राष्ट्रीय मौसम पूर्वानुमान केन्द्र
भारत मौसम विज्ञान विभाग
पृथ्वी विज्ञान मंत्रालय

National Weather Forecasting Centre
India Meteorological Department
Ministry of Earth Sciences

Wednesday, November 20, 2024
Time of Issue: 0800 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Forecast & Warnings (upto 7 days):

- ✓ Light to moderate rainfall at a few places accompanied with isolated thunderstorm & lightning very likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and Lakshadweep on 20th November, 2024.
- ✓ Light to moderate rainfall at many places over Andaman & Nicobar Islands during the week; Light to moderate rainfall at isolated places over Assam & Meghalaya on 20th and Nagaland, Manipur, Mizoram & Tripura during 20th - 22nd November.
- ✓ **Isolated heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal on 25th and Nicobar on 22nd & 23rd November.
- ✓ Isolated **Hailstorm** activity also very likely over Assam & Meghalaya on 20th November.
- ✓ **Dense to very dense fog** conditions very likely to prevail in isolated pockets of Uttar Pradesh in early morning of 20th and over Punjab, Haryana-Chandigarh during late night of 21st to early morning of 24th November. **Dense fog conditions** very likely to prevail in night/ morning hours in isolated pockets of Bihar in early morning of 20th; Punjab, Haryana-Chandigarh till 21st, Uttar Pradesh on 21st and Himachal Pradesh till 22nd November.

Temperature conditions and Forecast:

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

No significant change in minimum temperature observed over most parts of the country during past 24 hours. Minimum temperatures are **appreciably above normal (3°C to 5°C)** at isolated places over Bihar and East Uttar Pradesh; **above normal (2°C to 3°C)** at a few places over Andaman & Nicobar Islands and Sub-Himalayan West Bengal & Sikkim; at isolated places over West Rajasthan, West Uttar Pradesh, Saurashtra & Kutch and Kerala & Mahe. These are **below normal (2°C to 3°C)** at a few places over Vidarbha, Odisha, Telangana; at isolated places over Chhattisgarh, Gangetic West Bengal, East Madhya Pradesh, East Rajasthan, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam and near normal over rest parts of the country. Today, **the lowest minimum temperature** of **7.2°C** is reported at **Sikar (East Rajasthan)** over the plains of the country.

Forecast of temperature:

- ❖ No significant change in minimum temperatures over most parts of the country during next 5 days.

Weather forecast over Delhi/NCR during 20th Nov. to 22nd Nov. 2024

Past Weather:

There has been a fall in maximum and minimum temperatures over Delhi/NCR during past 24hr. Maximum and Minimum temperature over Delhi is in the range of 22 to 23°C and 9 to 13°C respectively. The maximum temperature was below normal by 4 to 5°C and the minimum temperature was below normal by 1 to 5°C. Mainly moderate to dense fog/smog condition with predominant surface wind from northwest direction with wind speed reaching 06 to 12 kmph prevailed during past 24hr. Dense fog reported at Palam airport during early morning today. Safdarjung airport recorded lowest visibility 150-200 m during 0800 hours IST of 18 Nov. to 0600 hours IST of 19 Nov. which improved thereafter becoming 400m at 0700 hours IST. Palam airport recorded lowest visibility 600m during 0300 hours to 0800 IST. Mainly smog condition with wind speed less than 10 kmph northwest direction prevailed over the region in the forenoon today.

Weather Forecast:

20.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/moderate to dense fog is likely in the morning. The wind speed will increase thereafter becoming less than 10 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 06 kmph from northwest direction during evening and night. Smog/ shallow fog is likely in the evening/night.

21.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 06 kmph during morning hours. Smog/ shallow to moderate fog is likely in the morning. The wind speed will gradually increase becoming 08-10 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 06 kmph from northwest direction during evening and night. Smog/ shallow fog is likely in the evening/night.

22.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with wind speed less than 06 kmph during morning hours. Smog/shallow to moderate fog 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 northwest directions during evening and night. Smog/ shallow fog is likely in the evening/night.

Main Weather Observations:

- **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at isolated places** over Kerala & Mahe, Lakshadweep, Tamil Nadu, Puducherry & Karaikal, Andaman & Nicobar Islands.

- **Heavy rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday): **NIL**

- **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **NIL**

- **Fog conditions observed** (at 0530 hours IST of today): **Very dense fog (visibility < 50 m)** reported in isolated pockets of East Uttar Pradesh; **Dense fog (visibility 51-200 m)** reported in isolated pockets of West Uttar Pradesh; **Moderate fog (visibility 201-500 m)** in isolated pockets of Delhi, Punjab Haryana, West Madhya Pradesh and Bihar.

- **Visibility reported** (at 0530 hours IST of today) (<500metres): Visibility reported (in m): **East Uttar Pradesh:** Kanpur- 0, Lucknow- 50; **West Uttar Pradesh:** Bareilly- 200, Sarsawa, Hindon- 500 each; **Delhi**: Safdarjung-500; **Bihar:** Bhagalpur, Purnea- 500 each**; Punjab:** Halwara, Bathinda- 500 each; **Haryana:** Sirsa-500; **West Madhya Pradesh:** Gwalior- 500.

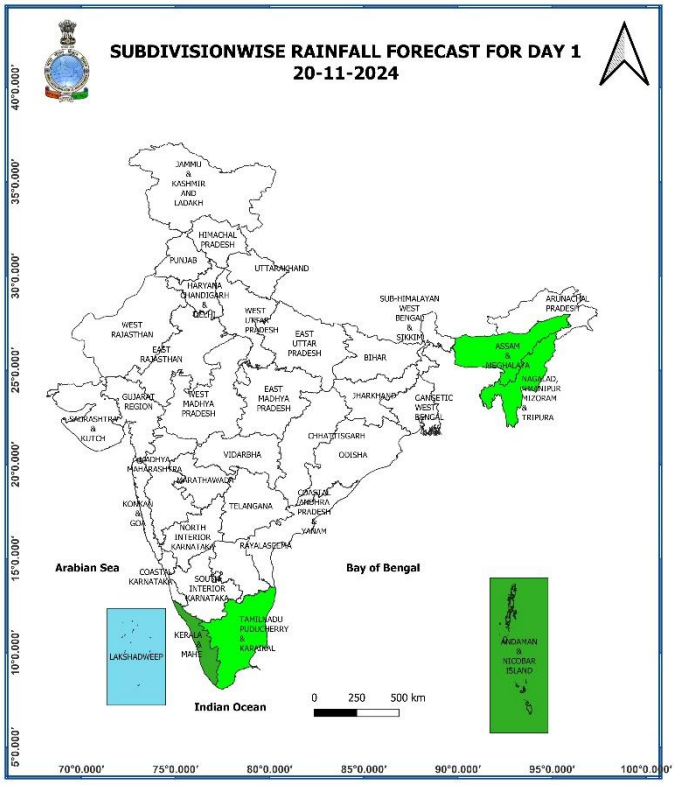
- **Minimum Temperature Departures (as on 19-11-2024):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Bihar and East Uttar Pradesh; **above normal (2°C to 3°C)** at a few places over Andaman & Nicobar Islands and Sub-Himalayan West Bengal & Sikkim; at isolated places over West Rajasthan, West Uttar Pradesh, Saurashtra & Kutch and Kerala & Mahe. These were **below normal (-2°C to -3°C)** at a few places over Vidarbha, Odisha, Telangana; at isolated places over Chhattisgarh, Gangetic West Bengal, East Madhya Pradesh, East Rajasthan, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam and near normal over rest parts of the country. Yesterday, **the lowest minimum temperature** of **7.2°C** was reported at **Sikar (East Rajasthan)** over the plains of the country. **(Fig.4)**

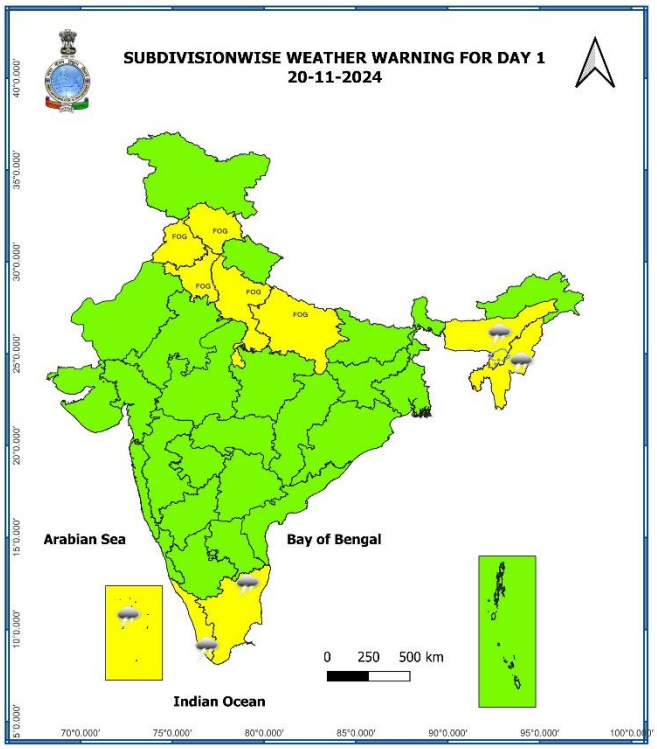
- **Maximum Temperature Departures (as on 19-11-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Assam & Meghalaya; **above normal (1.6°C to 3.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh. These were **markedly below normal (-5.1°C or less)** at isolated places over West Uttar Pradesh, Haryana-Chandigarh-Delhi; **below normal (-1.6°C to -3.0°C)** at isolated places over East Rajasthan, East Uttar Pradesh, Telangana and near normal over rest parts of the country. Yesterday, **the highest maximum temperature** of **35.8°C** was reported at **Karwar (Coastal Karnataka)** over the country. **(Fig. 2)**

Meteorological Analysis (Based on 0530 hours IST)

- The **cyclonic circulation** over west Assam & neighbourhood at 3.1 km above mean sea level persists.
- The **cyclonic circulation** over south Tamil Nadu & adjoining Comorin area at 1.5 km above mean sea level persists.
- The **cyclonic circulation** over central Pakistan & neighbourhood at 1.5 km above mean sea level persists.
- **Jet Stream Winds** of the order upto 90 knots at 12.6 km above mean sea level are prevailing over Northwest India.
- An **upper air cyclonic circulation** is likely to form over South Andaman Sea and adjoining areas around 21st November. It is likely to move west-northwestwards and become a **low pressure area** over southeast Bay of Bengal around 23rd November. Thereafter, it is likely to continue to move west-northwestwards and intensify into a **depression** over southwest Bay of Bengal during subsequent 2 days.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 27th November, 2024)

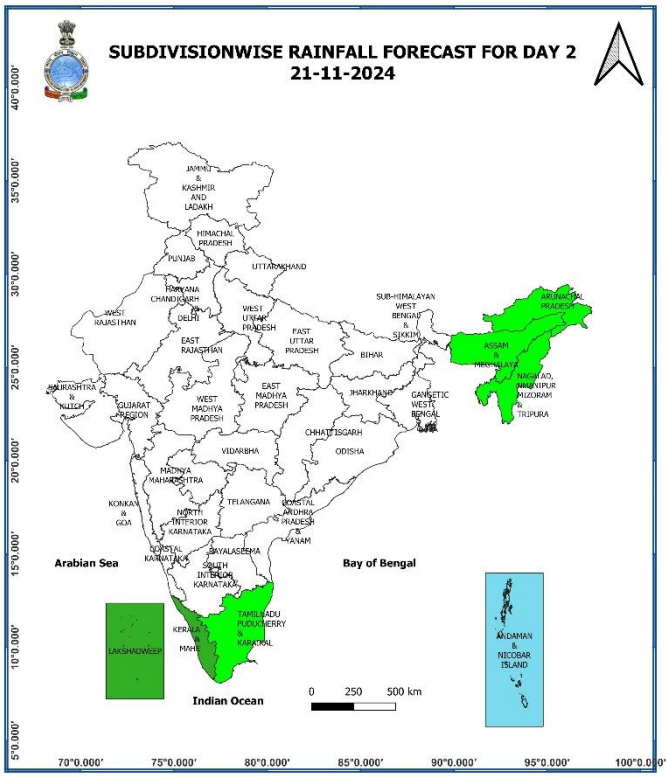


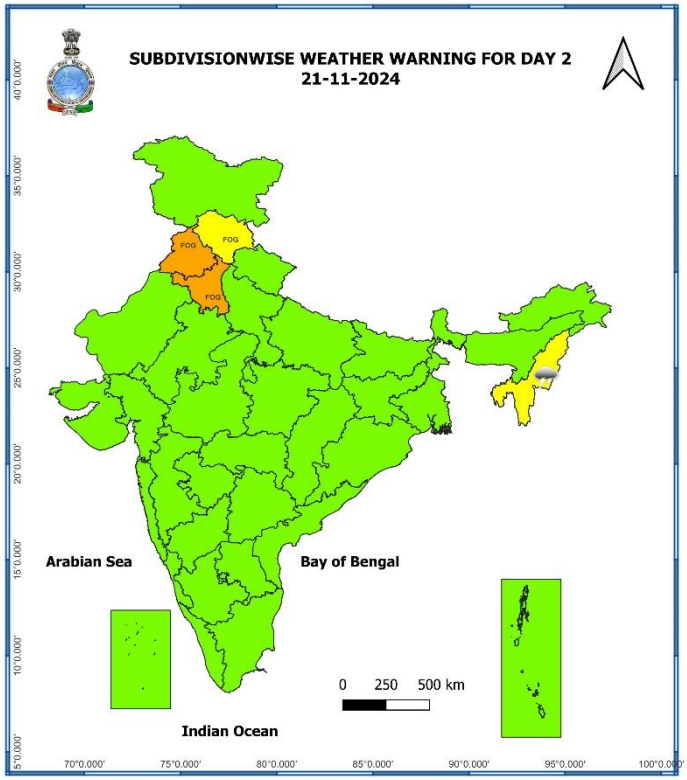


20 November (Day 1):

- **Dense fog** in isolated pockets of Uttar Pradesh, Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi; **Shallow to moderate fog** in isolated pockets of north Madhya Pradesh, West Bengal & Sikkim, Bihar, Jharkhand, Odisha in night/morning hours.

- **Thunderstorm accompanied with hail** very likely at isolated places over Assam & Meghalaya; **with lightning** at Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Lakshadweep and Kerala & Mahe.



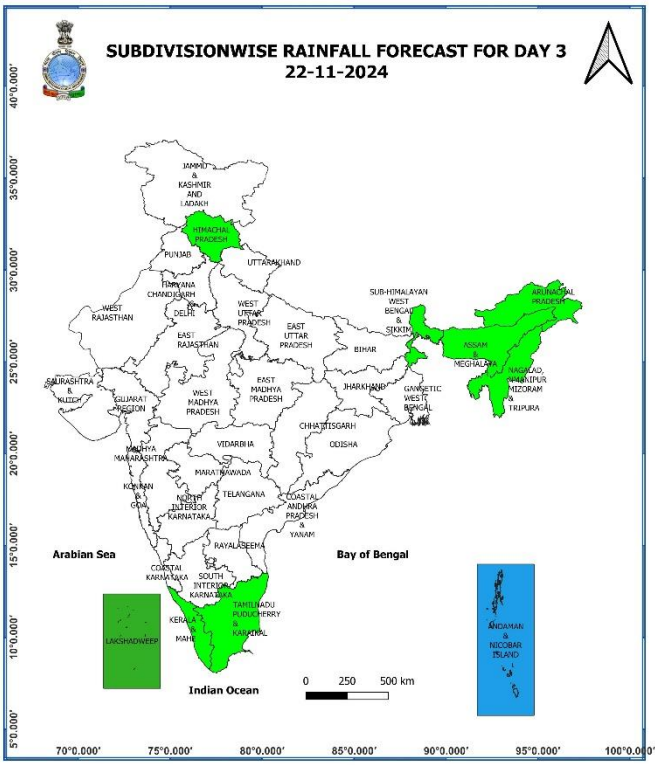


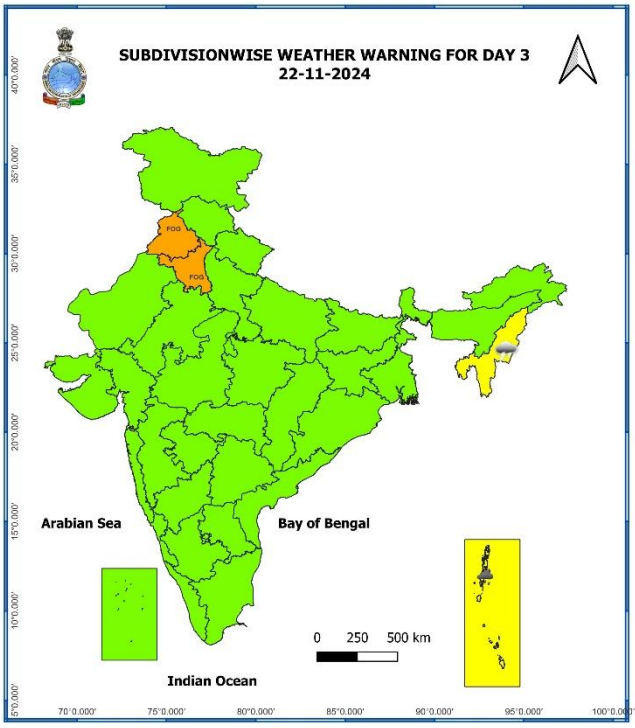
21 November (Day 2):

- **Dense to very dense fog** in isolated pockets of Punjab, Haryana-Chandigarh-Delhi; **dense fog** in isolated pockets of Himachal Pradesh; **Shallow to moderate fog** in isolated pockets of north Madhya Pradesh, Bihar in night/morning hours.

- **Thunderstorm accompanied with lightning** likely at isolated places over Nagaland, Manipur, Mizoram & Tripura.

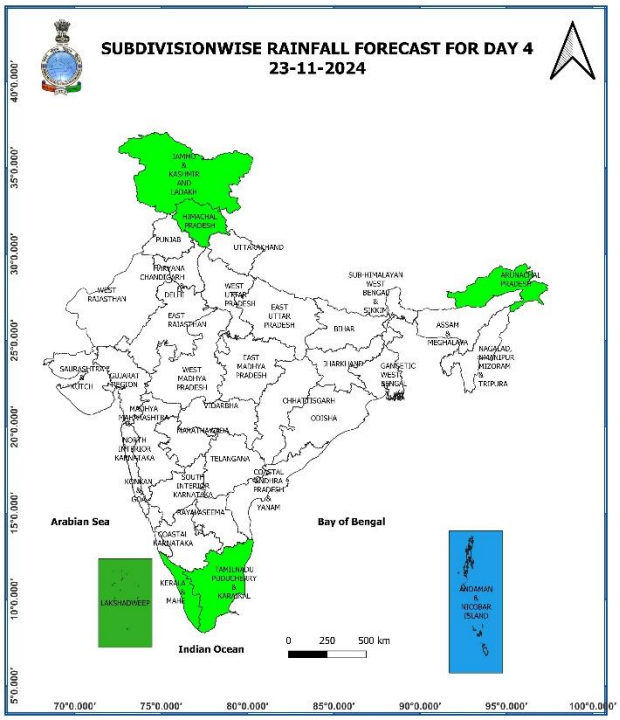
- **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely over southern parts of southeast Bay of Bengal and adjoining south Andaman Sea.

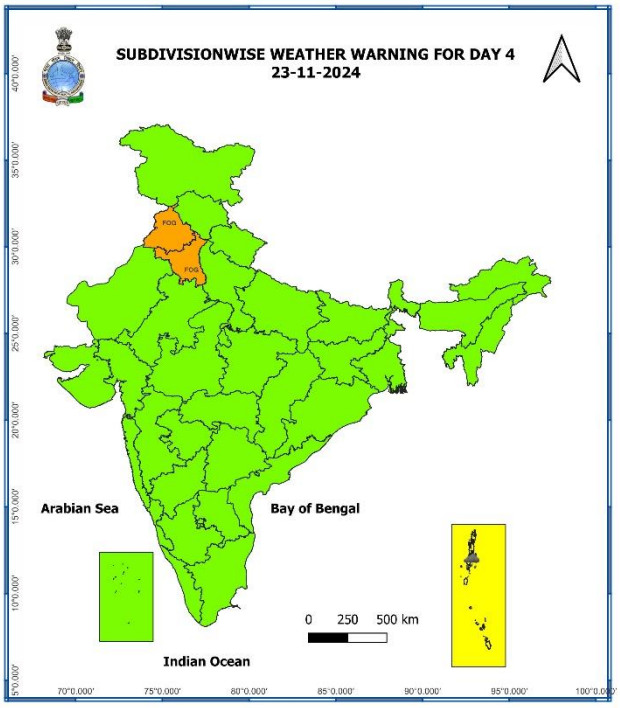




22 November (Day 3):

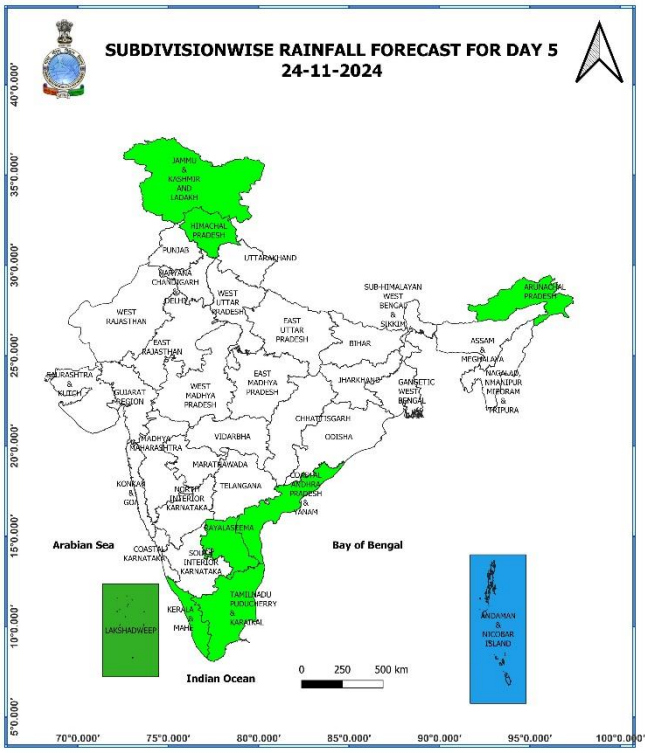
- **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Andaman & Nicobar Islands.
- **Dense to very dense fog** in isolated pockets of Punjab, Haryana-Chandigarh-Delhi in night/morning hours.
- **Thunderstorm accompanied with lightning** likely at isolated places over Nagaland, Manipur, Mizoram & Tripura.
- **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely over southern parts of southeast Bay of Bengal.

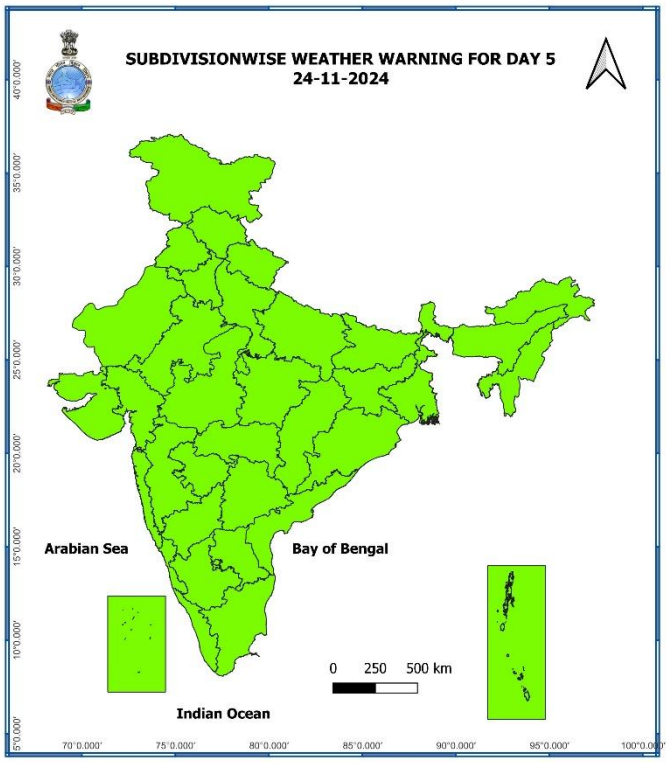




23 November (Day 4):

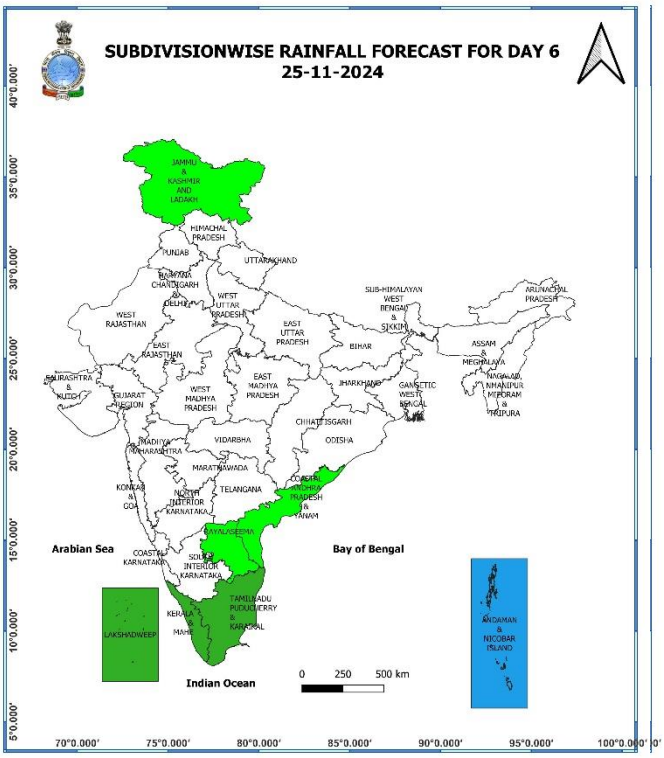
- **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Andaman & Nicobar Islands.
- **Dense to very dense fog** in isolated pockets of Punjab, Haryana-Chandigarh-Delhi in night/morning hours.
- **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely over south-central parts of south Bay of Bengal.

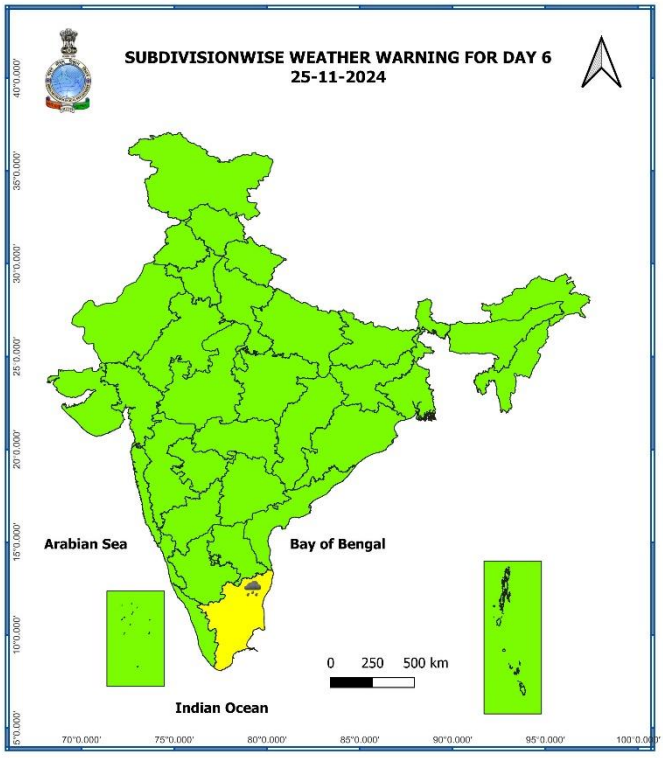




24 November (Day 5):

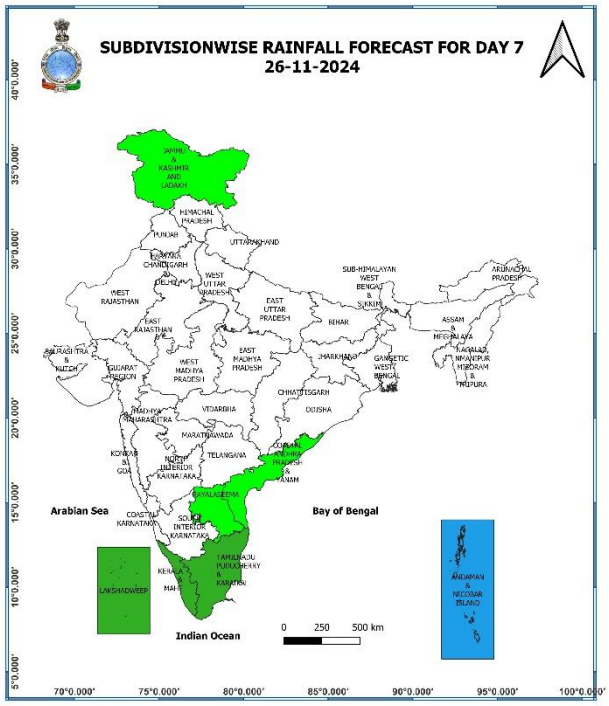
- **No Warning**

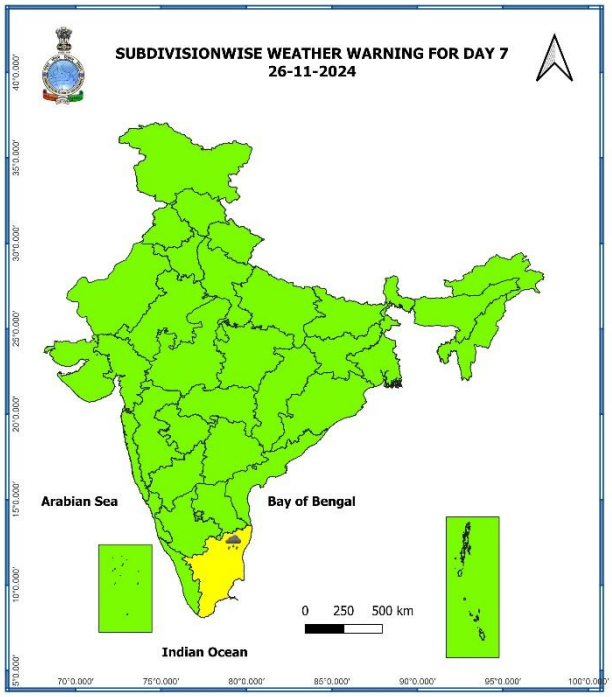




25 November (Day 6):

- **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal.





26 November (Day 7):

- **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal.

Weather Outlook for subsequent 3 days (During 27th November – 29th November, 2024)

- Isolated to Scattered light rainfall likely over some parts of western Himalayan region and south peninsular India.
- Mainly dry weather will prevail over rest parts of country.

- **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.**

Agromet advisories for Heavy Rainfall likely over Tamil Nadu, Puducherry & Karaikal:

- ✓ In **Tamil Nadu**, provide adequate drai1nage facilities for the removal of excess water from rice, cotton, sugarcane, turmeric and vegetable fields, coconut and banana orchards. Undertake propping in sugarcane.
- ✓ Provide mechanical support to banana plants to prevent lodging.

Impact expected due to dense/ very dense fog in the late night /morning hours over parts of Northwest India during next 3-4 days.

❖ 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.

Fig. 1: Maximum Temperatures

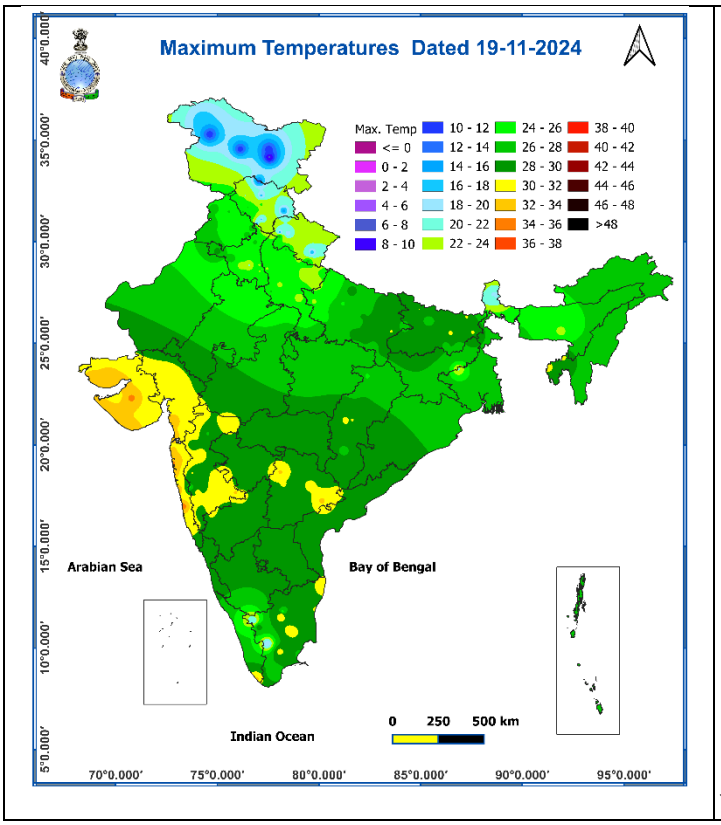


Fig. 2: Departure of Maximum Temperatures

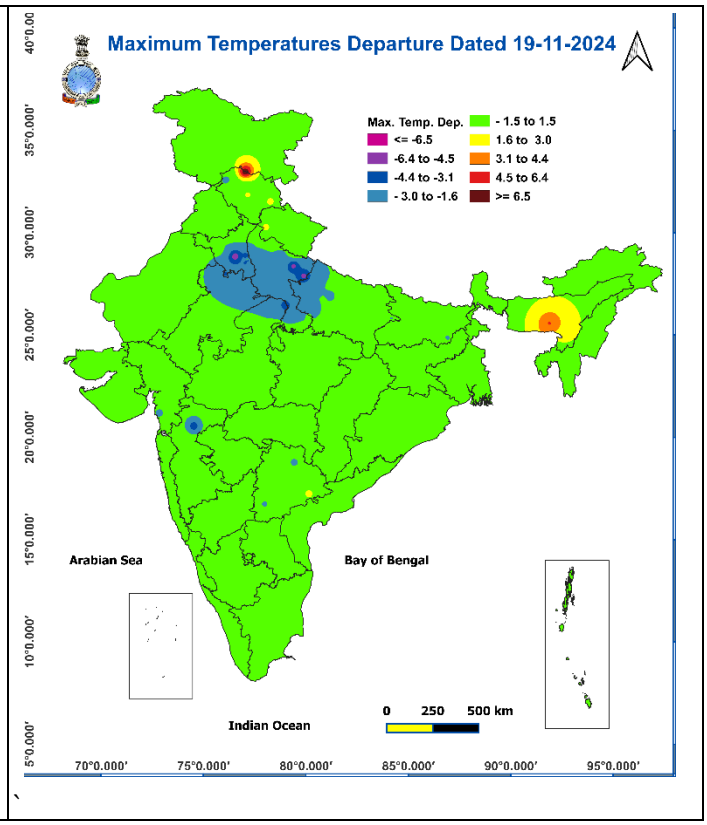


Fig. 3: Minimum Temperatures

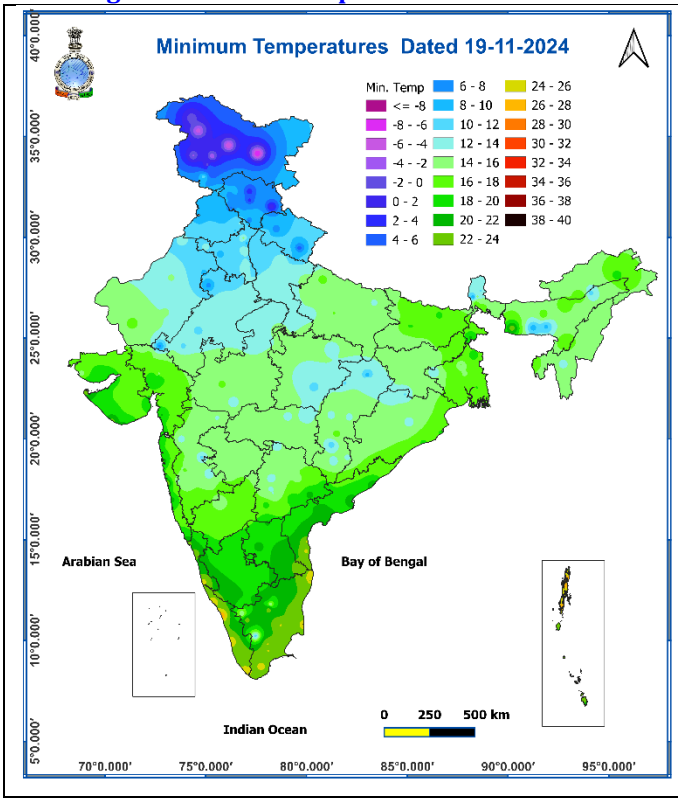


Fig. 4: Departure of Minimum Temperatures

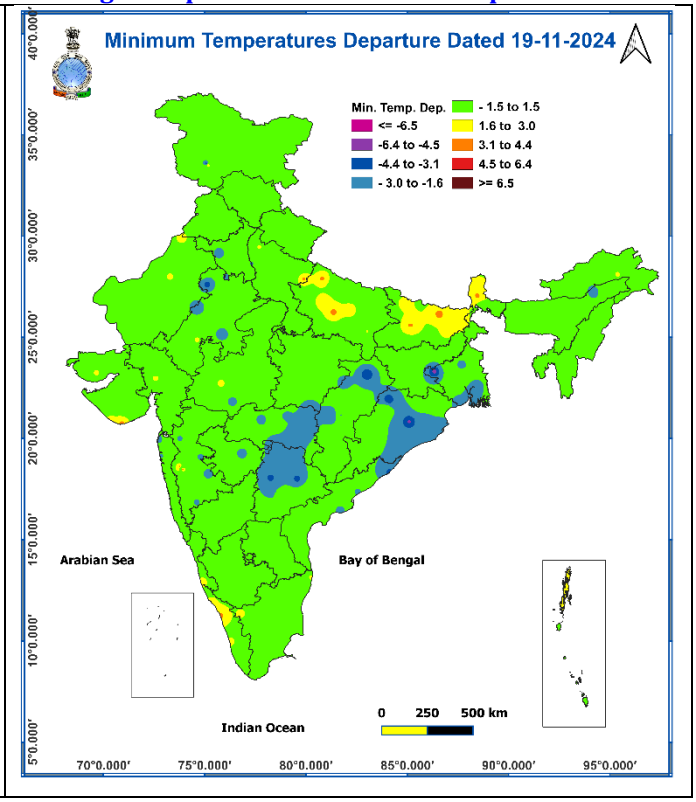


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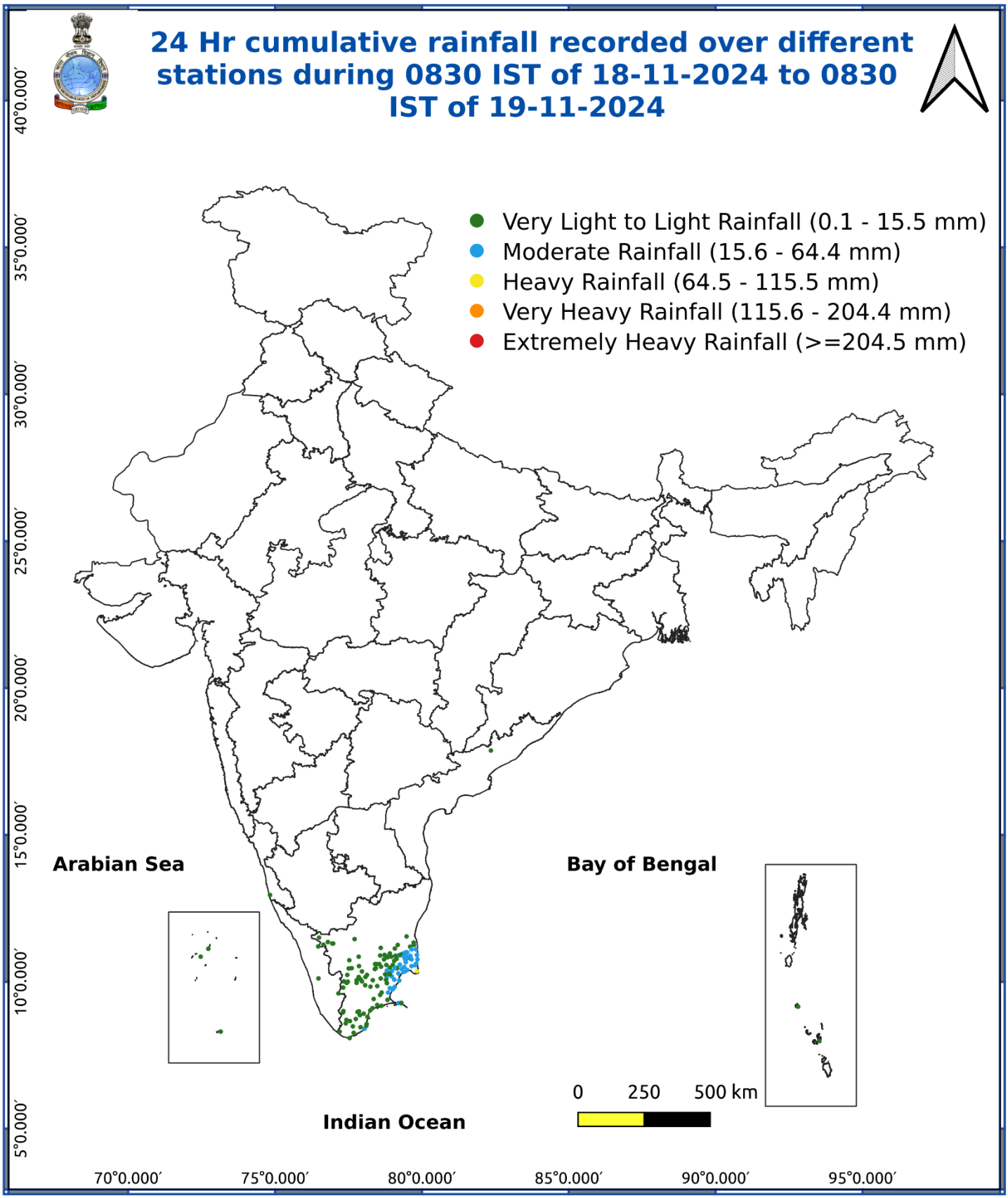
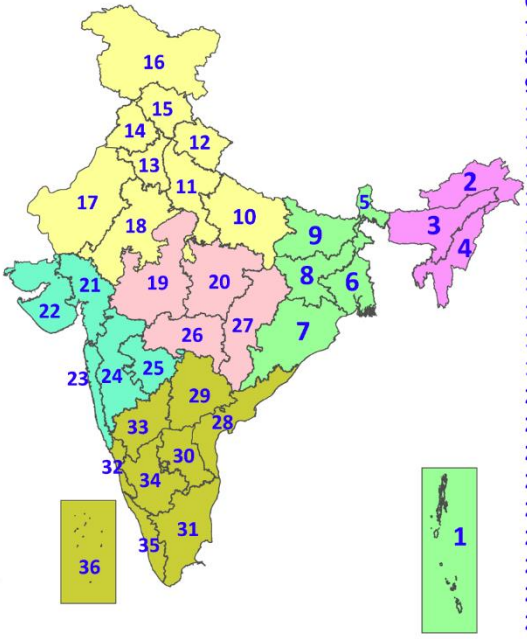
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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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)

* 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)