

Sunday, December 03, 2023
Time of Issue: 0915 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features

Weather Systems and Forecast & Warnings during next 5 days:

- ❖ A **cyclonic circulation** over Northeast Arabian Sea in lower tropospheric levels.
- ❖ A **trough** runs from cyclonic circulation over Northeast Arabian Sea to Northeast Madhya Pradesh in lower tropospheric levels.
- ❖ **Under the influence of the above systems:**
 - **Dense fog** very likely in isolated pockets over Punjab, Haryana, Uttar Pradesh & North Rajasthan during morning hours of 3rd December, 2023.

Depression over Southeast & adjoining Southwest Bay of Bengal

- ❖ The **Deep Depression** over Southwest Bay of Bengal moved northwestwards with a speed of 5 kmph during past 06 hours, intensified into a Cyclonic Storm "MICHAUNG" (pronounced as MIGJAUM) and lay centered at 0530 hours IST of today, the 3rd December, 2023 over the same region near Latitude 11.4°N and Longitude 82.5°E, about 300 km east-southeast of Puducherry, 310 km southeast of Chennai, 440 km southeast of Nellore, 550 km south-southeast of Bapatla and 550 km south-southeast of Machilipatnam. It is likely to continue to move northwestwards, intensify further and reach Westcentral Bay Of Bengal off south Andhra Pradesh and adjoining north Tamilnadu coasts by 4th December forenoon. Thereafter, it would move nearly northwards almost parallel and close to south Andhra Pradesh coast and cross South Andhra Pradesh coast between Nellore and Machilipatnam during forenoon of 5th December as a Cyclonic Storm with a maximum sustained wind speed of 80-90 kmph gusting to 100 kmph.

Warnings in association with the above Depression:

(i) Rainfall Warning:

- ✓ **North Coastal Tamil Nadu & Puducherry:** Light to moderate rainfall at most places with heavy to very heavy rainfall at a few places is very likely on 3rd and isolated heavy to very heavy rainfall on 4th December and decrease thereafter.
- ✓ **Coastal Andhra Pradesh:** Light to moderate rainfall at most places with heavy to very heavy rainfall at a few places over south coastal Andhra Pradesh on 3rd and heavy to very heavy rainfall with extremely heavy falls at isolated places over coastal Andhra Pradesh & Yanam on 4th & 5th December. Isolated heavy rainfall is likely over north coastal Andhra Pradesh on 6th December.
- ✓ **Rayalaseema:** Light to moderate rainfall at most places with **isolated heavy to very heavy rainfall** during 3rd-4th December.
- ✓ **Odisha:** Light to moderate rainfall at most places with **isolated heavy rainfall** is likely over south Coastal and adjoining south Interior Odisha during 4th-6th with **isolated very heavy rainfall** over the same region on 5th December.

(ii) Fishermen Warning:

Fishermen are advised not to venture into:

- ✓ Southwest Bay of Bengal and along & off North Tamil Nadu-Puducherry Coasts till 5th December.
- ✓ Westcentral Bay of Bengal and along & off Andhra Pradesh Coast till 6th December.
- ✓ Along & off Odisha coast from 4th December evening till 6th December

Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at a few places** over Kerala & Mahe and **at isolated places** over Arunachal Pradesh, Gangetic West Bengal, Uttar Pradesh, Madhya Pradesh, Gujarat Region, Marathwada, North Interior Karnataka, Coastal Andhra Pradesh & Yanam and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Significant Rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Kerala:** Pampadumpara-5; **Tamil Nadu:** Puzhal-2; Madhavarm, Chennai, Meenambakkam, Ann-University and Virinjipuram- 1 each; **Coastal Andhra Pradesh:** Nallore-1; **Gangetic West Bengal:** Kolkata-1.
- ❖ **Minimum Temperature Departures (as on 02-12-2023):** Minimum temperatures were **markedly above normal (5.1°C or more)** at most places over Jharkhand; at many places over Bihar, Konkan & Goa; at a few places over East Uttar Pradesh, Chhattisgarh, Madhya Maharashtra; **appreciably above normal (3.1°C to 5.0°C)** at most places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Himachal Pradesh, Haryana-Chandigarh-Delhi, Uttarakhand, West Uttar Pradesh, Rajasthan, Madhya Pradesh, Gujarat state, Vidarbha, Marathwada, Coastal Andhra Pradesh & Yanam, Rayalaseema, North Interior Karnataka, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura; at many places over Gangetic West Bengal; at a few places over Sub-Himalayan West Bengal & Sikkim; **above normal (1.6°C to 3.0°C)** at many places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe; at a few places over Coastal & South Interior Karnataka and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature** of 10.0°C was reported at **Amritsar (Punjab)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 02-12-2023):** Maximum temperatures were **above normal (1.6°C to 3.0°C)** at most places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura; at many places over Arunachal Pradesh, West Bengal & Sikkim, Bihar, Jharkhand and East Uttar Pradesh; at a few places over Odisha, Telangana, and km and Kerala & Mahe; at isolated places over West Uttar Pradesh and Punjab. They were **below normal (-1.6°C to -3.0°C)** at a few places over Saurashtra & Kutch; at isolated places over Haryana-Chandigarh-Delhi and Gujarat Region and **near normal** over rest parts of the country. Yesterday, the highest **maximum temperature** of 34.8°C was reported at **Punalur (Kerala)**.

Meteorological Analysis (Based on 0530 hours IST)

- ❖ The **Deep Depression** over Southwest Bay of Bengal moved northwestwards with a speed of 5 kmph during past 06 hours, intensified into a Cyclonic Storm “MICHAUNG” (pronounced as MIGJAUM) and lay centered at 0530 hours IST of today, the 3rd December, 2023 over the same region near Latitude 11.4°N and Longitude 82.5°E, about 300 km east-southeast of Puducherry, 310 km southeast of Chennai, 440 km southeast of Nellore, 550 km south-southeast of Bapatla and 550 km south-southeast of Machilipatnam. It is likely to continue to move northwestwards, intensify further and reach Westcentral Bay Of Bengal off south Andhra Pradesh and adjoining north Tamilnadu coasts by 4th December forenoon. Thereafter, it would move nearly northwards almost parallel and close to south Andhra Pradesh coast and cross South Andhra Pradesh coast between Nellore and Machilipatnam during forenoon of 5th December as a Cyclonic Storm with a maximum sustained wind speed of 80-90 kmph gusting to 100 kmph.
- ❖ The **Cyclonic Circulation** over south Haryana & neighbourhood between 3.1 & 4.5 km above mean sea level persists.
- ❖ The **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 62°E to the north of Lat. 30°N persists.
- ❖ The **Cyclonic Circulation** over Northeast Arabian Sea at 1.5 km above mean sea level persists.
- ❖ The **trough** from the above cyclonic circulation over Northeast Arabian sea to northeast Madhya Pradesh at 1.5 km above mean sea level persists.

Weather Forecast for next 7 days (Upto 0830 hours IST of 10th December, 2023)

- ❖ Meteorological sub-division wise detailed 7 days rainfall forecast is given in Table-1.
- ❖ No large change in Minimum Temperatures over many parts of the country during next 4-5 days.

Weather Outlook for subsequent 2 days

- ❖ Isolated to scattered light to moderate rainfall likely over parts of Peninsular India.
- ❖ Mainly dry weather likely to prevail over rest parts of the country.



Table-1

7 Days Rainfall Forecast								
S. No.	Subdivision	03-Dec	04-Dec	05-Dec	06-Dec	07-Dec	08-Dec	09-Dec
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	FWS	FWS	FWS	FWS	SCT	SCT	SCT
2	ARUNACHAL PRADESH	DRY	DRY	DRY	ISOL	ISOL	ISOL	ISOL
3	ASSAM & MEGHALAYA	DRY	DRY	DRY	ISOL	ISOL	ISOL	ISOL
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	DRY	ISOL	SCT	SCT	SCT	SCT
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	DRY	DRY	ISOL	DRY	DRY	DRY	DRY
6	GANGETIC WEST BENGAL	DRY	DRY	DRY	ISOL	ISOL	DRY	DRY
7	ODISHA	ISOL	SCT	FWS	FWS	SCT	ISOL	ISOL
8	JHARKHAND	DRY	DRY	ISOL	SCT	ISOL	DRY	DRY
9	BIHAR	DRY	DRY	DRY	ISOL	ISOL	DRY	DRY
10	EAST UTTAR PRADESH	ISOL	ISOL	ISOL	ISOL	ISOL	DRY	DRY
11	WEST UTTAR PRADESH	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
12	UTTARAKHAND	DRY	DRY	DRY	DRY	DRY	DRY	DRY
13	HARYANA CHANDIGARH & DELHI	DRY	DRY	DRY	DRY	DRY	DRY	DRY
14	PUNJAB	DRY	DRY	DRY	DRY	DRY	DRY	DRY
15	HIMACHAL PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
16	JAMMU & KASHMIR AND LADAKH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
17	WEST RAJASTHAN	DRY	DRY	DRY	DRY	DRY	DRY	DRY
18	EAST RAJASTHAN	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
19	WEST MADHYA PRADESH	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
20	EAST MADHYA PRADESH	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
21	GUJARAT REGION	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
22	SAURASHTRA & KUTCH	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY
23	KONKAN & GOA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
24	MADHYA MAHARASHTRA	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
25	MARATHAWADA	DRY	DRY	ISOL	ISOL	DRY	DRY	DRY
26	VIDARBHA	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY
27	CHHATTISGARH	ISOL	ISOL	SCT	SCT	DRY	DRY	DRY
28	COASTAL ANDHRA PRADESH & YANAM	FWS	WS	WS	SCT	ISOL	ISOL	ISOL
29	TELANGANA	ISOL	ISOL	SCT	ISOL	ISOL	ISOL	ISOL
30	RAYALASEEMA	SCT	FWS	FWS	SCT	ISOL	ISOL	ISOL
31	TAMILNADU PUDUCHERRY & KARAIKAL	FWS	SCT	SCT	ISOL	ISOL	DRY	DRY
32	COASTAL KARNATAKA	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
33	NORTH INTERIOR KARNATAKA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
34	SOUTH INTERIOR KARNATAKA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
35	KERALA & MAHE	SCT	ISOL	ISOL	ISOL	ISOL	SCT	SCT
36	LAKSHADWEEP	SCT	SCT	DRY	DRY	DRY	DRY	DRY

Legend	Category	% Stations
WS	Widespread/Most Places	76-100
FWS	Fairly Widespread/Many Places	51-75
SCT	Scattered/ A Few Places	26-50
ISOL	Isolated Places	1-25
DRY	No Rain	0

* Red colour warning does not mean "Red Alert" Red colour warning means "Take Action".
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Fig. 1: Maximum Temperatures

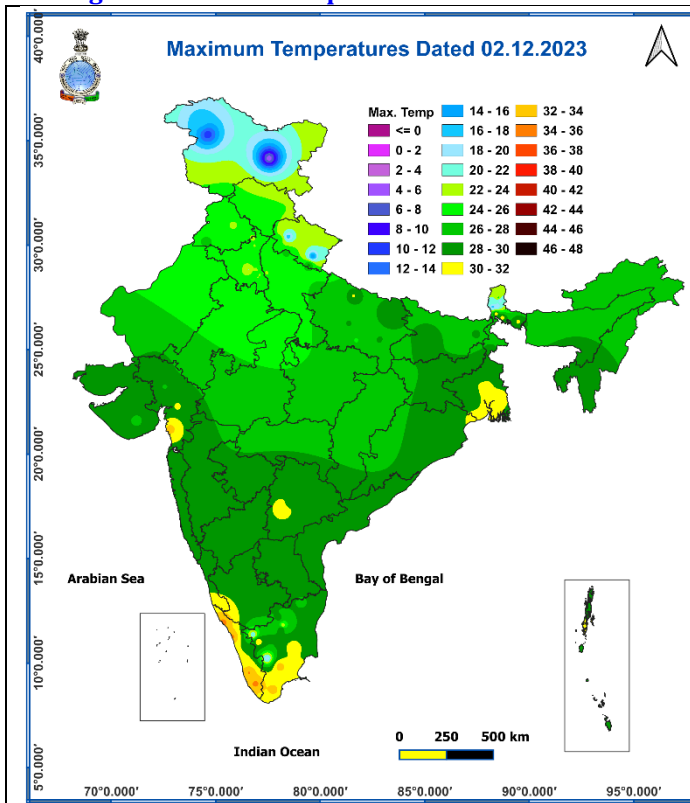


Fig. 2: Departure of Maximum Temperatures

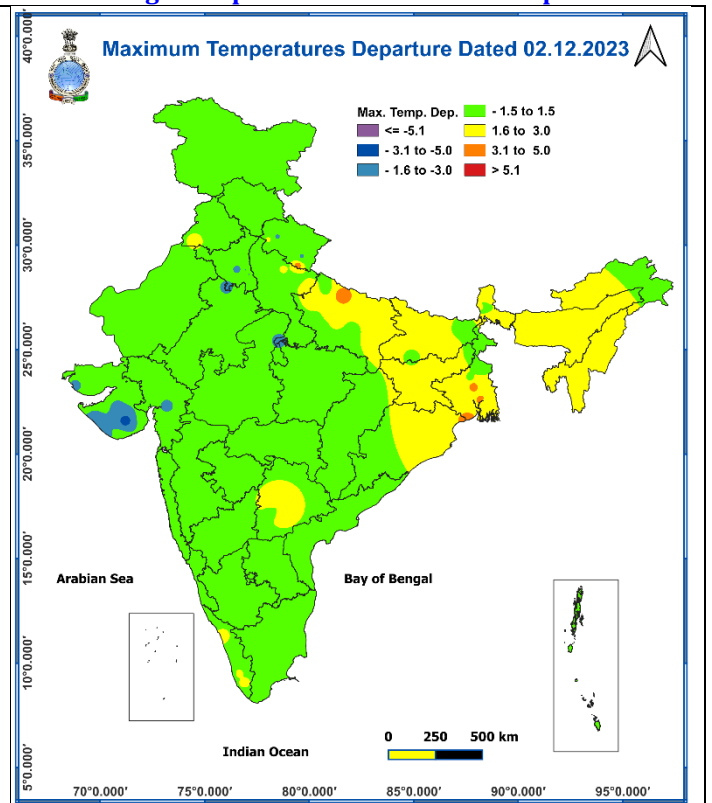


Fig. 3: Minimum Temperatures

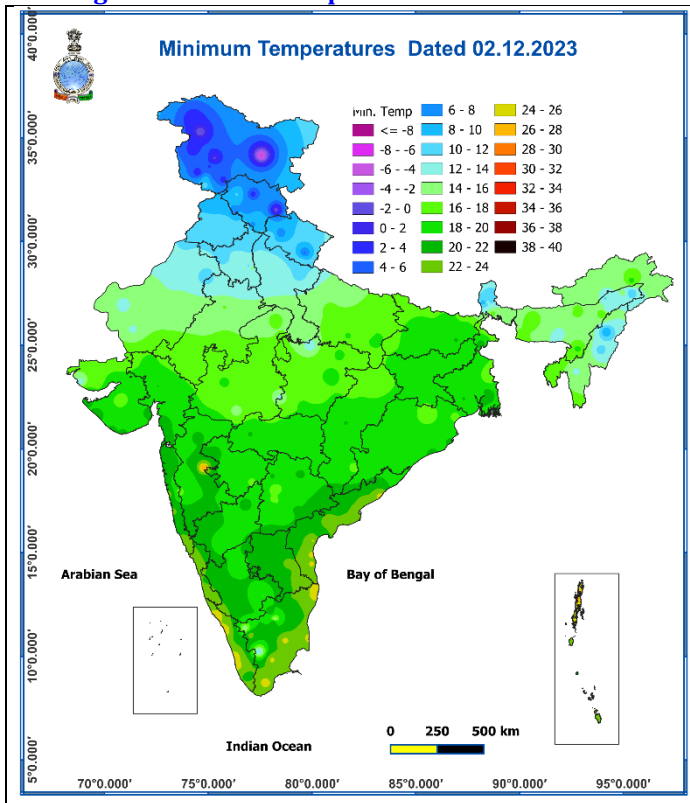


Fig. 4: Departure of Minimum Temperatures

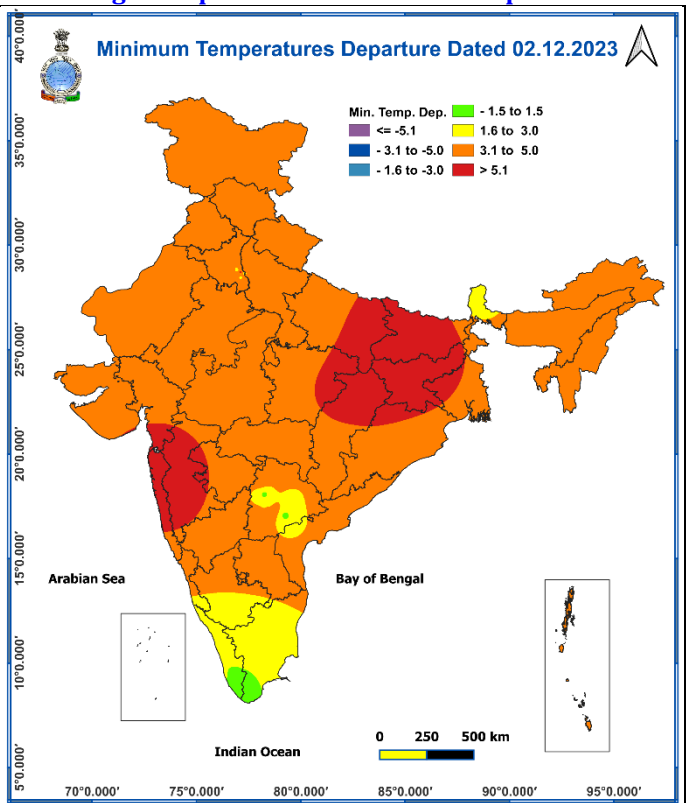
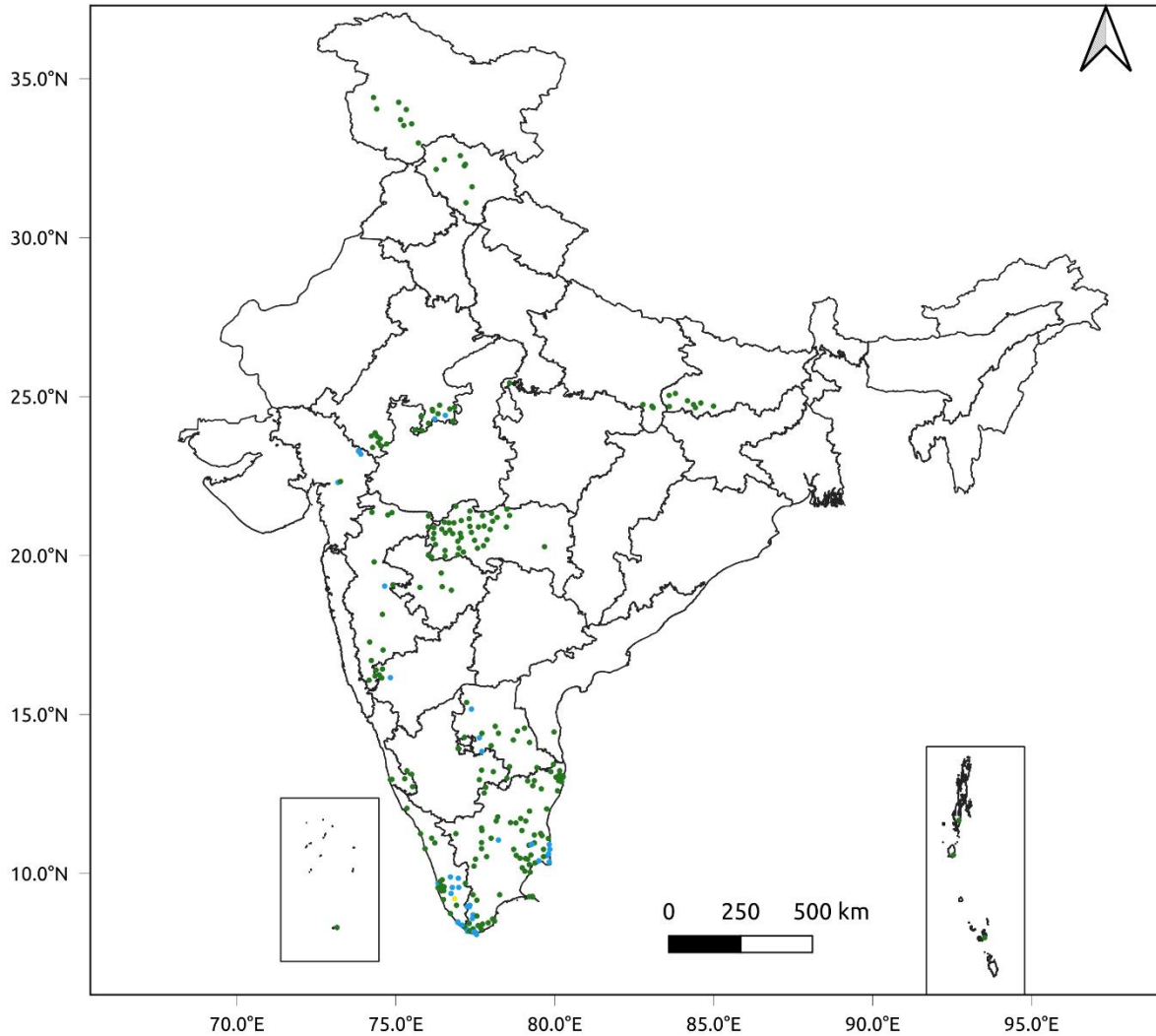


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



24 Hr cumulative rainfall recorded over different stations during 0830 IST of 1-12-2023 to 0830 IST of 2-12-2023

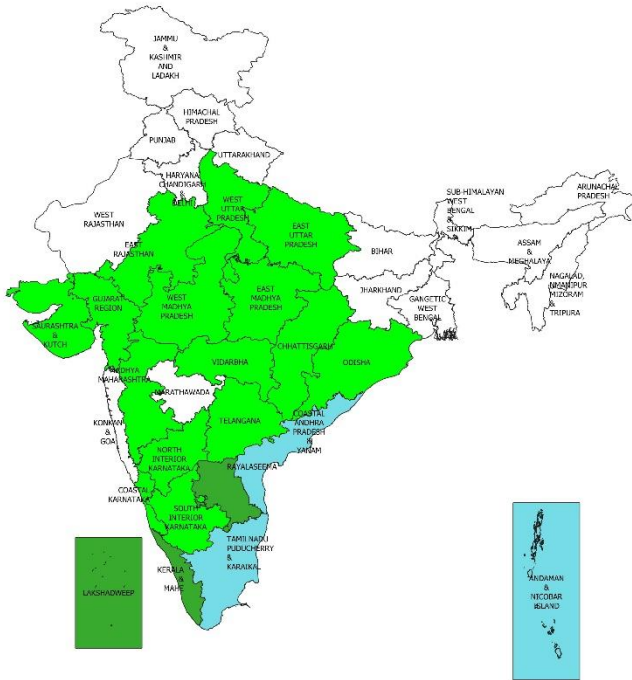


Legends

- Very Light to Light Rainfall (0.1 - 15.5 mm)
- Moderate Rainfall (15.6 - 64.4 mm)
- Heavy Rainfall (64.5 - 115.5 mm)
- Very Heavy Rainfall (115.6 - 204.4 mm)
- Extremely Heavy Rainfall (≥ 204.5 mm)



**SUBDIVISIONWISE RAINFALL FORECAST FOR DAY 1
(3-12-2023)**

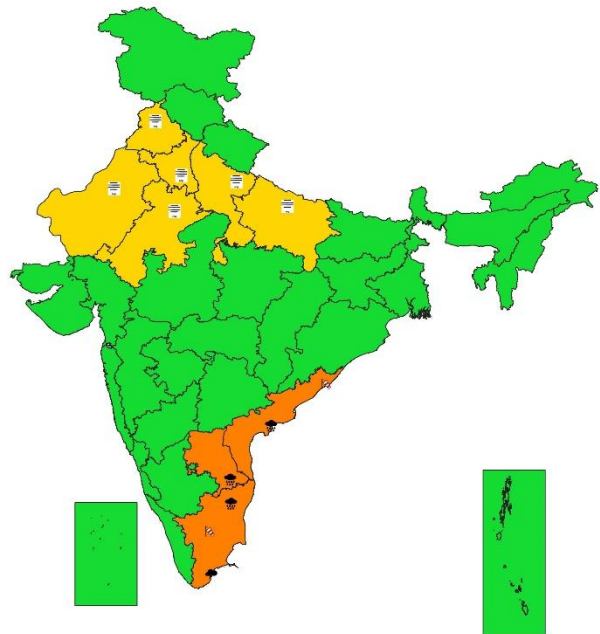


Legends

- DRY : No station reported rainfall ≥ 0.1 mm
- ISOLATED : No. of raingauge stations reported rainfall ≥ 0.1 mm is 1-25% of total no. of reporting stations on the day
- SCATTERED : No. of raingauge stations reported rainfall ≥ 0.1 mm is 26-50% of total no. of reporting stations on the day
- FAIRLY WIDE SPREAD : No. of raingauge stations reported rainfall ≥ 0.1 mm is 51-75% of total no. of reporting stations on the day
- WIDE SPREAD : No. of raingauge stations reported rainfall ≥ 0.1 mm is 75-100% of total no. of reporting stations on the day



**SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
(3-12-2023)**



Subdivision Warning

- ☁ Heavy Rain
- ❄ Heavy Snow
- ⚡ Thunderstorms & Lightning
- 🌪 Hailstorm

Dust Storm

- 🌪 Strong Surface Winds
- 🔥 Heat Wave
- ❄ Cold wave
- 🌫 Fog

Subdivision color

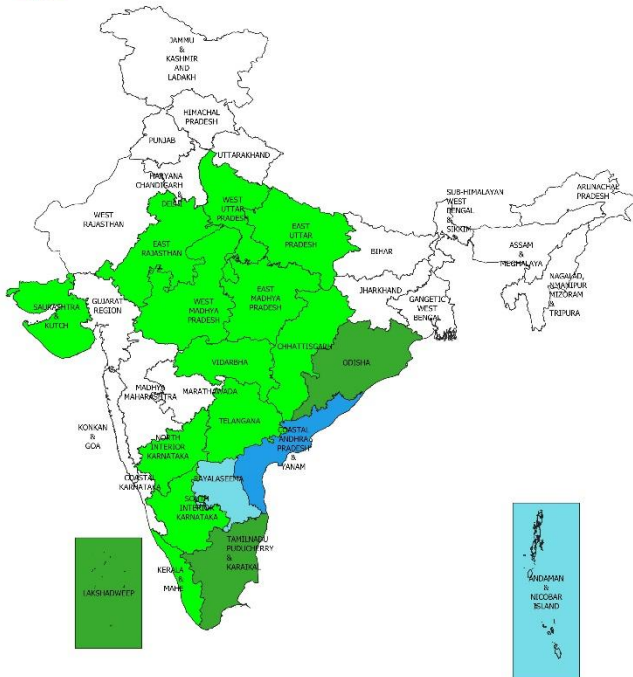
- NO WARNING
- WATCH(BE UPDATED)
- ALERT (BE PREPARED)
- WARNING (TAKE ACTION)

03 December (Day 1):

- ❖ **Heavy to very heavy rainfall** at a few places very likely over Tamil Nadu, south Coastal Andhra Pradesh and Rayalaseema;
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Dense Fog** very likely in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh and Rajasthan.
- ❖ **Gale Wind speed reaching 70-80 kmph gusting to 90 kmph** over Southwest & Westcentral Bay of Bengal along & off north Tamil Nadu, Puducherry, south Andhra coasts. Fishermen are advised not to venture into these areas.



SUBDIVISIONWISE RAINFALL FORECAST FOR DAY 2 (4-12-2023)

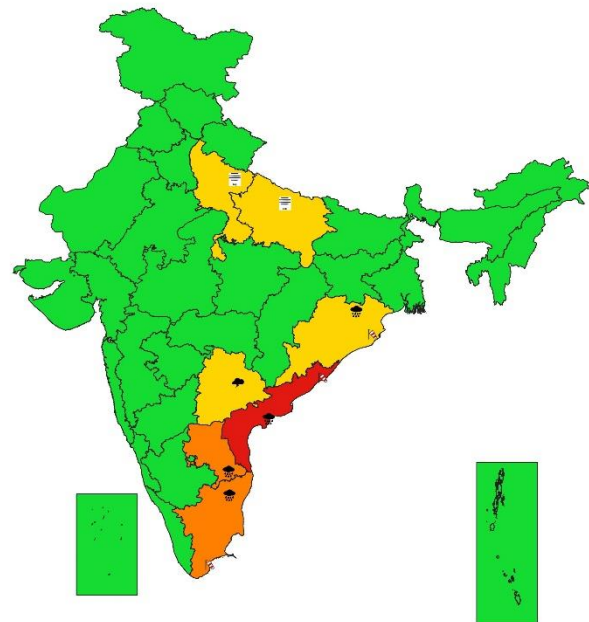


Legends

- DRY : No station reported rainfall ≥ 0.1 mm
- ISOLATED : No. of rain gauge stations reported rainfall ≥ 0.1 mm is 1-25% of total no. of reporting stations on the day
- SCATTERED : No. of rain gauge stations reported rainfall ≥ 0.1 mm is 26-50% of total no. of reporting stations on the day
- FAIRLY WIDE SPREAD : No. of rain gauge stations reported rainfall ≥ 0.1 mm is 51-75% of total no. of reporting stations on the day
- WIDE SPREAD : No. of rain gauge stations reported rainfall ≥ 0.1 mm is 75-100% of total no. of reporting stations on the day



SUBDIVISIONWISE WEATHER WARNING FOR DAY 2 (4-12-2023)



Subdivision Warning

- ☁ Heavy Rain
- ❄ Heavy Snow
- ⚡ Thunderstorms & Lightning
- 🌪 Hailstorm

Subdivision color

- NO WARNING
- WATCH (BE UPDATED)
- ALERT (BE PREPARED)
- WARNING (TAKE ACTION)

04 December (Day 2):

- ❖ **Heavy to very heavy rainfall** at a few places with **isolated extremely heavy rainfall** very likely over Coastal Andhra Pradesh; **Heavy to very heavy rainfall** at isolated places over Tamil Nadu and Rayalaseema; **Heavy rainfall** at isolated places over Odisha.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over Telangana and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Dense Fog** very likely in isolated pockets over Uttar Pradesh.
- ❖ **Gale Wind speed reaching 80-90 kmph gusting to 100 kmph** is very likely over Westcentral Bay of Bengal & along & off south Andhra Pradesh coast; **Gale Wind speed reaching 70-80 kmph gusting to 90 kmph** over Southwest & Westcentral Bay of Bengal along & off north Tamil Nadu, Puducherry; **Squally weather with wind speed reaching 35-45 kmph gusting to 55 kmph** over along & off Odisha coast. Fishermen are advised not to venture into these areas.

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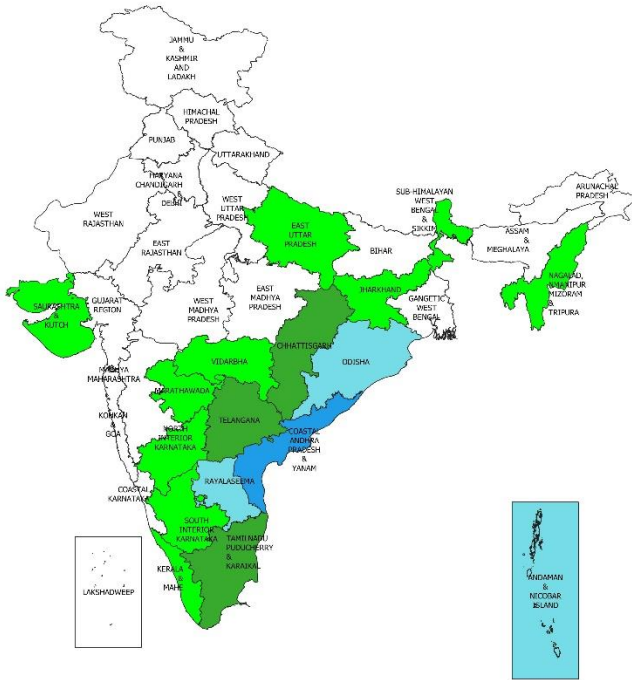
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**SUBDIVISIONWISE RAINFALL FORECAST FOR DAY 3
(5-12-2023)**

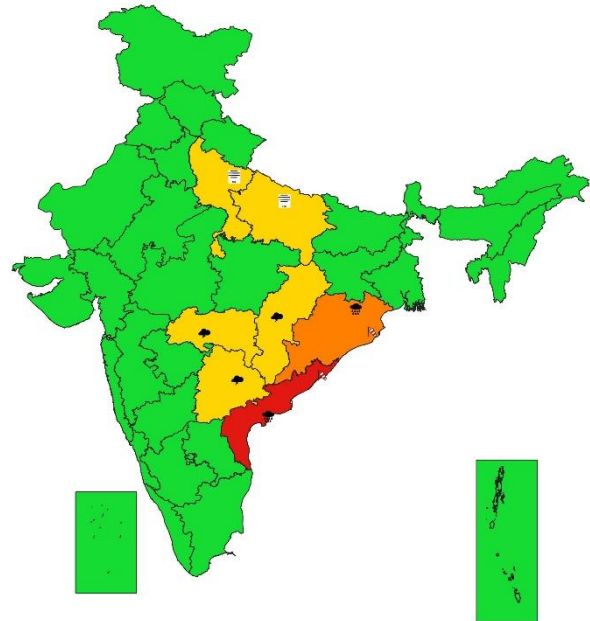


Legends

□ DRY : No station reported rainfall ≥ 0.1 mm
 ■ ISOLATED : No. of raingauge stations reported rainfall ≥ 0.1 mm is 1-25% of total no. of reporting stations on the day
 ■ SCATTERED : No. of raingauge stations reported rainfall ≥ 0.1 mm is 26-50% of total no. of reporting stations on the day
 ■ FAIRLY WIDE SPREAD : No. of raingauge stations reported rainfall ≥ 0.1 mm is 51-75% of total no. of reporting stations on the day
 ■ WIDE SPREAD : No. of raingauge stations reported rainfall ≥ 0.1 mm is 75-100% of total no. of reporting stations on the day



**SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
(5-12-2023)**



Subdivision Warning

☁ Heavy Rain
 ❄ Heavy Snow
 ⚡ Thunderstorms & Lightning
 🌪 Hailstorm

Dust Storm

🌪 Strong Surface Winds
 🌡 Heat Wave
 🌬 Cold wave
 🌫 Fog

Subdivision color

■ NO WARNING
 ■ WATCH (BE UPDATED)
 ■ ALERT (BE PREPARED)
 ■ WARNING (TAKE ACTION)

05 December (Day 3):

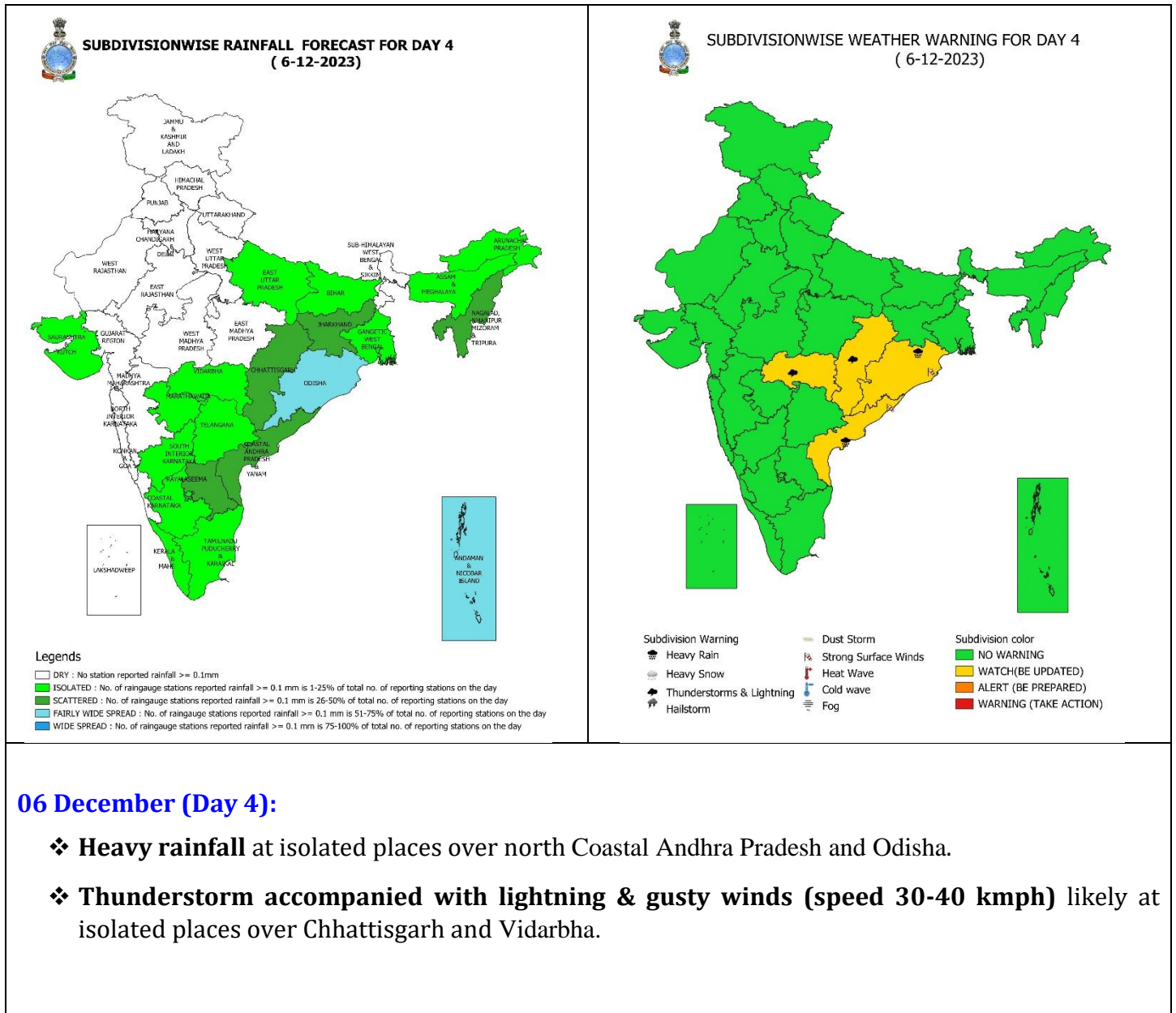
- ❖ **Heavy to very heavy rainfall** at a few places **with isolated extremely heavy rainfall** very likely over Coastal Andhra Pradesh; **Heavy to very heavy rainfall** at isolated places over Odisha.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Telangana and **with lightning** at isolated places over Vidarbha and Chhattisgarh.
- ❖ **Dense Fog** very likely in isolated pockets over Uttar Pradesh.
- ❖ **Gale Wind speed reaching 80-90 kmph gusting to 100 kmph** is likely over Westcentral Bay of Bengal & along & off south Andhra Pradesh coast; **Squally weather with wind speed reaching 40-50 kmph gusting to 60 kmph** over along & off south Odisha coasts. Fishermen are advised not to venture into these areas.

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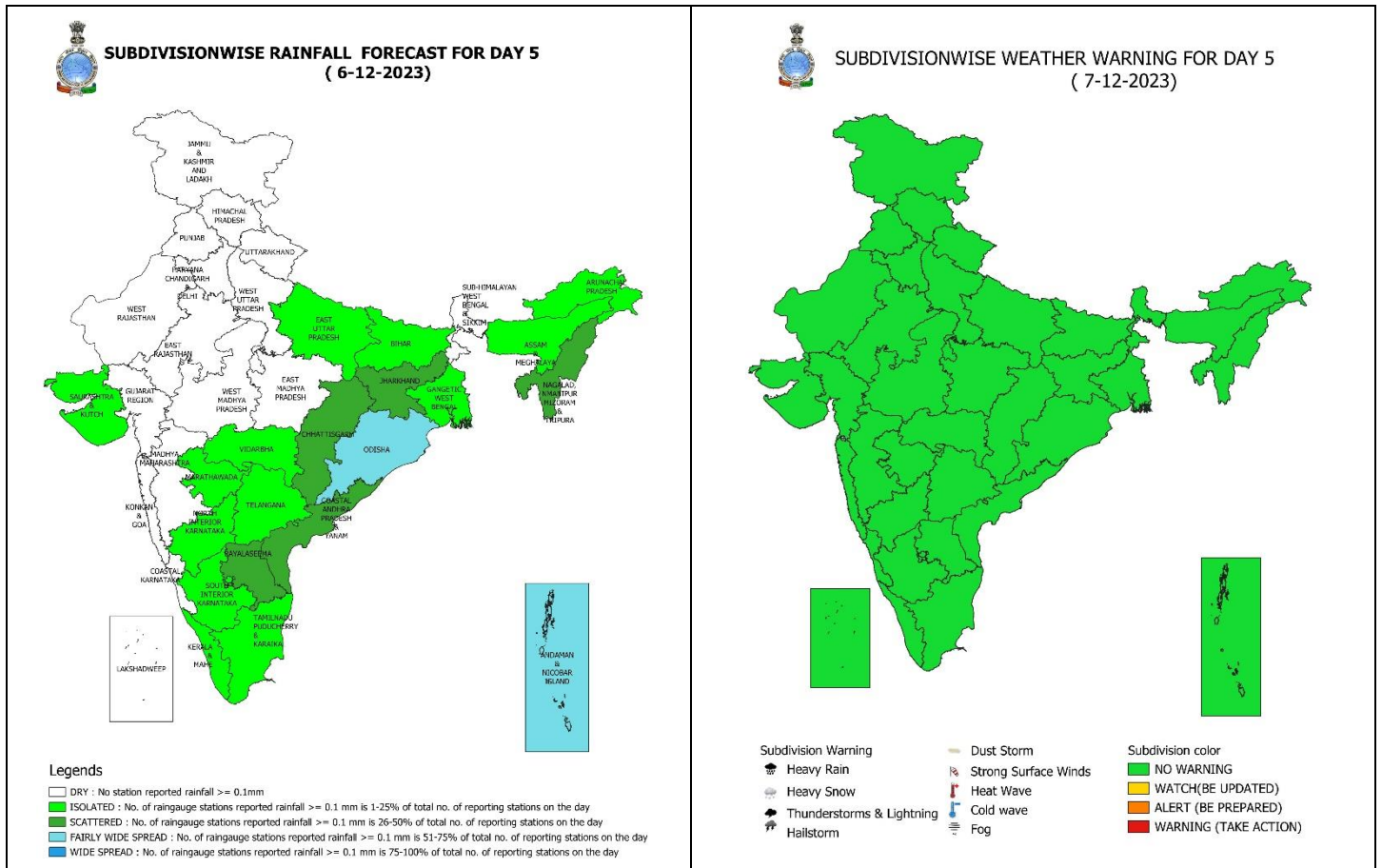
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06 December (Day 4):

- ❖ **Heavy rainfall** at isolated places over north Coastal Andhra Pradesh and Odisha.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Chhattisgarh and Vidarbha.

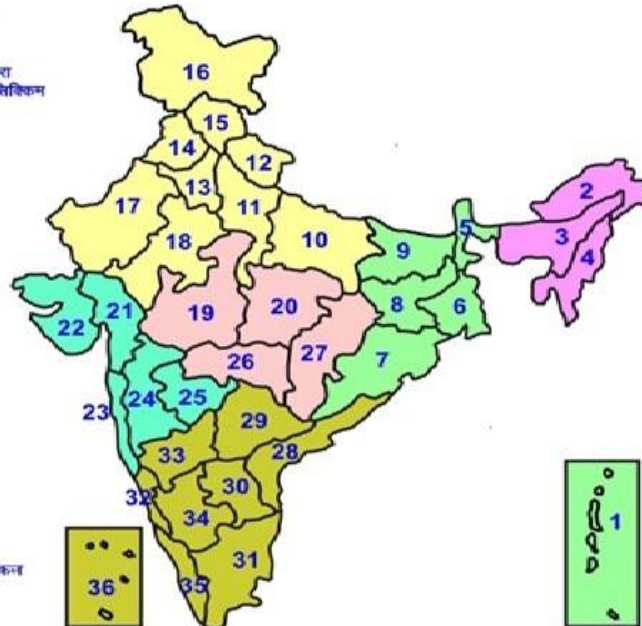


07 December (Day 5):

❖ **No warnings**

LEGENDS

- 1 अंडमान और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीजोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम बंगाल
- 7 ओडिशा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा चंडीगढ़ एवं दिल्ली
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू एवं कश्मीर एवं लद्दाख
- 17 पश्चिम राजस्थान
- 18 पूर्वी राजस्थान
- 19 पश्चिम मध्य प्रदेश
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात
- 22 सौराष्ट्र
- 23 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 महाराष्ट्र
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 तटीय आंध्र प्रदेश एवं यनम
- 29 तेलंगाना
- 30 चण्डीगढ़
- 31 तमिलनाडु, पुदुचेरी एवं कराईकल
- 32 तटिय कर्नाटक
- 33 आंतरिक उत्तरी कर्नाटक
- 34 आंतरिक दक्षिणी कर्नाटक
- 35 केरल एवं माहे
- 36 लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Odisha
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chd & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathawada
26. Vidharbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. Lakshadweep

SPATIAL DISTRIBUTION (% of Stations reporting)

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)

WARNING

WARNING (TAKE ACTION)
ALERT (BE PREPARED)
WATCH (BE UPDATED)
NO WARNING (NO ACTION)

Probabilistic Forecast

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



Heavy Rain



Heavy Snow



Thunderstorm



Dust Storm



Strong Winds



Visibility



Cyclone



Squall/ Hail



Frost



Cold Wave



Heat Wave



Sea State

* Red colour warning does not mean "Red Alert" Red colour warning means "Take Action".

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LEGENDS

WARNING

WARNING (TAKE ACTION)
ALERT (BE PREPARED)
WATCH (BE UPDATED)
NO WARNING (NO ACTION)

Probabilistic Forecast

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



Rain/ Snow *

Heavy: 64.5 to 115.5 mm/cm *
Very Heavy: 115.6 to 204.4 mm/cm*
Extremely Heavy: > 204.4 mm/cm *



Heat Wave

When maximum temperature of a station reaches $\geq 40^{\circ}\text{C}$ for plains and $\geq 30^{\circ}\text{C}$ for hilly regions

(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal 4.5°C to 6.4°C .

Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^{\circ}\text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature $\geq 45^{\circ}\text{C}$.

Severe Heat Wave: When actual maximum temperature $\geq 47^{\circ}\text{C}$

(c). Criteria for heat wave for coastal stations

When maximum temperature departure is $> 4.5^{\circ}\text{C}$ from normal. Heat Wave may be described provided maximum temperature $\geq 37^{\circ}\text{C}$



Warm Night

When maximum temperature remains 40°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°C .

Severe Warm Night: When minimum temperature departure $> 6.4^{\circ}\text{C}$.



Cold Wave

When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions.

(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C .

Severe Cold Wave: Minimum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave: When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$

Severe Cold Wave: When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is $\leq -4.5^{\circ}\text{C}$ & actual Minimum Temperature is $\leq 15^{\circ}\text{C}$



Cold Day

When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions
Based on departure

Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C .

Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$



Fog

Phenomenon of small droplets suspended in air and the horizontal visibility $< 1\text{km}$

Moderate Fog: When the visibility between 500-200 metres

Dense Fog: when the visibility between 50- 200 metres

Very Dense Fog: when the visibility < 50 metres



Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)



Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.



Frost

Ice deposits on ground

Air temperature $\leq 4^{\circ}\text{C}$ (over Plains)



Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph

Severe: Wind speed 62-87 kmph

Very Severe: Wind speed > 87 kmph



Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre

High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre

Phenomenal: Wind speed > 117 kmph (> 63 knots) & Wave height > 14 metre



Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)

Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)

Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)

Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)

Super Cyclone Storm: Wind speed > 220 kmph (> 119 knots)

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