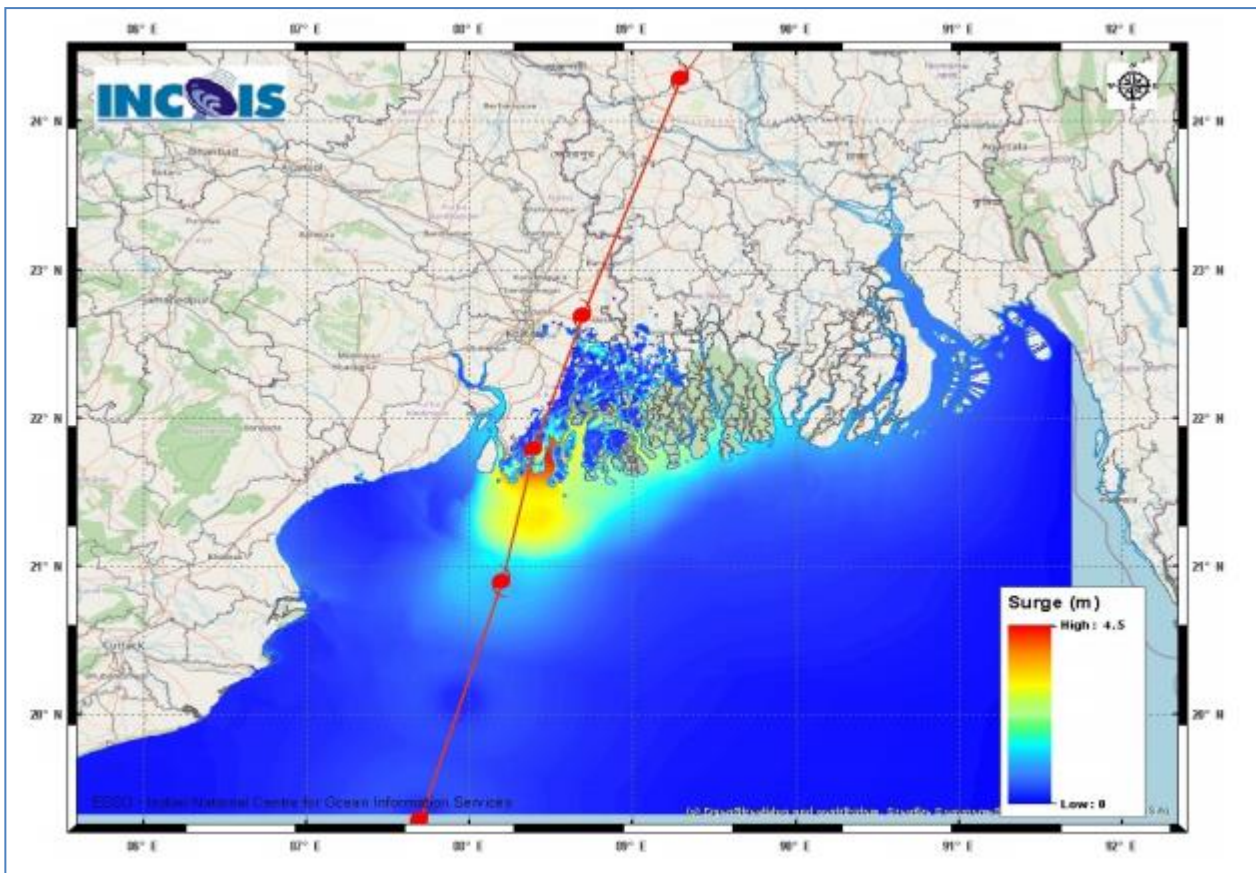
OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF EXTREMELY SEVERE CYCLONIC STORM 'AMPHAN' OVER WEST CENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL BASED ON 1200 UTC OF 19TH MAY, 2020



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

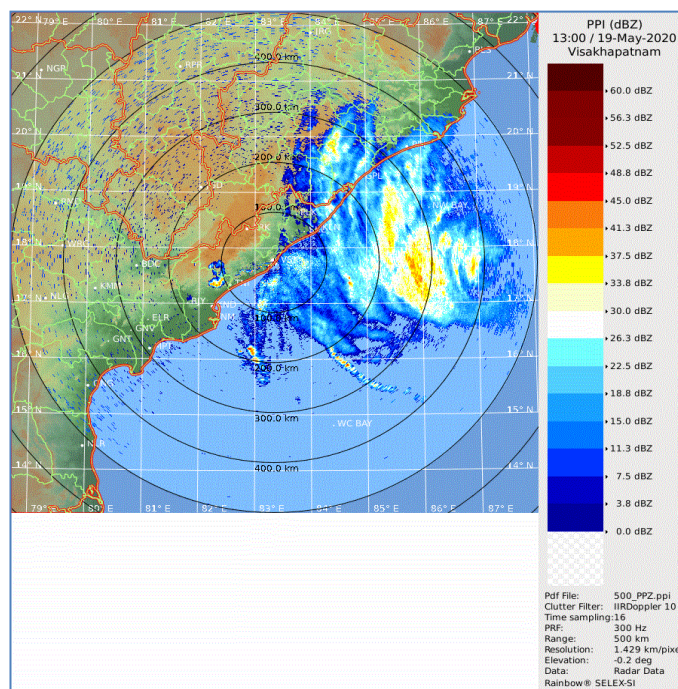
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Figure: Storm Surge forecast from INCOIS issued at 1800 IST of 19th May 2020



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 1830 hrs IST of 19th May 2020



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