



**Government of India**  
**Ministry of Earth Sciences**  
**India Meteorological Department**

**Press Release**  
**Date: 16<sup>th</sup> December, 2023**  
**Time of Issue: 1245 hours IST**

**Subject: Intense spell of rainfall activity over extreme south Peninsular India during next 2 days and gradual reduction thereafter.**

**Realized weather during past 24 hours till 0830 hours IST of today:**

- **Minimum temperatures** are in the range of 4-8°C over many parts of Punjab, Haryana-Chandigarh-Delhi, some parts of Uttar Pradesh and 8-11°C over many parts of north Rajasthan.
- **Dense to very Dense fog** observed in isolated pockets over Punjab and Haryana.

**Weather Systems and Forecast & Warnings during next 5 days: (graphics in Annexure I)**

**Weather Systems**

- A Cyclonic Circulation lies over Equatorial Indian Ocean adjoining Southwest Bay of Bengal off south Sri Lanka coast in lower tropospheric levels.
- A Western Disturbance seen as a cyclonic circulation over north Pakistan with trough aloft in middle tropospheric levels roughly along Long. 65°E and north of Lat. 28°N. An induced cyclonic circulation lies over northwest Rajasthan in lower tropospheric levels.

**Forecast & Warnings:**

- Light to moderate rainfall at a few places very likely over Tamil Nadu and at many places over Kerala & Mahe during 16<sup>th</sup>-18<sup>th</sup> and over Lakshadweep during 16<sup>th</sup> - 19<sup>th</sup> December.
- **Isolated heavy rainfall likely over south Tamil Nadu and Kerala during 16<sup>th</sup> to 18<sup>th</sup> and over Lakshadweep on 17<sup>th</sup> & 18<sup>th</sup> December. Isolated very heavy rainfall is also very likely over south Tamil Nadu on 16<sup>th</sup> & 17<sup>th</sup> and over south Kerala on 17<sup>th</sup> December, 2023.**
- Isolated light rainfall/snowfall is very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 16<sup>th</sup> & 17<sup>th</sup> and over Himachal Pradesh & north Punjab on 16<sup>th</sup> December.
- **Strong off-shore winds speed reaching 25-35 kmph gusting to 45 kmph** are likely along & off Gujarat Coast on 17<sup>th</sup> & 18<sup>th</sup> December, 2023.
- No significant weather likely over remaining parts of the country during next 5 days.

**Dense fog warning:**

- **Dense fog** very likely in isolated pockets over north Punjab and north Haryana during morning hours of next 5 days and over Assam & Meghalaya & Tripura on 17<sup>th</sup> & 18<sup>th</sup> December, 2023.

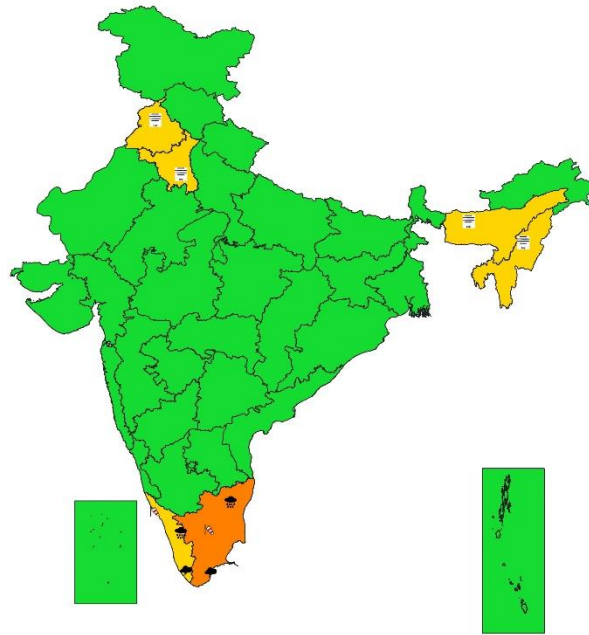
**Minimum Temperatures Forecast:**

- Gradual fall in minimum temperatures by 2-3°C very likely over many parts of Madhya Pradesh from 18<sup>th</sup> December.
- Rise by about 2°C in night temperatures very likely over many parts of Northwest India during next 2 days and fall by 2-3 °C from 18<sup>th</sup> December.
- No significant change in Minimum Temperatures likely over rest parts of the country during next 4-5 days.

For more details kindly refer: [https://mausam.imd.gov.in/responsive/all\\_india\\_forecast\\_bulletin.php](https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php) and <https://mausam.imd.gov.in/responsive/cycloneinformation.php>



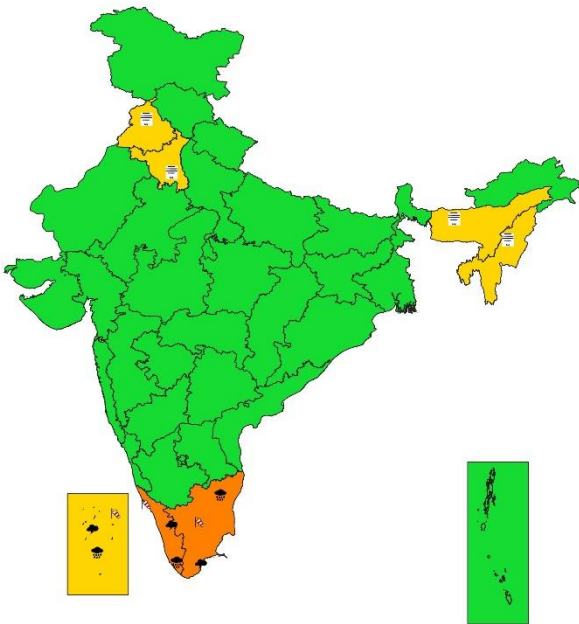
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 1  
( 16-12-2023 )**



- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH(BE UPDATED)        |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |



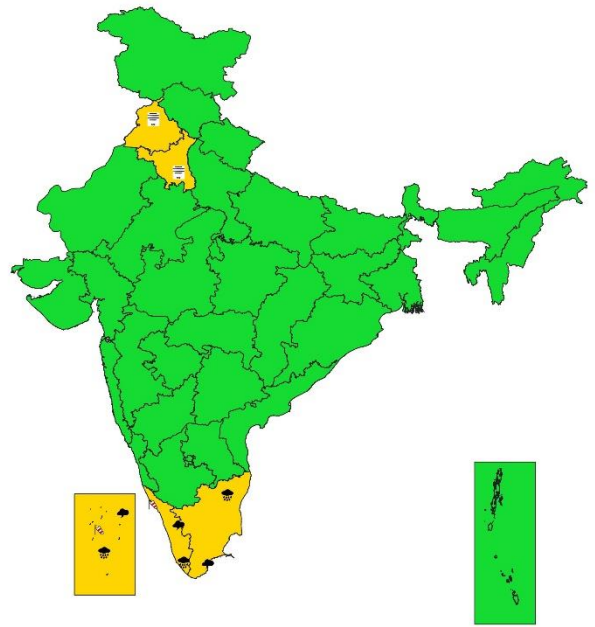
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 2  
( 17-12-2023 )**



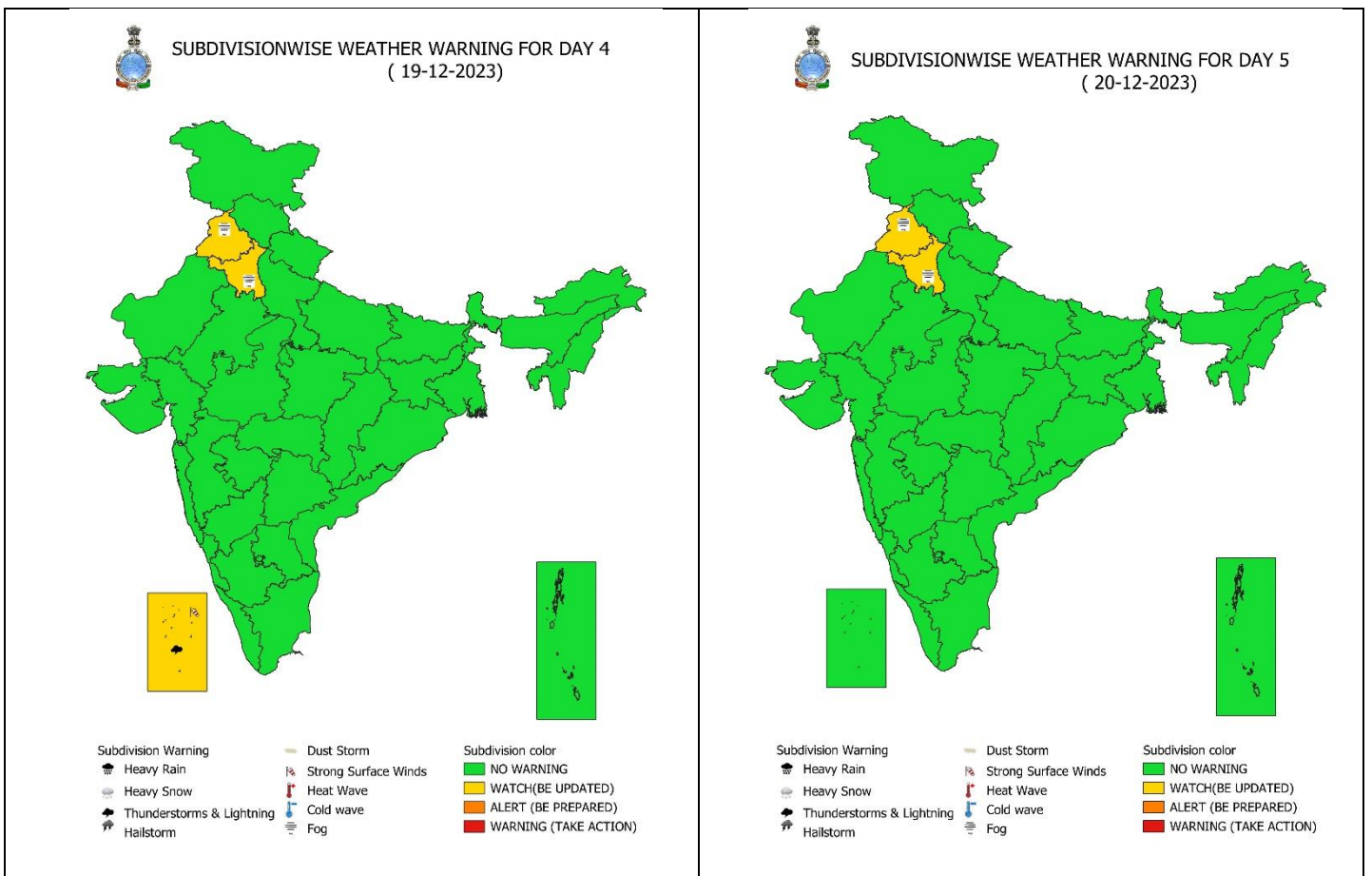
- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH(BE UPDATED)        |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |



**SUBDIVISIONWISE WEATHER WARNING FOR DAY 3  
( 18-12-2023 )**



- |                            |                      |                          |
|----------------------------|----------------------|--------------------------|
| <b>Subdivision Warning</b> | Dust Storm           | <b>Subdivision color</b> |
| Heavy Rain                 | Strong Surface Winds | NO WARNING               |
| Heavy Snow                 | Heat Wave            | WATCH(BE UPDATED)        |
| Thunderstorms & Lightning  | Cold wave            | ALERT (BE PREPARED)      |
| Hailstorm                  | Fog                  | WARNING (TAKE ACTION)    |



- **Impact & Action Suggested due to very heavy rainfall** over south Tamil Nadu on 16<sup>th</sup> & 17<sup>th</sup> and over south Kerala on 17<sup>th</sup> December, 2023.

#### A. Impact Expected

- ❖ Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- ❖ Occasional reduction in visibility due to heavy rainfall.
- ❖ Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
- ❖ Minor damage to kutcha roads.
- ❖ Possibilities of damage to vulnerable structure.
- ❖ Localized Landslides/Mudslides
- ❖ Damage to horticulture and standing crops in some areas due to inundation.
- ❖ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC).

#### B. Action Suggested

- ❖ Check for traffic congestion on your route before leaving for your destination.
- ❖ Follow any traffic advisories that are issued in this regard.
- ❖ Avoid going to areas that face the water logging problems often.
- ❖ Avoid staying in vulnerable structure.

**Legends:**

- ❖ **Heavy Rain:** 64.5 to 115.5 mm; **Very Heavy Rain:** 115.6 to 204.4 mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation
- ❖ **Region wise classification of meteorological Sub-Divisions:**
  - **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
  - **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
  - **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
  - **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
  - **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathwada.
  - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and 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)

Subdivision Warning	Dust Storm	Subdivision color
Heavy Rain	Strong Surface Winds	NO WARNING
Heavy Snow	Heat Wave	WATCH(BE UPDATED)
Thunderstorms & Lightning	Cold wave	ALERT (BE PREPARED)
Hailstorm	Fog	WARNING (TAKE ACTION)

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

Flash Flood Risk	
	High Risk (Take Action)
	Moderate Risk (Be Prepared)
	Low Risk (Be Updated)

**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