



Friday, May 19, 2023
Time of Issue: 0800 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features

- Southwest Monsoon is very likely to advance into some parts of South Bay of Bengal, South Andaman Sea and Nicobar island during next 24 hours.

Significant Meteorological features:

- ❖ The **Western Disturbance** as a trough in middle & upper tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 72°E to the north of Lat. 30°N.
- ❖ A **cyclonic circulation** lies over Punjab & adjoining central Pakistan, other over south Pakistan & adjoining southwest Rajasthan and another over East Uttar Pradesh in lower tropospheric levels.
- ❖ A **trough** runs from above cyclonic circulation over East Uttar Pradesh to Telangana in lower tropospheric levels.
- ❖ A trough in westerlies runs roughly along Long. 90°E to the north of Lat. 22°N at 1.5 km above mean sea level.

Forecast and warning over the country during next 5 days:

Northeast India:

- Light/moderate widespread rainfall with thunderstorm/lightning/gusty winds very likely to continue over Northeast India during next 5 days with **heavy rainfall** at isolated places over Assam & Meghalaya during 19th to 23rd and Nagaland, Manipur, Mizoram & Tripura on 19th May.

East India:

- Light/moderate isolated to scattered rainfall with thunderstorm/lightning/gusty winds very likely over the region during next 5 days.

Northwest India:

- **Duststorm/dust raising winds** very likely in isolated pockets over Rajasthan on 22nd & 23rd May, 2023.

Central India:

- Light/moderate isolated light rainfall with thunderstorm/lightning/gusty winds very likely over Madhya Pradesh, Vidarbha & Chhattisgarh on 22nd & 23rd May, 2023.

South India:

- Light/moderate isolated light rainfall with thunderstorm/lightning/gusty winds very likely over most parts of the region during next 5 days.

Observed Maximum Temperatures and Heat Wave conditions:

- Yesterday, Maximum Temperatures were in the range of 38-42°C over many parts of Rajasthan, Uttar Pradesh, Gujarat, Central & adjoining East India and North Peninsular India. Maximum Temperatures are near normal/below normal many parts of the country.
- Yesterday, **No significant Heat wave conditions** prevailed in any parts of the country.

Maximum Temperature Forecast and Heat Wave Warnings:

- Maximum temperatures are very likely to rise by 2-3°C over Maharashtra during next 5 days. No significant change in Maximum temperatures are very likely over many parts of Northwest & Central India during next 24 hours and rise by 2-4°C thereafter. No significant change in maximum temperature very likely over rest parts of the country during next 5 days.
- **Heat wave conditions** in isolated pockets very likely over south Uttar Pradesh, West Rajasthan and north Madhya Pradesh during 20th to 23rd May, 2023.
- Due to humid air & high temperature, **Hot and Discomfort weather** is very likely over Bihar, Jharkhand, Odisha and Konkan & Goa during next 5 days and over Coastal Andhra Pradesh, Rayalaseema, Kerala and Tamilnadu during 19th to 20th May, 2023.

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Main Weather Observations

- ❖ **Rainfall/thundershowers observed** (from 0830 hrs IST to 1730 hrs IST of yesterday): **at many places** over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad; **at a few places** over Gangetic West Bengal; **at isolated places** over Himachal Pradesh, Uttarakhand, Odisha, Andaman & Nicobar Islands, Assam & Meghalaya and Telangana.
- ❖ **Significant rainfall recorded** (from 0830 hrs IST to 1730 hrs IST of yesterday) (in cm): **Gangetic West Bengal:** Bankura-5, Dumdum(Kolkata)-2, Burdwan-1; **Odisha:** Keonjhar-2; **Andaman & Nicobar Islands:** Long Islands-1; **Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad:** Pahalgam-1.
- ❖ **Thunderstorm observed** (from 0830 hrs IST of yesterday to 0530 hrs IST of today): at isolated pockets over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Madhya Maharashtra, Odisha, West Madhya Pradesh and Tripura.
- ❖ **Hailstorm observed** (from 0830 hrs IST of yesterday to 0530 hrs IST of today): at isolated pockets over Odisha.
- ❖ **Thundersquall Observed** (from 0830 hrs IST of yesterday to 0530 hrs IST of today): at isolated pockets over Gangetic West Bengal.
- ❖ **Minimum Temperature Departures (as on 18-05-2023):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Madhya Maharashtra; **above normal (1.6°C to 3.0°C)** at many places over Jharkhand; at a few places over Gangetic West Bengal, Odisha, Rayalaseema, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe; at isolated places over Saurashtra & Kutch and Coastal Andhra Pradesh & Yanam. They were **markedly below normal (-5.1°C or less)** at a few places over Haryana, Chandigarh & Delhi; **appreciably below normal (-3.1°C to -5.0°C)** at a few places over Sub-Himalayan West Bengal & Sikkim; at isolated places over Punjab, Rajasthan, West Uttar Pradesh, Madhya Pradesh and Assam & Meghalaya; **below normal (-1.6°C to -3.0°C)** at many places over Bihar and Vidarbha; at a few places over Telangana; at isolated places over Uttarakhand and Nagaland, Manipur, Mizoram & Tripura and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature of 17.0°C** was reported at **Motihari (Bihar)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 18-05-2023):** Maximum temperatures were **appreciably above normal (3.1°C to 5.1°C)** at many places over Jharkhand; at isolated places over Chhattisgarh; **above normal (1.6°C to 3.0°C)** at most places over Rayalaseema, Kerala & Mahe; at many places over Madhya Maharashtra, Lakshadweep; at a few places over Odisha, Andaman & Nicobar Islands, North Interior Karnataka, Tamil Nadu, Puducherry & Karaikal; at isolated places over Coastal Andhra Pradesh & Yanam. They were **markedly below normal (-5.1°C or less)** at many places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad; appreciably below normal (-3.1°C to -5.1°C) at most places over Punjab, Haryana, Chandigarh & Delhi, West Rajasthan; at many places over Nagaland, Manipur, Mizoram & Tripura; at a few places over Uttarakhand, West Uttar Pradesh, Bihar, Assam & Meghalaya; **below normal (-1.6°C to -3.0°C)** at most places over Sub-Himalayan West Bengal & Sikkim; at many places over East Rajasthan, Gangetic West Bengal; at a few places over East Madhya Pradesh, Saurashtra & Kutch; at isolated places over East Uttar Pradesh, West Madhya Pradesh, Gujarat Region and **near normal** over rest parts of the country. Yesterday, **the highest maximum temperature of 44.4°C** was reported at **Rentachintala (Coastal Andhra Pradesh)**.

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Meteorological Analysis (Based on 0530 hours IST)

- ❖ The **Western Disturbance** as a trough in middle & upper tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 72°E to the north of Lat. 30°N.
- ❖ The **cyclonic circulation** over Punjab & adjoining central Pakistan extending upto 1.5 km above mean sea level persists.
- ❖ The **cyclonic circulation** over south Pakistan & adjoining southwest Rajasthan extending upto 1.5 km above mean sea level persists.
- ❖ The **cyclonic circulation** over East Uttar Pradesh at 0.9 km above mean sea level persists.
- ❖ The **trough** from above cyclonic circulation over East Uttar Pradesh to Telangana across East Madhya Pradesh and Vidarbha at 0.9 km above mean sea level persists.
- ❖ The trough in westerlies roughly along Long. 90°E to the north of Lat. 22°N at 1.5 km above mean sea level persists.
- ❖ Southwest Monsoon is very likely to advance into some parts of South Bay of Bengal, South Andaman Sea and Nicobar islands during next 24 hours.

Weather Forecast for next 5 days (Upto 0830 hours IST of 24th May, 2023)

- ❖ Meteorological sub-division wise detailed 5 days rainfall forecast is given in Table-1.

Maximum Temperatures Forecast and Heat Wave Warnings:

- ❖ **Northwest & Central India:** No significant change in Maximum temperatures likely during next 24 hours and rise by 2-4°C thereafter.
- ❖ **West India:** Rise in maximum temperatures by 2-3°C likely over Maharashtra during next 5 days.
- ❖ No significant change in Maximum temperatures likely over rest parts of the country.

Weather Outlook for subsequent 2 days (During 24th-26th May, 2023)

- ❖ Fairly widespread to widespread light/moderate rainfall likely to continue over northeast India
- ❖ Isolated to Scattered rainfall over Northwest India and isolated rainfall over south peninsular India and Islands.
- ❖ Dry weather over rest parts of the country.

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Weather Warning during next 5 days

19 May (Day 1): ♦ **Heavy rainfall** very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Gangetic West Bengal; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura, Odisha, Jharkhand and Bihar; **with lightning** at isolated places over Assam & Meghalaya, Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

20 May (Day 2): ♦ **Heavy rainfall** very likely at isolated places over Assam & Meghalaya.

♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Gangetic West Bengal; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Jharkhand and Bihar; **with lightning** at isolated places over Odisha, Telangana and Kerala & Mahe,

♦ **Heat wave conditions** very likely in isolated pockets over Uttar Pradesh, West Rajasthan and Madhya Pradesh.

21 May (Day 3): ♦ **Heavy rainfall** likely at isolated places over, Assam & Meghalaya.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Gangetic West Bengal, Bihar, Jharkhand and Kerala & Mahe; **with lightning** at isolated places over Telangana and South Interior Karnataka.

♦ **Heat wave conditions** likely in isolated pockets over Uttar Pradesh, West Rajasthan and Madhya Pradesh.

22 May (Day 4): ♦ **Heavy rainfall** likely at isolated places over Assam & Meghalaya.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Gangetic West Bengal, Jharkhand, Bihar and Kerala & Mahe; **with lightning** at isolated places over Uttarakhand, Himachal Pradesh, Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, East Madhya Pradesh, Vidarbha, Chhattisgarh, Telangana and Coastal & South Interior Karnataka.

♦ **Dust Storm/Thunderstorm with gusty winds (speed 40-50 kmph)** very likely in isolated pockets over Rajasthan.

♦ **Heat wave conditions** likely in isolated pockets over Uttar Pradesh, West Rajasthan and Madhya Pradesh.

23 May (Day 5): ♦ **Heavy rainfall** likely at isolated places over Assam & Meghalaya.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Gangetic West Bengal, Jharkhand, Bihar and Kerala & Mahe; **with lightning** at isolated places over Uttarakhand, Himachal Pradesh, Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, East Madhya Pradesh, Vidarbha, Chhattisgarh, Telangana and Coastal & South Interior Karnataka.

♦ **Dust Storm/Thunderstorm with gusty winds (speed 40-50 kmph)** very likely in isolated pockets over Rajasthan.

♦ **Heat wave conditions** likely in isolated pockets over Uttar Pradesh, West Rajasthan and Madhya Pradesh.



Table-1

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

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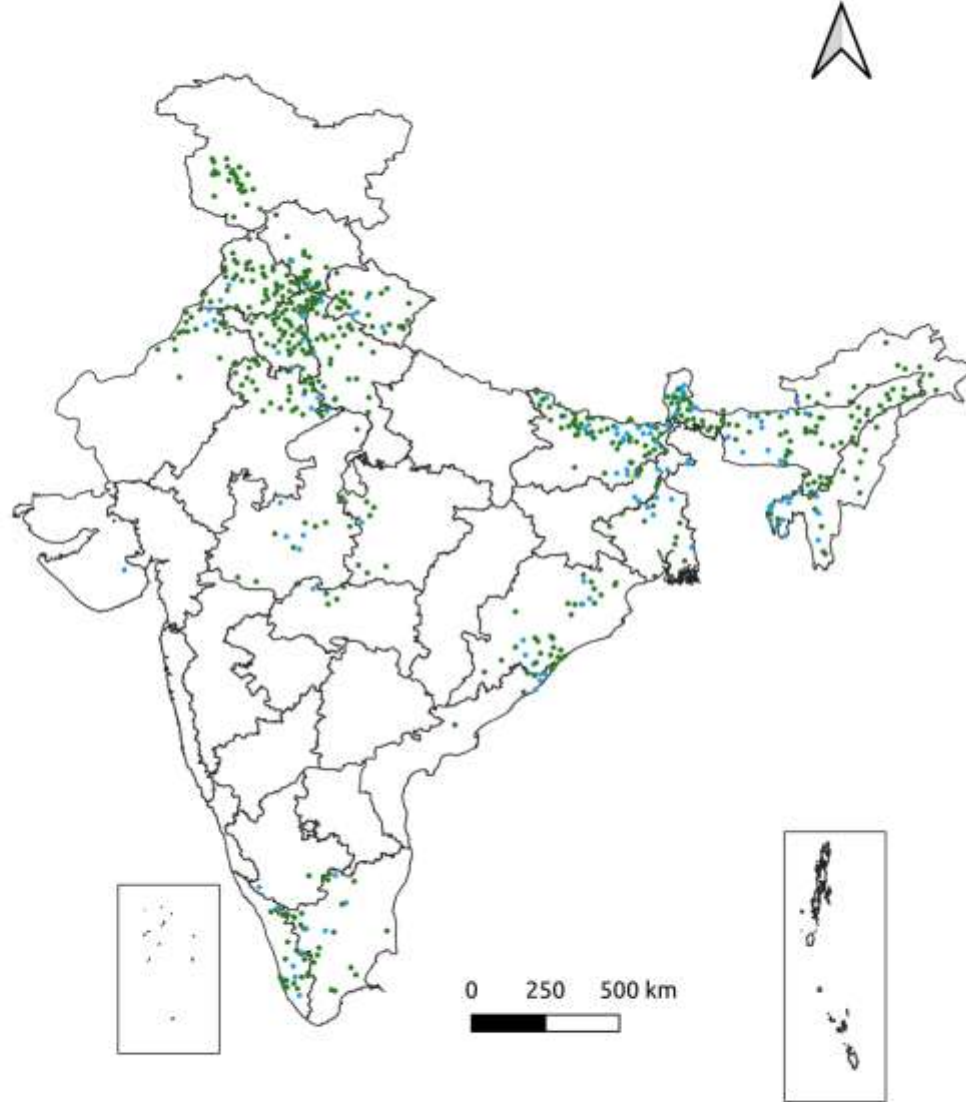
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Fig. 1: Accumulated Rainfall (mm) during past 24 hours



24 Hr cumulative rainfall recorded over different stations during 0830 IST of 17-5-2023 to 0830 IST of 18-5-2023



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)

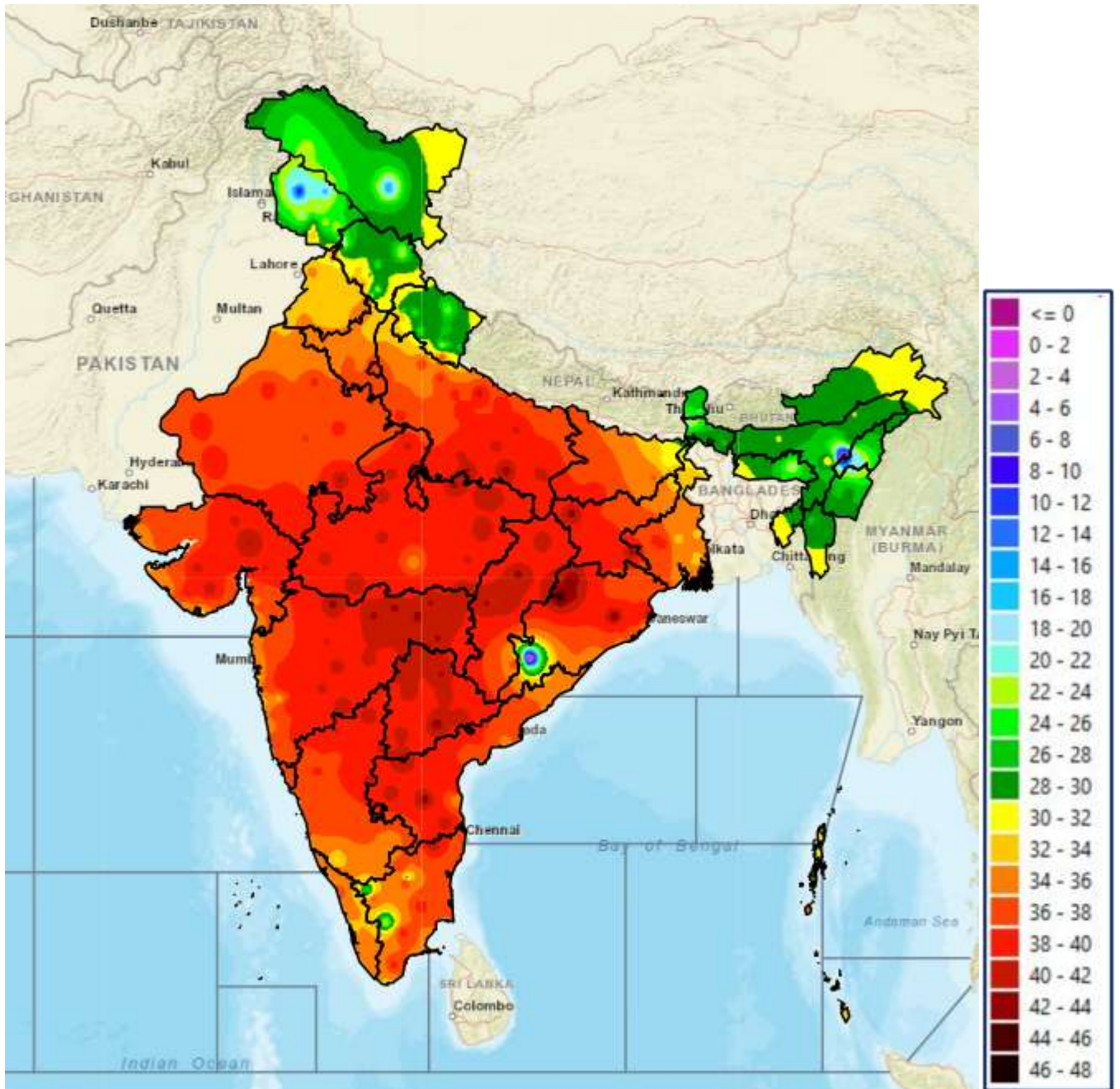
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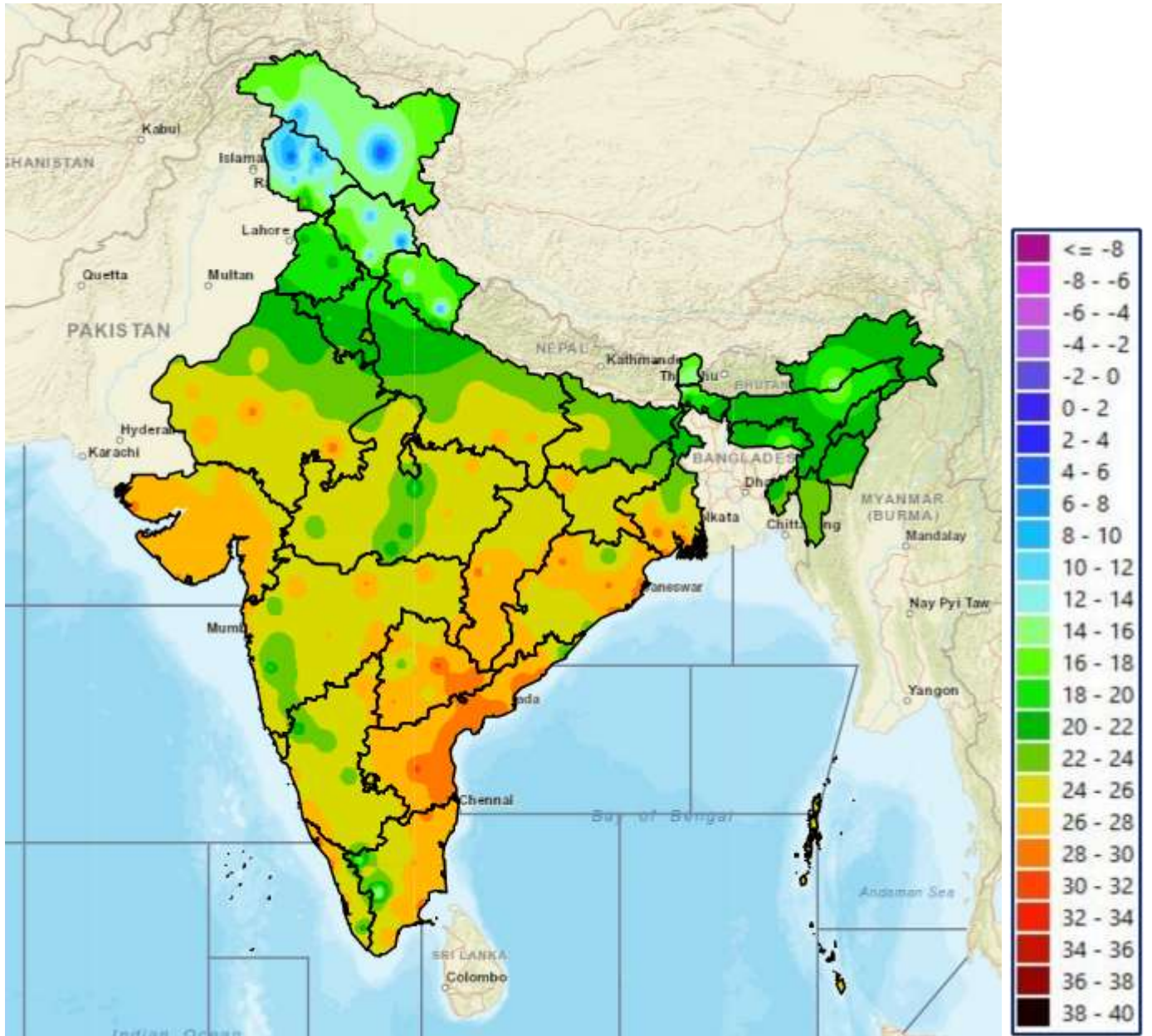
Fig. 2: Maximum Temperatures Dated 18.05.2023



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Fig. 3: Minimum Temperatures Dated 18.05.2023



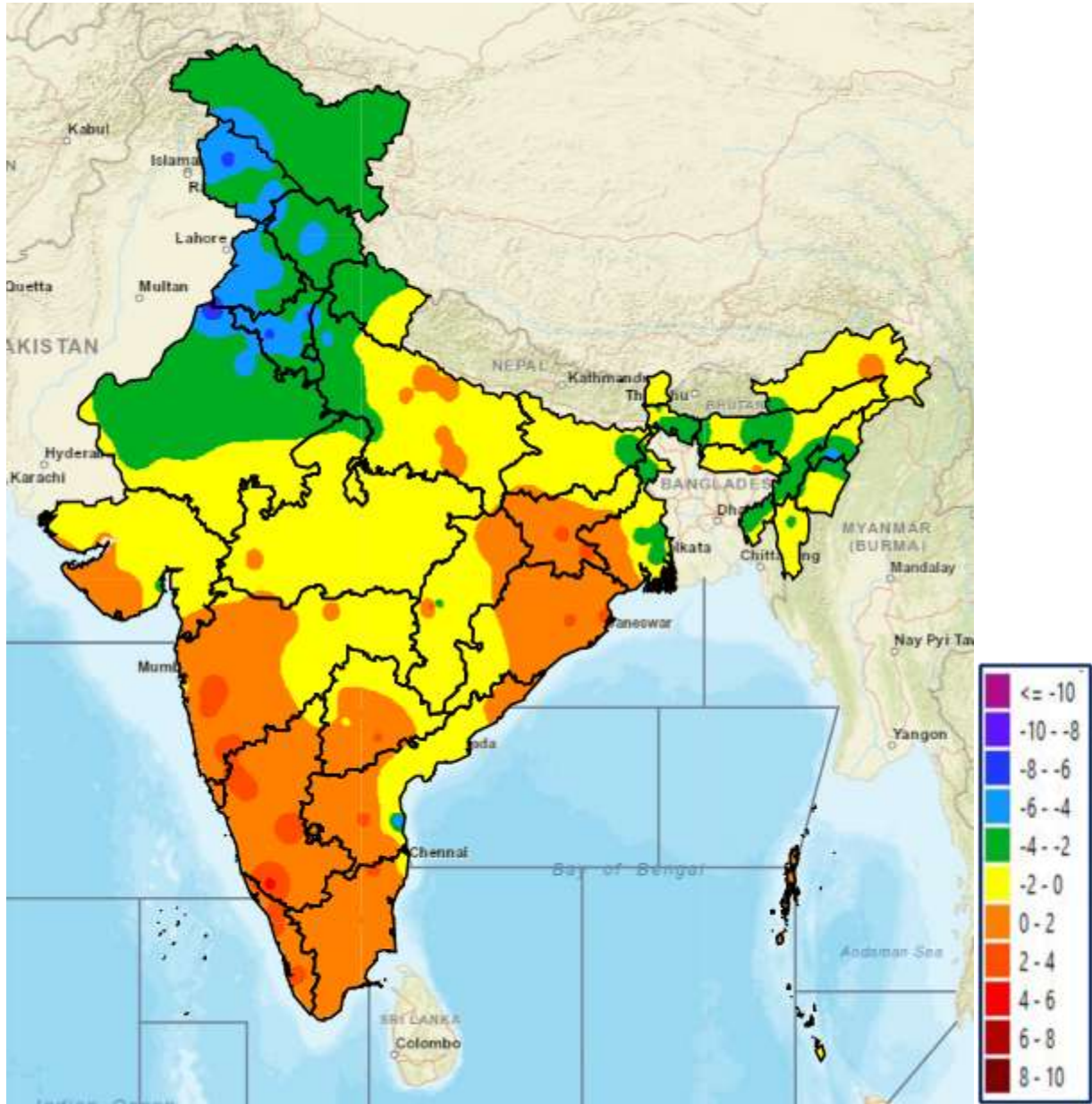
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Fig. 4: Departure from Normal of Maximum Temperatures Dated 18.05.2023



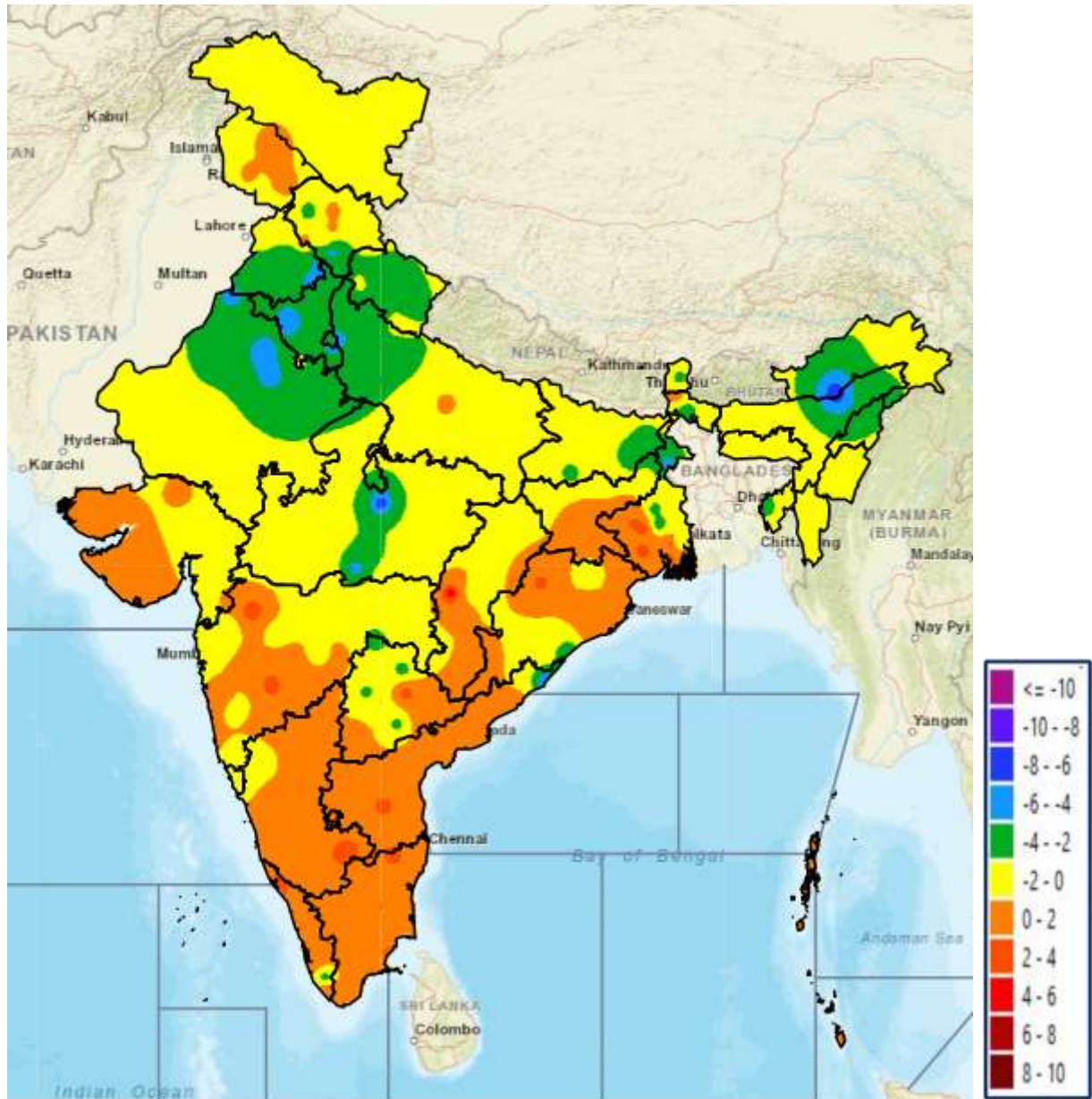
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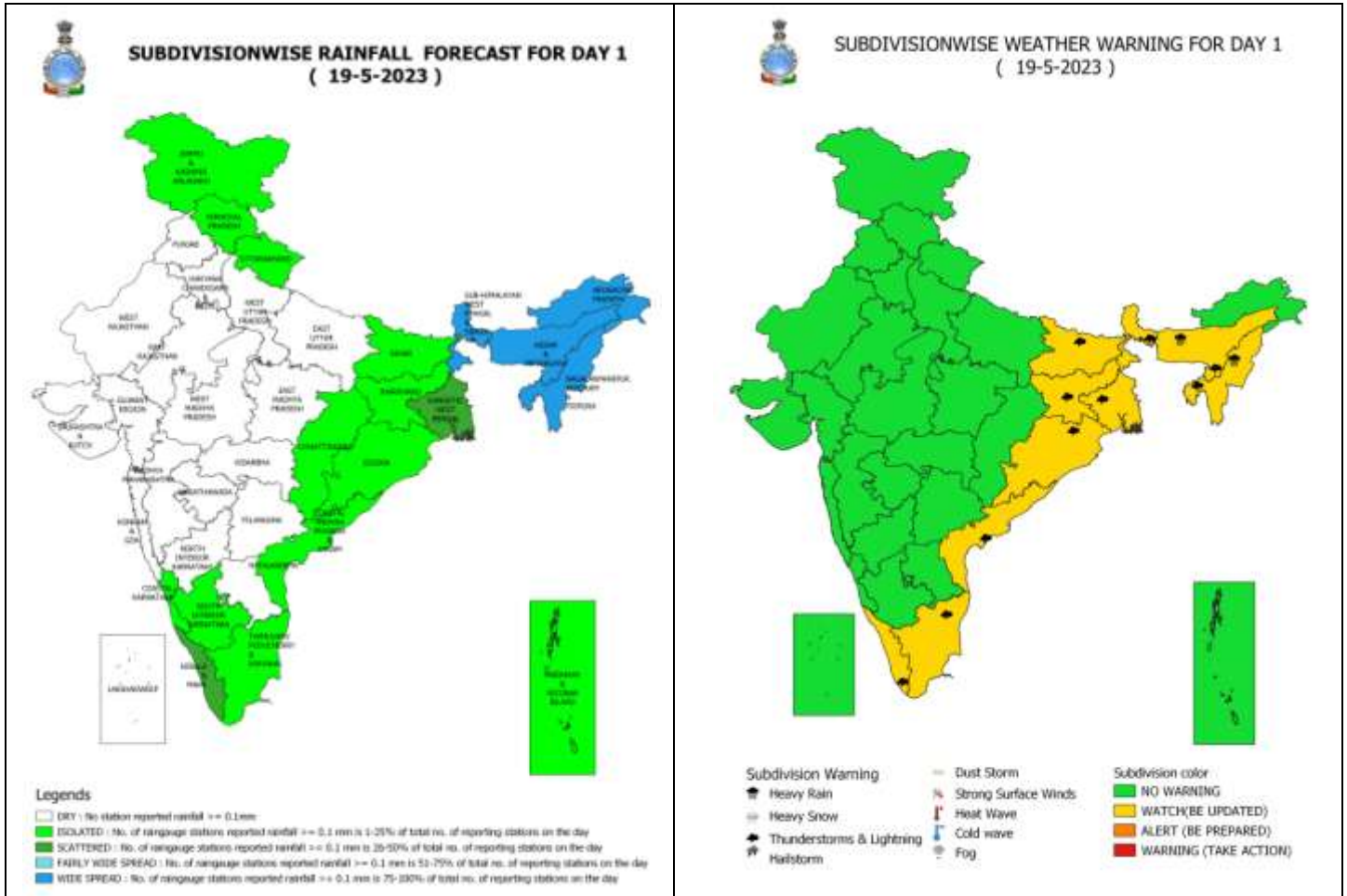
Fig. 5: Departure from Normal of Minimum Temperatures Dated 18.05.2023



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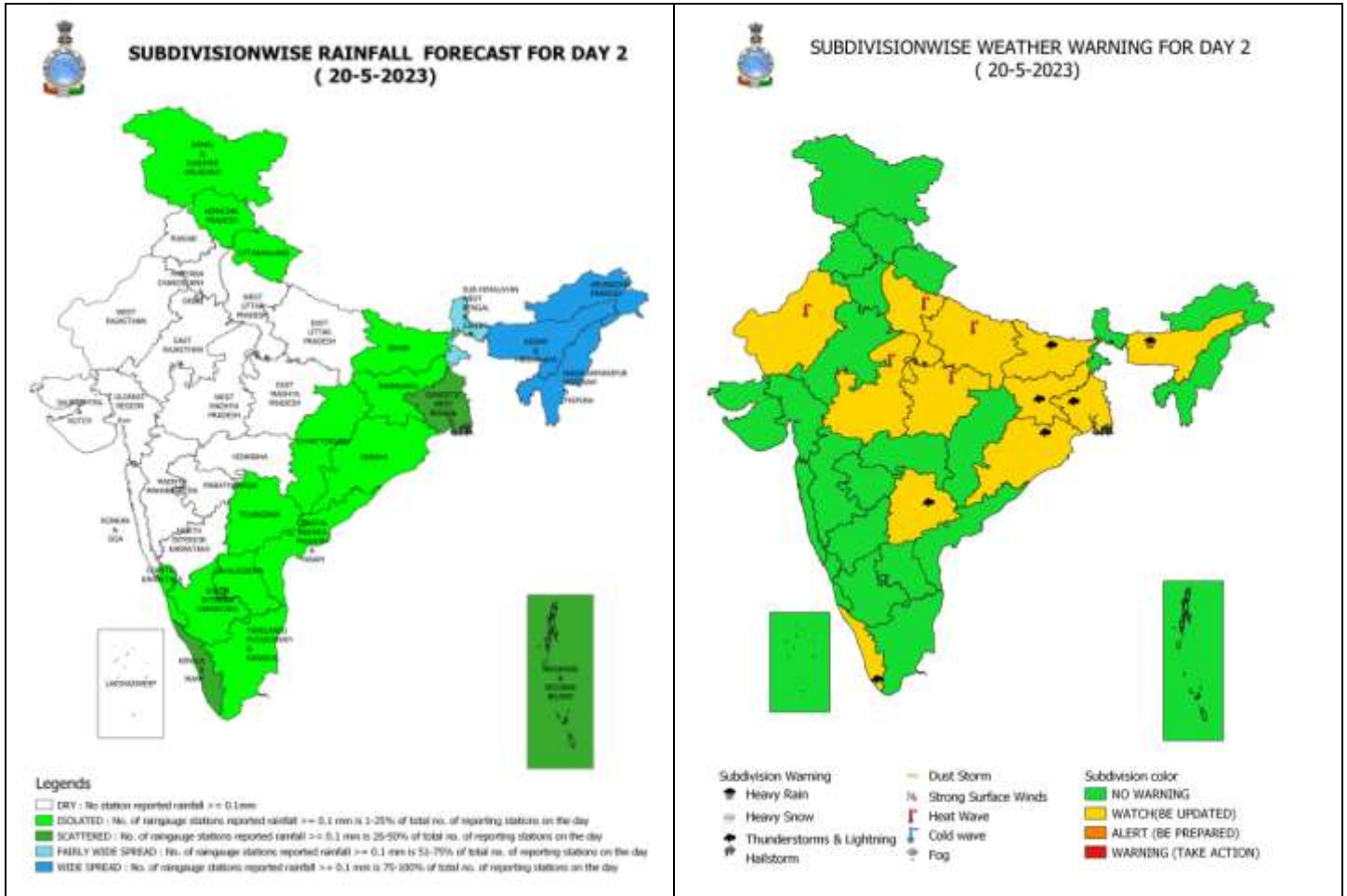
19 May (Day 1): ♦ **Heavy rainfall** very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Gangetic West Bengal; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura, Odisha, Jharkhand and Bihar; **with lightning** at isolated places over Assam & Meghalaya, Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

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20 May (Day 2): ♦ **Heavy rainfall** very likely at isolated places over Assam & Meghalaya.

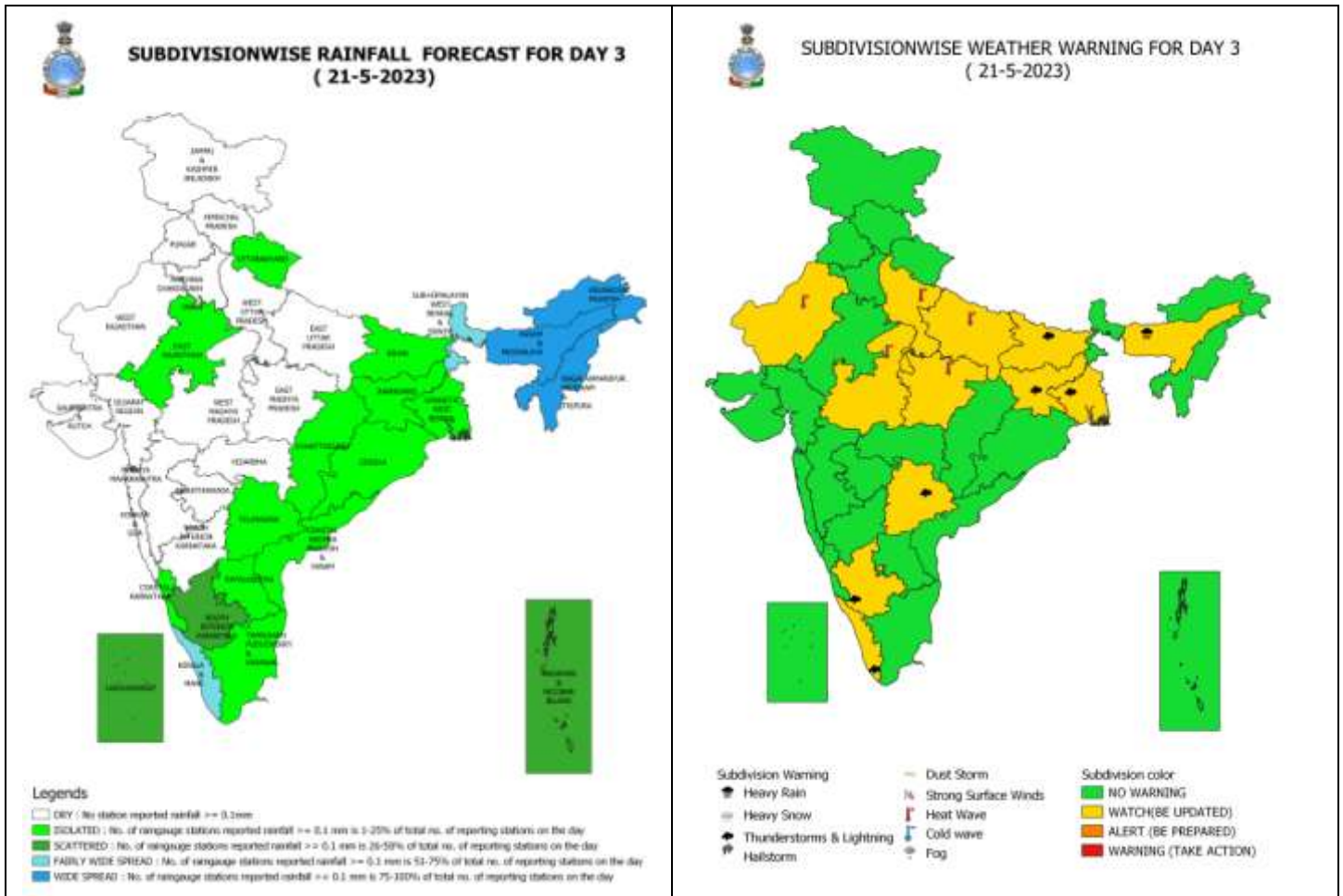
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♦ **Heat wave conditions** very likely in isolated pockets over Uttar Pradesh, West Rajasthan and Madhya Pradesh.

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21 May (Day 3): ♦ **Heavy rainfall** likely at isolated places over, Assam & Meghalaya.

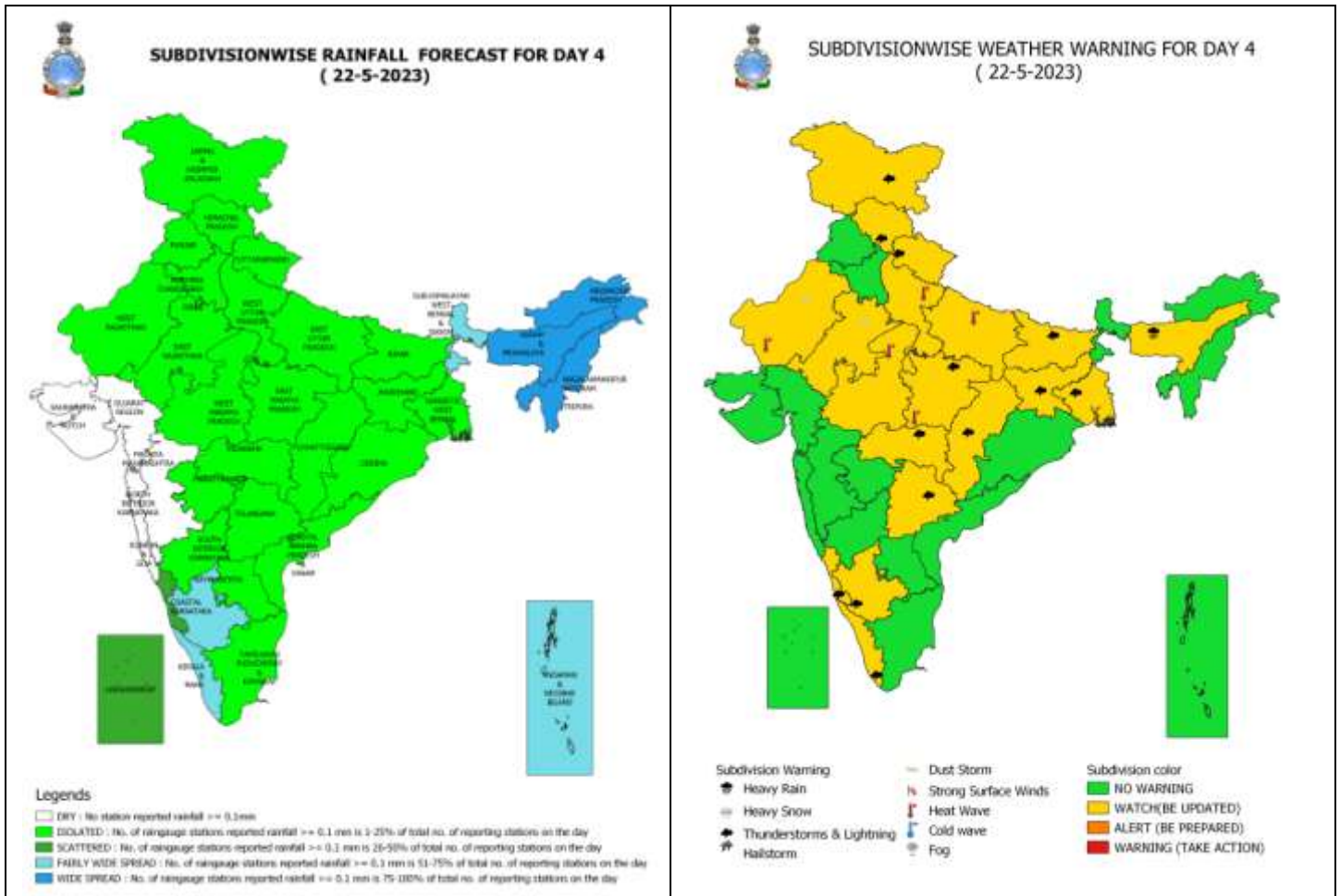
♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Gangetic West Bengal, Bihar, Jharkhand and Kerala & Mahe; **with lightning** at isolated places over Telangana and South Interior Karnataka.

♦ **Heat wave conditions** likely in isolated pockets over Uttar Pradesh, West Rajasthan and Madhya Pradesh.

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22 May (Day 5): ♦ Heavy rainfall likely at isolated places over Assam & Meghalaya.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Gangetic West Bengal, Jharkhand, Bihar and Kerala & Mahe; **with lightning** at isolated places over Uttarakhand, Himachal Pradesh, Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, East Madhya Pradesh, Vidarbha, Chhattisgarh, Telangana and Coastal & South Interior Karnataka.

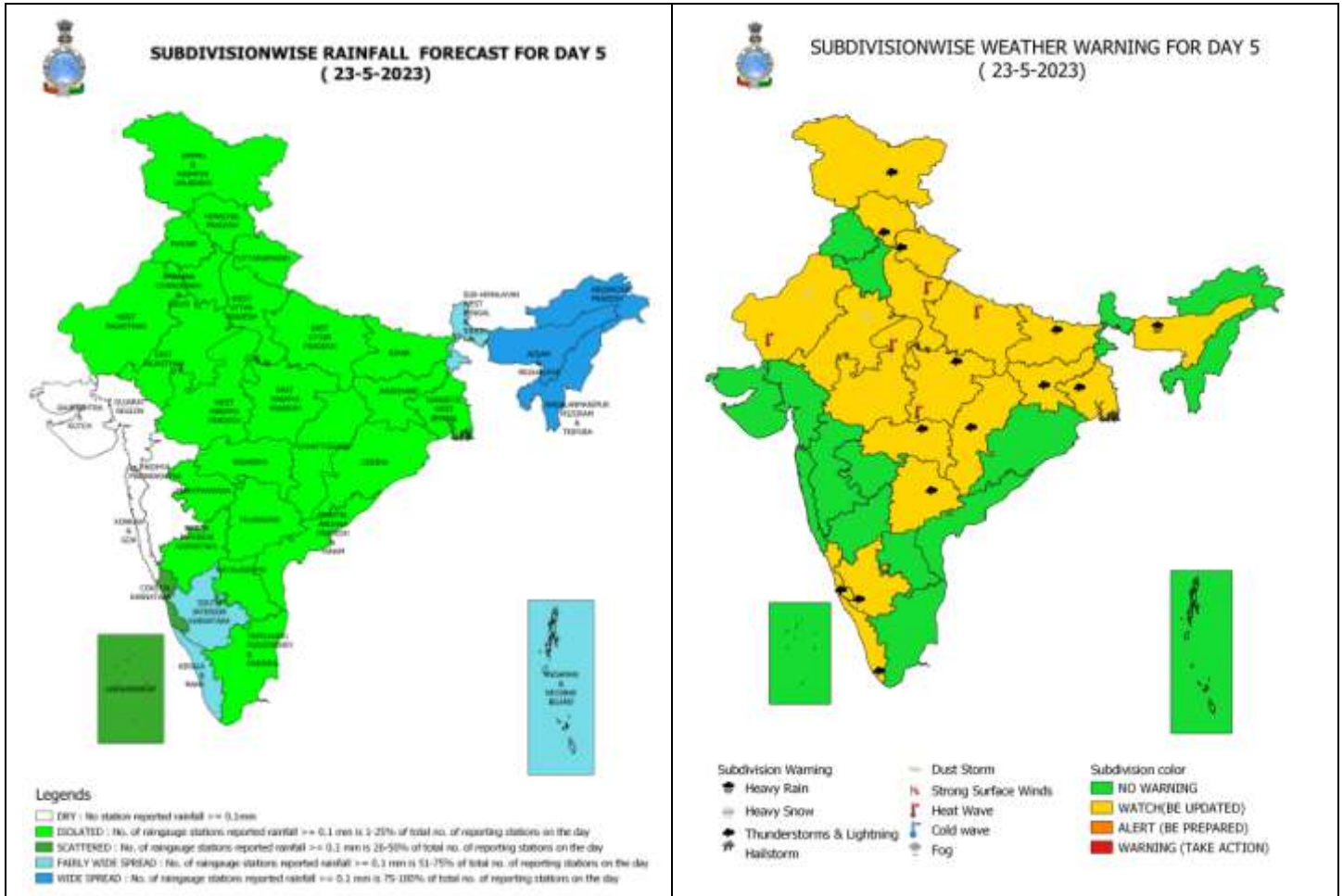
♦ **Dust Storm/Thunderstorm with gusty winds (speed 40-50 kmph)** very likely in isolated pockets over Rajasthan.

♦ **Heat wave conditions** likely in isolated pockets over Uttar Pradesh, West Rajasthan and Madhya Pradesh.

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23 May (Day 5): ♦ Heavy rainfall likely at isolated places over Assam & Meghalaya.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Gangetic West Bengal, Jharkhand, Bihar and Kerala & Mahe; **with lightning** at isolated places over Uttarakhand, Himachal Pradesh, Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, East Madhya Pradesh, Vidarbha, Chhattisgarh, Telangana and Coastal & South Interior Karnataka.

♦ **Dust Storm/Thunderstorm with gusty winds (speed 40-50 kmph)** very likely in isolated pockets over Rajasthan.

♦ **Heat wave conditions** likely in isolated pockets over Uttar Pradesh, West Rajasthan and Madhya Pradesh.

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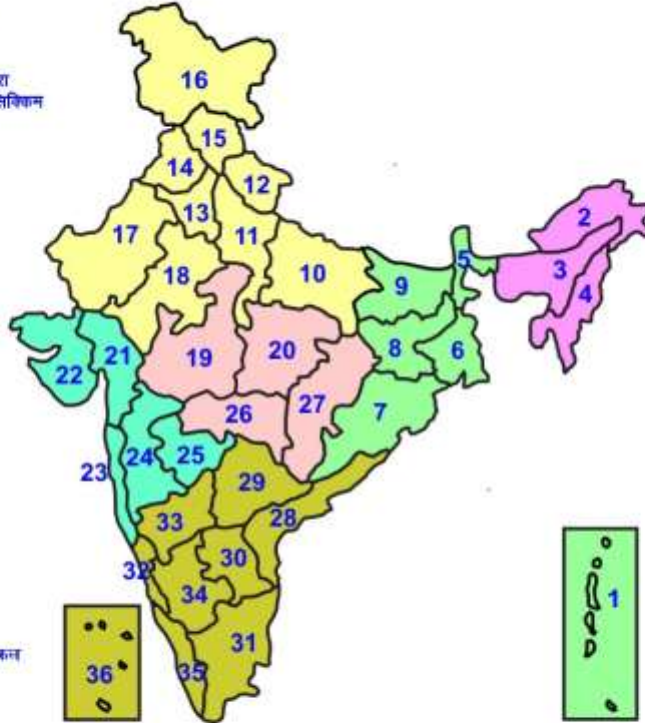
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LEGENDS

- 1 अंडमान और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीज़ोरम 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 नददाख
- 17 पश्चिम राजस्थान
- 18 पूर्वी राजस्थान
- 19 पश्चिम मध्य प्रदेश
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात क्षेत्र
- 22 सौराष्ट्र एवं कच्छ
- 23 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठवाड़ा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 वटीय आंध्र प्रदेश एवं थनम
- 29 तेलंगाना
- 30 रायलसीमा
- 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. 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

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 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°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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