Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 20th January, 2025
Time of Issue: 1300 hours IST

Subject: Wet spell likely to continue over Western Himalayan Region till 23rd and likely over plains of northwest India on 22nd & 23rd January, 2025.

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

- **Heavy to very heavy rainfall with extremely heavy falls** observed at isolated places over South Tamil Nadu.
- **Dense to very dense fog (visibility< 50 m)** reported in some parts of Rajasthan; in isolated pockets of Uttar Pradesh and **dense fog (visibility 50-199 m)** reported in isolated pockets of Bihar, Odisha and Manipur.
- **Visibility reported (<200 m)** (in meter)**: West Rajasthan:** Bikaner, Jaisalmer & Phalodi_IAF-0 each, Churu-200; **East Rajasthan:** Pilani & Sikar-0, Banasthali Vidhyapeeth-200; **West Uttar Pradesh:** Bareilly, Meerut-40 each; **East Uttar Pradesh:** Gorakhpur-40; **Bihar:** Valmikinagar-50; **Odisha:** Nayagarh-60, Paradip (50-199m); **Manipur:** Imphal 100; **Sub-Himalayan West Bengal:** Malda-200; **Meghalaya:** Barapani 200.

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

- The **Western Disturbance** as cyclonic circulation lies over North Pakistan & neighbourhood in lower tropospheric levels. The **induced cyclonic circulation** lies over West Rajasthan in lower tropospheric levels. Another **Western Disturbance** as a trough in middle & upper tropospheric levels with its axis at 5.8 km above mean sea level runs roughly along Long. 58°E to the north of Lat. 28°N. Under the influence of these systems:
  - ✓ Isolated to Scattered rainfall/snowfall very likely over Western Himalayan Region till 21st and scattered to fairly widespread rainfall/snowfall on 22nd & 23rd; isolated to scattered rainfall accompanied with thunderstorm & lightning likely over Punjab, Haryana Chandigarh & Delhi, East Rajasthan & West Uttar Pradesh on 22nd & 23rd January.
- A **cyclonic circulation** lies over Gulf of Mannar & adjoining Sri Lanka at middle tropospheric levels and strong northeasterly winds over Tamilnadu coast. Under the influence of these systems:
  - ✓ isolated Light to moderate rainfall Tamilnadu Puducherry & Karaikal & Kerala & Mahe during 20th-23rd and Scattered Light to moderate rainfall over Lakshadweep on 20th & 21st January.

ii. Temperature, Cold Wave, Cold Day and Fog Forecast:

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

- Minimum temperatures are **below 0°C** over few parts of Jammu, Kashmir & Ladakh; **8-12°C** over many parts of plains of northwest India; **13-18°C** in many parts of central & adjoining peninsular India. Today, the lowest minimum temperature of **5.0°C** is reported at **Mandla (East Madhya Pradesh)** over the plains of the country.
- During the past 24 hours, there has been **rise in minimum temperatures by 1-4^{0}C** in many parts of plains of northwest India & East Madhya Pradesh and **fall by 1-2^{0}C** in many parts of Gangetic West Bengal; in a few parts of Coastal Karnataka; in isolated places of Odisha, Marathawada, Madhya Maharashtra and Interior Karnataka.
- Minimum temperatures are above **normal by 2-4 °C** at many places over plains of northwest & adjoining central India, Maharashtra and Gujarat State. These are **below normal by 1-3°C** at many places over East India, Chhattisgarh and Telangana and near normal over rest parts of the country.

Forecast of temperature:

- No significant change in minimum temperatures likely over Central India during next 24 hours and gradual rise by 2-4°C during subsequent 4 days.
- No significant change in minimum temperatures likely over East India & East Uttar Pradesh during next 2 days and gradual rise by 2-3°C during subsequent 3 days.
- Gradual rise in minimum temperatures by 2-3°C likely over Maharashtra during next 3 days and no Significant change during subsequent 2 days.
- No significant change in minimum temperatures likely Gujarat region during next 2 days and fall by 2-3°C during subsequent 3 days.
- No significant change in minimum temperatures likely over rest parts of the country.

Dense Fog Warnings:

Dense fog conditions very likely to continue to prevail during night/early morning hours in isolated pockets of Rajasthan on 20th, 23rd & 24th; East Uttar Pradesh during 20th-24th; West Uttar Pradesh, Haryana, Chandigarh, Punjab on 23rd & 24th; Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Sub-Himalayan West Bengal & Sikkim & Odisha during 20th-22nd; Gangetic West Bengal on 21st & 22nd January.

Cold Day Warnings:

Cold day conditions very likely in a few pockets of Himachal Pradesh on 23rd January.

Fishermen Warnings (Annexure V):

Fishermen are advised not to venture into Comorin area & adjoining Gulf of Mannar during 20th-22nd; South Sri Lanka coast and southwest Bay of Bengal on 20th & 21st January.

iii. Weather conditions and forecast over Delhi/NCR during 20th Jan. to 23rd Jan. 2025 (Annexure VI)

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 20.01.2025 (in cm):

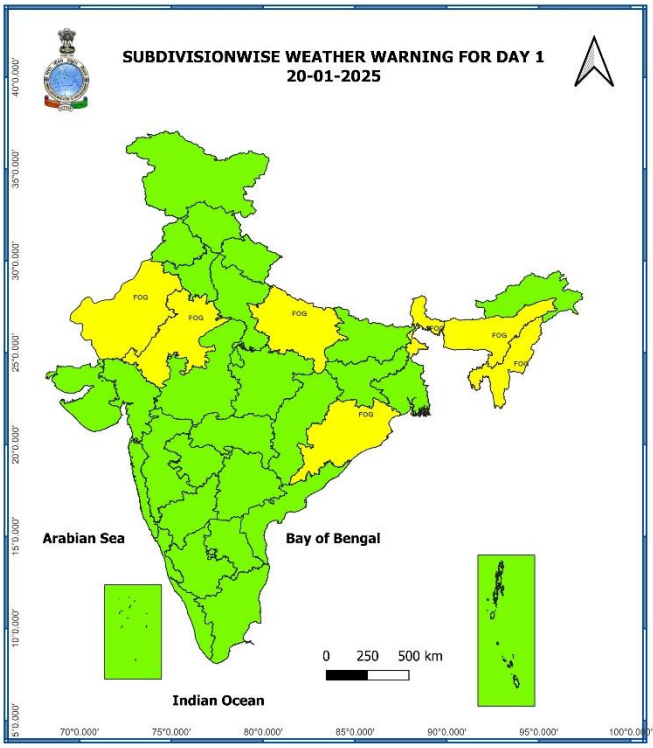
- **South Tamil Nadu:** Oothu (dist Tirunelveli) 23, Nalumukku (dist Tirunelveli) 22, Kakkachi (dist Tirunelveli) 21, Manjolai (dist Tirunelveli) 16, Thangachimadam (dist Ramanathapuram) 11, Rameswaram (dist Ramanathapuram) 10, Mandapam (dist Ramanathapuram) 9, Pamban (dist Ramanathapuram) 8, Valinokam (dist Ramanathapuram), Poondi (dist Tiruvallur) 6 each

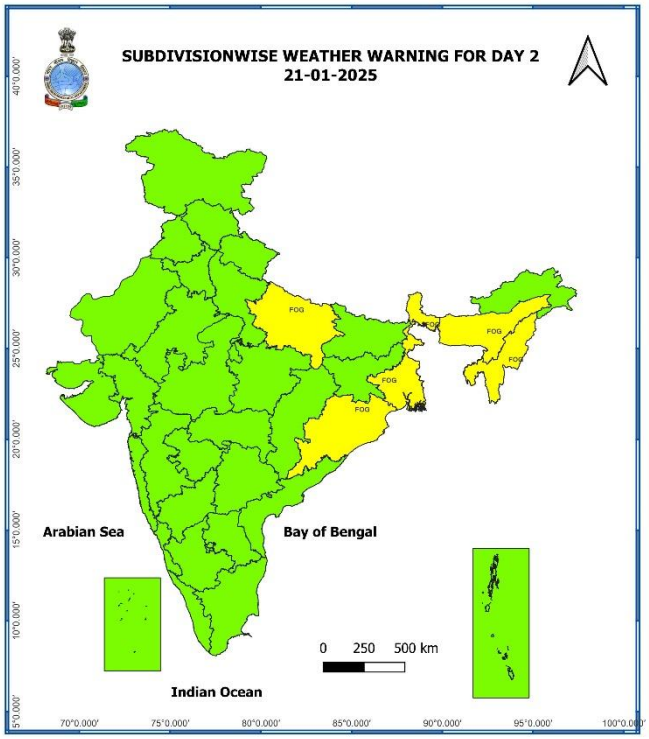
ANNEXURE II

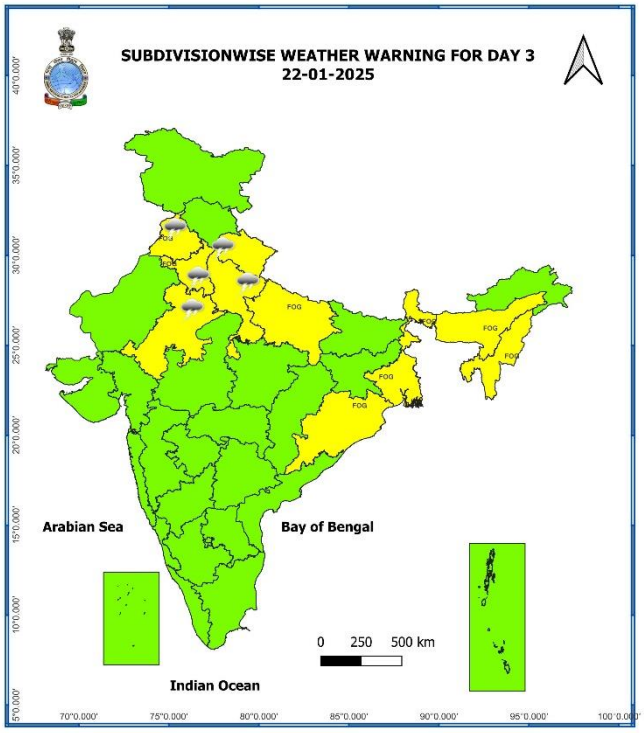
7 Days Rainfall Forecast								
S. No.	Subdivision	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	ISOL	ISOL	ISOL	ISOL	ISOL	SCT	SCT
2	ARUNACHAL PRADESH	DRY	DRY	DRY	ISOL	ISOL	ISOL	ISOL
3	ASSAM & MEGHALAYA	DRY	DRY	DRY	DRY	DRY	DRY	ISOL
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	DRY	DRY	DRY	ISOL	DRY	DRY	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	ISOL	ISOL	DRY	DRY	DRY
12	UTTARAKHAND	ISOL	ISOL	SCT	FWS	DRY	DRY	DRY
13	HARYANA CHANDIGARH & DELHI	DRY	DRY	SCT	ISOL	DRY	DRY	DRY
14	PUNJAB	DRY	DRY	SCT	ISOL	DRY	DRY	DRY
15	HIMACHAL PRADESH	ISOL	ISOL	SCT	SCT	DRY	DRY	DRY
16	JAMMU & KASHMIR AND LADAKH	SCT	SCT	SCT	ISOL	DRY	DRY	DRY
17	WEST RAJASTHAN	DRY	DRY	ISOL	DRY	DRY	DRY	DRY
18	EAST RAJASTHAN	DRY	DRY	ISOL	DRY	DRY	DRY	DRY
19	WEST MADHYA PRADESH	DRY	DRY	ISOL	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	DRY	DRY	DRY
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	ISOL	DRY	DRY	DRY
36	LAKSHADWEEP	SCT	SCT	DRY	DRY	DRY	DRY	DRY

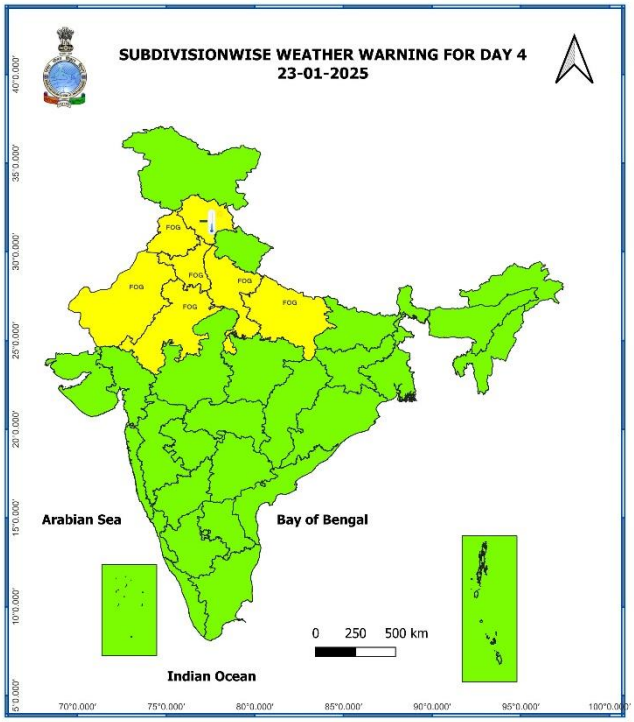
- **As the lead period increases forecast accuracy decreases**

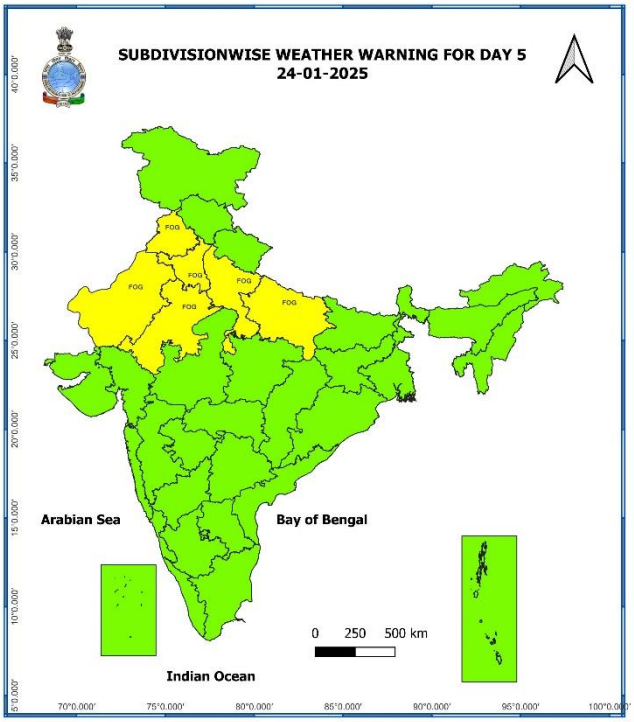
ANNEXURE III

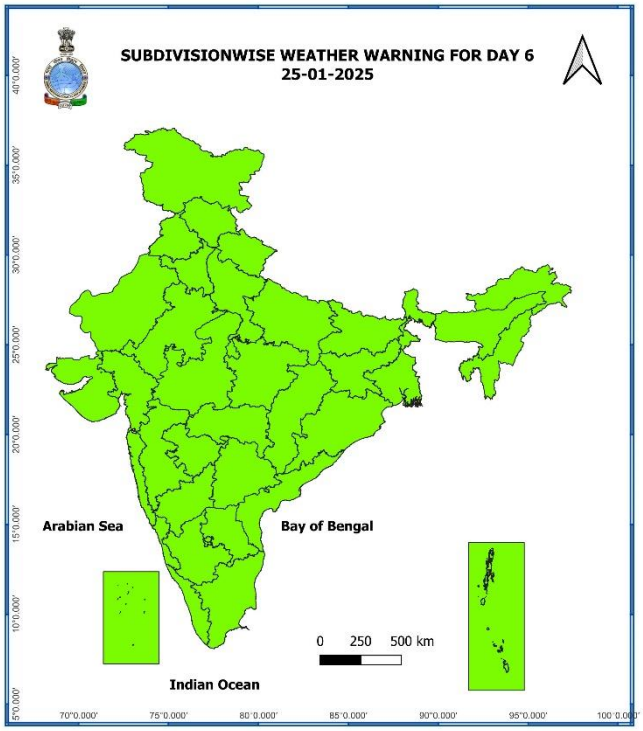


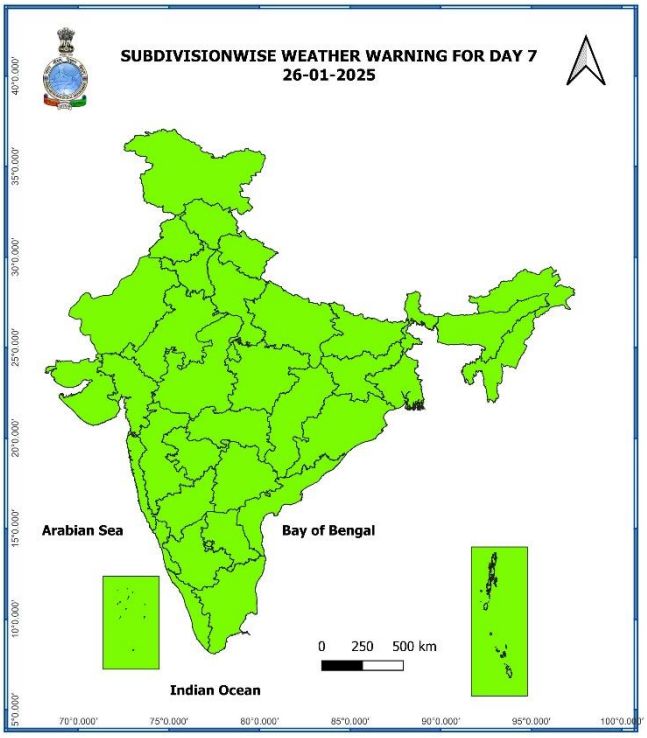












- **Action may be taken based on ORANGE AND RED COLOUR warnings.**
- **Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.**
- **As the lead period increases forecast accuracy decreases.**

Fig. 1: Maximum Temperatures

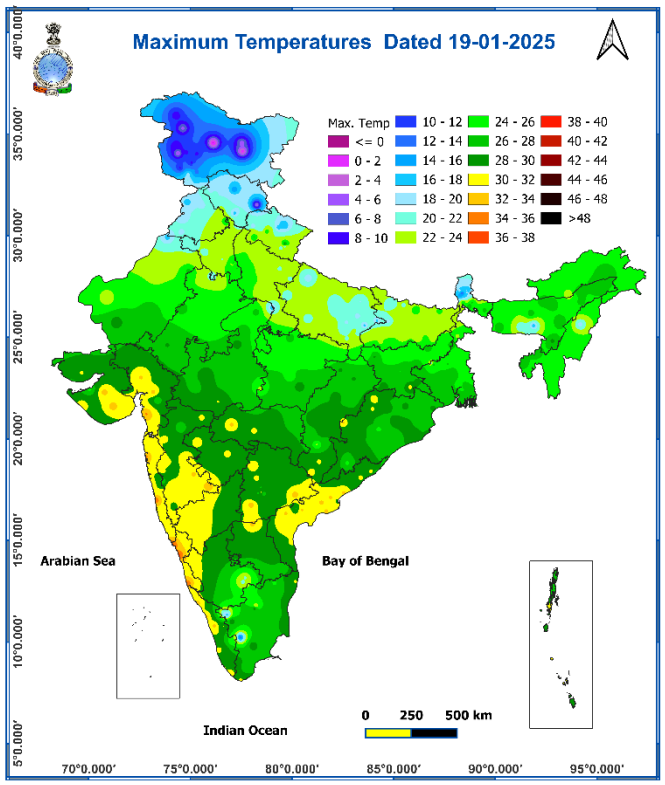


Fig. 2: Departure of Maximum Temperatures

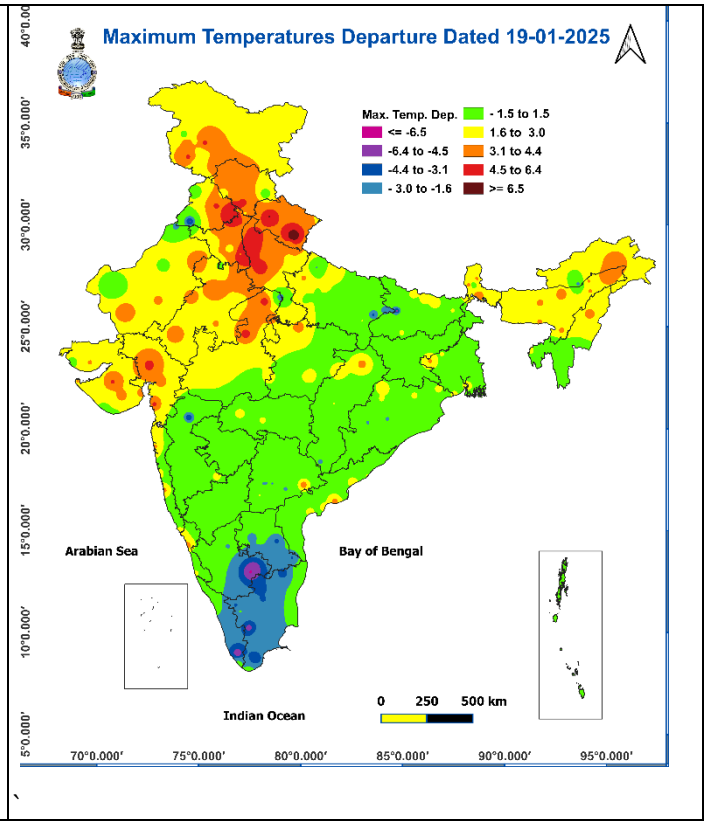


Fig. 3: Minimum Temperatures

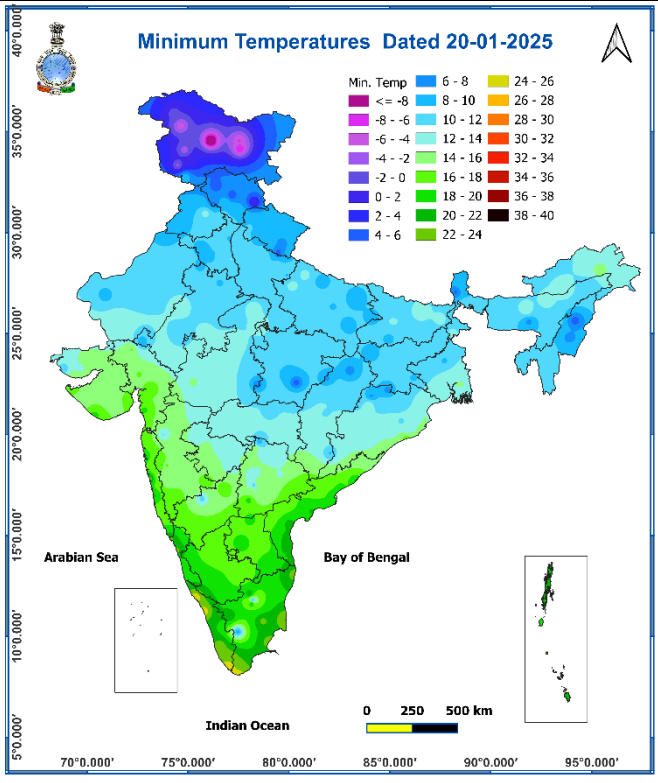
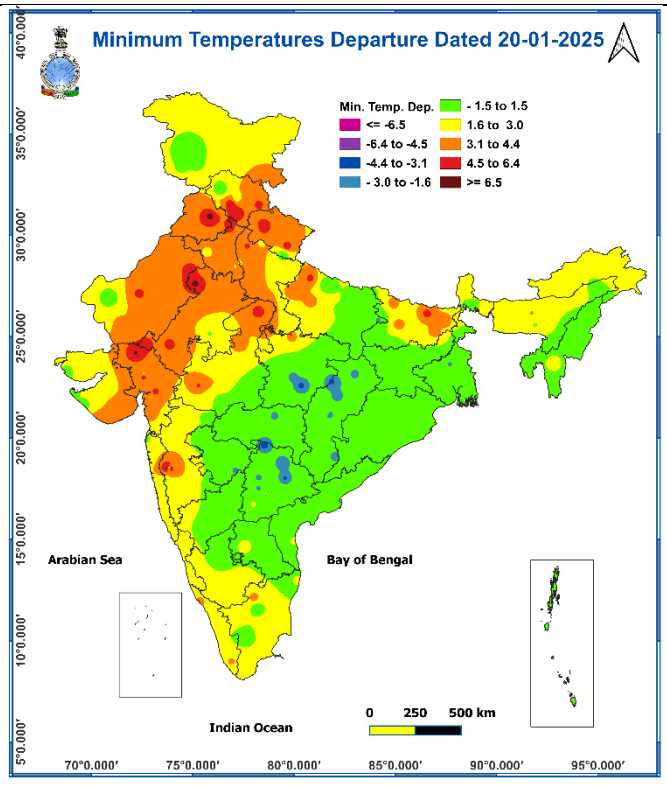
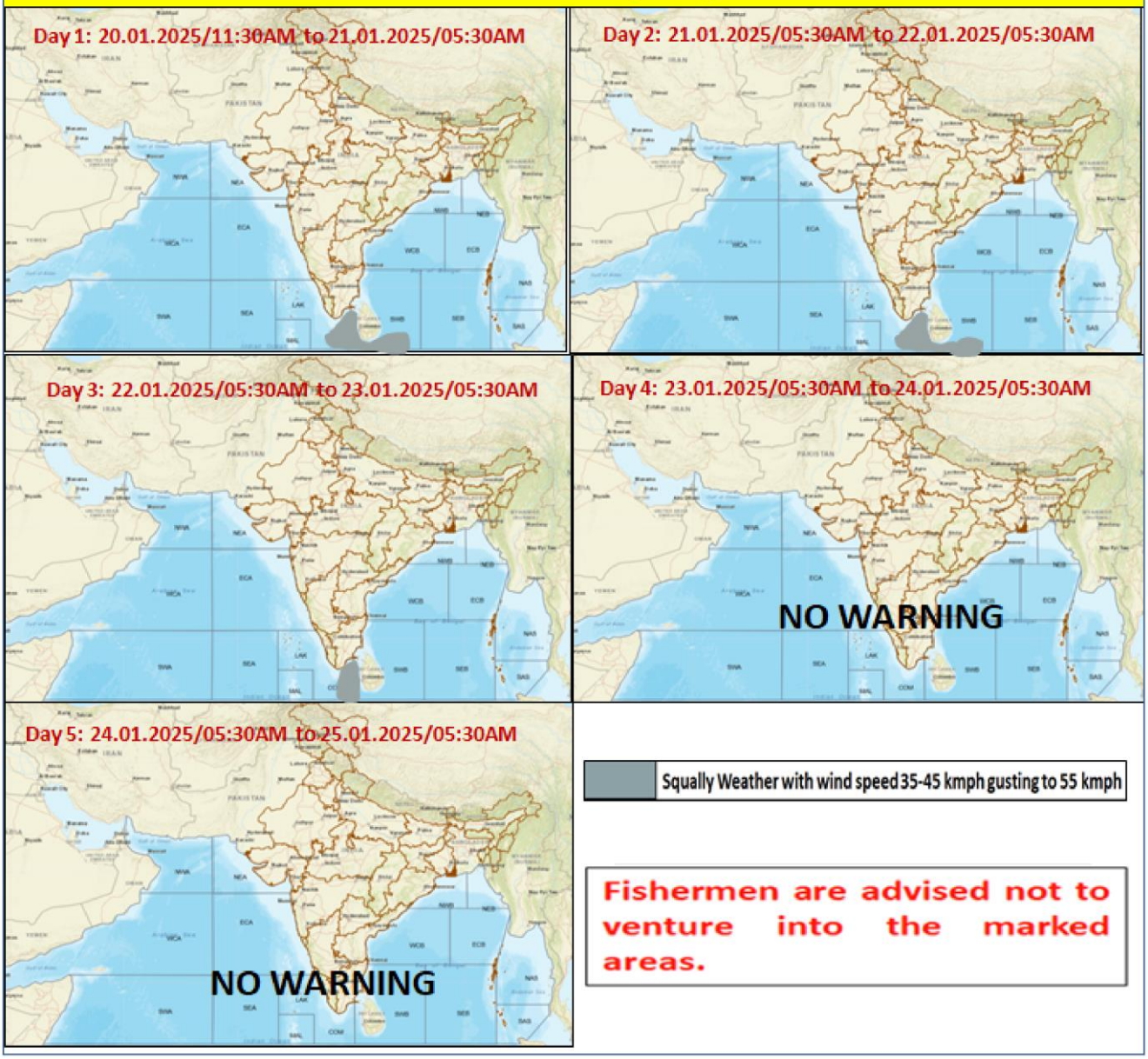


Fig. 4: Departure of Minimum Temperatures



ANNEXURE V

Fishermen Warning Graphics



ANNEXURE VI

Weather forecast over Delhi/NCR during 20th to 23rd Jan. 2025

Past Weather:

There has been a rise in minimum temperature upto 02°C over Delhi/NCR during past 24hr. The Maximum and Minimum temperatures over Delhi are in the range of 23 to 26°C and 10 to 11°C respectively. The minimum temperature was above normal upto 05°C and maximum temperature was above normal upto 06°Cover most places. Shallow fog was reported at Safdarjung and Palam airport. Palam airport recorded the lowest visibility 500m from 0730 hours to 0800 hours IST which improved thereafter becoming 600 m at 0830 hours IST. Safdarjung airport recorded the lowest visibility 600m at 0430 hours IST which improved thereafter becoming 700 m at 0530 hours IST. Mainly smog/mist conditions with predominant surface wind from the northwest direction with wind speed reaching 06 to 08 kmph prevailed during past 24hr. Mainly clear sky conditions with wind speed less than 10 kmph west direction prevailed over the region in the forenoon today.

Weather Forecast:

20.01.2024: Mainly clear sky. 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 06 kmph from the northwest direction during the night. Smog/shallow fog is likely in the evening/night.

21.01.2025: Partly cloudy sky. The predominant surface wind is likely to be from the northwest direction with a wind speed less than 06 kmph during morning hours. Smog/shallow fog in most of the places very likely to commence during early morning hours with moderate fog in isolated places during morning hours. The wind speed will gradually increase thereafter becoming 10-12 kmph from northwest direction during afternoon. It will decrease becoming less than 06 kmph from northwest direction during evening and night. Smog/shallow fog is likely in the evening/night.

22.01.2025: Generally cloudy sky. Possibility of one or two spell of very light to light rain with thunderstorm during evening/night. The predominant surface wind is likely to be from north direction with wind speed less than 04 kmph during morning hours. Smog/moderate fog in most of the places very likely to commence during early morning hours with dense fog in few places during morning hours. The wind speed will gradually increase thereafter becoming 06-08 kmph from northeast direction during afternoon. It will decrease becoming less than 06 kmph from northeast direction during evening and night. Smog/shallow fog is likely in the evening/night.

23.01.2025: Generally cloudy sky. Possibility of one or two spell of very light to light rain with thunderstorm during morning hours. The predominant surface wind will likely be in the northeast direction with a wind speed of less than 06 kmph during morning hours. Smog/ shallow fog in most of the places very likely to commence during early morning hours with moderate fog in isolated places during morning hours. The wind speed will gradually increase thereafter becoming 08-10 kmph from north direction during afternoon. It will decrease becoming less than 06 kmph from northeast direction during evening and night. Smog/shallow fog is likely in the evening/night.

Impact expected due to dense fog in the night /morning hour over parts of Northwest, East & Northeast India

❖ 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 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.

Legends & abbreviations:

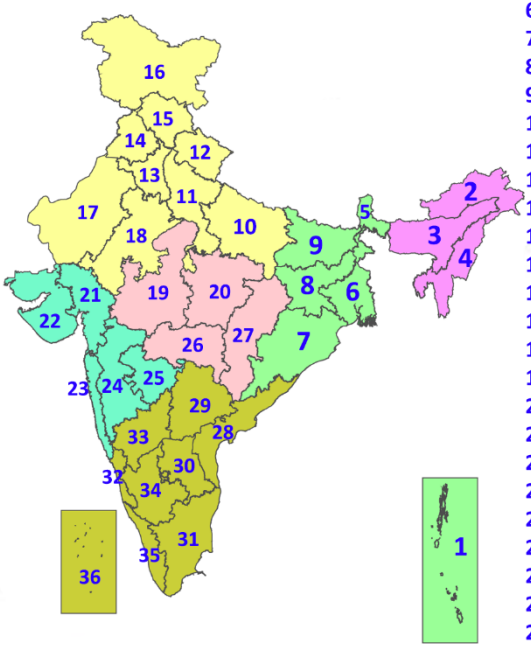
- ❖ **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District: **NH:** National Highway; **KVK**: Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation;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

* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".
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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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