

Tuesday, January 21, 2025
Time of Issue: 1330 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems, Forecast and warning:

- ❖ The **Western Disturbance** as a cyclonic circulation lies over North Pakistan & neighbourhood with a trough aloft in middle tropospheric levels roughly along Long. 70°E to the north of Lat. 30°N. The induced cyclonic circulation lies over West Rajasthan in lower tropospheric levels. A fresh **Western Disturbance** as a trough in middle & upper tropospheric westerlies runs roughly along Long. 52°E to the north of Lat. 30°N. Under the influence of these systems:
 - ✓ Isolated to Scattered rainfall/snowfall very likely over Western Himalayan Region till 23rd and isolated to scattered rainfall likely over Punjab, Haryana, Chandigarh & West Uttar Pradesh on 22nd & 23rd; Rajasthan and West Madhya Pradesh on 22nd January.
 - ✓ Thunderstorm activity at isolated places likely over Himachal Pradesh, Uttarakhand, Haryana, Chandigarh, West Uttar Pradesh on 22nd January.

ii. Temperature, Cold Day and Fog Forecast:

Temperature Conditions during past 24 hours till 0830 hours IST of today:

- ❖ Minimum temperatures are **below 0°C** over isolated places of Jammu, Kashmir & Ladakh; **8-14°C** over many parts of plains of northwest, Central & East India; **14-18°C** in many parts of West India. Today, the lowest minimum temperature of **6.5°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°C** in many parts of East Madhya Pradesh; in some parts of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Odisha, West Bengal & Sikkim; in isolated places of Assam & Meghalaya and Chhattisgarh and **fall by 1-3°C** in some parts of Himachal Pradesh, Coastal Andhra Pradesh & Yanam, Tamilnadu Puducherry & Karaikal; in isolated places of West Uttar Pradesh, West Rajasthan, Karnataka, Telangana and Kerala & Mahe.
- ❖ Minimum temperatures are **below normal (-1°C to -3°C)** at many places over Telangana, at a few places over Coastal Andhra Pradesh & Yanam; at isolated places over Odisha, Chhattisgarh, North Interior Karnataka. These are **markedly above normal (5°C or more)** at isolated places over East Uttar Pradesh; **appreciably above normal (3°C to 5°C)** at a few places over East Madhya Pradesh, West Uttar Pradesh; at isolated places over Gujarat State, East Rajasthan, West Rajasthan, Punjab, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; **above normal (1°C to 3°C)** at many places over Assam & Meghalaya, Kerala & Mahe; at isolated places over Bihar, Jharkhand, West Rajasthan, Tamil Nadu, Puducherry & Karaikal, Konkan & Goa, Madhya Maharashtra, Gangetic West Bengal and near normal over rest parts of the country.

Forecast of temperature:

- ❖ Gradual rise in minimum temperatures by about 2°C likely over plains of Northwest & Central India during next 48 hours and gradual fall by 2-3°C thereafter.
- ❖ No significant change in minimum temperatures likely over Gujarat region during next 24 hours and gradual fall by 2-3°C thereafter.
- ❖ No significant change in minimum temperatures likely over rest parts of the country.

Dense Fog Warnings:

Dense to very Dense fog Condition very likely to continue to prevail during night/early morning hours in isolated parts of East Uttar Pradesh till 24th; Bihar and Odisha on 21st January.

Dense fog conditions very likely to continue to prevail during night/early morning hours in some parts of Bihar during 22nd-24th; in isolated pockets of Gangetic West Bengal, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura till 23rd; Rajasthan & Odisha during 22nd-24th; Sub-Himalayan West Bengal & Sikkim till 24th; Himachal Pradesh & East Uttar Pradesh during 24th-26th and West Uttar Pradesh during 22nd-26th January.

Cold Day Warnings:

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

Fishermen Warnings:

Fishermen are advised not to venture into Comorin area & adjoining Gulf of Mannar on 21st & 22nd; adjoining South Sri Lanka coast & southwest Bay of Bengal on 21st; Westcentral and adjoining southwest Arabian sea along and off Somalia coast during 22nd-24th January.

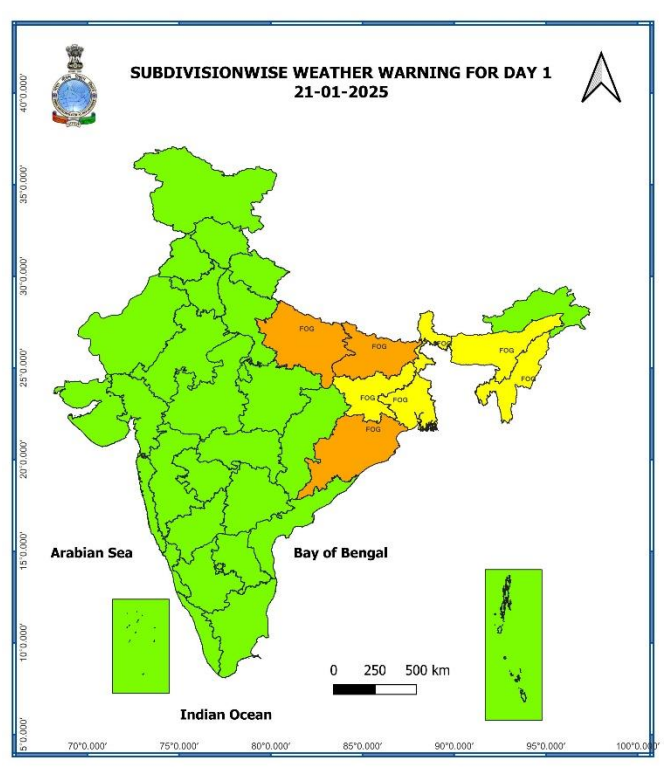
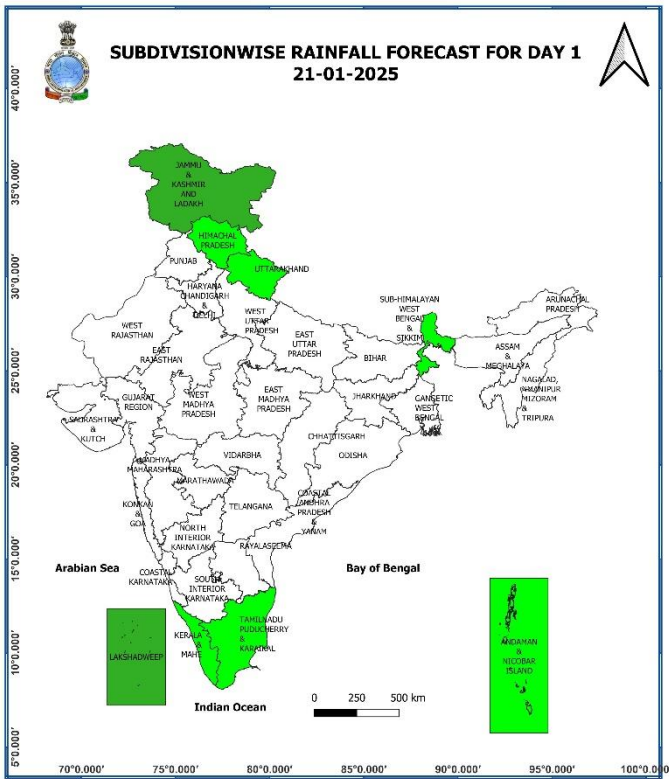
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; **at isolated places** over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Lakshadweep, Tamil Nadu, Puducherry & Karaikal.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Tamil Nadu:** Oothu (dist Tirunelveli), Thiruthuraipoondi (dist Thiruvarur) 1 each; **Lakshadweep:** Agathi (dist Lakshadweep) 1.
- ❖ **Rainfall/Snowfall** recorded at isolated places over **Jammu Kashmir (in cm):** Gulmarg (dist Baramula) 1.
- ❖ **Fog recorded** (at 0830 hours IST of today): **Dense to very dense fog** reported in some parts of East Uttar Pradesh; in isolated pockets of Odisha, Bihar, Meghalaya and **dense fog** reported in isolated pockets of West Uttar Pradesh, Sub-Himalayan West Bengal. .
- ❖ **Visibility reported** (at 0830 hours IST of today) (≤ 200 m): **East Uttar Pradesh:** Ayodhya, Gorakhpur, Bahraich 0 each; **Odisha:** Paradip, Chandbali 0 each; **Bihar:** Purnea, Patna, Bhagalpur, Supaul 0 each; **Meghalaya:** Shillong 0, Barapani 30; **Sub-Himalayan West Bengal:** Cooch Behar 50; **West Uttar Pradesh:** Najibabad 100.
- ❖ **Minimum Temperature Departures (as on 21-01-2025):** Minimum temperatures are **markedly above normal (5.0°C or more)** at isolated places over East Uttar Pradesh; **appreciably above normal (3.1°C to 5.0°C)** at a few places over East Madhya Pradesh, West Uttar Pradesh; at isolated places over Gujarat State, East Rajasthan, West Rajasthan, Punjab, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; **above normal (1.6°C to 3.0°C)** at many places over Assam & Meghalaya, Kerala & Mahe; at isolated places over Bihar, Jharkhand. West Rajasthan, Tamil Nadu, Puducherry & Karaikal, Konkan & Goa, Madhya Maharashtra, Gangetic West Bengal. These are **below normal (-1.6°C to -3.0°C)** at many places over Telangana, at a few places over Coastal Andhra Pradesh & Yanam; at isolated places over Odisha, Chhattisgarh, North Interior Karnataka and near normal over rest parts of the country (Fig. 4). Today, the lowest minimum temperature of **6.5°C** is reported at **Mandla (East Madhya Pradesh)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 20-01-2025):** Maximum temperatures were **markedly above normal (-5.1°C or more)** at a few places over Punjab; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttar Pradesh, East Rajasthan, Saurashtra & Kutch; **appreciably above normal (3.1°C to 5.0°C)** at isolated places West Rajasthan, Uttarakhand, Madhya Pradesh, Gujarat Region, Assam & Meghalaya; **above normal (1.6°C to 3.0°C)** at isolated places over Jharkhand, Gangetic West Bengal, Odisha, Chhattisgarh, Coastal Andhra Pradesh & Yanam, Vidarbha, Madhya Maharashtra, Nagaland, Manipur, Mizoram & Tripura, Haryana-Chandigarh-Delhi. These were **below normal (-1.6°C to -3.0°C)** at isolated places over Tamil Nadu, Puducherry & Karaikal, Sub-Himalayan West Bengal & Sikkim and near normal over rest part of the country (Fig. 2). Yesterday, the **highest maximum temperature of 35.4°C** was reported at **Bombay Santacruz (Konkan & Goa)** over the plains of the country.

Meteorological Analysis (Based on 0830 hours IST)

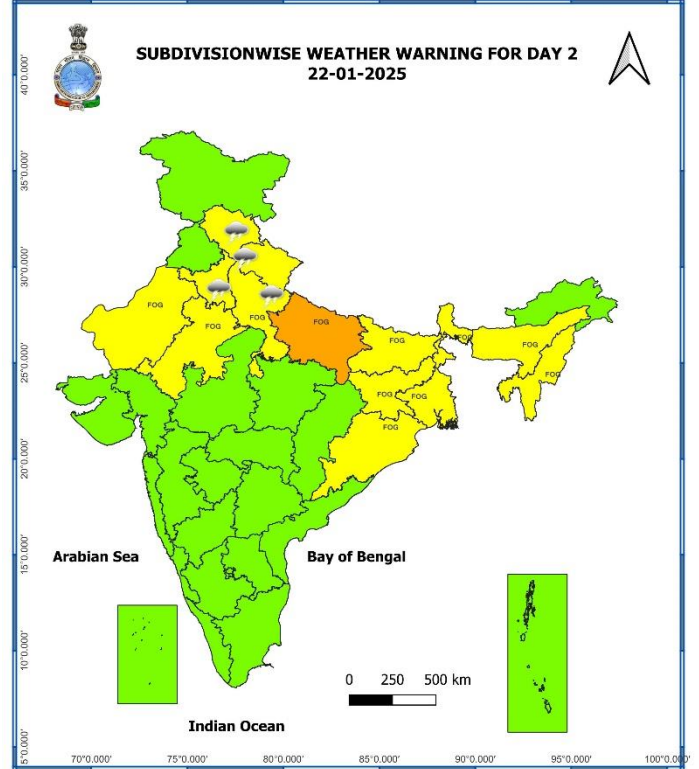
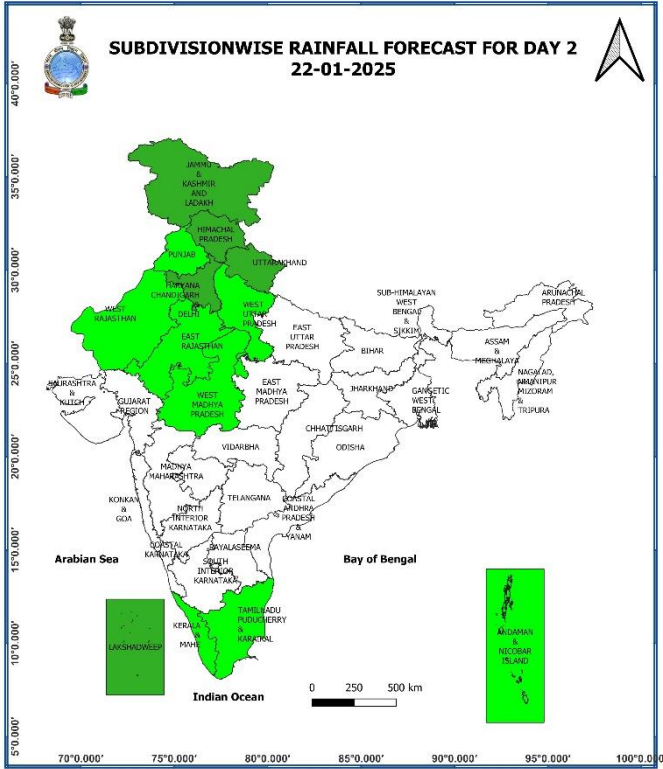
- ❖ The **Western Disturbance** as a cyclonic circulation over North Pakistan & neighbourhood at 3.1 km above mean sea level persists with a trough aloft in middle tropospheric levels with its axis at 5.8 km above mean sea level roughly along Long. 70°E to the north of Lat. 30°N.
- ❖ Another **Western Disturbance** as a trough in middle & upper tropospheric levels roughly along Long. 60°E to the north of Lat. 28°N has merged with the above system.
- ❖ The induced **cyclonic circulation** now lies over West Rajasthan at 1.5 km above mean sea level.
- ❖ A **cyclonic circulation** lies over southeast Rajasthan and neighbourhood at 0.9 km above mean sea level.
- ❖ A fresh **Western Disturbance** as a trough in middle & upper tropospheric westerlies with its axis at 5.8 km above mean sea level runs roughly along Long. 52°E to the north of Lat. 30°N.
- ❖ Subtropical **westerly Jet Stream** with core winds of the order upto 150 knots at 12.6 km above mean sea level continues to prevail over Northwest India.
- ❖ The **cyclonic circulation** over northeast Assam & neighbourhood persists and now seen between 1.5 km and 3.1 km above mean sea level.
- ❖ The **cyclonic circulation** over Gulf of Mannar & adjoining Sri Lanka at 5.8 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 28th January, 2025)



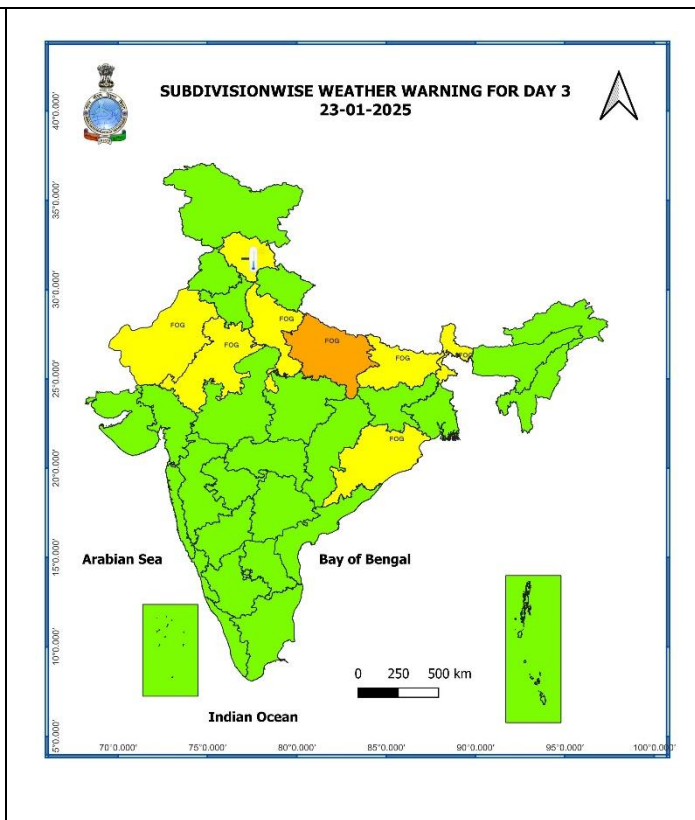
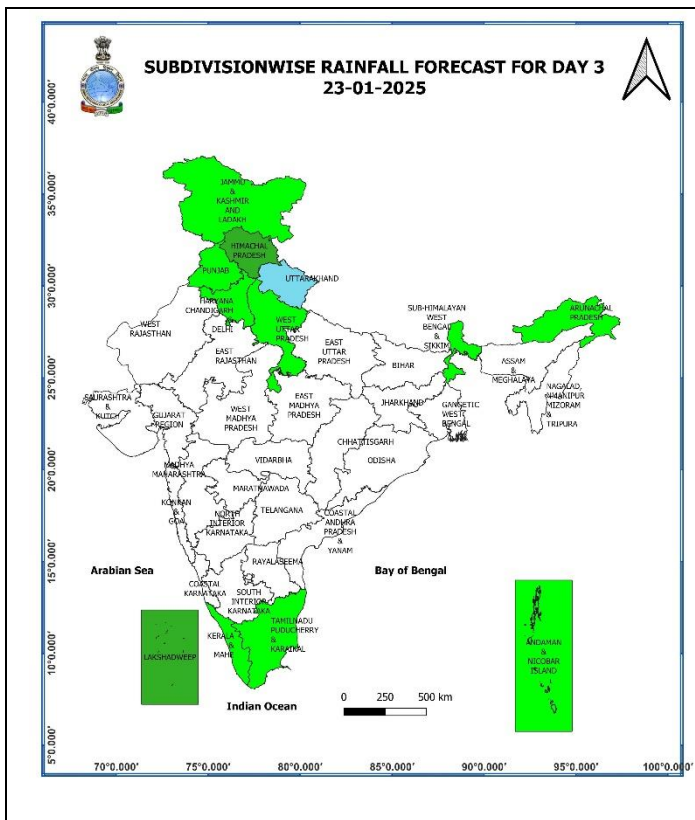
21st January (Day 1):

- ❖ **Dense to very dense fog** conditions very likely at a few places over Bihar, Odisha, East Uttar Pradesh; **dense fog conditions** in isolated pockets of Sub-Himalayan West Bengal & Sikkim, Gangetic West Bengal, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during night/morning hours.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over gulf of Mannar and adjoining Comorin area, adjoining south Sri Lanka coast, adjoining southwest Bay of Bengal. Fishermen are advised not to venture in to these areas.



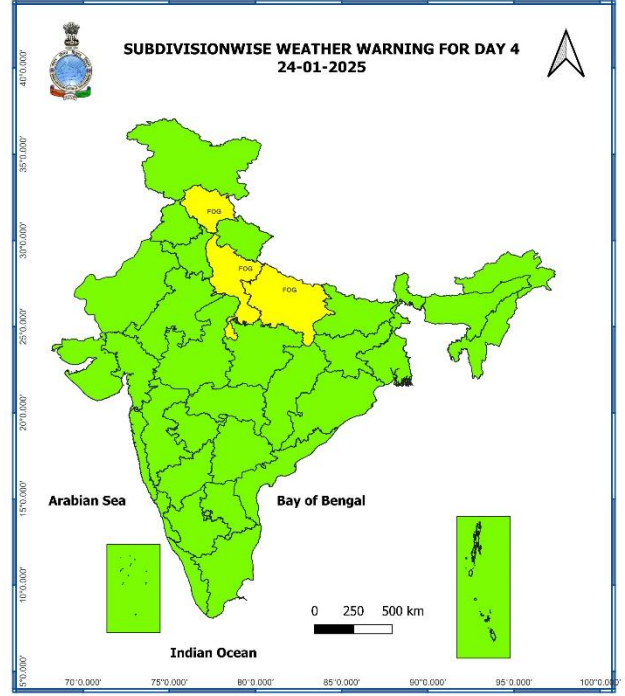
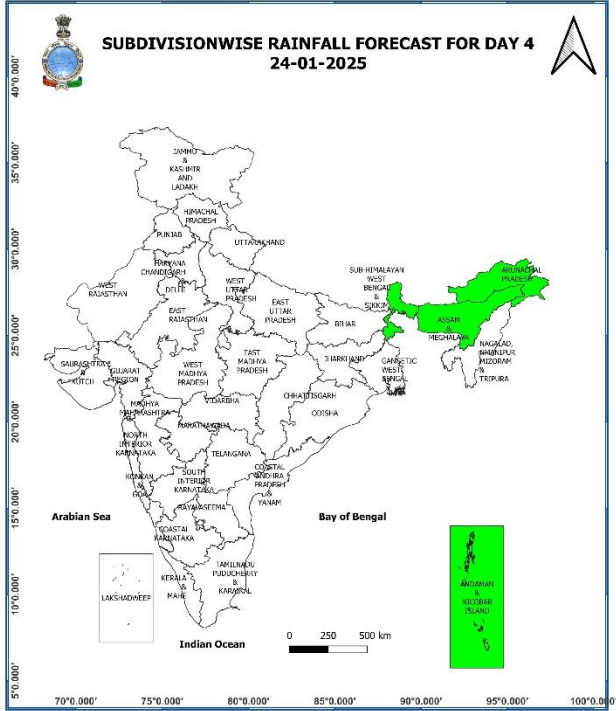
22nd January (Day 2):

- ❖ **Dense to very dense fog** conditions very likely at isolated places over East Uttar Pradesh; **dense fog conditions** at a few places over Bihar; in isolated pockets of West Uttar Pradesh, Rajasthan, West Bengal & Sikkim, Jharkhand, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during night/morning hours.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Himachal Pradesh, Uttarakhand, Haryana-Chandigarh, West Uttar Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over Comorin area adjoining gulf of Mannar. **Squally wind with wind speed 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over west central and adjoining southwest Arabian sea along and off Somalia coast. Fishermen are advised not to venture in to these areas.



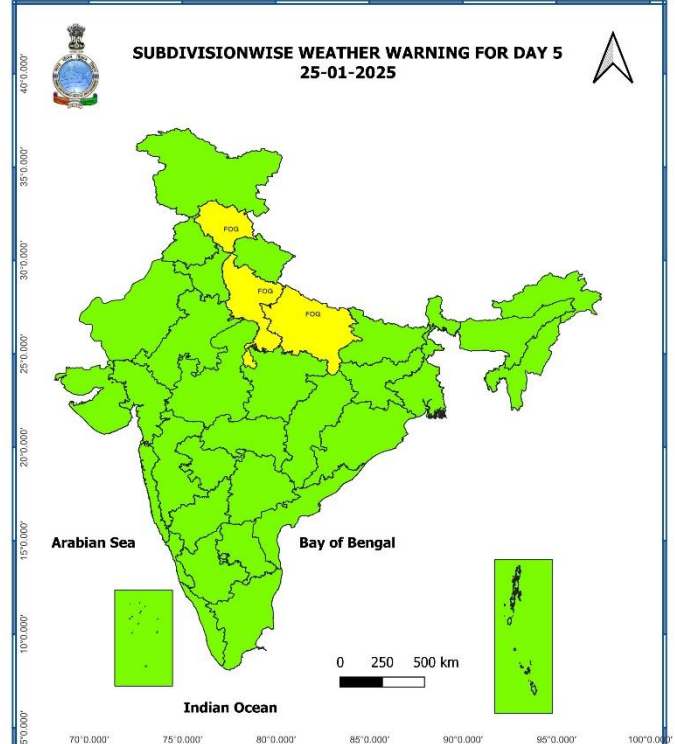
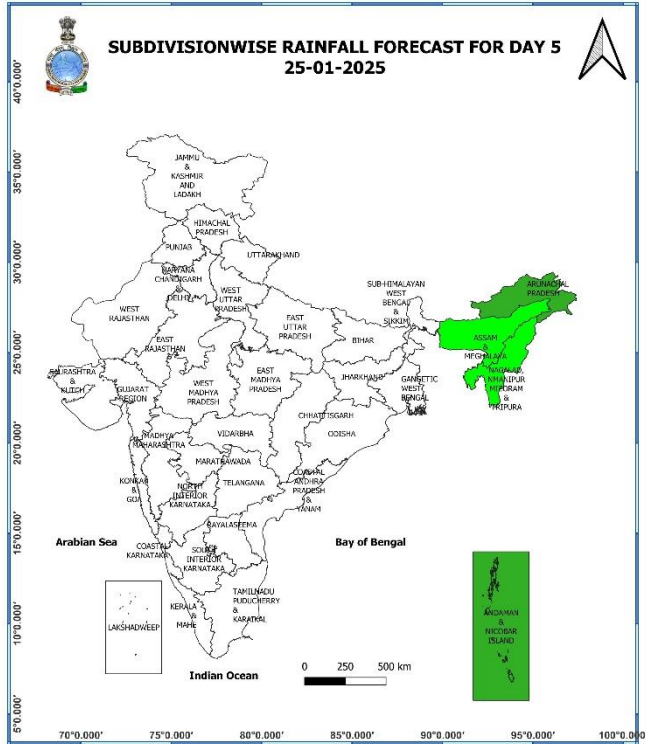
23rd January (Day 3):

- ❖ **Dense to very dense fog** conditions very likely at isolated places over East Uttar Pradesh; **dense fog conditions** in a few pockets of Bihar, at isolated pockets of Rajasthan, West Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Odisha.
- ❖ **Cold day conditions** likely in some pockets of Himachal Pradesh.
- ❖ **Squally wind with wind speed 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over west central and adjoining southwest Arabian sea along and off Somalia coast.



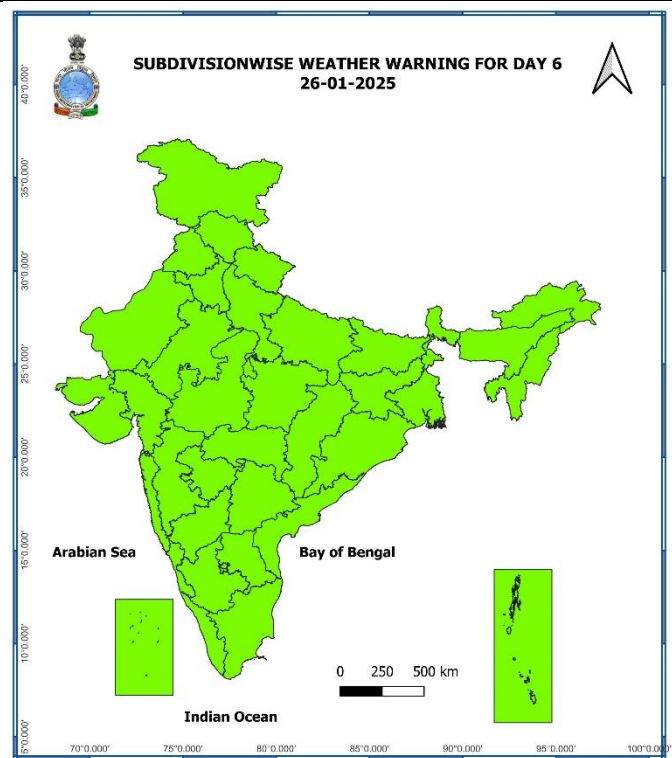
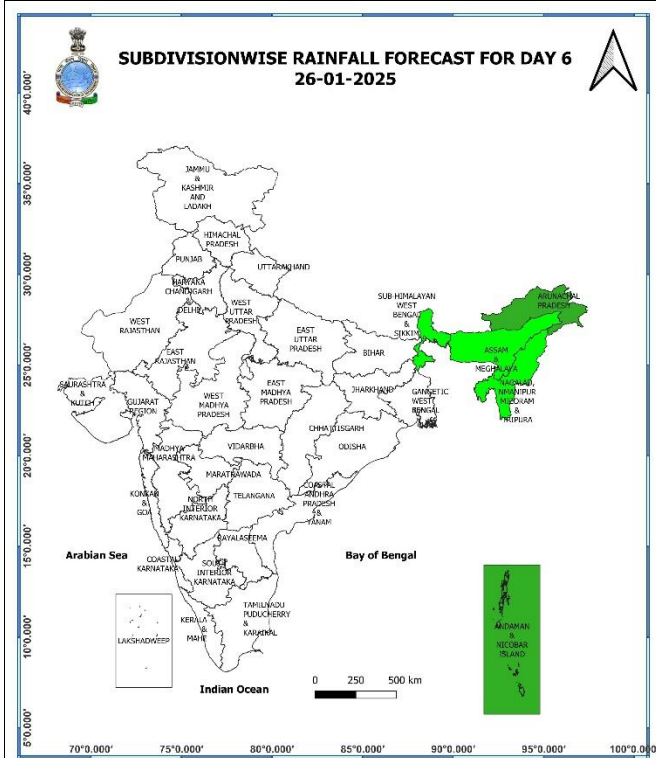
24th January (Day 4):

- ❖ **Dense fog conditions** likely in isolated pockets of Himachal Pradesh, Uttar Pradesh.
- ❖ **Squally wind with wind speed 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over southwest Arabian sea along and off Somalia coast.



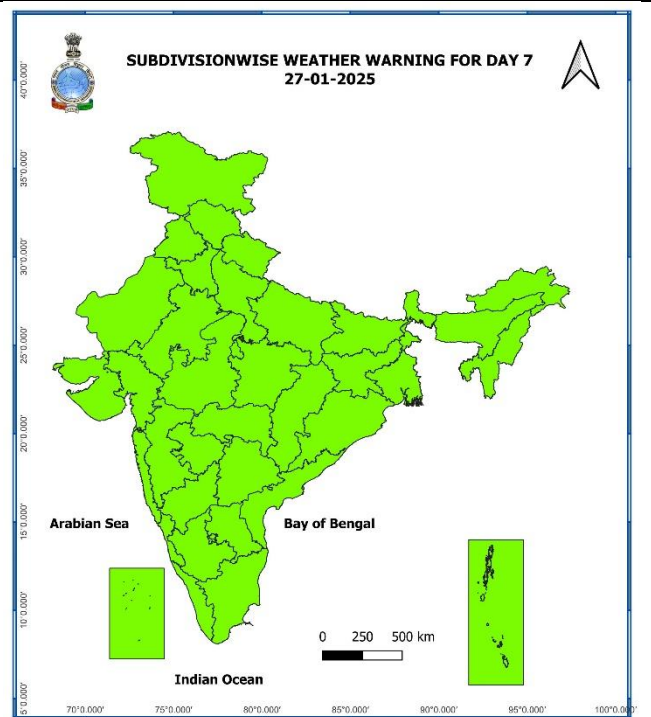
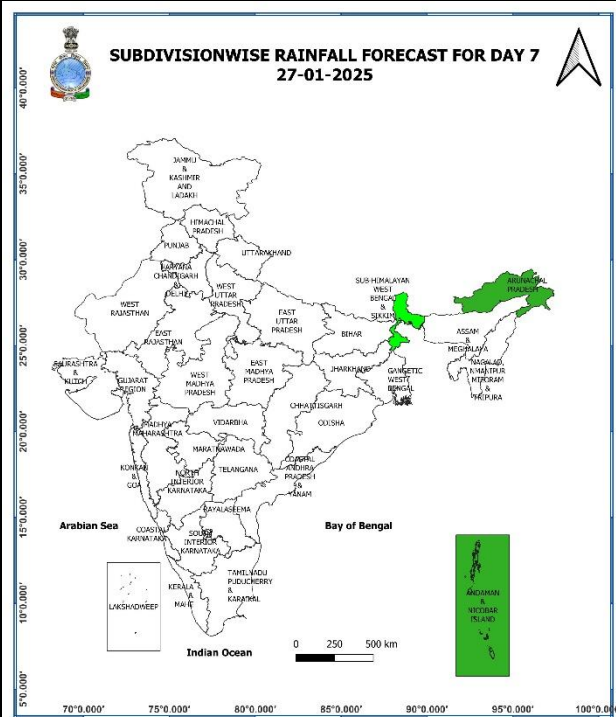
25th January (Day 5):

❖ **Dense fog conditions** likely in isolated pockets of Himachal Pradesh, Uttar Pradesh.



26th January (Day 6):

❖ **No Weather Warning.**



27th January (Day 7):

❖ **No Weather Warning.**

Weather Outlook for subsequent 3 days (During 28th January- 30th January, 2025)

- ❖ Isolated to scattered rainfall over Tamil Nadu & South Kerala and scattered to fairly widespread rainfall over Nicobar Islands.
- ❖ Scattered to Fairly widespread rainfall/snowfall over Arunachal Pradesh.

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

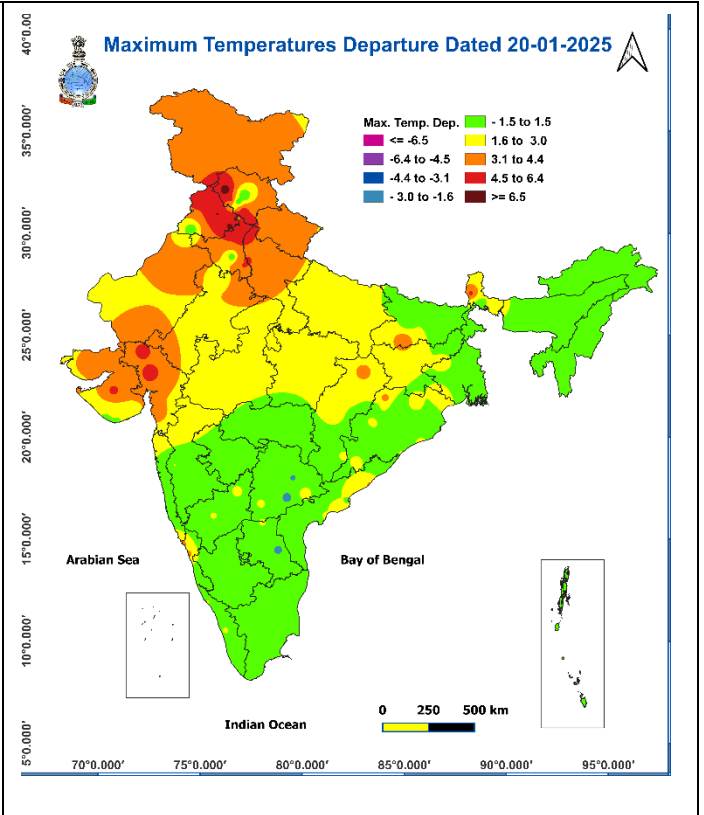
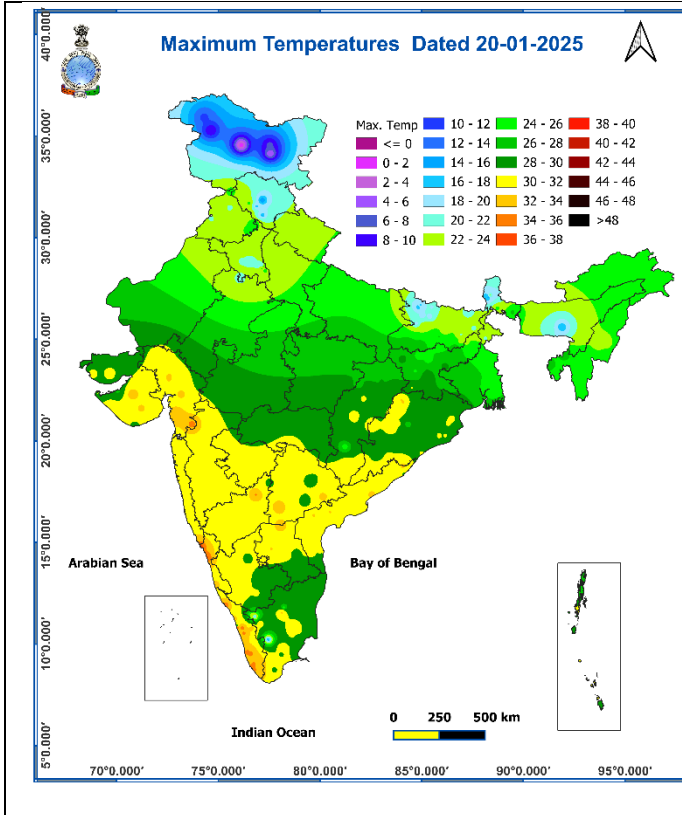


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

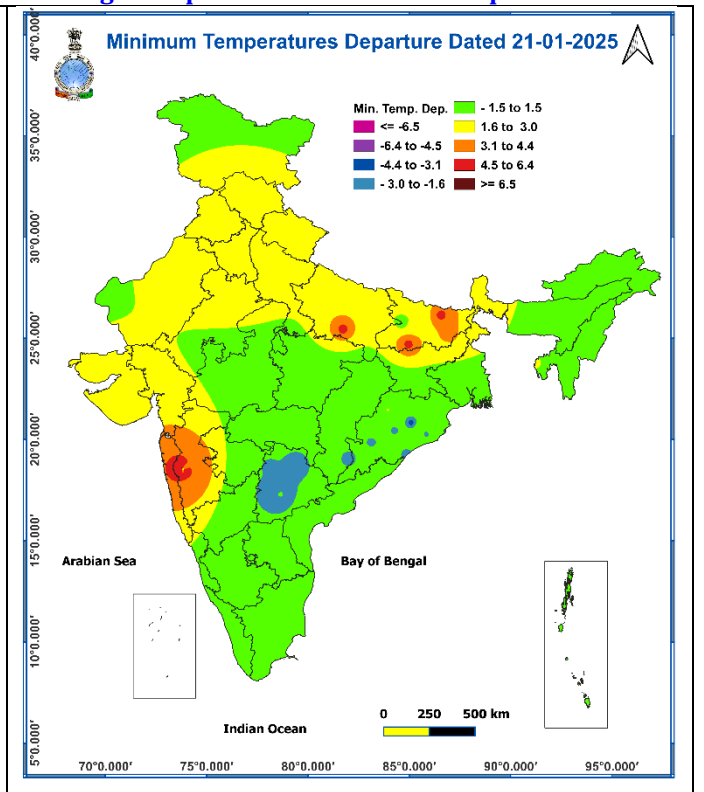
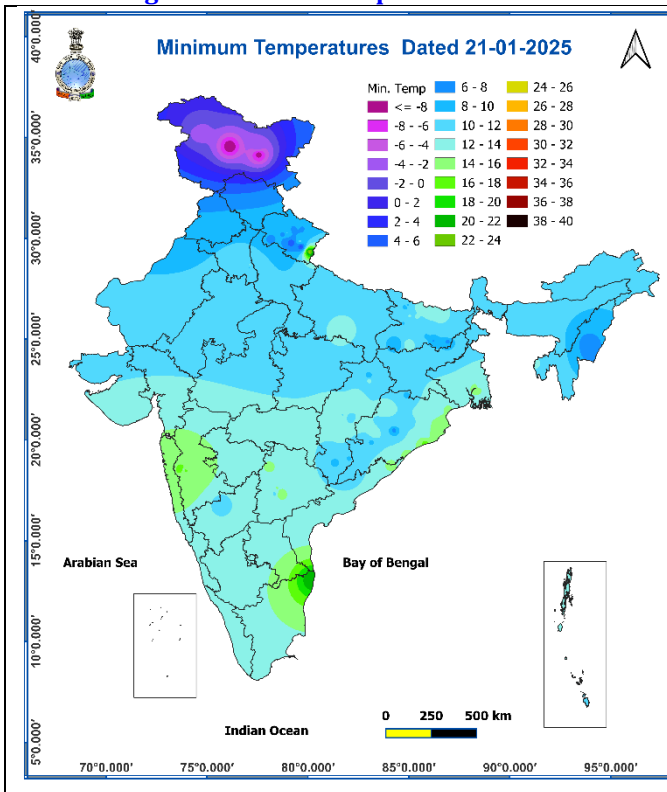
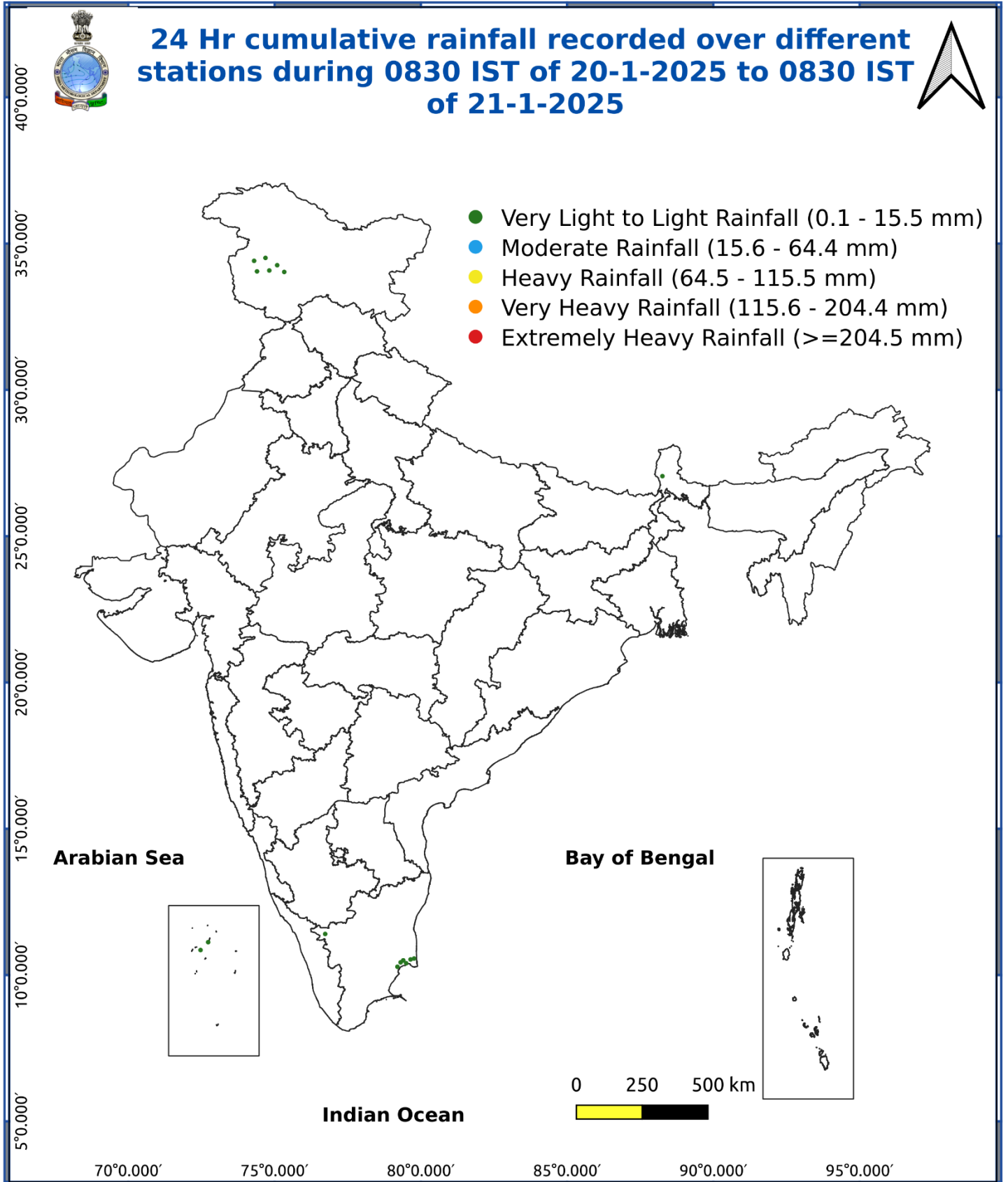


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



* 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)

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

❖ Transport and Aviation:

- May affect some airports, highways and railway routes in the areas of met- sub-division.
- Difficult driving conditions with slower journey times.
- Unless taken precautionary measures, it may lead to some road traffic collisions.

❖ Power Sector:

- Chances of Tripping of Power lines in the very dense fog routes.

❖ Human Health:

- Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath.
- Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
- Eye Irritation: Dense fog contains pollutions of various types and these Pollutants in the air if exposed may tend to irritate the membranes of the eye causing various infections leading to redness or swelling of the eye.

Action suggested:

❖ Transport and Aviation:

- Be careful while driving or outing through any transport.
- Use fog lights during driving.
- Be in touch with airlines, railways and state transport for schedule of your journey.

❖ Power Sector:

- To keep ready Maintenance Team.
- Human Health: To avoid outing until unless emergency and to cover the face.

Impact expected due to Cold Day conditions

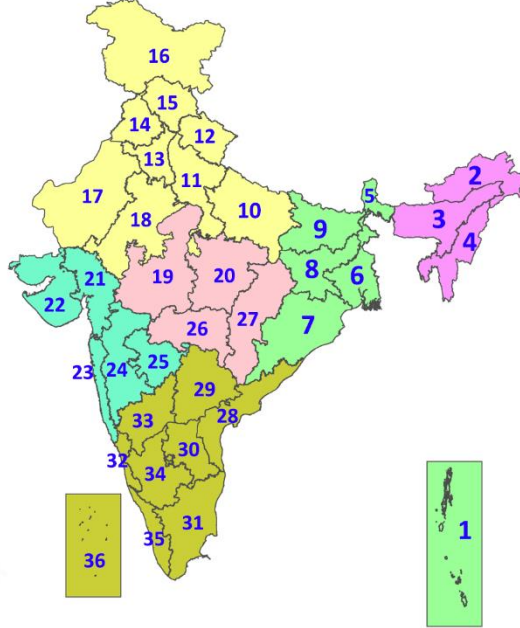
- ❖ An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- ❖ Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- ❖ Frostbite can occur due to prolonged 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

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)