Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 23rd December, 2023
Time of Issue: 1300 hours IST

Subject: (i) Isolated Hailstorm activity likely over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 24th December, 2023.
(ii) No significant weather over most parts of the country during the next 5 days.

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

- **Minimum temperatures** are in the range of 6-12°C over most parts of Punjab, Haryana-Chandigarh-Delhi, northwest Rajasthan, East Uttar Pradesh, south Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand and interior Odisha. Minimum Temperature are **normal to above normal** over northern parts of the country.
- **Today in the morning hours, Very Dense fog** (Visibility: 0-50 metres) was realized in isolated pockets of Haryana, Punjab and East Uttar Pradesh; **Dense fog** (Visibility: 50-200 metres) in isolated pockets north Madhya Pradesh and west Uttar Pradesh; **Moderate fog** (Visibility: 200-500 metres) in isolated pockets of Delhi and **Shallow Fog** (visibility: 500-1000 metres) in isolated pockets of Uttar Pradesh, Northwest Rajasthan, Bihar, Assam & Meghalaya and Tripura.

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

Weather Systems:

- The Western Disturbance seen as a trough in middle tropospheric levels between Lat. 36°N/Lon. 67°E and Lat. 26°N/Lon. 72°E.
- An induced Cyclonic Circulation lies over West Rajasthan & neighbourhood in lower tropospheric levels.
- The Cyclonic Circulation over Equatorial Indian Ocean and adjoining southwest Bay of Bengal in lower tropospheric levels.

Forecast & Warnings:

- **Isolated light rainfall/snowfall** likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh & Uttarakhand on 23rd December, 2023.
- Light to moderate rainfall at isolated places very likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and Lakshadweep area during next 5 days.
- Light to moderate rainfall at isolated places very likely over Northeast India during next 3 days. Isolated **thunderstorm with Hailstorm** also likely over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura on 24th December,2023.

Dense fog warning (Graphics in Annexure I):

- **Dense to very dense fog** conditions very likely in morning hours at isolated pockets of Punjab, Uttar Pradesh on 24th & 25th; over Haryana on 24th. **Dense Fog** conditions very likely in morning hours in isolated pockets of Haryana during 25th – 28th; Punjab during 26th – 28th; north Rajasthan and Odisha on 24th & 25th ; Uttar Pradesh on 26th ;north Madhya Pradesh on 24th; Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura 27th & 28th December,2023.

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Minimum Temperatures Forecast:

- **Northwest India:** Fall by about 2-3°C in Minimum Temperatures during next 24 hours and no significant change thereafter.
- 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_forcast_bulletin.php and https://mausam.imd.gov.in/responsive/cycloneinformation.php

Impact expected and action suggested due to dense to very dense fog in the night/morning hours in isolated pockets over Punjab, Haryana and Uttar Pradesh on 24th & 25th December, 2023.

Impact expected:

➢ **Transport and Aviation:**

- May affect some airports, highways and railway routes in the areas of met- sub-division.
- Difficult driving conditions with slower journey times.
- Some road traffic collisions.

➢ **Power Sector:**

- Chances of Tripping of Power lines in the very dense fog routes.

➢ **Human Health:**

- Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath.
- Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
- Causes Eye Irritation: Dense fog contains pollutions of various types and these Pollutants in the air if exposed may tend to irritate the membranes of the eye causing various infections leading to redness or swelling of the eye.

Action suggested:

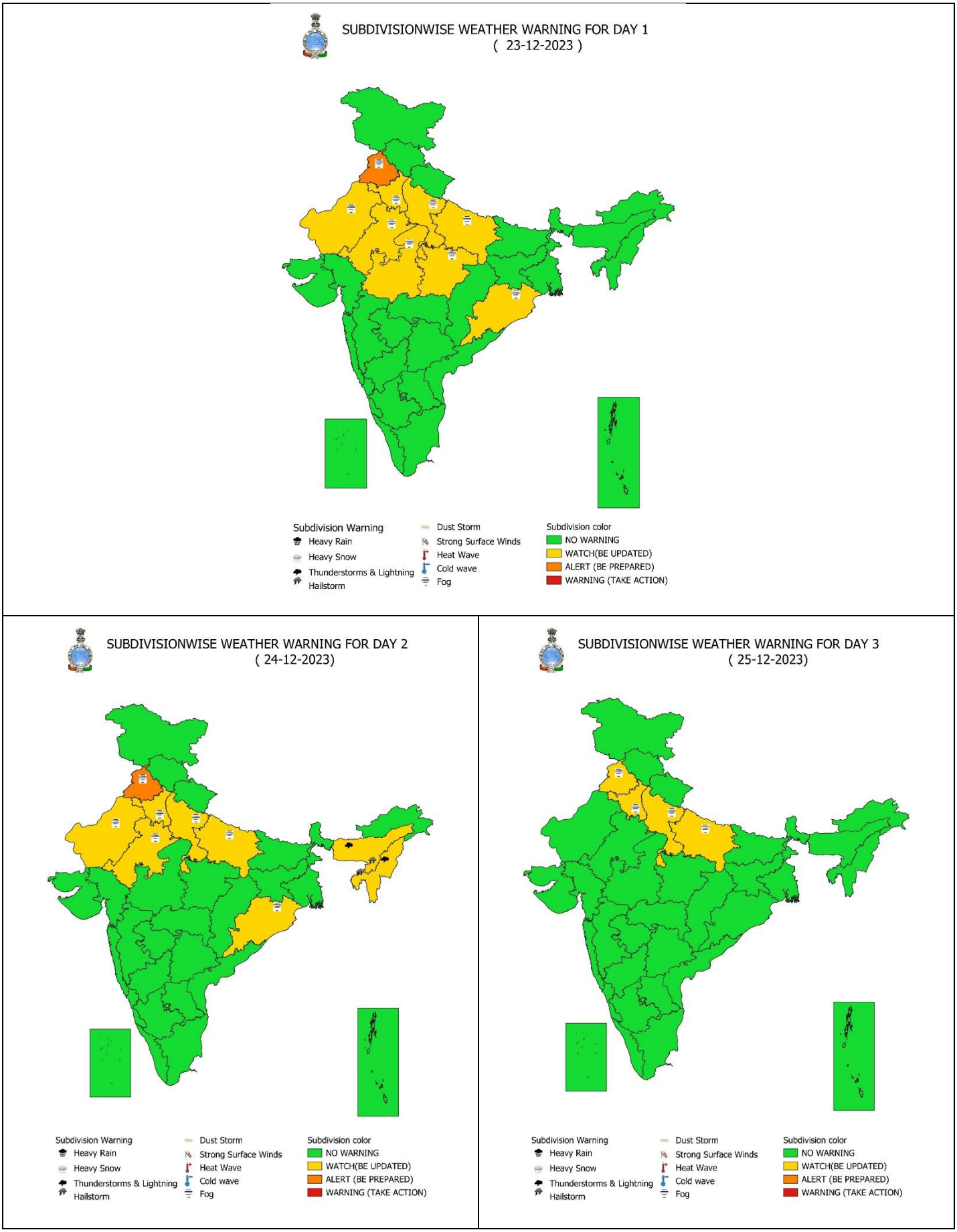
➢ **Transport and Aviation:**

- Careful while driving or outing through any transport.
- Use fog lights during driving.
- Be in touch with airlines and Railway and State transport for schedule of your journey.

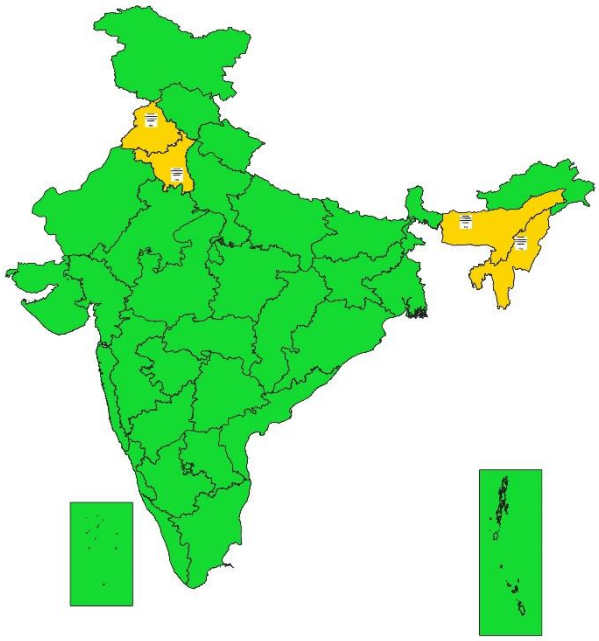
➢ **Power Sector:**

- To keep ready Maintenance Team
- **Human Health:** To avoid outing until unless emergency and to cover the face.

Annexure I


SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
(23-12-2023)
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm
Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog
Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)
SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
(24-12-2023)
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm
Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog
Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)
SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
(25-12-2023)
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm
Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog
Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)

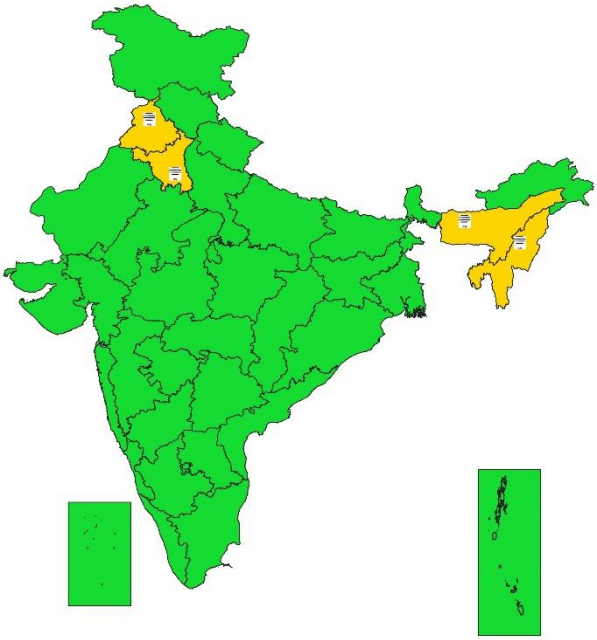
SUBDIVISIONWISE WEATHER WARNING FOR DAY 4
(26-12-2023)



Subdivision Warning
- Heavy Rain
- Heavy Snow
- Thunderstorms & Lightning
- Hailstorm
- Dust Storm
- Strong Surface Winds
- Heat Wave
- Cold wave
- Fog

Subdivision color
- NO WARNING
- WATCH(BE UPDATED)
- ALERT (BE PREPARED)
- WARNING (TAKE ACTION)

SUBDIVISIONWISE WEATHER WARNING FOR DAY 5
(27-12-2023)



Subdivision Warning
- Heavy Rain
- Heavy Snow
- Thunderstorms & Lightning
- Hailstorm
- Dust Storm
- Strong Surface Winds
- Heat Wave
- Cold wave
- Fog

Subdivision color
- NO WARNING
- WATCH(BE UPDATED)
- ALERT (BE PREPARED)
- WARNING (TAKE ACTION)

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

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

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)

Definition of Cold wave, Cold Day and Fog Conditions:

Cold Wave

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 : 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

Cold Day

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.
Severe Cold Day: Maximum Temperature Departure from normal ≤ -6.5 °C

Fog

Phenomenon of small droplets suspended in air and the horizontal visibility < 1km

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