



Wednesday, December 20, 2023
Time of Issue: 2000 hours IST
(NIGHT)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems and Forecast & Warnings during next 5 days:

Weather Systems:

- The Cyclonic Circulation over Lakshadweep lies over southeast Arabian Sea in lower tropospheric levels.
- A Western Disturbance as a trough in middle tropospheric westerlies runs roughly along Long. 50°E to the north of Lat. 25°N.

Forecast & Warnings:

- Light to moderate rainfall at isolated places accompanied with isolated thunderstorm, lightning very likely over south Tamil Nadu, Kerala & Mahe and Lakshadweep on 21th December and decrease significantly thereafter.
- Isolated light rainfall/snowfall likely over Jammu-Kashmir-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh during 22nd-24th and over north Punjab, north Haryana and Uttarakhand on 23rd December.
- No significant weather likely over remaining parts of the country during next 5 days.

Dense fog warning:

- **Dense fog** in isolated pockets very likely over Punjab, Haryana, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura in the morning hours during next 4 days.

Minimum Temperatures Forecast:

- No significant change in Minimum Temperatures likely over Northwest, Central and East India during next 2 days and rise by 2-3°C thereafter.



Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of today): **at many places** over Lakshadweep and **at isolated places** over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Significant rainfall recorded** (from 0830 hours IST to 1730 hours IST of today) (in cm): **Lakshadweep:** Minicoy-4, Aminidivi-3.
- ❖ **Fog Observed (at 1730 hours IST of today):** **Moderate fog** (visibility between 200-500 meters) in isolated pockets of Assam; **Shallow fog** (visibility 500-1000 meters) in isolated pockets of Punjab.
- ❖ **Visibility Recorded (at 1730 hours IST of today) (≤ 500 meters):** **Assam:** Silchar-200; **Punjab:** Patiala-500.
- ❖ **Cold wave** observed in isolated pockets over Punjab.
- ❖ **Minimum Temperature Departures (as on 20-12-2023):** Minimum temperatures are **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Gujarat state; **above normal (1.6°C to 3.0°C)** at most places over Coastal & South Interior Karnataka; at many places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe; at a few places over Sub-Himalayan West Bengal & Sikkim; at isolated places over Rayalaseema. They are **below normal (-1.6°C to -3.0°C)** at many places over Odisha, at a few places over Chhattisgarh, Himachal Pradesh and Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; at isolated places over Madhya Pradesh, Rajasthan state, Vidarbha and **near normal** over rest parts of the country. Today, **the lowest minimum temperature** of 3.0°C is reported at **Sikar (East Rajasthan)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 20-12-2023):** Maximum temperatures are **appreciably above normal (3.1°C to 5.0°C)** at a few places over Himachal Pradesh; **above normal (1.6°C to 3.0°C)** at many places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; at isolated place over Sub-Himalayan West Bengal & Sikkim and Kerala & Mahe. They are **appreciably below normal (-3.1°C to -5.0°C)** at a few places over Saurashtra & Kutch; **below normal (-1.6°C to -3.0°C)** at many places over Gujarat Region; at isolated places over Konkan & Goa, Madhya Maharashtra, West Madhya Pradesh, Rajasthan, Chhattisgarh, Telangana, Gangetic West Bengal and **near normal** over rest parts of the country. Today, **the highest maximum temperature** of 36.4°C is reported at **Kannur (Kerala)**.



Meteorological Analysis (Based on 1730 hours IST)

- ❖ The **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 50°E to the north of Lat. 25°N.
- ❖ The **Cyclonic Circulation** over southeast Arabian Sea extending upto 3.1 km above mean sea level persists.

Weather Forecast for next 7 days (Upto 0830 hours IST of 27th December, 2023)

- ❖ Meteorological sub-division wise detailed 7 days rainfall forecast is given in Table-1.
- ❖ Shallow to moderate fog very likely in isolated pockets over Bihar and Odisha in the morning hours during next 2-3 days.
- ❖ No significant change in Minimum Temperatures likely over Northwest, Central and East India during next 2 days and rise by 2-3°C thereafter.
- ❖ No significant change in Minimum Temperatures likely over rest parts of the country during next 4-5 days.

Weather Outlook for subsequent 2 days

- ❖ **Fairly widespread to widespread** light to moderate rainfall likely over Andaman & Nicobar Islands. **Isolated** light rainfall likely over Tamil Nadu, Puducherry & Karaikal.
- ❖ Mainly dry weather likely to prevail over rest parts of the country.



Table-1

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

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".
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day
For more details kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599
(Service to the Nation since 1875)



Fig. 1: Maximum Temperatures

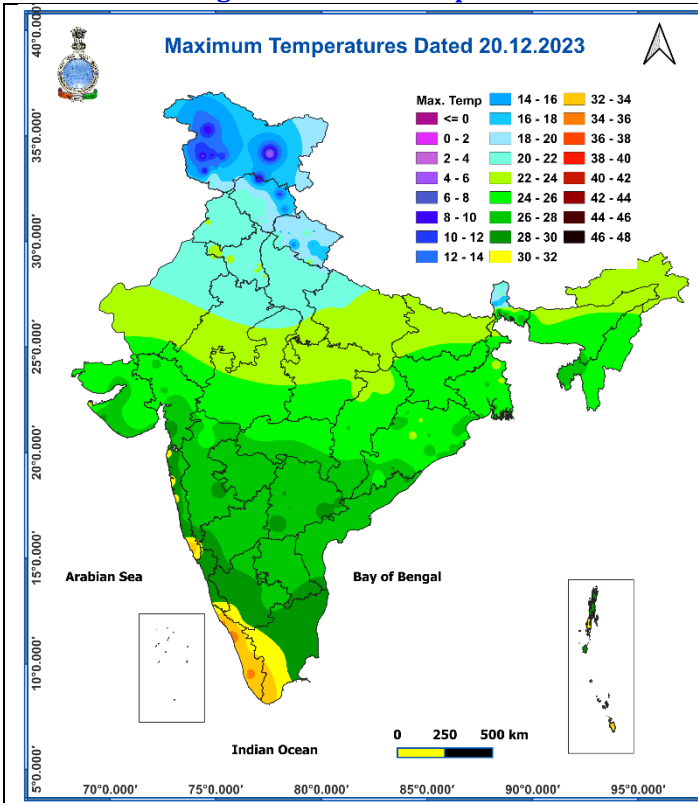


Fig. 2: Departure of Maximum Temperatures

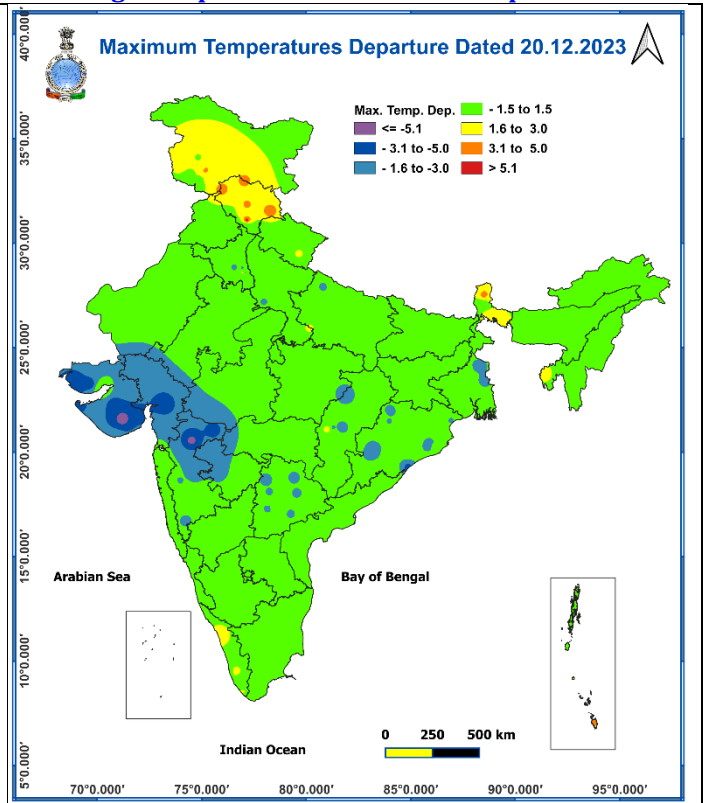


Fig. 3: Minimum Temperatures

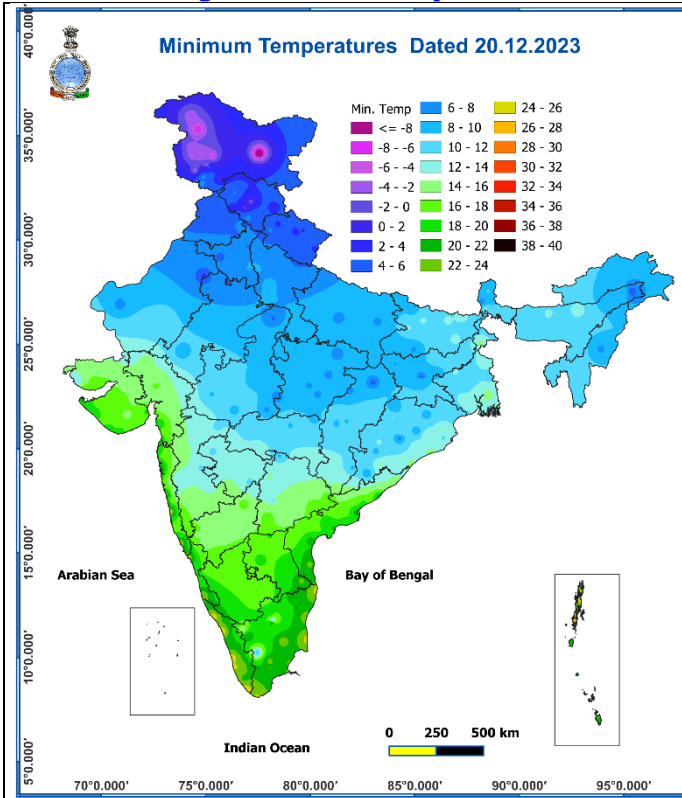


Fig. 4: Departure of Minimum Temperatures

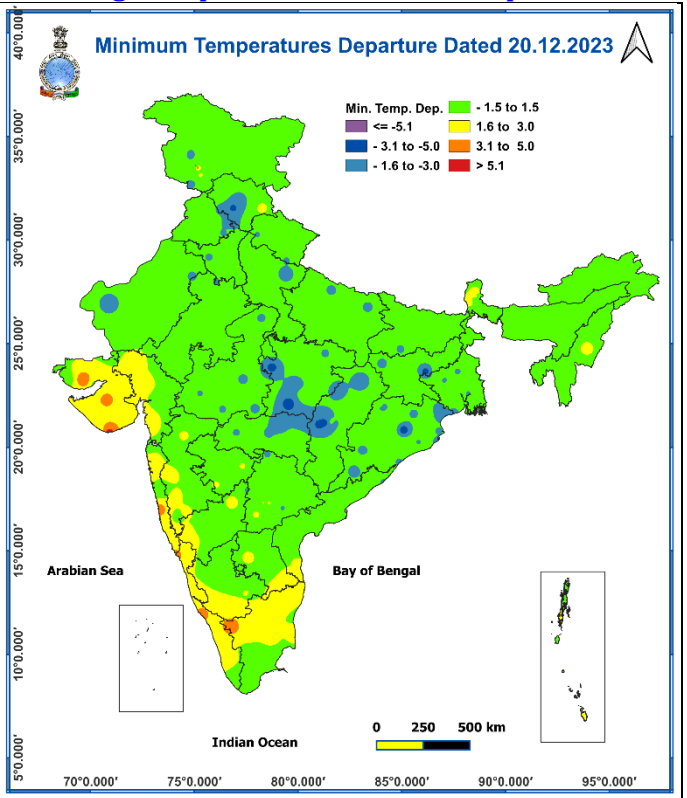
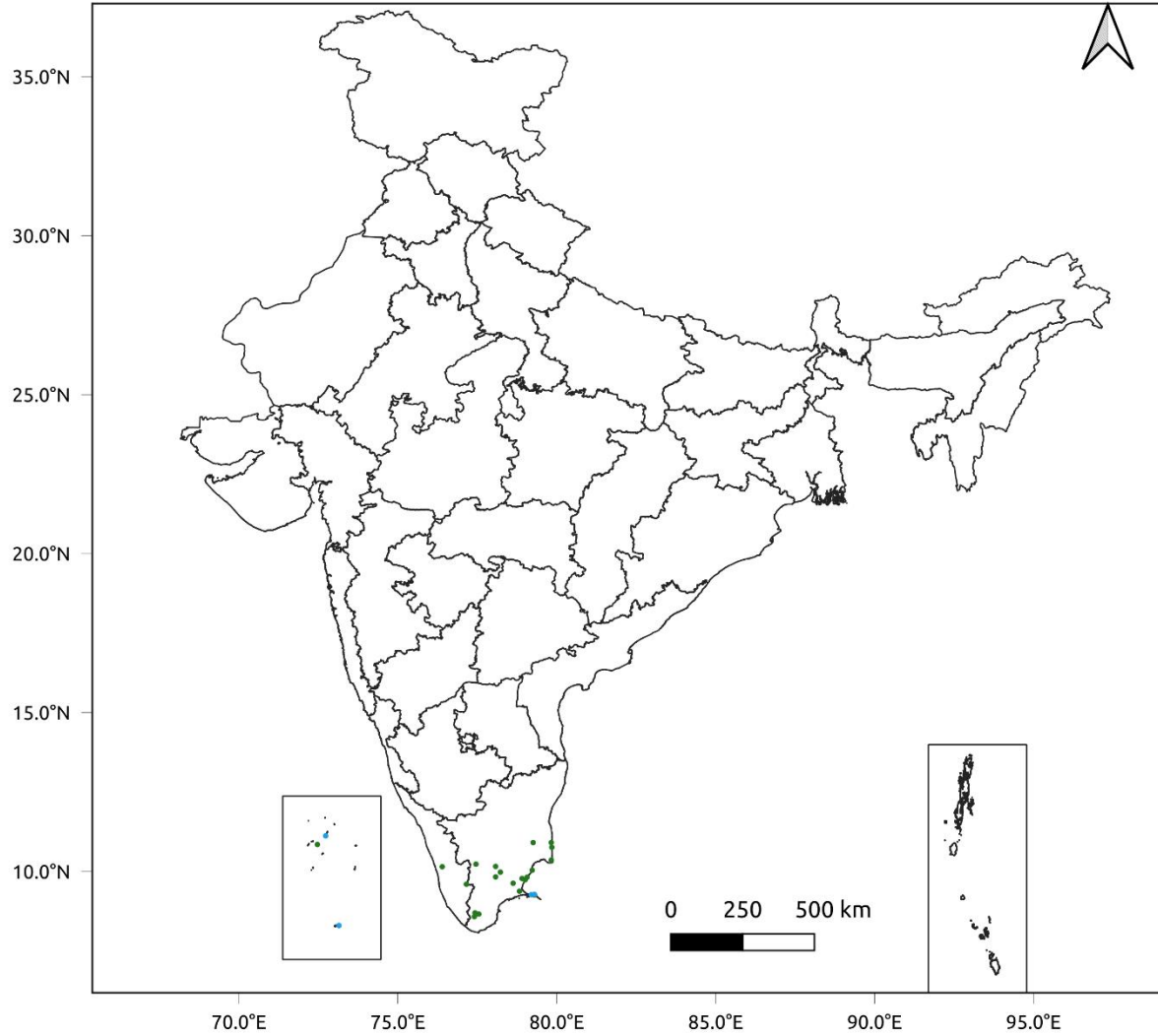


Fig. 5: Accumulated Rainfall (mm) during past 24 hours

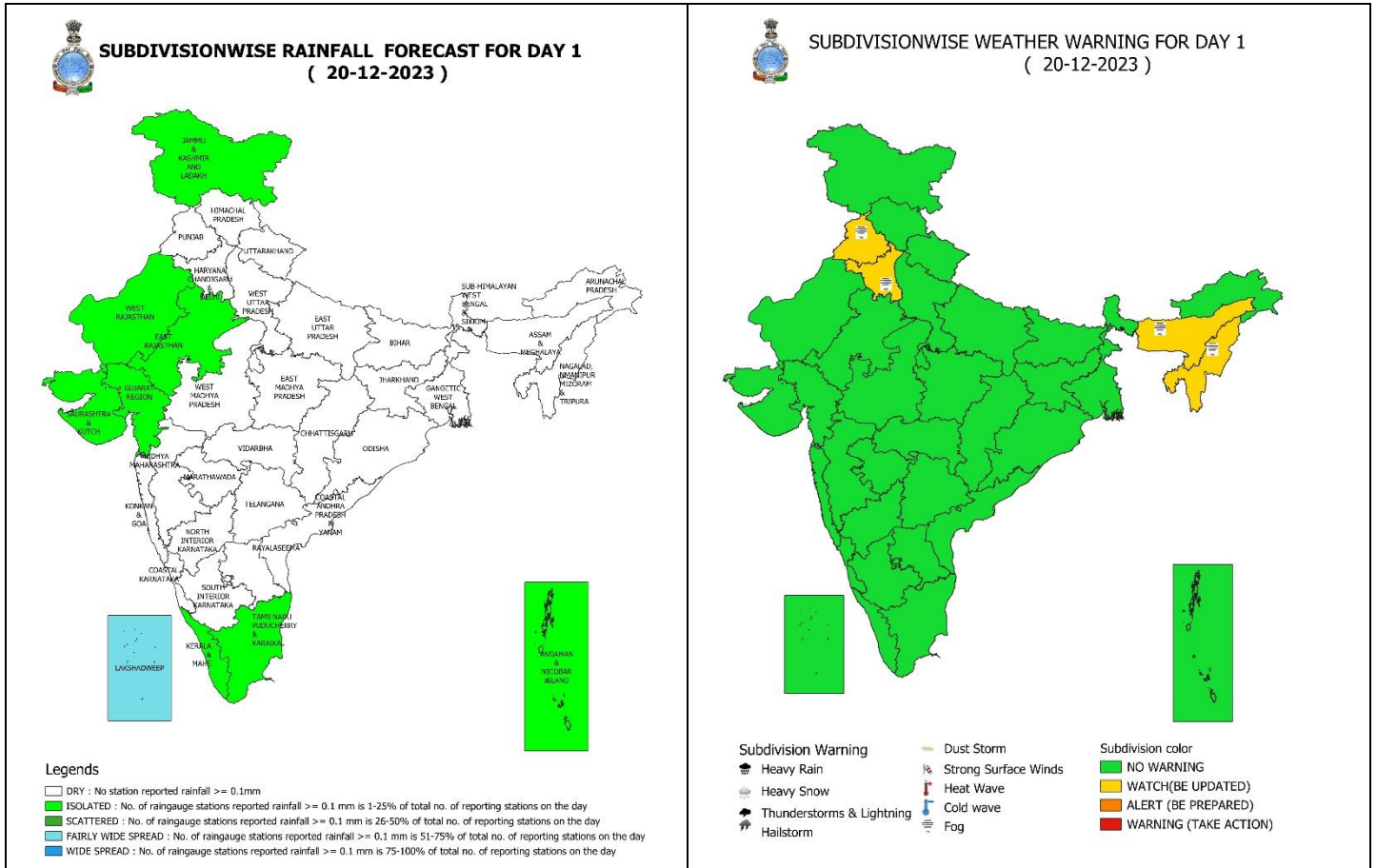


24 Hr cumulative rainfall recorded over different stations during 0830 IST of 19-12-2023 to 0830 IST of 20-12-2023



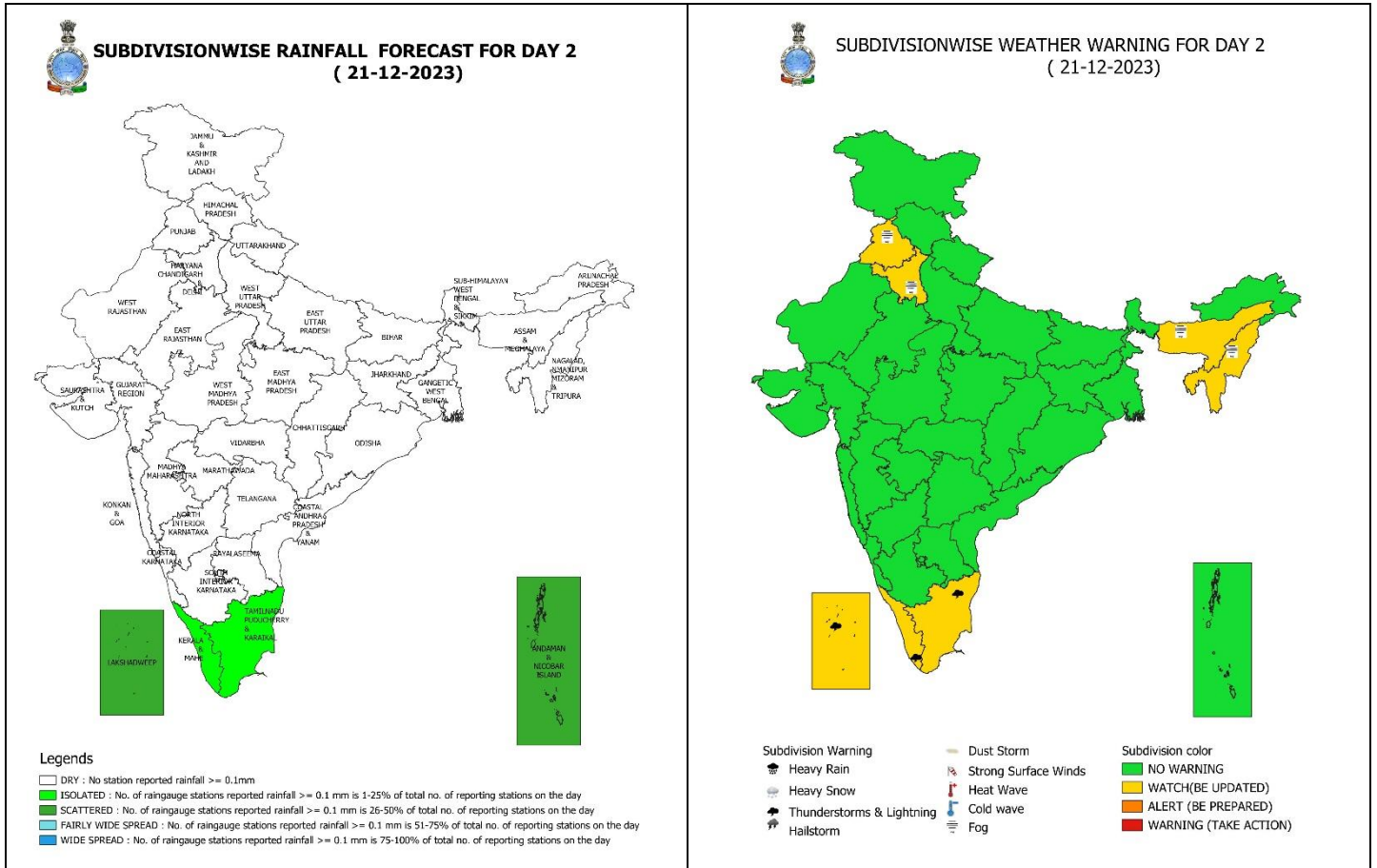
Legends

- 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)



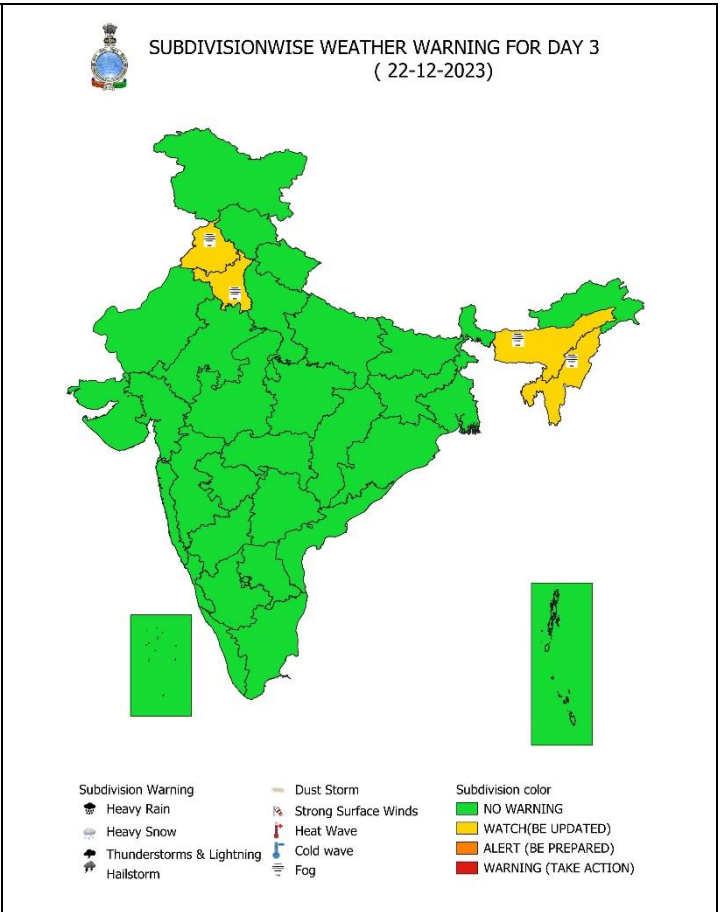
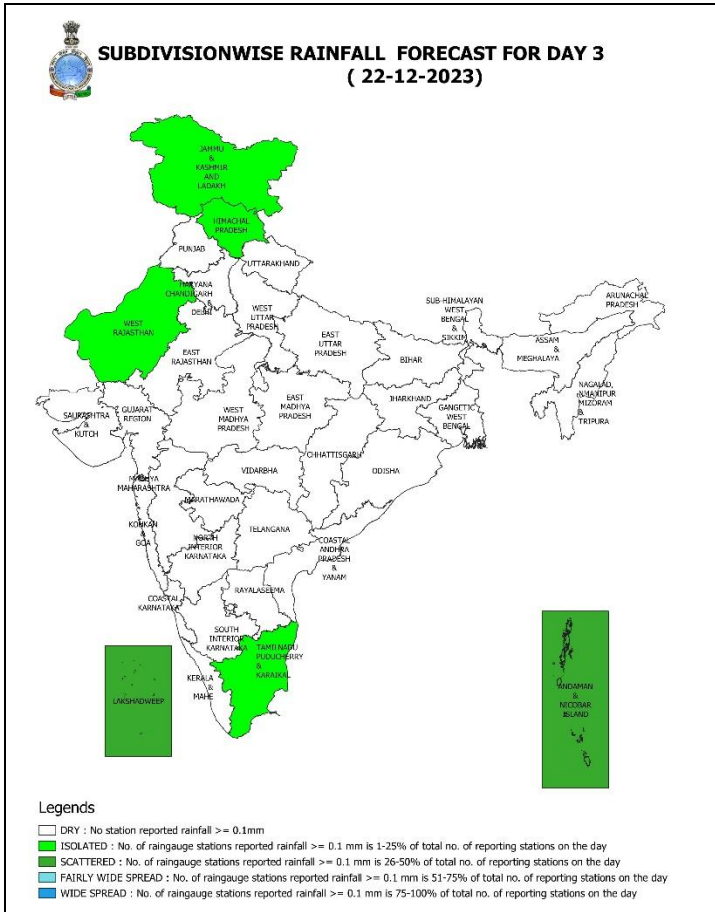
20 December (Day 1):

- ❖ **Dense Fog** very likely in isolated pockets over Punjab, Haryana, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather** with wind speed 40-45 kmph gusting to 55 kmph very likely to prevailing over Gulf of Mannar and Comorin area. Fishermen are advised not to venture into these areas.



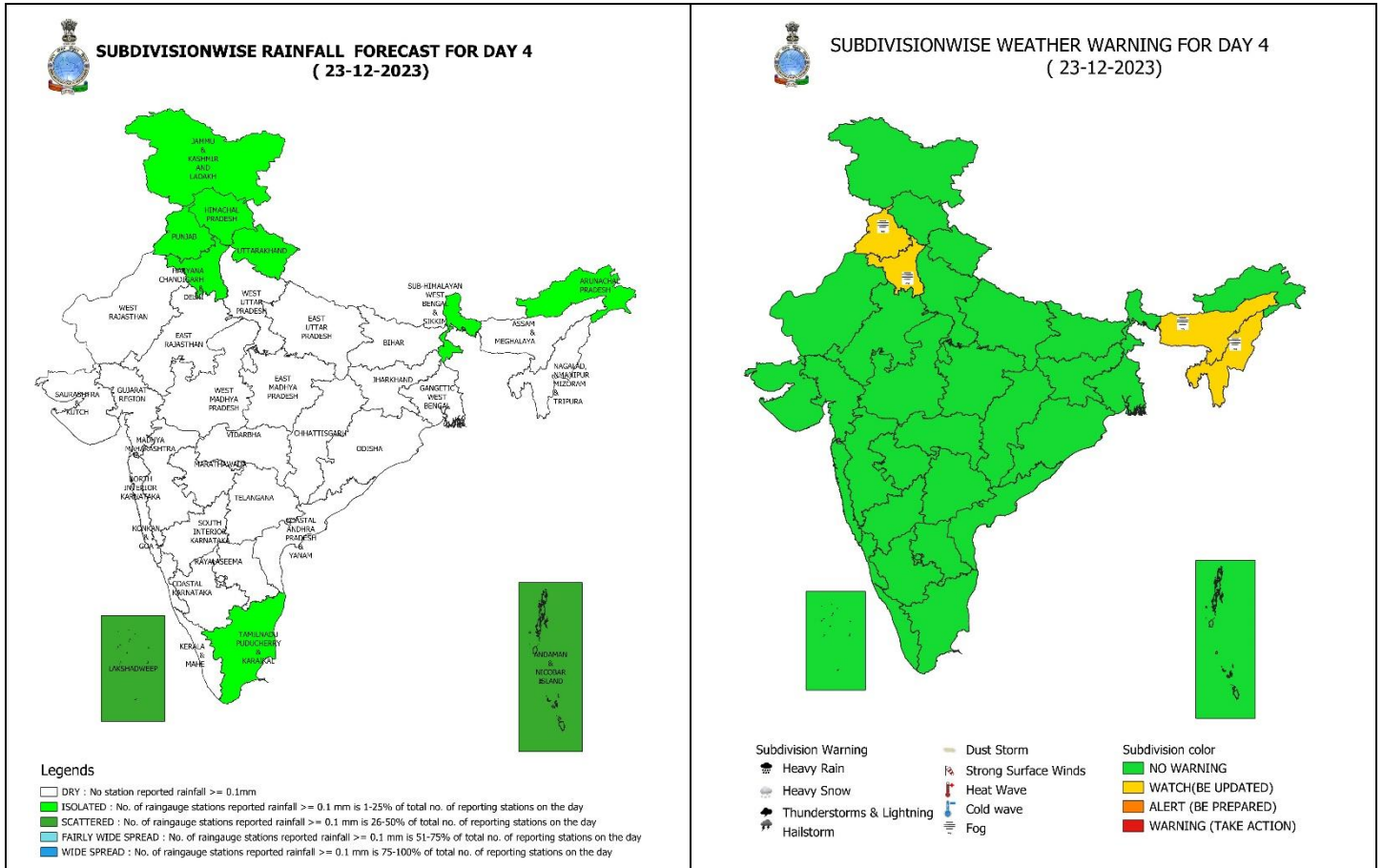
21 December (Day 2):

- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and Lakshadweep.
- ❖ **Dense Fog** very likely in isolated pockets over Punjab, Haryana, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather** with wind speed 40-45 kmph gusting to 55 kmph very likely to prevailing over Comorin area. Fishermen are advised not to venture into these areas.



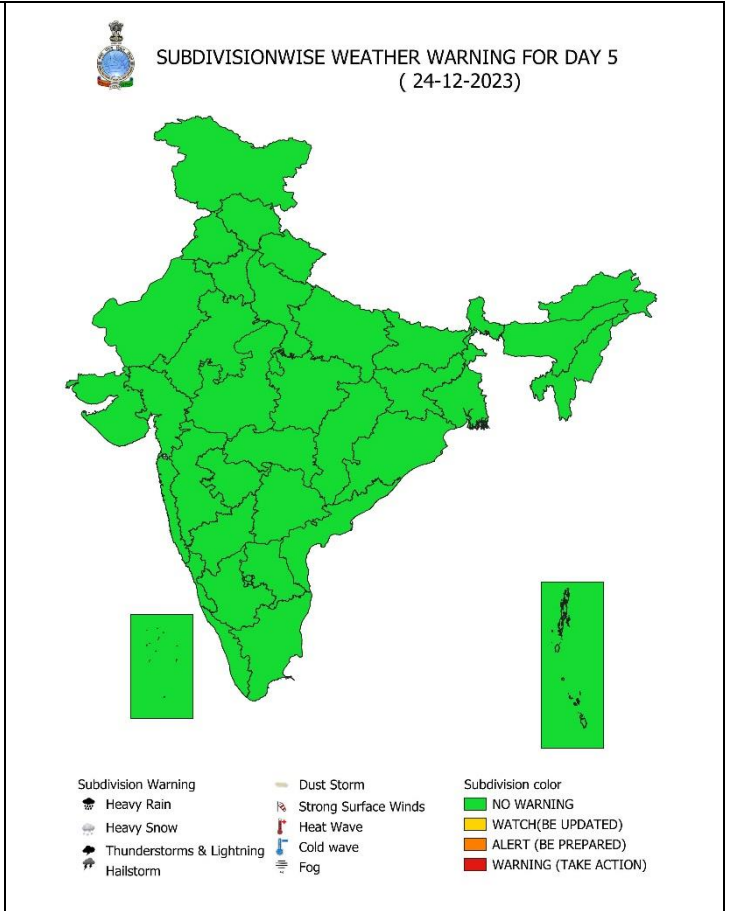
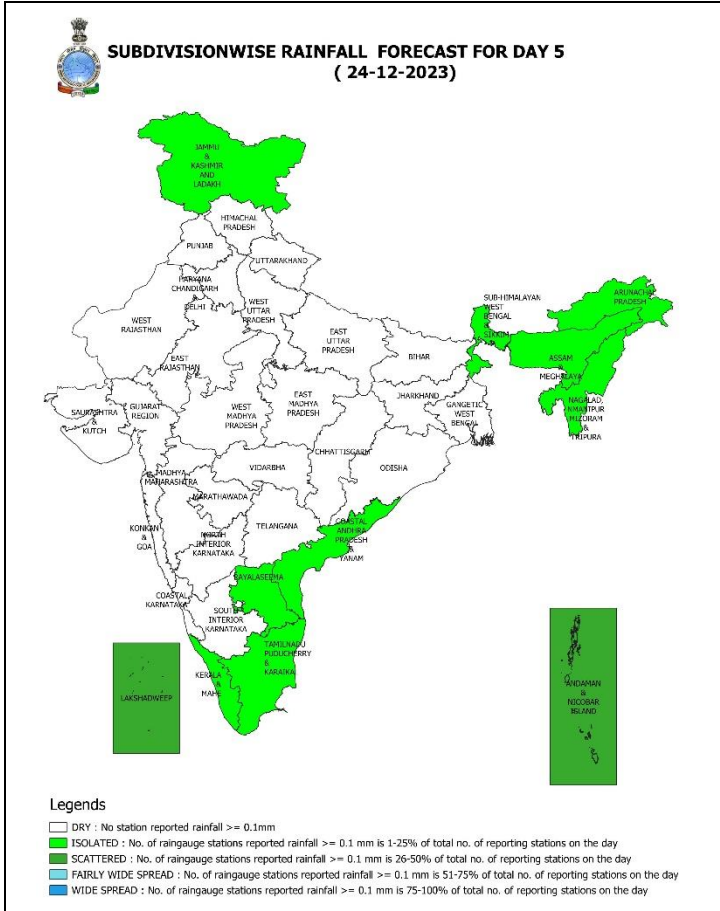
22 December (Day 3):

❖ **Dense Fog** very likely in isolated pockets over Punjab, Haryana, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.



23 December (Day 4):

❖ **Dense Fog** likely in isolated pockets over Punjab, Haryana, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

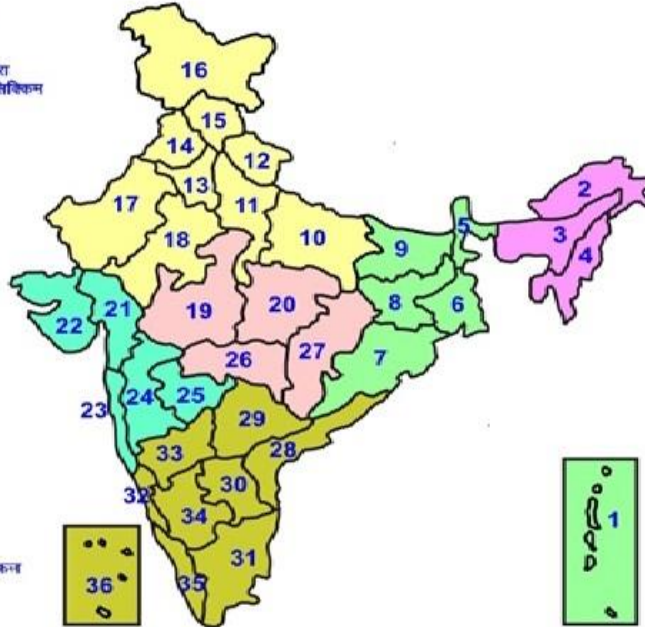


24 December (Day 5):

❖ **No Warning.**

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 उत्तरीसगढ़
- 28 तटीय आंध्र प्रदेश एवं यनम
- 29 तेलंगाना
- 30 राजलक्ष्मी
- 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

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)