



**India Meteorological Department  
(Ministry of Earth Sciences)**

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**FROM: INDIA METEOROLOGICAL DEPARTMENT**

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**Sub: Cyclonic Storm 'JAWAD' over westcentral Bay of Bengal: Cyclone Warning for north Andhra Pradesh and Odisha coasts – Orange Message.**

The **Cyclonic Storm 'JAWAD'** (Pronounced as JOWAD) over westcentral Bay of Bengal continued to move north-northwestwards with a speed of 14 kmph during past 06 hours and lay centered at 2030 hrs IST of today, the 03<sup>rd</sup> December 2021, over westcentral Bay of Bengal near Lat. 15.7°N and Long. 85.0°E, about 280 km south-southeast of Vishakhapatnam (Andhra Pradesh), 400 km nearly south of Gopalpur (Odisha), 460 km south-southwest of Puri (Odisha) and 540 km south-southwest of Paradip (Odisha).

It is likely to move north-northwestwards and reach Westcentral Bay of Bengal off north Andhra Pradesh–south Odisha coasts by tomorrow, the 04<sup>th</sup> December morning. Thereafter, it is likely to recurve north-northeastwards and move along Odisha coast reaching near Puri around 5<sup>th</sup> December noon. Subsequently, it is likely to continue to move north-northeastwards along coastal Odisha towards West Bengal coast.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
03.12.21/2030	15.7/85.0	70-80 gusting to 90	Cyclonic Storm
03.12.21/2330	15.9/84.7	75-85 gusting to 95	Cyclonic Storm
04.12.21/0530	16.5/84.4	80-90 gusting to 100	Cyclonic Storm
04.12.21/1130	17.1/84.3	90-100 gusting to 110	Severe Cyclonic Storm
04.12.21/1730	17.9/84.5	90-100 gusting to 110	Severe Cyclonic Storm
05.12.21/0530	19.2/85.3	85-95 gusting to 105	Cyclonic Storm
05.12.21/1730	20.1/86.3	70-80 gusting to 90	Cyclonic Storm
06.12.21/0530	21.0/87.4	55-65 gusting to 75	Deep Depression
06.12.21/1730	21.9/88.5	45-55 gusting to 65	Depression

### **Warnings:**

#### **(i) Rainfall (warning graphics enclosed)**

**3<sup>rd</sup> Dec.:** Light to moderate rainfall at many places with heavy to very heavy rainfall at isolated places over north coastal Andhra Pradesh and south coastal Odisha.

**4<sup>th</sup> Dec.:** Light to moderate rainfall at most places with **heavy to very heavy rainfall & extremely heavy falls** at isolated places very likely over south coastal Odisha and north coastal Andhra Pradesh and heavy to very heavy rainfall at isolated places over north coastal Odisha & adjoining interior districts and also over coastal districts of Gangetic west Bengal.

**5<sup>th</sup> Dec.:** Light to moderate rainfall at many places with **heavy to very heavy rainfall at isolated places** likely over Gangetic West Bengal & north Odisha and heavy rainfall at isolated places over Assam & Meghalaya, Mizoram and Tripura.

**6<sup>th</sup> Dec.:** Light to moderate rainfall at many places with **heavy to very heavy rainfall at isolated places** likely over Assam & Meghalaya, Mizoram and Tripura and heavy rainfall at isolated places over west Bengal.

#### **(ii) Wind warning**

- Gale wind, speed reaching 70-80 kmph gusting to 90 kmph, prevails over westcentral Bay of Bengal. It would gradually increase becoming 90-100 kmph gusting to 110 kmph over westcentral and adjoining northwest Bay of Bengal from the evening of 4<sup>th</sup> December for the subsequent 12 hours.
- Squally winds, speed reaching 45-55 kmph gusting to 65 kmph likely to prevail along & off North Andhra Pradesh–Odisha coasts becoming 55-65 gusting to 75 kmph from the forenoon of tomorrow, the 4<sup>th</sup> December and increase gradually becoming 80-90 kmph gusting to 100 kmph from 4<sup>th</sup> evening till 5<sup>th</sup> morning and 70-80 kmph gusting to 90 kmph during subsequent 12 hours.
- Squally wind speed reaching 45-55 kmph gusting to 65 kmph also likely to commence along & off West Bengal coast from 4<sup>th</sup> December evening and become Gale wind speed reaching 60-70 kmph gusting to 80 kmph from the morning of 5<sup>th</sup> December for the subsequent 12 hours and gradually decrease thereafter.

#### **(iii) Sea condition**

- Sea condition would be High over westcentral Bay of Bengal during next 12 hours and High to very High over westcentral & adjoining northwest Bay of Bengal from the early morning of 4<sup>th</sup> December for the subsequent 24 hours. It is likely to be high over northwest Bay of Bengal on 5<sup>th</sup> December.
- Sea condition will be rough to very rough over along & off North Andhra Pradesh – Odisha coast from the midnight of 3<sup>rd</sup> December and become High to very High from 4<sup>th</sup> Afternoon, for the subsequent 12 hours.

- It will be rough to very rough along & off West Bengal coast from 4<sup>th</sup> morning and very rough to High from the same evening for the subsequent 12 hours.

**(iv) Storm surge warning. ( Graphics enclosed)**

- Storm surge of about 0.5 – 1m height above astronomical tide is likely to inundate low lying areas of coastal districts of Odisha around noon of 5<sup>th</sup> December.
- Fourth December being a new Moon day, higher astronomical tides of about 2-4 m height are likely along the coast of Odisha & West Bengal.

**(v) Fishermen Warning**

Fishermen are advised not to venture into westcentral and adjoining southeast & eastcentral Bay of Bengal on 3<sup>rd</sup> December, over west-central & northwest Bay of Bengal and along & off north Andhra Pradesh - Odisha- West Bengal coasts during 3<sup>rd</sup> - 5<sup>th</sup> December 2021 (Graphics enclosed).

**(vi) Advisory to along & off shore Installations**

The off-shore & alongshore operations along north Andhra Pradesh, Odisha & West Bengal coasts are advised to be judiciously regulated on 3<sup>rd</sup> December and to be suspended on 4<sup>th</sup> & 5<sup>th</sup> December 2021, to ensure safety of life & property.

**(vii) EXPECTED IMPACT & ACTION SUGGESTED (For Srikakulam, Vizianagaram & Vishakhapatnam districts of north Coastal Andhra Pradesh; Gajapati, Ganjam, Puri, Nayagarh, Khurda, Cuttack, Jagatsinghpur & Kendrapara districts of Odisha)**

**A. Impact Expected**

- Major damage to thatched houses/ huts and possible of damage to vulnerable structure.
- Breaking of tree branches, uprooting of trees.
- Minor damage to power and communication lines.
- Localized Flooding, water logging and inundation in low lying areas due to Heavy rain & Tidal waves and closure of underpasses mainly in urban areas of the affected region.
- Occasional reduction in visibility due to heavy rainfall.
- Disruption of traffic in roads of major cities due to water logging leading to delayed travel.
- Minor damage to kutcha roads.
- Localized Landslides/Mudslides
- Damage to horticulture and standing crops in some areas due to inundation. Damage to banana, Papaya & Moring (Drumstick) trees due to strong winds.
- It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

**B. Action Suggested**

- Total suspension of fishing operations.
- Check for traffic congestion on your route before leaving for your destination.
- Follow any traffic advisories that are issued in this regard.
- Avoid going to areas that face the water logging problems often.
- Avoid staying in vulnerable structure.
- Harvest the ripen crops like Paddy & Horticultural crops and also secure the harvested crops securely from the damage due to rain and strong winds.

Next Bulletin will be issued at 0230 hrs IST of 04<sup>th</sup> December 2021.

**(D R Pattanaik)**  
**Scientist-F, RSMC, New Delhi**

Copy to: ACWC Kolkata/ CWC Vishakhapatnam/CWC Bhubaneswar/RMC Guwahati  
**LEGEND: Heavy Rainfall:** 64.5 to 115.5mm, **Very Heavy Rainfall:** 115.6 to 204.4mm **Most Places:** more than 76% of total stations, **Isolated Places:** Less than 25% of total stations

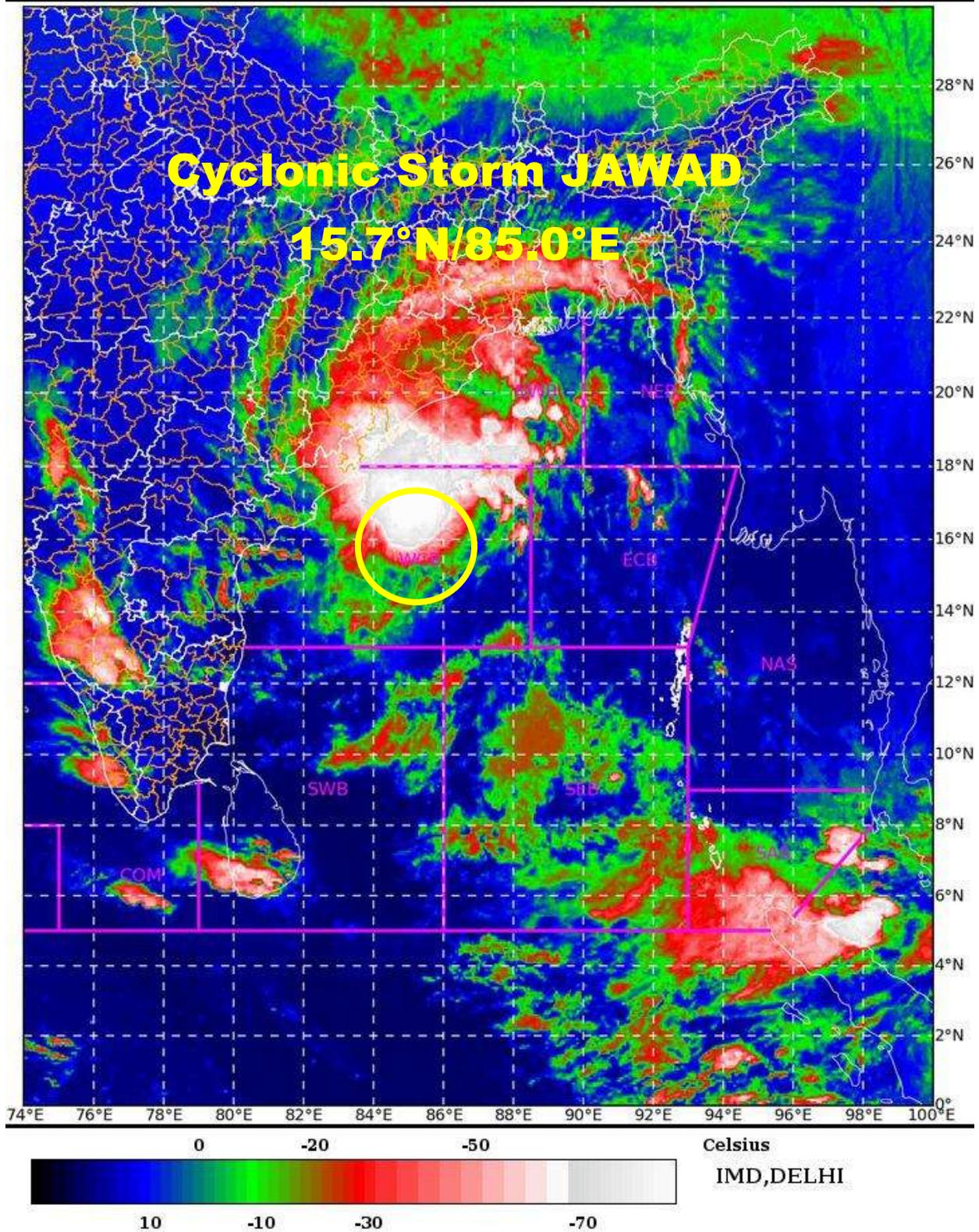
SAT : INSAT-3D IMG

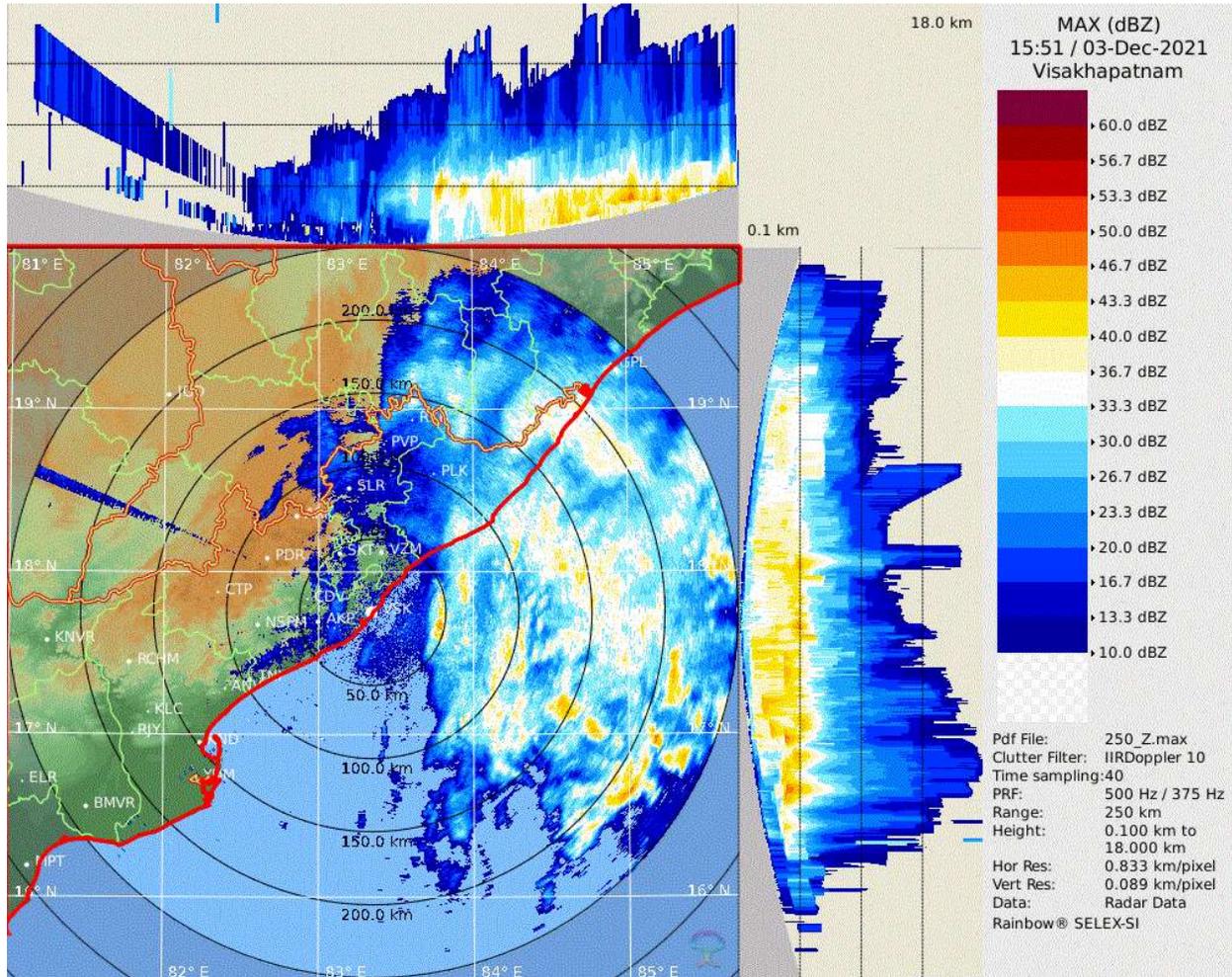
03-12-2021/(1500 to 1526) GMT

IMG\_TIR1\_TEMP 10.8 um

03-12-2021/(2030 to 2056) IST

L1C Mercator





**Doppler Weather RADAR imagery from Vishakhapatnam, depicting deep convective clouds over north Coastal Andhra Pradesh and south Odisha.**



**OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF CYCLONIC STORM 'JAWAD' OVER WESTCENTRAL BAY OF BENGAL BASED ON 1200 UTC OF 3<sup>rd</sup> DECEMBER, 2021**

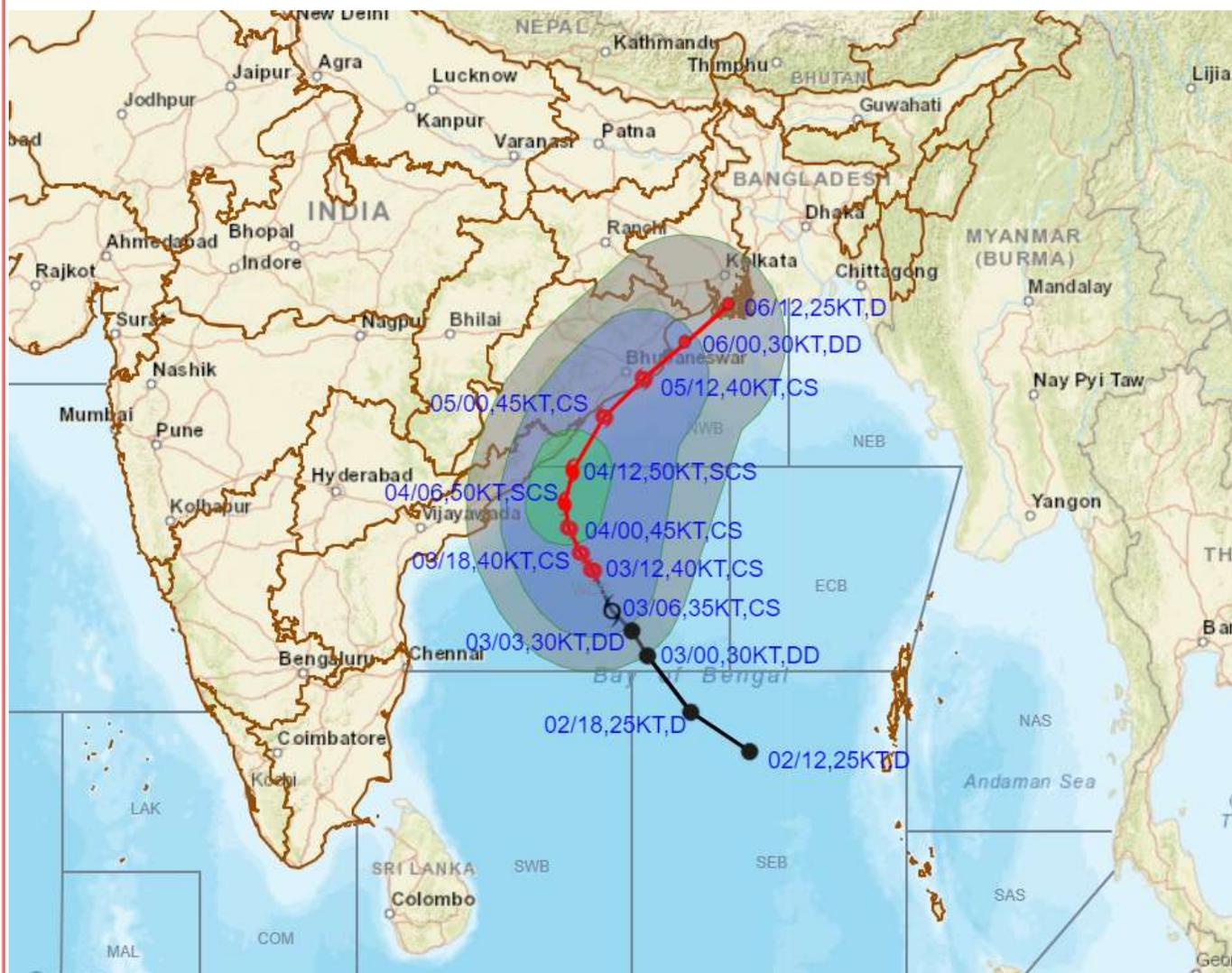


DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE 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



## OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM 'JAWAD' OVER WESTCENTRAL BAY OF BENGAL BASED ON 1200 UTC OF 3<sup>rd</sup> DECEMBER, 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)

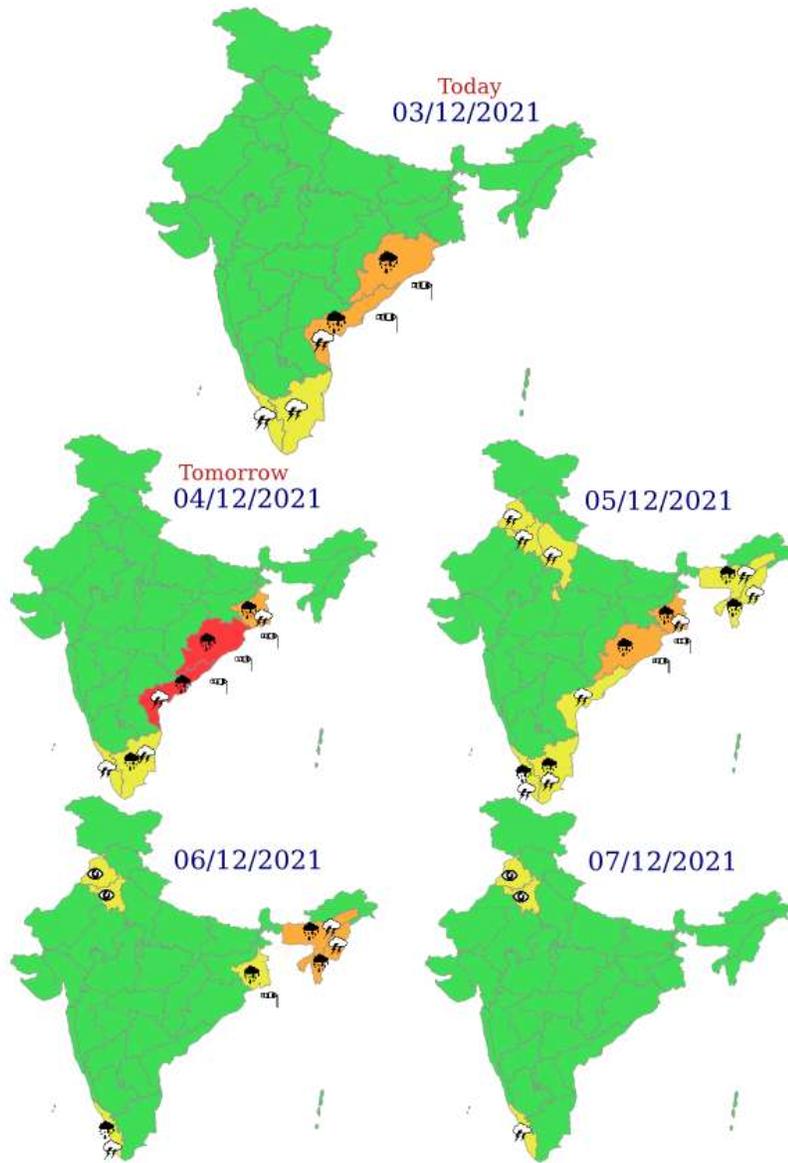
■ 34-49 KT (62-91 KMPH)

■ 50-63 KT (92-117 KMPH)

■ ≥ 64 KT (≥ 118 KMPH)

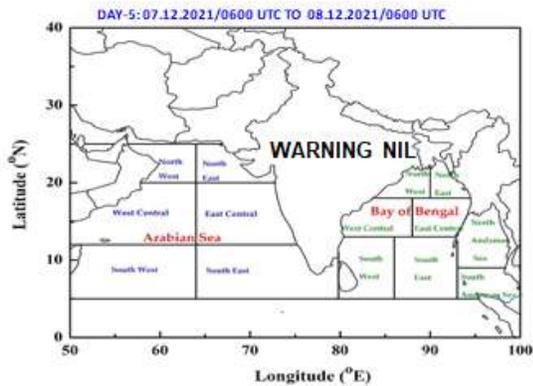
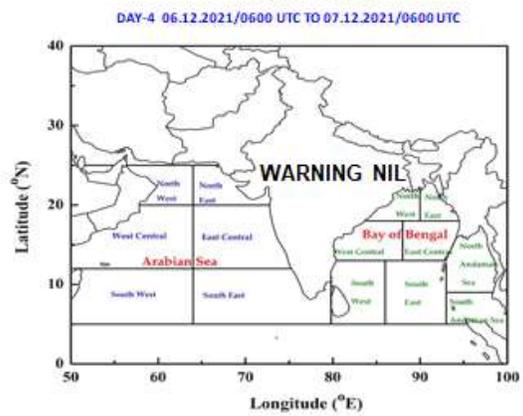
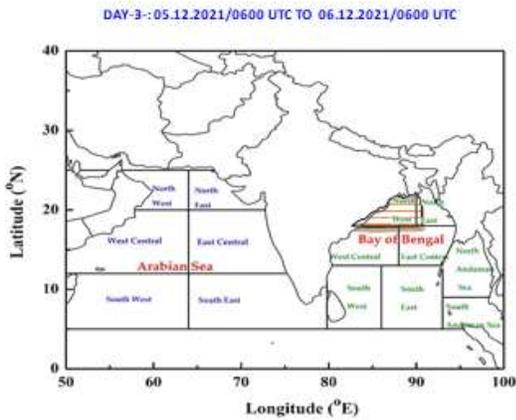
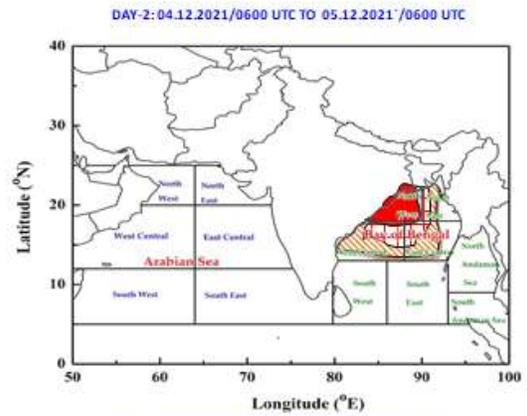
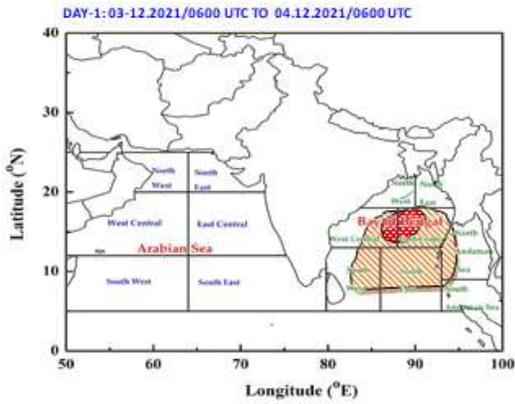
### IMPACT OVER THE SEA

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



# Fishermen Warning

## INDIA METEOROLOGICAL DEPARTMENT FISHERMAN WARNING FOR BAY OF BENGAL AND ARABIAN SEA



### AREA UNDER FISHERMEN WARNING

-  40-50 KMPH G TO 60 KMPH (SQ.WEATHER)
-  45-55 KMPH GUSTING TO 65 KMPH
-  50-60 KMPH G TO 70 KMPH
-  60-70 KMPH G TO 80 KMPH
-  70-80 KMPH G TO 90 KMPH
-  80-90 KMPH G TO 95 KMPH
-  90-100 KMPH G TO 110 KMPH

## Model predicted storm surge heights in association with the Cyclone

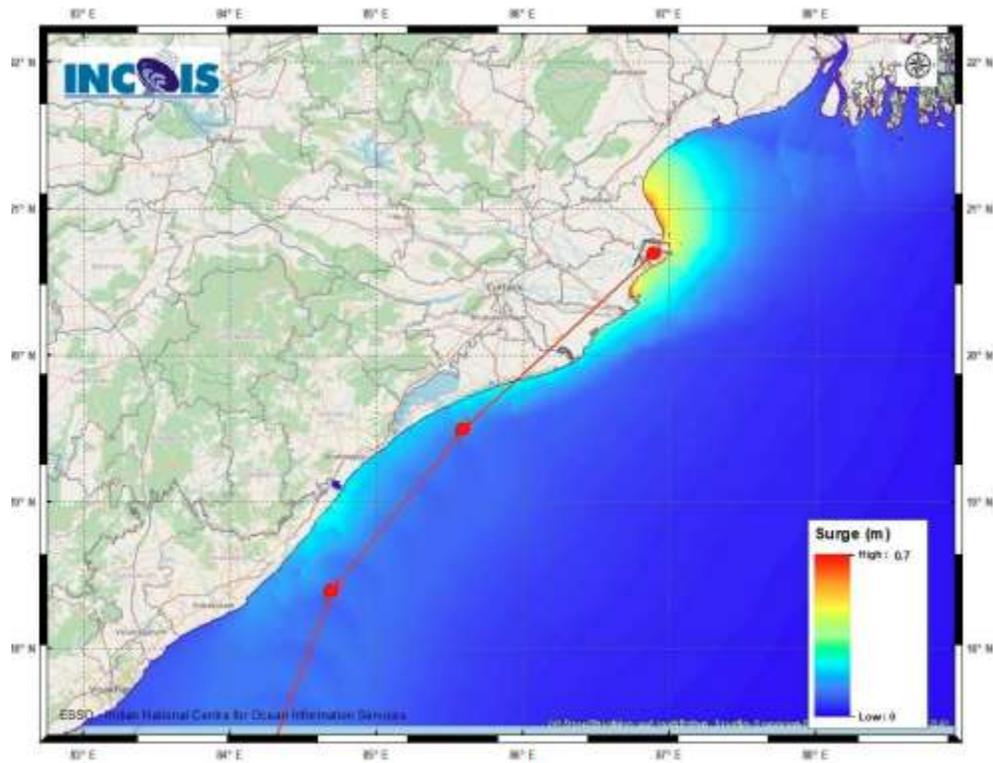


Figure: Storm Surge Map

### STORM SURGE HEIGHT INFORMATION:

\* The below listed surge heights are over and above astronomical tide.

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	STORM SURGE (m) *	EXPECTED INUNDATION EXTENT (km)
Kendraparha	Kendrapara	Odisha	Tikayat Nagar	0.3-0.7	Upto 2.64
Bhadrak	Bhadrak	Odisha	Mohanpur	0.4-0.6	Upto 0.64
Jagatsinghpur	Jagatsinghpur	Odisha	Musadia	0.3-0.6	Upto 2.37
Puri	Puri	Odisha	Chhuriana	0.2-0.6	Upto 1.03
Baleshwar	Baleshwar	Odisha	Srikona	0.2-0.4	Upto 0.78
Brahmapur	Ganjam	Odisha	Golabandha	0.2-0.3	Upto 0.81
Chatrapur	Ganjam	Odisha	Prayagi	0.2-0.3	Upto 0.76
Ichchapuram	Srikakulam	Andhra Pradesh	Burjapadu	0.2-0.3	Upto 0.89
Sompeta	Srikakulam	Andhra Pradesh	Gollagandi	0.2-0.3	Upto 0.68
Tekkali	Srikakulam	Andhra Pradesh	Pedavanka	0.2-0.3	Upto 0.57