



Tuesday, May 16, 2023  
Time of Issue: 0745 hours IST  
(MORNING)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features

#### Significant Meteorological features:

- ❖ The trough in middle & upper tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 84°E to the north of Lat. 28°N.
- ❖ The **Western Disturbance** as a trough in middle & upper tropospheric westerlies with its axis at 5.8 km above mean sea level runs roughly along Long. 62°E to the north of Lat. 30°N.
- ❖ A **cyclonic circulation** lies over south Bangladesh & neighbourhood at 0.9 km above mean sea level.

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

##### **Northeast India:**

- ❖ Light/moderate widespread rainfall very likely over Northeast India during next 05 days.
- ❖ **Heavy rainfall** very likely at isolated places over Arunachal Pradesh on 16<sup>th</sup>; over Assam & Meghalaya during 16<sup>th</sup> to 20<sup>th</sup> and Nagaland, Manipur, Mizoram & Tripura during 16<sup>th</sup> to 19<sup>th</sup> May.
- ❖ Isolated **very heavy falls** also likely over Assam & Meghalaya on 16<sup>th</sup>, 18<sup>th</sup> & 19<sup>th</sup> May, 2023.

##### **Northwest India:**

- ❖ **Duststorm** very likely in isolated pockets over Rajasthan during 16<sup>th</sup>-18<sup>th</sup> May, 2023.

#### Heat Wave Warnings:

- **Heat wave conditions** in isolated pockets is very likely over Odisha on 16<sup>th</sup> & 17<sup>th</sup> and Gangetic West Bengal & Coastal Andhra Pradesh on 16<sup>th</sup> May.

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## Main Weather Observations

- ❖ **Rainfall/thundershowers observed** (from 0830 hrs IST to 1730 hrs IST of yesterday): **at isolated places** over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, East Madhya Pradesh, Saurashtra & Kutch, Jharkhand, Gangetic West Bengal, Assam & Meghalaya and Arunachal Pradesh.
- ❖ **Significant rainfall recorded** (from 0830 hrs IST to 1730 hrs IST of yesterday) (in cm): Bankura -2; Jamshedpur and Midnapore – 1 each.
- ❖ **Thunderstorm observed** (from 0830 hrs IST of yesterday to 0530 hrs IST of today): at isolated pockets over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Uttarakhand, East Rajasthan, Gangetic West Bengal and Odisha.
- ❖ Yesterday, **Heat wave conditions** prevailed in isolated parts of Coastal Andhra Pradesh.
- ❖ **Minimum Temperature Departures (as on 15-05-2023):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over East Madhya Pradesh; **above normal (1.6°C to 3.0°C)** at many places over Saurashtra & Kutch, Kerala & Mahe; at a few places over Madhya Maharashtra, Telangana; at isolated places over Gujarat Region, Coastal Andhra Pradesh & Yanam, Odisha, Tamil Nadu, Puducherry & Karaikal. They were **appreciably below normal (-3.1°C to -5.0°C)** at many places over East Rajasthan, at isolated places over West Madhya Pradesh; **below normal (-1.6°C to -3.0°C)** at many places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, at a few places over Himachal Pradesh, Bihar, Assam & Meghalaya; at isolated places over West Rajasthan, Gangetic West Bengal, Vidarbha, Haryana, Chandigarh & Delhi and near normal over rest parts of the country. Yesterday, **the lowest minimum temperature of 20.1°C** was reported at **Malanjhand (East Madhya Pradesh)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 15-05-2023):** Maximum temperatures were **above normal (1.6°C to 3.0°C)** at many places over Punjab and Coastal Andhra Pradesh & Yanam; at a few places over Himachal Pradesh, Haryana, Chandigarh & Delhi, Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Konkan & Goa, Odisha, Gangetic West Bengal and Assam & Meghalaya; at isolated places over East Rajasthan, East Madhya Pradesh, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal. They were **below normal (-1.6°C to -3.0°C)** at a few places over Bihar and Nagaland, Manipur, Mizoram & Tripura; at isolated places over Saurashtra & Kutch and near normal over rest parts of the country. Yesterday, **the highest maximum temperature of 44.5°C** was reported at **Tikamgarh (East Madhya Pradesh)**.



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

- ❖ The trough in middle & upper tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 84°E to the north of Lat. 28°N.
- ❖ 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. 62°E to the north of Lat. 30°N.
- ❖ **The cyclonic circulation** over south Bangladesh & neighbourhood at 0.9 km above mean sea level persists.

### Weather Forecast for next 5 days (Upto 0830 hours IST of 21st May, 2023)

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

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

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

### Weather Outlook for subsequent 2 days (During 21st-23rd May, 2023)

- ❖ Fairly widespread to widespread light/moderate rainfall likely to continue over northeast India
- ❖ Isolated to Scattered rainfall/snowfall over Western Himalayan Region and isolated rainfall over Kerala, Tamil Nadu and Islands.
- ❖ Dry weather over rest parts of the country.
- ❖ Heat wave conditions likely in isolated pockets over East India.

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## Weather Warning during next 5 days

**16 May (Day 1):** ♦ **Heavy to very heavy rainfall** very likely at isolated places over Assam & Meghalaya; **heavy rainfall** at isolated places over Arunachal Pradesh and Manipur, Mizoram & Tripura.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim; **with lightning** at isolated places over Himachal Pradesh, Punjab, West Uttar Pradesh, Gangetic West Bengal, Bihar, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

♦ **Heat wave conditions** very likely in isolated pockets over Odisha and Coastal Andhra Pradesh & Yanam.

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

♦ **Squally Weather (with Wind Speed 40-45 kmph gusting to 55 kmph)** very likely over South-east Arabian sea adjoining Lakshadweep and Maldives area.

♦ **Squally Wind (with Wind Speed 40-45 kmph gusting to 55 kmph)** very likely over south-west Bay of Bengal along & off Tamil Nadu coast and Comorin area; Northwest Arabian sea and Somalia coast. Fishermen are advised not to venture into these areas.

**17 May (Day 2):** ♦ **Heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Manipur, Mizoram & Tripura and Kerala.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over Punjab, West Bengal & Sikkim, Odisha, Jharkhand, Kerala & Mahe; **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, West Uttar Pradesh, Bihar and Tamil Nadu, Puducherry & Karaikal.

♦ **Heat wave conditions** very likely in isolated pockets over Odisha.

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

♦ **Squally Weather (with Wind Speed 40-45 kmph gusting to 55 kmph)** likely over South-east Arabian sea, adjoining Lakshadweep area.

♦ **Squally Wind (with Wind Speed 40-45 kmph gusting to 55 kmph)** very likely over Somalia coast. Fishermen are advised not to venture into these areas.

**18 May (Day 3):** ♦ **Heavy to very heavy rainfall** very likely at isolated places over Assam & Meghalaya; **heavy rainfall** at isolated places over West Bengal & Sikkim and Manipur, Mizoram & Tripura.

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

♦ **Dust Storm/Thunderstorm with gusty winds (speed 30-40 kmph)** very likely in isolated pockets over Rajasthan.

**19 May (Day 4):** ♦ **Heavy to very heavy rainfall** likely at isolated places over Assam & Meghalaya; **heavy rainfall** at isolated places over Manipur, Mizoram & Tripura.

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

**20 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; **with lightning** at isolated places over Chhattisgarh, Bihar, South Interior Karnataka and Kerala & Mahe.

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Table-1

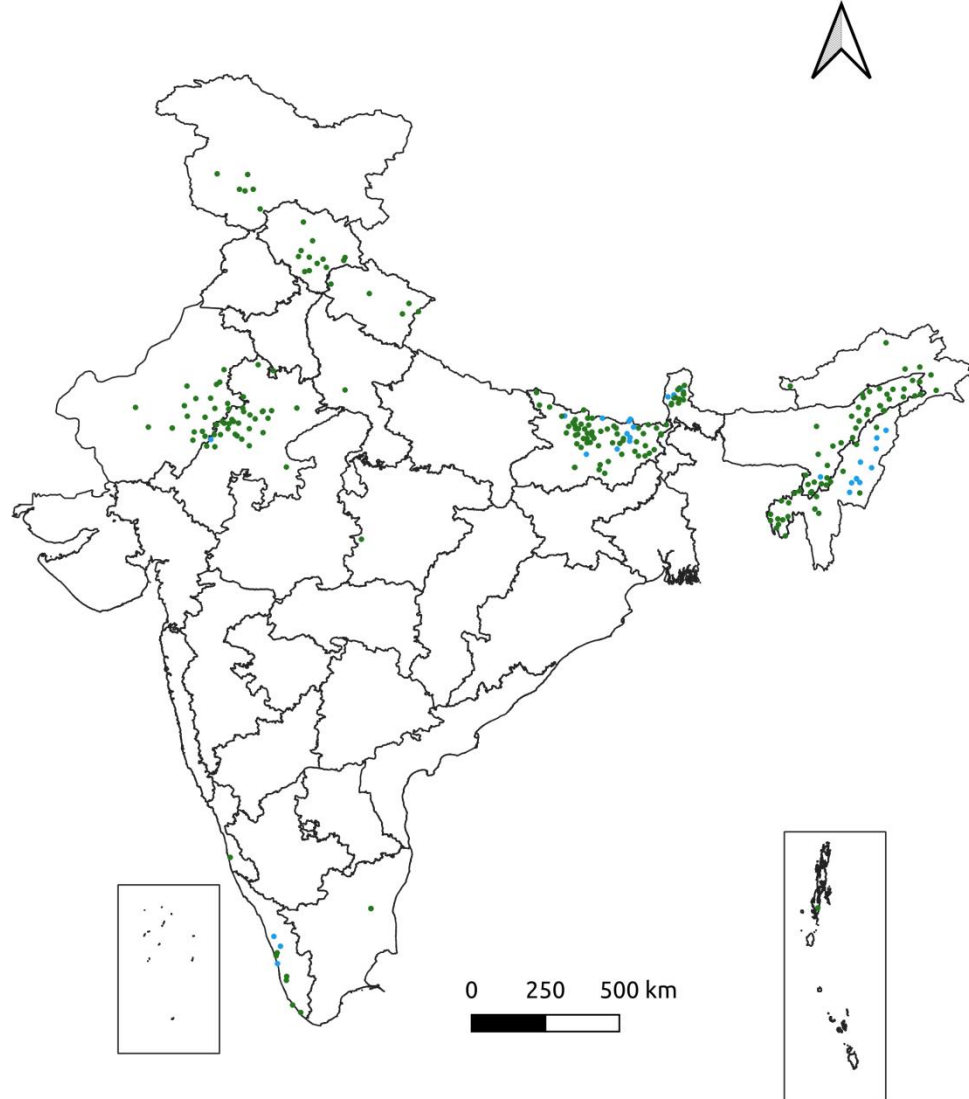
<b>5 Day Rainfall Forecast</b>						
S. No.	Subdivision	16-May	17-May	18-May	19-May	20-May
		Day 1	Day 2	Day 3	Day 4	Day 5
1	ANDAMAN & NICOBAR ISLANDS	SCT	SCT	SCT	SCT	ISOL
2	ARUNACHAL PRADESH	WS	FWS	FWS	FWS	WS
3	ASSAM & MEGHALAYA	WS	WS	WS	WS	WS
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	WS	WS	WS	WS	FWS
5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

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



24 Hr cumulative rainfall recorded over different stations during 0830 IST of 14-5-2023 to 0830 IST of 15-5-2023



## 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 15.05.2023

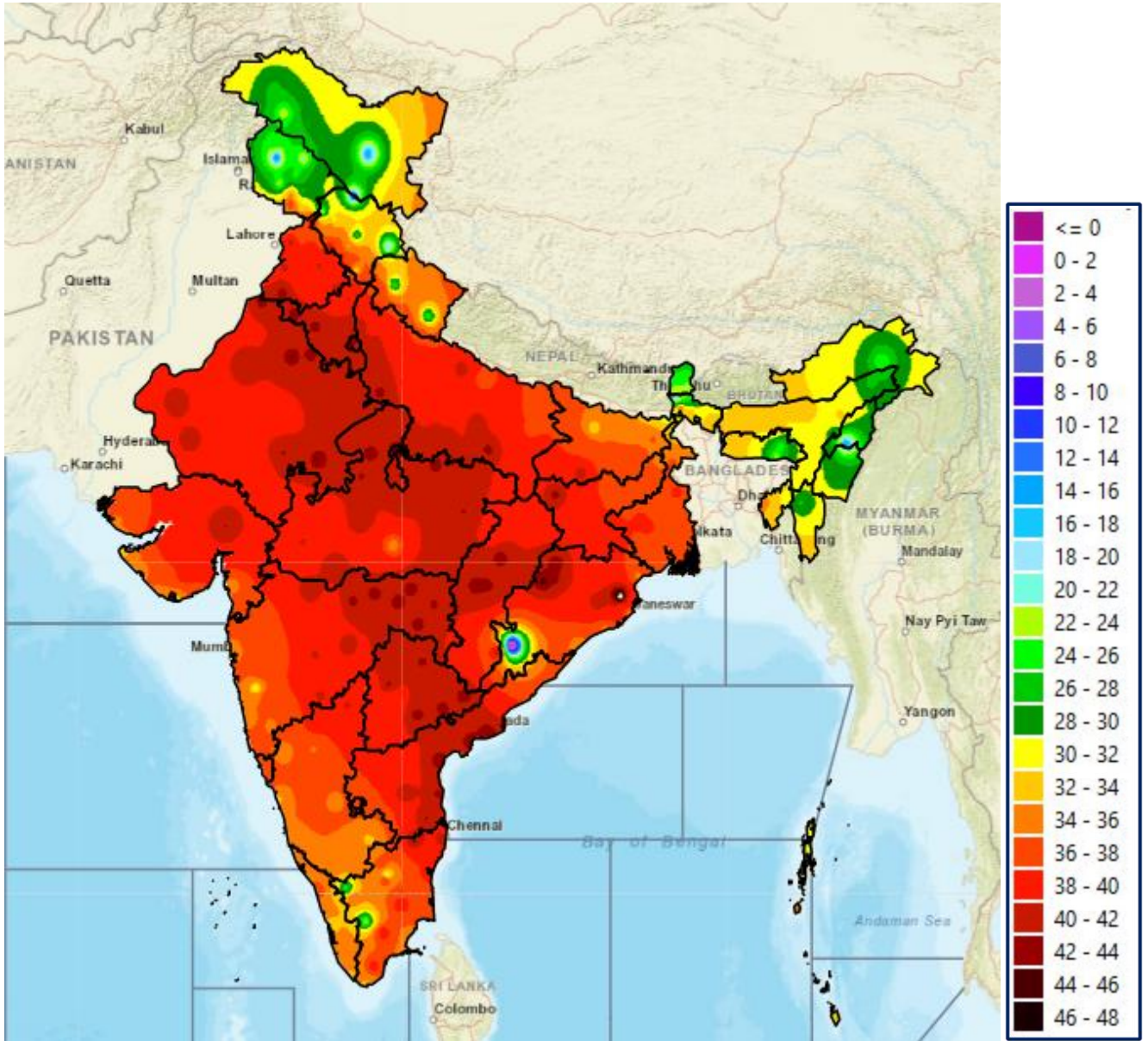


Fig. 3: Minimum Temperatures Dated 15.05.2023

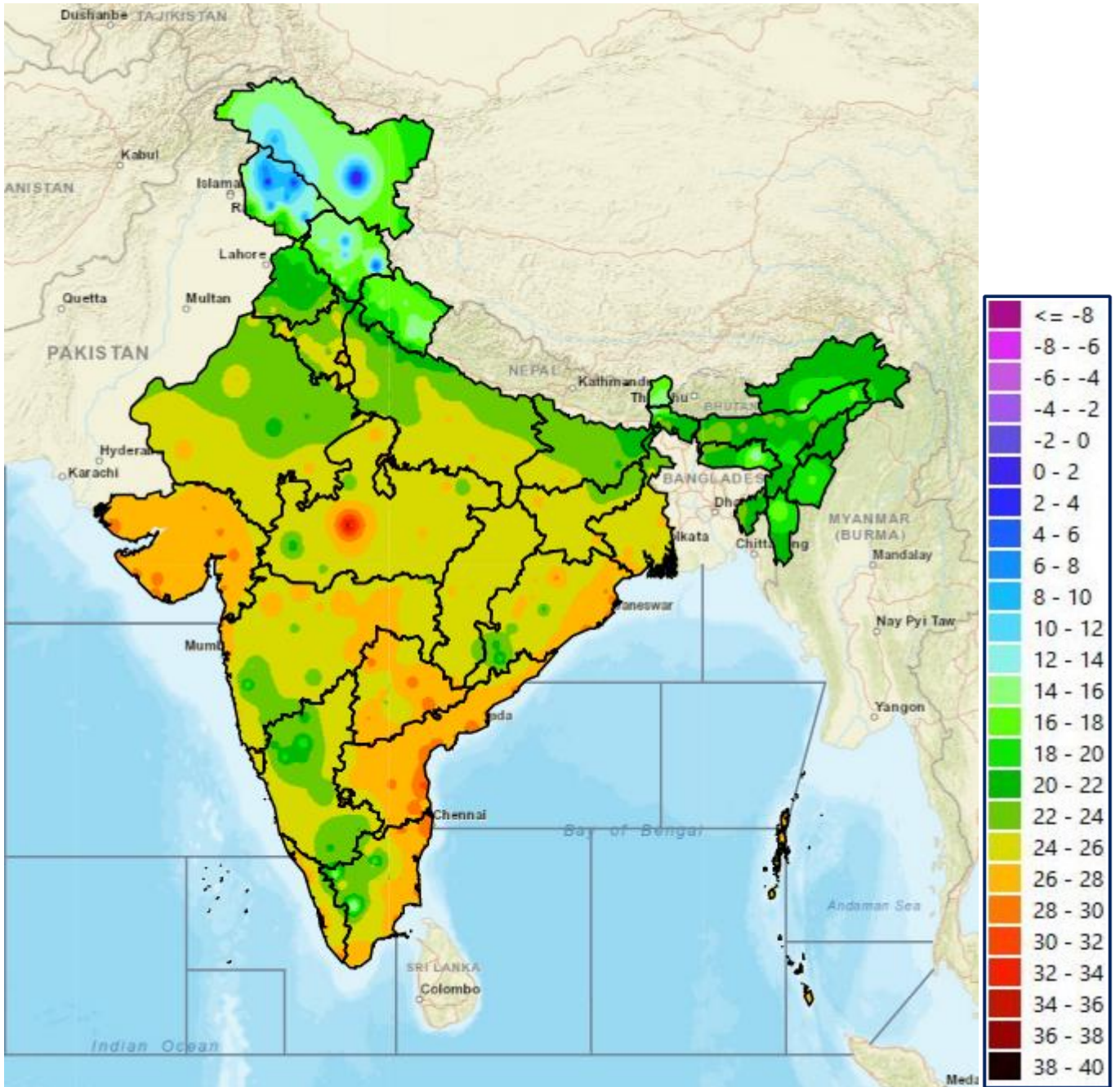


Fig. 4: Departure from Normal of Maximum Temperatures Dated 15.05.2023

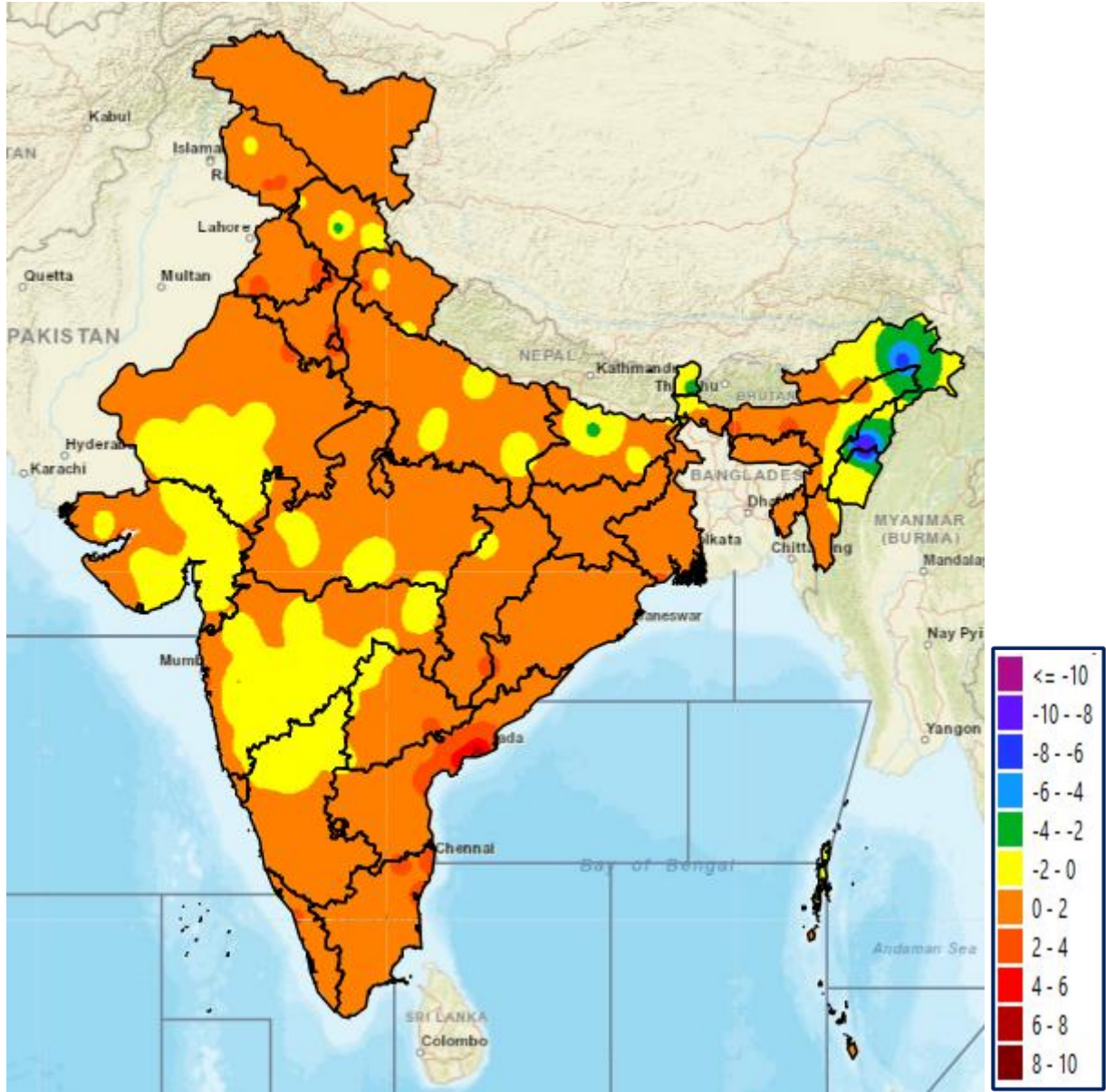
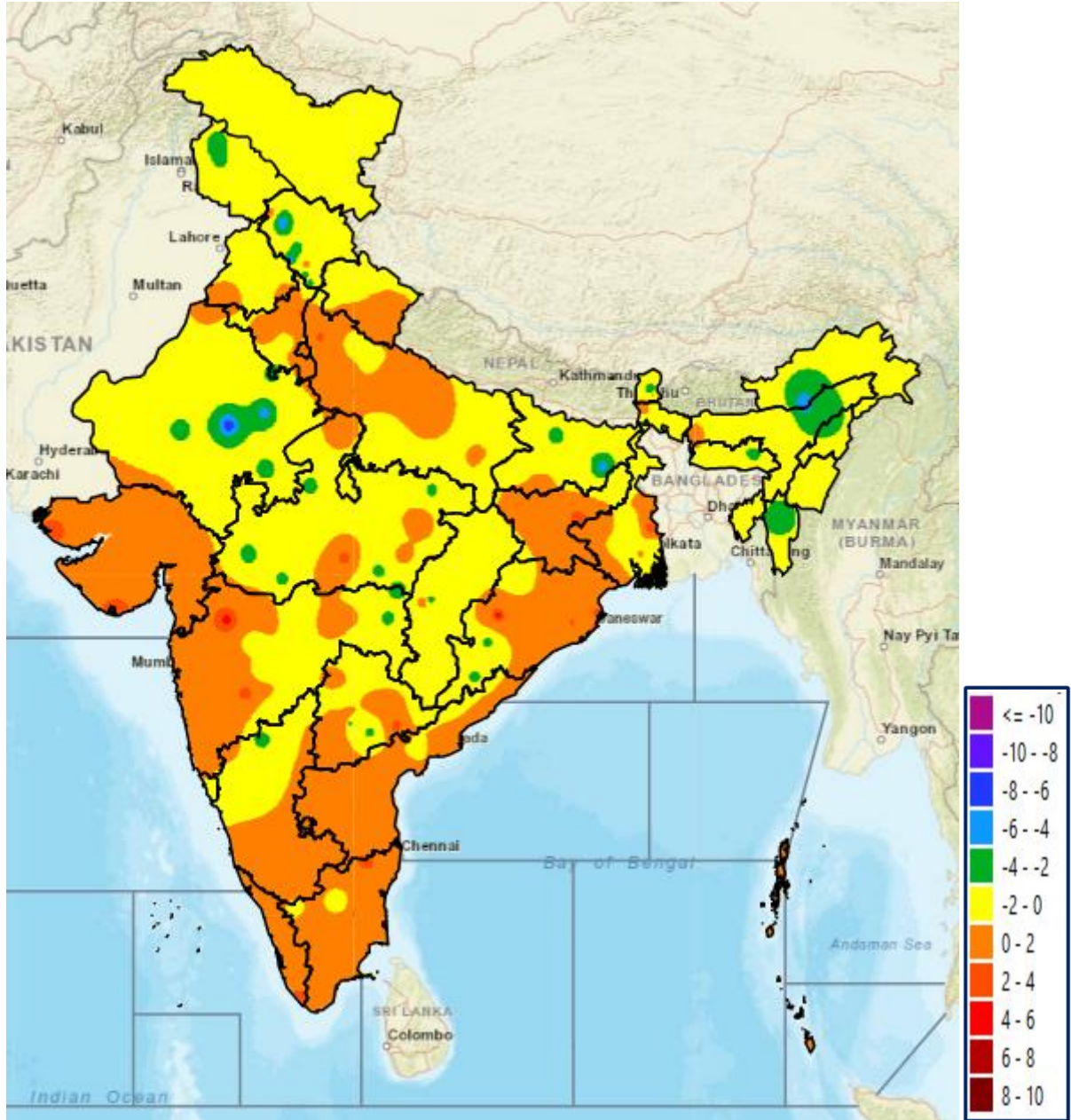
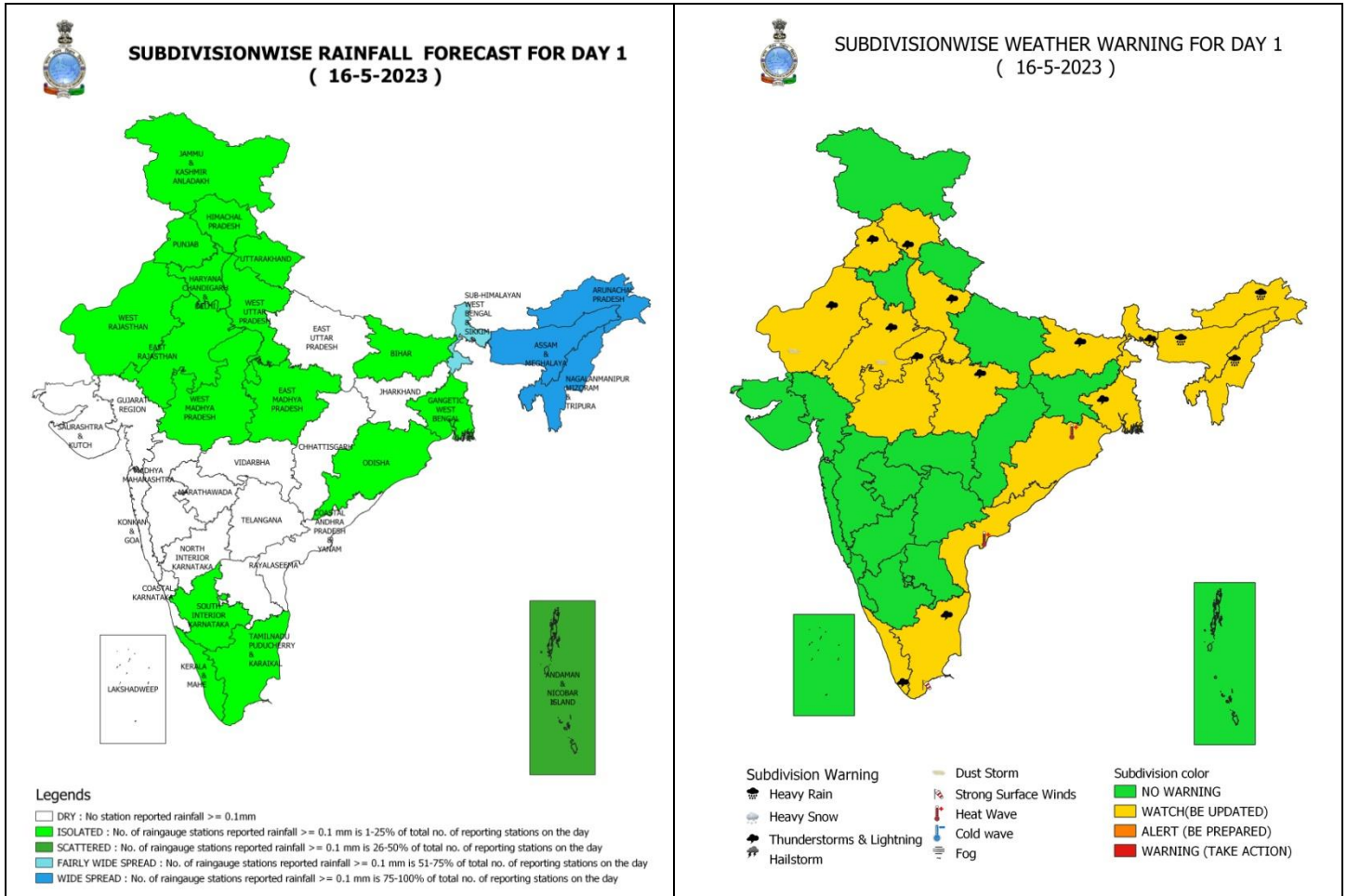


Fig. 5: Departure from Normal of Minimum Temperatures Dated 15.05.2023





**16 May (Day 1):** ♦ **Heavy to very heavy rainfall** very likely at isolated places over Assam & Meghalaya; **heavy rainfall** at isolated places over Arunachal Pradesh and Manipur, Mizoram & Tripura.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim; **with lightning** at isolated places over Himachal Pradesh, Punjab, West Uttar Pradesh, Gangetic West Bengal, Bihar, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

♦ **Heat wave conditions** very likely in isolated pockets over Odisha and Coastal Andhra Pradesh & Yanam.

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

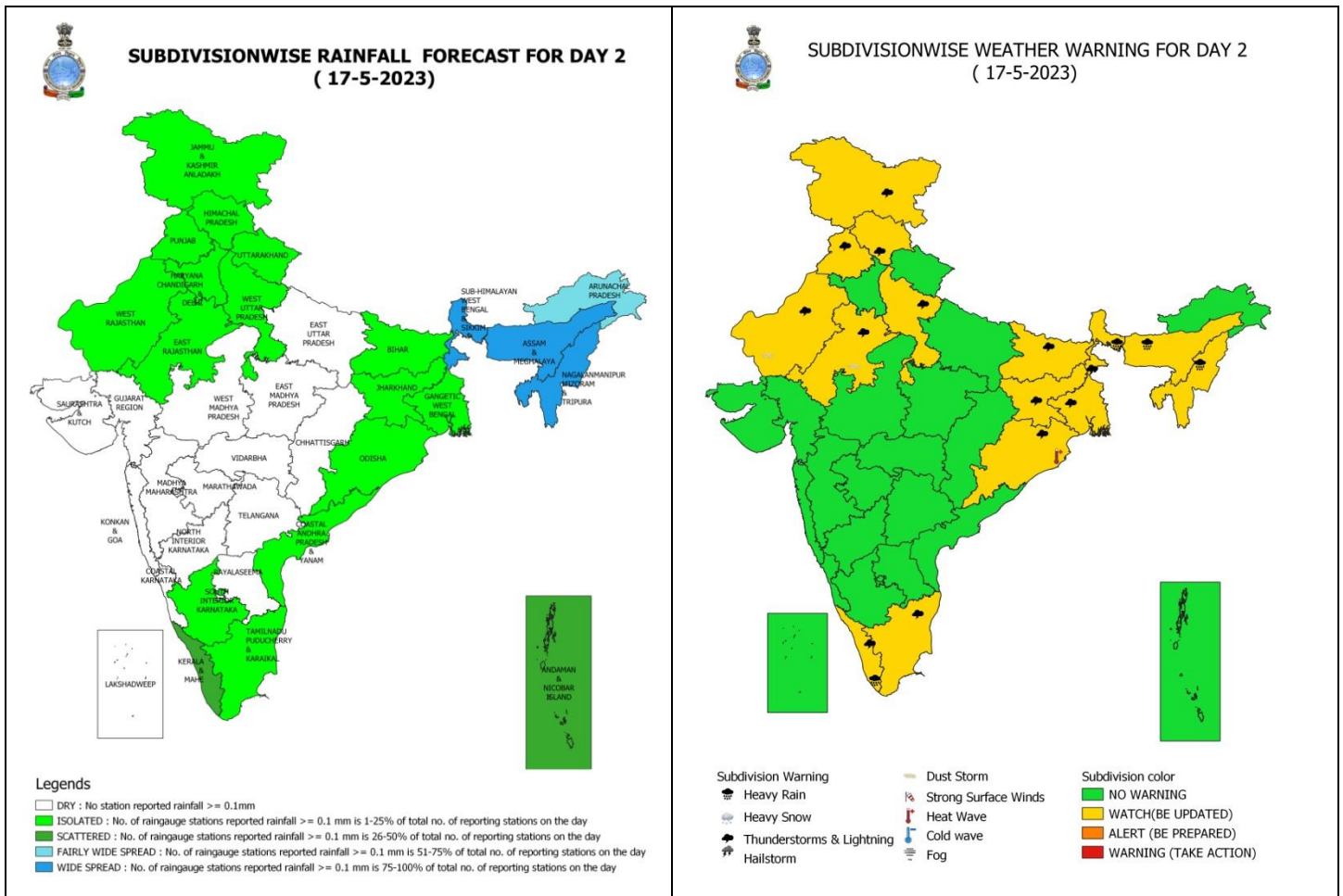
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**17 May (Day 2):** ♦ **Heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Manipur, Mizoram & Tripura and Kerala.

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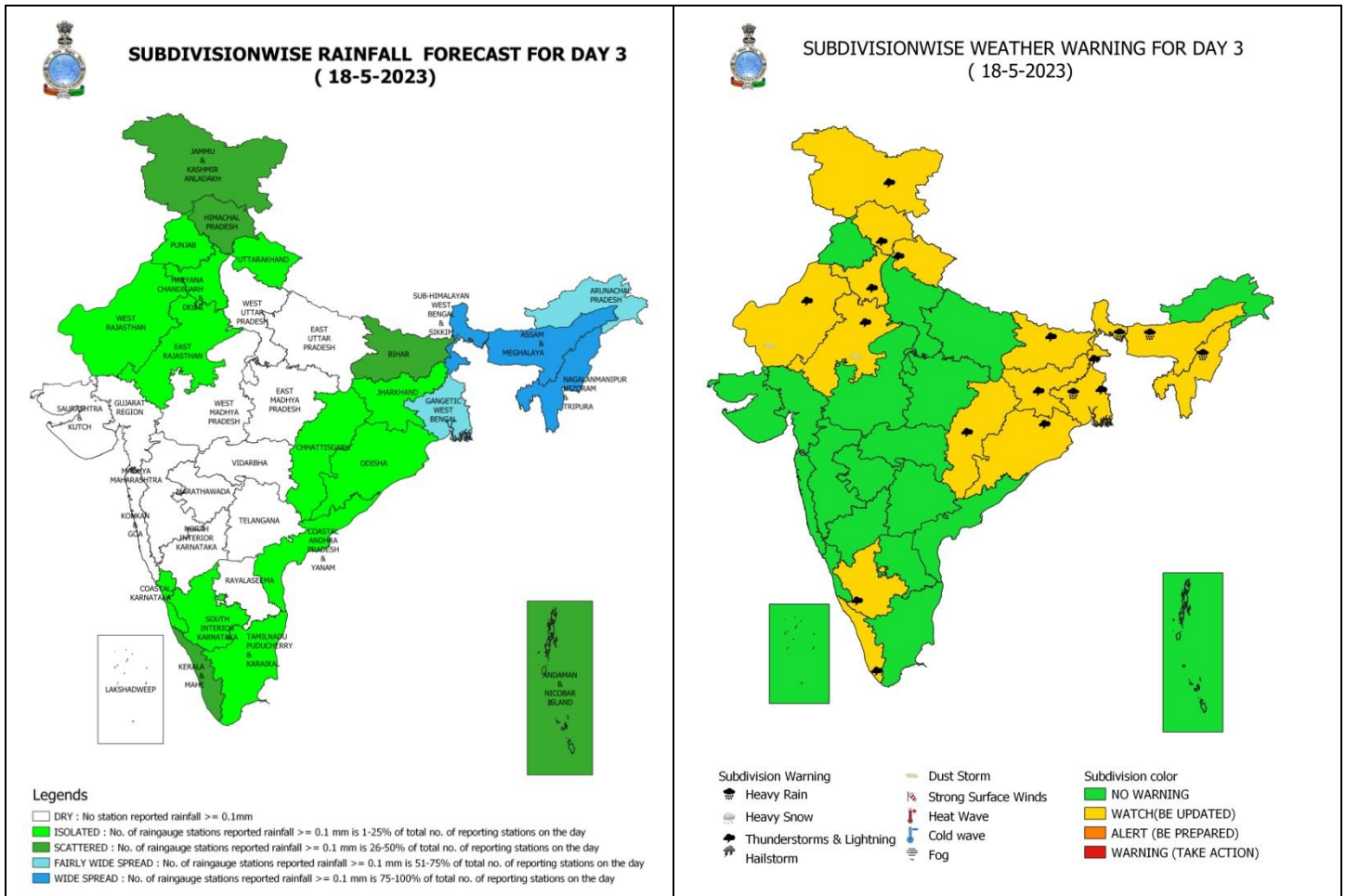
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**18 May (Day 3):** ♦ **Heavy to very heavy rainfall** very likely at isolated places over Assam & Meghalaya; **heavy rainfall** at isolated places over West Bengal & Sikkim and Manipur, Mizoram & Tripura.

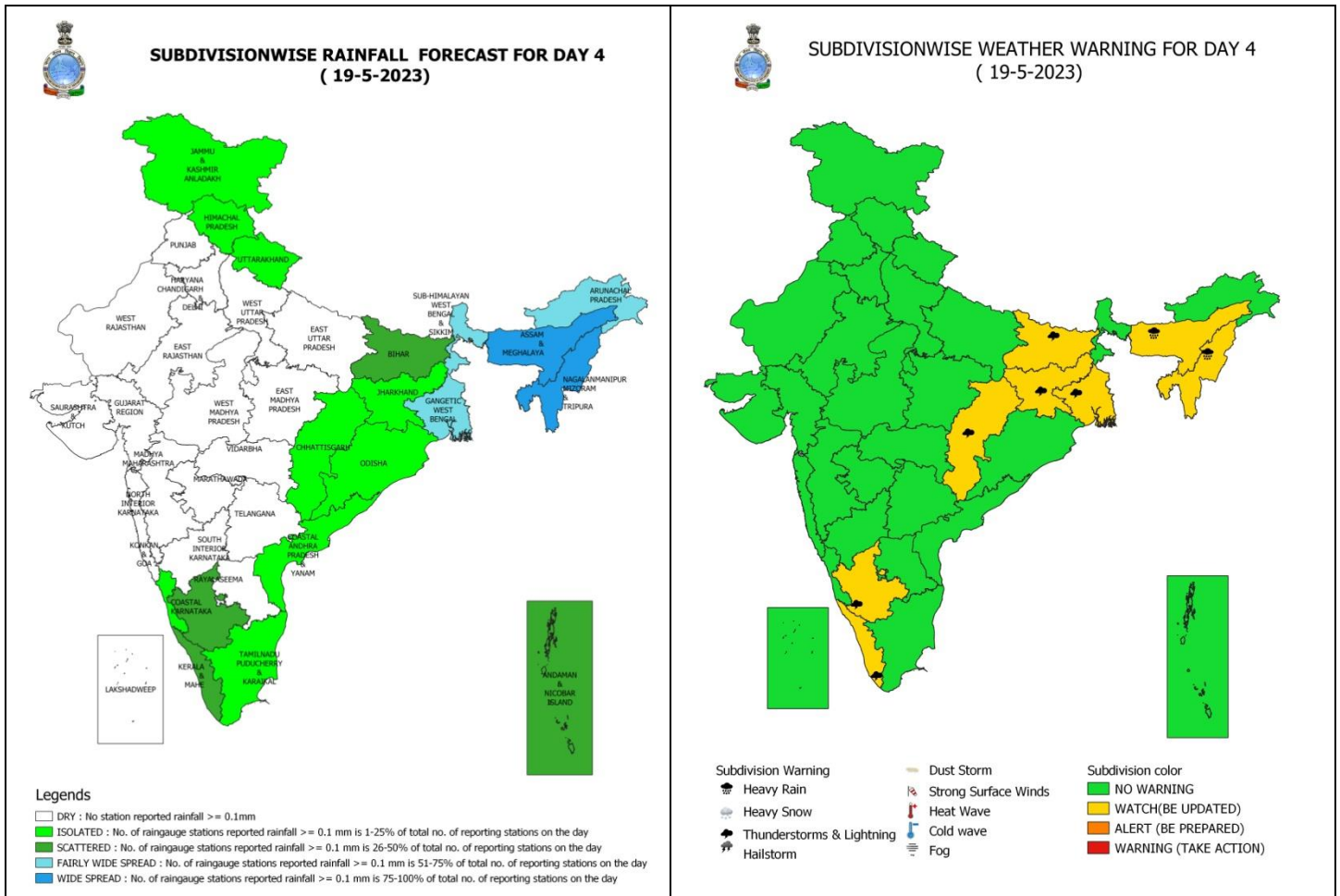
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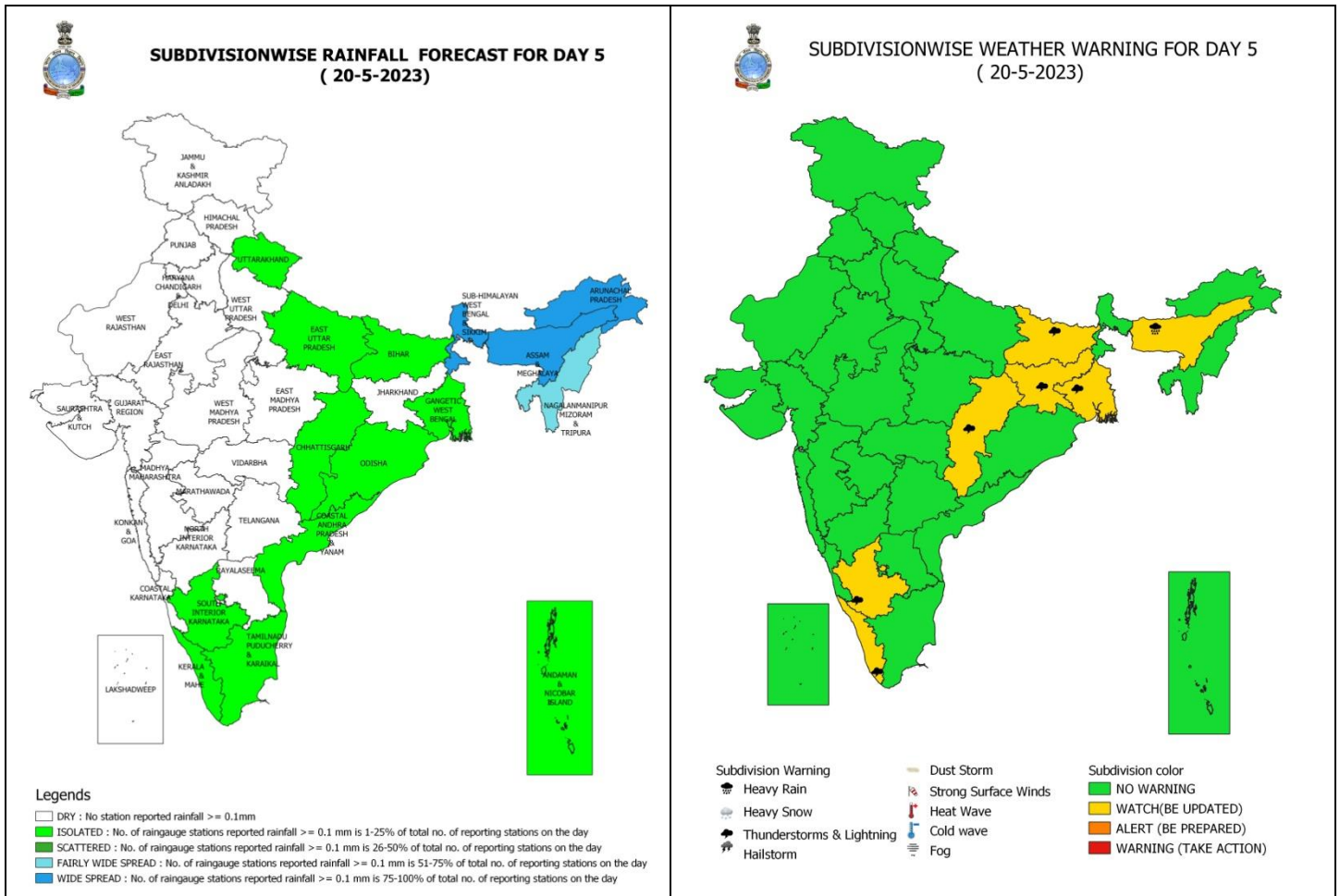
**19 May (Day 4):** ♦ Heavy to very heavy rainfall likely at isolated places over Assam & Meghalaya; heavy rainfall at isolated places over Manipur, Mizoram & Tripura.

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

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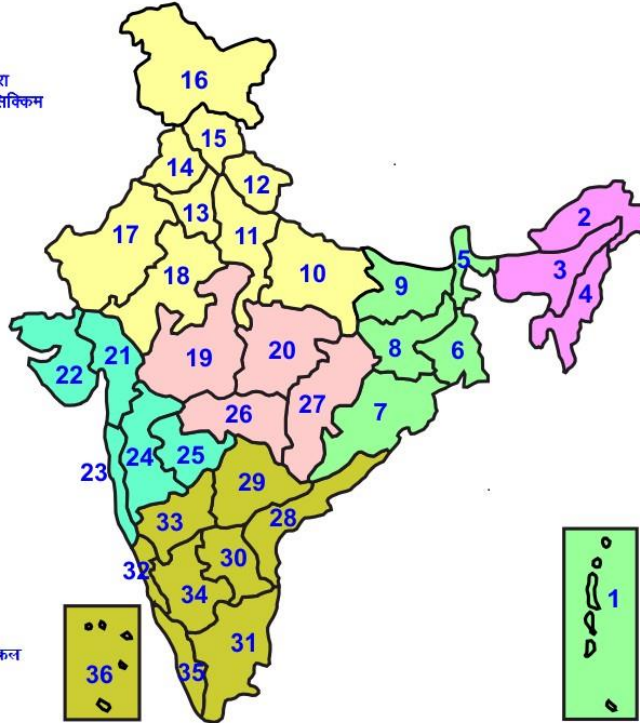
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## LEGENDS

- 1 अंडमान और निकोबार द्वीप समुह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम गंगेय 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 रायलसेमा
- 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

<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".

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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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