Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 24th December, 2024
Time of Issue: 1315 hours IST

Subject: (i) A Well marked low pressure area lay over Southwest and adjoining Westcentral Bay of Bengal off South Andhra Pradesh- North Tamil Nadu coasts.
(ii) An active Western Disturbance and its interaction with easterly winds is very likely to affect Northwest & Central India from night of 26th December 2024.

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

- **Cold wave to severe cold wave conditions** observed in isolated pockets over Himachal Pradesh.
- **Very dense fog (visibility < 50 m)** reported in isolated pockets of Meghalaya; **dense fog (visibility 50-200 m)** reported in isolated pockets of Bihar, Rajasthan and Himachal Pradesh.
- **Visibility reported (≤ 200 m)** (in meter): **Meghalaya:** Barapani 40; **Bihar**: Purnea 50; **East Rajasthan:** Udaipur 93; **West Rajasthan:** Churu 92, **Himachal Pradesh:** Bilaspur 100.
- **Heavy rainfall** recorded at isolated places over Andaman & Nicobar Islands.

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

- Yesterday's **well marked low pressure area** over Southwest and adjoining Westcentral Bay of Bengal off South Andhra Pradesh- North Tamil Nadu coasts persisted over the same region at 0830 hrs IST of today, the 24th December, 2024. It is likely to move west-southwestwards and weaken gradually into a low pressure area over the same region during next 24 hours.
- Under the influence of these systems:
  - ✓ Light to moderate rainfall accompanied with thunderstorm, lightening very likely at a few places with **heavy rainfall** at isolated places over Coastal Andhra Pradesh & Rayalaseema on 24th & 25thDecember.
  - ✓ Light to moderate rainfall at isolated places accompanied with thunderstorm, lightening over Tamil Nadu, Puducherry & Karaikal on 24th and at a few places on 25th & 26th December.

- The Western disturbance as a cyclonic circulation lay over Punjab & neighbourhood in lower & middle tropospheric levels and an induced cyclonic circulation lay over southeast Rajasthan. Under their influence, **Light to moderate rainfall/snowfall** likely at isolated places over Western Himalayan Region and light rainfall at isolated places over Uttar Pradesh on 24th December, 2024.

- Another active **western disturbance** is likely to affect northwest India from night of 26th December 2024. It is very likely to interact with lower levels easterly winds over central parts of the country leading to high moisture feeding from Arabian Sea as well as Bay of Bengal till 28th December. Under the influence of these systems:

  - ✓ Isolated to Scattered Rainfall/Snowfall is likely over Western Himalayan Region on 27th & 28th December.
  - ✓ Isolated to Scattered rainfall accompanied with thunderstorm and lightning also likely over Rajasthan, Gujarat State on 26th & 27th, Punjab, Haryana, Chandigarh, West Uttar Pradesh on 27th December; West Madhya Pradesh, Madhya Maharashtra & Marathwada during 26th -28th, Vidarbha & Chhattisgarh on 27th & 28th December.
  - ✓ **Thunderstorm accompanied with hailstorms also likely over Punjab, Haryana, Chandigarh, West Uttar Pradesh, Rajasthan, Madhya Maharashtra & Marathwada on 27th and Madhya Pradesh & Vidarbha on 27th & 28th December.**

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; **2-6°C** over plains of Himachal Pradesh; **6-12°C** over Northwest India, Bihar & Jharkhand; **12-18°C** over many parts of Central & West India. Today, **the lowest minimum temperature** of **6.5°C** is reported at Patiala **(Punjab)** over the plains of the country.

- There has been a rise by 2-5^{0}C in minimum temperature over many parts of the Uttar Pradesh, Madhya Pradesh & Odisha; by 1-3^{0}C over some parts of Maharashtra & Telangana; fall by 2-5^{0}C over many parts of Rajasthan and Gujarat State during past 24 hours.

- Minimum temperatures are **below normal (-1°C to -3°C)** at a few places over Saurashtra Kutch; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.

Forecast of temperature:

- Fall in minimum temperatures by about 2°C likely over Northwest India during next 2 days and gradual rise in minimum temperatures by 2-4°C thereafter.
- No significant change in minimum temperatures likely over Central & East India during next 5 days.
- Rise in minimum temperatures by 2-3°C likely over West India (except Gujarat State) during next 2 days and no significant change thereafter.
- No significant change in minimum temperatures likely over Gujarat State during next 24 hours & gradual rise by 2-4°C thereafter.

Cold Wave Warnings:

Cold wave to severe cold wave conditions very likely in some parts of Himachal Pradesh on 24th & 25th and in isolated pockets on 26th December.

Cold wave conditions very likely in isolated pockets over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Haryana, Chandigarh on 24th & 25th December.

Cold Day Warnings:

Cold Day conditions very likely in isolated pockets of Rajasthan on 24th December.

Dense Fog Warnings:

Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Rajasthan & Bihar till 26th, Himachal Pradesh, Punjab, Haryana, Chandigarh, Uttar Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura till 27th December.

Ground Frost Warnings:

Ground Frost conditions very likely in isolated pockets of Himachal Pradesh during 24th -26th; Meghalaya & Nagaland on 24th December.

Fishermen Warnings (Annexure V):

Fishermen are advised not to venture into Westcentral & adjoining southwest Bay of Bengal and along & off south Andhra Pradesh-north Tamil Nadu coasts on 24th & 25th December.

iii. Weather conditions and forecast over Delhi/NCR during 24th to 27th Dec. 2024 (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 24.12.2024 (in cm):

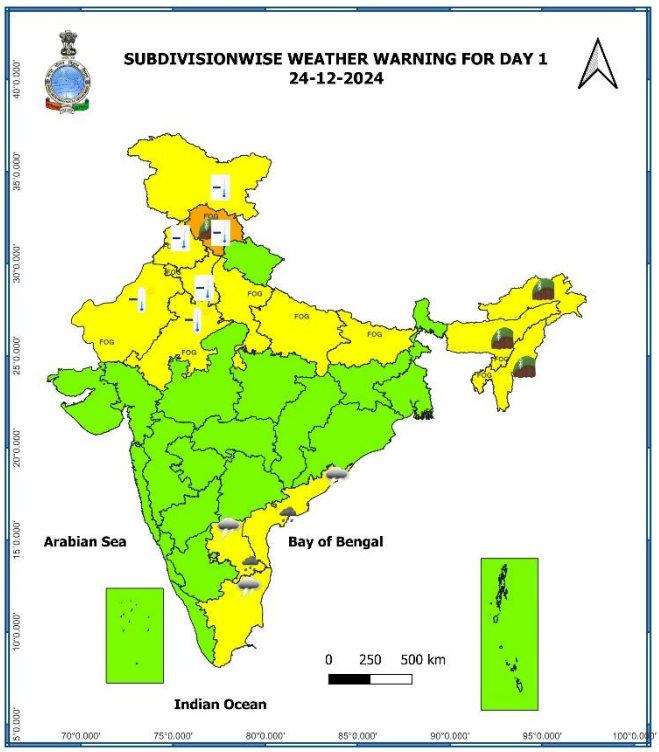
- **Andaman & Nicobar Islands:** Car Nicobar (dist Nicobar) 8, Iaf Carnicobar (dist Nicobar) 6

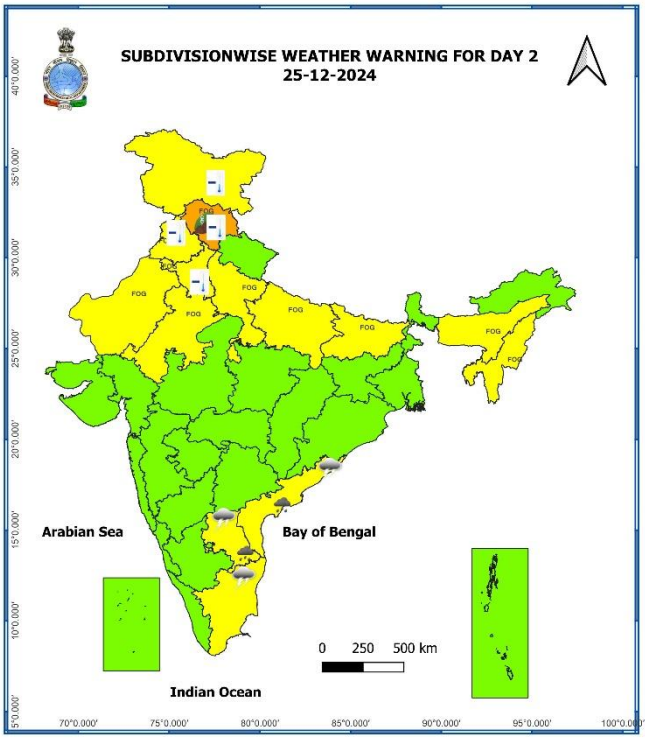
ANNEXURE II

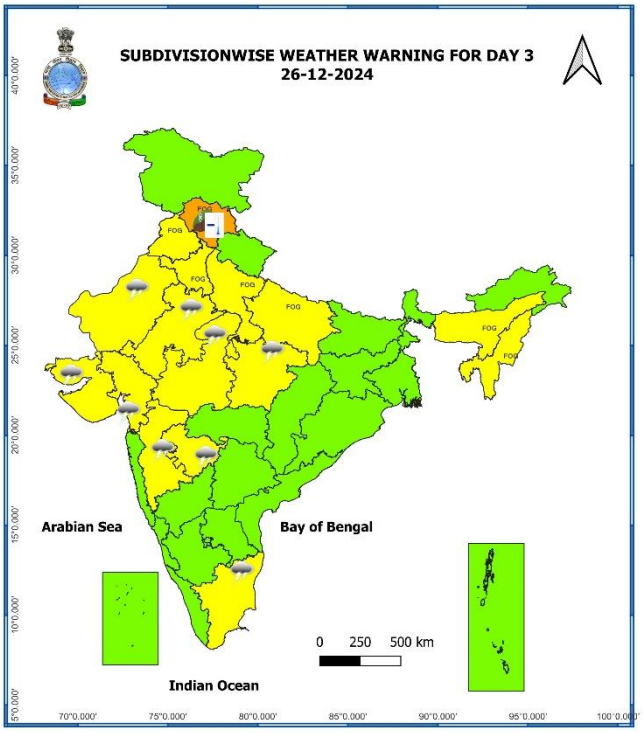
7 Days Rainfall Forecast								
S. No.	Subdivision	24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	ISOL	ISOL	ISOL	SCT	FWS	FWS	FWS
2	ARUNACHAL PRADESH	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
3	ASSAM & MEGHALAYA	DRY	DRY	DRY	DRY	DRY	DRY	DRY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

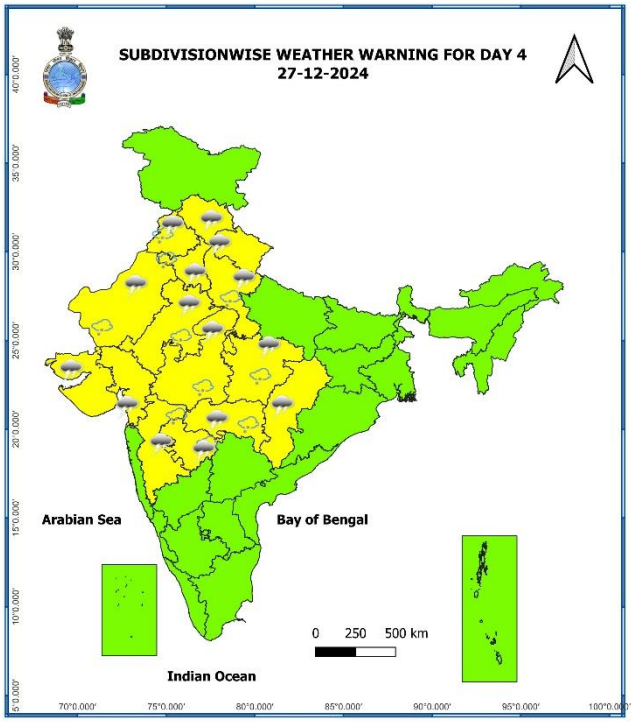
- **As the lead period increases forecast accuracy decreases**

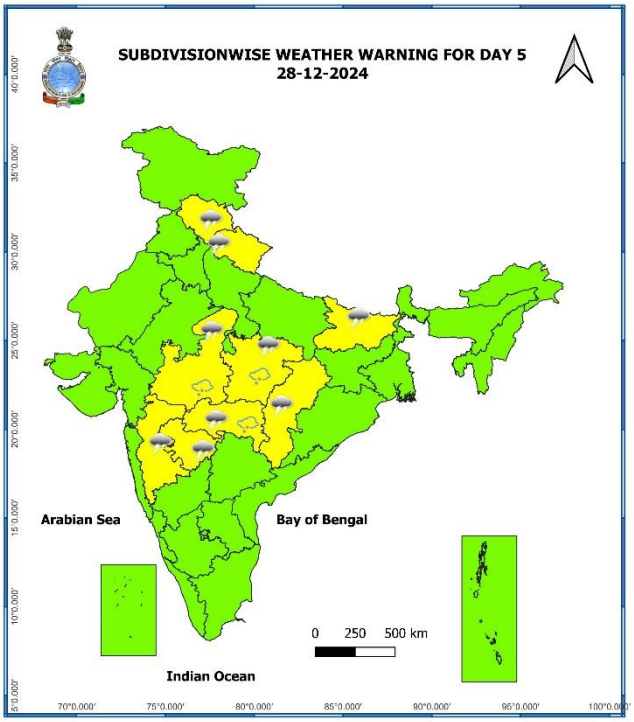
ANNEXURE III

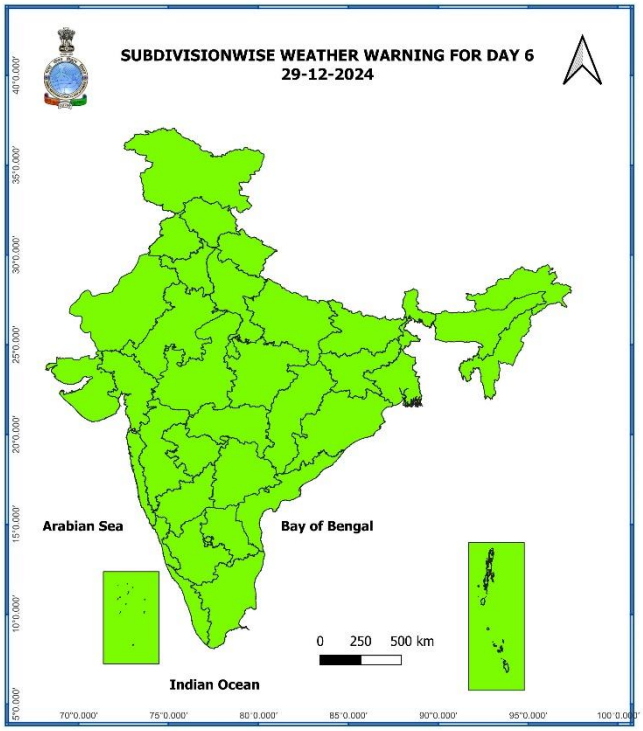


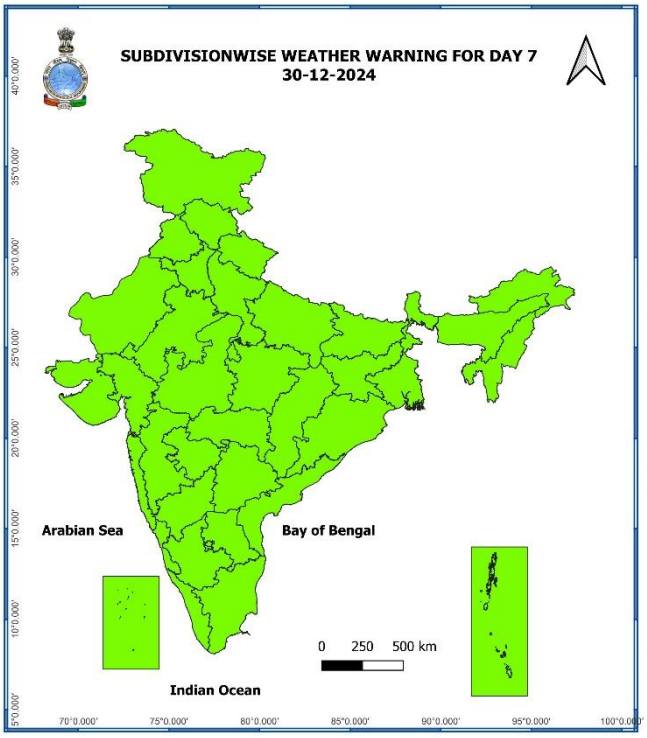












- **Action may be taken based on ORANGE AND RED COLOUR warnings.**
- **Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.**
- **As the lead period increases forecast accuracy decreases.**

Fig. 1: Maximum Temperatures

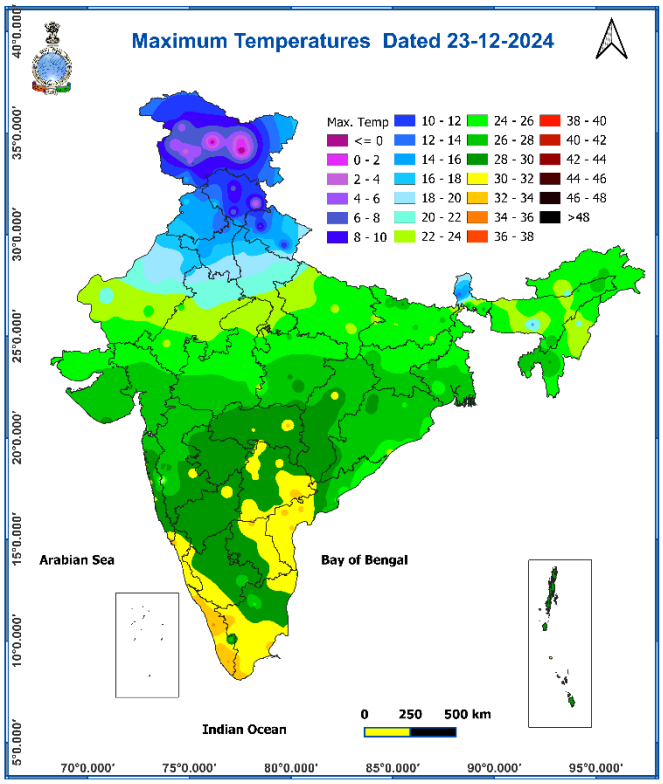


Fig. 2: Departure of Maximum Temperatures

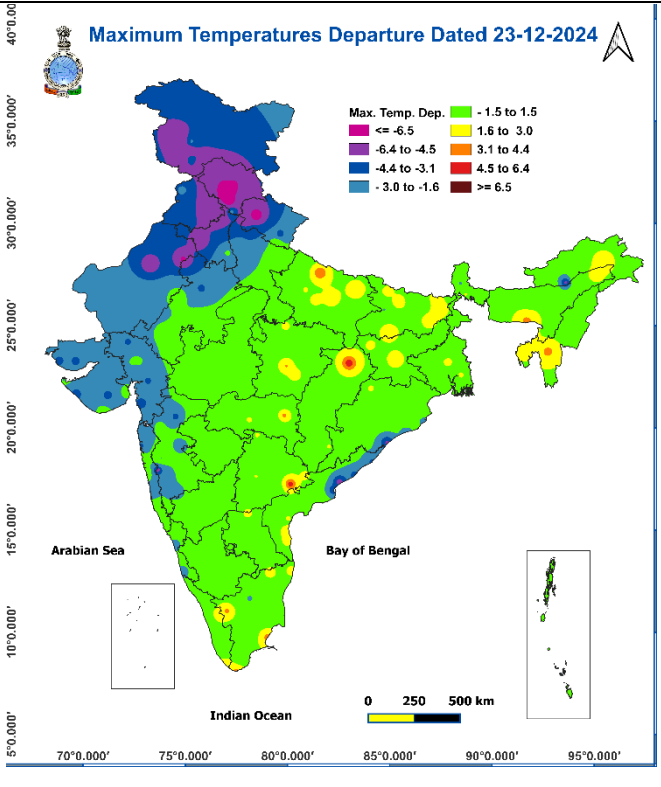


Fig. 3: Minimum Temperatures

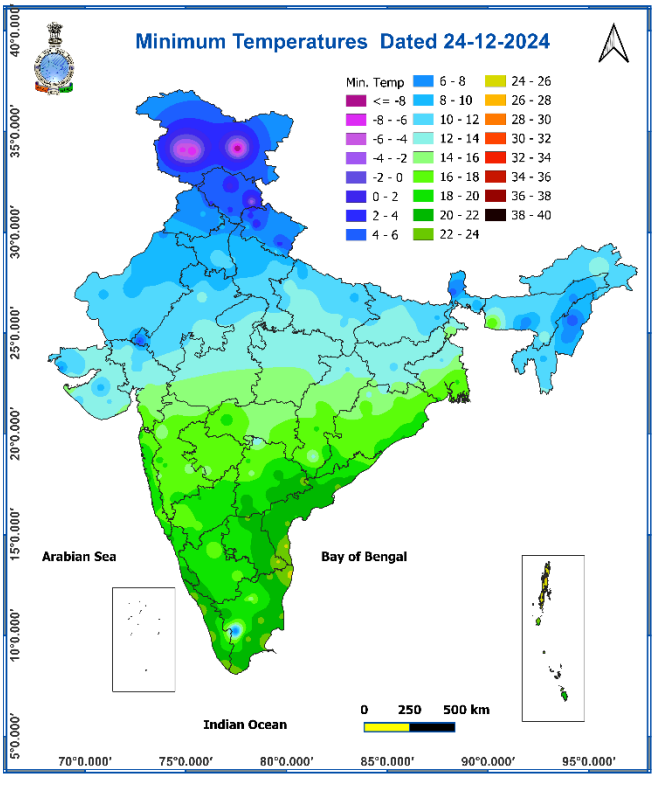
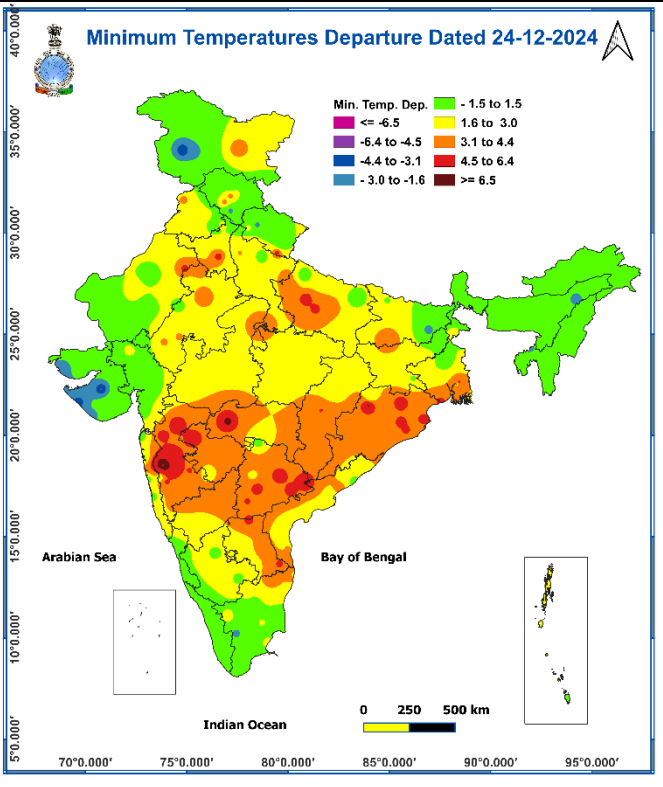


Fig. 4: Departure of Minimum Temperatures



ANNEXURE V

Fishermen Warning Graphics

ANNEXURE VI

Weather forecast over Delhi/NCR during 24th Dec. to 27th Dec. 2024

Past Weather:

There has been a rise in minimum temperature upto 01°C over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 17 to 19°C and 09 to 10°C respectively. The minimum temperature was above normal upto 02 to 03°C and maximum temperature was below normal upto 01 to 03°C over most places. Dense fog reported at Safdarjung airport. Safdarjung airport recorded lowest visibility 150 m during 0530 hours IST which improved thereafter becoming 250 m at 0700 hours IST. Palam airport recorded lowest visibility 800 m during 0430 hours to 0630 hours IST which improved thereafter becoming 1100m at 0700 hours IST. Mainly smog/ dense fog condition with predominant surface wind from variable direction with wind speed reaching 04 to 10 kmph prevailed past 24hr. Mainly smog/mist condition with wind speed less than 08 kmph east direction prevailed over the region in the forenoon today.

Weather Forecast:

24.12.2024: Partly cloudy sky with possibility of very light rain/drizzle. The predominant surface wind is likely to be east direction with wind speed less than 06 kmph till evening. It would decrease thereafter becoming less than 04 kmph from northeast direction during night. Smog/shallow fog is likely in the evening/night.

25.12.2024: Mainly clear sky. The predominant surface wind is likely to be from northeast direction with 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 less than 06 kmph from north direction during afternoon. It will decrease thereafter becoming less than 04 kmph from north direction during evening and night. Smog/shallow fog is likely in the evening/night.

26.12.2024: Partly cloudy sky with very light rain during late night. The predominant surface wind is likely to be from northwest direction with speed less than 04 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 becoming 04-06 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 04 kmph from north direction during evening and night. Smog/shallow fog is likely in the evening/night.

27.12.2024: Generally cloudy sky with light to moderate rain/thundershowers. The predominant surface wind is likely to be from north direction with wind speed less than 04 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 06-08 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 04 kmph from north 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 over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Punjab, Haryana and Chandigarh

- 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 Heavy Rainfall / Cold Wave likely over various parts of the country

- Make necessary arrangements to drain out excess water from rice nurseries, green gram, black gram, sesame and other standing crop fields and vegetables in **Coastal Andhra Pradesh** and **Rayalaseema.**
- Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields.
- In **Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Arunachal Pradesh, Meghalaya** and **Nagaland,** 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 and Fishery

- Keep the animals inside the shed during heavy rainfall and provide balanced feed.
- Store the feed and fodder at safer place to avoid spoilage from rainfall.
- Construct an outlet with proper netting around the pond to drain out excess rain water, thereby preventing fishes/fingerlings from escaping in case of overflowing.
- 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:

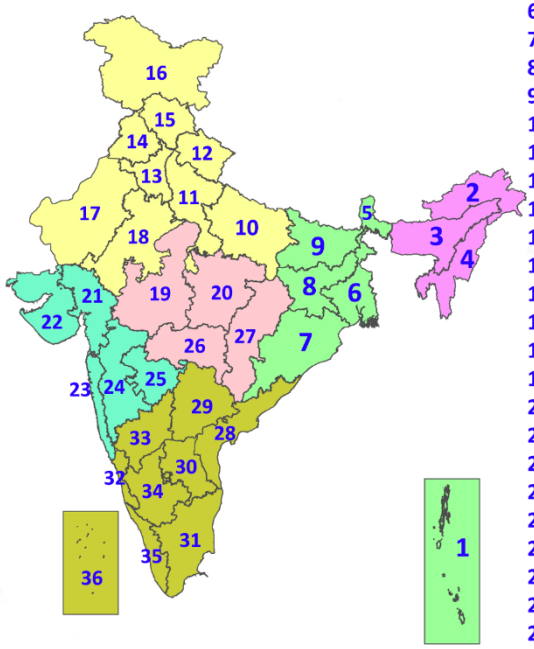
- **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- **Obsy:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District: **NH:** National Highway; **KVK**: Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation;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