Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 30th December, 2023
Time of Issue: 1345 hours IST

Subject: 1) Very dense fog likely to continue over many parts of plains of Northwest & adjoining Central India and likely to further extend to East India during next 2 days and gradually decrease thereafter.

2) Cold Day conditions likely to continue over some parts of Punjab, Haryana, Uttar Pradesh, Madhya Pradesh and north Rajasthan on 30th & 31st December.

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

- **Minimum temperatures**: The Minimum temperatures are in the range of 7-10°C over most parts of Punjab, Haryana-Chandigarh, Uttar Pradesh, north Rajasthan and in range of 10-12°C over Delhi, south Rajasthan and Madhya Pradesh. **These are 2-4°C above normal** over many parts of Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Uttar Pradesh, Madhya Pradesh Bihar, interior Odisha, Chhattisgarh and Jharkhand.
- **Fog: Very dense fog (visibility ≤50 m) occurred over most parts of Punjab,** Haryana, , Uttar Pradesh, Bihar, north Rajasthan, north Madhya Pradesh since last night till today morning with visibility going down below 50 m. **Dense fog (visibility 50-200 m)** occurred over some parts of interior Odisha, Chhattisgarh, Jharkhand and southeast Uttarakhand for a few hours in the morning.
- **Visibility Recorded (≤200 meters): Punjab**: Amritsar, Bhatinda-0, Chandigarh, Patiala-25 each; **Haryana**: Ambala-25; Karnal, Hissar-50; **Delhi**: Ayanagar, Safdarjung-200; **North Rajasthan**: Jaipur-25, Churu-50, Bikaner-100; **West Uttar Pradesh:** Bareilly, Jhansi, Meerut-50; **East Uttar Pradesh:** Bahraich-50, Gorakhpur-200; **Madhya Pradesh**: Satna-25; Gwalior, Khajuraho, Tikamgarh, Damoh -50; Guna-200; **Odisha**: Phulbani, Koraput, Rourkela, Nayagarh- 50; Sonepur: 100; **Jharkhand**: Daltonganj-200.
- **Cold day to severe cold day conditions** occurred in isolated pockets of Punjab, Haryana and Uttar Pradesh.
- **Heavy to very heavy rainfall with extremely heavy falls** occurred at isolated places over south Tamil Nadu.
- **Significant rainfall (from 0830 hours IST of yesterday to 0830 hours of today): Tamil Nadu:** Oothu (dist Tirunelveli) 22, Nalumukku (dist Tirunelveli) 21, Kakkachi (dist Tirunelveli) 20, Manjolai (dist Tirunelveli) 10.

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

Weather Systems:

- The Western Disturbance lay as a cyclonic circulation over north Pakistan at 3.1 km above mean sea level with trough aloft in mid tropospheric levels with its axis at 5.8 km above mean sea level roughly along Long. 62°E to the north of Lat. 30°N in the morning of today.
- An induced cyclonic circulation lay over West Rajasthan & neighbourhood in lower tropospheric levels.

Under the influence of these systems:

Dense fog and Cold day warning:

- **Very dense fog** conditions **(visibility ≤50 m)** very likely to prevail over many parts of Punjab during late evening to next day morning and over West Uttar Pradesh during mid night & morning hours from 30th December to 04th January; over Haryana-Chandigarh-Delhi, East Uttar Pradesh during mid night & morning hours from 30th December to 01st January.
- **Dense Fog** conditions **(visibility 50-200 m)** very likely to prevail for few hours in early morning/morning hours over Uttarakhand during 31st December to 04th January; north Madhya Pradesh, north Rajasthan, Jharkhand on 31st December & 01st January; Gangetic West Bengal on 31st; Odisha, Bihar, Assam & Meghalaya, Mizoram & Tripura during 31st December, 2023-02nd January, 2024.
- **Cold Day conditions** very likely in some parts of Punjab, Haryana and in isolated pockets of Uttar Pradesh, Madhya Pradesh and north Rajasthan on 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; 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 01st–03rd January, 2024.

Temperatures Forecast:

- Gradual rise by 2-3°C in Minimum Temperatures likely over many parts of Central India during next 2 days and no significant change thereafter.
- Fall by 2-3°C in Maximum Temperatures likely over many parts of Central & Northwest India during next 2 days and no significant change thereafter.
- No significant change in minimum temperatures likely over rest parts of the country.

Low Pressure Area over Arabian Sea:

Under the influence of upper air cyclonic circulation over West Equatorial Indian Ocean & adjoining Southeast Arabian Sea, a Low Pressure Area has formed over the same region and the associated upper-air cyclonic circulation extends upto mid-tropospheric levels. It is likely to move west-northwestwards and become Well Marked Low Pressure Area over central parts of south Arabian Sea & adjoining West Equatorial Indian Ocean during next 48 hours.

Rainfall Forecast:

Under the influence of a fresh easterly wave and Low Pressure Area over West Equatorial Indian Ocean & adjoining Southeast Arabian Sea; light to moderate rainfall at some places very likely over south Tamil Nadu, south Kerala and Lakshadweep from 30th December 2023 to 03rd January, 2024 with isolated **heavy rainfall** over south Tamil Nadu on 30th December 2023.

Fishermen Warning: (Annexure II)

- **30th & 31st Dec:** **Squally weather with wind speed 40-45 kmph gusting to 55 kmph** very likely to prevail over Comorin area, adjoining Gulf of Mannar and adjoining Maldives area and over Southeast Arabian Sea adjoining to Equatorial Indian Ocean & adjoining parts of Lakshadweep, Maldives Areas.

- **01st January:** **Squally weather with wind speed 40-45 kmph gusting to 55 kmph** very likely to prevail over Comorin area, adjoining Gulf of Mannar and adjoining Maldives area and over Southeast Arabian Sea adjoining to Equatorial Indian Ocean & adjoining parts of Lakshadweep, Maldives Areas.

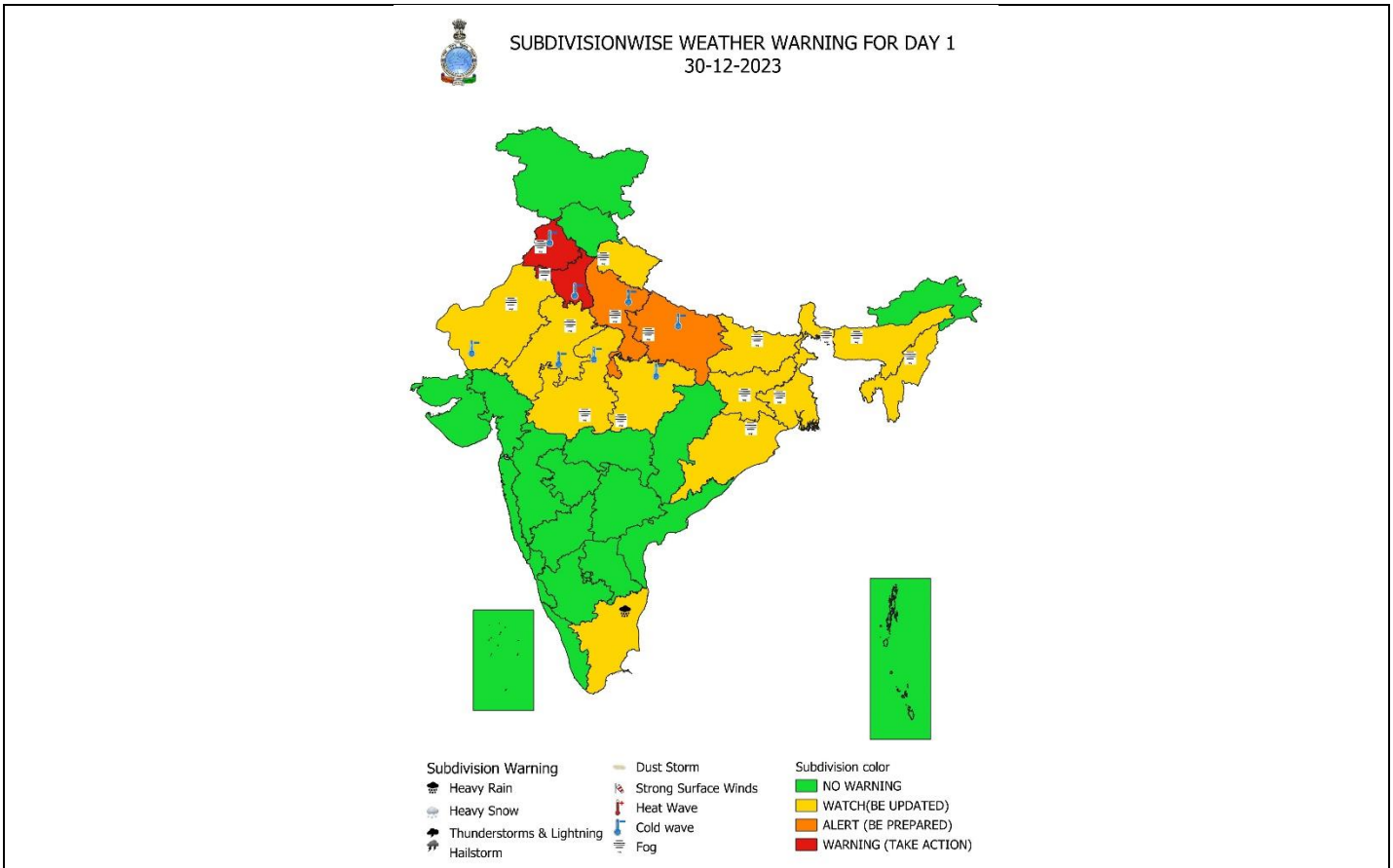
For more details kindly refer: https://mausam.imd.gov.in/responsive/all_india_forcast_bulletin.php

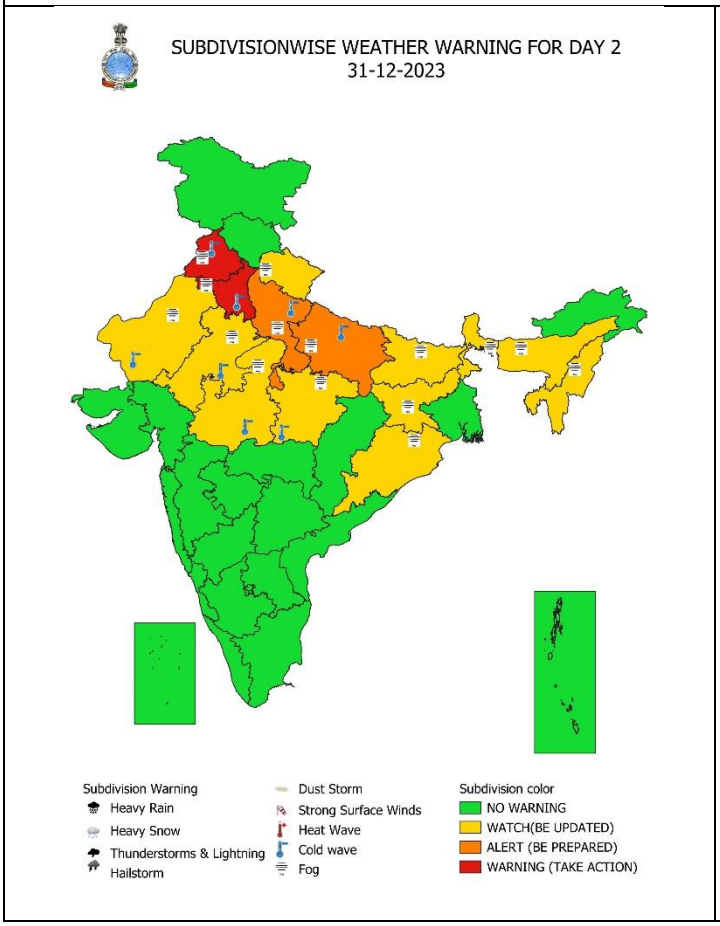
Impact expected due to dense to very dense fog in the night/morning hours over Punjab, Haryana, Chandigarh, Delhi and Uttar Pradesh during 30th December night to 03rd January morning; over north Rajasthan and north Madhya Pradesh on 30th & 31st December.

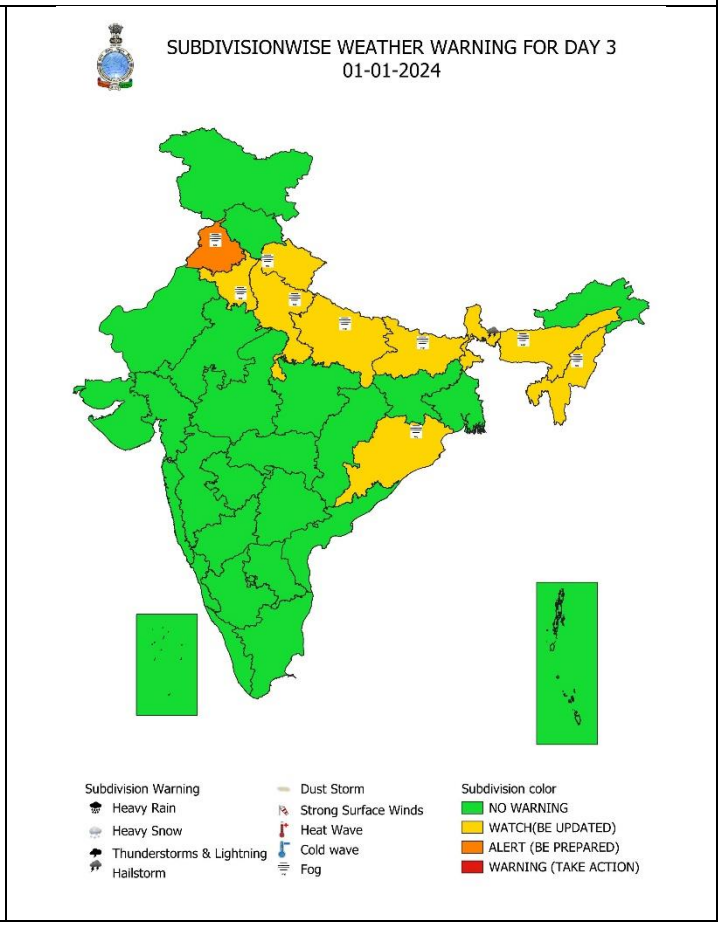
- **Transport and Aviation:**
  - May affect some airports, highways and railway routes in the areas of met- sub-division.
  - Difficult driving conditions with slower journey times.
  - Unless taken precautionary measures, it may lead to some road traffic collisions.
- **Power Sector:**
  - Chances 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.

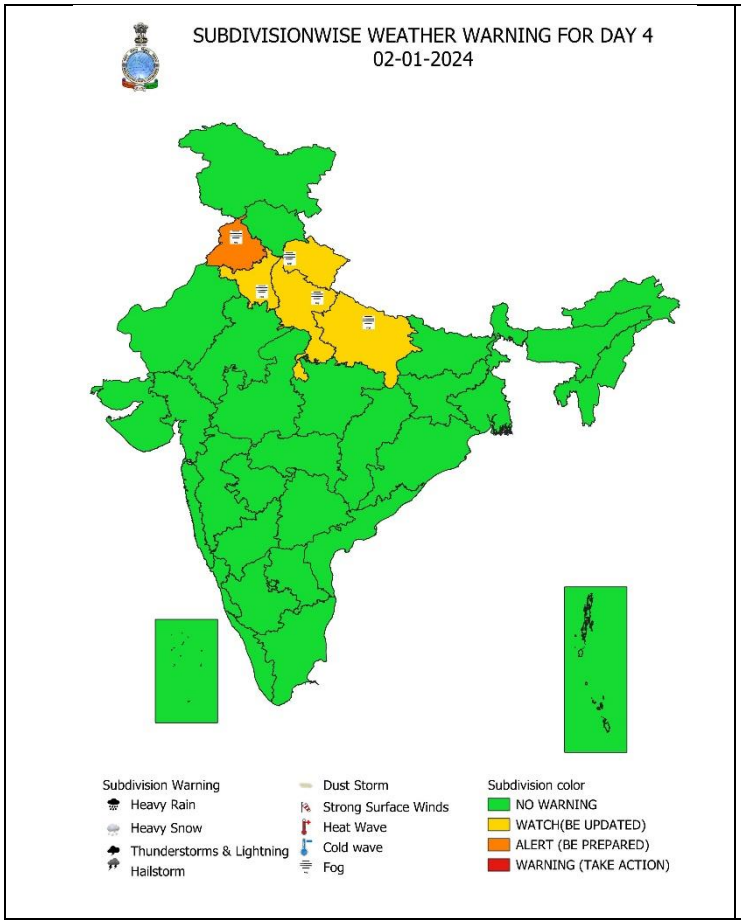
Action suggested:

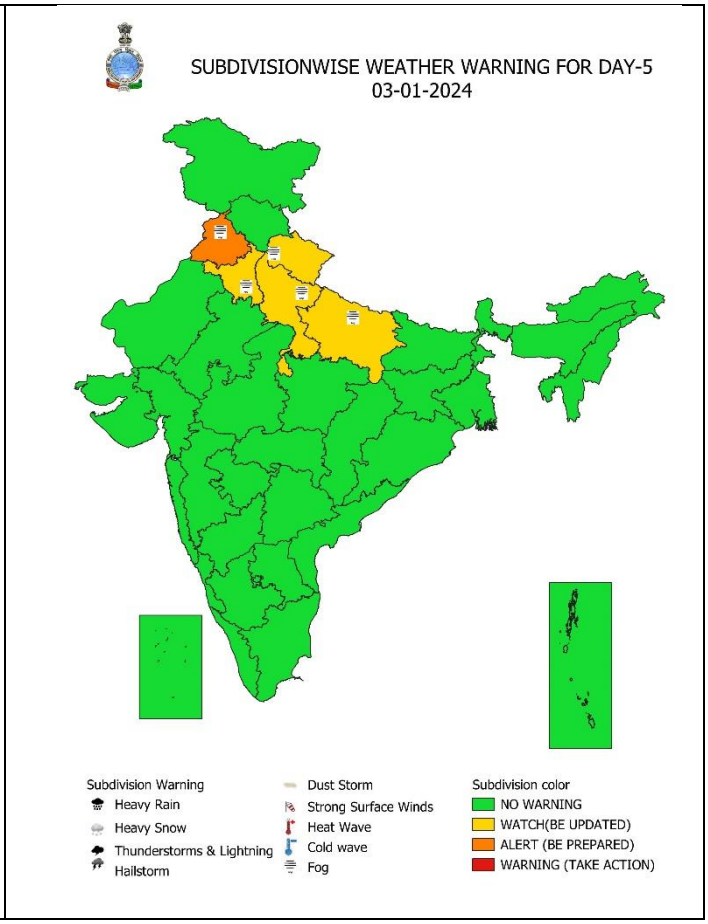
- **Transport and Aviation:**
  - Be careful while driving or outing through any transport.
  - Use fog lights during driving.
  - Be in touch with airlines, railways and state transport for schedule of your journey.
- **Power Sector:**
  - To keep ready Maintenance Team
  - Human Health: To avoid outing until unless emergency and to cover the face.


SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
30-12-2023
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)

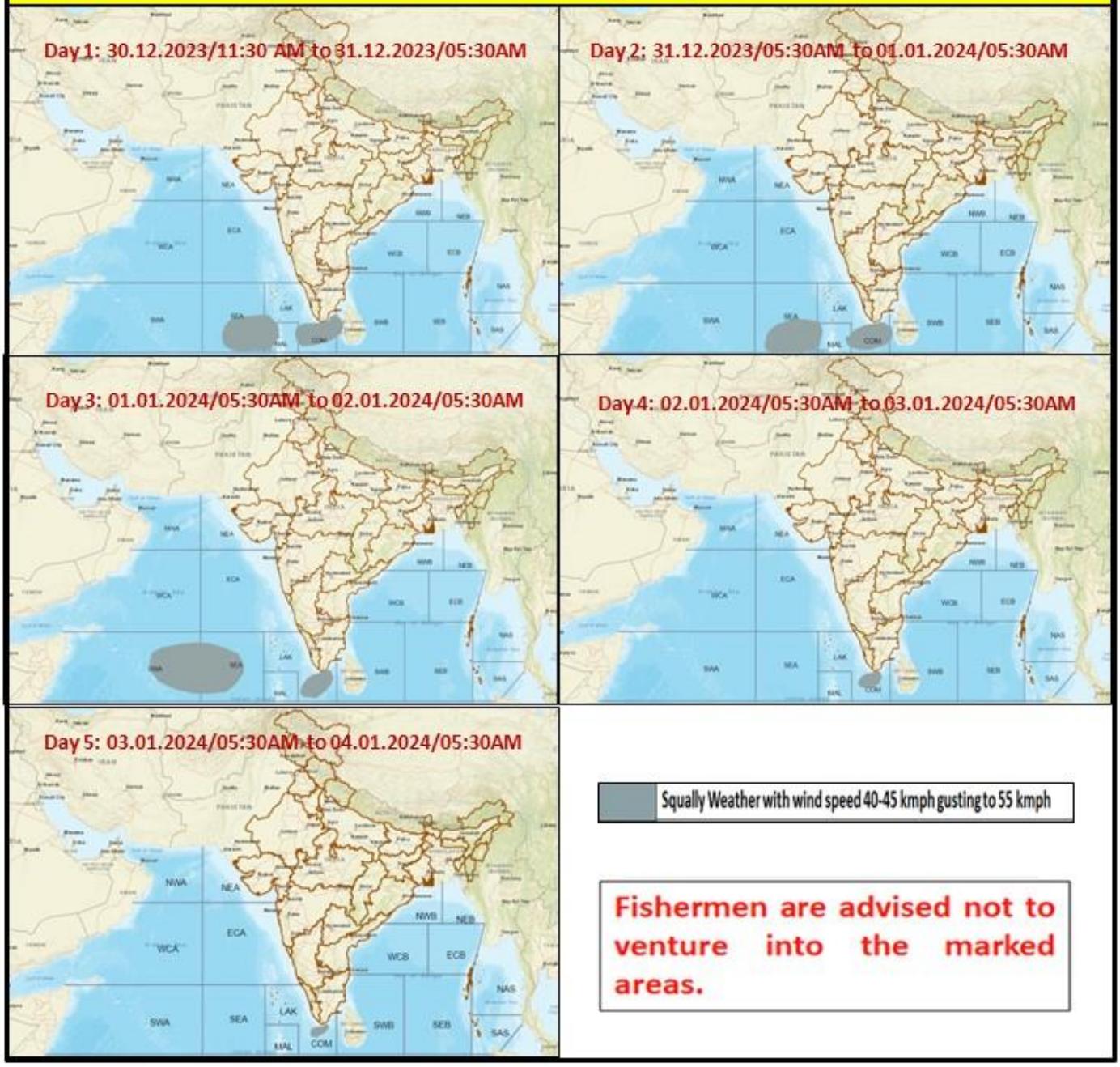

SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
31-12-2023
Subdivision Warning
Heavy Rain
Heavy Snow
Thunderstorms & Lightning
Hailstorm
Dust Storm
Strong Surface Winds
Heat Wave
Cold wave
Fog
Subdivision color
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)


SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
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 4
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)


SUBDIVISIONWISE WEATHER WARNING FOR DAY-5
03-01-2024
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)

Fishermen Warning Graphics



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