

#### National Weather Forecasting Centre India Meteorological Department Ministry of Earth Sciences

Thursday, April 13, 2023 MID-DAY

Time of Issue: 1330 hours IST

#### ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

## **Significant Weather Features**

### **Significant Meteorological features:**

- ❖ A **trough/wind discontinuity** runs from east Vidarbha to north coastal Karnataka in lower tropospheric levels.
- ❖ A cyclonic circulation lies over southwest Rajasthan in lower tropospheric levels.
- ❖ A fresh Western Disturbance is likely to affect Western Himalayan Region from 15<sup>th</sup> April, 2023.

### Maximum Temperatures, Forecast and Heat Wave Warning during next 5 days:

- ❖ Maximum temperatures are in the range of 40-42°C over parts of central & north peninsular India. These are above normal by 3-5°C over many parts of Western Himalayan region and Northeast India, West Bengal & Sikkim, Odisha, Coastal Andhra Pradesh and Kerala & Mahe.
- ❖ Maximum Temperatures are very likely to be above normal by 3-5°C over Northeast India, West Bengal & Sikkim, Odisha, Coastal Andhra Pradesh, Kerala & Mahe and Madhya Pradesh during next 4-5 days. These are likely to be above normal by 1-3°C over most parts of the rest parts of the country.
- ❖ Heat wave conditions very likely in isolated pockets over Gangetic West Bengal during 13<sup>th</sup>-17<sup>th</sup>; over north coastal Andhra Pradesh & Odisha during 13<sup>th</sup>-15<sup>th</sup> April and over Bihar during 15<sup>th</sup>-17<sup>th</sup> April, 2023.

#### **Rainfall Forecast and Warnings:**

#### West India:

❖ Light/moderate isolated rainfall with thunderstorm/lightning very likely over Konkan & Goa, Madhya Maharashtra and Marathwada during next 5 days. Isolated **hailstorm** activity very likely over Madhya Maharashtra & Marathawada on 13<sup>th</sup> & 14<sup>th</sup> and over south Konkan & Goa on 13<sup>th</sup> April, 2023.

#### **Northwest India:**

- ❖ Light/moderate scattered to fairly widespread rainfall with thunderstorm/lightning very likely over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad; isolated to scattered rainfall with thunderstorm/lightning over Himachal Pradesh & Uttarakhand during 15<sup>th</sup>-17<sup>th</sup> April.
- ❖ Isolated light rainfall over West Rajasthan on 16<sup>th</sup> and over Punjab on 17<sup>th</sup> April, 2023.
- ❖ Strong surface winds (25-35 kmph) very likely over Uttar Pradesh on 13th April, 2023.





## **Main Weather Observations**

- \* Rainfall/thundershowers observed (from 0830 hours IST of yesterday to 0830 hours IST of today): Andaman & Nicobar Islands and at isolated places over Uttarakhand, Rajasthan, Haryana, Assam & Meghalaya, Arunachal Pradesh, Konkan & Goa, Madhya Maharashtra, Marathawada, Kerala, Coastal Andhra Pradesh and Telangana.
- ❖ Significant rainfall recorded (in cm): Nil.
- **Thunderstorm observed** (from 0830 hours IST of yesterday to 0830 hours IST of today): at isolated places over West Madhya Pradesh, Madhya Maharashtra and East Rajasthan.
- Yesterday, Heat Wave conditions prevailed in isolated pockets over Gangetic West Bengal.
- ★ Minimum Temperature Departures (as on 13-04-2023): Minimum temperatures are appreciably above normal (3.1°C to 5.1°C at a few places over Punjab, West Rajasthan, Andaman & Nicobar Islands, Gujarat Region; at isolated places over East Uttar Pradesh, Chhattisgarh; above normal (1.6°C to 3.0°C) at many places over Madhya Maharashtra, Marathwada; at a few places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Himachal Pradesh, West Madhya Pradesh, Saurashtra & Kutch, Konkan & Goa; at isolated places over Vidarbha, Telangana. They are appreciably below normal (-3.1°C to -5.1°C) at a few places over Tamil Nadu, Puducherry & Karaikal; at isolated places over Rayalaseema; below normal (-1.6°C to -3.0°C) at a few places over Haryana, Chandigarh & Delhi, East Madhya Pradesh, Jharkhand; at isolated places over Odisha and near normal over rest parts of the country. Today, the lowest minimum temperature of 17.6°C is reported at Rewa (East Madhya Pradesh) over plains of the country.
- ❖ Maximum Temperature Departures (as on 12-04-2023): Maximum temperatures were appreciably above normal (3.1°C to 5.1°C) at many places over Gangetic West Bengal; at a few places over Assam & Meghalaya; above normal (1.6°C to 3.0°C) at most places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Sub-Himalayan West Bengal & Sikkim; at many places over Bihar; at a few places over Odisha, Coastal Andhra Pradesh & Yanam; at isolated places over Gujarat State, Konkan & Goa, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe. They were below normal (-1.6°C to -3.0°C) at isolated places over West Madhya Pradesh and near normal over rest parts of the country. Yesterday, the highest maximum temperature of 43.0°C was reported at Rajgarh (West Madhya Pradesh) and Jharsuguda (Odisha).



## Meteorological Analysis (Based on 0830 hours IST)

- ❖ The **cyclonic circulation** over southwest Rajasthan & neighbourhood persists and now extends upto 3.1 km above mean sea level.
- ❖ The **trough/wind discontinuity** from east Vidarbha to Coastal Karnataka now runs from east Vidarbha to north Coastal Karnataka across Marathwada & North Interior Karnataka at 0.9 km above mean sea level.
- ❖ A **cyclonic circulation** lies over north Bangladesh & neighbourhood at 0.9 km above mean sea level.
- ❖ A fresh Western Disturbance is likely to affect Western Himalayan Region from 15<sup>th</sup> April, 2023.

## Weather Forecast for next 5 days (upto 0830 hours IST of 18th April, 2023)

- ❖ Meteorological sub-division wise detailed 5 days rainfall forecast is given in Table-1.
- ❖ Northwest & East India: Maximum Temperatures are very likely to rise gradually by 2-3°C during next 3 days and no significant change thereafter.
- **❖ Central India:** Maximum Temperatures are very likely to rise gradually by 2-4°C during next 5 days.
- **❖ Maharashtra**: No significant change in Temperatures very likely during next 2 days and rise gradually by 2-4°C thereafter.
- ❖ South India: Maximum Temperatures are very likely to rise gradually by 2°C during next 3 days and no significant change thereafter.

# Weather Outlook for subsequent 2 days (during 18th-20th April, 2023)

- ❖ Fairly widespread to widespread light/moderate rainfall likely over Western Himalayan region and isolated light rainfall over adjoining plains of Northwest India.
- ❖ Isolated light rainfall likely over parts of Peninsular India, Central India, Northeast India and Maharashtra.
- ❖ Mainly dry weather likely over rest parts of the country.



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# **Weather Warning during next 5 days**

- **13 April (Day 1): ♦ Hailstorm with thunderstorm, lightning & gusty winds (40-50 kmph)** very likely at isolated places over south Konkan & Goa, Madhya Maharashtra and **with thunderstorm, lightning** at isolated places over Marathwada.
- ◆ Thunderstorm with lightning very likely at isolated places over north Konkan, Coastal Andhra Pradesh.
- ♦ **Heat Wave conditions** very likely in isolated pockets over coastal areas of Gangetic West Bengal, Odisha and north Coastal Andhra Pradesh.
- **14 April (Day 2): ♦ Hailstorm with thunderstorm, lightning & gusty winds (40-50 kmph)** very likely at isolated places over Madhya Maharashtra and **with thunderstorm, lightning** at isolated places over Marathwada.
- ♦ Thunderstorm with lightning very likely at isolated places over Vidarbha, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Telangana and North Interior Karnataka.
- ♦ **Heat Wave conditions** very likely in isolated pockets over Gangetic West Bengal, Odisha and north Coastal Andhra Pradesh.
- **15 April (Day 3): ♦ Thunderstorm with lightning & gusty wind (30-40 kmph)** likely at isolated places over Kerala & Mahe and **with lightning** at isolated places over Vidarbha, Madhya Maharashtra, Marathwada, Telangana and Karnataka.
- ♦ **Heat Wave conditions** likely in isolated pockets over Gangetic West Bengal, Odisha, north Coastal Andhra Pradesh and Bihar.
- **16 April (Day 4): ♦ Thunderstorm with lightning & gusty wind (30-40 kmph)** likely at isolated places over Kerala & Mahe and **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffrabad, Madhya Maharashtra, Marathwada and Karnataka.
- ♦ **Heat Wave conditions** likely in isolated pockets over Gangetic West Bengal and Bihar.
- **17 April (Day 5): ♦ Thunderstorm with lightning & gusty wind (30-40 kmph)** likely at isolated places over Kerala & Mahe and **with lightning** at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffrabad, Himachal Pradesh, Uttarakhand, Punjab, Chhattisgarh, Madhya Maharashtra, Marathwada and Karnataka.
- ♦ **Heat Wave conditions** likely in isolated pockets over Gangetic West Bengal and Bihar.





# Table-1

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

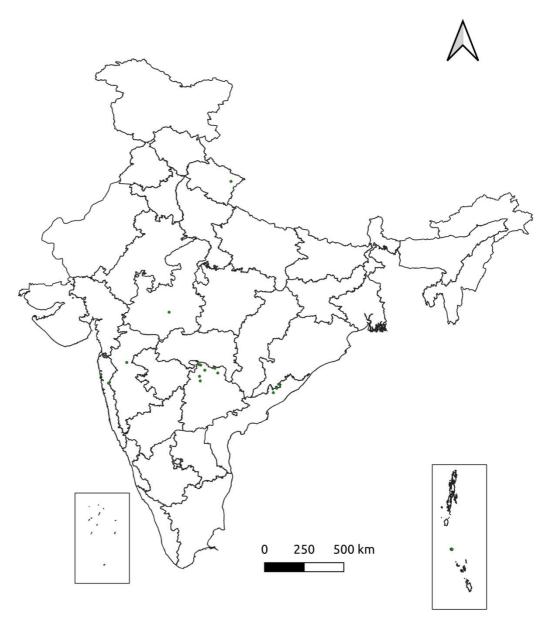
Legend	Category	% Stations
WS	Widespread/Most Places	76-100
FWS	Fairly Widespread/Many Places	51-75
SCT	Scattered/ A Few Places	26-50
ISOL	Isolated Places	1-25
DRY	No Rain	0



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



24 Hr cumulative rainfall recorded over different stations during 0830 IST of 12-4-2023 to 0830 IST of 13-4-2023



# 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 (>=204.5 mm)



Fig. 2: Maximum Temperatures Dated 12.04.2023

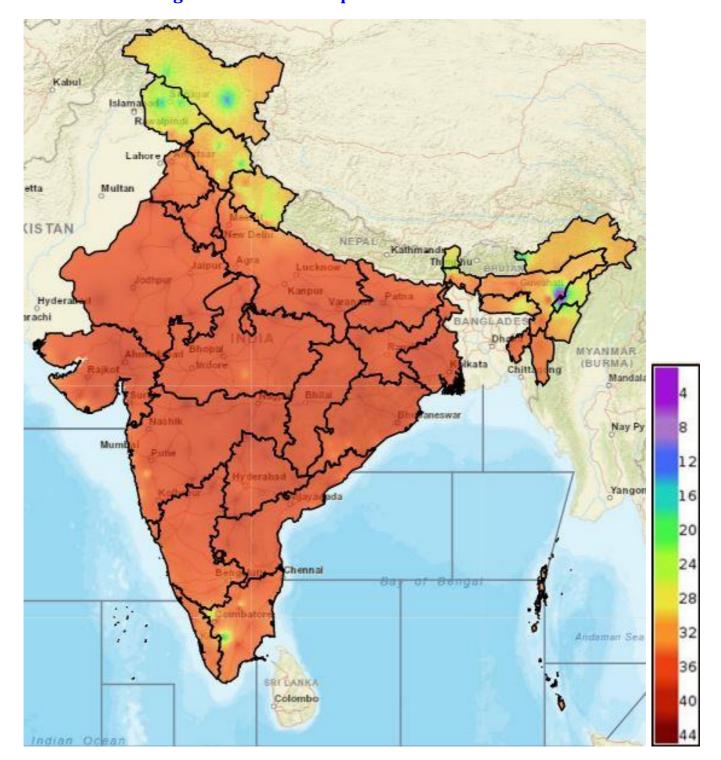




Fig. 3: Minimum Temperatures Dated 13.04.2023

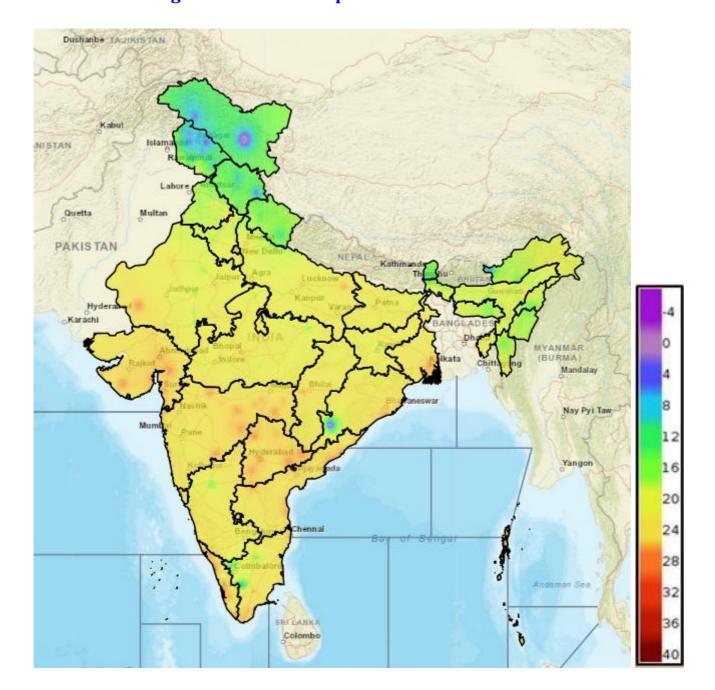




Fig. 4: Departure from Normal of Maximum Temperatures Dated 12.04.2023

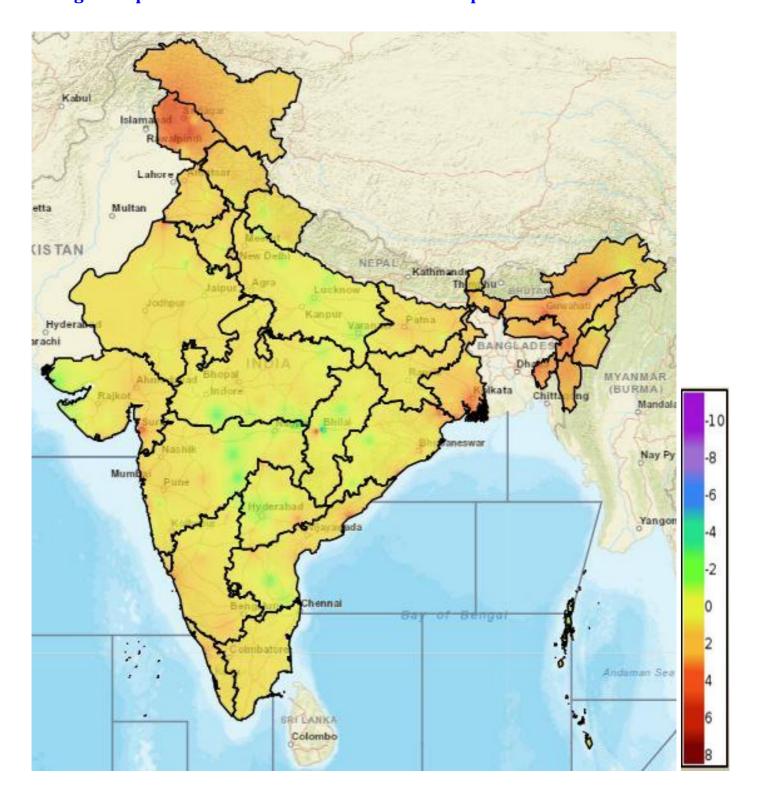
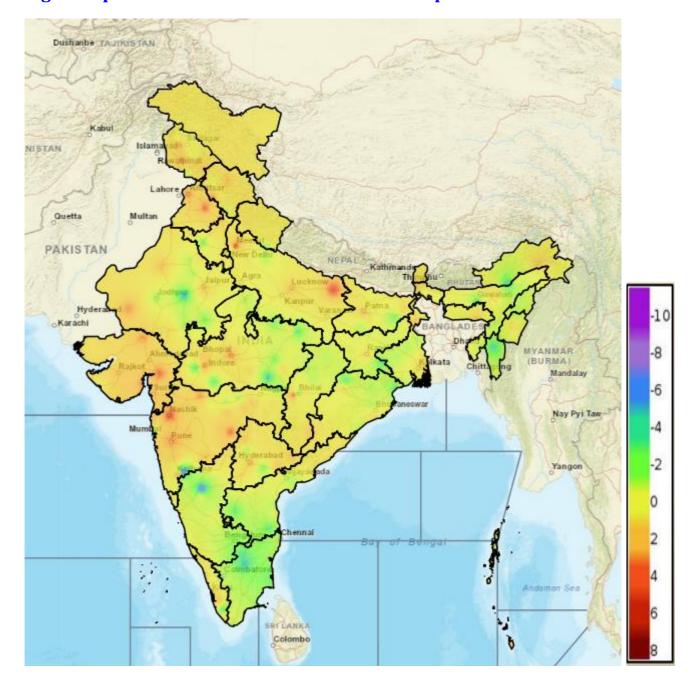
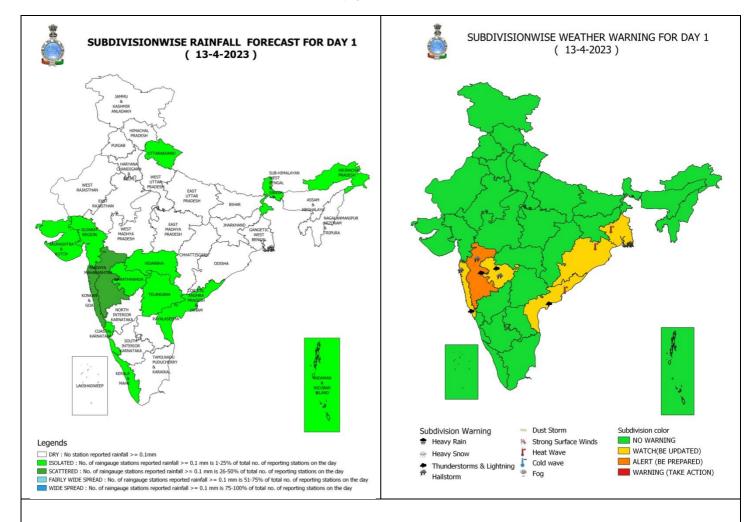




Fig. 5: Departure from Normal of Minimum Temperatures Dated 12.04.2023



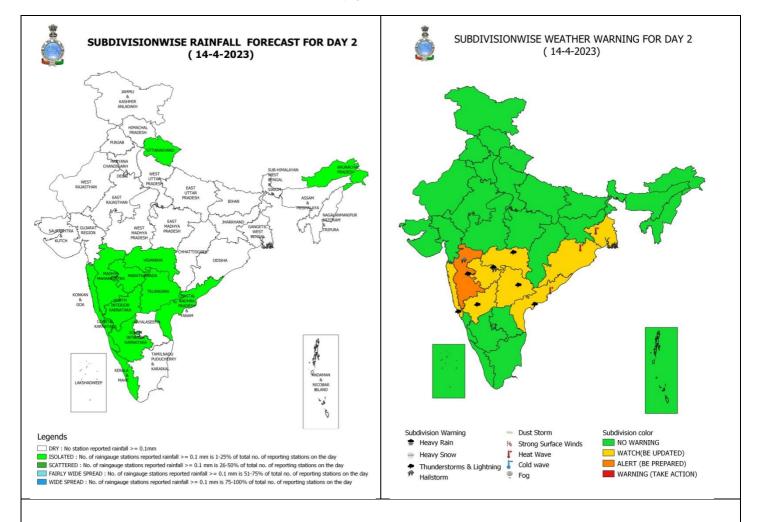




**13 April (Day 1):** ♦ **Hailstorm with thunderstorm, lightning & gusty winds (40-50 kmph)** very likely at isolated places over south Konkan & Goa, Madhya Maharashtra and **with thunderstorm, lightning** at isolated places over Marathwada.

- ♦ Thunderstorm with lightning very likely at isolated places over north Konkan, Coastal Andhra Pradesh and Gujarat state.
- ♦ **Heat Wave conditions** very likely in isolated pockets over coastal areas of Gangetic West Bengal, Odisha and north Coastal Andhra Pradesh.

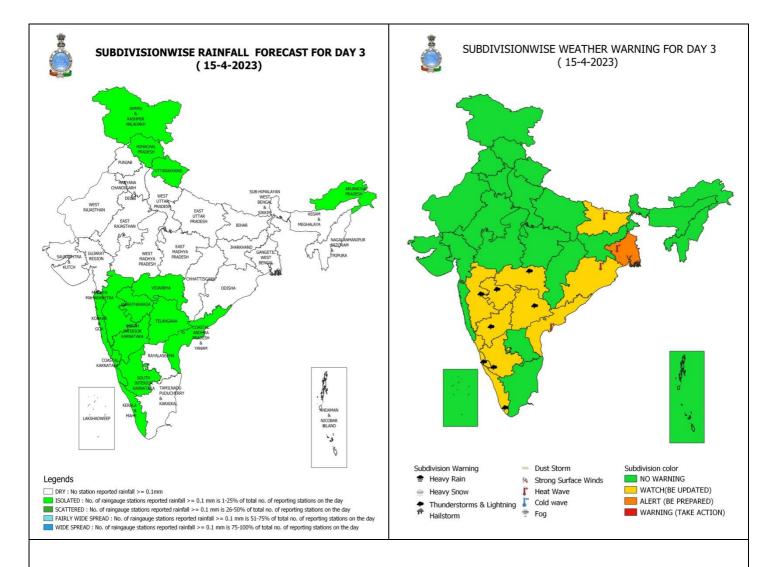




**14** April (Day 2): ♦ Hailstorm with thunderstorm, lightning & gusty winds (40-50 kmph) very likely at isolated places over Madhya Maharashtra and with thunderstorm, lightning at isolated places over Marathwada.

- ♦ Thunderstorm with lightning very likely at isolated places over Vidarbha, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Telangana and North Interior Karnataka.
- ♦ **Heat Wave conditions** very likely in isolated pockets over Gangetic West Bengal, Odisha and north Coastal Andhra Pradesh.

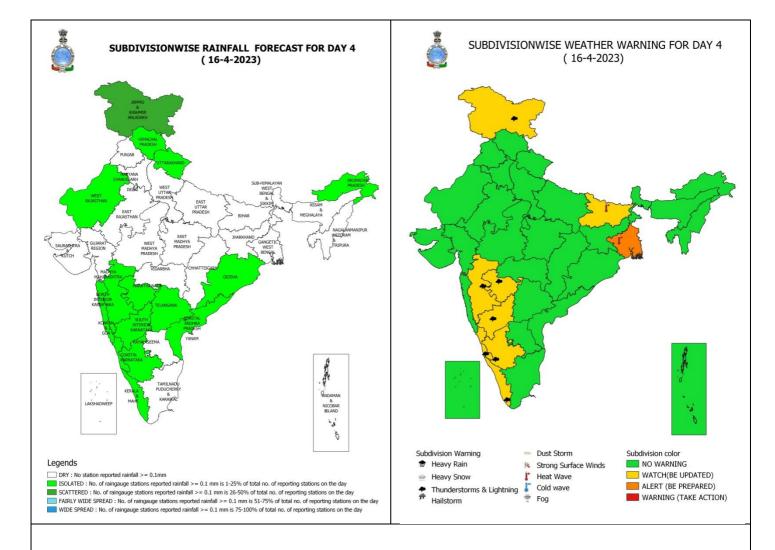




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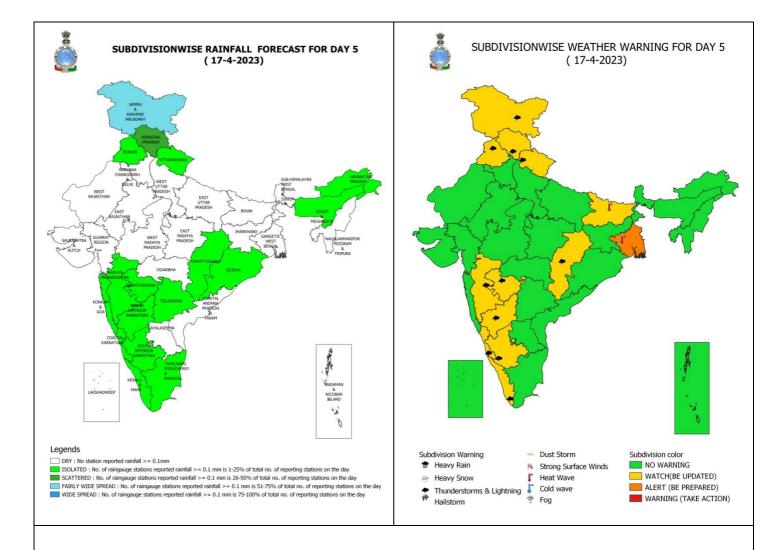




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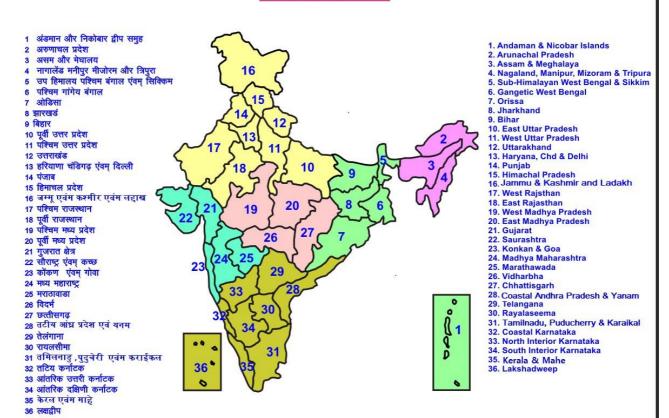


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# **LEGENDS**



## 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 Widespred (FWS/ Many Places)	1-25	Isolated (ISOL)

## WARNING

#### **WARNING (TAKE ACTION)**

ALERT ( BE PREPARED)

WATCH (BE UPDATED)

**NO WARNING (NO ACTION)** 

## **Probabilistic Forecast**

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



**Heavy Rain** 



**Heavy Snow** 



**Thunderstorm** 



**Dust Storm** 



**Strong Winds** 



Visibility



Cyclone



Squall/ Hail



Frost



**Cold Wave** 



**Heat Wave** 



Sea State



#### **LEGENDS Probabilistic Forecast WARNING** WARNING (TAKE ACTION) Probability of Occurrence (%) Terms Unlikely Likely Very Likely Most Likely ALERT ( BE PREPARED) WATCH (BE UPDATED) NO WARNING ( NO ACTION > 75 Heavy: 64.5 to 115.5 mm/cm 3 Very Heavy: 115.6 to 204.4 mm/cm\* Rain/ Snow \* Extremely Heavy: > 204.4 mm/cm When maximum temperature of a station reaches ≥40° C for plains and ≥30° 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 ≥6.5° C (b). Based on Actual maximum temperature **Heat Wave** Heat Wave: When actual maximum temperature ≥45°C Severe Heat Wave: When actual maximum temperature ≥47°C (c). Criteria for heat wave for coastal stations When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum temperature ≥37°C When maximum temperature remains 40°C # Warm Night Warm Night: When minimum temperature departure 4.5 °C to 6.4 °C. Severe Warm Night: When minimum temperature departure >6.4 °C When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °C (b) Based on actual Minimum Temperature (for Plains only) **Cold Wave** Cold Wave : When Minimum Temperature is ≤ 4.0 °C Severe Cold Wave: When Minimum Temperature is ≤ 2.0 °C (c) For Coastal Stations When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions Based on departure Cold Day: Maximum Temperature Departure from normal -4.5 °C to -6.4 °C **Cold Day** Severe Cold Day: Maximum Temperature Departure from normal ≤ -6.5 °C Phenomenon of small droplets suspended in air and the horizontal visibility < 1km 0 Moderate Fog: When the visibility between 500-200 metres Dense Fog: when the visibility between 50- 200 metres Fog Very Dense Fog: when the visibility < 50 metres 44 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) **Thunderstorm** An ensemble of particles of dust or sand energetically lifted to great heights by a strong and Dust/Sand Storm turbulent wind Ice deposits on ground Air temperature ≤4°C ( over Plains) Frost A strong wind that rises suddenly, lasts for atleast 1 minute. Moderate: Wind speed 52-61 kmph 4 Severe: Wind speed 62-87 kmph Squall Very Severe: Wind speed >87 kmph 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 Sea State Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre 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) Cyclone Super Cyclone Strom: Wind speed >220 kmph (>119 knots)