



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

NATIONAL BULLETIN NO. 9 (BOB/06/2024)

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DATED: 23.10.2024

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

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**Subject: Cyclonic storm "DANA" over eastcentral and adjoining westcentral Bay of Bengal
(Cyclone Warning for Odisha and West Bengal coasts: **Orange Message**)**

The cyclonic storm "DANA" (pronounced as Dana) over Eastcentral Bay of Bengal moved northwestwards with a speed of 12 kmph during past 6 hours and lay centred at 1430 hrs IST of today, the 23rd October, over the eastcentral & adjoining westcentral Bay of Bengal near latitude 16.9° N and longitude 89.1°E, about 460 km southeast of Paradip (Odisha), 490 km south-southeast of Dhamara (Odisha) and 540 km south-southeast of Sagar Island (West Bengal).

It is very likely to move northwestwards and intensify into a severe cyclonic storm over northwest Bay of Bengal by early morning of 24th and cross north Odisha and West Bengal coasts between Puri and Sagar Island close to Bhitarkanika and Dhamara (Odisha) during night of 24th to morning of 25th October, 2024 as a severe Cyclonic Storm with a wind speed of 100-110 kmph gusting 120 kmph.

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
23.10.24/1430	16.9/89.1	75-85 gusting to 95	Cyclonic Storm
23.10.24/1730	17.3/88.7	80-90 gusting to 100	Cyclonic Storm
23.10.24/2330	18.0/88.3	90-100 gusting to 110	Severe Cyclonic Storm
24.10.24/0530	18.7/88.0	100-110 gusting to 120	Severe Cyclonic Storm
24.10.24/1130	19.4/87.7	100-110 gusting to 120	Severe Cyclonic Storm
24.10.24/2330	20.5/87.3	100-110 gusting to 120	Severe Cyclonic Storm
25.10.24/1130	21.2/86.6	95-105 gusting to 115	Severe Cyclonic Storm
25.10.24/2330	21.6/85.7	65-75 gusting to 85	Cyclonic Storm
26.10.24/1130	21.8/84.8	40-50 gusting to 60	Depression

(i) Rainfall Warning:

- ❖ Light to moderate rainfall at most places with **heavy rainfall (07-11 cm)** at isolated places is very likely over **Balasore, Bhadrak, Kendrapara, Jagatsingpur, Puri and Khorda**, districts of Odisha commencing from evening of 23rd Oct. & **heavy to very heavy rainfall** at a few places and **extremely heavy rainfall (≥ 21 cm)** at isolated places over **Baleswar, Mayurbhanj, Bhadrak, Kendrapara, Jagatsingpur Kendujhar, Jajpur, Cuttack and Dhenkanal, Khorda and Puri** districts of Odisha on 24th & 25th October.
- ❖ **Light to moderate rainfall at most places with heavy rainfall** at isolated places is very likely on 23rd October and heavy to very heavy rainfall at a few places with **extremely heavy rainfall** at isolated places over **South & North 24 Parganas, East & West Medinipur, Jhargram, Howrah, Hooghly, Kolkata and Bankura** districts of Gangetic West Bengal on 24th & 25th October.
- ❖ Light to moderate rainfall at most places is likely over south Jharkhand with **heavy rainfall** at isolated places on 24th and **heavy to very heavy rainfall** at isolated places on 25th October.

(ii) Wind Warning:

Eastcentral Bay of Bengal: Gale wind speed reaching 75-85 kmph gusting to 95 kmph is prevailing and likely to increase becoming 80-90 kmph gusting to 100 kmph from 23rd evening till 24th morning. It is likely to decrease thereafter.

Adjoining areas of Westcentral Bay of Bengal: Gale wind speed reaching 65-75 kmph gusting to 85 kmph is prevailing. It is likely to increase gradually becoming 80-90 kmph gusting to 100 kmph from 23rd afternoon and 90-100 kmph gusting to 110 kmph from 24th morning till 24th afternoon. It is likely to decrease thereafter.

Northwest Bay of Bengal: Squally wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing. It is very likely to increase gradually becoming Gale wind speed reaching 70-90 kmph gusting to 100 kmph from 23rd evening till 24th night and thereafter 100-110 kmph gusting to 120 kmph till 25th Oct morning. It is likely to decrease gradually thereafter.

Adjoining areas of northeast Bay of Bengal: Squally wind speed reaching 45-55 kmph gusting to 60 kmph is very likely to commence from 23rd night, becoming 50-60 kmph gusting to 70 kmph from 24th till 25th morning and decrease gradually thereafter.

Along & off Odisha-west Bengal coasts: Squally wind speed reaching 45-55 gusting to 65 kmph is prevailing. It would gradually increase becoming gale wind speed reaching 60-70 kmph gusting to 80 kmph from 24th morning and 100-110 kmph gusting to 120 kmph along &

off north Odisha and east Medinipur district of West Bengal; Gale wind speed reaching 60-80 kmph gusting to 90 kmph is likely along & off south Odisha and remaining districts of coastal West Bengal from 24th night till 25th Oct morning and decrease gradually thereafter.

South Jharkhand: Squally wind speed reaching 40-50 gusting to 60 kmph is very likely to prevail from morning of 25th till evening of 26th October.

(ii) Storm surge warning:

Storm surge of 1.0 to 2.0 m height above astronomical tide is very likely to inundate low lying areas of Kendrapara, Bhadrak & Balasore districts of Odisha and East Medinipur districts of West Bengal during the time of landfall.

Storm surge of 0.5 to 1.0 m height above astronomical tide is very likely to inundate low lying areas of South 24-Parganas district of West Bengal and Jagatsingpur district of Odisha during the time of landfall.

(iii) Sea Condition:

Eastcentral Bay of Bengal: Sea condition is likely to be **high till 24th October evening** and improve gradually thereafter.

Adjoining areas of Westcentral Bay of Bengal: Sea condition is likely to be **very Rough to high** on 23rd and **high till 24th October evening**. It is likely to improve gradually thereafter.

Northwest Bay of Bengal: Sea condition is likely to be **Very Rough till 23rd evening** and would become **High to Very High** from 23rd night till 25th morning and improve gradually thereafter.

Adjoining areas of northeast Bay of Bengal: Sea condition is likely to be **Rough to Very Rough** from 23rd night till 25th morning and improve gradually thereafter.

Along & off Odisha-west Bengal coasts: **Rough to Very Rough** Sea condition is prevailing and likely to become **High to Very High** from **24th October morning to 25th Oct forenoon** and improve gradually thereafter.

(iv) Fishermen Warning:

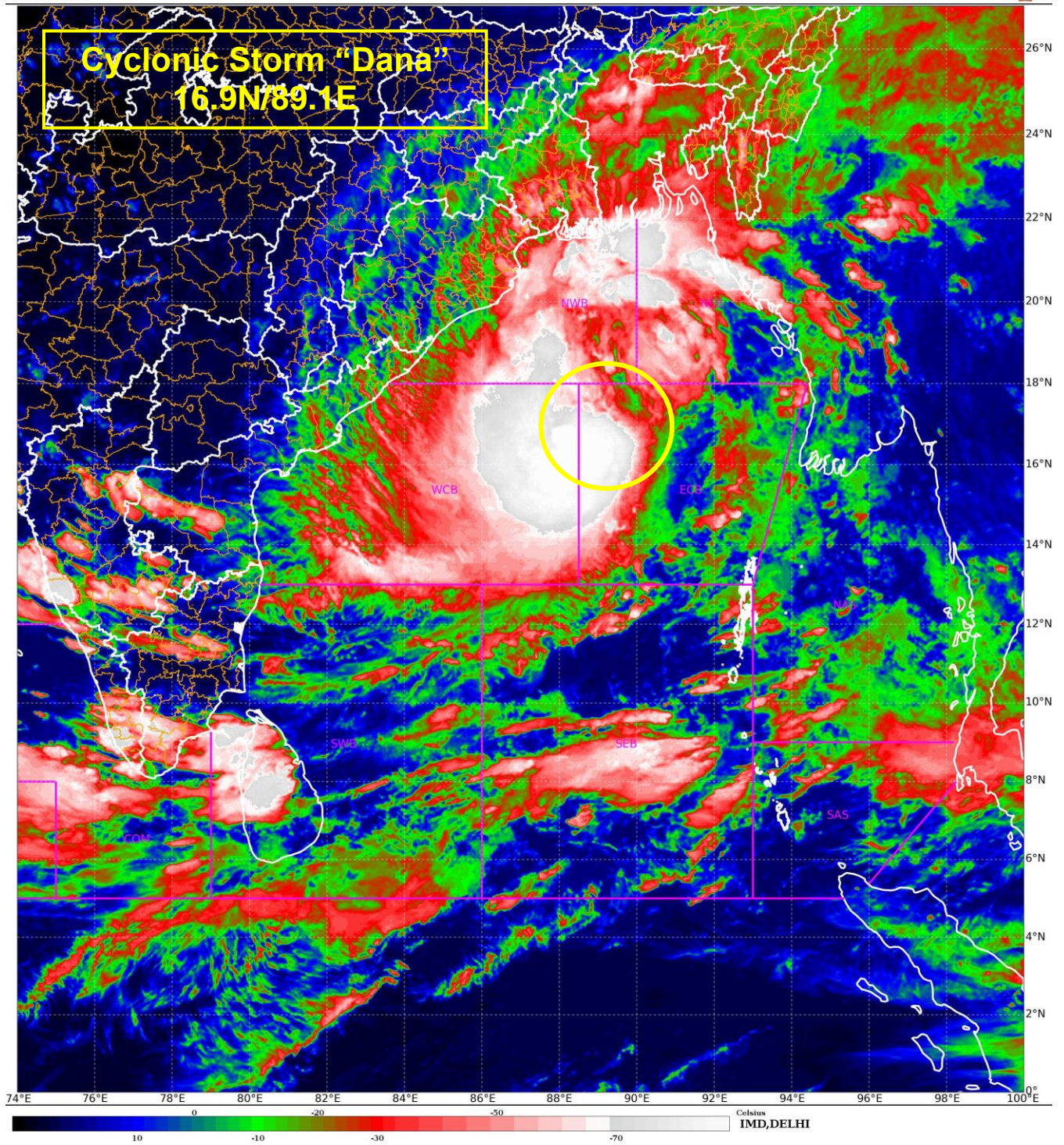
- Total suspension of fishing operations during 23rd to 25th Oct over Central and North Bay of Bengal.
- Fishermen are advised not to venture into
 - Eastcentral Bay of Bengal till 24th October.
 - **Adjoining areas of Westcentral Bay of Bengal till 24th Oct.**
 - **Northwest & adjoining northeast Bay of Bengal and along & off Odisha, West Bengal and Bangladesh coasts** during till 25th October.
- ❖ **Impact Expected over districts of Odisha (Baleswar, Bhadrak, Kendrapara, Jajpur, Jagatsinghpur, Puri, Khorda, Mayurbhanj, Kendujhar, Cuttack, Dhenkanal) and West Bengal (East & West Medinipur, South & North 24 Parganas, Jhargram, Howrah, Hooghly, Kolkata, & Bankura)**
- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Breaking of tree branches and uprooting of trees. Large dead limbs blown from trees.
- Damage to power and communication lines.

- Major damage to Kutchha and some damage to Pucca roads. Flooding of escape routes.
- Damage to vulnerable structure.
- Major damage to standing crops including banana, papaya, horticultural and vegetable crops due to inundation and wind.
- Damage to embankments/ salt pans.
- Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- Occasional reduction in visibility due to heavy rainfall.
- Disruption of traffic in major cities and roadways due to water logging in roads and poor visibility due to heavy rain leading to increased travel time and incidents
- Localized Landslides/Mudslides/landslips/mud slips/land sinks/mud sinks.
- Likely disruption of marine and inland water transportation like small boats and trawlers.
- It may lead to riverine flooding in some river catchments (for riverine flooding please visit Webpage of Central Water Commission)
- ❖ **Action Suggested for districts of Odisha (Baleswar, Bhadrak, Kendrapara, Jajpur, Jagatsinghpur, Puri, Khorda, Mayurbhanj, Kendujhar, Cuttack, Dhenkanal) and West Bengal (South & North 24 Parganas, East & West Medinipur, Jhargram, Howrah, Hooghly, Kolkata & Bankura)**
- Total suspension of fishing operations during 23rd to 25th Oct over Central and North Bay of Bengal.
- Fishermen are advised not to venture into
 - ✓ Eastcentral Bay of Bengal till 24th October.
 - ✓ **Adjoining areas of Westcentral Bay of Bengal on 23rd and 24th Oct.**
 - ✓ **Northwest and adjoining northeast Bay of Bengal and along & off Odisha, West Bengal and Bangladesh coasts during 23rd to 25th October morning.**
- Movement in motor boats unsafe
- Coastal hutment dwellers to be moved to safer places.
- People in affected areas to remain indoors.
- Judicious regulation of onshore/offshore, Port and maritime activities including shipping.
- Judicious regulation of tourism activities in coastal areas.
- Judicious regulation of surface transports including railways and roadways.
- 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.

Next bulletin will be issued at 2030 hours IST of today, the 23rd October, 2024.

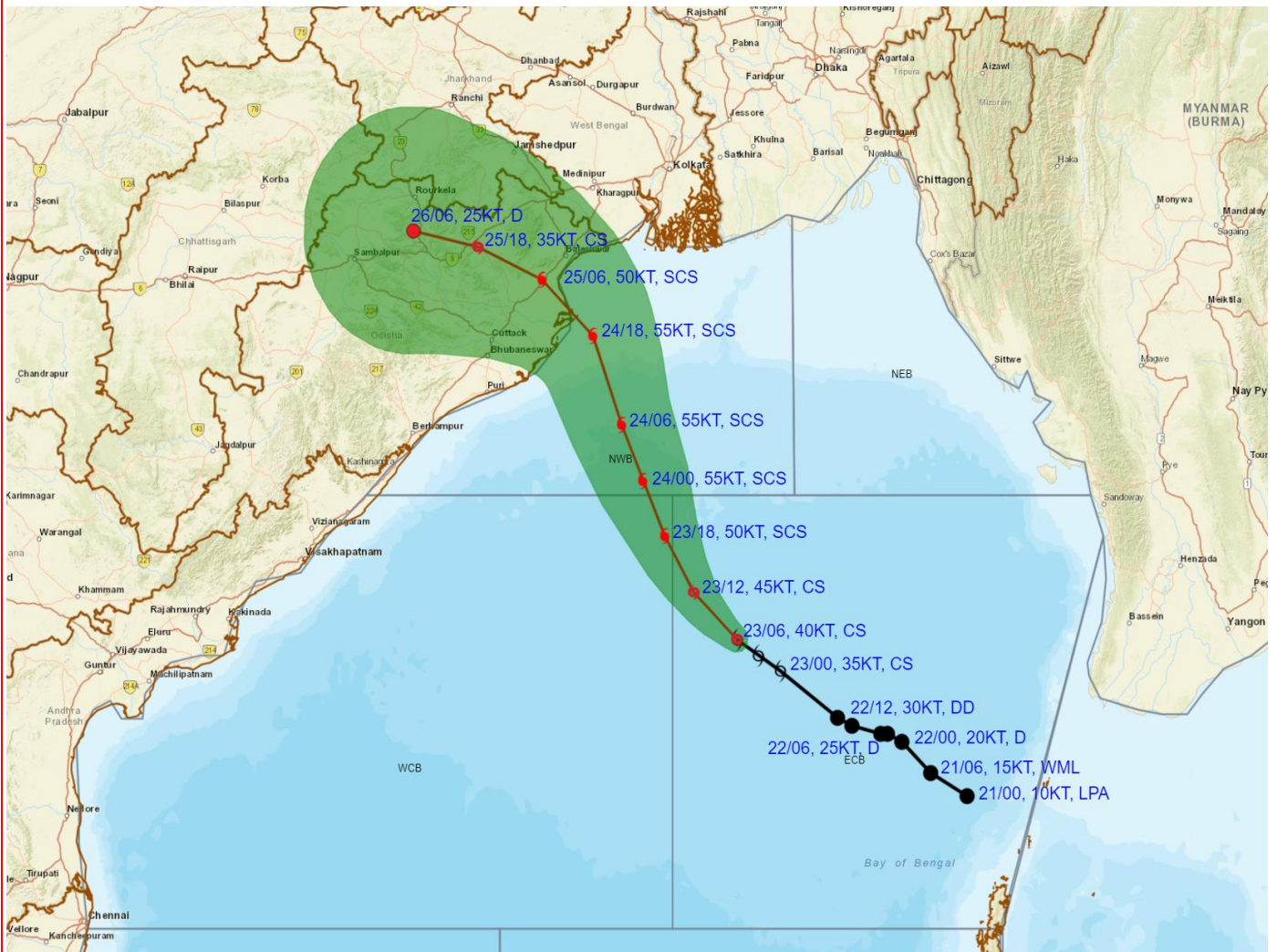
(Ananda Kumar Das)
Scientist-F, RSMC & IMD, New Delhi

Copy to: ACWC Kolkata/ACWC Chennai/CWC Bhubaneswar/CWC Vishakhapatnam/Meteorological Centre Port Blair





OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF CYCLONIC STORM 'DANA' OVER EASTCENTRAL BAY OF BENGAL BASED ON 0600 UTC (1130 Hrs. IST) OF 23RD OCTOBER 2024



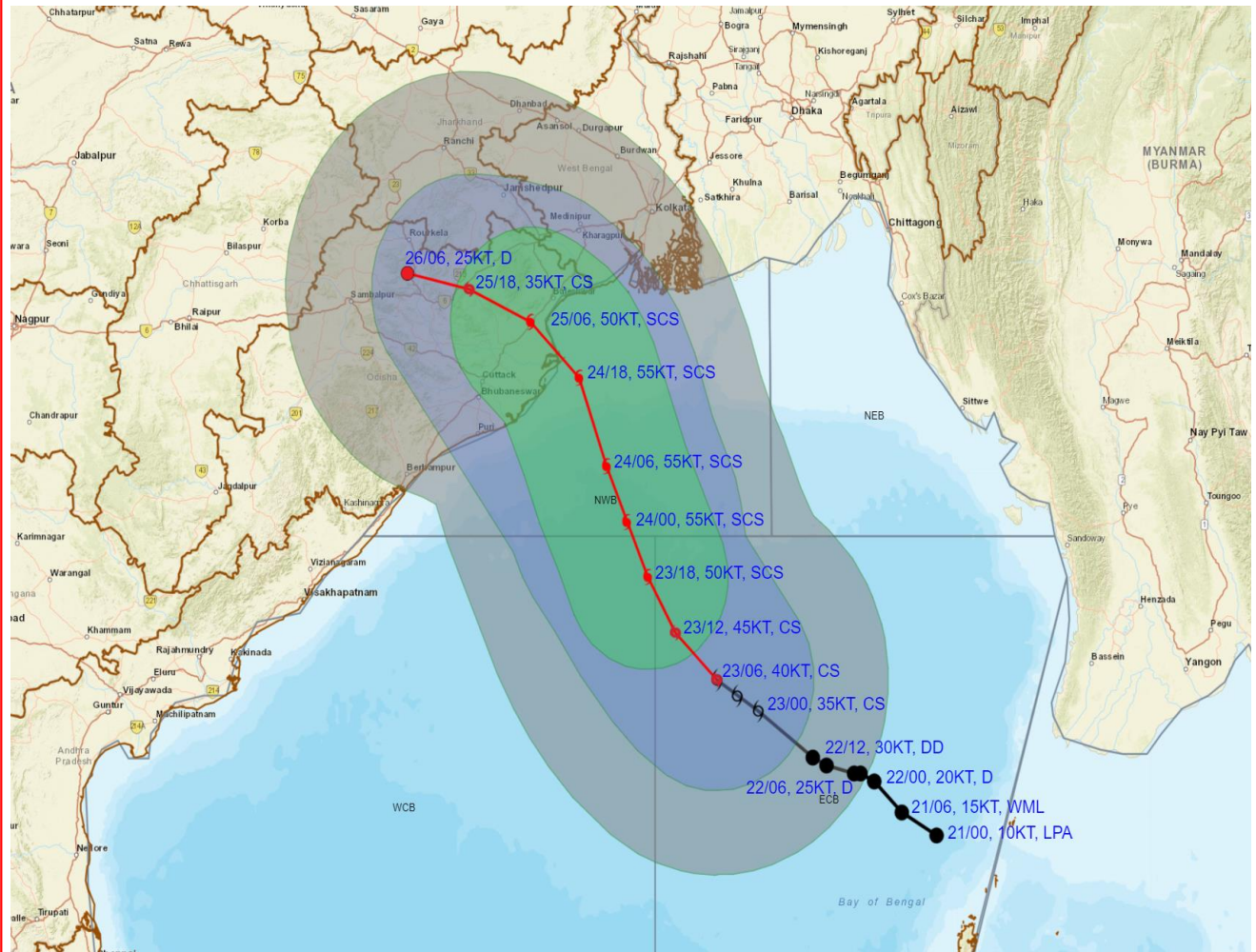
DATE/TIME : IN UTC
 IST : UTC + 0530
 KT : NAUTICAL MILE S/HOUR = 1.85 KM/HOUR
 LPA : LOW PRESSURE AREA
 WML : WELL MARKED LOW PRESSURE AREA
 D : DEPRESSION (17-27 KT)
 DD : DEEP DEPRESSION (28-33 KT)
 CS : CYCLONIC STORM (34-47 KT)
 SCS : SEVERE CYCLONIC STORM (48-63 KT)
 VSCS : VERY SEVERE CYCLONIC 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

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS		
Date and Time (UTC)	PARADIP (CWR)	DHAMARA	SAGAR ISLAND
23.10.24/0600	490, SE	520, SSE	570, SSE
24.10.24/0600	150, SE	180, SSE	250, S
25.10.24/0600	100, N	50, NW	160, WSW
26.10.24/0600	260, NW	240, WNW	340, W



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM 'DANA' OVER EASTCENTRAL BAY OF BENGAL BASED ON 0600 UTC (1130 Hrs. IST) OF 23RD OCTOBER 2024

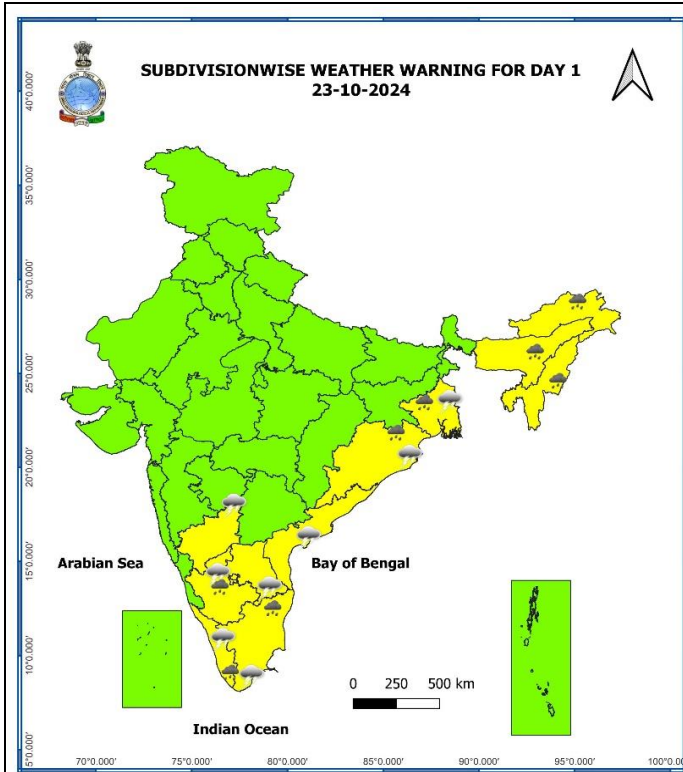


DATE/TIME : IN UTC
 IST : UTC + 0530
 KT : NAUTICAL MILE / HOUR = 1.85 KM / HOUR
 LPA : LOW PRESSURE AREA
 WML : WELL MARKED LOW PRESSURE AREA
 D : DEPRESSION (17-27 KT)
 DD : DEEP DEPRESSION (28-33 KT)
 CS : CYCLONIC STORM (34-47 KT)
 SCS : SEVERE CYCLONIC STORM (48-63 KT)
 VSCS : VERY SEVERE CYCLONIC 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



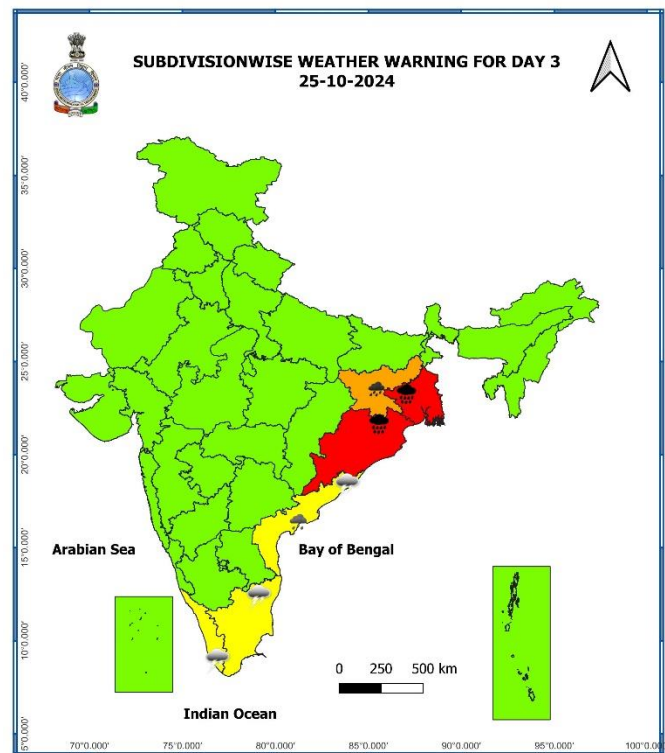
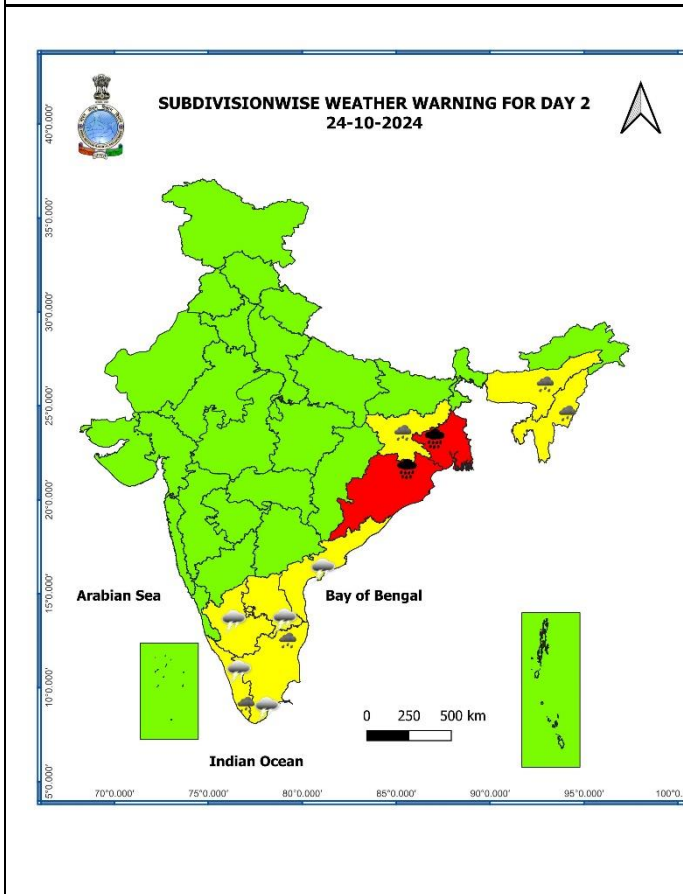
- Heavy Rain
- Very Heavy Rain
- Extremely Heavy Rain

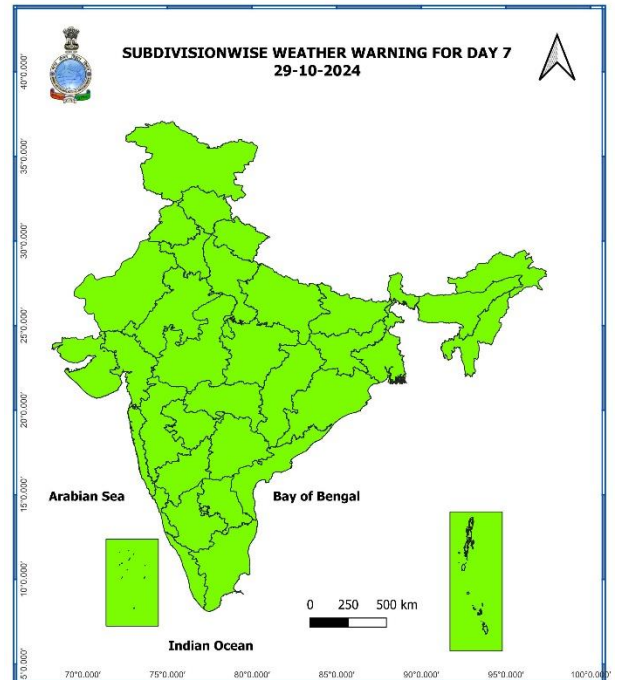
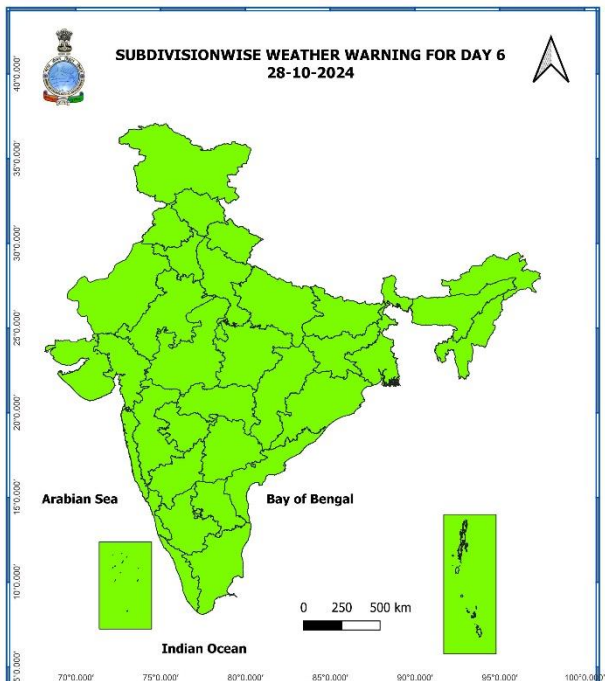
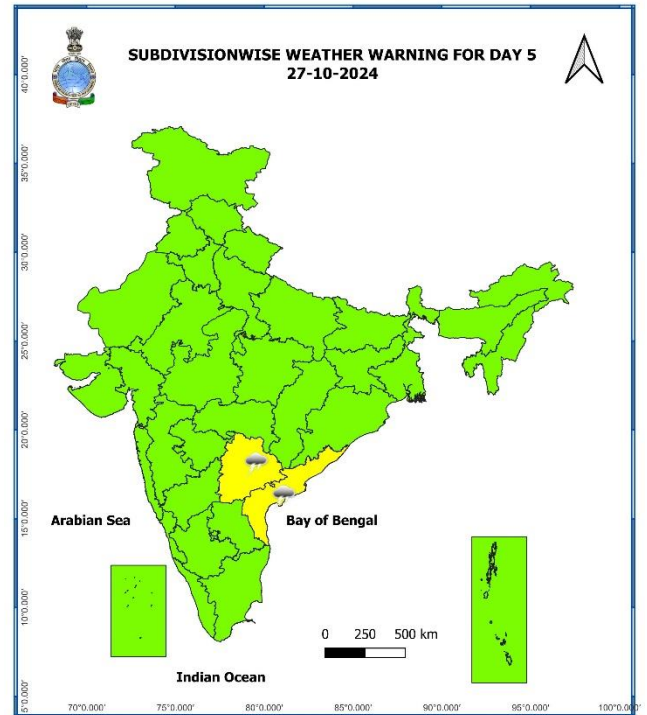
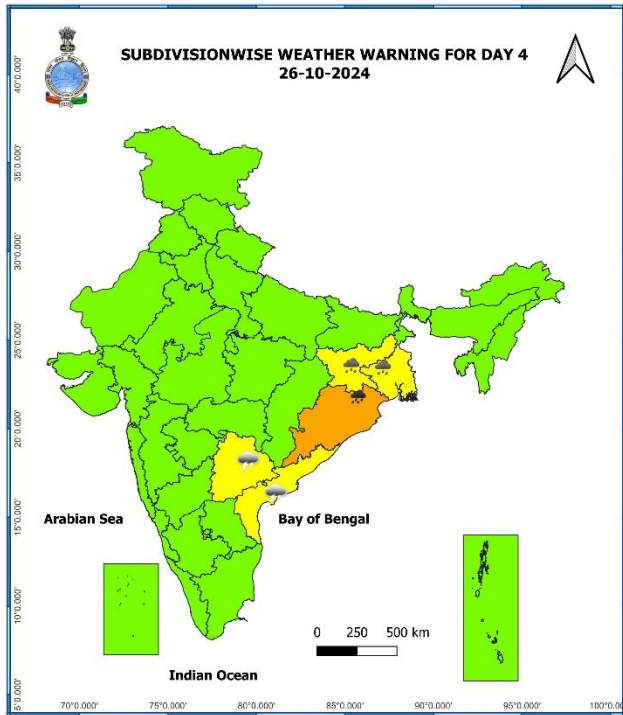
COLOUR CODED WARNING

- No Warning (No Action)
- Watch (Be Aware)
- Alert (Be Prepared To Take Action)
- Warning (Take Action)

Probabilistic Forecast

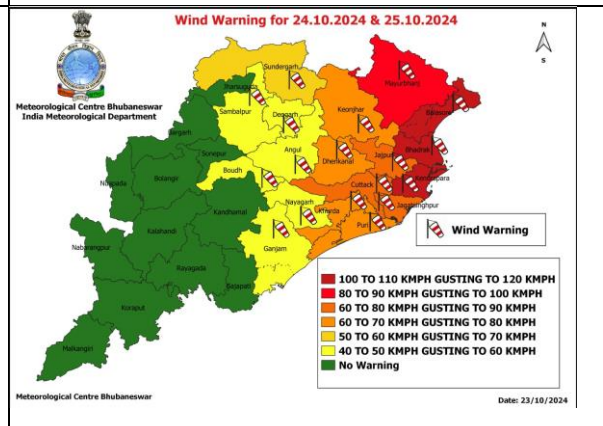
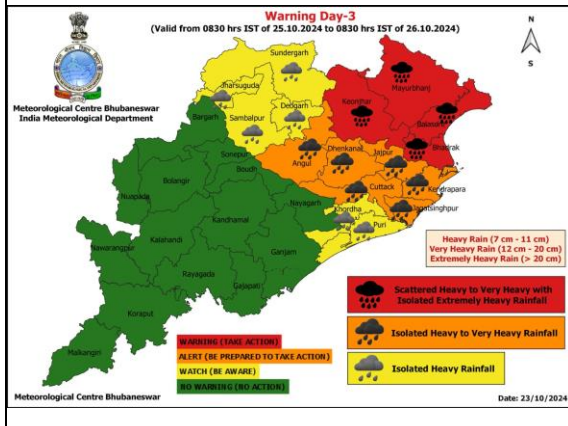
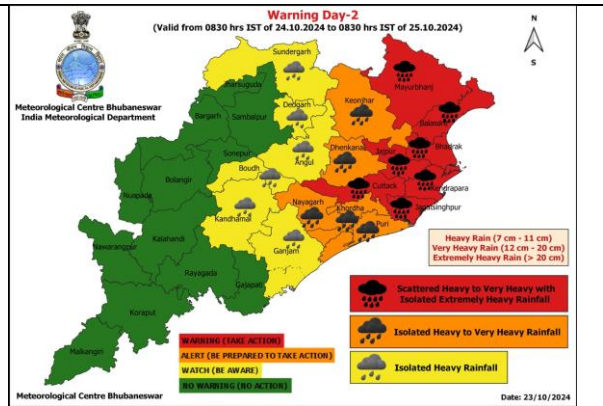
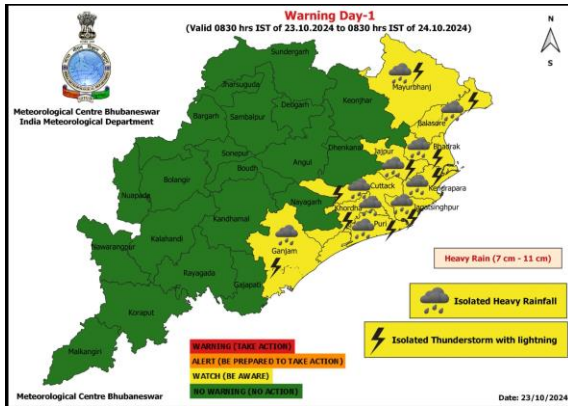
Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



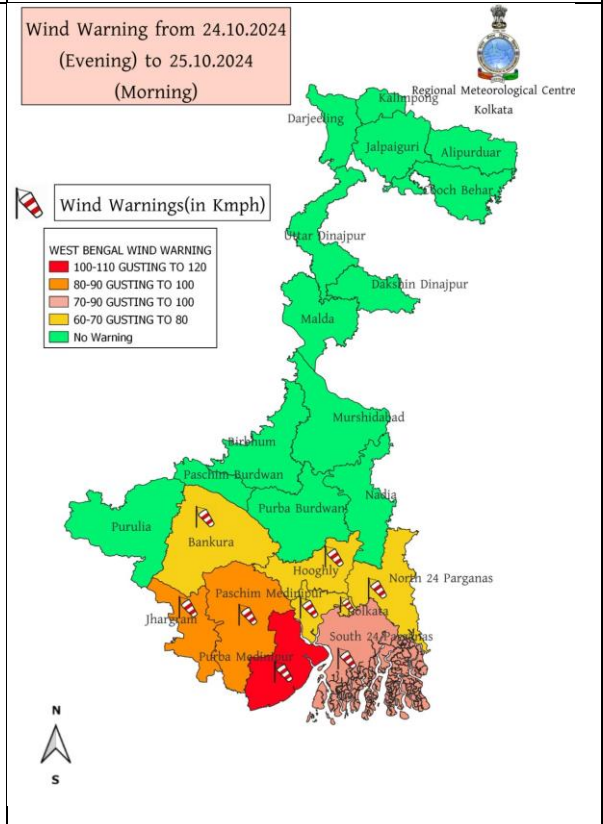
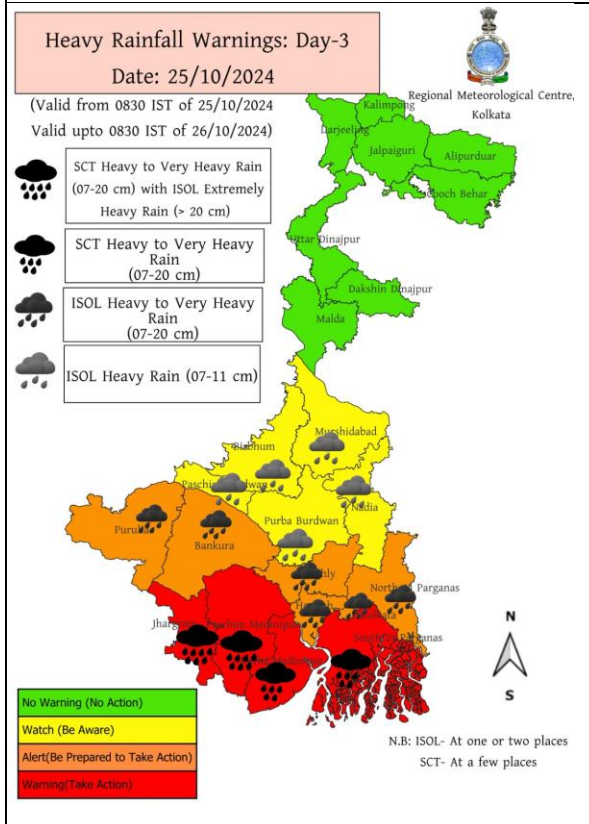
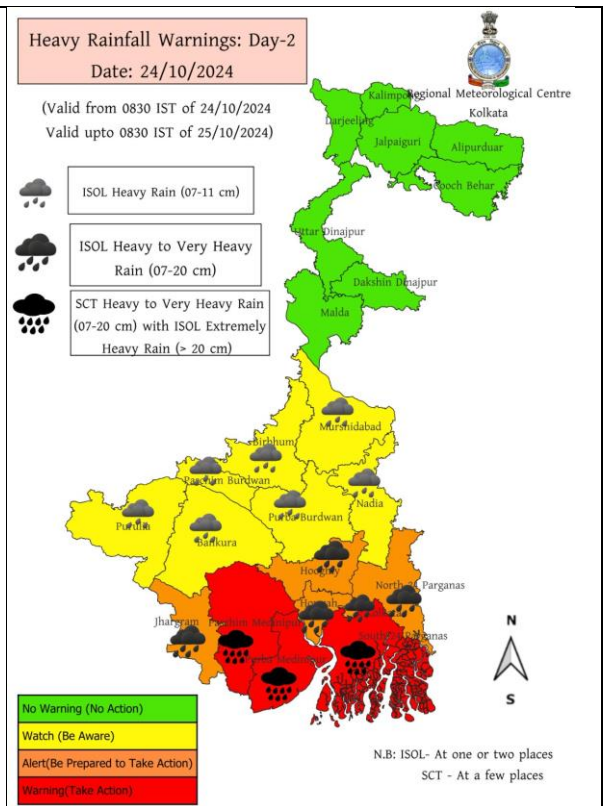
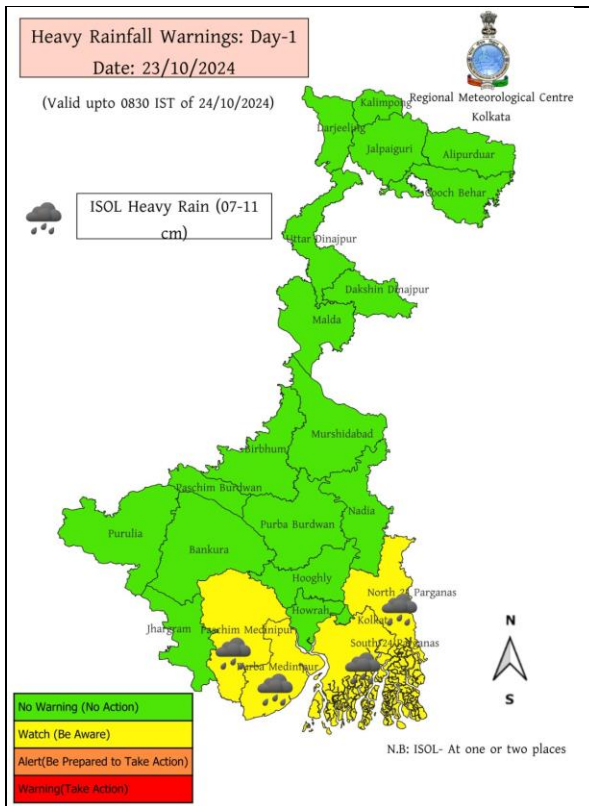


- Action may be taken based on **ORANGE AND RED** COLOUR warnings.
- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases.

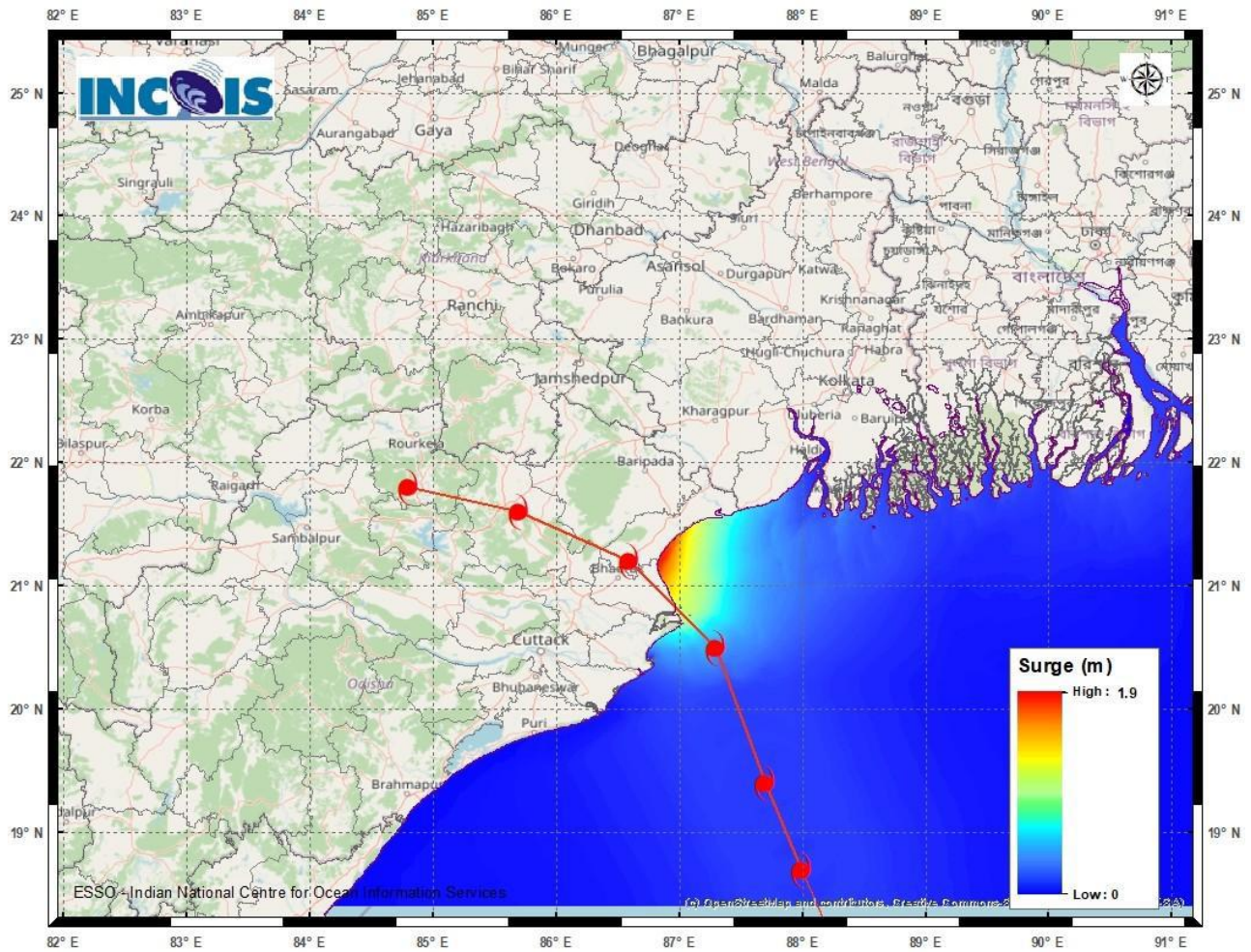
District-wise Warning of Odisha



District-wise Warning of West Bengal



Storm Surge warning graphics



DISTRICT	STATE/UNION TERRITORY	NEAREST PLACE OF HABITATION	STORM SURGE (m) *	EXPECTED INUNDATION EXTENT (km)
Baleshwar	Odisha	Kumbhiringari	0.4-1.9	Upto 1.08
North 24 Parganas	West Bengal	Island	0.4-0.5	Upto 0.15
Bhadrak	Odisha	Mohanpur	0.8-1.9	Upto 1.24
Purba Medinipur	West Bengal	Safar Chata	0.2-0.7	Upto 0.98
Kendrapara	Odisha	Suravi	0.2-1.0	Upto 3.01

Fishermen Warning Graphics

