



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 02nd January, 2025

Time of Issue: 1300 hours IST

Subject: (i) Wet spell over Western Himalayan Region during next one week and over plains of northwest India during 05th to 06th with possibility of isolated heavy falls over Jammu & Kashmir on 05th & 06th January 2025.

(ii) Dense fog and cold day conditions likely to continue over parts of Northwest & central India during next 24 hours and improve thereafter.

i. Realised weather during past 24 hours till 0830 hours IST of today (Annexure I)

- ❖ **Cold day to severe cold day conditions** observed in isolated pockets of Haryana, Rajasthan, East Uttar Pradesh and West Madhya Pradesh and **Cold day conditions** in isolated pockets of Punjab and West Uttar Pradesh.
- ❖ **Very dense fog (visibility < 50 m)** reported in isolated pockets of Punjab, Haryana, Delhi, Rajasthan, West Madhya Pradesh, Uttar Pradesh; **dense fog (visibility 50-200 m)** reported in isolated pockets of Himachal Pradesh, East Madhya Pradesh, Odisha.
- ❖ **Visibility reported (< 200 m): Rajasthan:** Kota, Ganganagar & Churu-0 each, **Haryana:** Hissar, Ambala & Chandigarh-0 each, **West Madhya Pradesh:** Bhopal, Rajgarh, Ujjain -0 each, Gwalior & Ratlam -200 each; **Delhi:** Ayanagar-0, Safdarjung-200; **Punjab:** Amritsar-0, Patiala-200, **Uttar Pradesh** Deomali, Ghazipur & Hamirpur-0 each, Varanasi & Fursatganj-200 each

Weather Systems, Forecast and warning (Annexure II & III):

- ❖ A **Western disturbance** as a cyclonic circulation lies over Jammu & adjoining north Pakistan in lower tropospheric levels. Another **western disturbance** as a cyclonic circulation lies over central parts of Iran in lower & middle tropospheric levels with a trough aloft in upper tropospheric westerlies with its axis at 7.6 km above mean sea level roughly along Long. 54°E to the north of Lat. 25°N. An induced cyclonic circulation is also likely to form over Punjab & neighbourhood on 05th January. In addition, moisture feeding from Arabian Sea to northwest India is also likely during 05th to 07th January 2025. **Under its influence**
 - ✓ Light isolated to scattered rainfall/snowfall over Western Himalayan region from 02nd to 04th and scattered to fairly widespread rainfall/snowfall over the region from 05th to 06th January. **Heavy rainfall/snowfall** at isolated places also likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 05th & 06th January.
 - ✓ Light isolated to scattered rainfall also likely over the plains of Northwest India during 04th to 06th January.
 - ✓ Isolated thunderstorm accompanied with lightning also likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 05th & 06th January.

ii. Temperature, Cold Wave and Fog Forecast:

Temperature Conditions during past 24 hours till 0830 hours IST of today (Annexure IV):

- ❖ Minimum temperatures were **below 0°C** over many parts of Jammu, Kashmir & Ladakh; **4-9°C** over many parts of Northwest & Central India and Jharkhand; **9-14°C** over many parts of East India, **14-18°C** over many parts of West India. Today, the lowest minimum temperature of 4.4°C is reported at **Dehri (Bihar)** over the plains of the country.
- ❖ There has been a fall in minimum temperature by 2-4°C over many parts of Central India and by 1-2°C over many parts of Northwest & East India during past 24 hours and rise in minimum temperature by 1-2°C over some parts of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, East Rajasthan and Gujarat State.
- ❖ Minimum temperatures are **below normal (-1°C to -3°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Madhya Pradesh and Saurashtra & Kutch. These are **appreciably above normal (3°C to 5°C)** at a few places over Madhya Maharashtra & Odisha; at isolated places over Punjab and

Marathwada; **above normal (1°C to 3°C)** at many places over Telangana, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam; at a few places over East Uttar Pradesh, East Madhya Pradesh, Bihar, Gujarat Region, Konkan & Goa, Gangetic West Bengal, Rayalaseema and Kerala & Mahe; at isolated places over Haryana, Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Vidarbha and near normal over rest parts of the country.

Forecast of temperature:

- ❖ Gradual rise in minimum temperatures by 2-3°C likely over Northwest India during next 5 days.
- ❖ No significant change in minimum temperatures likely over Central & East India during next 3 days and gradual rise by 2-3°C thereafter.
- ❖ Fall in minimum temperatures by 2-3°C likely over Maharashtra region during next 2 days and no significant change thereafter.
- ❖ No significant change in minimum temperatures likely over Gujarat state during next 5 days.

Cold Day Warnings:

Cold Day conditions very likely in some parts of Punjab, Haryana, Chandigarh on 02nd and in isolated pockets of Uttar Pradesh, Rajasthan and West Madhya Pradesh on 02nd January.

Dense Fog Warnings:

Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Punjab, Haryana-Chandigarh, West Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Odisha on 02nd, Himachal Pradesh, Madhya Pradesh on 02nd & 03rd and Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura during 02nd-06th January.

Ground Frost Warnings:

Ground Frost conditions very likely in isolated pockets of Arunachal Pradesh, Meghalaya & Nagaland, Manipur, Mizoram during 02nd-03rd January.

Fishermen Warnings (Annexure V):

Fishermen are advised not to venture into Gulf of Mannar & adjoining Comorin area during 02nd -04th; southwest Bay of Bengal on 02nd; southern parts of southeast Arabian sea on 03rd & 04th January.

iii. Weather conditions and forecast over Delhi/NCR during 02nd Jan. to 05th Jan. 2025 (Annexure VI)

For more details, kindly refer National Weather Bulletin:

https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php

For District wise warnings refer: <https://mausam.imd.gov.in/responsive/districtWiseWarningGIS.php>

ANNEXURE I

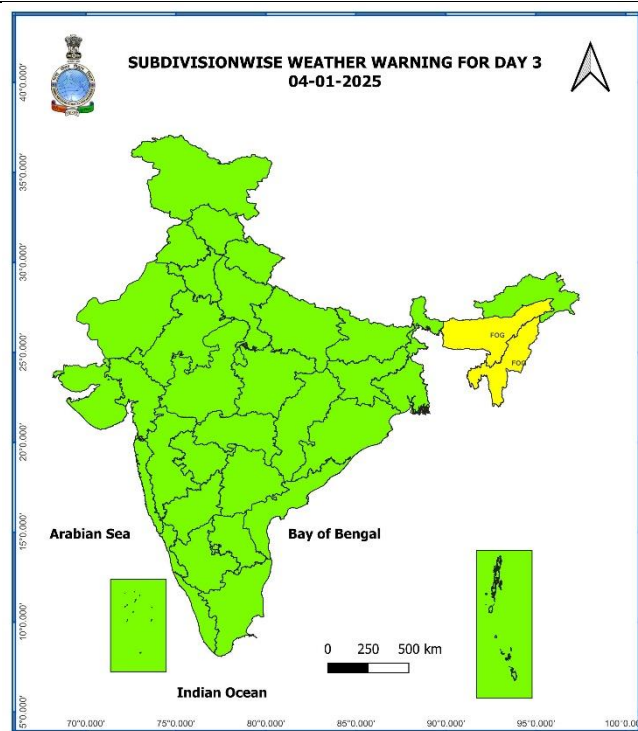
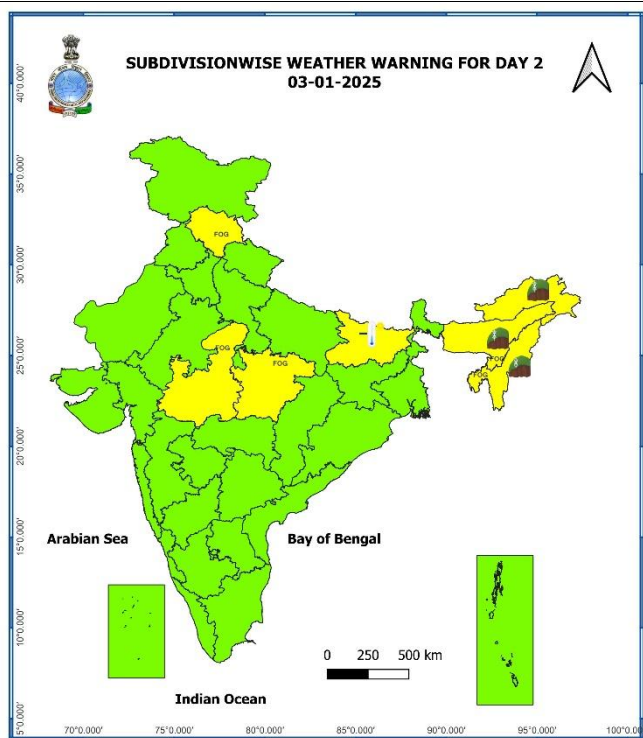
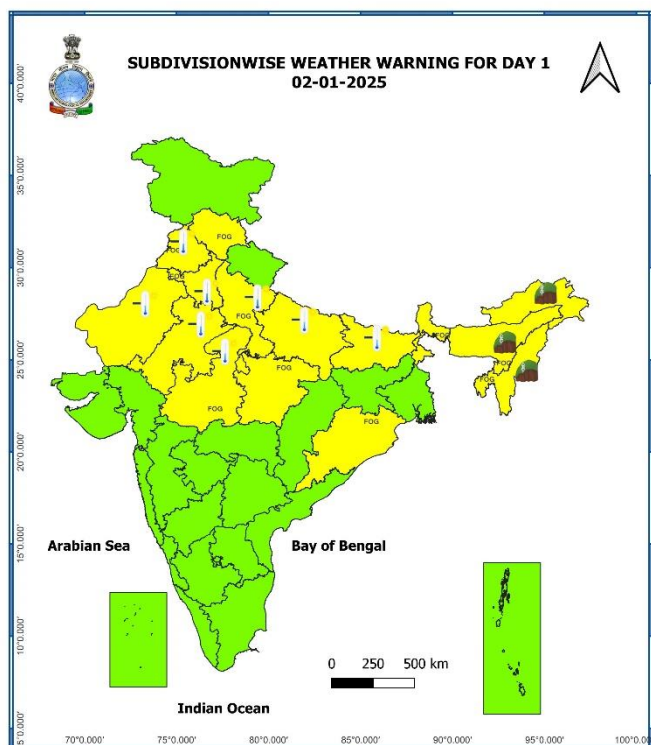
Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 02.01.2025 (in cm):

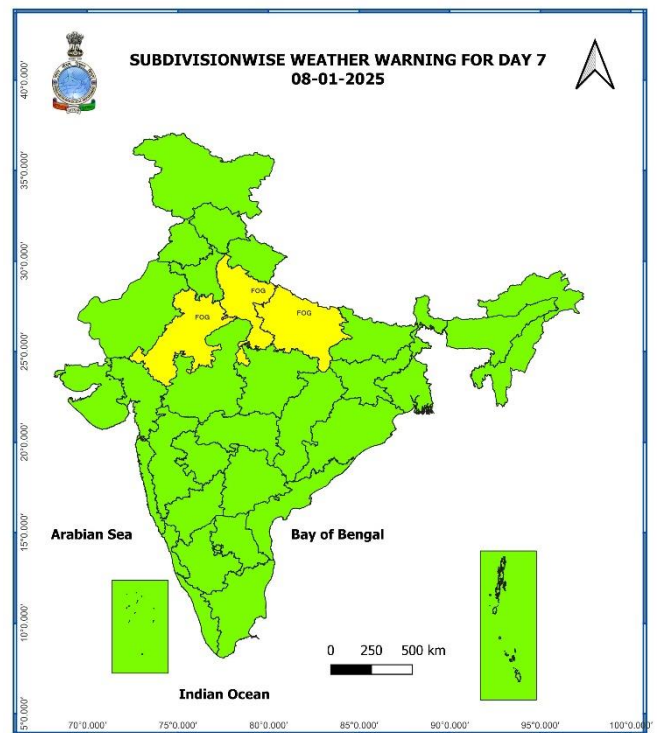
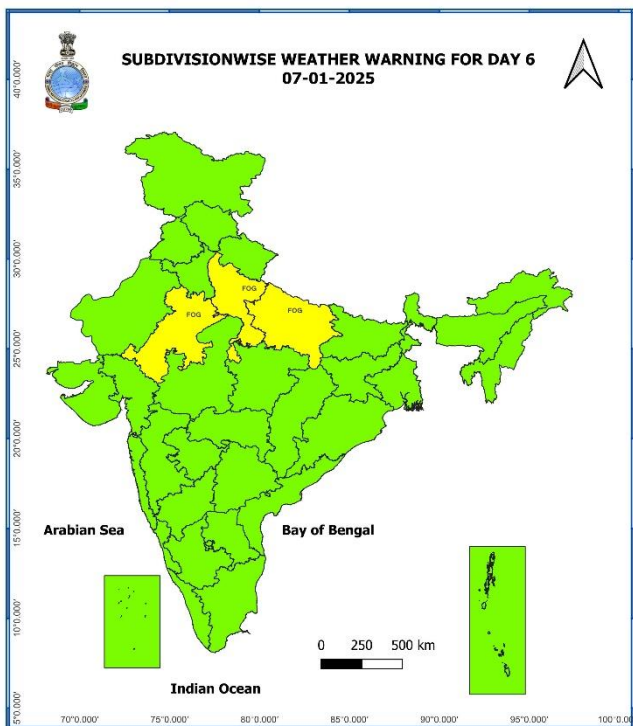
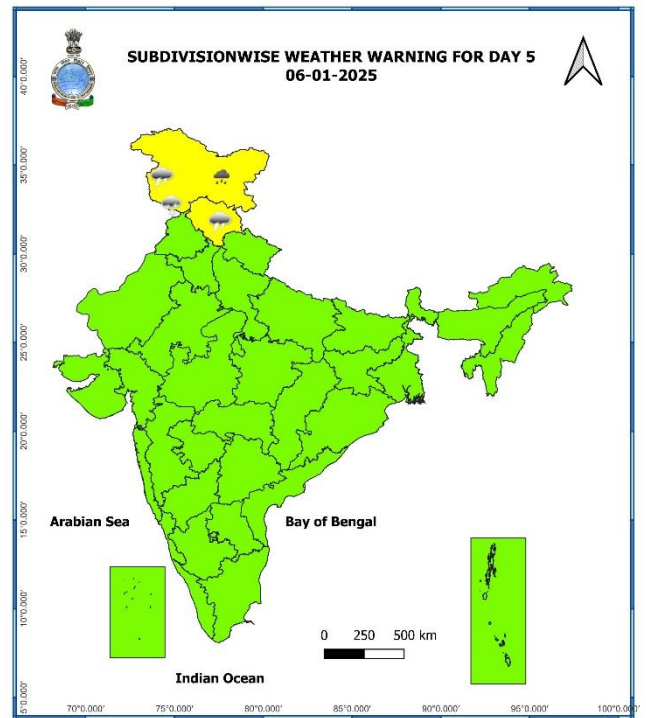
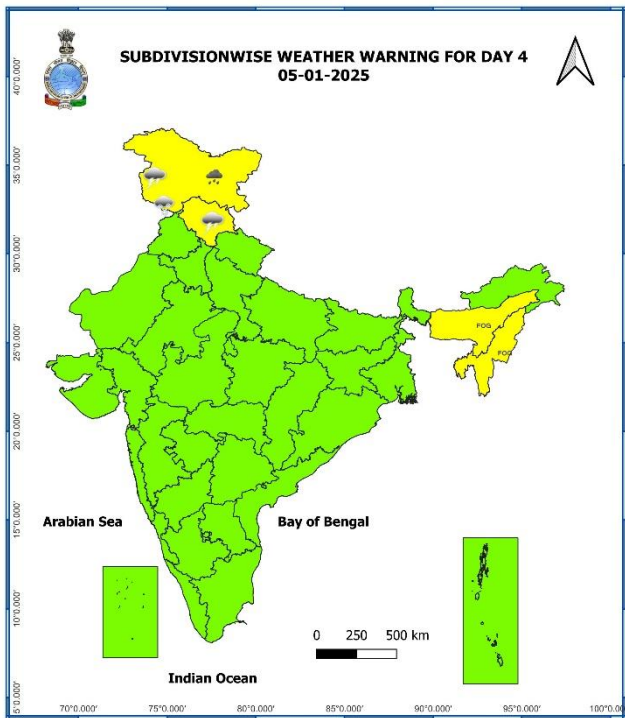
- ❖ **Jammu & Kashmir:** Bandipora (dist Bandipore) 1.

ANNEXURE II

7 Days Rainfall Forecast								
S. No.	Subdivision	02-Jan	03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	ISOL	ISOL	ISOL	SCT	SCT	SCT	ISOL
2	ARUNACHAL PRADESH	DRY	DRY	DRY	DRY	DRY	ISOL	SCT
3	ASSAM & MEGHALAYA	DRY	DRY	DRY	DRY	DRY	ISOL	ISOL
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	DRY	DRY	DRY	DRY	DRY	ISOL
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	DRY	DRY	DRY	DRY	ISOL	ISOL	ISOL
6	GANGETIC WEST BENGAL	DRY	DRY	DRY	DRY	DRY	DRY	DRY
7	ODISHA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
8	JHARKHAND	DRY	DRY	DRY	DRY	DRY	DRY	DRY
9	BIHAR	DRY	DRY	DRY	DRY	DRY	DRY	DRY
10	EAST UTTAR PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
11	WEST UTTAR PRADESH	DRY	DRY	DRY	DRY	ISOL	DRY	DRY
12	UTTARAKHAND	DRY	DRY	DRY	ISOL	SCT	ISOL	DRY
13	HARYANA CHANDIGARH & DELHI	DRY	DRY	DRY	SCT	SCT	ISOL	DRY
14	PUNJAB	DRY	DRY	ISOL	SCT	SCT	DRY	DRY
15	HIMACHAL PRADESH	ISOL	ISOL	SCT	SCT	WS	SCT	SCT
16	JAMMU & KASHMIR AND LADAKH	SCT	ISOL	FWS	WS	WS	ISOL	ISOL
17	WEST RAJASTHAN	DRY	DRY	DRY	ISOL	DRY	DRY	DRY
18	EAST RAJASTHAN	DRY	DRY	DRY	DRY	DRY	DRY	DRY
19	WEST MADHYA PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
20	EAST MADHYA PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
21	GUJARAT REGION	DRY	DRY	DRY	DRY	DRY	DRY	DRY
22	SAURASHTRA & KUTCH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
23	KONKAN & GOA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
24	MADHYA MAHARASHTRA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
25	MARATHAWADA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
26	VIDARBHA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
27	CHHATTISGARH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
28	COASTAL ANDHRA PRADESH & YANAM	DRY	DRY	DRY	DRY	DRY	DRY	DRY
29	TELANGANA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
30	RAYALASEEMA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
32	COASTAL KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
33	NORTH INTERIOR KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
34	SOUTH INTERIOR KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
35	KERALA & MAHE	DRY	DRY	DRY	DRY	DRY	ISOL	ISOL
36	LAKSHADWEEP	DRY	SCT	SCT	SCT	SCT	FWS	FWS

- As the lead period increases forecast accuracy decreases





- Action may be taken based on ORANGE AND RED COLOUR warnings.
- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases.

Fig. 1: Maximum Temperatures

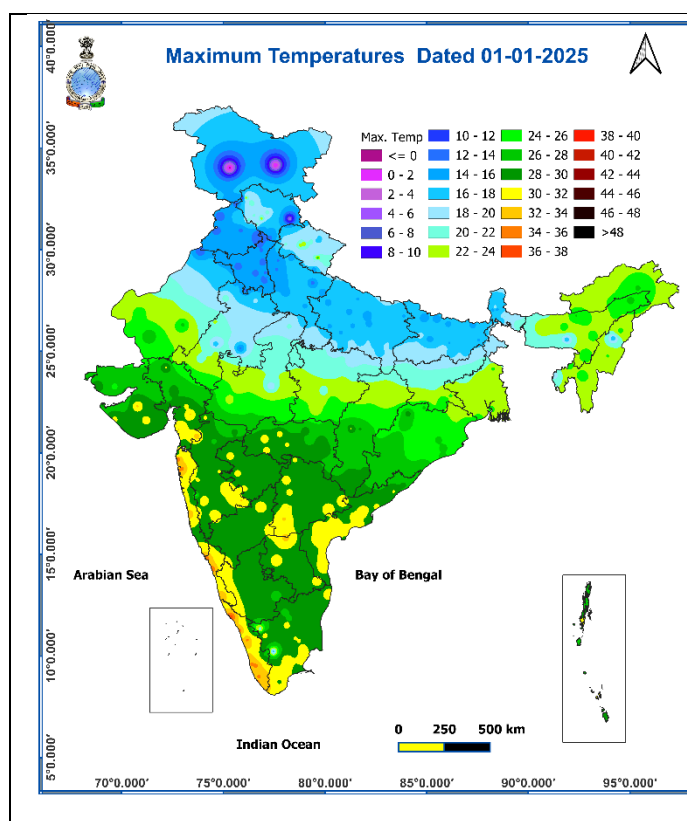


Fig. 2: Departure of Maximum Temperatures

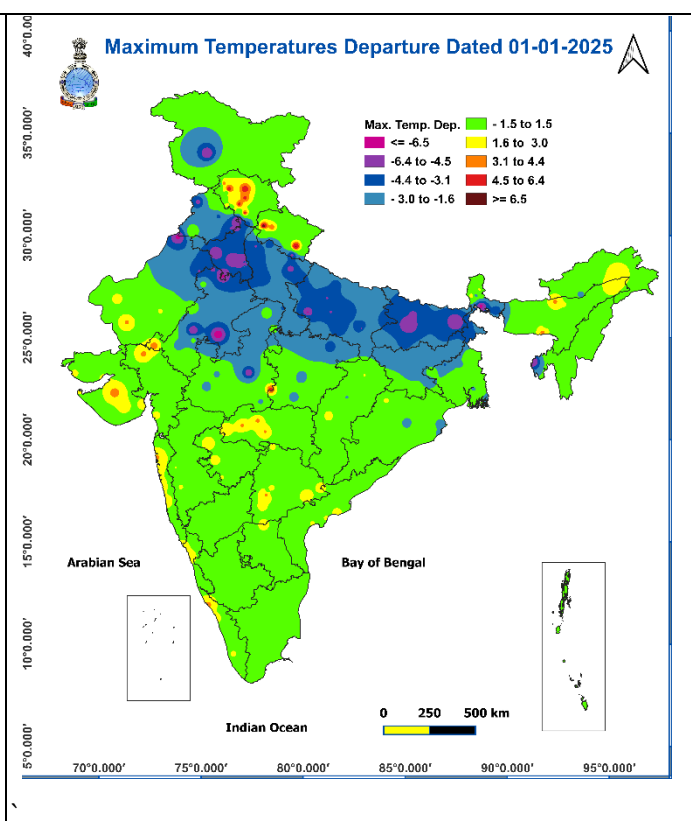


Fig. 3: Minimum Temperatures

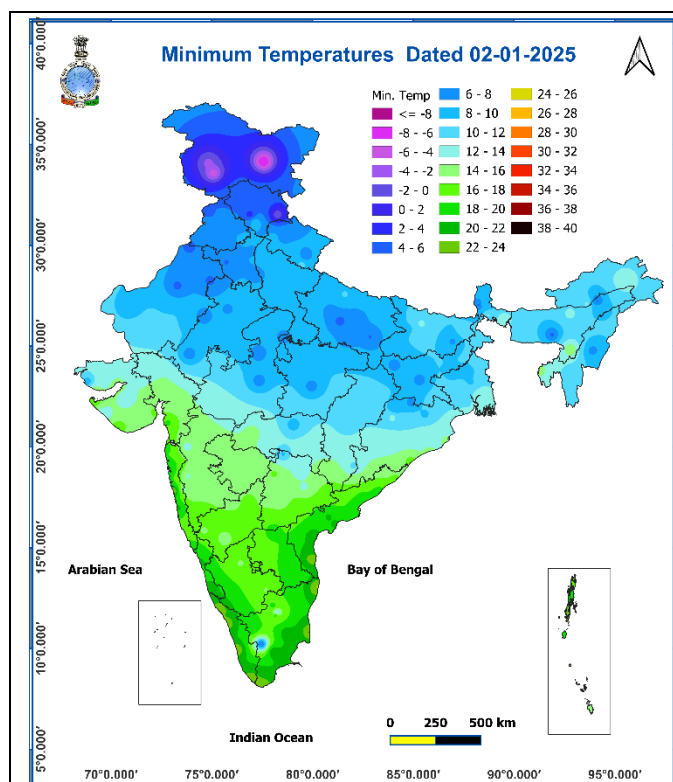
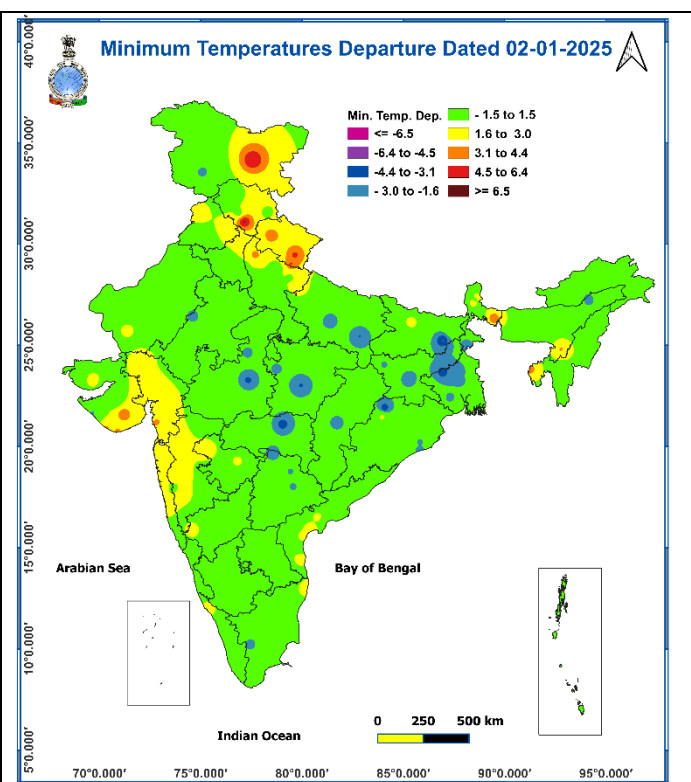


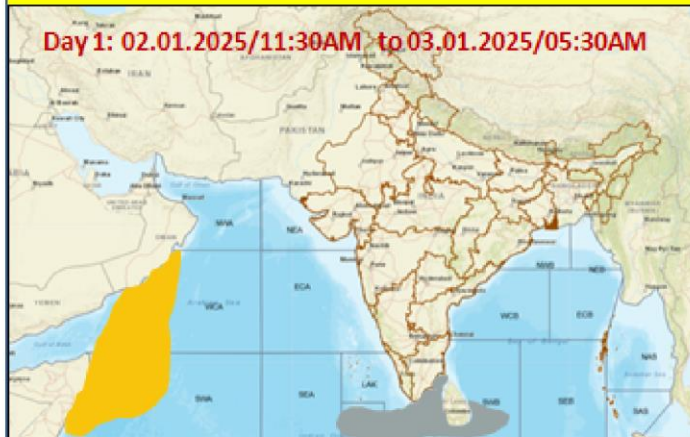
Fig. 4: Departure of Minimum Temperatures



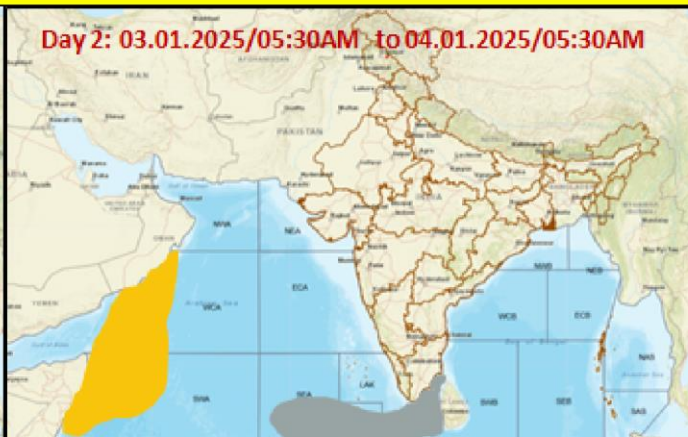


Fishermen Warning Graphics

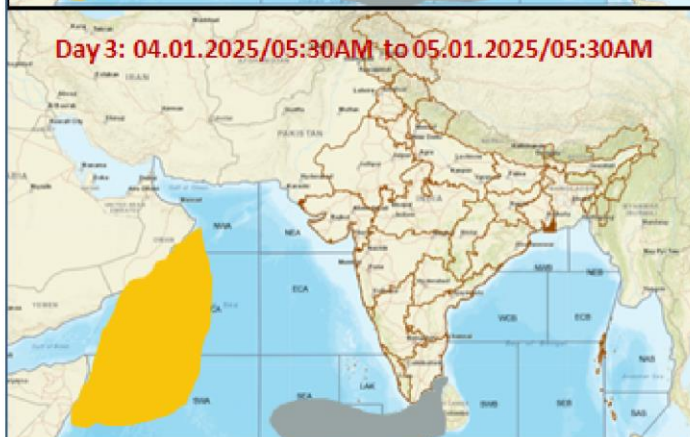
Day 1: 02.01.2025/11:30AM to 03.01.2025/05:30AM



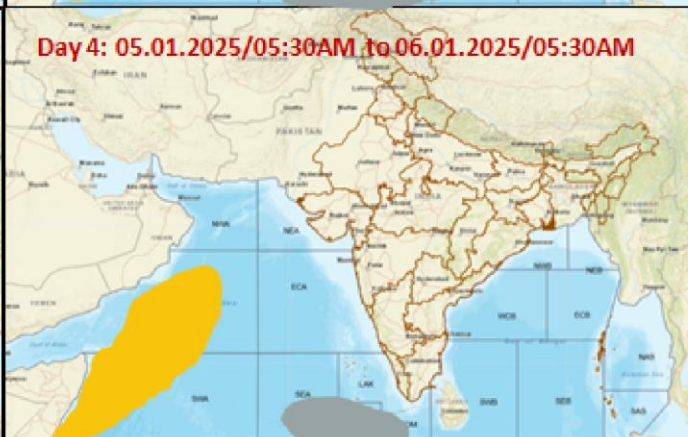
Day 2: 03.01.2025/05:30AM to 04.01.2025/05:30AM



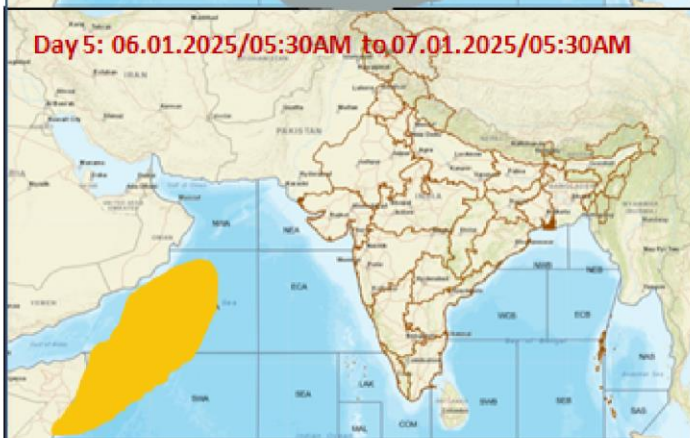
Day 3: 04.01.2025/05:30AM to 05.01.2025/05:30AM



Day 4: 05.01.2025/05:30AM to 06.01.2025/05:30AM



Day 5: 06.01.2025/05:30AM to 07.01.2025/05:30AM



Squally Weather with wind speed 35-45 kmph gusting to 55 kmph

Squally wind with speed 45-55 kmph gusting to 65 kmph

Fishermen are advised not to venture into the marked areas.

Weather forecast over Delhi/NCR during 02nd to 05th Jan. 2025**Past Weather:**

There has been a slight rise in minimum temperature and fall in maximum temperature upto 03°C over Delhi/NCR during past 24hr. The Maximum and Minimum temperatures over Delhi are in the range of 13 to 15°C and 6 to 8°C respectively. The minimum temperature was near normal and the maximum temperature was below normal up to 03 to 06°C over most places. Very dense fog was reported at Palam airports. Palam airport recorded the lowest visibility 00 m from 0600 hours to 0800 hours IST which thereafter improved becoming 50m at 0830 hours IST. Safdarjung airport recorded the lowest visibility 200 m at 0800 hours IST which thereafter improved becoming 250 m at 0830 hours IST. Mainly clear sky conditions with predominant surface wind from the west direction with wind speed reaching 06 to 10 mph prevailed during past 24 hr. Mainly smog/mist conditions with wind speed less than 10 kmph northwest direction prevailed over the region in the forenoon today.

Weather Forecast:

02.01.2024: Partly cloudy sky. Cold day conditions likely at isolated places. The predominant surface wind will likely be in the northwest direction with a wind speed of less than 12 kmph till evening. It would decrease thereafter becoming less than 08 kmph from the northwest direction during the night. Smog/shallow fog is likely in the evening/night.

03.01.2025: Partly cloudy sky. The predominant surface wind is likely to be from the northwest direction with a speed of less than 06 kmph during morning hours. Smog/ moderate fog in most of the places and dense fog in isolated places is likely in the morning. The wind speed will gradually increase becoming 08-10 kmph from the northwest direction during the afternoon. It will decrease thereafter becoming less than 06 kmph from the northwest direction during evening and night. Smog/shallow fog is likely in the evening/night.

04.01.2025: Partly cloudy sky. The predominant surface wind is likely to be from the northwest direction with a wind speed less than 04 kmph during morning hours. Smog/ moderate fog in most of the places and dense fog in isolated places is likely in the morning. The wind speed will increase thereafter becoming 04-06 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 04 kmph from southwest direction during evening and night. Smog/shallow fog is likely in the evening/night.

05.01.2025: Partly cloudy sky. The predominant surface wind is likely to be from south direction with wind speed less than 06 kmph during morning hours. Smog/ shallow fog in most of the places and moderate fog in isolated places is likely in the morning. The wind speed will increase thereafter becoming 10-12 kmph from southeast direction during afternoon. It will gradually decrease becoming less than 08 kmph from southeast direction during evening and night. Smog/shallow fog is likely in the evening/night.

Impact expected due to dense/very dense fog in the night /morning hour:

❖ 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.

Impact expected due to Cold Day/Severe Cold day conditions

- ❖ An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- ❖ Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- ❖ Frostbite can occur due to prolonged exposure to cold. The skin turns pale, hard and numb and eventually black blisters appear on exposed body parts such as fingers, toes, nose and or earlobes. Severe frostbite needs immediate medical attention and treatment.
- ❖ Impact on agriculture, crop, livestock, water supply, transport and power sector at some places.

Action suggested:

- ❖ Wear several layers of loose fitting, light weight; warm woollen clothing.
- ❖ Cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts. Wear several layers of loose fitting, light weight; warm Woolen clothing rather than one layer of heavy cloth.
- ❖ Eat vitamin-C rich fruits & vegetable and drink sufficient fluids preferably warm fluids to maintain adequate immunity.
- ❖ Avoid or limit outdoor activities.
- ❖ Keep dry, if wet, change cloths immediately to prevent loss of body heat. Wear insulated/waterproof shoes.
- ❖ Warm the affected area of the body slowly with lukewarm water; do not rub the skin vigorously.
- ❖ If the affected skin area turns black, immediately consult a doctor.
- ❖ Maintain ventilation while using Heaters to avoid inhaling toxic fumes.
- ❖ Take safety measures while using electrical and gas heating devices.
- ❖ Extreme care needed for vulnerable people.
- ❖ Seek medical attention as soon as possible for someone suffering from frostbite/ Hypothermia.
- ❖ Protect livestock from cold weather.

Agromet advisories for likely impact of Heavy Rainfall / Cold Wave/ Ground Frost

- In **North Eastern States**, apply light and frequent irrigation to the standing crops in the evening to protect them from low temperature stress or cold injuries. Use mulching and cover vegetable nurseries and young fruit plants with straw/polythene sheets to maintain optimum soil temperature.

Livestock

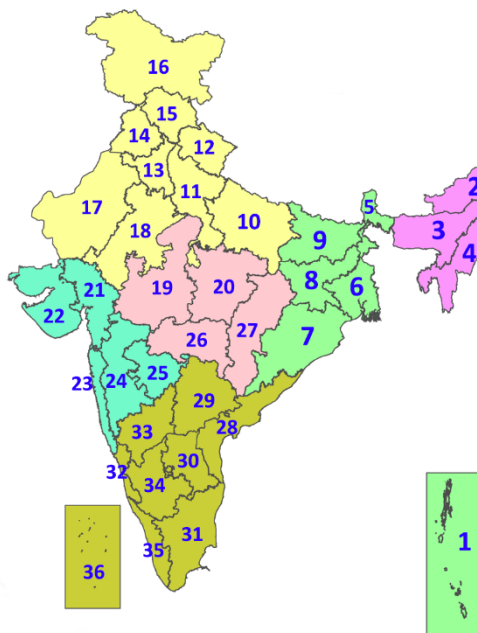
- Keep the animals inside the shed during heavy rainfall period and provide them balanced feed. Store feed and fodder in a safe place to prevent spoilage.
- To protect from cold, keep cattle inside the sheds during night and provide dry bedding. Also keep the chicks warm by providing artificial light in the poultry sheds.

Legends & abbreviations:

- ❖ **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome, **IAF:** Indian Air Force.
- ❖ **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 Marathawada.
 - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

LEGENDS

1. अंडमान और निकोबार द्वीपसमूह
2. अरुणाचल प्रदेश
3. असम और मेघालय
4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
5. उप-हिमालयी पश्चिम बंगाल और सिक्किम
6. गंगीय पश्चिम बंगाल
7. ओडिशा
8. झारखंड
9. बिहार
10. पूर्वी उत्तर प्रदेश
11. पश्चिम उत्तर प्रदेश
12. उत्तराखंड
13. हरियाणा, चंडीगढ़ और दिल्ली
14. पंजाब
15. हिमाचल प्रदेश
16. जम्मू और कश्मीर और लद्दाख
17. पश्चिम राजस्थान
18. पूर्वी राजस्थान
19. पश्चिम मध्य प्रदेश
20. पूर्वी मध्य प्रदेश
21. गुजरात
22. सौराष्ट्र
23. कोंकण और गोवा
24. मध्य महाराष्ट्र
25. मराठवाड़ा
26. विदर्भ
27. छत्तीसगढ़
28. तटीय आंध्र प्रदेश और यनम
29. तेलंगाना
30. रायलसीमा
31. तमिलनाडु, पुडुचेरी और कराईकल
32. तटीय कर्नाटक
33. आंतरिक उत्तरी कर्नाटक
34. आंतरिक दक्षिणी कर्नाटक
35. केरल और माहे
36. लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Odisha
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chandigarh & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathwada
26. Vidarbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. 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)



Fog



Heavy Snow



Cold Wave



Heavy Rain



Dust Storm



Cold Day



Very Heavy Rain



Heat Wave



Ground Frost



Extremely Heavy Rain



Warm Night



Thunder & Lightning



Hot Day



Hailstorm



Hot & Humid



Dust Raising Winds



Strong Surface Winds

COLOUR CODED WARNING

No Warning (No Action)

Watch (Be Aware)

Alert (Be Prepared To Take Action)

Warning (Take Action)

Probabilistic Forecast

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

* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".
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(Service to the Nation since 1875)

DEFINITION/CRITERIA

Rain/ Snow *

Heavy: 64.5 to 115.5 mm/cm *
Very Heavy: 115.6 to 204.4 mm/cm*
Extremely Heavy: > 204.4 mm/cm *

Heat Wave

When maximum temperature of a station reaches $\geq 40^\circ \text{C}$ for plains and $\geq 30^\circ \text{C}$ 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 $\geq 6.5^\circ \text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature $\geq 45^\circ \text{C}$.

Severe Heat Wave: When actual maximum temperature $\geq 47^\circ \text{C}$

(c) Criteria for heat wave for coastal stations

When maximum temperature departure is $> 4.5^\circ \text{C}$ from normal. Heat Wave may be described provided maximum temperature $\geq 37^\circ \text{C}$

Warm Night

When maximum temperature remains 40°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°C .

Severe Warm Night: When minimum temperature departure $> 6.4^\circ \text{C}$.

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°C to -6.4°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°C to -6.4°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

Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)

Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.

Frost

Ice deposits on ground

Air temperature $\leq 4^\circ \text{C}$ (over Plains)

Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph

Severe: Wind speed 62-87 kmph

Very Severe: Wind speed > 87 kmph

Sea State

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

Phenomenal: Wind speed > 117 kmph (> 63 knots) & Wave height > 14 metre

Cyclone

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)

Super Cyclone Strom: Wind speed > 220 kmph (> 119 knots)

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