

Tuesday, December 31, 2024
Time of Issue: 1330 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems, Forecast and warning:

- ❖ A **Western disturbance** as a cyclonic circulation over east Afghanistan in lower tropospheric levels. Another **fresh western disturbance** is likely to affect Northwest India from 4th January, 2025. It is very likely to cause:
 - ✓ Light isolated to scattered rainfall/snowfall over Western Himalayan region from 01st to 03rd and scattered to fairly widespread rainfall/snowfall over the region from 04th to 06th January. **Heavy rainfall/snowfall** at isolated places also likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 05th January 2025.
 - ✓ Light isolated to scattered rainfall also likely over the plains of northwest India during 04th to 06th January 2025.
- ❖ A **cyclonic circulation** lies over Equatorial Indian Ocean & adjoining southwest Bay of Bengal in lower tropospheric levels. It is very likely to cause light to moderate rainfall accompanied with thunderstorm, lightning very likely at a few places with **heavy rainfall** at isolated places over south Tamil Nadu on 31st December.

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; **3-9°C** over many parts of Northwest India; **9-14°C** over many parts of Central India, **14-18°C** over many parts of West & East India. Today, the lowest minimum temperature of 3.5°C is reported at **Uttarlai_IAF (West Rajasthan)** over the plains of the country.
- ❖ There has been a fall in minimum temperature by 1-4^oC over many parts of East Madhya Pradesh, Maharashtra and Odisha, in some parts of West Rajasthan, in isolated places over Jammu-Kashmir-Ladakh during past 24 hours and rise in minimum temperature by 1-2^oC over some parts of West Madhya Pradesh, in isolated places over East Rajasthan & Telangana.
- ❖ Minimum temperatures are **below normal (-1°C to -3°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Rajasthan. These are markedly above normal (5°C or more) at many places over Odisha; at isolated places over Bihar, Madhya Maharashtra; appreciably above normal (3°C to 5°C) at many places over Telangana; at a few places over Uttar Pradesh, Vidarbha, East Madhya Pradesh; at isolated places over Marathwada, Konkan & Goa, West Madhya Pradesh, Chhattisgarh; above normal (1°C to 3°C) many places over Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam; at isolated places over Rayalaseema, North Interior Karnataka, East Rajasthan, Gujarat state, Gangetic West Bengal and near normal over rest parts of the country.

Forecast of temperature:

- ❖ No significant change in minimum temperatures likely over Western Himalayan region during next 24 hours and gradual rise by 3-5°C thereafter.
- ❖ No significant change in minimum temperatures likely over plains of Northwest India during next 24 hours and gradual rise by 2-4°C thereafter.
- ❖ No significant change in minimum temperatures likely over Central India during next 5 days.
- ❖ Fall in minimum temperatures by 2-3°C likely over East India during next 24 hours and no significant change thereafter.
- ❖ Fall in minimum temperatures by 2-3°C likely over Maharashtra during next 3 days and no significant change thereafter.
- ❖ Rise in minimum temperatures by 2-3°C likely over Gujarat state during next 5 days.

Cold Wave Warnings:

Cold wave conditions very likely in isolated pockets of Himachal Pradesh on 31st December.

Cold Day Warnings:

Cold Day to severe cold day conditions very likely in isolated pockets of Rajasthan, Haryana, Chandigarh and Punjab on 31st December.

Cold Day conditions very likely in some parts of West Uttar Pradesh on 31st December; in isolated pockets of West Uttar Pradesh, Punjab & Haryana-Chandigarh on 01st January; Himachal Pradesh on 31st December; East Uttar Pradesh on 31st December & 01st January.

Dense Fog Warnings:

Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh, Uttar Pradesh, Rajasthan, Odisha, Sub-Himalayan West Bengal & Sikkim till 01st January; Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura till 05th January.

Ground Frost Warnings:

Ground Frost conditions very likely in isolated pockets of Arunachal Pradesh, Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura on 31st December & 01st January.

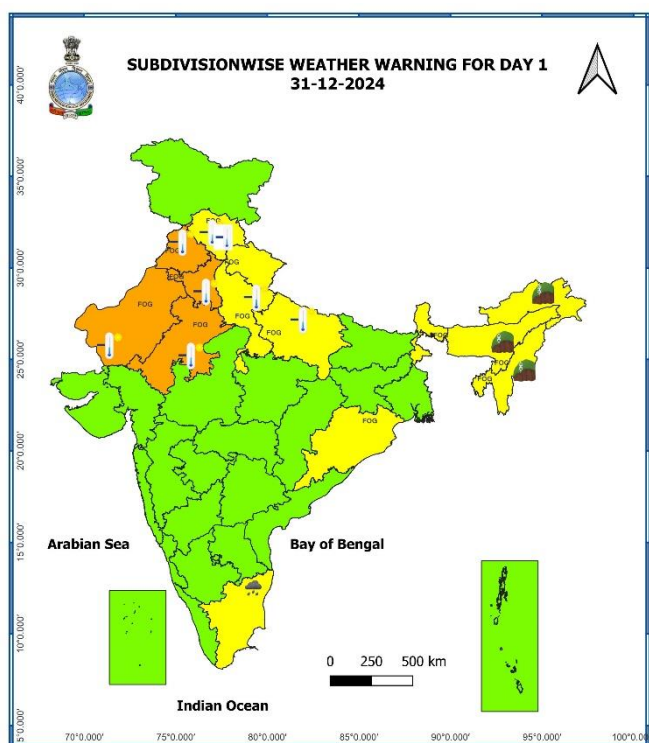
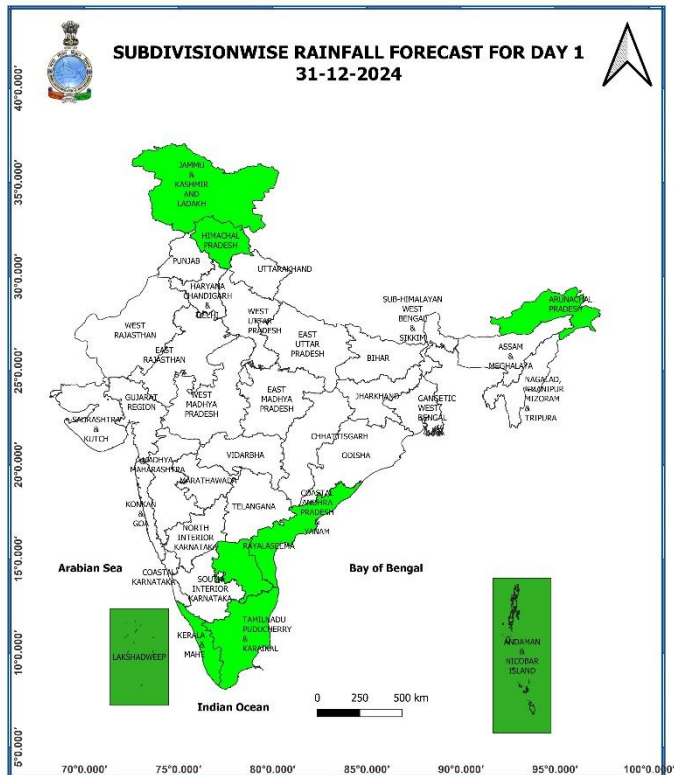
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at a few places** over Tamil Nadu, Puducherry & Karaikal; **at isolated places** over Kerala & Mahe, Rayalaseema, Arunachal Pradesh, Andaman & Nicobar Islands, Bihar, Uttar Pradesh.
- ❖ **Heavy to very heavy rainfall** recorded at isolated places over south Tamil Nadu.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Tamilnadu, Puducherry & Karaikal:** Oothu (dist Tirunelveli) 14, Nalumukku (dist Tirunelveli) 13, Kakkachi (dist Tirunelveli) 12, Manjolai (dist Tirunelveli) 10
- ❖ **Fog reported (at 0830 hours IST of today):** **Very dense fog** in isolated pockets of Chandigarh, East Rajasthan, Chhattisgarh, Sub-Himalayan West Bengal; **dense fog** in isolated pockets of Punjab, West Uttar Pradesh, Assam & Meghalaya, Tripura.
- ❖ **Visibility reported** (at 0830 hours IST of today) (≤ 50 meter): **Chandigarh** 00; **East Rajasthan:** Sikar 00; **Chhattisgarh:** Ambikapur 00; **Sub-Himalayan West Bengal:** Cooch Behar 00; **Punjab:** Amritsar 50; **Assam & Meghalaya:** Barapani 50, Tezpur 100; **Tripura:** Agartala 50; **West Uttar Pradesh:** Moradabad 100;
- ❖ **Cold day to severe cold day conditions** observed in some parts of Punjab, Haryana, Chandigarh & Delhi and in isolated pockets of Himachal Pradesh and Rajasthan.
- ❖ **Cold wave conditions** observed in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh.
- ❖ **Minimum Temperature Departures (as on 31-12-2024):** Minimum temperatures are **markedly above normal (5.1°C or more)** at many places over Odisha; at isolated places over Bihar, Madhya Maharashtra; **appreciably above normal (3.1°C to 5.0°C)** at many places over Telangana; at a few places over Uttar Pradesh, Vidarbha, East Madhya Pradesh; at isolated places over Marathwada, Konkan & Goa, West Madhya Pradesh, Chhattisgarh; **above normal (1.6°C to 3.0°C)** many places over Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam; at isolated places over Rayalaseema, North Interior Karnataka, East Rajasthan, Gujarat state, Gangetic West Bengal; These are **below normal (-1.6°C to -3.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Rajasthan and near normal over rest part of the country. Today, the **lowest minimum temperature of 3.5°C** is reported at **Uttarlai IAF (West Rajasthan)** over the plains of the country (Fig. 4).
- ❖ **Maximum Temperature Departures (as on 30-12-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Gangetic West Bengal, Assam & Meghalaya and Telangana; **above normal (1.6°C to 3.0°C)** at a few places over Vidarbha, Konkan & Goa and Coastal Andhra Pradesh & Yanam; at isolated places over Madhya Maharashtra, Chhattisgarh, Odisha, Nagaland, Manipur, Mizoram & Tripura, Telangana, Kerala & Mahe, Lakshadweep and Tamil Nadu, Puducherry & Karaikal. These were **markedly below normal (-5.1°C or less)** at a few places over Jammu-Kashmir-Ladakh Gilgit-Baltistan-Muzaffarabad, Haryana-Chandigarh-Delhi, Rajasthan; at isolated places over Haryana-Chandigarh-Delhi, Uttar Pradesh, West Rajasthan and East Madhya Pradesh; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over East Rajasthan and West Madhya Pradesh; **below normal (-1.6°C to -3.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Bihar and near normal over rest part of the country. Yesterday, the **highest maximum temperature of 36.0°C** was reported at **Karwar (Coastal Karnataka) & Kannur Airport (Kerala)** over the plains of the country (Fig. 2).

Meteorological Analysis (Based on 0830 hours IST)

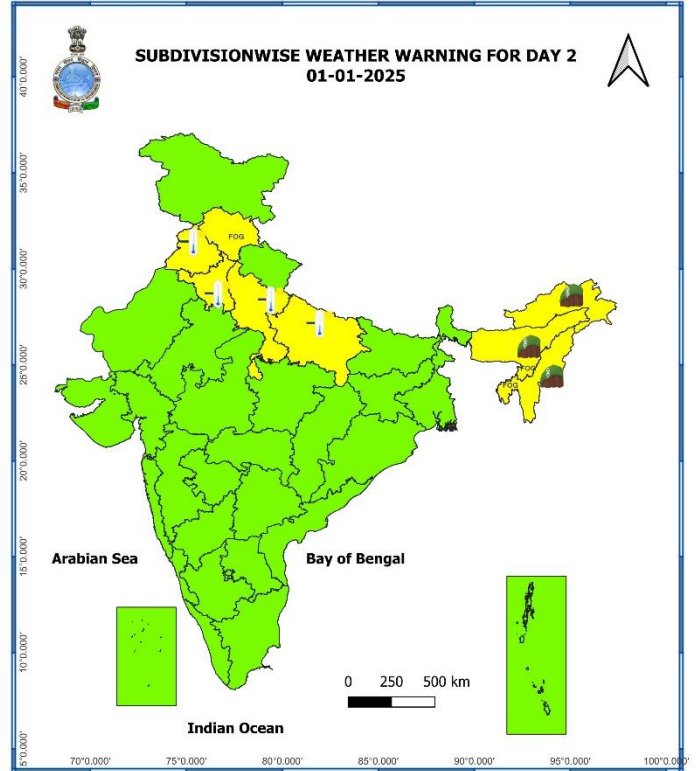
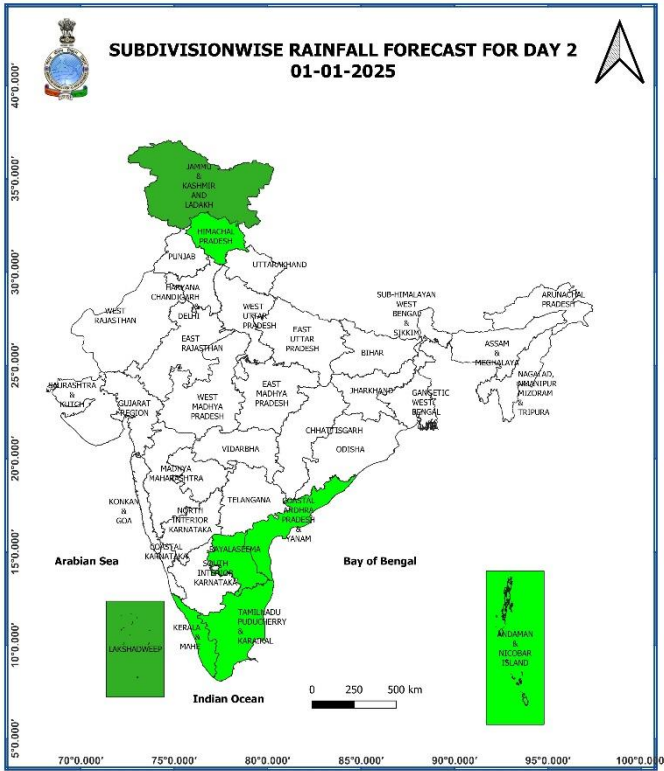
- ❖ The **Western disturbance** now seen as a cyclonic circulation over east Afghanistan & neighbourhood at 3.1 km above mean sea level.
- ❖ The **cyclonic circulation** over Northeast Assam & neighbourhood now lies over South Assam & neighbourhood & extends upto 3.1 km above mean sea level.
- ❖ The **cyclonic circulation** over Equatorial Indian Ocean & adjoining southwest Bay of Bengal extending upto 1.5 km above mean sea level persists.
- ❖ A **fresh western disturbance** is likely to affect Northwest India from 4th January, 2025.
- ❖ The **cyclonic circulation** over Northeast Bihar & neighbourhood at 1.5 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 07th January, 2025)



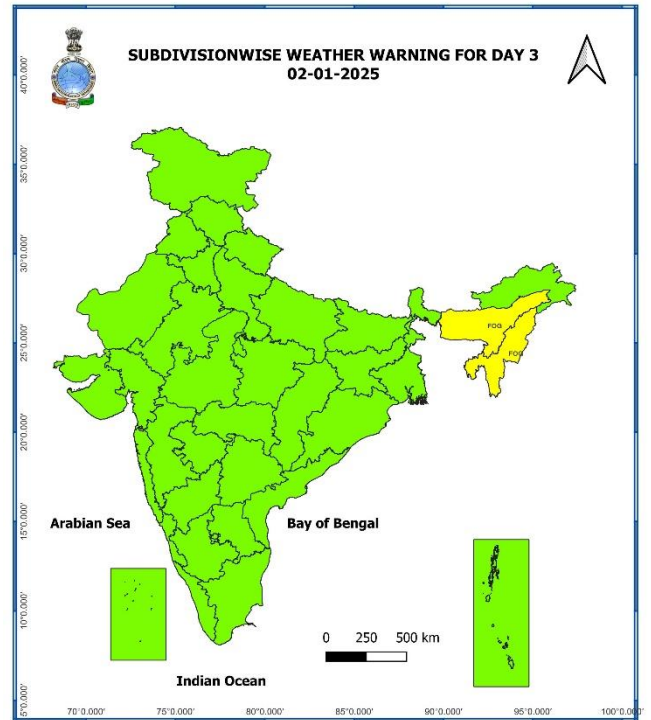
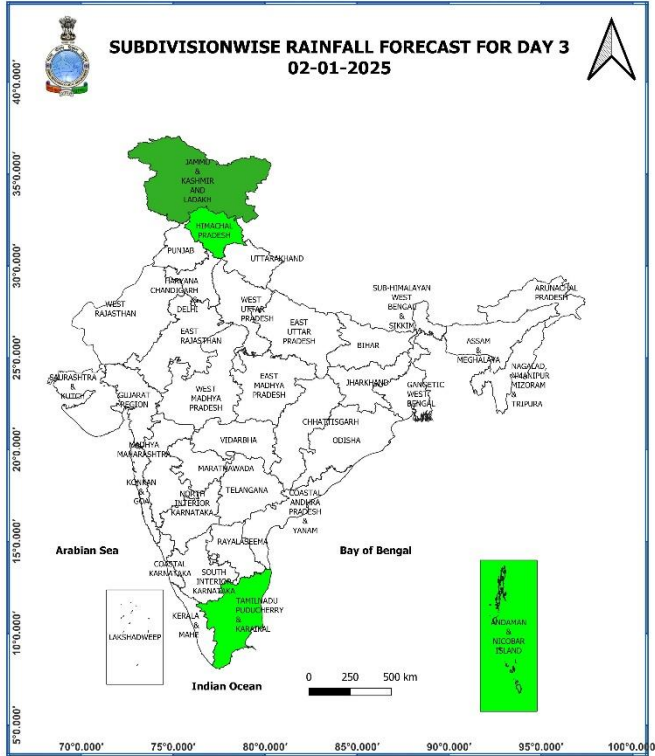
31st December (Day 1):

- ❖ **Heavy rainfall** very likely at isolated places over south Tamil Nadu.
- ❖ **Dense fog** very likely in Uttarakhand, Himachal Pradesh, Punjab, Haryana-Chandigarh, Rajasthan, Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold day to severe cold day conditions** very likely in isolated pockets of Punjab, Haryana-Chandigarh, Rajasthan; **Cold day conditions** very likely in a few pockets of West Uttar Pradesh, in isolated pockets of Himachal Pradesh, East Uttar Pradesh.
- ❖ **Cold wave conditions** very likely in isolated pockets of Himachal Pradesh.
- ❖ **Ground Frost** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind** (speed 35 kmph to 45 kmph gusting to 55 kmph) very likely to prevail Gulf of Mannar and adjoining Comorin area, over many parts of southwest Bay of Bengal and adjoining parts of southeast Bay of Bengal, along and off Sri Lanka coast. Fisherman are advised not to venture in to these areas.



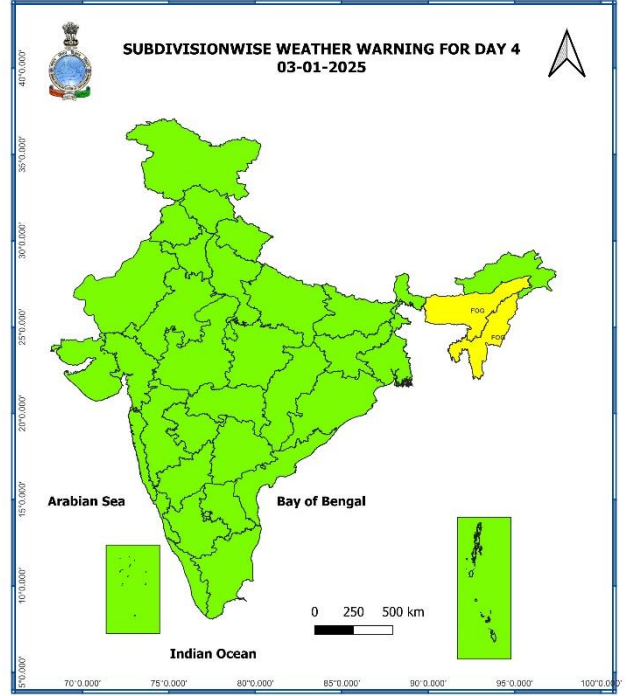
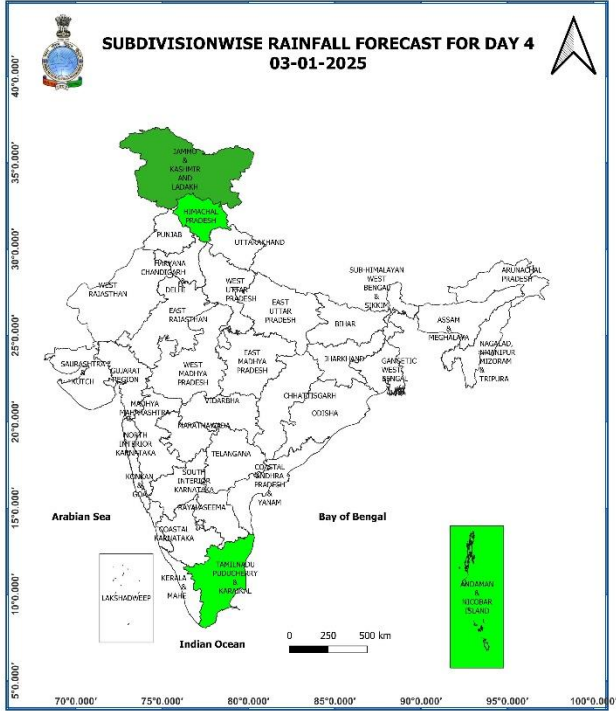
01st January (Day 2):

- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold Day conditions** very likely at isolated places over Punjab, Haryana, Chandigarh, Delhi and Uttar Pradesh.
- ❖ **Ground Frost** very likely at places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind** (speed 35 kmph to 45 kmph gusting to 55 kmph) likely to prevail over Gulf of Mannar and Comorin area and adjoining Maldives area, along and off Sri Lanka coast and adjoining southwest Bay of Bengal. Fisherman are advised not to venture in to these areas.



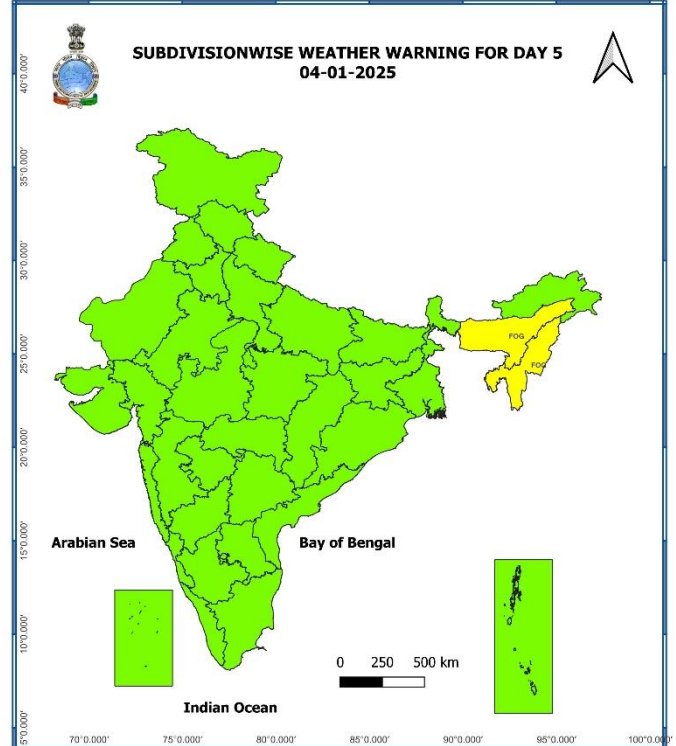
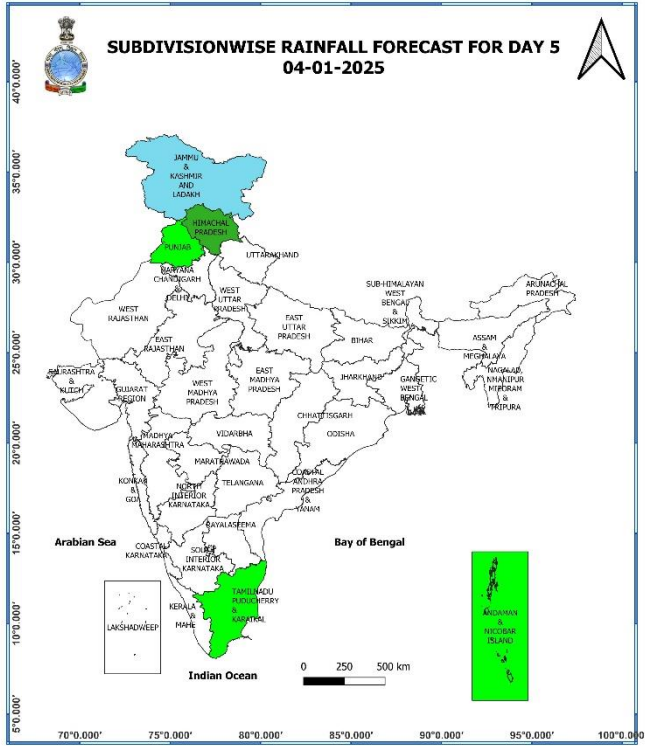
02nd January (Day 3):

- ❖ **Dense fog** very likely in isolated pockets of Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Squally weather with wind** (speed 35 kmph to 45 kmph gusting to 55 kmph) likely to prevail over Gulf of Mannar, Comorin area and Maldives area. Fisherman are advised not to venture in to these areas.



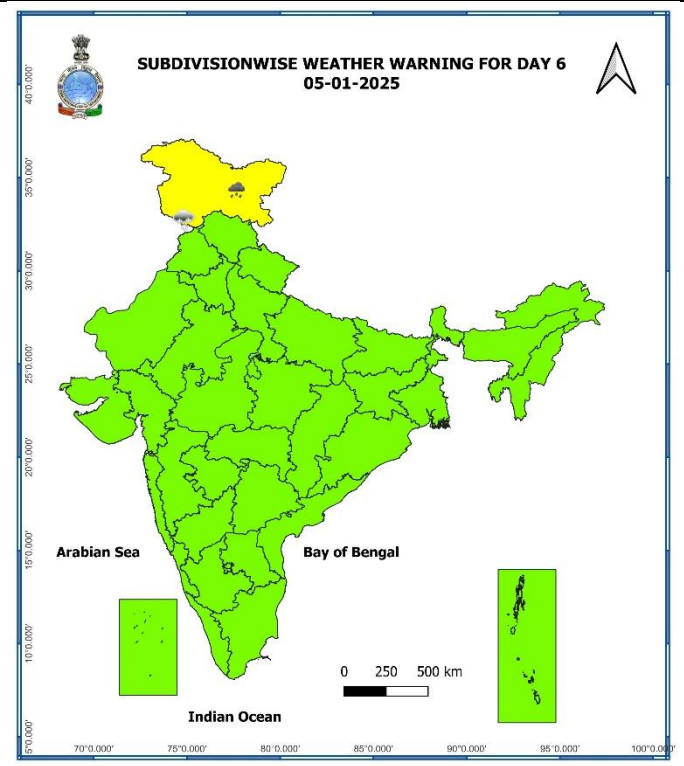
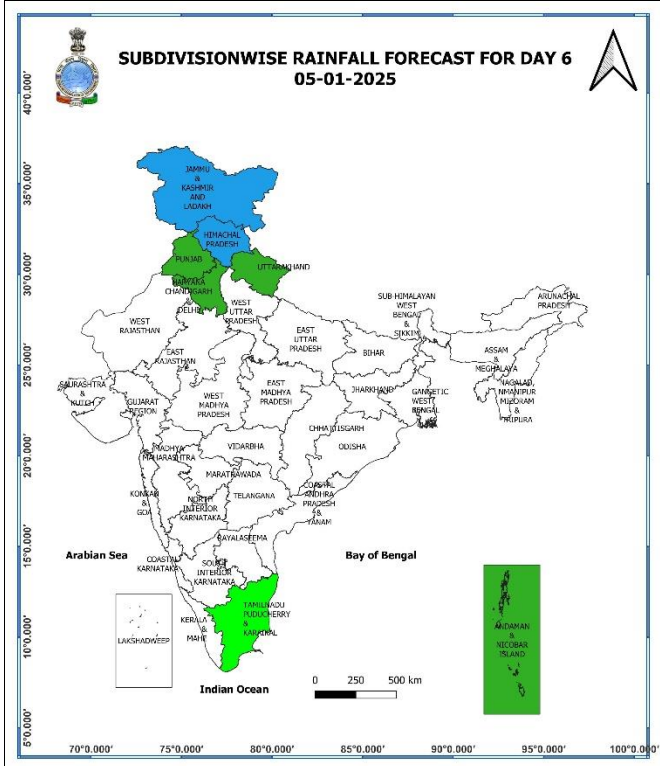
03rd January (Day 4):

- ❖ **Dense fog** likely in isolated pockets of Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Squally weather with wind** (speed 35 kmph to 45 kmph gusting to 55 kmph) likely to prevail over Gulf of Mannar, Comorin area and Maldives area, over southern parts of southeast Arabian sea. Fisherman are advised not to venture in to these areas.



04th January (Day 5):

- ❖ **Dense fog** likely in isolated pockets of Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Squally weather with wind** (speed 35 kmph to 45 kmph gusting to 55 kmph) likely to prevail over Gulf of Mannar, Comorin area and Maldives area, over southern parts of southeast Arabian sea. Fisherman are advised not to venture in to these areas.



05th January (Day 6):

- ❖ **Heavy Rainfall/snowfall** likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.

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.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

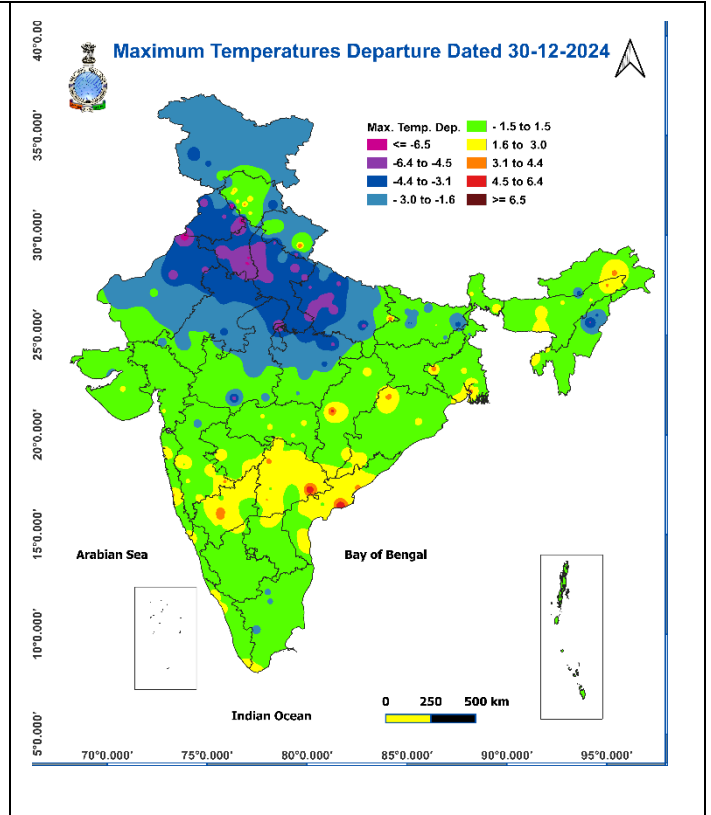
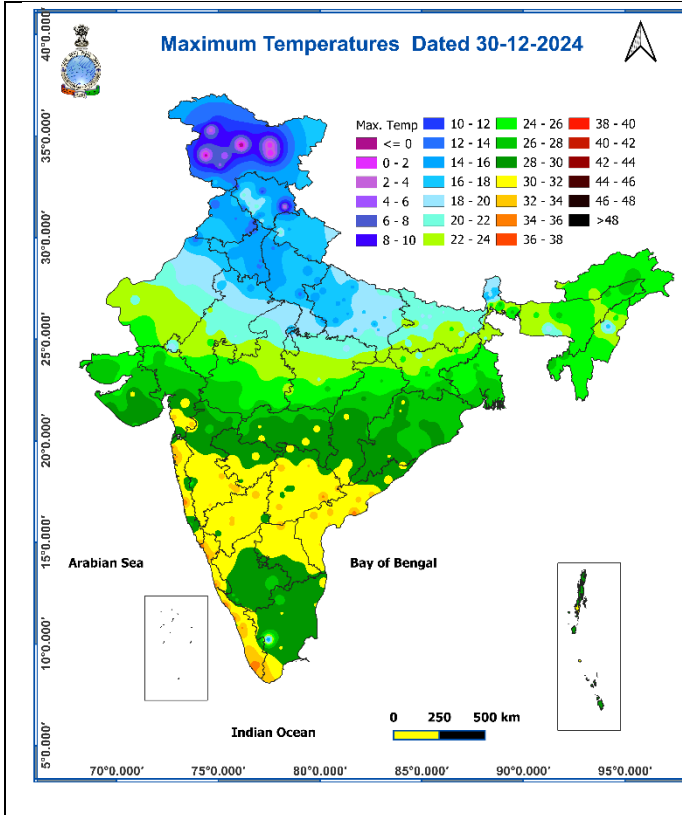


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

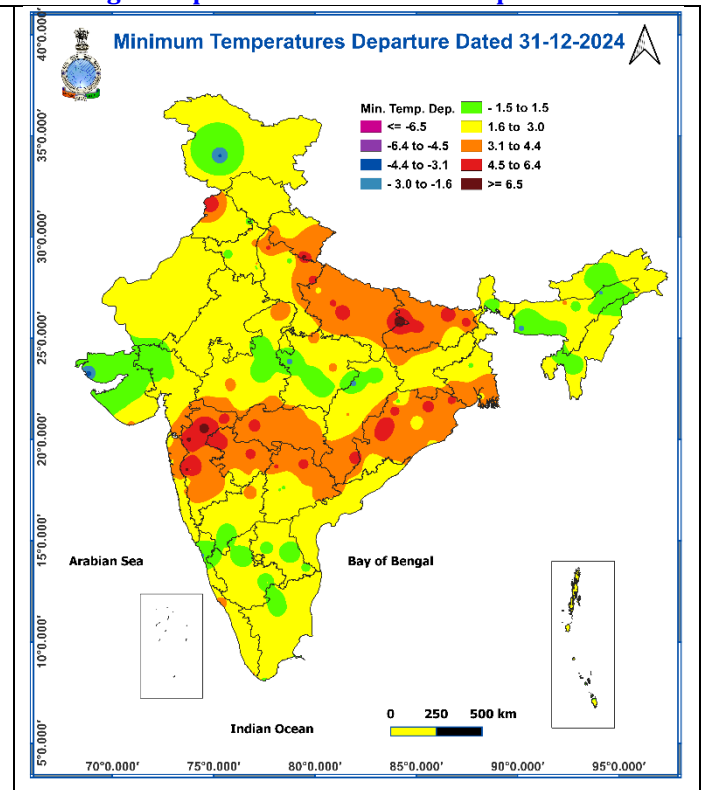
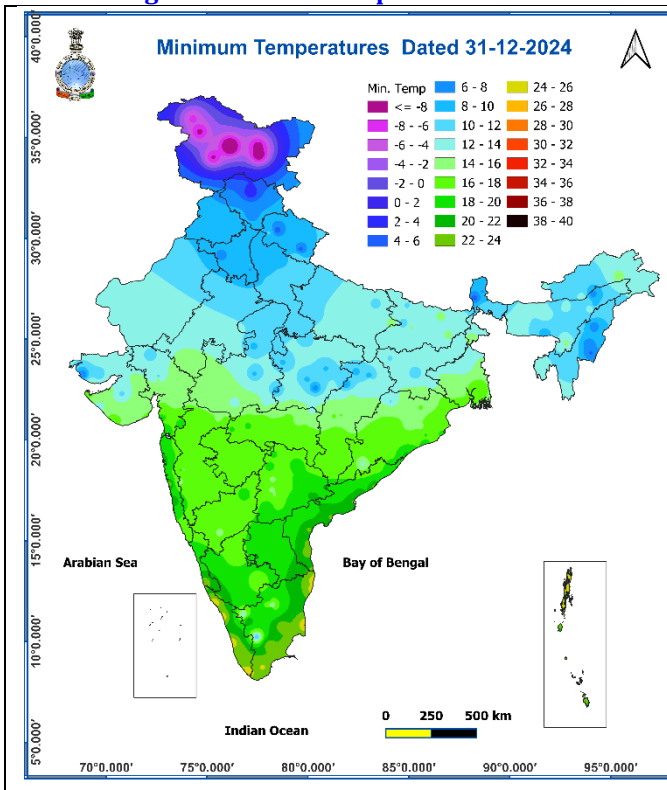
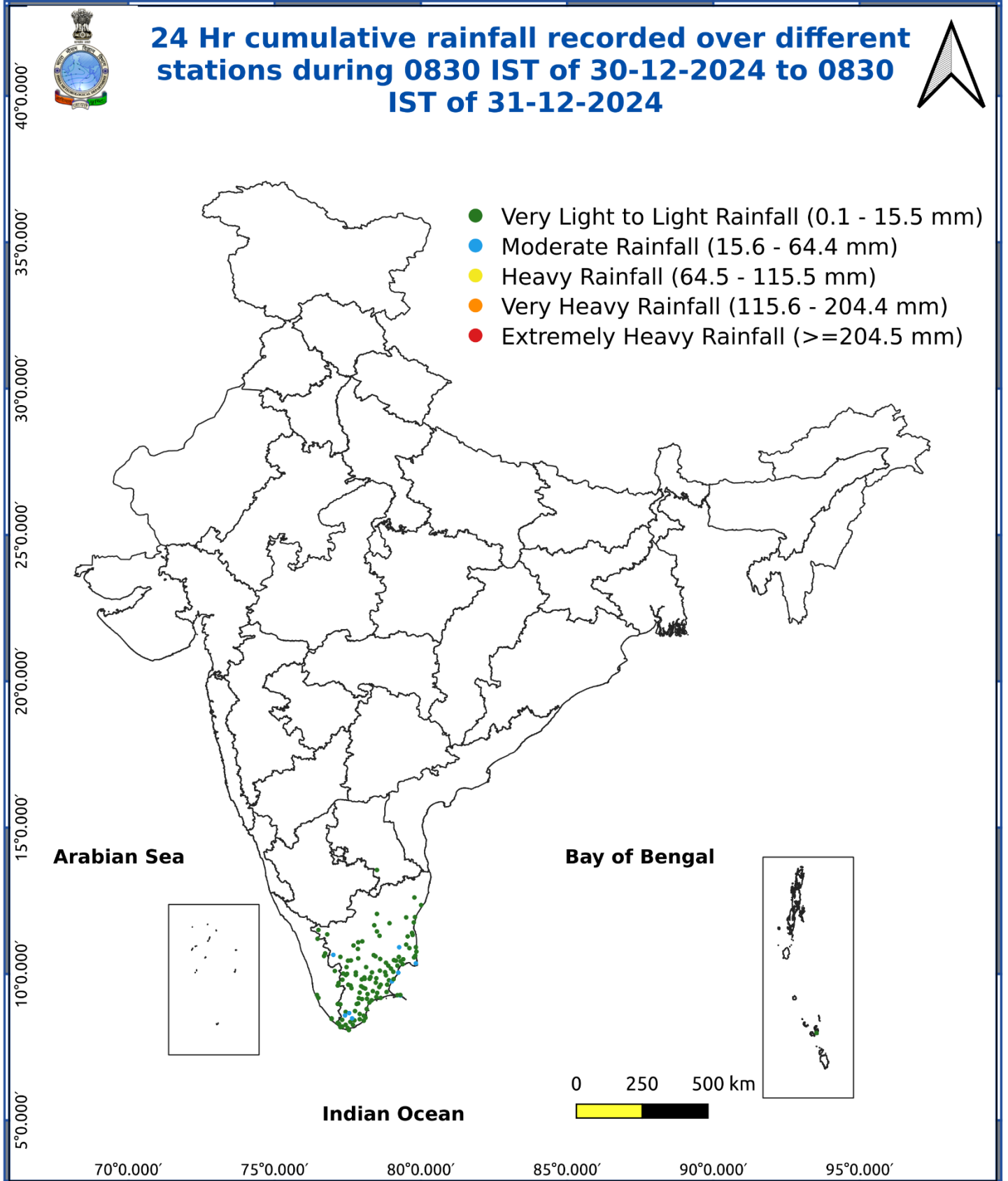


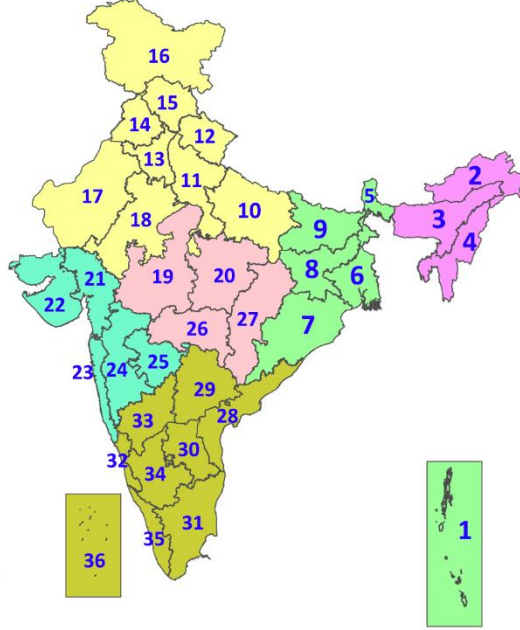
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599
(Service to the Nation since 1875)

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

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)