



Monday, April 17, 2023

MORNING

Time of Issue: 0800 hours IST

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features

#### Significant Meteorological features:

- ❖ A Western Disturbance as a trough in middle tropospheric westerlies runs roughly along Long. 60°E to the north of Lat. 28°N.
- ❖ A cyclonic circulation lies over north Pakistan & adjoining Punjab in lower tropospheric levels.
- ❖ A trough/wind discontinuity runs from south Madhya Maharashtra to Tamil Nadu in lower tropospheric levels.

#### Maximum Temperatures and Heat Wave observed:

- ❖ Yesterday's, Maximum Temperatures were in the range of 40-42°C over some/many parts of plains of Northwest India, Central and East India and 35-40°C over many parts of rest of the country except over Western Himalayan Region (22-25°C) & Islands (30-34°C). Maximum Temperatures were above normal by 3-5°C over many parts of East & Northeast India.
- ❖ **Heat Wave conditions** are prevailing in isolated pockets over Gangetic West Bengal since last 6 days; Coastal Andhra Pradesh since last 4 days and Bihar since last 2 days.

#### Maximum Temperatures Forecast and Heat Wave Warnings:

##### Northwest India:

- ❖ No significant change in Maximum Temperatures very likely during next 24 hours and gradual fall by 2-4°C during subsequent 3 days.
- ❖ Heat wave conditions are very likely in isolated pockets over Punjab and Haryana on 17th April and abate thereafter.

##### East India:

- ❖ No significant change in Maximum Temperatures very likely during next 5 days.
- ❖ Heat wave conditions are very likely in isolated/some pockets over Gangetic West Bengal and Bihar during next 5 days and over Sub-Himalayan West Bengal & Sikkim during next 2 days.

##### Central India:

- ❖ Rise in Maximum Temperatures by 2-3°C very likely during next 2 days and fall by about 2°C during subsequent 2 days.
- ❖ Heat wave conditions very likely in isolated pockets over West Madhya Pradesh on 17th & 18th April.

##### South Peninsular India:

- ❖ Rise in Maximum Temperatures by about 2°C very likely over Andhra Pradesh and Telangana during next 5 days.
- ❖ Heat wave conditions very likely in isolated pockets over Coastal Andhra Pradesh & Yanam during next 2 days.

##### West India:

- ❖ Rise in Maximum Temperatures over Maharashtra by 2-4°C during next 5 days.

#### Rainfall Forecast and Warnings:

##### Northwest India:

- ❖ Light/moderate scattered rainfall with thunderstorm/lightning very likely over Western Himalayan Region and adjoining plains during next 5 days.
- ❖ Heavy rainfall at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad on 18th; over Himachal Pradesh on 18th & 19th and over Uttarakhand on 19th April.
- ❖ Hailstorm over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad on 16th & 17th; over Himachal Pradesh during 16th to 18th and over Uttarakhand during 18th to 20th April.

##### West India:

- ❖ Light isolated rainfall with thunderstorm/lightning/gusty winds very likely over parts of Maharashtra next 5 days.

**No significant weather likely over rest parts of the country.**

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## Main Weather Observations

- ❖ **Rainfall/thundershowers observed** (from 0830 hours IST to 1730 hours IST of yesterday): **at isolated places** over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad and Madhya Maharashtra.
- ❖ **Significant rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): Nil.
- ❖ **Thunderstorm observed** (from 0830 hours IST of yesterday to 0530 hours IST of today): at isolated places over Madhya Maharashtra, Sub-Himalayan West Bengal & Sikkim, Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad and Haryana, Chandigarh & Delhi.
- ❖ **Hailstorm observed** (from 0830 hours IST of yesterday to 0530 hours IST of today): at isolated places over Madhya Maharashtra.
- ❖ **Yesterday Heat Wave conditions** were prevailing in some pockets over Gangetic West Bengal and in isolated pockets over Coastal Andhra Pradesh.
- ❖ **Minimum Temperature Departures (as on 16-04-2023):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over West Rajasthan, Chhattisgarh, Gangetic West Bengal and Arunachal Pradesh; **above normal (1.6°C to 3.0°C)** at many places over Punjab, Jharkhand and Assam & Meghalaya; at a few places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, East Uttar Pradesh, Nagaland, Manipur, Mizoram & Tripura and Odisha; at isolated places over Sub-Himalayan West Bengal & Sikkim and Andaman & Nicobar Islands. They were **appreciably below normal (-3.1°C to -5.0°C)** at a few places over Vidarbha; at isolated places over West Madhya Pradesh; **below normal (-1.6°C to -3.0°C)** at many places over Madhya Maharashtra; at a few places over East Madhya Pradesh, Marathwada and Tamil Nadu, Puducherry & Karaikal and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature of 16.1°C** was reported at **Pantnagar (Uttarakhand)** over plains of the country.
- ❖ **Maximum Temperature Departures (as on 16-04-2023):** Maximum temperatures were **markedly above normal (5.1°C or more)** at many places over Gangetic West Bengal, Assam & Meghalaya; at isolated places over Odisha; **appreciably above normal (3.1°C to 5.0°C)** at most places over Sub-Himalayan West Bengal & Sikkim, Punjab; at a few places over Bihar, East Uttar Pradesh, Haryana, Chandigarh & Delhi, Coastal Andhra Pradesh & Yanam; at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad; **above normal (1.6°C to 3.0°C)** at many places over Himachal Pradesh, Uttarakhand, Kerala & Mahe, Chhattisgarh; at a few places over Madhya Pradesh, Tamil Nadu, Puducherry & Karaikal; at isolated places over West Rajasthan; They were **below normal (-1.6°C to -3.0°C)** at isolated places over Madhya Maharashtra and **near normal** over rest parts of the country. Yesterday, **the highest maximum temperature of 43.4°C** was reported at **Sultanpur (East Uttar Pradesh)**.

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## Meteorological Analysis (Based on 0530 hours IST)

- ❖ The **Western Disturbance** as a trough in mid & upper tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 60°E to the north of Lat. 28°N.
- ❖ The **cyclonic circulation** over north Pakistan & adjoining Punjab extending upto 1.5 km above mean sea level persists.
- ❖ The **cyclonic circulation** over southwest Rajasthan & neighbourhood at 3.1 km above mean sea level persists.
- ❖ The **cyclonic circulation** over northwest Madhya Pradesh & neighbourhood extending upto 1.5 km above mean sea level persists.
- ❖ The **trough/wind discontinuity** from south Madhya Maharashtra to Tamil Nadu across Interior Karnataka at 0.9 km above mean sea level persists.

## Weather Forecast for next 5 days ( upto 0830 hours IST of 22<sup>nd</sup> April, 2023)

- ❖ Meteorological sub-division wise detailed 5 days rainfall forecast is given in Table-1.
- ❖ **Northwest India:** No significant change in Maximum Temperatures very likely during next 24 hours and fall by 2-4°C thereafter during subsequent 3 days.
- ❖ **Central India:** Maximum Temperatures are very likely to rise by 2-3°C during next 2 days and fall by about 2°C thereafter during subsequent 2-3 days.
- ❖ **Interior Maharashtra:** Maximum Temperatures are very likely to rise by 2-4°C during next 5 days.
- ❖ **South India:** Maximum Temperatures are very likely to rise by about 2°C over Telangana, Rayalaseema and Coastal Andhra Pradesh during next 5 days.
- ❖ **Rest parts of the country:** No significant change in Temperatures very likely during 5 days.

## Weather Outlook for subsequent 2 days ( during 22<sup>nd</sup> -24<sup>th</sup> April, 2023)

- ❖ Scattered to Fairly widespread light/moderate rainfall likely over Northeast India.
- ❖ Isolated to scattered light rainfall likely over parts of Western Himalayan region and Peninsular India.
- ❖ Dry weather likely over rest parts of India.

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## Weather Warning during next 5 days

**17 April (Day 1):** ♦ **Hailstorm with thunderstorm & lightning** very likely at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad and Himachal Pradesh.

♦ **Thunderstorm with lightning & gusty wind (30-40 kmph)** very likely at isolated places over West Rajasthan and **with lightning** at isolated places over Odisha, Marathwada, North Interior Karnataka and Kerala & Mahe.

♦ **Heat Wave conditions** very likely in some parts over Gangetic West Bengal and in isolated pockets over Sub-Himalayan West Bengal & Sikkim, Bihar, Punjab, Haryana, West Madhya Pradesh and Coastal Andhra Pradesh & Yanam.

**18 April (Day 2):** ♦ **Heavy rainfall/snowfall** very likely at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad and Himachal Pradesh.

♦ **Hailstorm with thunderstorm & lightning** very likely at isolated places over Himachal Pradesh and Uttarakhand.

♦ **Thunderstorm with lightning & gusty wind (40-50 kmph)** very likely at isolated places over Punjab, Haryana, Chandigarh & Delhi; **with lightning & gusty wind (30-40 kmph)** at isolated places over Rajasthan and Vidarbha and **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Konkan & Goa, Madhya Maharashtra, Marathwada, Kerala & Mahe.

♦ **Heat Wave conditions** very likely in some parts over Gangetic West Bengal and in isolated pockets over Sub-Himalayan West Bengal & Sikkim, Bihar and Coastal Andhra Pradesh & Yanam.

**19 April (Day 3):** ♦ **Heavy rainfall/snowfall** likely at isolated places over Himachal Pradesh and Uttarakhand.

♦ **Hailstorm with thunderstorm, lightning & gusty wind (30-40 kmph)** likely at isolated places over Uttarakhand.

♦ **Thunderstorm with lightning & gusty wind (40-50 kmph)** likely at isolated places over Punjab, Haryana, Chandigarh & Delhi; **with lightning & gusty wind (30-40 kmph)** over Rajasthan, Vidarbha, Chhattisgarh and **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Uttar Pradesh, Odisha, Konkan & Goa, Madhya Maharashtra, Marathwada and Kerala & Mahe.

♦ **Heat Wave conditions** likely in some parts over Gangetic West Bengal and in isolated pockets over Bihar.

**20 April (Day 4):** ♦ **Hailstorm with thunderstorm, lightning & gusty wind (30-40 kmph)** likely at isolated places over Uttarakhand.

♦ **Thunderstorm with lightning & gusty wind (40-50 kmph)** likely at isolated places over Punjab, Haryana, Chandigarh & Delhi; **with lightning & gusty wind (30-40 kmph)** likely at isolated places over Chhattisgarh and **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Maharashtra and Kerala & Mahe.

♦ **Heat Wave conditions** likely in isolated pockets over Gangetic West Bengal and Bihar.

**21 April (Day 5):** ♦ **Hailstorm with thunderstorm, lightning & gusty wind (30-40 kmph)** likely at isolated places over Uttarakhand.

♦ **Thunderstorm with lightning & gusty wind (40-50 kmph)** likely at isolated places over Punjab, Haryana, Chandigarh & Delhi; **with lightning & gusty wind (30-40 kmph)** likely at isolated places over Chhattisgarh and **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Maharashtra and Kerala & Mahe.

♦ **Heat Wave conditions** likely in isolated pockets over Gangetic West Bengal and Bihar.

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Table-1

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

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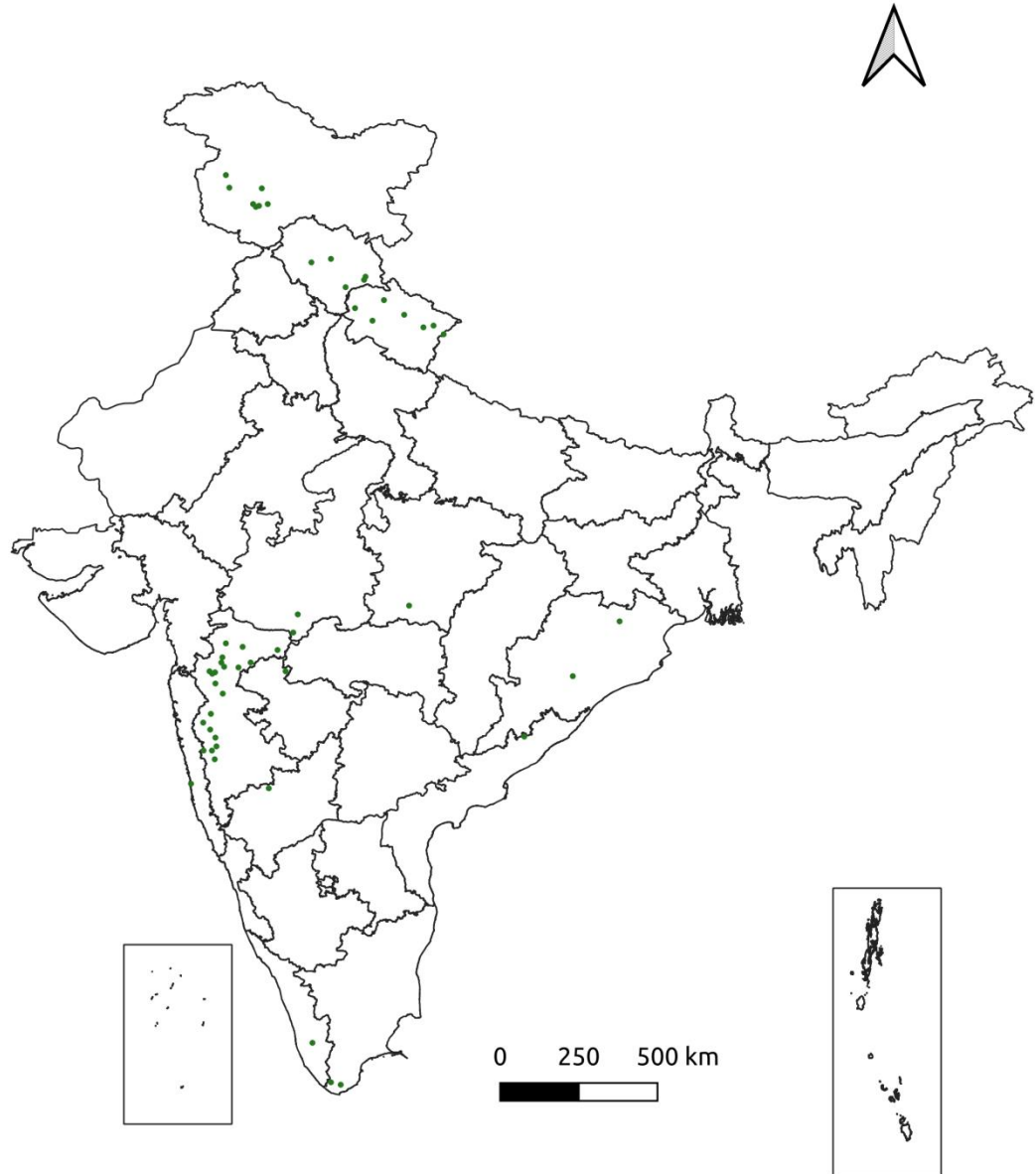
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**Fig. 1: Accumulated Rainfall (mm) during past 24 hours**



24 Hr cumulative rainfall recorded over different stations during 0830 IST of 15-4-2023 to 0830 IST of 16-4-2023



## 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 ( $\geq 204.5$  mm)

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Fig. 2: Maximum Temperatures Dated 16.04.2023

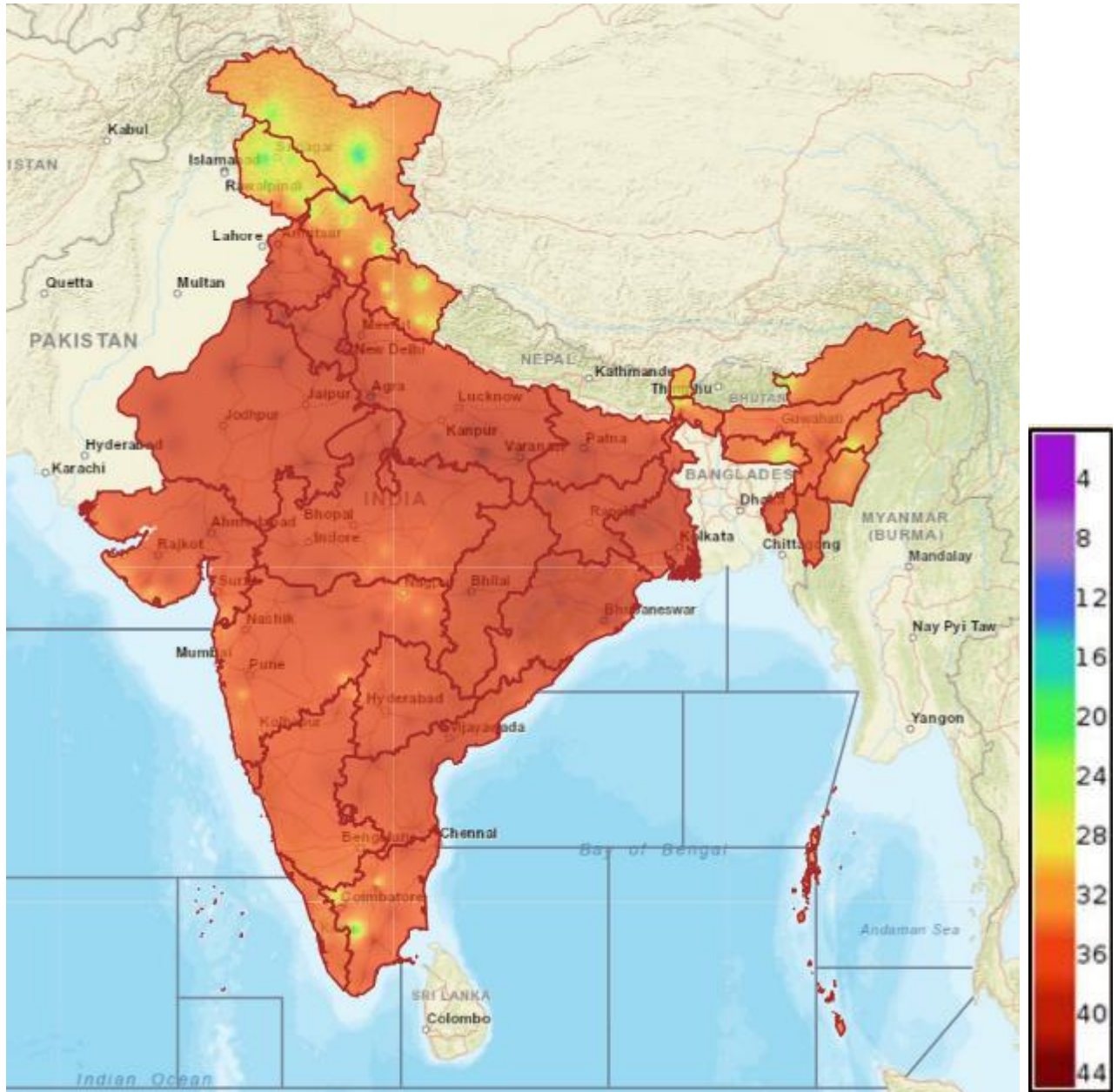


Fig. 3: Minimum Temperatures Dated 16.04.2023

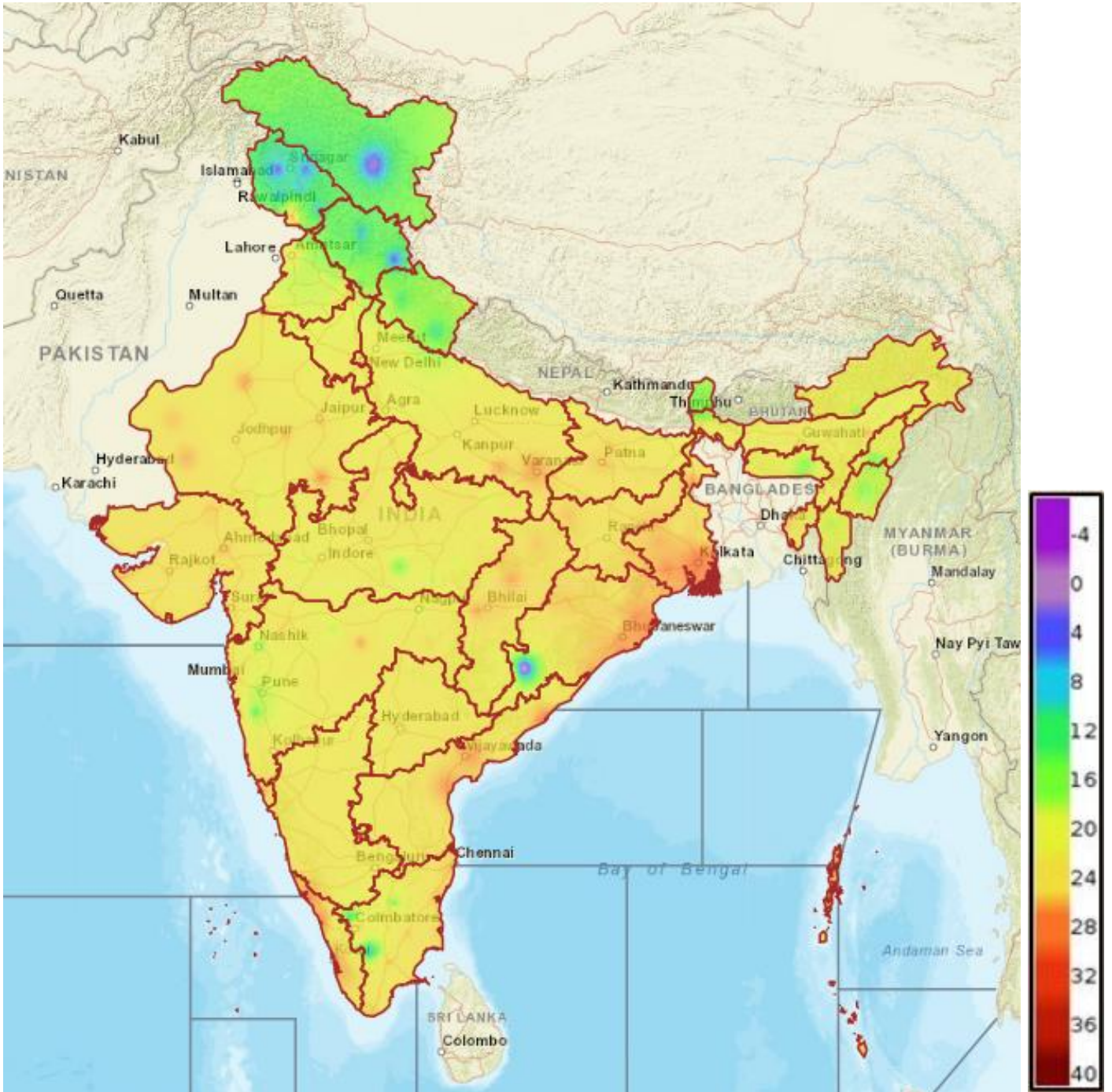
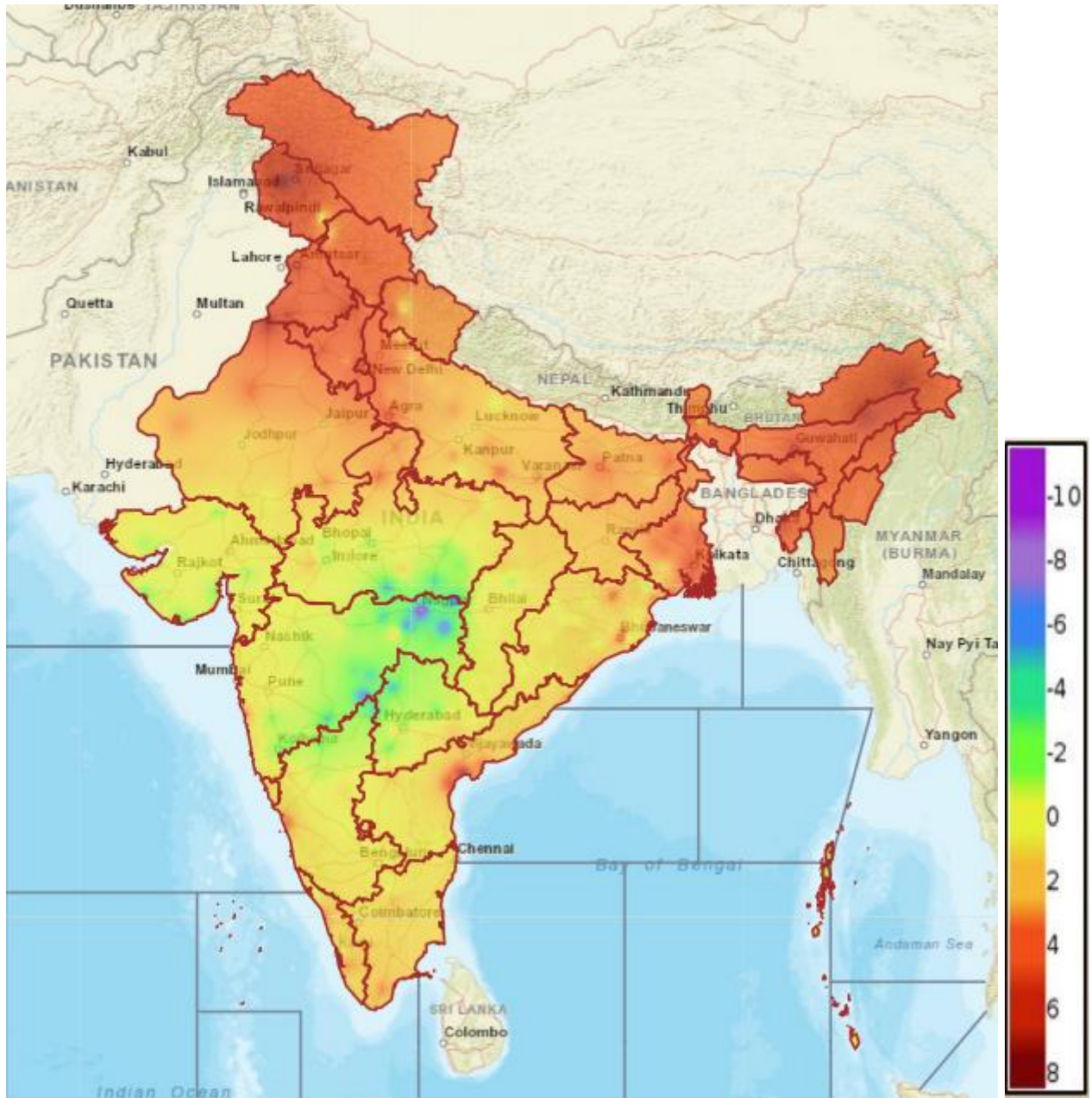


Fig. 4: Departure from Normal of Maximum Temperatures Dated 16.04.2023

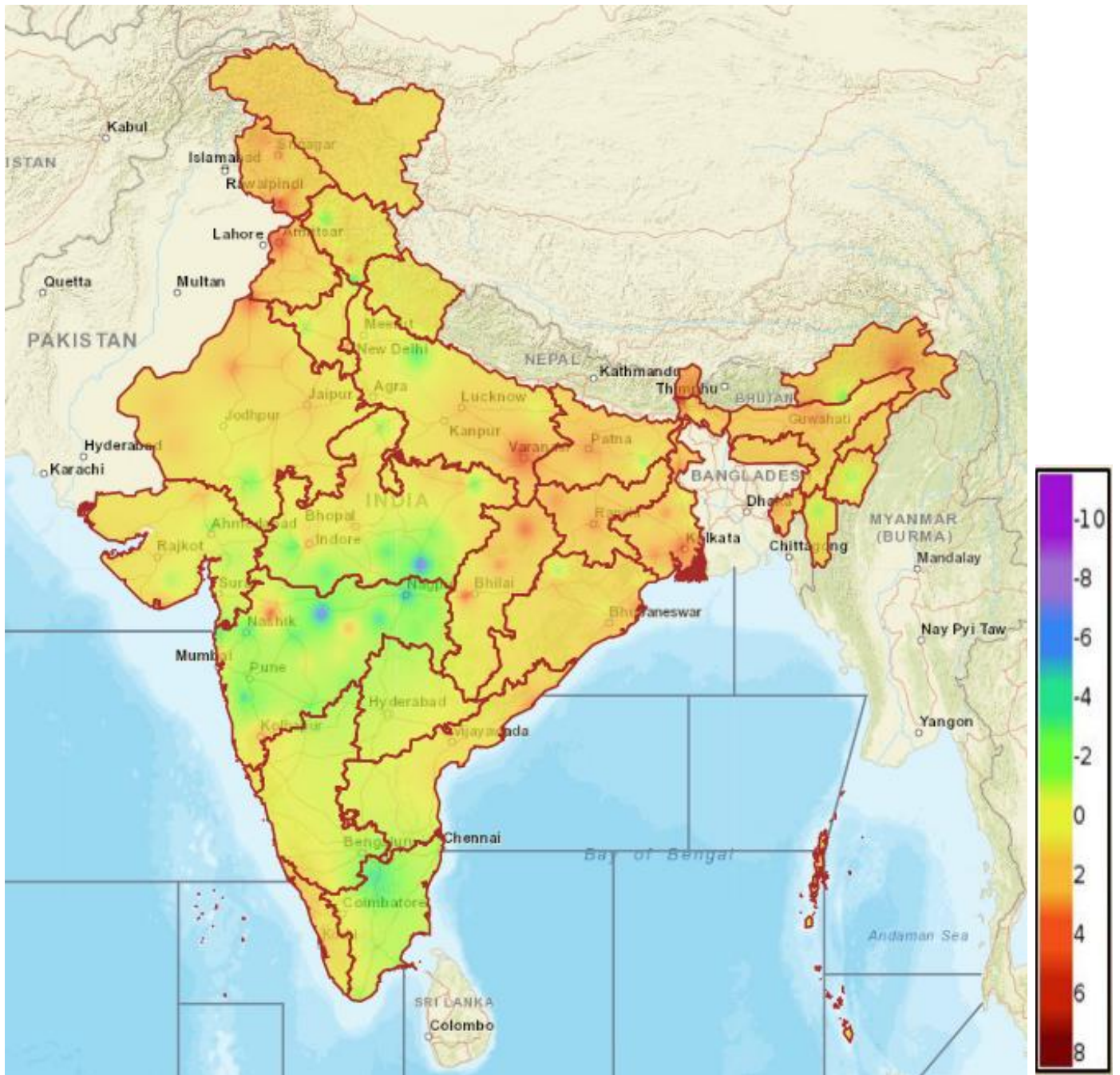


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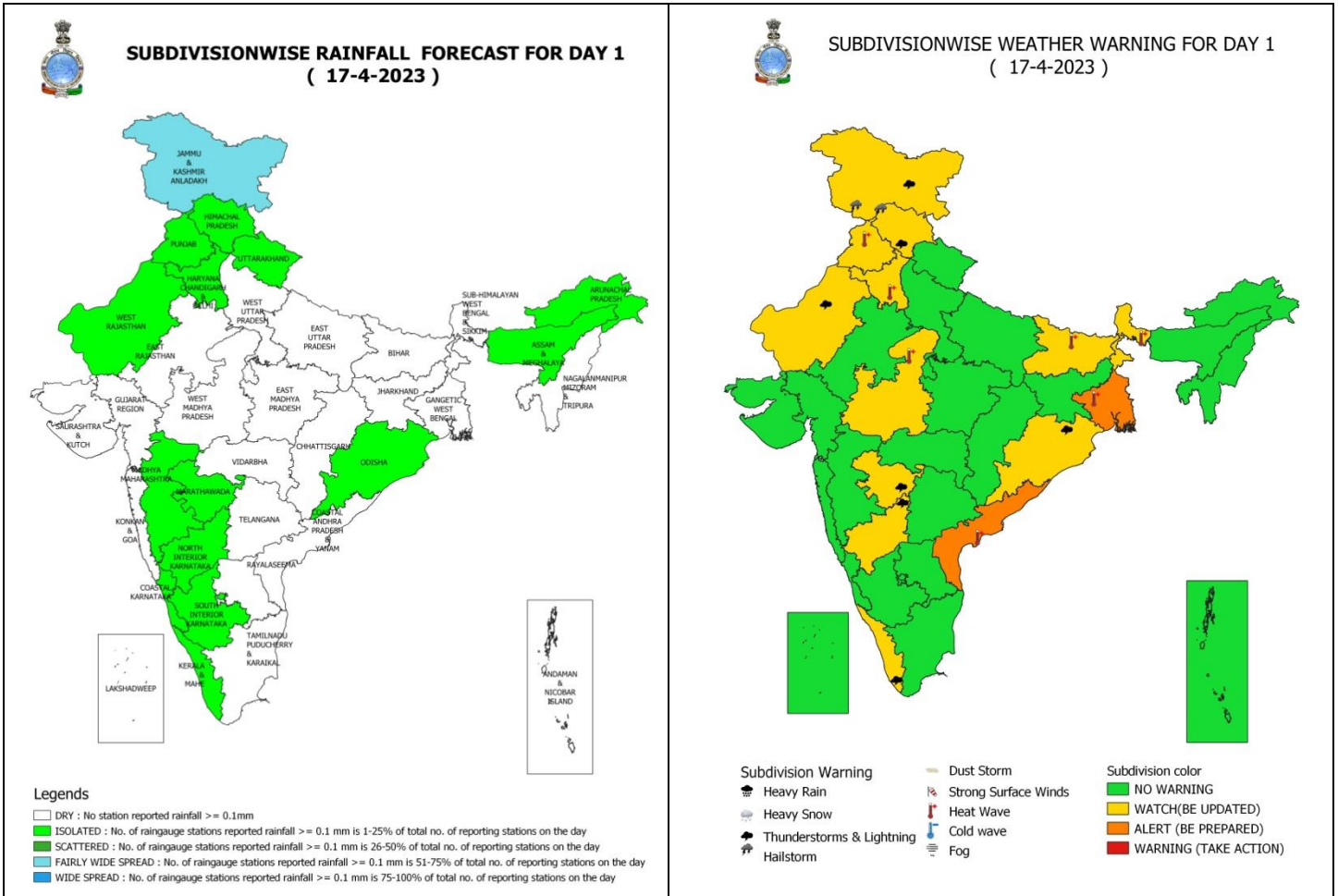
Fig. 5: Departure from Normal of Minimum Temperatures Dated 16.04.2023



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**17 April (Day 1):** ♦ **Hailstorm with thunderstorm & lightning** very likely at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad and Himachal Pradesh.

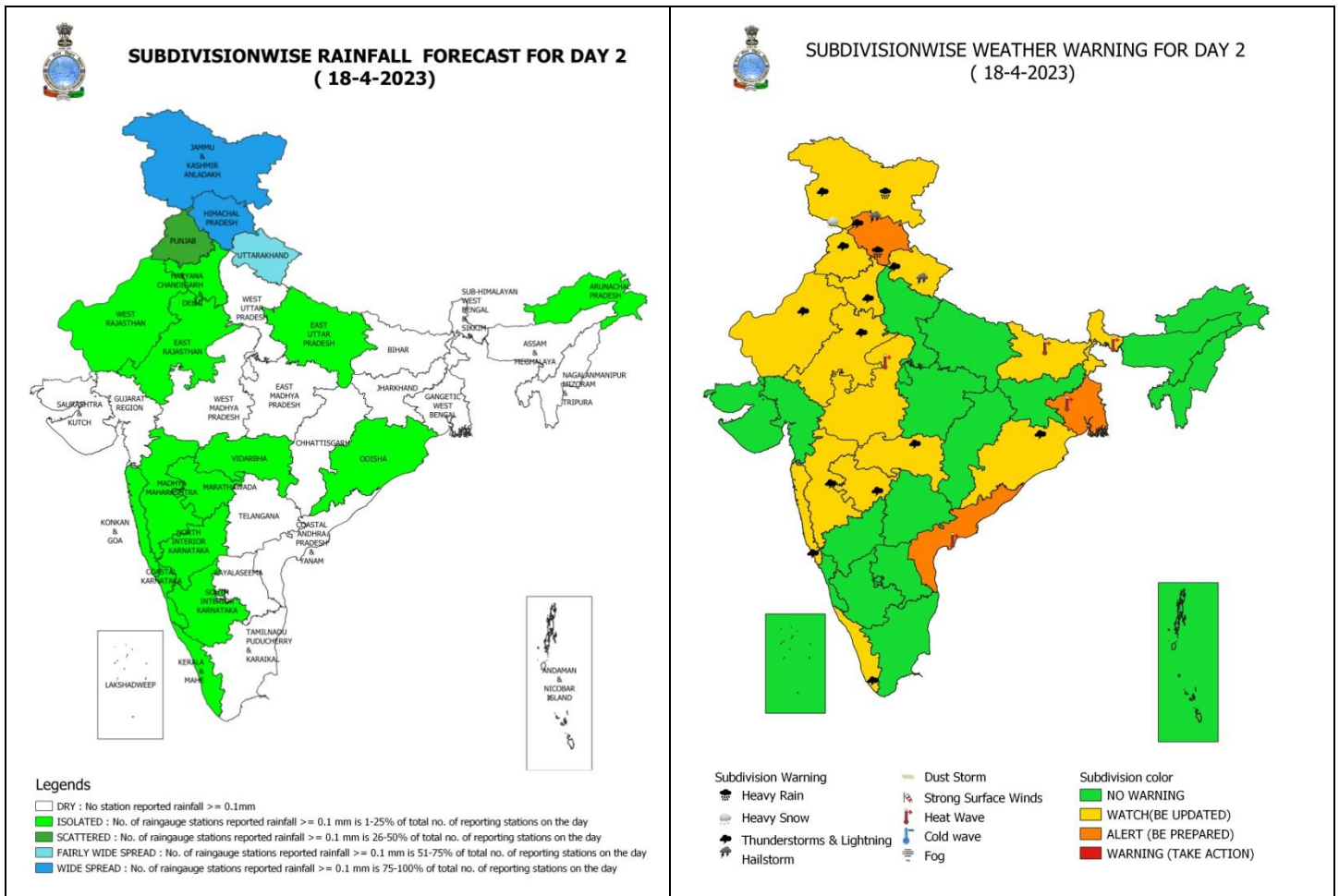
♦ **Thunderstorm with lightning & gusty wind (30-40 kmph)** very likely at isolated places over West Rajasthan and **with lightning** at isolated places over Odisha, Marathwada, North Interior Karnataka and Kerala & Mahe.

♦ **Heat Wave conditions** very likely in some parts over Gangetic West Bengal and in isolated pockets over Sub-Himalayan West Bengal & Sikkim, Bihar, Punjab, Haryana, West Madhya Pradesh and Coastal Andhra Pradesh & Yanam.

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**18 April (Day 2):** ♦ **Heavy rainfall/snowfall** very likely at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffrabad and Himachal Pradesh.

♦ **Hailstorm with thunderstorm & lightning** very likely at isolated places over Himachal Pradesh and Uttarakhand.

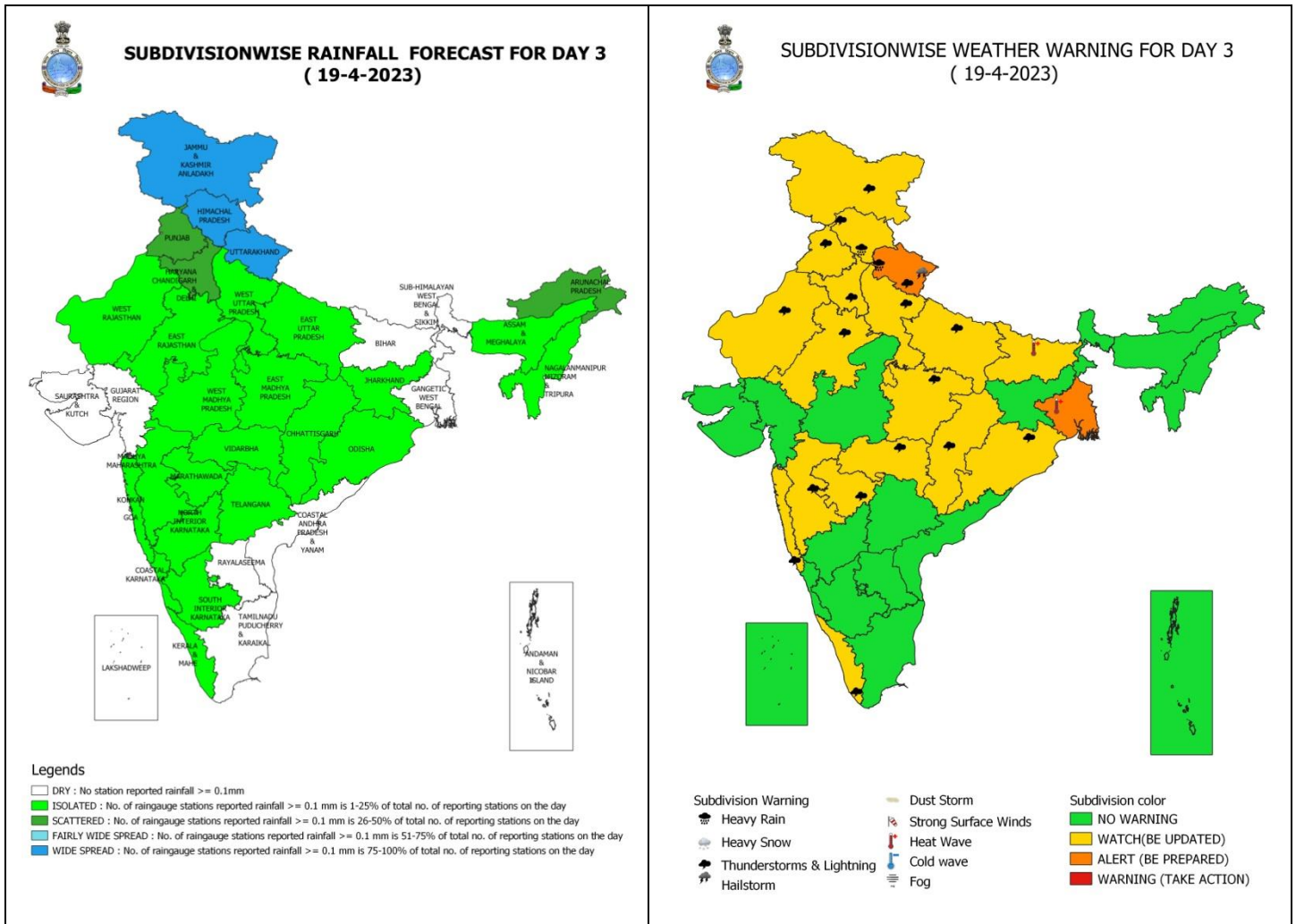
♦ **Thunderstorm with lightning & gusty wind (40-50 kmph)** very likely at isolated places over Punjab, Haryana, Chandigarh & Delhi; **with lightning & gusty wind (30-40 kmph)** at isolated places over Rajasthan and Vidarbha and **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffrabad, Konkan & Goa, Madhya Maharashtra, Marathwada, Kerala & Mahe.

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**19 April (Day 3):** ♦ Heavy rainfall/snowfall likely at isolated places over Himachal Pradesh and Uttarakhand.

♦ Hailstorm with thunderstorm, lightning & gusty wind (30-40 kmph) likely at isolated places over Uttarakhand.

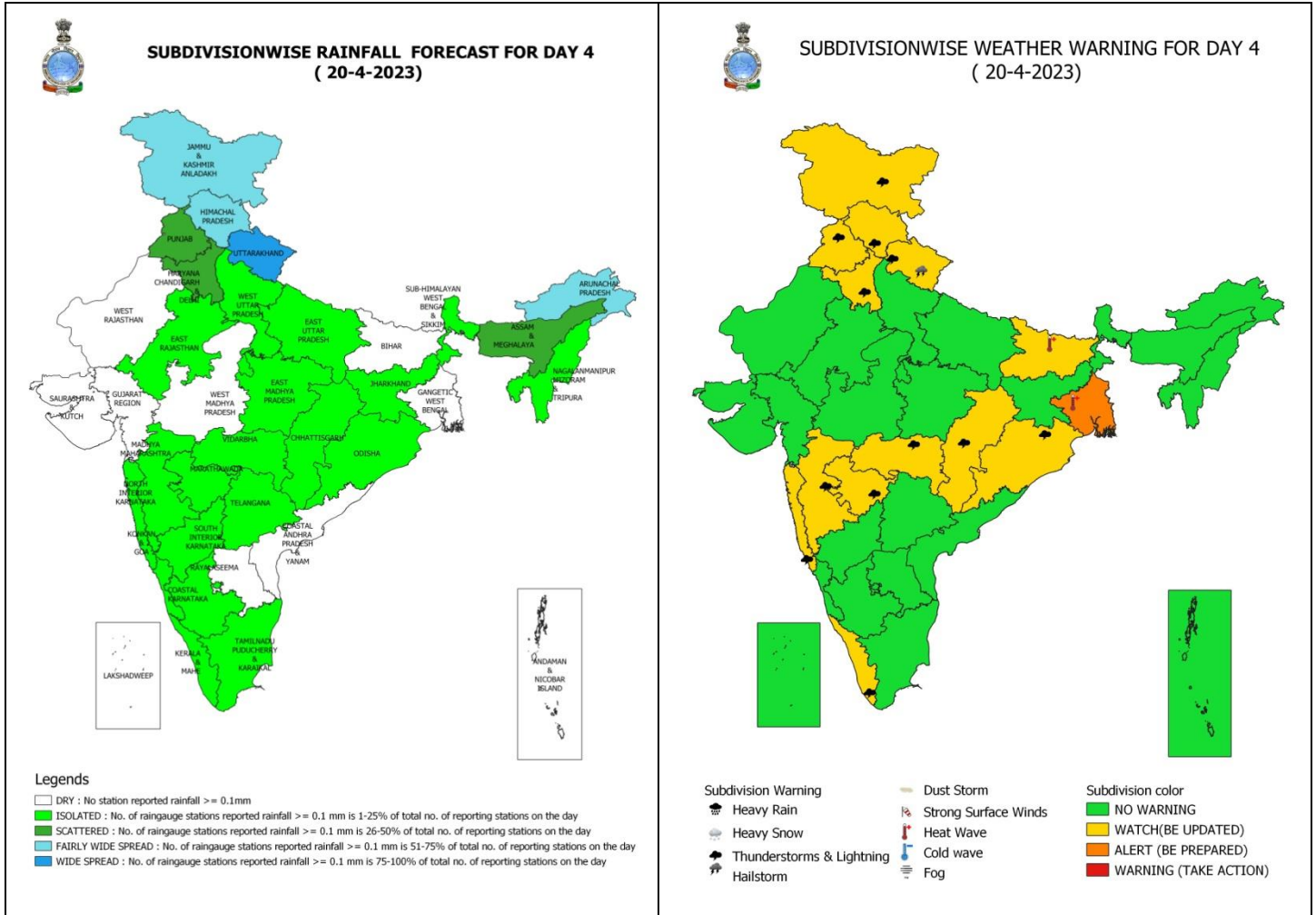
♦ Thunderstorm with lightning & gusty wind (40-50 kmph) likely at isolated places over Punjab, Haryana, Chandigarh & Delhi; with lightning & gusty wind (30-40 kmph) over Rajasthan, Vidarbha, Chhattisgarh and with lightning at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Uttar Pradesh, Odisha, Konkan & Goa, Madhya Maharashtra, Marathwada and Kerala & Mahe.

♦ Heat Wave conditions likely in some parts over Gangetic West Bengal and in isolated pockets over Bihar.

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**20 April (Day 4): ♦ Hailstorm with thunderstorm, lightning & gusty wind (30-40 kmph) likely at isolated places over Uttarakhand.**

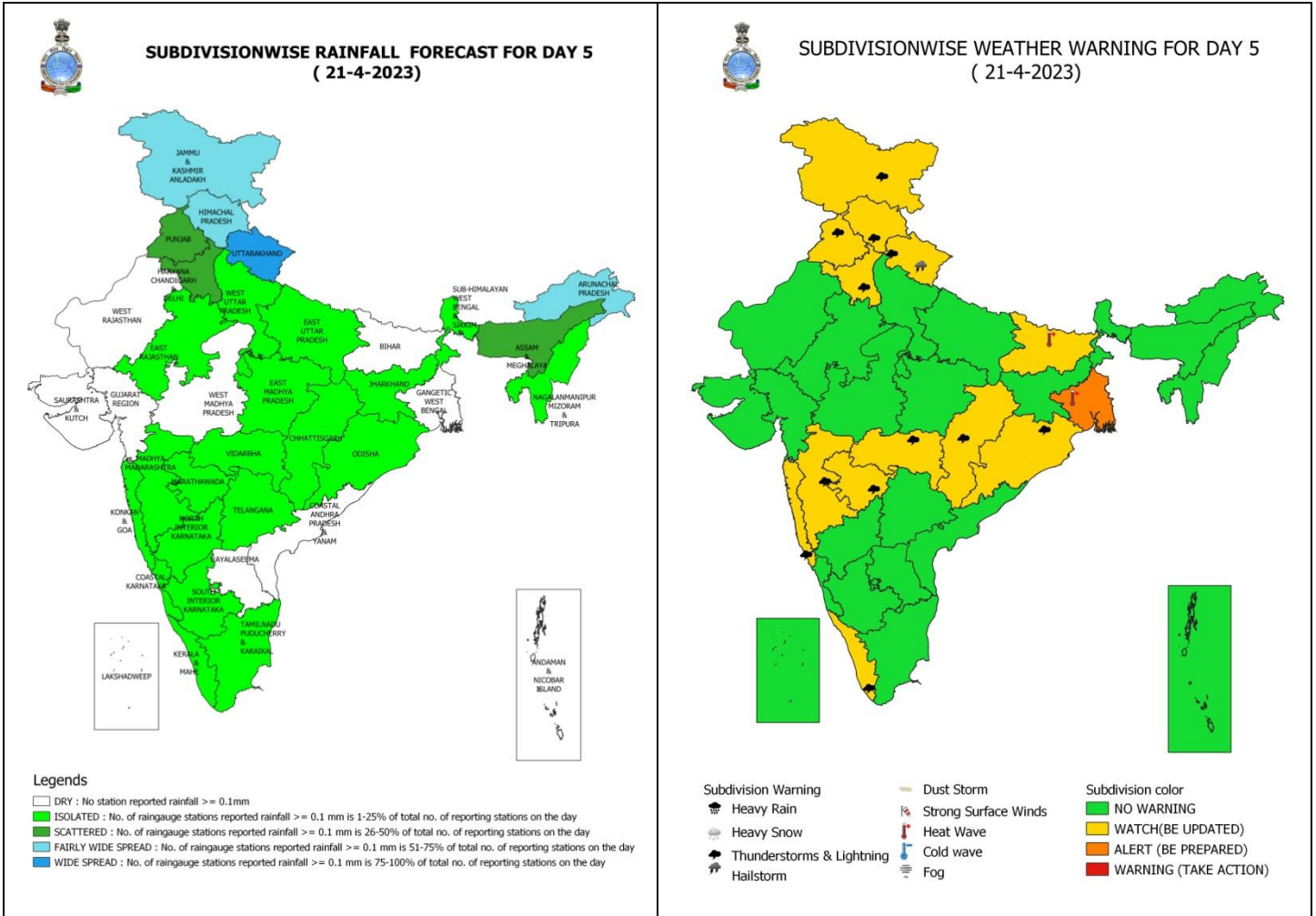
**♦ Thunderstorm with lightning & gusty wind (40-50 kmph) likely at isolated places over Punjab, Haryana, Chandigarh & Delhi; with lightning & gusty wind (30-40 kmph) likely at isolated places over Chhattisgarh and with lightning at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Maharashtra and Kerala & Mahe.**

**♦ Heat Wave conditions likely in isolated pockets over Gangetic West Bengal and Bihar.**

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**21 April (Day 5): ♦ Hailstorm with thunderstorm, lightning & gusty wind (30-40 kmph) likely at isolated places over Uttarakhand.**

**♦ Thunderstorm with lightning & gusty wind (40-50 kmph) likely at isolated places over Punjab, Haryana, Chandigarh & Delhi; with lightning & gusty wind (30-40 kmph) likely at isolated places over Chhattisgarh and with lightning at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Maharashtra and Kerala & Mahe.**

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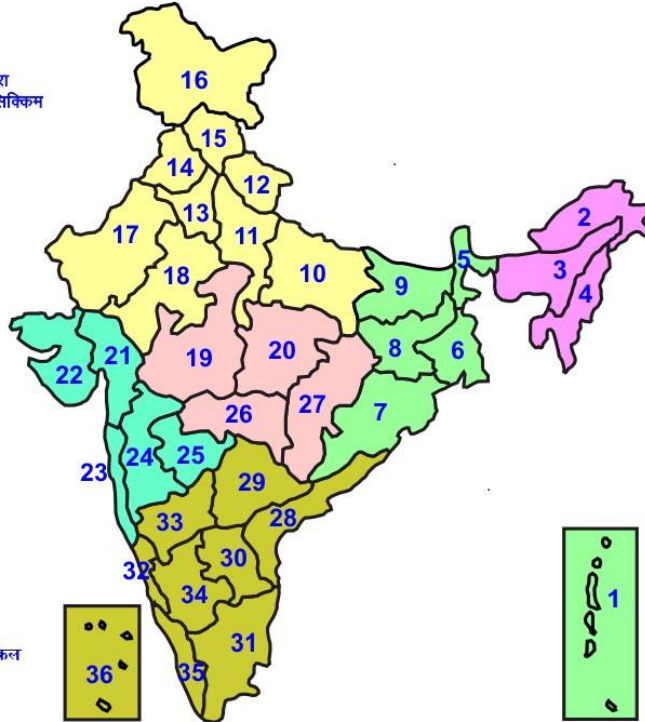
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## LEGENDS

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

<b>WARNING (TAKE ACTION)</b>
<b>ALERT ( BE PREPARED)</b>
<b>WATCH (BE UPDATED)</b>
<b>NO WARNING ( NO ACTION)</b>

## 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 color warning does not mean "Red Alert" Red color 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

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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  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

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  $40^{\circ}\text{C}$

Warm Night: When minimum temperature departure  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .

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  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .

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  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .

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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