



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 28**

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)
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. 28 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 60 HOURS ISSUED AT 1430 UTC OF 14.11.2018 BASED ON 1200 UTC OF 14.11.2018.

CYCLONIC STORM 'GAJA' OVER SOUTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL

THE CYCLONIC STORM 'GAJA' OVER SOUTHWEST AND ADJOINING SOUTHEAST & WESTCENTRAL BAY OF BENGAL MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF 13 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1200 UTC OF 14TH NOVEMBER, 2018 OVER SOUTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL NEAR LATITUDE 12.4°N AND LONGITUDE 84.2°E, ABOUT 430 KM EAST-SOUTHEAST OF CHENNAI (43278) (TAMIL NADU) AND 510 KM EAST-NORTHEAST OF NAGAPATTINAM (43347) (TAMIL NADU). IT IS VERY LIKELY TO MOVE WEST-SOUTHWESTWARDS AND INTENSIFY FURTHER INTO A SEVERE CYCLONIC STORM DURING NEXT 12 HOURS. WHILE MOVING WEST-SOUTHWESTWARDS THEREAFTER, IT IS LIKELY TO WEAKEN AND CROSS TAMIL NADU COAST BETWEEN PAMBAN (43363) AND CUDDALORE (43329) DURING 1200 & 1500 UTC OF 15TH NOVEMBER AS A CYCLONIC STORM WITH A WIND SPEED OF 80 KMPH-90 KMPH GUSTING TO 100 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
14.11.18/1200	12.4/84.2	75-85 gusting to 95	Cyclonic Storm
14.11.18/1800	12.1/83.6	80-90 gusting to 100	Cyclonic Storm
15.11.18/0000	11.7/82.7	90-100 gusting to 115	Severe Cyclonic Storm
15.11.18/0600	11.2/81.8	90-100 gusting to 115	Severe Cyclonic Storm
15.11.18/1200	10.8/80.5	80-90 gusting to 100	Cyclonic Storm
16.11.18/0000	10.6/78.9	50-60 gusting to 70	Deep Depression
16.11.18/1200	10.5/77.1	40-50 gusting to 60	Depression
17.11.18/0000	10.4/75.3	20-30 gusting to 40	Low

AS PER THE SATELLITE IMAGERY BASED ON 1200 UTC OF 14TH NOVEMBER 2018, THE INTENSITY OF THE SYSTEM IS C.I. 3.0. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER BAY OF BENGAL BETWEEN LATITUDE 11.0°N TO 16.0°N AND LONGITUDE 82.0°E TO 88.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 88°C.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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

AT 1200 UTC OF 14TH NOVEMBER, A BOUY LOCATED AT 13.5°N/84.0°E REPORTED A MEAN SEA LEVEL PRESSURE OF 1004.2 HPA AND MEAN SURFACE WIND SPEED OF 50°/20 KNOTS. ANOTHER BOUY LOCATED AT 15°N/89°E REPORTED A MEAN SEA LEVEL PRESSURE OF 1008.4 HPA AND MEAN SURFACE WIND SPEED OF 120°/12 KNOTS.

THE ESTIMATED CENTRAL PRESSURE IS ABOUT 998 HPA AND THE MAXIMUM SUSTAINED SURFACE WIND SPEED IS 40 KNOTS GUSTING TO 50 KNOTS. STATE OF SEA IS HIGH AROUND THE SYSTEM CENTRE. THE WINDS ARE STRONGER IN NORTHEAST SECTOR OF THE SYSTEM.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 5 WITH AMPLITUDE CLOSE TO 1. IT WILL REMAIN IN PHASE 5 DURING NEXT 2 DAYS WITH AMPLITUDE LESS THAN 1. HENCE MJO WILL SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER SOUTH & ADJOINING CENTRAL BAY OF BENGAL DURING NEXT 2 DAYS. THUS, IT WILL FAVOUR FURTHER INTENSIFICATION OF THE SYSTEM.

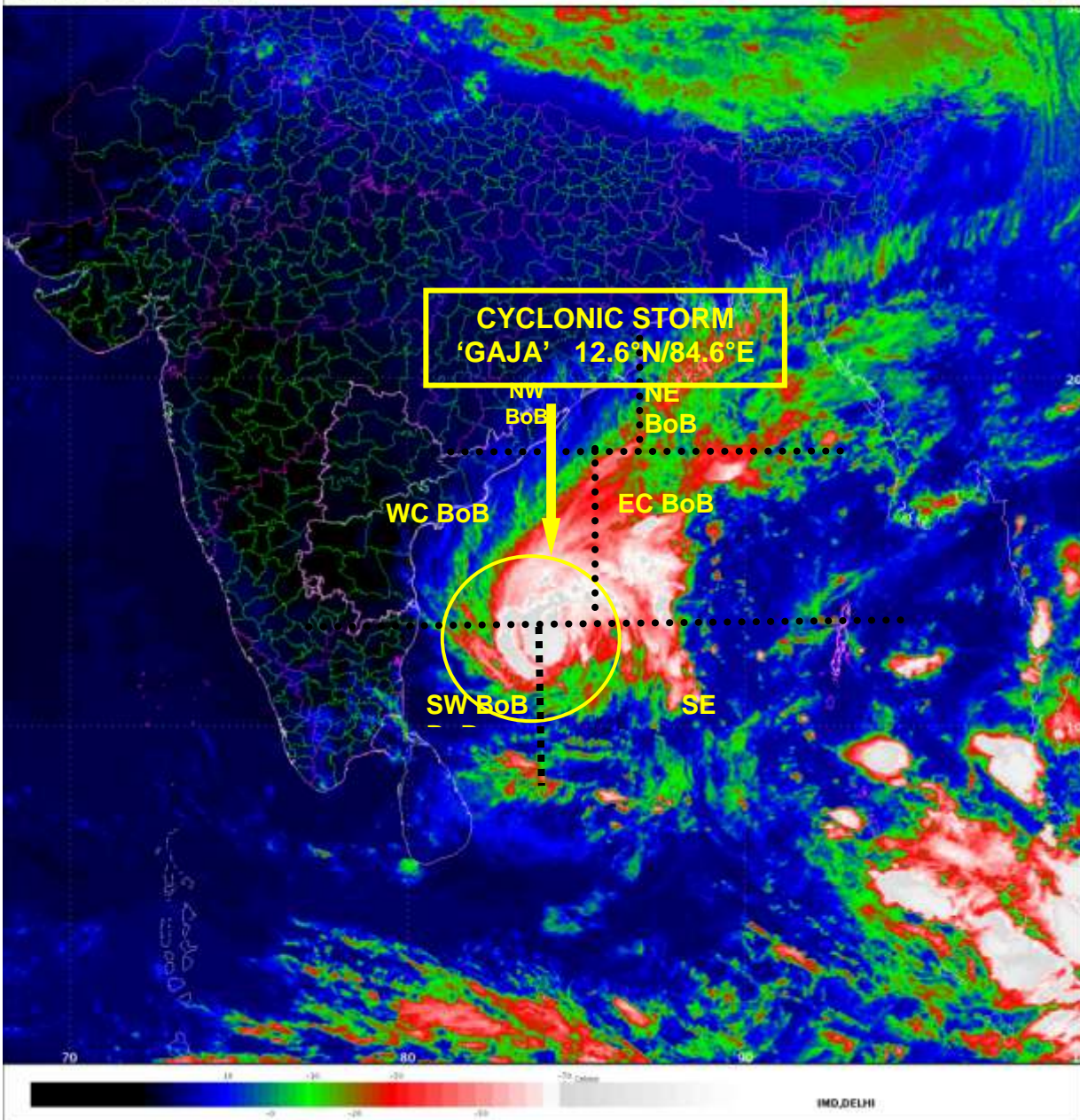
THE ENVIRONMENTAL CONDITIONS: SEA SURFACE TEMPERATURE IS AROUND 28-29°C AND TROPICAL CYCLONE HEAT POTENTIAL(TCHP) IS 50-80 KJ/CM² AROUND THE SYSTEM CENTRE. IT IS LESS THAN 50 KJ/CM² OVER WESTERN PARTS OF SOUTHWEST BAY OF BENGAL NORTH TAMIL NADU COAST. THE LOWER LEVEL CONVERGENCE IS OF THE ORDER 10X10⁻⁵ SECOND⁻¹ AROUND THE SYSTEM CENTRE. THE LOWER LEVEL VORTICITY IS OF THE ORDER 120X10⁻⁶ SECOND⁻¹ TO SOUTH OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS OF THE ORDER OF 20X10⁻⁵ SECOND⁻¹ TO THE NORTHEAST SYSTEM CENTRE. THE VERTICAL WIND SHEAR IS LOW TO MODERATE (10-15 KNOTS) OVER THE SYSTEM CENTRE AND ALSO ALONG THE FORECAST TRACK. AS PER THE TOTAL PRECIPITABLE WATER (TPW) IMAGERY, WARM AIR ADVECTION IS TAKING PLACE FROM THE SOUTHEAST SECTOR TO THE CORE OF THE SYSTEM CENTRE AND COLD AIR ADVECTION IS TAKING PLACE NEAR NORTH TAMIL NADU AND ANDHRA PRADESH COASTS. CLOUD IMAGERY INDICATE IMPROVEMENT IN CLOUD ORGANISATION WITH BANDS WRAPPING AROUND THE CENTRE FROM NORTHWEST AND NORTHEAST SECTORS RESULTING IN CURVED BAND PATTERN FOR THE SYSTEM. THE POLEWARD OUTFLOW IS FAVOURABLE FOR INCREASE IN DIVERGENCE WHICH CAN LEAD TO FURTHER INTENSIFICATION OF THE SYSTEM. ALL THESE ENVIRONMENTAL CONDITIONS ARE FAVOURABLE FOR FURTHER INTENSIFICATION OF THE SYSTEM DURING NEXT 12 HOURS INTO A MARGINAL SEVERE CYCLONIC STORM. HOWEVER, WHILE MOVING WESTSOUTHWESTWARDS, THE SYSTEM WILL EXPERIENCE LOWER OCEAN HEAT CONTENT, COLD AIR ADVECTION IN ASSOCIATION WITH THE ANTICYCLONE OVER THE ARABIAN SEA WHICH CAN INHIBIT SIGNIFICANT INTENSIFICATION OF THE SYSTEM AND RATHER CAN CAUSE SLIGHT WEAKENING BEFORE LANDFALL.

UPPER LEVEL RIDGE RUNS ALONG LAT 15°N IN ASSOCIATION WITH THE ANTICYCLONIC CIRCULATION TO THE EAST AND WEST OF THE SYSTEM CENTRE. HOWEVER, THE SYSTEM IS NOW MOVING WEST-SOUTHWESTWARDS UNDER THE INFLUENCE OF THE ANTICYCLONE TO THE WEST (ARABIAN SEA) AND THE COL REGION TO THE NORTH OF THE SYSTEM CENTRE. THE SYSTEM WILL CONTINUE TO MOVE WESTSOUTHWESTWARDS TILL LANDFALL. THEREAFTER IT WILL MOVE IN A NEAR WESTWARDS DIRECTION WITH INCREASE IN SPEED OF MOVEMENT.

(SUNITHA DEVI)
SCIENTIST-E, RSMC, NEW DELHI

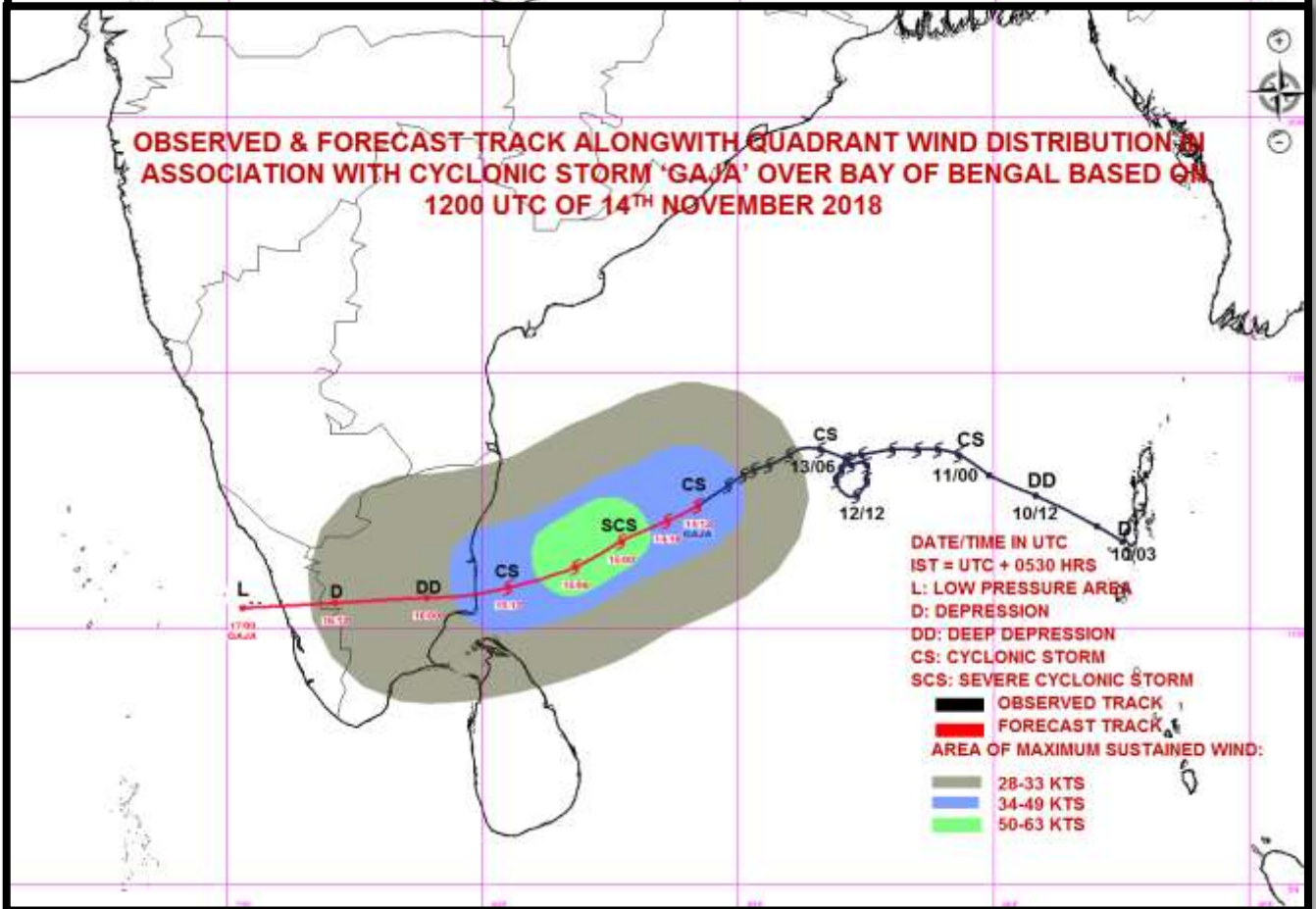
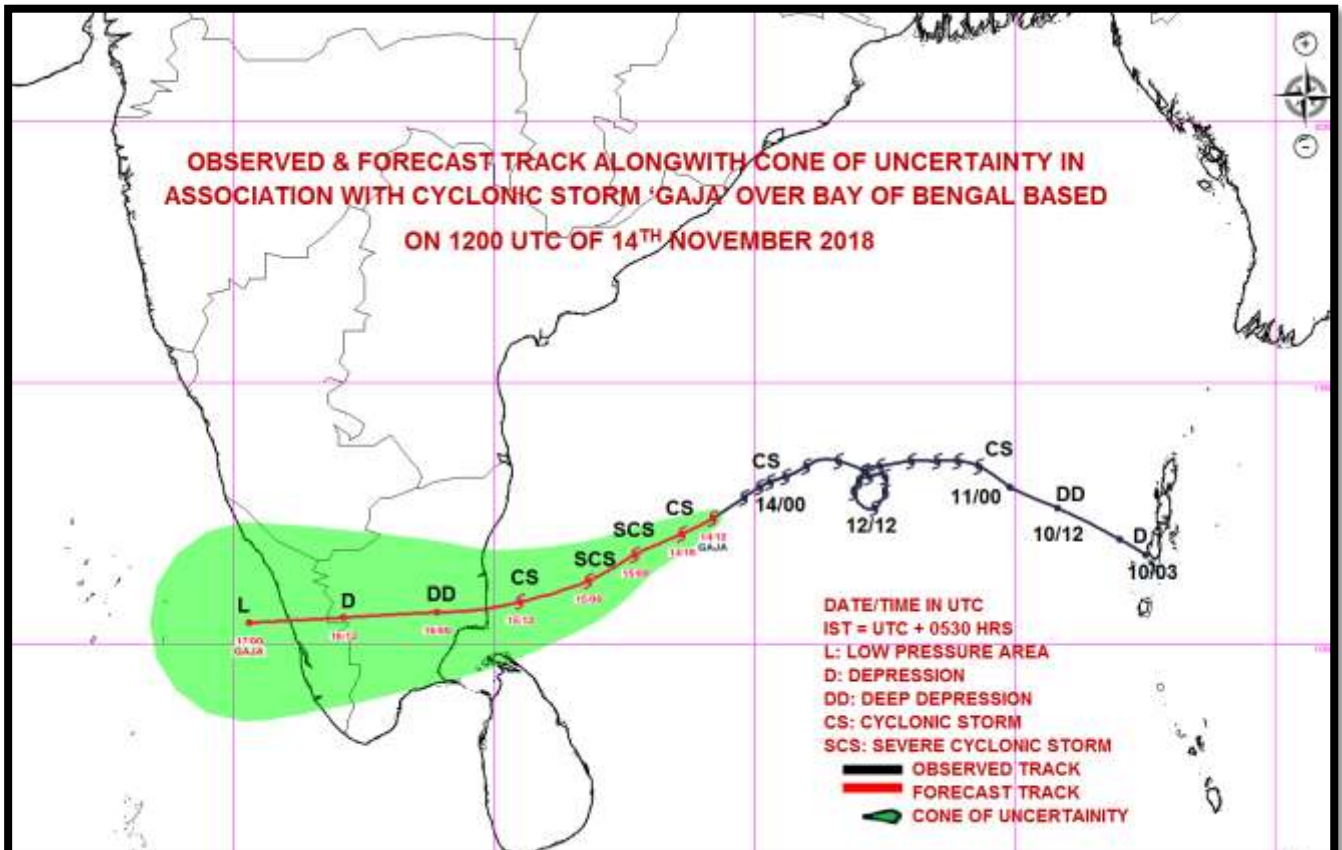
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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