



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI  
TROPICAL WEATHER OUTLOOK

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. 6 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0900 UTC OF 26.09.2021 BASED ON 0600 UTC OF 26.09.2021.

**Cyclonic Storm ‘Gulab’ (pronounced as Gul-Aab) over Northwest & adjoining west-central Bay of Bengal: Cyclone warning & post landfall outlook for north Andhra Pradesh and south Odisha coasts – Red Message**

THE CYCLONIC STORM ‘GULAB’ (PRONOUNCED AS GUL-AAB) OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL MOVED NEARLY WESTWARDS WITH A SPEED OF 18 KMPH DURING LAST 03 HOURS AND LAY CENTERED AT 0600 UTC OF 26<sup>TH</sup> SEPTEMBER 2021, OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL NEAR LAT. 18.4°N AND LONG. 85.9°E, ABOUT 140 KM EAST-SOUTHEAST OF GOPALPUR (43049) & 190 KM EAST-NORTHEAST OF KALINGAPATNAM (43105).

IT IS LIKELY TO MOVE NEARLY WESTWARDS AND CROSS NORTH ANDHRA PRADESH - SOUTH ODISHA COASTS BETWEEN KALINGAPATNAM & GOPALPUR, AS A CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 75-85 KMPH GUSTING TO 95 KMPH, AROUND 1800 UTC OF TODAY, THE 26<sup>TH</sup> SEPTEMBER, 2021. THE LANDFALL PROCESS WILL COMMENCE AROUND 1200 UTC OF TODAY.

CURRENTLY THE CYCLONE IS BEING MONITORED BY DOPPLER WEATHER RADAR AT VISHAKHAPATNAM (43149). LIGHT TO MODERATE RAINFALL IN ASSOCIATION WITH THE OUTER SPIRAL BANDS OF THE SYSTEM HAS COMMENCED OVER SOUTH COASTAL ODISHA AND COASTAL ANDHRA PRADESH SINCE 0000 UTC OF TODAY.

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
26.09.21/0600	18.4/85.9	75-85 gusting to 95	Cyclonic Storm
26.09.21/1200	18.5/85.0	75-85 gusting to 95	Cyclonic Storm
26.09.21/1800	18.6/84.1	70-80 gusting to 90	Cyclonic Storm
27.09.21/0000	18.7/83.2	55-65 gusting to 75	Deep Depression
27.09.21/0600	18.8/82.4	40-50 gusting to 60	Depression
27.09.21/1800	19.0/81.2	35-45 gusting to 55	Well marked low

AS PER INSAT-3D IMAGERY AT 0600 UTC OF 26<sup>th</sup> SEP. THE CLOUDS ARE ORGANISED IN CURVED BAND PATTERN. THE AREA OF DEEP CONVECTION IS SEEN TO THE WEST OF LOW LEVEL CIRCULATION CENTRE UNDER THE INFLUENCE OF EASTERLY VERTICAL WIND SHEAR. THE INTENSITY OF THE SYSTEM IS CATEGORISED AS T 2.5. MINIMUM CLOUD TOP TEMPERATURE IS -93<sup>0</sup>C. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL BETWEEN LATITUDE 16.0°N & 19.5°N AND LONGITUDE 83.5°E & 87.0°E AND SOUTH COASTAL ODISHA & NORTH COASTAL ANDHRA PRADESH.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 40 KNOTS GUSTING TO 50 KNOTS. THE SEA CONDITION IS HIGH OVER NORTHWEST & ADJOINING WESTCENTRAL BOB AROUND THE SYSTEM CENTRE DURING NEXT 24 HOURS. THE ESTIMATED CENTRAL PRESSURE IS 994 HPA.

**STORM SURGE GUIDANCE:** TIDAL WAVE OF ABOUT 0.5 M HEIGHT ABOVE THE ASTRONOMICAL TIDE LIKELY TO INUNDATE LOW LYING AREAS OF SRIKAKULAM, VIZIANAGARAM, GANJAM DISTRICTS DURING THE TIME OF LANDFALL.

### REMARKS:

SEA SURFACE TEMPERATURE (SST) IS ABOUT 28-29°C OVER CENTRAL & ADJOINING NORTH BAY OF BENGAL (BOB) AND TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS ABOUT 80-90 KJ/CM<sup>2</sup> OVER THE SAME AREA. MADDEN JULIAN OSCILLATION (MJO) INDEX IS LYING IN PHASE 4 WITH AMPLITUDE MORE THAN 1. A ZONE OF POSITIVE LOW LEVEL VORTICITY ( $150 \times 10^{-6} \text{S}^{-1}$ ) LIES AROUND THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO MID TROPOSPHERIC LEVEL. A ZONE OF POSITIVE LOWER LEVEL CONVERGENCE OF  $20 \times 10^{-5} \text{S}^{-1}$  LIES TO THE SOUTHWEST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE OF  $20 \times 10^{-5} \text{S}^{-1}$  IS ALSO SEEN TO THE SOUTHWEST OF SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS ABOUT 20-25 KTS OVER NORTHWEST AND ADJOINING CENTRAL BOB AND ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE IS SEEN NEAR 25°N. THE SYSTEM IS LYING IN THE SOUTHERN PERIPHERY OF THE RIDGE NEAR 25°N AND WILL BE STEERED NEARLY WESTWARDS DURING NEXT 36 HOURS.

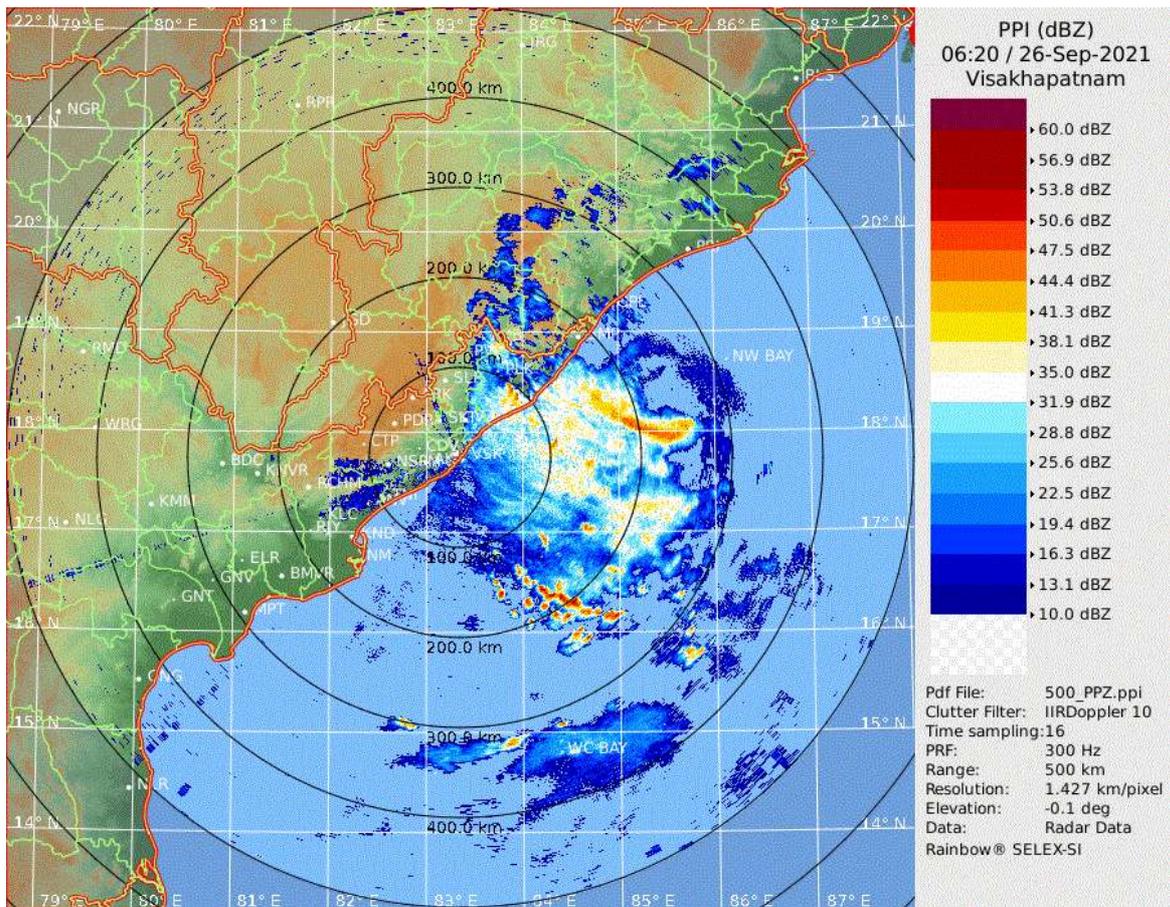
NUMERICAL MODEL GUIDANCE SHOW GOOD CONSENSUS W.R.T. NEAR WESTWARDS MOVEMENT OF THE SYSTEM. NO FURTHER INTENSIFICATION IS INDICATED.

CONSIDERING ALL THE ABOVE, THE SYSTEM WILL MOVE FURTHER WESTWARDS DURING NEXT 36 HOURS ALONG THE SOUTHERN PERIPHERY OF RIDGE TO IT'S NORTH. INCREASED VERTICAL WIND SHEAR AND DECREASED OCEAN HEAT CONTENT WILL LIMIT FURTHER INTENSIFICATION OF THE SYSTEM. HOWEVER, THE WARM SEA, FAVOURABLE MJO CONDITIONS AND MODERATE OUTFLOW WILL HELP SYSTEM MAINTAIN IT'S CYCLONIC STORM INTENSITY TILL LANDFALL.

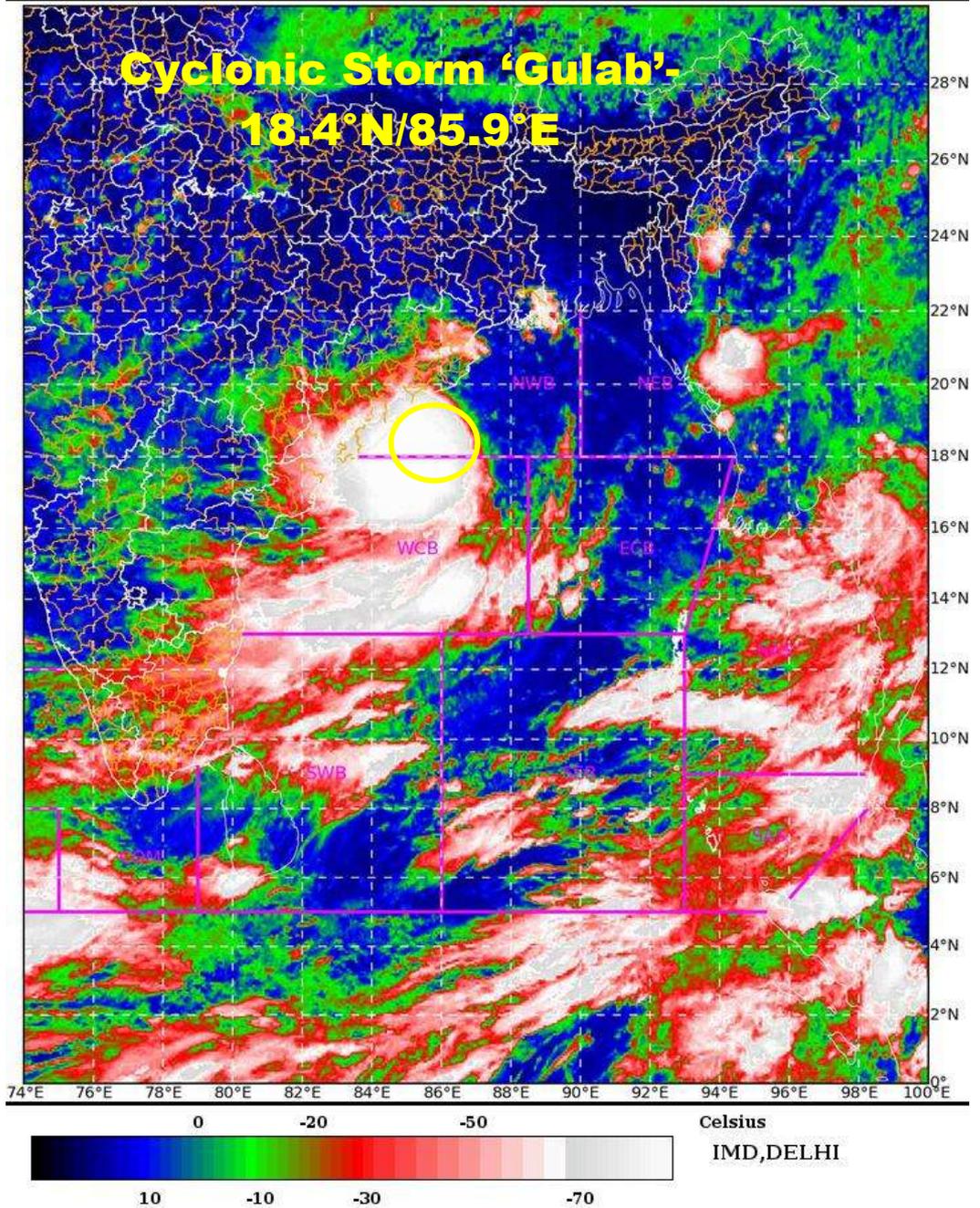
THE NEXT BULLETIN WILL BE ISSUED AT 1200 UTC OF 26<sup>TH</sup> SEPTEMBER, 2021.

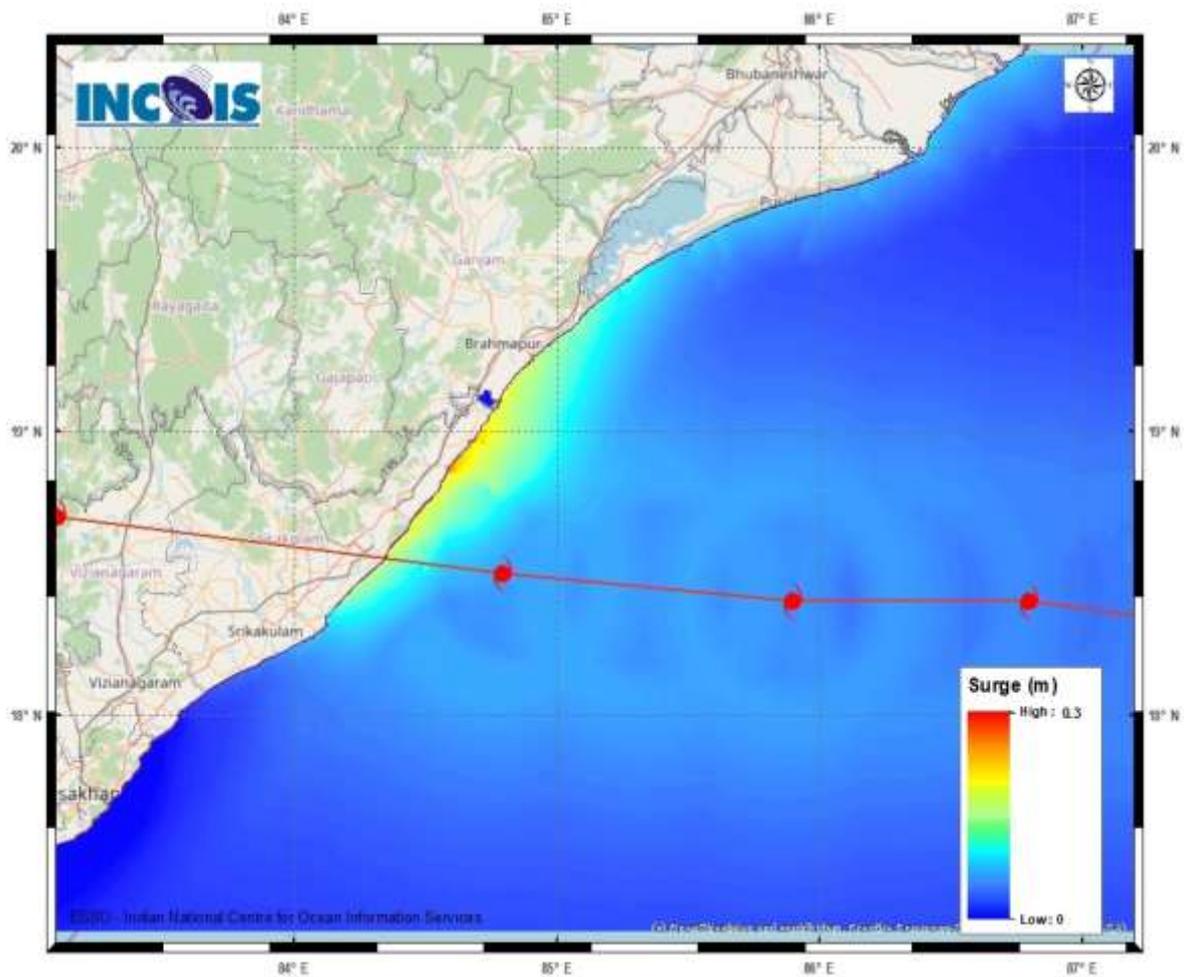
(SUNITHA DEVI S.)

SCIENTIST-F, RSMC, NEW DELHI



Reflectivity imagery from Doppler weather RADAR Vishakhapatnam based on 1200 Noon of 26<sup>th</sup> September 2021.



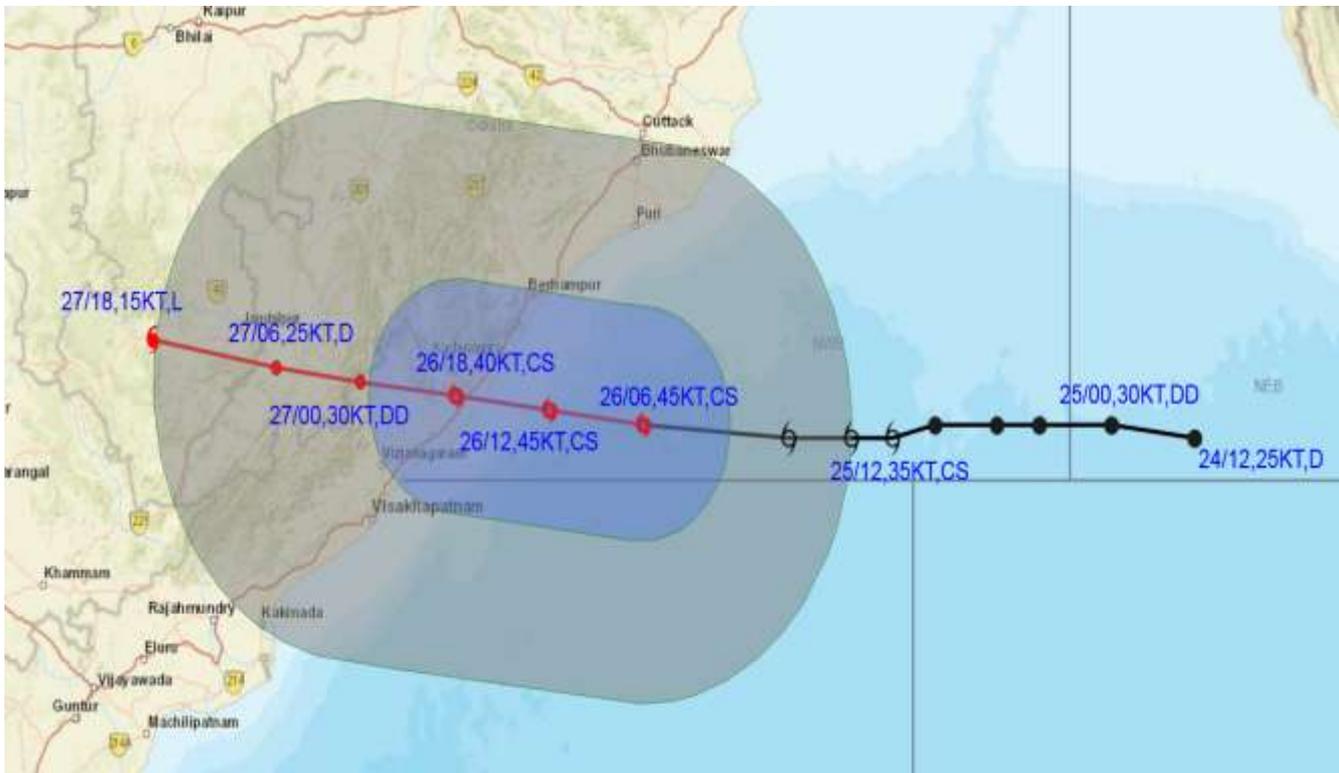


Storm surge graphic from INCOIS for the current system (BoB/04/2021)

Peak storm surge upto 0.5 m over and above the astronomical tide near Tekkali, Sompeta Srikakulam, Andhra Pradesh.



# OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM GULAB OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 0600 UTC OF 26TH SEPTEMBER, 2021



**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 ( $\geq$  120 KT)

● LESS THAN 34 KT  
 ○ 34-47 KT  
 ⊙  $\geq$  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)  
 —  $\geq$  64 KT ( $\geq$  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
$\geq$ 64 ( $\geq$ 118)	Phenomenal	Total suspension of fishing operations



# OBSERVED AND FORECAST TRACK OF CYCLONIC STORM GULAB OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 0600 UTC OF 26<sup>TH</sup> SEPTEMBER, 2021

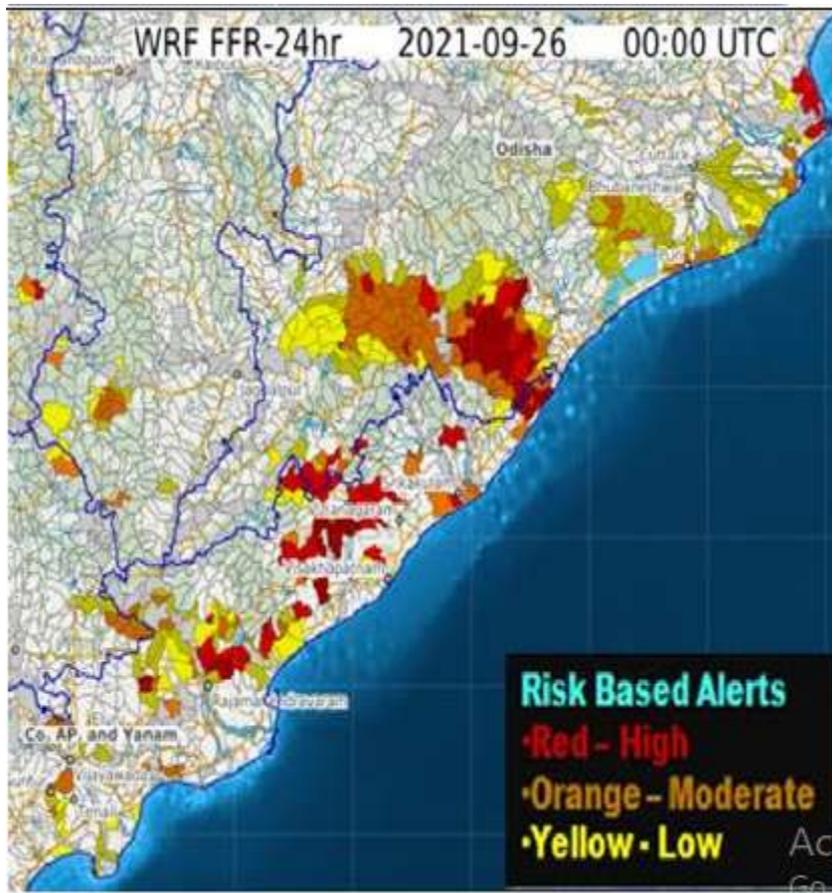


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- LESS THAN 34 KT
- 34-47 KT
- $\geq$  48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

**24 hours Outlook for the Flash Flood Risk(FFR) till 0530 IST of 27.09.2021:**

**Moderate to High Risk** over few watersheds and neighborhood of South Odisha adjoining Coastal Andhra Pradesh met subdivision in next 24hours. Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over the area as shown in map due to expected rainfall occurrence in next 24 hours.



**Flash Flood Risk (FFR)**

Flash Flood Risk products of 12-hour, 24-hour and 36-hour are relative frequencies of positive flash flood threat for the entire forecast lead time interval. This is a measure of the forecast flash flood occurrence frequency and may be considered as a flash flood outlook.