Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 29th December, 2023
Time of Issue: 1400 hours IST

Subject: i) Dense to very dense fog at many parts likely to continue over Northwest India during next 2 days and gradually decrease thereafter.
ii) Light isolated rainfall likely over Northwest & Central India during 30th December, 2023 to 02nd January, 2024.

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

- **Minimum temperatures** are in the range of 7-11°C over most parts of Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Madhya Pradesh, Rajasthan and in range of 12-14°C over Bihar, Chhattisgarh, interior Odisha and Jharkhand. **These are 2-4°C above normal** over many parts of Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Uttar Pradesh, Bihar, interior Odisha and Jharkhand.
- **Fog Observed (at 0830 hours IST of today): Dense fog** to v**ery dense fog** observed in most places over isolated pockets of Punjab and Haryana-Chandigarh-Delhi: at many places over Uttar Pradesh; at a few places over north Rajasthan and Uttarakhand; and at isolated parts over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh. **Dense fog** in isolated pockets of Odisha and Bihar.
- **Visibility Recorded (at 0830 hours IST of today) (≤500 meters): Jammu-Kashmir**: Srinagar-25 & Jammu-500; **Uttarakhand**: Pantnagar-25; **Punjab**: Patiala & Ludhiana-25 each, Amritsar-200; **Haryana**: Ambala-25, Chandigarh-25, Karnal-25, Hissar-50, Narnaul-200; **Delhi**:Ayanagar-25, Palam-150, Ridge-200, Safdarjung-200; **Uttar Pradesh:** Bareilly-25, Bahraich, Gorakhpur & Meerut-50 each, Sultanpur & Lucknow-200 each, Jhansi-500; **Tamil Nadu**-Coonoor-25, Kodiakanal-200; **Rajasthan**: Ganganagar-50, Churu & Jaipur-50 each, Kota-200; **Odisha**:Rourkela-50; **Bihar**: Gaya & Patna-50; **Madhya Pradesh**: Rewa-200, Sidhi, Gwalior, Khajuraho-500 each; **Jharkhand**: Ranchi & Jamshedpur-500 each; **Telangana**: Hyderabad (airport)-500.
- **Heavy rainfall observed (from 0830 hours IST of yesterday to 0830 hours of today): Very heavy rainfall** in isolated places over Tamil Nadu.
- **Significant rainfall (from 0830 hours IST of yesterday to 0830 hours of today): Tamil Nadu:** Kakkachi (dist Tirunelveli), Oothu (dist Tirunelveli) 16 each, Nalumukku (dist Tirunelveli) 15.
- **Cold day to severe cold day conditions** observed in many places over Punjab and **cold day** condition in some pockets of Haryana and in isolated pockets of Uttar Pradesh.

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

Dense fog and Cold day warning:

- **Dense to very dense fog conditions very likely to continue in most places over Punjab, Haryana-Chandigarh-Delhi from 29th night 31st morning and in some pockets for subsequent 3 days.**
- **Dense to very dense fog conditions very likely to continue in many places over Uttar Pradesh from 29th night 31st morning and in isolated pockets for subsequent 3 days.**
- Dense to very dense fog conditions very likely to continue in few pockets over north Rajasthan and Bihar Pradesh from 29th night 31st morning and decrease in distribution & intensity thereafter.
- **Dense Fog** conditions very likely to continue during morning hours in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand during 29th December to 02nd January; Madhya Pradesh on 29th; Jharkhand on 29th & 30th; Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 29th-31st December, 2023.

- **Cold Day conditions** very likely in some to many parts of Punjab, Haryana-Chandigarh-Delhi on 29th, 30th & 31st and in isolated pockets of Uttar Pradesh on 29th, 30th & 31st December.

Rainfall Forecast:

- Under the influence of a feeble Western Disturbance, light isolated rainfall/snowfall is very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 29th; Himachal Pradesh and Uttarakhand on 30th & 31st December, 2023.
- Due to lower level easterly winds from Bay of Bengal, light isolated rainfall likely over Uttar Pradesh, Madhya Pradesh and Chhattisgarh during 31st December, 2023 to 02nd January, 2024.
- Under the influence of a fresh easterly wave, light to moderate isolated to scattered rainfall very likely over Tamil Nadu, Kerala and Lakshadweep from 29th December 2023 to 02nd January, 2024.
- Isolated **heavy rainfall** also likely over Tamil Nadu on 29th December 2023, 01st January & 02nd January 2024.

Minimum Temperatures Forecast:

- No significant change in Minimum Temperatures likely over Northwest & East India during next 5 days.
- Gradual rise by 2-3°C in Minimum Temperatures likely over central India during next 4-5 days.

For more details kindly refer: https://mausam.imd.gov.in/responsive/all_india_forcast_bulletin.php

Impact expected due to dense to very dense fog in the night/morning hours over Punjab, Haryana, Chandigarh, Delhi and Uttar Pradesh during 29th December night to 02nd January morning; over Rajasthan on 29th and over Bihar on 29th & 30th December.

❖ **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.
- Unless taken precautionary measures, it may lead to some road traffic collisions.

❖ **Power Sector:**
- Chances of Tripping of Power lines in the very dense fog routes.

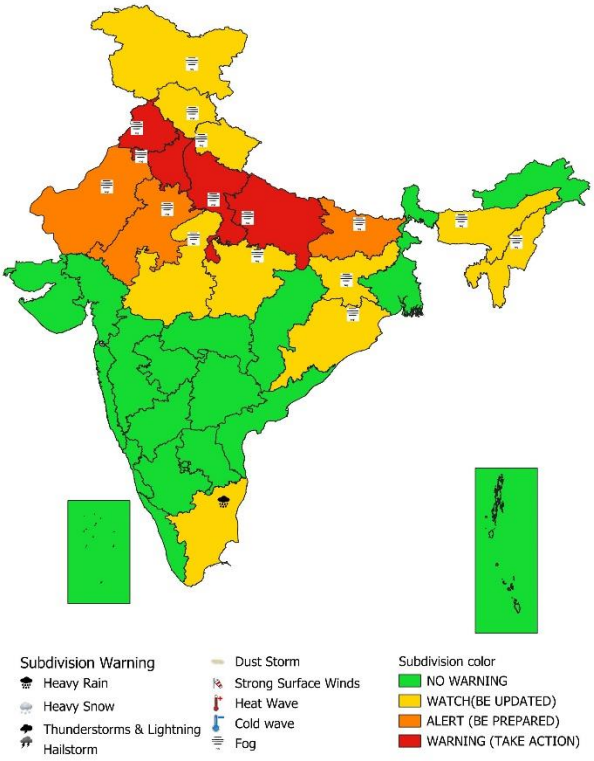
❖ **Human Health:**
- Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath.
- Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
- 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:

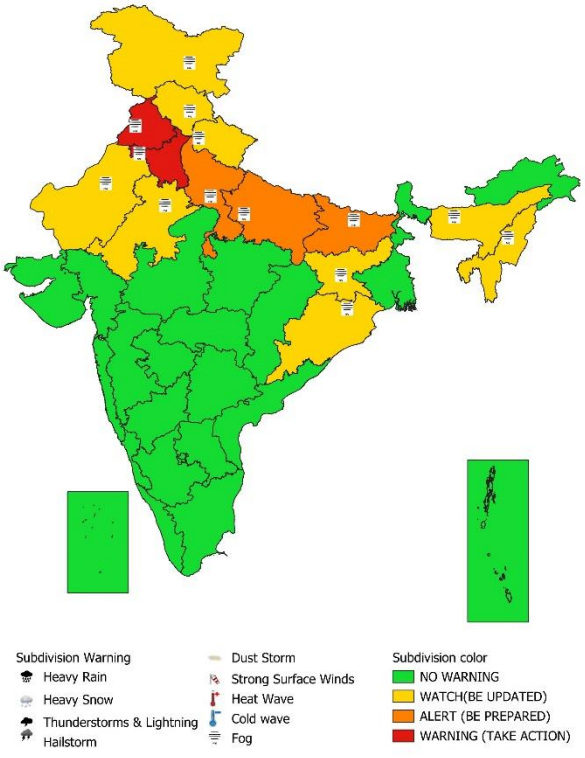
❖ **Transport and Aviation:**
- Be careful while driving or outing through any transport.
- Use fog lights during driving.
- Be in touch with airlines, railways and state transport for schedule of your journey.

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

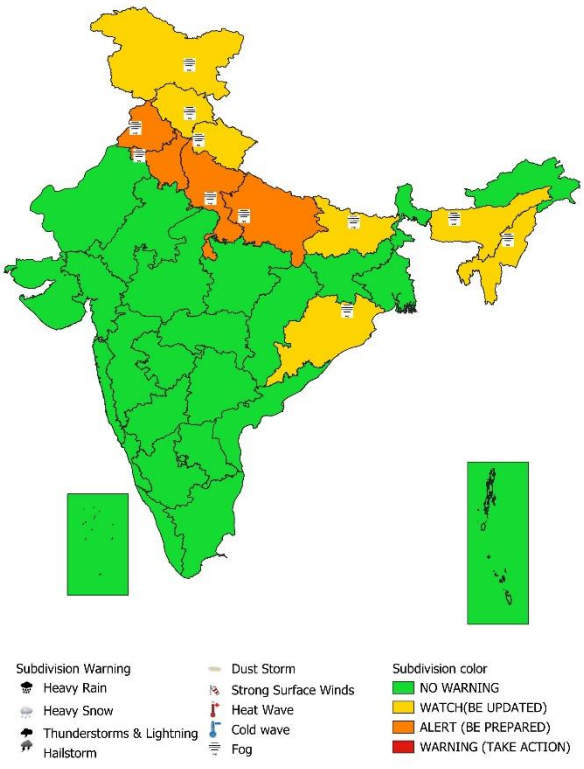
SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
(29-12-2023)

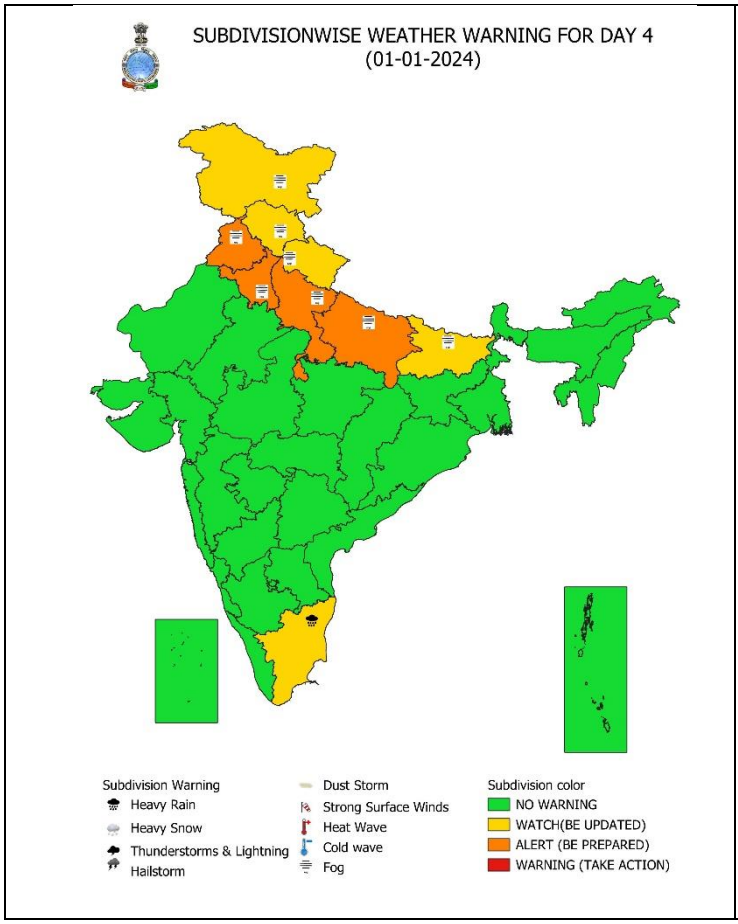


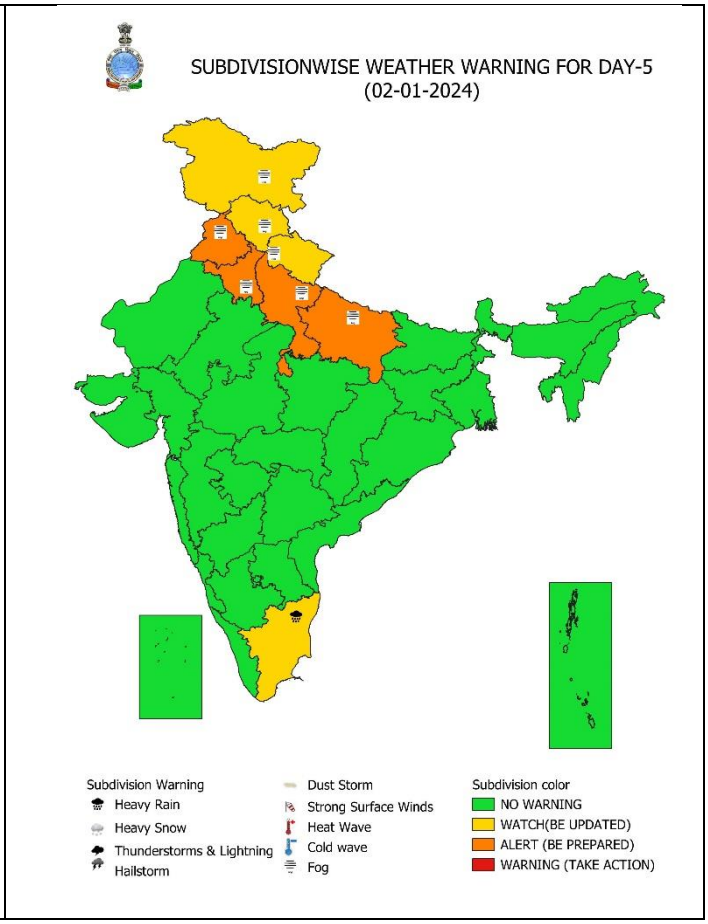
SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
(30-12-2023)



SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
(31-12-2023)




SUBDIVISIONWISE WEATHER WARNING FOR DAY 4
(01-01-2024)
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
(02-01-2024)
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