



Saturday, May 20, 2023  
Time of Issue: 0745 hours IST  
(MORNING)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features

#### Advancement of southwest Monsoon:

- ❖ The Northern Limit of Southwest Monsoon continues to pass through 5°N/85°E, 6.5°N/90°E, Nancowry and 10°N/98°E.
- ❖ Conditions are favourable of further advance of southwest monsoon into some more parts of south Bay of Bengal, Andaman Sea and Andaman & Nicobar Islands during next 3 days.

#### Significant Meteorological features:

- ❖ The trough in middle & upper tropospheric westerlies runs roughly along Long. 80°E to the north of Lat. 30°N.
- ❖ A **cyclonic circulation** lies over East Uttar Pradesh and **trough** runs from this circulation to North Interior Karnataka at lower tropospheric levels.
- ❖ A fresh **Western Disturbance** is likely to affect Northwest India from 23<sup>rd</sup> May.

#### Forecast and warning over the country during next 5 days:

##### Northeast India:

- Light/moderate fairly widespread/widespread rainfall with thunderstorm/lightning/gusty winds very likely to continue over Northeast India during next 5 days.
- **Heavy rainfall** at isolated places over Assam & Meghalaya during 20<sup>th</sup> to 24<sup>th</sup> and Tripura & Mizoram on 24<sup>th</sup> May, 2023.

##### East India:

- Light/moderate isolated to scattered rainfall with thunderstorm/lightning/gusty winds very likely over most part of the region during next 5 days.
- **Heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim on 20<sup>th</sup>, 23<sup>rd</sup> & 24<sup>th</sup> May, 2023.

##### Northwest India:

- ❖ Light/moderate scattered to fairly widespread rainfall with thunderstorm/lightning/gusty winds very likely over Uttar Pradesh and Rajasthan on 22<sup>nd</sup> & 23<sup>rd</sup>; Western Himalayan Region on 23<sup>rd</sup> May, 2023.
- **Duststorm/dust raising winds** very likely in isolated pockets over Rajasthan during 22<sup>nd</sup> to 24<sup>th</sup> May, 2023.
- Under the influence of a fresh Western Disturbance, scattered to fairly widespread rainfall/thunderstorm likely over northwest India mainly during 23<sup>rd</sup> to 25<sup>th</sup> and decrease thereafter.

##### Central India:

- Light/moderate isolated light rainfall with thunderstorm/lightning/gusty winds (speed 40-50 kmph) over Chhattisgarh during next 5 days; over Vidarbha on 22<sup>nd</sup> & 23<sup>rd</sup> 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 40-42°C over many parts of Rajasthan, Madhya Pradesh, Chhattisgarh, Marathwada, Vidarbha, Telangana and over some parts of Gujarat state, East Uttar Pradesh, Bihar, Jharkhand, Madhya Maharashtra, Andhra Pradesh and north Interior Odisha.
- Maximum Temperatures were near normal over most parts of the country.
- Yesterday, **No Heat wave conditions observed in any parts of the country.**

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

- Maximum temperatures are very likely to rise by 2-4°C over northwest India during next 3 days and fall by 2-4°C thereafter. Gradual rise by 2-3°C during next 2 days and no significant change thereafter over central India & Maharashtra. No significant change in Maximum temperatures are very likely over east India during next 24 hours and rise by 2-3°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 during 20<sup>th</sup> to 22<sup>nd</sup>; over West Rajasthan, north Madhya Pradesh on 20<sup>th</sup> & 21<sup>st</sup> and over Chhattisgarh and Jharkhand during 21<sup>st</sup> to 23<sup>rd</sup> May, 2023.
- Due to humid air & high temperature, **Hot and Discomfort weather** is very likely over Konkan region during next 5 days and over Andhra Pradesh, Tamil Nadu and Kerala on 20<sup>th</sup> May, 2023.

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## Main Weather Observations

- ❖ **Rainfall/thundershowers observed** (from 0830 hrs IST to 1730 hrs IST of yesterday): **at a few places** over Assam & Meghalaya and **at isolated places** over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, East Madhya Pradesh, Chhattisgarh, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Odisha, Jharkhand, West Bengal & Sikkim and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Significant rainfall recorded** (from 0830 hrs IST to 1730 hrs IST of yesterday) (in cm): Coonoor, Jagdalpur, Midnapore and Majbat-3; Keongjharharh-2; Silchar-1.
- ❖ **Thunderstorm observed** (from 0830 hrs IST of yesterday to 0530 hrs IST of today): at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, West Rajasthan, East Madhya Pradesh, Chhattisgarh, Odisha, Gangetic West Bengal, Assam & Meghalaya, Tripura, Chhattisgarh, Odisha, Jharkhand, Coastal Andhra Pradesh & Yanam, Kerala & Mahe and Tamilnadu.
- ❖ **Hailstorm observed** (from 0830 hrs IST of yesterday to 0530 hrs IST of today): at isolated places over Odisha.
- ❖ **Minimum Temperature Departures (as on 19-05-2023):** Minimum temperatures were **above normal (1.6°C to 3.0°C)** at many places over Kerala & Mahe; at a few places over West Rajasthan, Jharkhand, Odisha, Madhya Maharashtra, Coastal Karnataka; at isolated places over Chhattisgarh, Coastal Andhra Pradesh & Yanam, Telangana, Interior Karnataka and Tamil Nadu, Puducherry & Karaikal. They were **appreciably below normal (-3.1°C to -5.1°C)** at a few places over Haryana, Chandigarh & Delhi, West Uttar Pradesh, Gangetic West Bengal; at isolated places over East Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim; **below normal (-1.6°C to -3.0°C)** at most places over Uttarakhand; at many places over Himachal Pradesh; at a few places over West Madhya Pradesh, Bihar; at isolated places over Punjab, East Rajasthan, Vidarbha and Nagaland, Manipur, Mizoram & Tripura and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature of 16.6°C** was reported at **Balughat (Sub-Himalayan West Bengal & Sikkim)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 19-05-2023):** Maximum temperatures were **above normal (1.6°C to 3.0°C)** at many places over Rayalaseema; at a few places over Madhya Maharashtra, North Interior Karnataka and Jharkhand and at isolated places over Kerala & Mahe, Bihar, Gangetic West Bengal, Odisha and Andaman & Nicobar Islands. They were **appreciably below normal (-3.1°C to -5.1°C )** at a few places over Haryana, Chandigarh & Delhi and Nagaland, Manipur, Mizoram & Tripura and at isolated places over Assam & Meghalaya; **below normal (-1.6°C to -3.0°C)** at a few places over West Uttar Pradesh and East Madhya Pradesh and at isolated places over West Rajasthan, West Madhya Pradesh and Sub-Himalayan West Bengal & Sikkim and **near normal** over rest parts of the country. Yesterday, **the highest maximum temperature of 43.9°C** was reported at **Barmer (West Rajasthan)**.

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### Meteorological Analysis (Based on 0530 hours IST)

- ❖ The Northern Limit of Southwest Monsoon continues to pass through 5°N/85°E, 6.5°N/90°E, Nancowry and 10°N/98°E.
- ❖ Conditions are favourable of further advance of southwest monsoon into some more parts of south Bay of Bengal, Andaman Sea and Andaman & Nicobar Islands during next 3 days.
- ❖ The trough in middle & upper tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 80°E to the north of Lat. 30°N 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 North Interior Karnataka across East Madhya Pradesh and Vidarbha at 0.9 km above mean sea level persists
- ❖ A fresh Western Disturbance likely to affect Northwest India from 23<sup>rd</sup> May 2023.

### Weather Forecast for next 5 days (Upto 0830 hours IST of 25th May, 2023)

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

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

- ❖ **Northwest India:** Maximum temperatures are very likely to rise by 2-4°C over northwest India during next 3 days and fall by 2-4°C thereafter.
- ❖ **Central India & Maharashtra:** Maximum temperatures are very likely to gradual rise by 2-3°C during next 2 days and no significant change thereafter.
- ❖ **East India:** No significant change in Maximum temperatures likely during next 24 hours and rise by 2-3°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 25th–27th 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

**20 May (Day 1):** ♦ **Heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya.

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

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

**21 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 Chhattisgarh; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over West Rajasthan, Gangetic West Bengal, Jharkhand; **with lightning** at isolated places over Sub-Himalayan West Bengal & Sikkim, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, South Interior Karnataka and Telangana.

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

**22 May (Day 3):** ♦ **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 Rajasthan, Chhattisgarh, Gangetic West Bengal; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Uttar Pradesh, Vidarbha, Bihar, Jharkhand; **with lightning** at isolated places over Sub-Himalayan West Bengal & Sikkim, Kerala & Mahe, Karnataka and Telangana.

♦ **Heat wave conditions** very likely in isolated pockets over south Uttar Pradesh, north Chhattisgarh and east Jharkhand.

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

**23 May (Day 4):** ♦ **Heavy rainfall** likely at isolated places over Assam & Meghalaya and Sub-Himalayan West Bengal & Sikkim.

♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Rajasthan, Chhattisgarh, Gangetic West Bengal; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Uttar Pradesh, Vidarbha, Bihar, Jharkhand; **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Sub-Himalayan West Bengal & Sikkim, Kerala & Mahe, Karnataka and Telangana.

♦ **Heat wave conditions** likely in isolated pockets over north Chhattisgarh and east Jharkhand.

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

**24 May (Day 5):** ♦ **Heavy to very heavy rainfall** likely at isolated places over Meghalaya **Heavy rainfall** at isolated places over Assam, Tripura & Mizoram and Sub-Himalayan West Bengal & Sikkim.

♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Rajasthan, Bihar, Chhattisgarh, Gangetic West Bengal; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Uttar Pradesh, Jharkhand; **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Sub-Himalayan West Bengal & Sikkim, Kerala & Mahe and South Interior Karnataka.

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



Table-1

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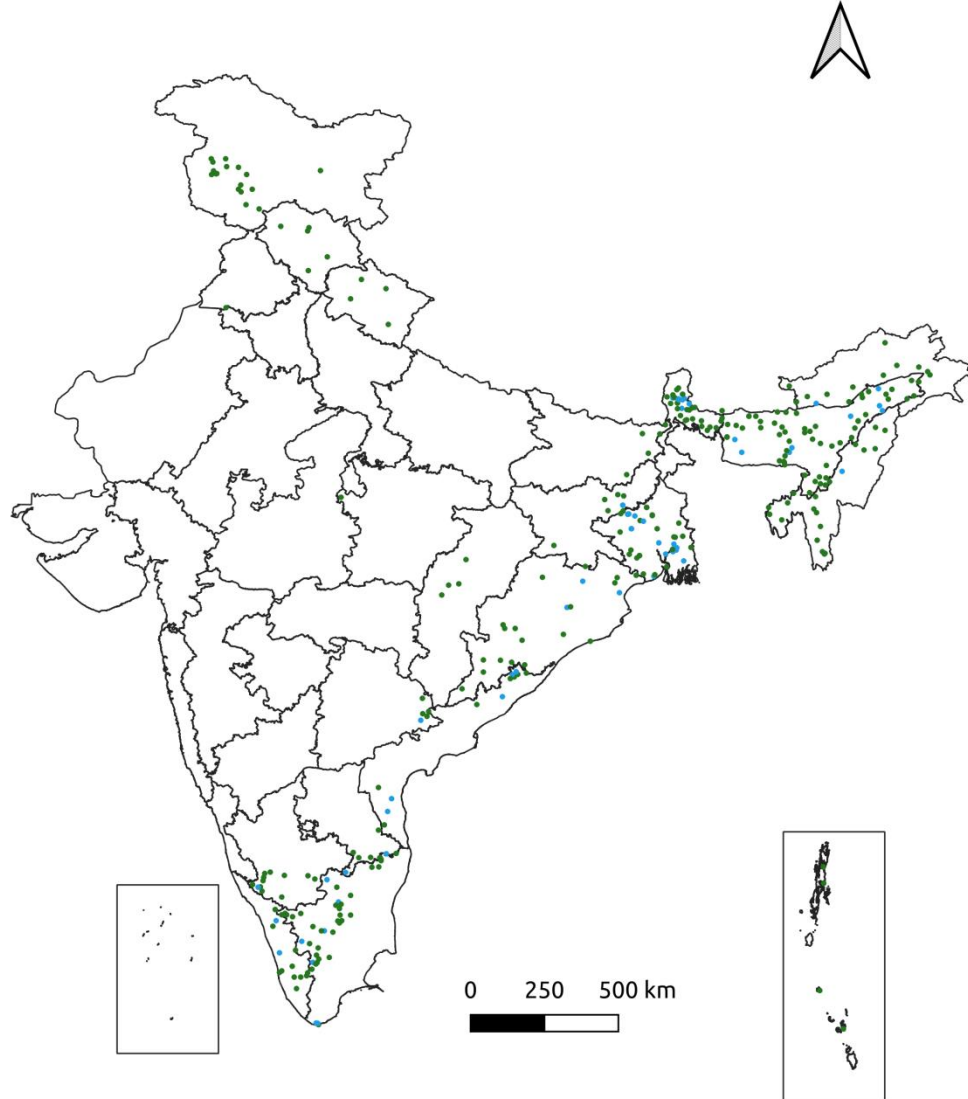
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Fig. 1: Accumulated Rainfall (mm) during past 24 hours



24 Hr cumulative rainfall recorded over different stations  
during 0830 IST of 18-5-2023 to 0830 IST of 19-5-2023



## 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 ( $\geq 204.5$  mm)

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Fig. 2: Maximum Temperatures Dated 19.05.2023

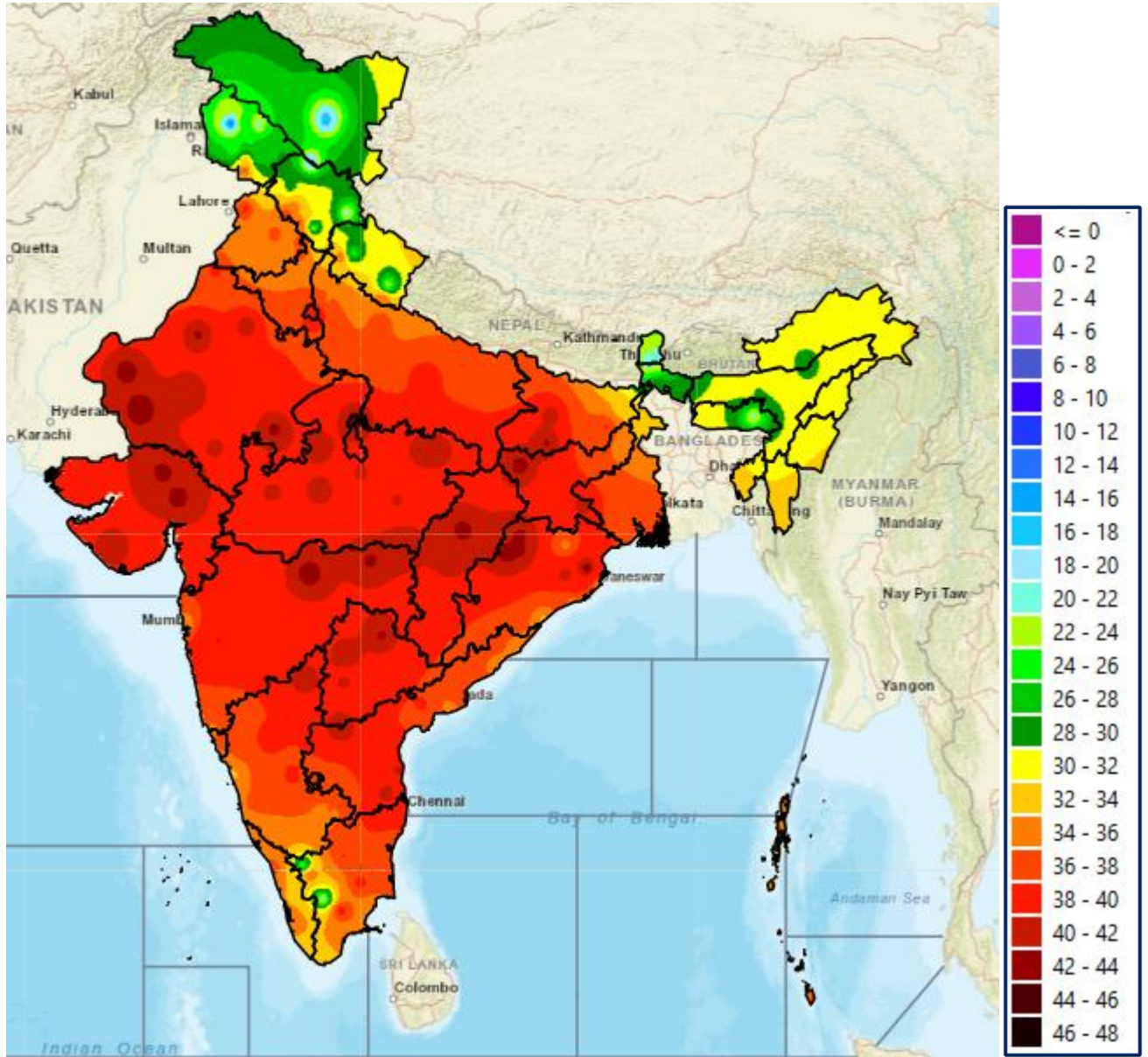


Fig. 3: Minimum Temperatures Dated 19.05.2023

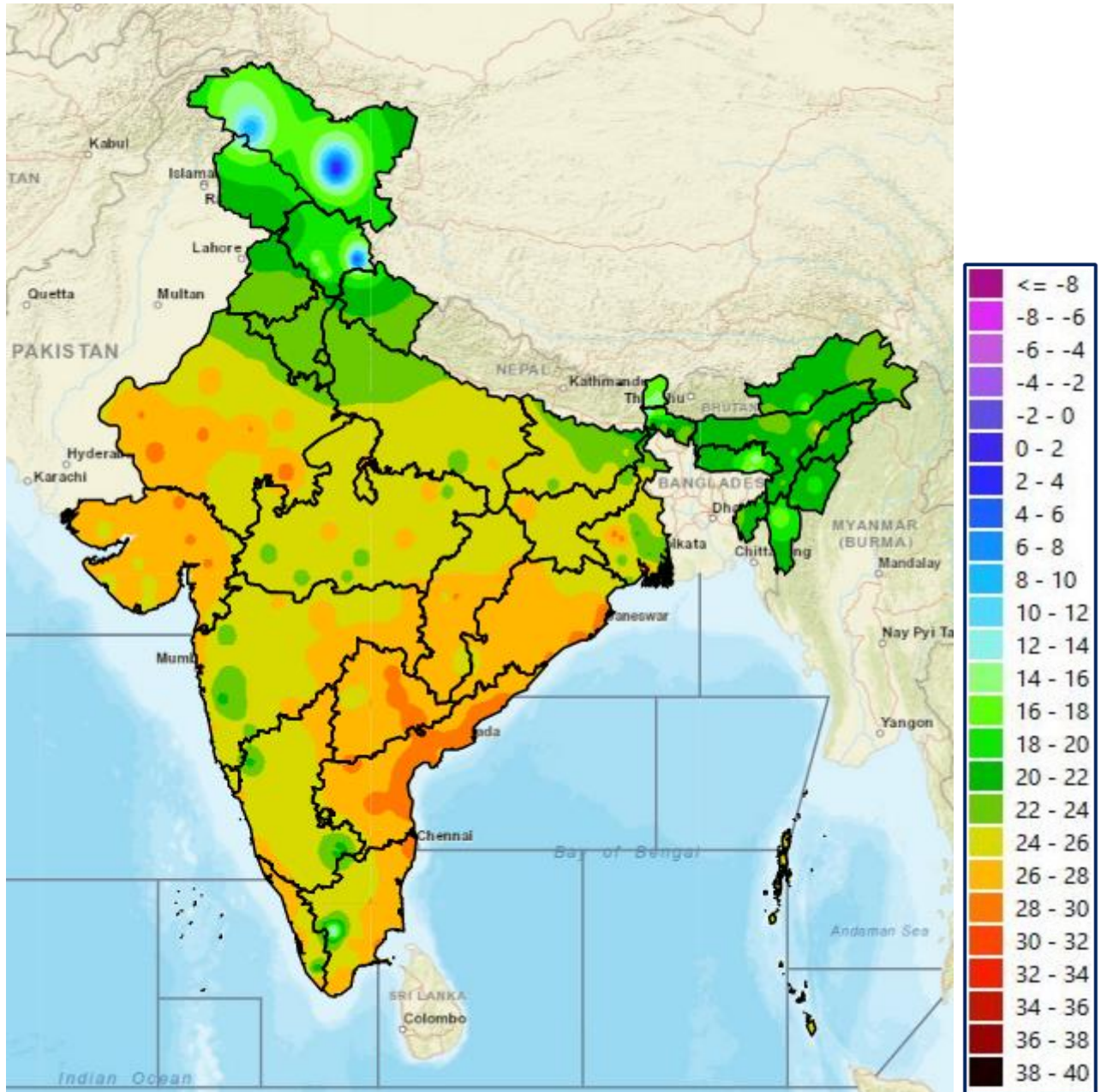




Fig. 4: Departure from Normal of Maximum Temperatures Dated 19.05.2023

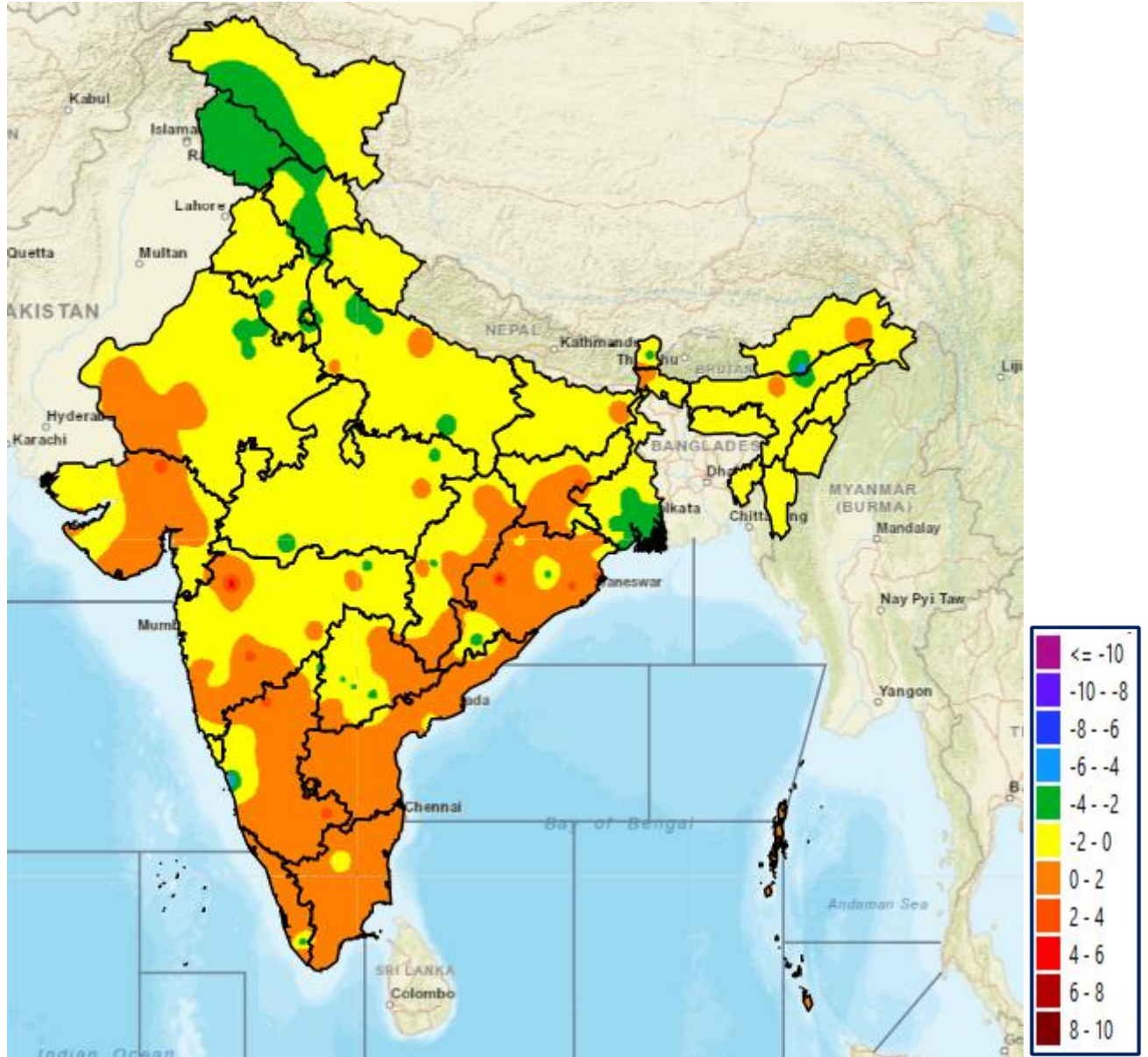
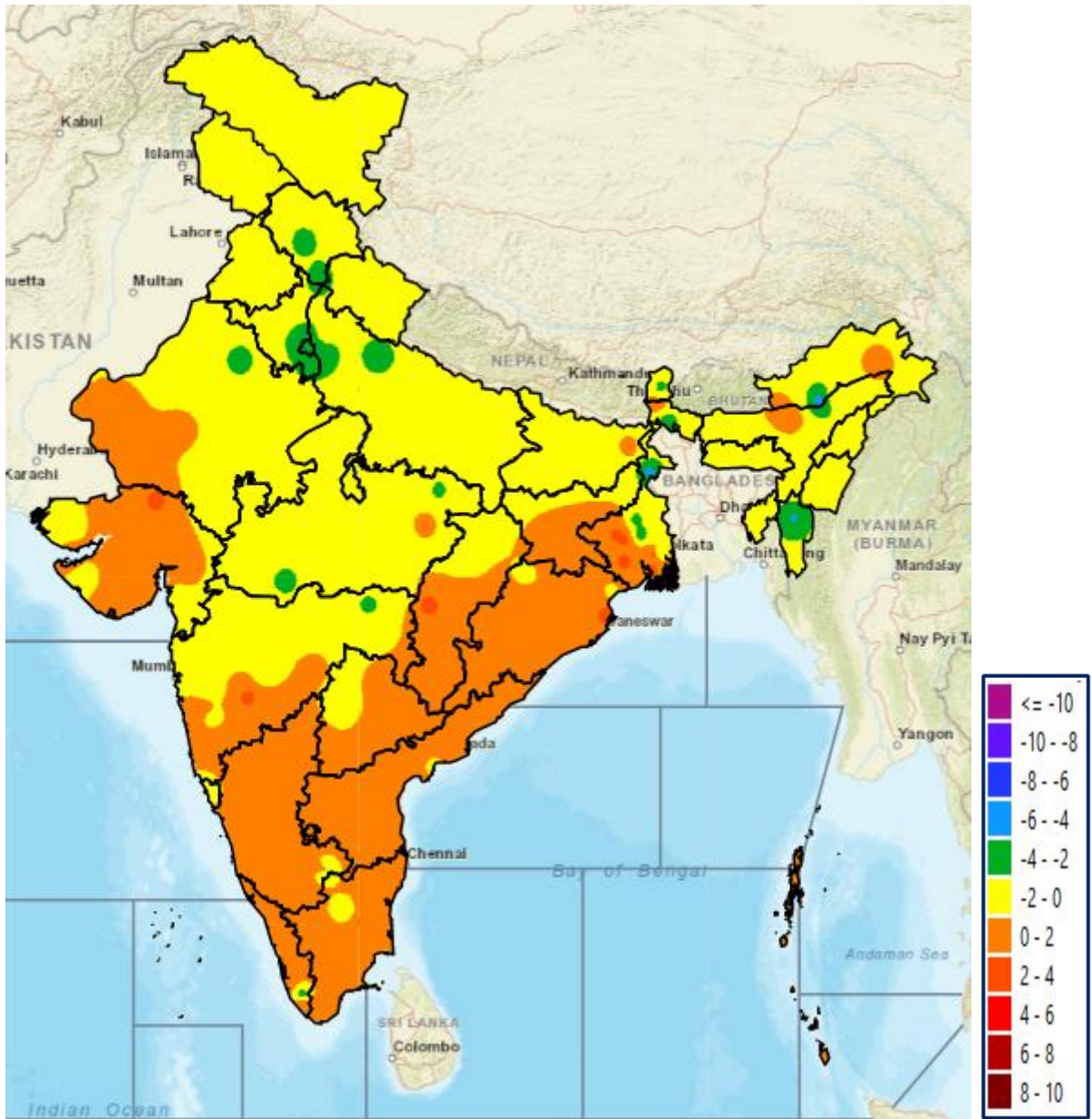


Fig. 5: Departure from Normal of Minimum Temperatures Dated 19.05.2023



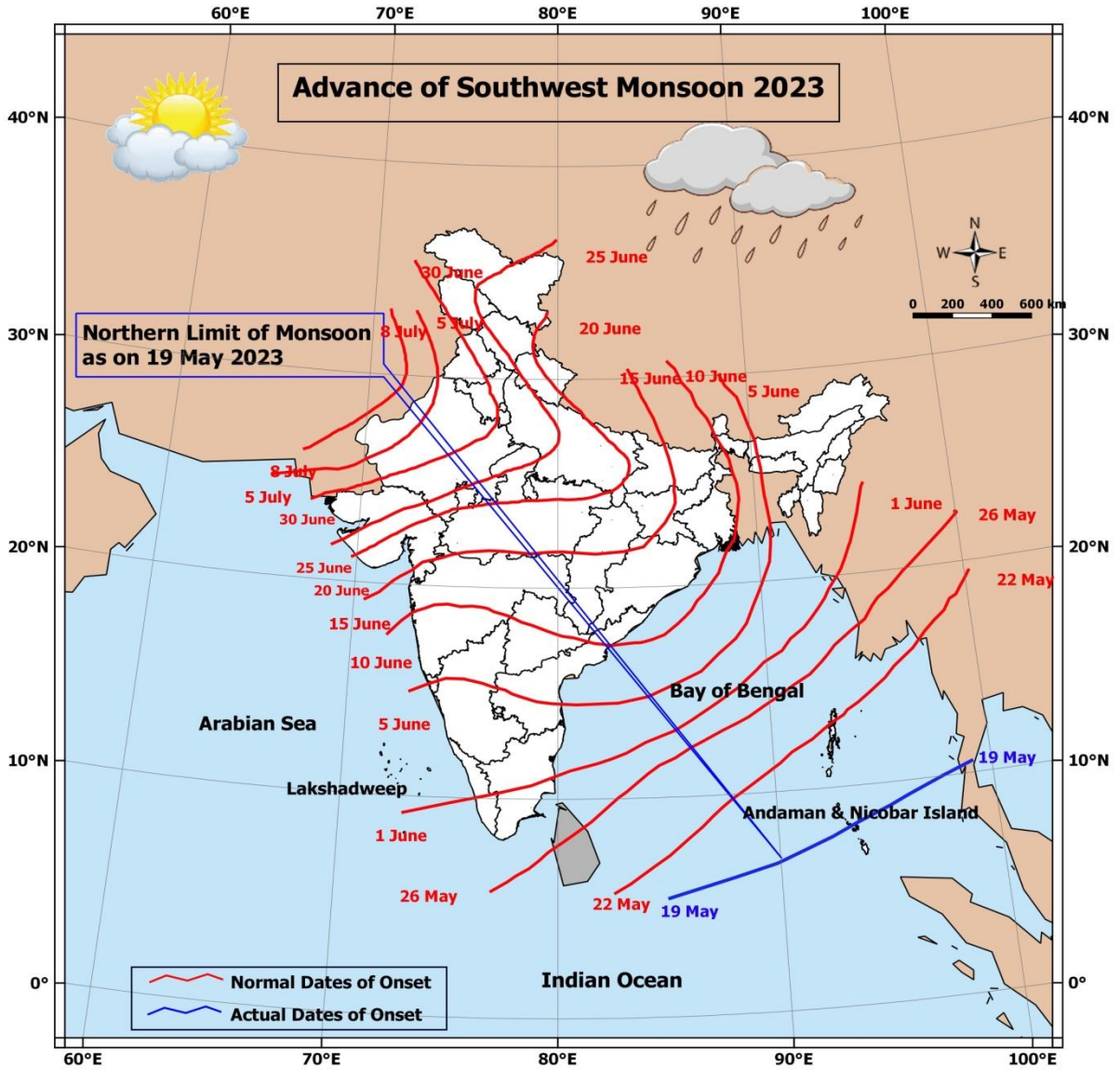
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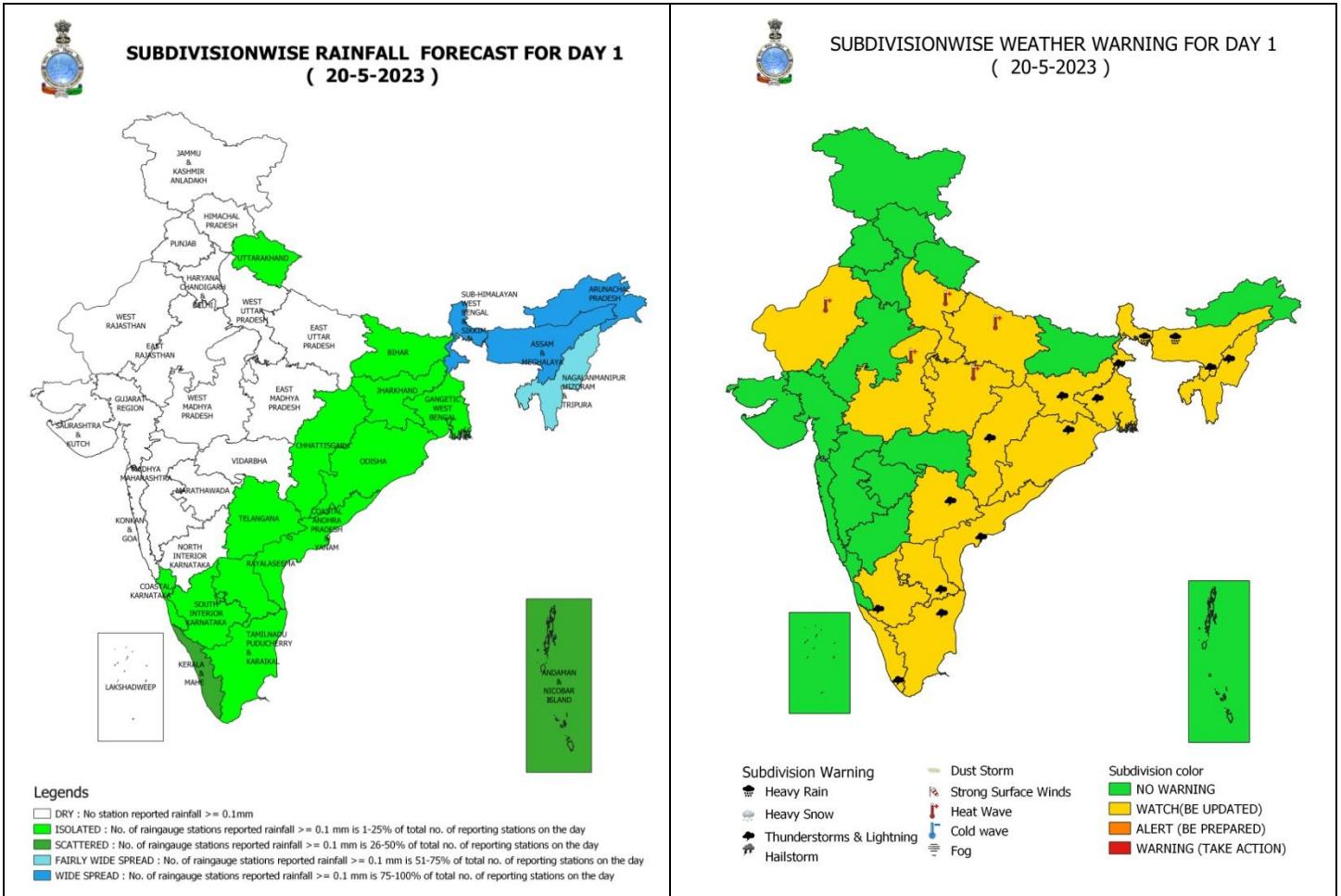
Fig. 6: Advance of Southwest Monsoon 19.05.2023



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**20 May (Day 1):** ♦ **Heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya.

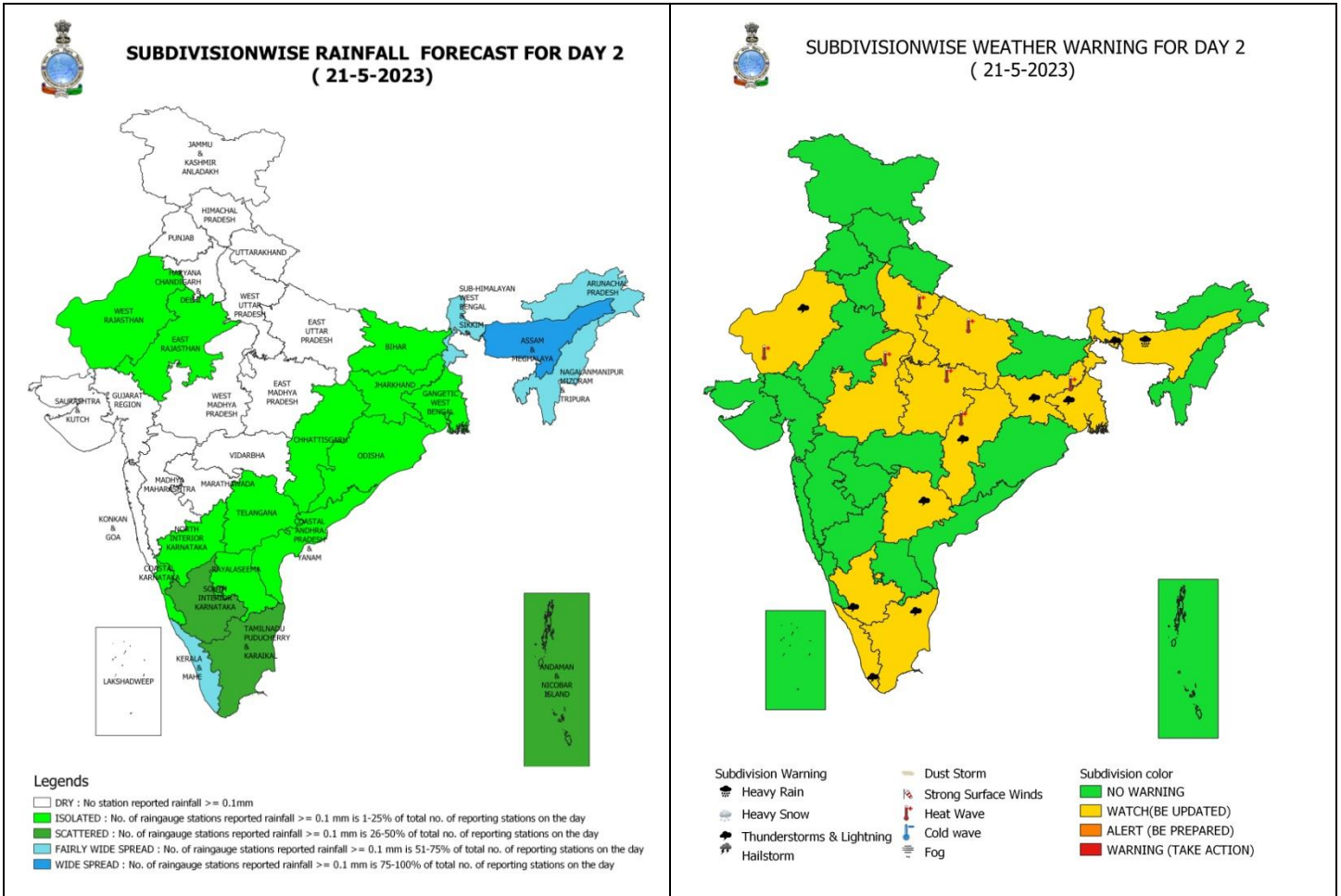
♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Chhattisgarh; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Gangetic West Bengal, Odisha, Jharkhand, Telangana; **with lightning** at isolated places over Sub-Himalayan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

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

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

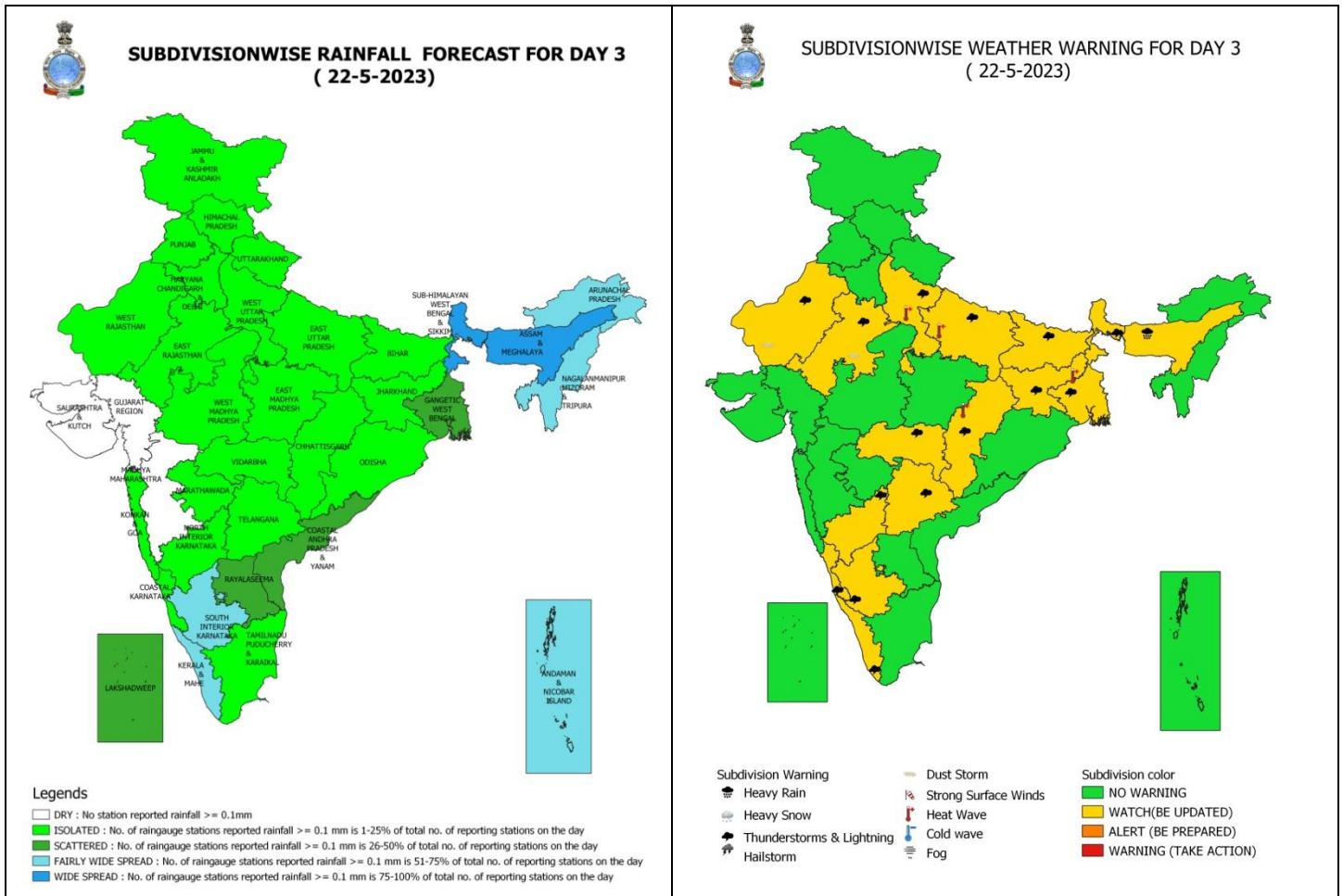
♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Chhattisgarh; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over West Rajasthan, Gangetic West Bengal, Jharkhand; **with lightning** at isolated places over Sub-Himalayan West Bengal & Sikkim, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, South Interior Karnataka and Telangana.

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

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**22 May (Day 3):** ♦ 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 Rajasthan, Chhattisgarh, Gangetic West Bengal; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Uttar Pradesh, Vidarbha, Bihar, Jharkhand; **with lightning** at isolated places over Sub-Himalayan West Bengal & Sikkim, Kerala & Mahe, Karnataka and Telangana.

♦ **Heat wave conditions** very likely in isolated pockets over south Uttar Pradesh, north Chhattisgarh and east Jharkhand.

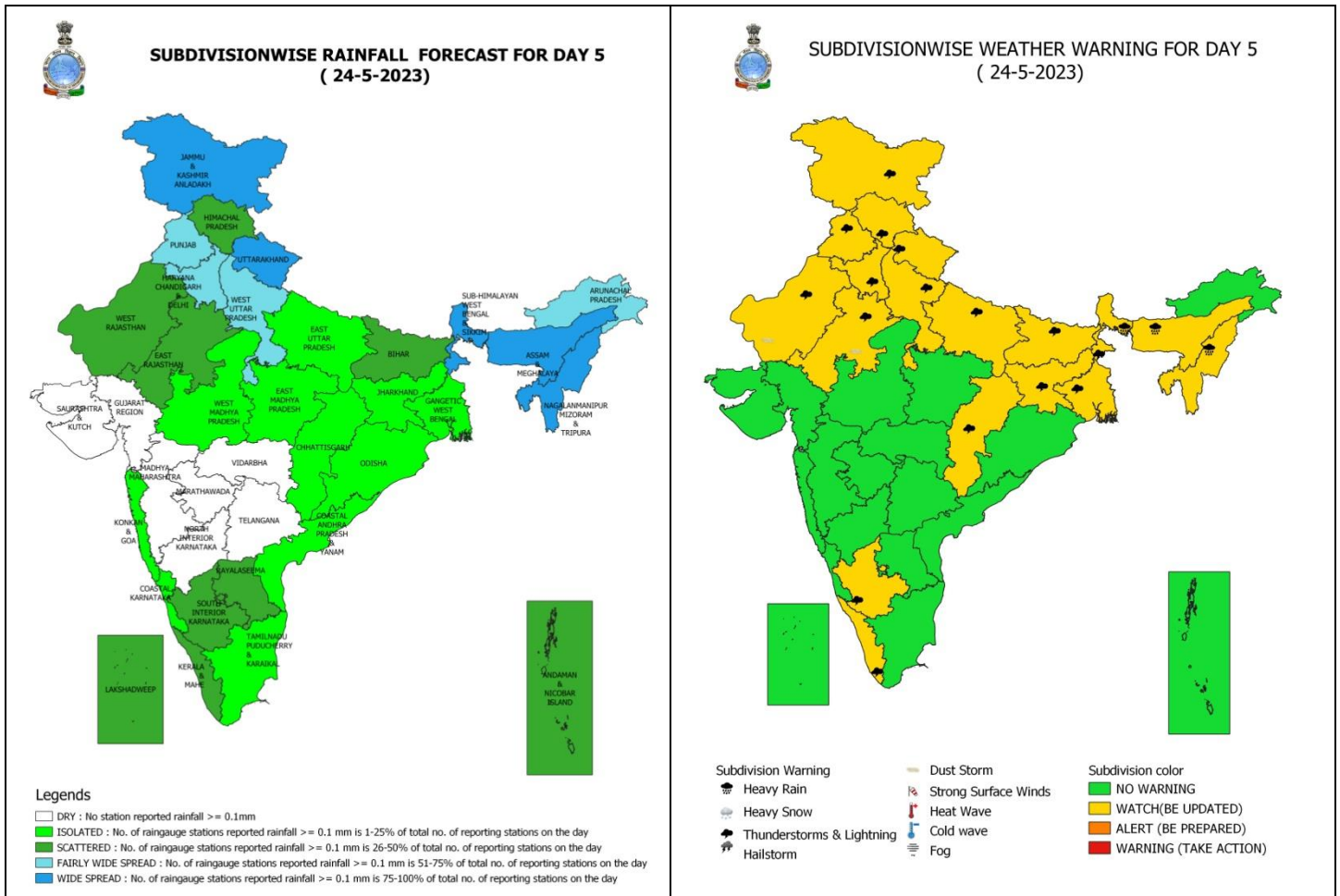
♦ **Dust Storm/Thunderstorm with gusty winds (speed 40-50 kmph)** very likely in isolated pockets over Rajasthan.

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**24 May (Day 5):** ♦ **Heavy to very heavy rainfall** likely at isolated places over Meghalaya **Heavy rainfall** at isolated places over Assam, Tripura & Mizoram and Sub-Himalayan West Bengal & Sikkim.

♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Rajasthan, Bihar, Chhattisgarh, Gangetic West Bengal; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Uttar Pradesh, Jharkhand; **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Sub-Himalayan West Bengal & Sikkim, Kerala & Mahe and South Interior Karnataka.

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

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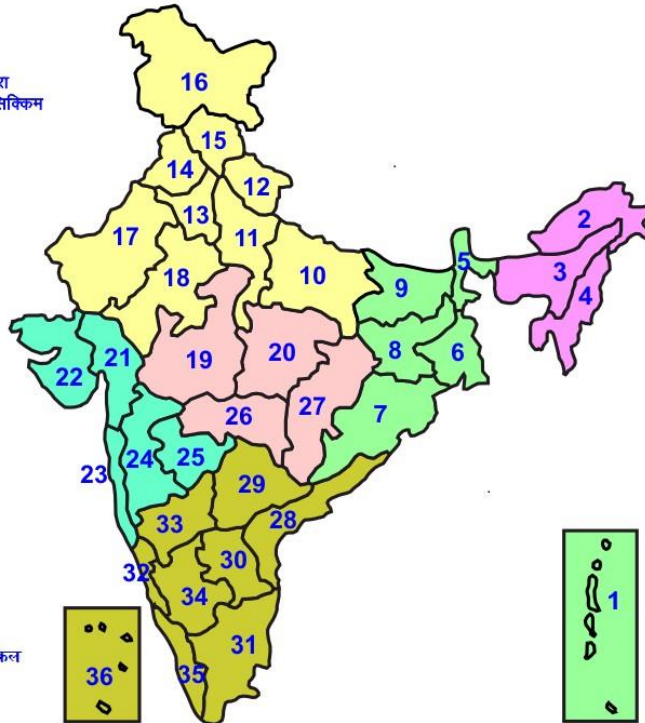
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## LEGENDS

- 1 अंडमान और निकोबार द्वीप समुह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीजोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम गॉंगेय बंगाल
- 7 ओडिशा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा चंडिगढ़ 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 क्षेत्र
- 22 सौराष्ट्र एवं कच्छ
- 23 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठावाडा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 तटीय आंध्र प्रदेश एवं यनम
- 29 तेलंगाना
- 30 रायलसीमा
- 31 तमिलनाडु, पुदुचेरी एवं कराईकल
- 32 तटिय कर्नाटक
- 33 आंतरिक उत्तरी कर्नाटक
- 34 आंतरिक दक्षिणी कर्नाटक
- 35 केरल एवंम 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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