



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 0300 UTC OF 18.05.2020 BASED ON 0000 UTC OF 18.05.2020.

**SUB:** EXTREMELY SEVERE CYCLONIC STORM 'AMPHAN' (PRONOUNCED AS **UM-PUN**) OVER WEST CENTRAL BAY OF BENGAL AND ADJOINING CENTRAL PARTS OF SOUTH BAY OF BENGAL

THE **EXTREMELY SEVERE CYCLONIC STORM 'AMPHAN'** (PRONOUNCED AS **UM-PUN**) OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL MOVED NORTHWARDS WITH A SPEED OF 13 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 0000 UTC OF TODAY, THE 18<sup>TH</sup> MAY, 2020 OVER **WEST CENTRAL AND ADJOINING CENTRAL PARTS OF SOUTH BAY OF BENGAL** NEAR LATITUDE 13.2°N AND LONGITUDE 86.3°E, ABOUT 790 KM NEARLY SOUTH OF PARADIP (42976), 940 KM SOUTH-SOUTHWEST OF DIGHA (42901) AND 1060 KM SOUTH-SOUTHWEST OF KHEPUPARA (41984). IT IS VERY LIKELY TO INTENSIFY FURTHER IN TO A SUPER CYCLONIC STORM DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS ACROSS NORTHWEST BAY OF BENGAL AND CROSS WEST BENGAL AND BANGLADESH COASTS BETWEEN DIGHA (42901) AND HATIYA ISLANDS (41963) DURING 0900-1200 UTC OF 20<sup>TH</sup> MAY 2020 AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEDD OF 155-165 KMPH GUSTING TO 185 KMPH.

**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
18.05.20/0000	13.2/86.3	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
18.05.20/0600	14.0/86.4	200-210 GUSTING TO 230	EXTREMELY SEVERE CYCLONIC STORM
18.05.20/1200	14.6/86.5	220-230 GUSTING TO 255	SUPER CYCLONIC STORM
18.05.20/1800	15.2/86.6	230-240 GUSTING TO 265	SUPER CYCLONIC STORM
19.05.20/0000	15.9/86.8	220-230 GUSTING TO 255	SUPER CYCLONIC STORM
19.05.20/1200	17.6/87.2	200-210 GUSTING TO 220	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/0000	19.9/87.8	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/1200	22.1/88.6	145-155 GUSTING TO 170	VERY SEVERE CYCLONIC STORM
21.05.20/0000	24.0/89.3	80-90 GUSTING TO 100	CYCLONIC STORM
21.05.20/1200	25.9/90.0	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 0000 UTC OF 18<sup>TH</sup> MAY, THE CURRENT INTENSITY OF THE SYSTEM IS **T5.5**. **IT SHOWS A CIRCULAR EYE PATTERN WITH A DIAMETER OF 20 KM** . IN THE WESTERN SECTOR. MINIMUM CLOUD TOP TEMPERATURE IS -93 DEG CELCIUS. ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION PREVAILS BETWEEN LAT 11.0°N TO 14.5°N LONG 83.0°E TO 88.0°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**.

AT 0000 UTC OF 17<sup>TH</sup> MAY, A BOUY (**23094**) LOCATED AT 13.3°N/84°E REPORTED A MEAN SEA LEVEL PRESSURE OF 994 HPA AND ANOTHER BOUY (**23460**) LOCATED AT 6.5°N/88.4°E REPORTED A MEAN SEA LEVEL PRESSURE OF 1002 HPA AND MEAN SURFACE WIND SPEED OF 210°/15.6KNOTS AND ANOTHER BOUY (**23459**) LOCATED AT 14°N/87.0°E REPORTED A MEAN SURFACE WIND SPEED OF 90°/42.8 KNOTS.

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS IN PHASE 2 WITH AMPLITUDE MORE THAN 1 DURING 18<sup>TH</sup>-20<sup>TH</sup> MAY. IT WILL REMAIN IN PHASE 3 WITH AMPLITUDE MORE THAN 1 DURING NEXT 3 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 BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS MORE THAN 100 KJ/CM<sup>2</sup> OVER MAJOR PARTS OF SOUTH & CENTRAL BOB. IT IS ABOUT 60-80 KJ/CM<sup>2</sup> OVER BOB TO THE NORTH OF 17°N AND IS DECREASING TOWARDS EXTREME NORTH BOB.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE POSITIVE VORTICITY IS AROUND  $300 \times 10^{-6} \text{ SEC}^{-1}$  AROUND THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE ZONE IS AROUND  $50 \times 10^{-5} \text{ SEC}^{-1}$  LOCATED AROUND THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT  $40 \times 10^{-5} \text{ SEC}^{-1}$  TO THE NORTHWEST OF THE SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS LOW TO MODERATE (10-15 KTS) AROUND THE SYSTEM CENTRE. IT IS INCREASING TO THE NORTH OF LAT. 15N ALONG THE EXPECTED TRACK. THE UPPER TROPOSPHERIC RIDGE LIES NEAR 17.0 N OVER BOB. AT PRESENT THE SYSTEM IS MOVING NEAR NORTHWARD ALONG THE PERIPHERY OF THE ANTICYCLONE AND HENCE SYSTEM STARTED MOVING IN THE NORTH-NORTHEASTWARD DIRECTION.

TOTAL PRECIPITABLE WATER IMAGERY OF 18<sup>TH</sup> MAY INDICATES CONTINUED WARM MOIST AIR INCURSION OVER THE SYSTEM AREA, MAINLY IN ITS NORTHWESTERN SECTOR.

VARIOUS NUMERICAL MODELS INCLUDING ECMWF, IMD GFS, NCEP GFS, GEFS, NEPS AND NCUM ARE INDICATING FURTHER INTENSIFICATION OF THE SYSTEM INTO AN SUPER CYCLONE CATEGORY AND MOVEMENT TOWARDS WEST BENGAL AND BANGLADESH COASTS. 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 3-4 METERS OVER THE LOW LYING AREAS OF EAST MEDINIPUR DISTRICT OF WEST BENGAL DURING THE TIME OF LANDFALL.
- STORM SURGE OF ABOUT 3-4 METERS ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS OF BANGLADESH DURING THE TIME OF LANDFALL.

(V R DURAI )  
SCIENTIST-E, RSMC, NEW DELHI

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PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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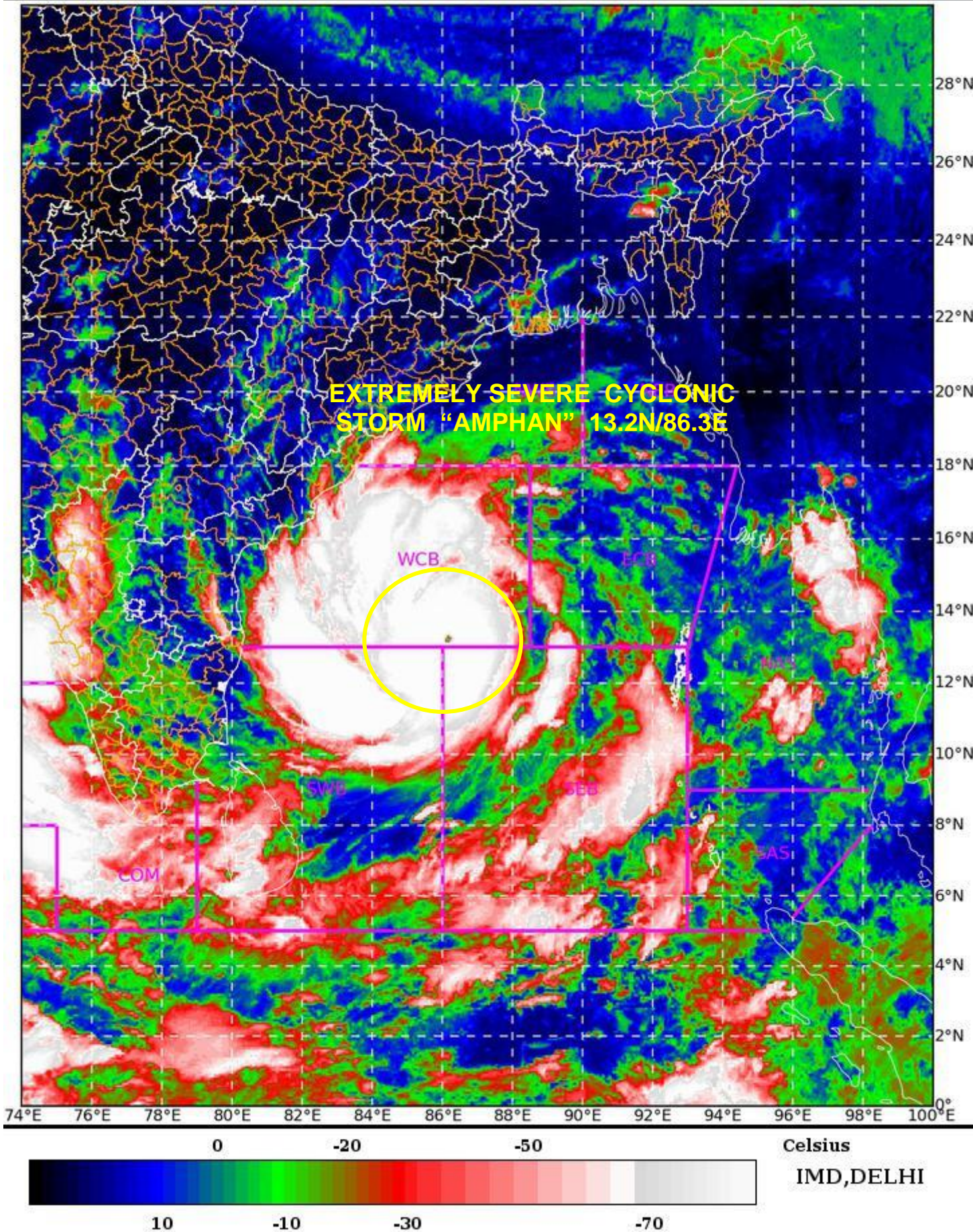
SAT : INSAT-3D IMG

18-05-2020/(0200 to 0227) GMT

IMG\_TIR1\_TEMP 10.8 um

18-05-2020/(0730 to 0757) IST

L1C Mercator

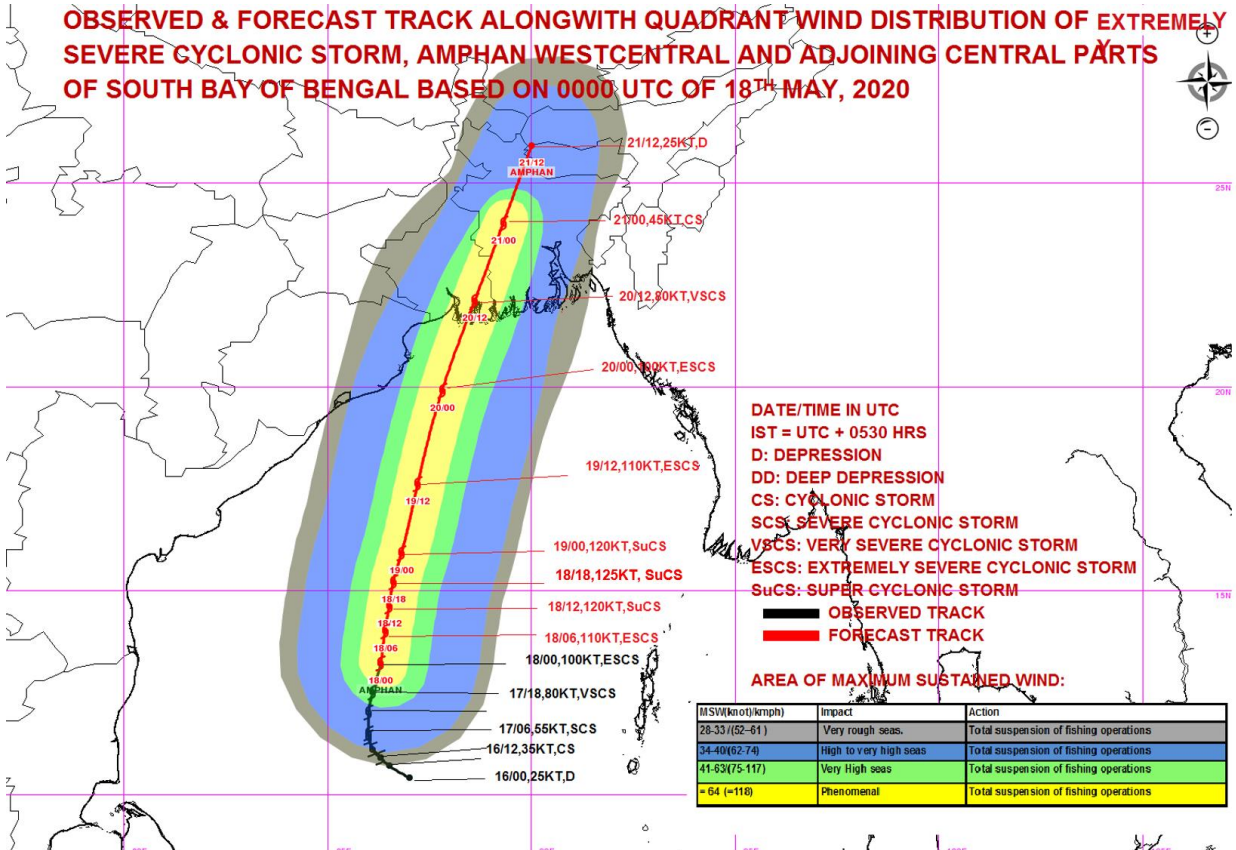


**PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)**

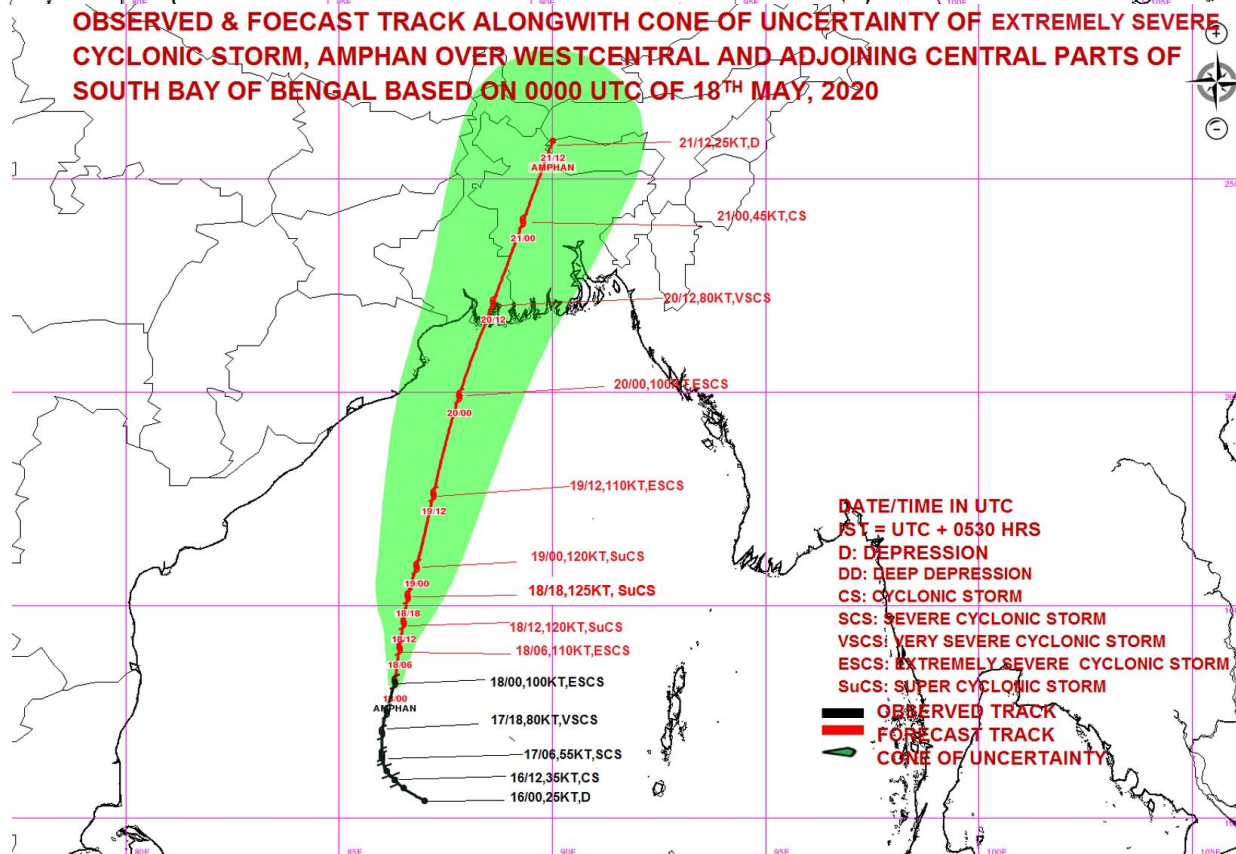
**NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%**



**OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF EXTREMELY SEVERE CYCLONIC STORM, AMPHAN WESTCENTRAL AND ADJOINING CENTRAL PARTS OF SOUTH BAY OF BENGAL BASED ON 0000 UTC OF 18<sup>TH</sup> MAY, 2020**



**OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF EXTREMELY SEVERE CYCLONIC STORM, AMPHAN OVER WESTCENTRAL AND ADJOINING CENTRAL PARTS OF SOUTH BAY OF BENGAL BASED ON 0000 UTC OF 18<sup>TH</sup> MAY, 2020**



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

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