



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. 8 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1100 UTC OF 26.09.2021 BASED ON 0900 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 19 KMPH DURING LAST 06 HOURS AND LAY CENTERED AT 0900 UTC OF 26<sup>TH</sup> SEPTEMBER 2021, OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL NEAR LAT. 18.4°N AND LONG. 85.3°E, ABOUT 110 KM EAST-SOUTHEAST OF GOPALPUR (43049) & 130 KM EAST-NORTHEAST OF KALINGAPATNAM (43105).

IT IS LIKELY TO MOVE NEARLY WESTWARDS AND CROSS NORTH ANDHRA PRADESH - SOUTH ODISHA COASTS BETWEEN KALINGAPATNAM (43105) & GOPALPUR (43049), 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.

CURRENTLY THE CYCLONE IS BEING MONITORED BY DOPPLER WEATHER RADAR AT VISHAKHAPATNAM. 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 EARLY MORNING OF TODAY AND IS CONTINUING OVER THESE REGIONS.

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
26.09.21/0900	18.4/85.3	75-85 gusting to 95	Cyclonic Storm
26.09.21/1200	18.5/84.7	75-85 gusting to 95	Cyclonic Storm
26.09.21/1800	18.6/83.6	60-70 gusting to 80	Cyclonic Storm
27.09.21/0000	18.7/82.4	55-65 gusting to 75	Deep Depression
27.09.21/0600	18.9/81.3	40-50 gusting to 60	Depression

AS PER INSAT-3D IMAGERY AT 0900 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>o</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 15.5°N & 19.5°N AND LONGITUDE 83.5°E & 86.5°E AND SOUTH COASTAL ODISHA & NORTH COASTAL ANDHRA PRADESH.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 45 KNOTS GUSTING TO 55 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 UPPER 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.

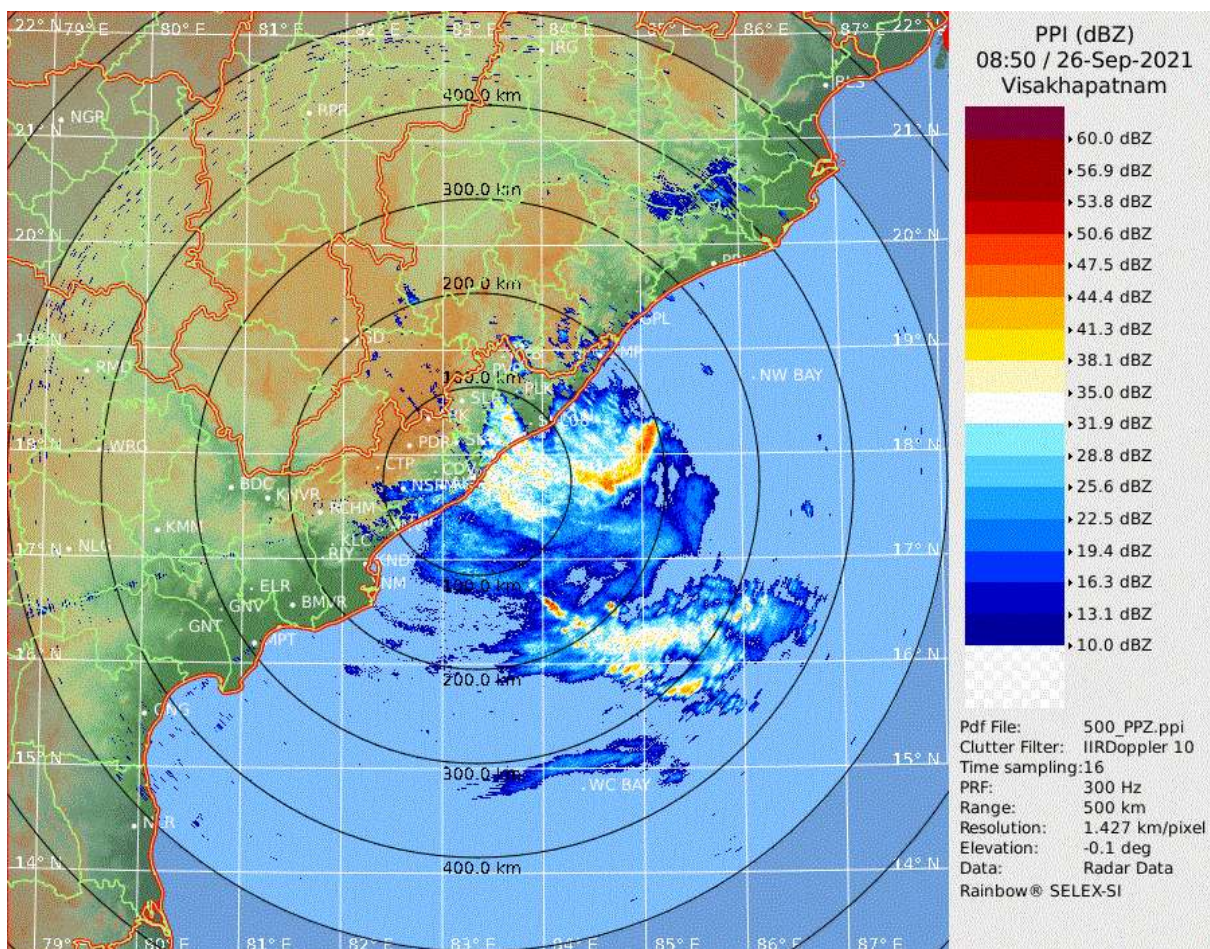
NUMERICAL MODEL GUIDANCE SHOW GOOD CONSENSUS W.R.T. NEAR WESTWARDS MOVEMENT OF THE SYSTEM. NO FURTHER INTENSIFICATION IS INDICATED.

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 1500 UTC OF 26<sup>TH</sup> SEPTEMBER, 2021.

(SUNITHA DEVI S.)

SCIENTIST-F, RSMC, NEW DELHI

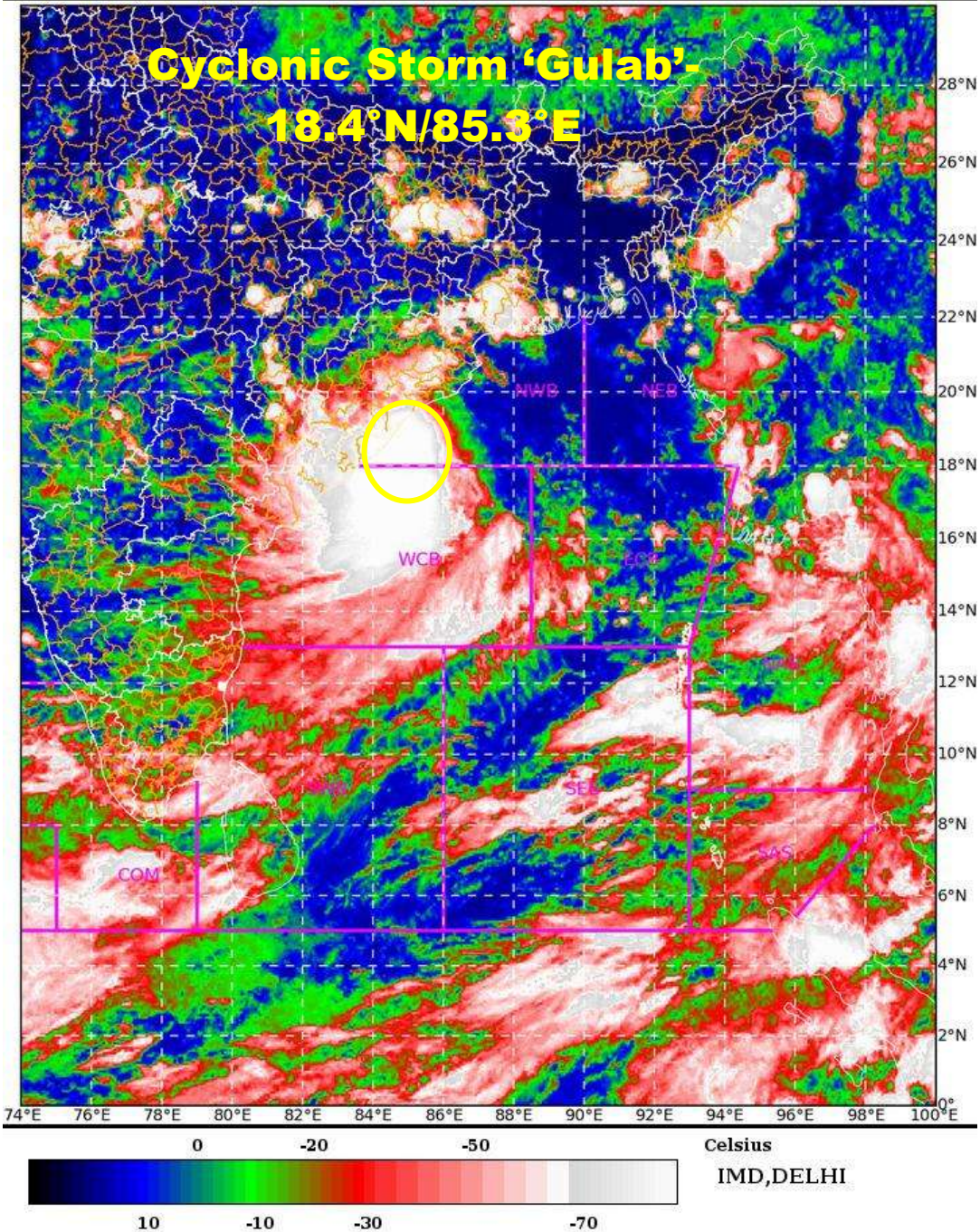


Reflectivity imagery from Doppler weather RADAR Vishakhapatnam based on 1420 IST of 26<sup>th</sup> September 2021.

SAT : INSAT-3D IMG 26-09-2021/(0900 to 0927) GMT

IMG\_TIR1\_TEMP 10.8 um 26-09-2021/(1430 to 1457) IST

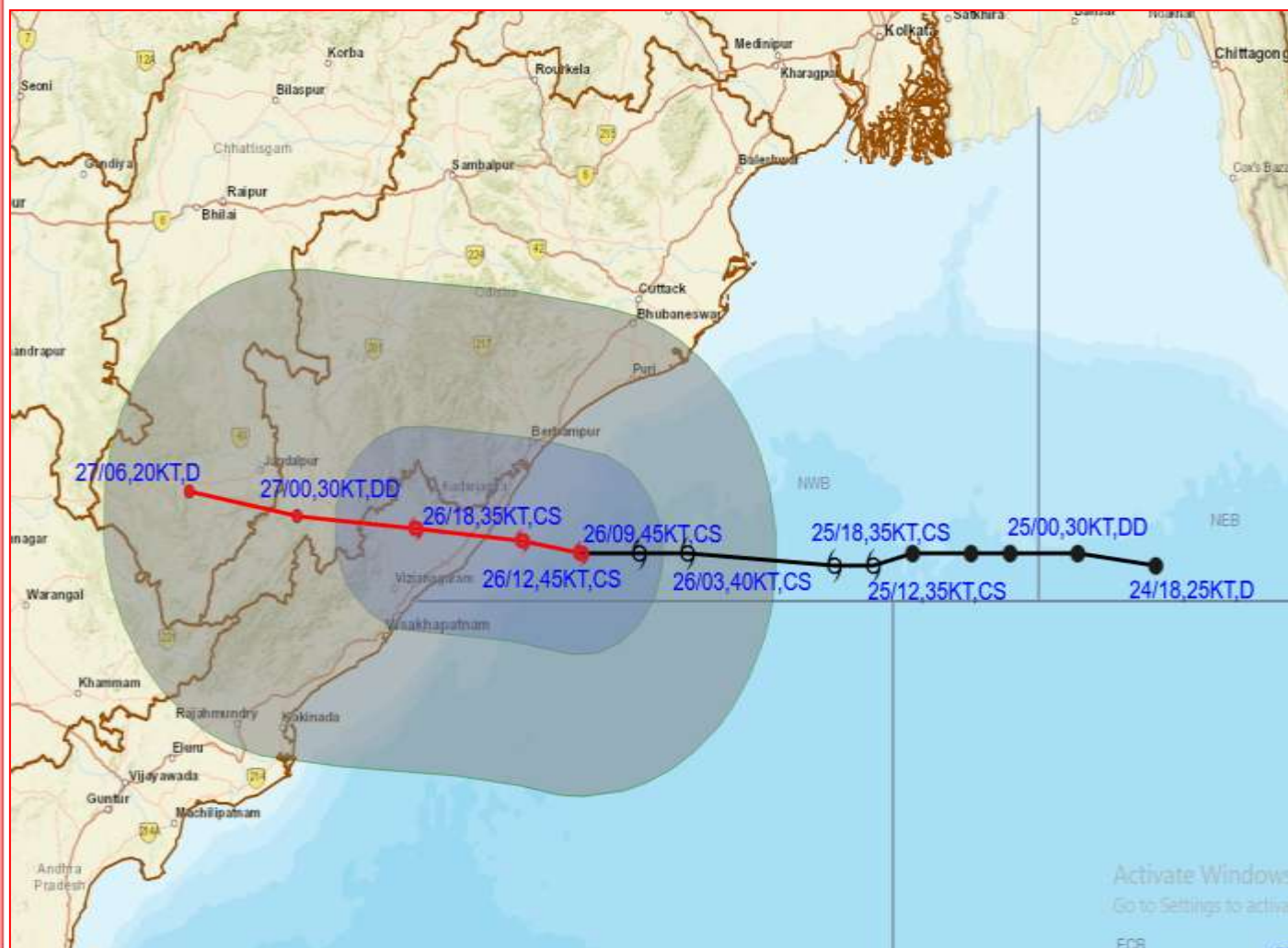
L1C Mercator



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%  
This is a guidance Bulletin for the WMO/ESCAP Panel Member countries., Please visit respective National websites for Country specific Bulletins



# OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM GULAB OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 0900 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 (≥ 120 KT)**

- LESS THAN 34 KT
- 34-47 KT
- ⦿ ≥ 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)
- ≥ 64 KT (≥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
≥ 64 (≥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 0900 UTC OF 26<sup>TH</sup> SEPTEMBER, 2021



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**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

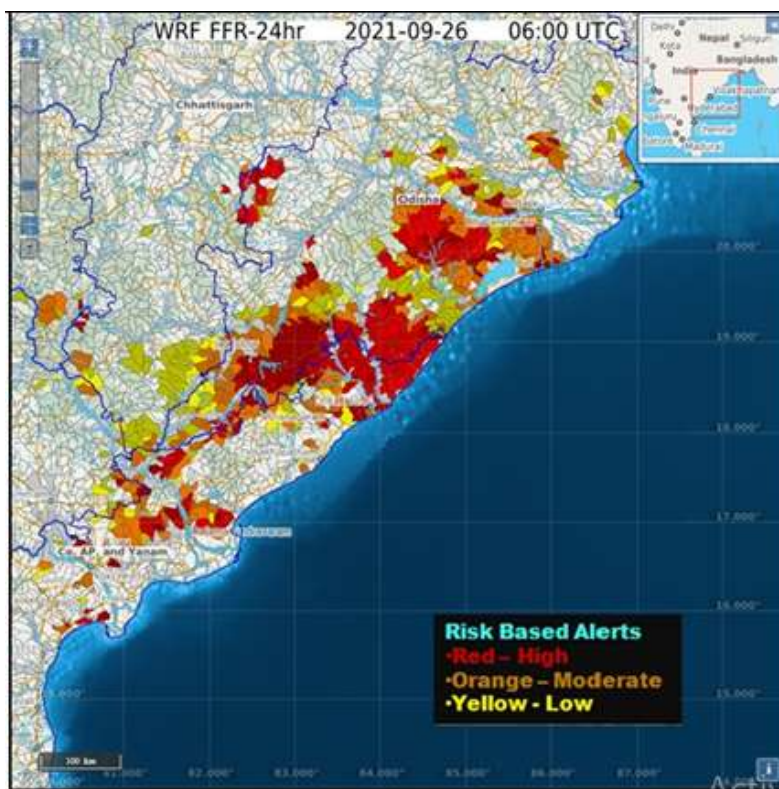
Storm surge graphics from INCOIS for the current system (BoB/04/2021)

Peak storm surge upto 0.5 m over and above the astronomical tide near Tekkali, Srikakulam, Andhra Pradesh and Ganjam District of Odisha.

**24 hours Outlook for the Flash Flood Risk(FFR) till 1130 IST of 27.09.2021:**

**High Risk** likely over few watersheds and neighborhoods of **North Coastal Andhra Pradesh and adjoining South Odisha & South Chhattisgarh districts** in next 24 hours.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over the area as depicted in map **due to the expected rainfall of Cyclonic Storm “Gulab” approaching landfall 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.