Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 10th January, 2025
Time of Issue: 1330 hours IST

Subject: (i) In association with the Western disturbance and its interaction with easterly winds, wet spell likely over Northwest India during 10th to 12th January accompanied with thunderstorm, lightning & hail on 11th January, 2025.
(ii) Dense to very dense fog conditions likely to continue over Indo-Gangetic plains during next 4-5 days.

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

- **Cold wave to severe cold wave conditions** prevailed in isolated pockets of Himachal Pradesh; **Cold wave** in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Haryana.
- **Ground Frost conditions** reported in isolated pockets of Uttarakhand.
- **Dense to very dense fog (visibility< 50 m)** reported in most parts of Punjab; in some parts of Haryana and Uttar Pradesh, Delhi; in isolated pockets of Chandigarh, West Madhya Pradesh and **dense fog (visibility 50-200 m)** reported in isolated pockets of Himachal Pradesh, Odisha and Assam.
- **Visibility reported (<200 m)** (in meter)**: Punjab:** Amritsar, Patiala- 0 each; **Delhi:** Palam- 0, Safdarjung 50; **Haryana:** Ambala, Chandigarh 0 each; **West Madhya Pradesh:** Gwalior 0; **East Uttar Pradesh:** Kushinagar, Kanpur, Prayagraj 0 each, Varanasi 20, Lucknow 100; **West Uttar Pradesh:** Agra 0, Aligarh 30, Meerut 40; **Himachal Pradesh:** Bilaspur, Una, Dehragopipur 50 each; **Assam:** Guwahati- 150.

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

- A Western Disturbance as a Cyclonic Circulation lies over southeast Iran & neighbourhood in lower & upper tropospheric levels. An induced cyclonic circulation lies over southwest Rajasthan & neighbourhood in lower tropospheric levels. There is likely interaction of westerly in association with Western Disturbance and easterly winds at lower tropospheric levels. Under its influence, Light/moderate isolated to scattered rainfall/snowfall likely over Western Himalayan region on 11th & 12th and Light/moderate isolated to scattered rainfall likely over the plains of Northwest India and adjoining central India during 10th -12th January.
  - ✓ Thunderstorm activity at isolated places likely over West Rajasthan on 10th & 11th; Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Punjab, Haryana, Chandigarh, West Uttar Pradesh, East Rajasthan & West Madhya Pradesh on 11th; Uttarakhand, East Uttar Pradesh & East Madhya Pradesh on 11th & 12th January. Isolated hailstorm also likely over West Rajasthan on 10th & 11th; over Uttarakhand, Punjab, south Haryana, East Rajasthan and West Madhya Pradesh on 11th January.

- A cyclonic circulation lies over Southeast Bay of Bengal & adjoining Southwest Bay of Bengal in lower tropospheric levels. Under its influence,
  - ✓ Light to moderate rainfall accompanied with thunderstorm, lightning very likely at a few places over Coastal Andhra Pradesh & Yanam and Rayalaseema on 13th; Tamil Nadu, Puducherry & Karaikal during 12th – 14th and Kerala & Mahe on 13th & 14th January with Isolated **heavy rainfall** likely over Tamilnadu, Puducherry & Karaikal on 12th January.
- Light to moderate rainfall accompanied with thunderstorm, lightning very likely at isolated places over Arunachal Pradesh and Assam & Meghalaya on 13th & 14th January.

ii. Temperature, Cold Wave and Fog Forecast:

Forecast of temperature:

- Rise in minimum temperatures by 2-3°C likely over Northwest India during next 3 days and gradual fall by 2-4°C thereafter.
- Gradual rise in minimum temperatures by 3-4°C likely over Central India during next 2 days and gradual fall by about 2°C thereafter.
- No significant change in minimum temperatures likely over East India during next 24 hours and gradual rise by 2-4°C during subsequent 4 days.
- Gradual rise in minimum temperatures by 2-3°C likely over Maharashtra & Gujarat state during next 2 days and fall by 2-4°C thereafter.

Cold Wave Warnings:

Cold wave conditions very likely in isolated pockets over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad & Himachal Pradesh on 10th January.

Dense Fog Warnings:

Dense to very Dense fog Condition very likely to continue to prevail during night/early morning hours in some parts of Punjab, Haryana-Chandigarh on 12th & 13th; in isolated pockets of East Uttar Pradesh till 11th; East Rajasthan on 12th & 13th January.

Dense fog conditions very likely to continue to prevail during night/early morning hours in isolated pockets of Punjab, Haryana, Chandigarh on 10th, 11th, 14th & 15th; West Rajasthan on 11th & 12th; East Rajasthan on 11th; Madhya Pradesh till 11th; Sub-Himalayan West Bengal & Sikkim during 11th-13th; Bihar & Assam & Meghalaya till 12th; East Uttar Pradesh during 12th-15th; Himachal Pradesh during 13th-15th; Odisha & Nagaland, Manipur, Mizoram & Tripura till 13th; West Uttar Pradesh till 15th January.

Cold Day Warnings:

Cold day conditions very likely in isolated pockets of Himachal Pradesh on 12th January.

Ground Frost Warnings:

Ground frost conditions very likely in isolated pockets of Himachal Pradesh on 10th January.

Fishermen Warnings (Annexure IV):

Fishermen are advised not to venture into southeast & southwest Bay of Bengal on 10th; Gulf of Mannar and adjoining Comorin area during 10th -12th January.

iii. Weather conditions and forecast over Delhi/NCR during 10th Jan. to 13th Jan. 2025 (Annexure V)

For more details, kindly refer National Weather Bulletin:
https://mausam.imd.gov.in/responsive/all_india_forcast_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 10.01.2025 (in cm):

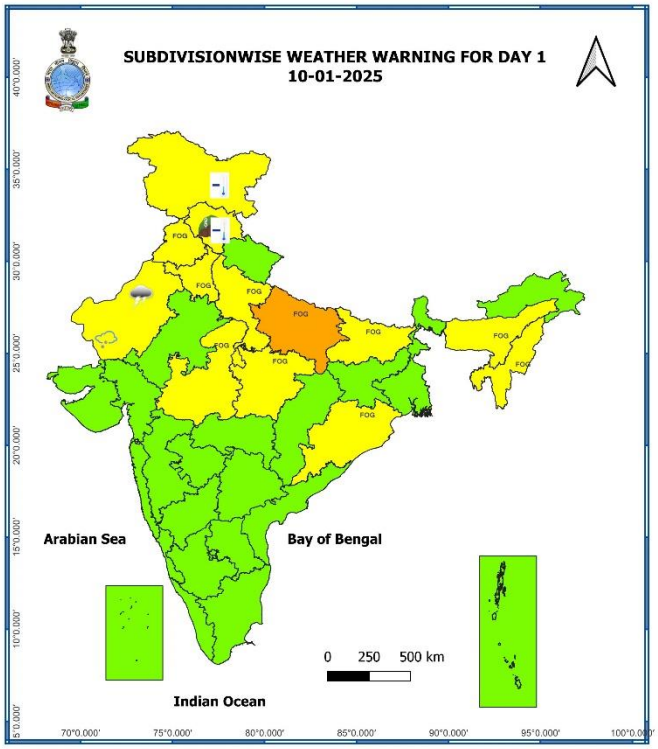
- **Andaman & Nicobar Islands:** Port Blair (dist South Andaman) 2, Hut Bay (dist South Andaman) 1

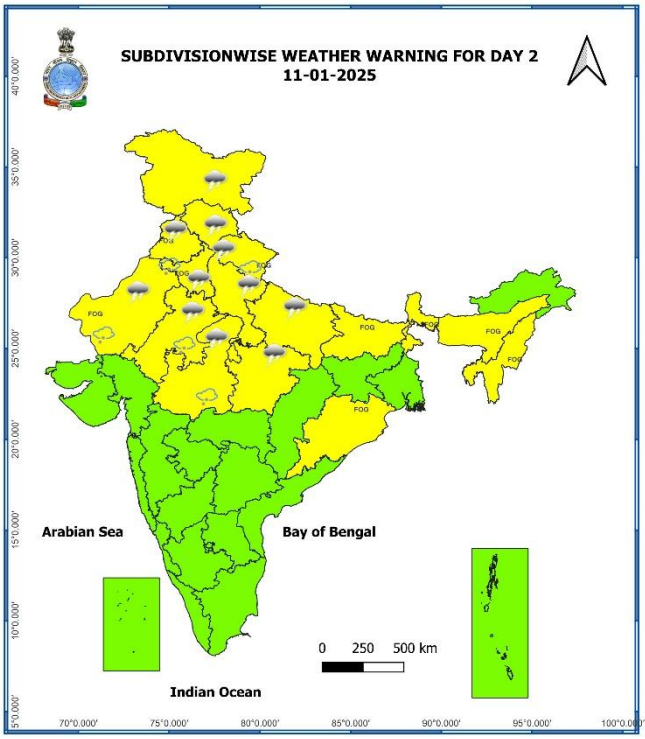
ANNEXURE II

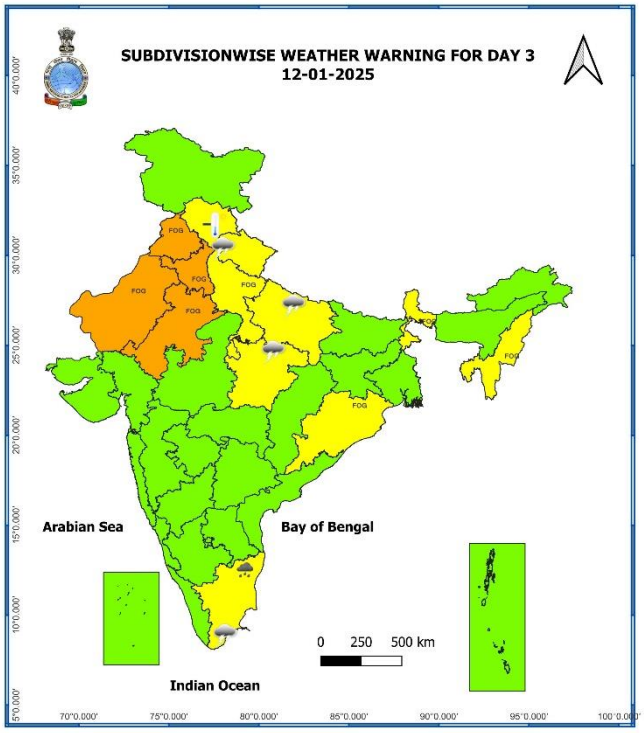
7 Days Rainfall Forecast								
S. No.	Subdivision	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	ISOL	SCT	SCT	SCT	ISOL	ISOL	SCT
2	ARUNACHAL PRADESH	DRY	DRY	ISOL	SCT	ISOL	DRY	DRY
3	ASSAM & MEGHALAYA	DRY	DRY	DRY	ISOL	ISOL	DRY	DRY
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	DRY	DRY	ISOL	ISOL	DRY	DRY
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	DRY	ISOL	ISOL	ISOL	DRY	DRY	DRY
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	ISOL	DRY	DRY	DRY	DRY
10	EAST UTTAR PRADESH	DRY	ISOL	ISOL	DRY	DRY	DRY	DRY
11	WEST UTTAR PRADESH	DRY	SCT	ISOL	DRY	DRY	DRY	DRY
12	UTTARAKHAND	DRY	FWS	SCT	DRY	DRY	DRY	DRY
13	HARYANA CHANDIGARH & DELHI	ISOL	SCT	ISOL	DRY	DRY	DRY	DRY
14	PUNJAB	ISOL	SCT	ISOL	DRY	DRY	DRY	DRY
15	HIMACHAL PRADESH	DRY	SCT	SCT	DRY	DRY	DRY	DRY
16	JAMMU & KASHMIR AND LADAKH	DRY	ISOL	ISOL	DRY	DRY	DRY	DRY
17	WEST RAJASTHAN	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
18	EAST RAJASTHAN	DRY	ISOL	DRY	DRY	ISOL	ISOL	DRY
19	WEST MADHYA PRADESH	DRY	ISOL	ISOL	DRY	DRY	DRY	DRY
20	EAST MADHYA PRADESH	DRY	ISOL	ISOL	DRY	DRY	DRY	DRY
21	GUJARAT REGION	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
22	SAURASHTRA & KUTCH	DRY	ISOL	DRY	DRY	DRY	DRY	DRY
23	KONKAN & GOA	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
24	MADHYA MAHARASHTRA	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
25	MARATHAWADA	DRY	ISOL	DRY	DRY	DRY	DRY	DRY
26	VIDARBHA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
27	CHHATTISGARH	DRY	DRY	ISOL	DRY	DRY	DRY	DRY
28	COASTAL ANDHRA PRADESH & YANAM	ISOL	DRY	ISOL	ISOL	ISOL	DRY	DRY
29	TELANGANA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
30	RAYALASEEMA	DRY	DRY	DRY	ISOL	ISOL	ISOL	DRY
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	ISOL	SCT	SCT	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	ISOL	ISOL	ISOL	SCT	SCT	SCT	ISOL
36	LAKSHADWEEP	DRY	DRY	DRY	SCT	SCT	SCT	SCT

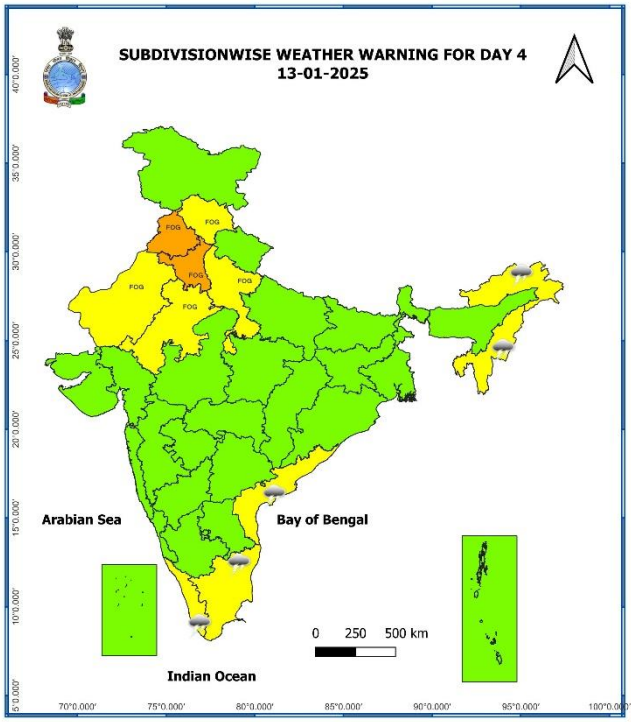
- **As the lead period increases forecast accuracy decreases**

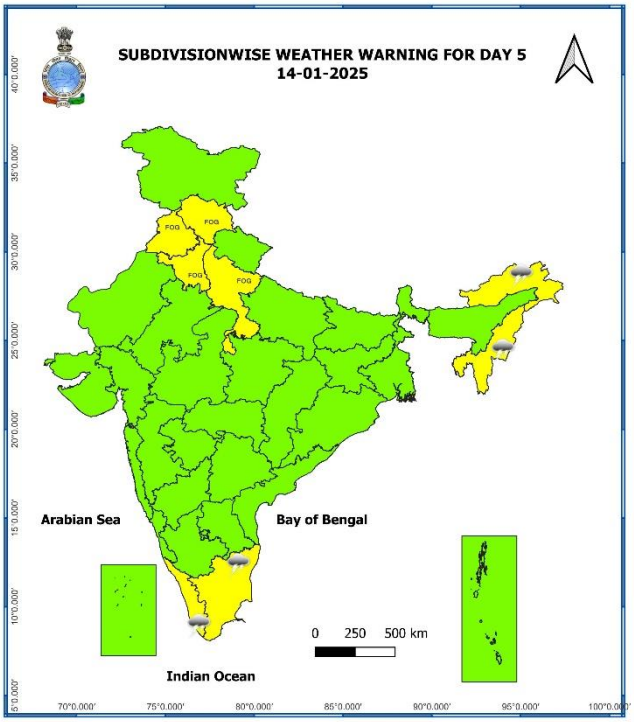
ANNEXURE III

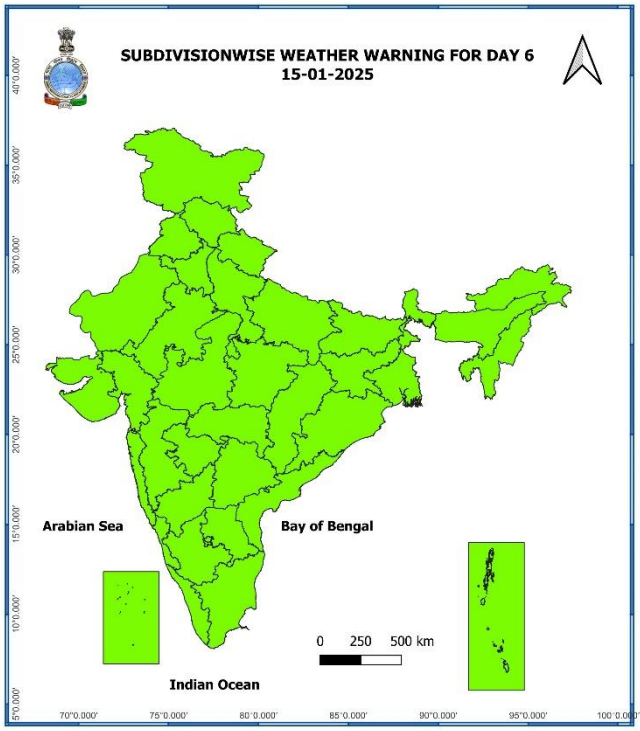


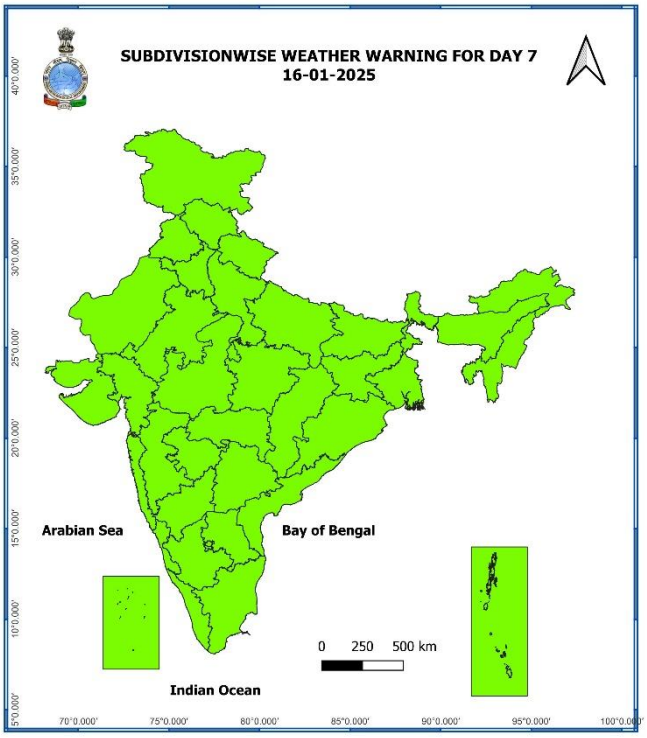












- **Action may be taken based on ORANGE AND RED COLOUR warnings.**
- **Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.**
- **As the lead period increases forecast accuracy decreases.**

Fig. 1: Maximum Temperatures

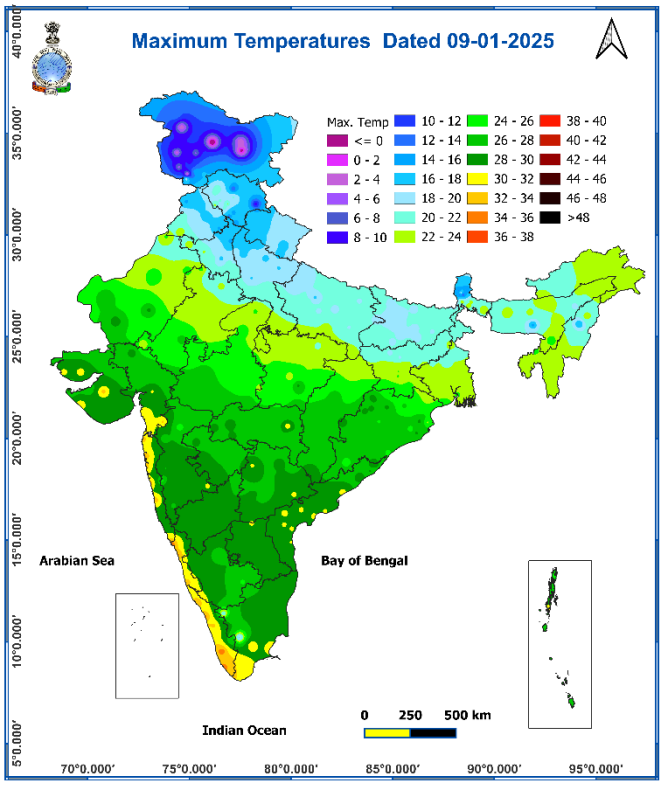


Fig. 2: Departure of Maximum Temperatures

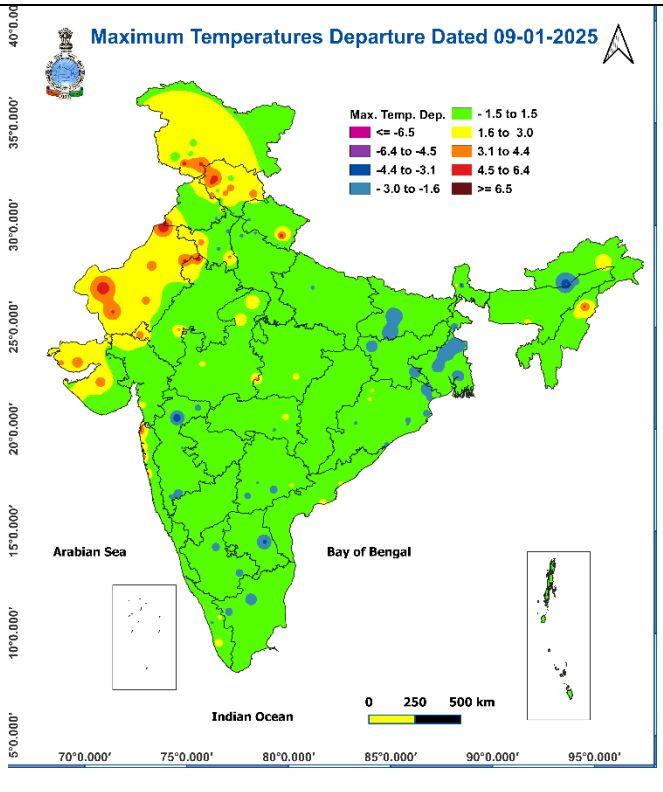


Fig. 3: Minimum Temperatures

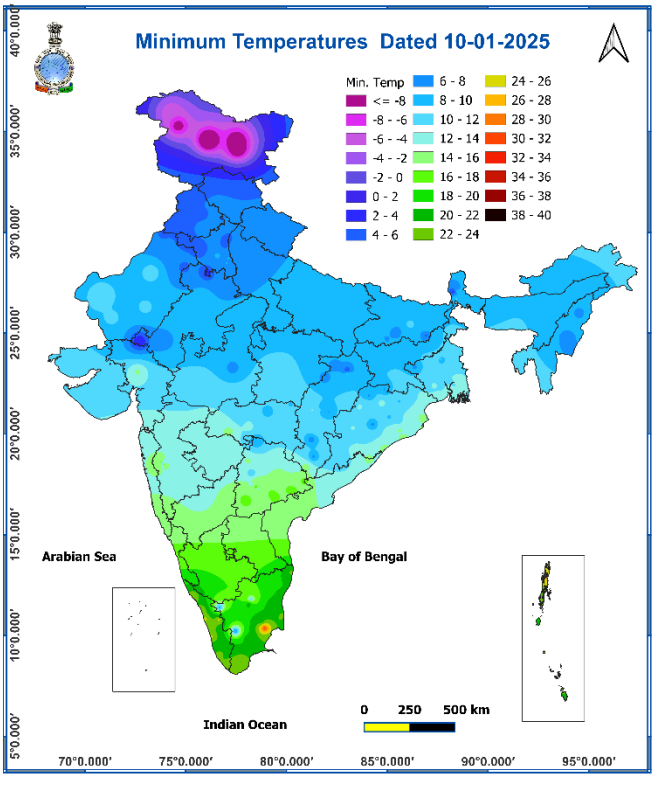
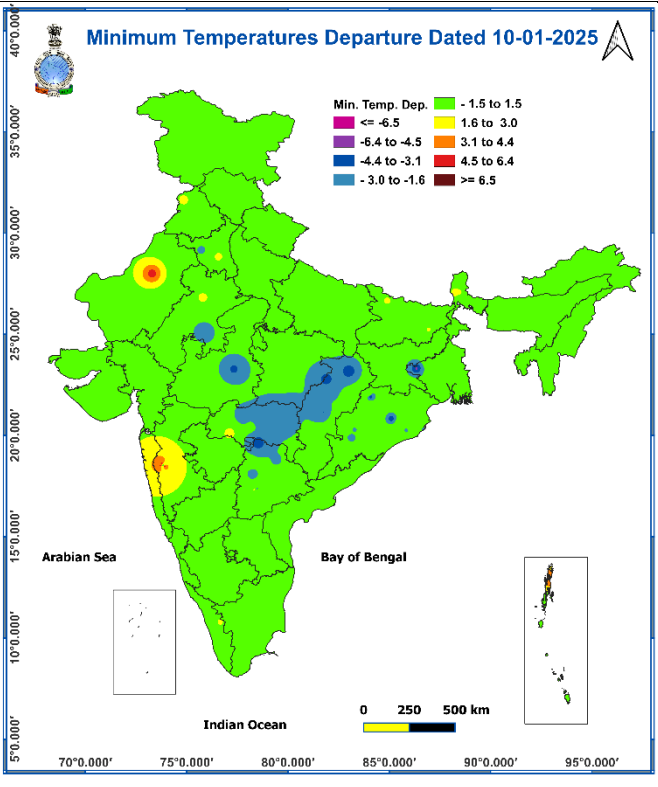
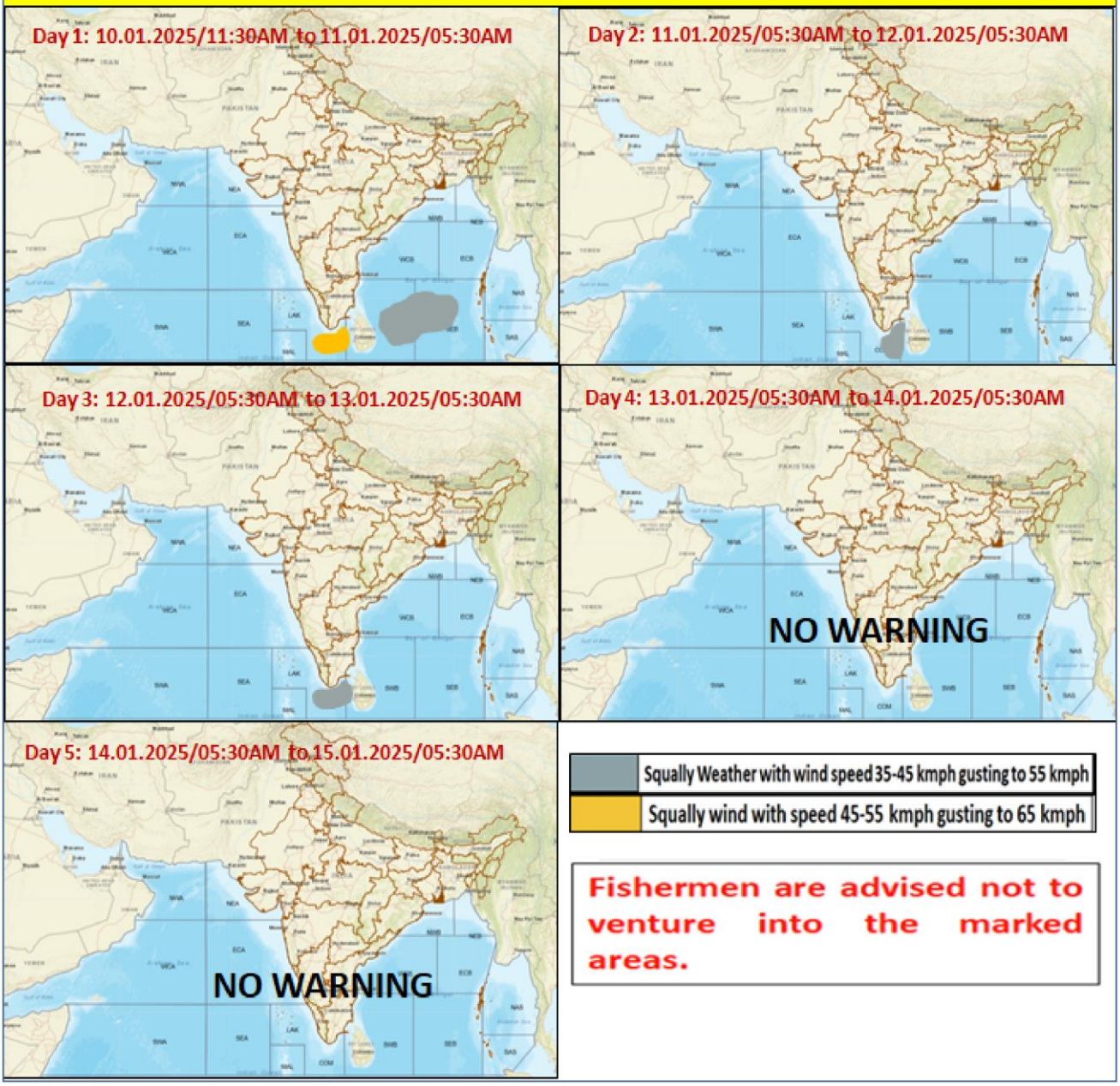


Fig. 4: Departure of Minimum Temperatures



ANNEXURE IV

Fishermen Warning Graphics



ANNEXURE V

Weather forecast over Delhi/NCR during 10th to 13th Jan. 2025

Past Weather:

There has been a rise in minimum temperature upto 01°C over Delhi/NCR during past 24hr. The Maximum and Minimum temperatures over Delhi are in the range of 18 to 22°C and 6 to 8°C respectively. The minimum temperature was near normal and the maximum temperature was above normal upto 02°Cover most places. Very Dense fog was reported at Palam airport. Palam airport recorded the lowest visibility 00 m from 0430 hours to 0830 hours IST which improved thereafter becoming 100m at 0900 hours IST. Safdarjung airport recorded the lowest visibility 50 m from 0530 hours to 0800 hours IST which improved thereafter becoming 100 m at 0830 hours IST. Mainly smog/mist conditions with predominant surface wind from the variable direction with wind speed reaching 08 to 10 kmph prevailed during past 24hr. Mainly smog/mist conditions with wind speed less than 06 kmph southeast direction prevailed over the region in the forenoon today.

Weather Forecast:

10.01.2024: Mainly clear sky. The predominant surface wind will likely be in the southeast direction with a wind speed of less than 06 kmph till evening. It would decrease thereafter becoming less than 04 kmph from the southeast direction during the night. Smog/shallow to moderate fog is likely in the evening/night.

11.01.2025: Generally cloudy sky. Light rain/thunderstorm. The predominant surface wind is likely to be from the southeast direction with a speed of less than 06 kmph during morning hours. Smog/ moderate fog in most of the places and dense fog in few places is likely in the morning. The wind speed will gradually increase thereafter becoming 08-10 kmph from the southeast direction during the afternoon. It will decrease thereafter becoming less than 04 kmph from the southeast direction during evening and night. Smog/shallow fog is likely in the evening/night.

12.01.2025: Generally cloudy sky. Very light rain/drizzle during morning hours. The predominant surface wind is likely to be from the southeast direction with a 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 gradually increase thereafter becoming 06-08 kmph from northeast direction during afternoon. It will decrease becoming less than 04 kmph from north direction during evening and night. Smog/ shallow to moderate fog is likely in the evening/night.

13.01.2025: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with wind speed less than 04 kmph during morning hours. Smog/moderate fog is likely in the morning. The wind speed will gradually increase thereafter becoming 06-08 kmph from northwest direction during afternoon. It will decrease becoming less than 04 kmph from northwest 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 Wave/Severe Cold Wave 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 woollen 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 Hailstorms / Cold Wave/ Ground Frost

- Use hail nets to protect orchards and vegetable plants in **Himachal Pradesh, Uttarakhand, Punjab, Haryana, Rajasthan, and Madhya Pradesh,**
- In **Jammu & Kashmir** and **Himachal Pradesh,** 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.
- Provide mechanical support to horticultural crops and staking to vegetables.

Livestock

- 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:

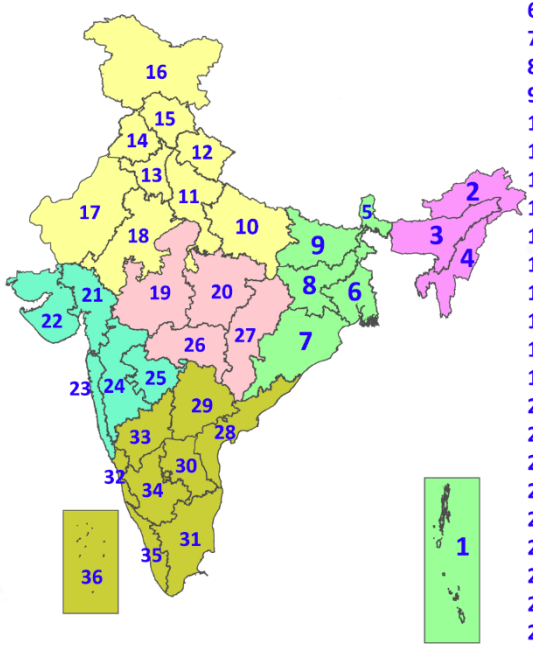
- **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- **Obsy:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District: **NH:** National Highway; **KVK**: Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **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.

राष्ट्रीय मौसम पूर्वानुमान केन्द्र
भारत मौसम विज्ञान विभाग
पृथ्वी विज्ञान मंत्रालय

National Weather Forecasting Centre
India Meteorological Department
Ministry of Earth Sciences

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 Rain
Very Heavy Rain
Extremely Heavy Rain
Thunder & Lightning
Hailstorm
Dust Raising Winds

Heavy Snow
Dust Storm
Heat Wave
Warm Night
Hot Day
Hot & Humid
Strong Surface Winds

Cold Wave
Cold Day
Ground Frost

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

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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 ≥40° C for plains and ≥30° 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 ≥6.5° C

(b). Based on Actual maximum temperature

- **Heat Wave:** When actual maximum temperature ≥45°C.
- **Severe Heat Wave:** When actual maximum temperature ≥47°C

(c). Criteria for heat wave for coastal stations

When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum temperature ≥37°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 °C.

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

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 ≤4°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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