

Sunday, November 17, 2024
Time of Issue: 1400 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- ❖ A **cyclonic circulation** lies over Maldives & adjoining Equatorial Indian Ocean in lower tropospheric level.
- ❖ A **trough** runs from the above **cyclonic circulation** over Maldives & adjoining Equatorial Indian Ocean to southeast Arabian Sea in lower tropospheric levels.

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 on 17th & 18th November, 2024.
- ✓ Light to moderate rainfall at many places over Andaman & Nicobar Islands during the week.
- ✓ **Isolated heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe on 17th November 2024.
- ✓ **Dense to very dense fog** conditions very likely to prevail in isolated pockets of Punjab, Haryana-Chandigarh, North Rajasthan, north Uttar Pradesh and Bihar in late night of 17th/early morning of 18th and dense fog for subsequent 24 hours. **Dense fog conditions** is very likely to prevail in late night/early morning hours in isolated pockets of Himachal Pradesh during next 5 days; Sub-Himalayan West Bengal & Sikkim and west Assam & Meghalaya in late night of 17th/early morning of 18th November.
- ✓ Thunderstorm accompanied with lightning & squally wind speed 30 kmph – 40 kmph very likely over south east Arabian sea, Lakshadweep area, Comorin area and south Andaman Sea and Nicobar area.

ii. 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 **markedly above normal (5°C -6°C)** at few places over Madhya Maharashtra; at isolated places over Konkan & Goa; **appreciably above normal (3°C to 5°C)** at few places over North Interior Karnataka; at isolated places over Punjab, West Uttar Pradesh, Bihar, Marathwada, Coastal Karnataka; **above normal (2°C to 3°C)** at most places over South Interior Karnataka; at many places over Rayalaseema; at a few places over Telangana, Kerala & Mahe; at isolated places over Rajasthan, Gujarat state, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim. These are **below normal (-2°C to -3°C)** at isolated places over East Madhya Pradesh, Chhattisgarh, Odisha, Jharkhand, Gangetic West Bengal and near normal over rest parts of the country. Today, the **lowest minimum temperature of 11.8°C** is reported at **Delhi Ridge (Delhi)** over the plains of the country.

Forecast of temperature:

- ❖ Gradual fall in minimum temperatures by 2-3°C very likely over Northwest India during next 5 days.
- ❖ No large Change in minimum temperatures very likely over Central India during next 3 days and gradual fall by 2-3°C thereafter.
- ❖ No large Change in minimum temperatures over East India during next 5 days
- ❖ Gradual fall in minimum temperatures by 2-4°C very likely over Maharashtra Region during next 5 days and No large Change in minimum temperatures over Gujarat State during next 2 days and gradual fall by 2-3°C subsequent 2 days.

iii. Weather forecast over Delhi/NCR during 17th Nov. to 20th Nov. 2024

There has been a slight fall in maximum temperatures over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi are in the range of 28 to 30°C and 12 to 17°C respectively. The maximum temperature was above normal by 1°C and the minimum temperature was above normal by 4°C over most places. Mainly smog condition with predominant surface wind from west/northwest direction with wind speed reaching 06 to 08 kmph prevailed during past 24hr. Shallow fog reported at Palam airport during early morning hours. Palam airport recorded lowest visibility 500 m during 0830 to 0900 hours IST which improved thereafter becoming 600m at 0930 hours IST. Safdarjung airport recorded lowest visibility 300m during 0700 hours to 0900 IST which improved thereafter becoming 400m at 0930 hours IST. Mainly smog condition with wind speed less than 06 kmph northwest direction prevailed over the region in the forenoon today.

Weather Forecast:

17.11.2024: Mainly clear sky. The predominant surface wind is likely to be northwest with wind speed upto 06-10 kmph till evening. It would decrease thereafter becoming less than 08 kmph from north direction during night. Smog/shallow fog is likely in the evening/night.

18.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 06 kmph during morning hours. Smog/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 08 kmph from northwest direction during evening and night. Smog/ shallow fog is likely in the evening/night.

19.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 06 kmph during morning hours. Smog/moderate fog at few places is likely in the morning. The wind speed will gradually increase becoming 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.

20.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with wind speed less than 10 kmph during morning hours. Smog/moderate fog in the morning. The wind speed will increase thereafter becoming 10-12 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 08 kmph from northwest directions during evening and night. Smog/ shallow fog is likely in the evening/night.

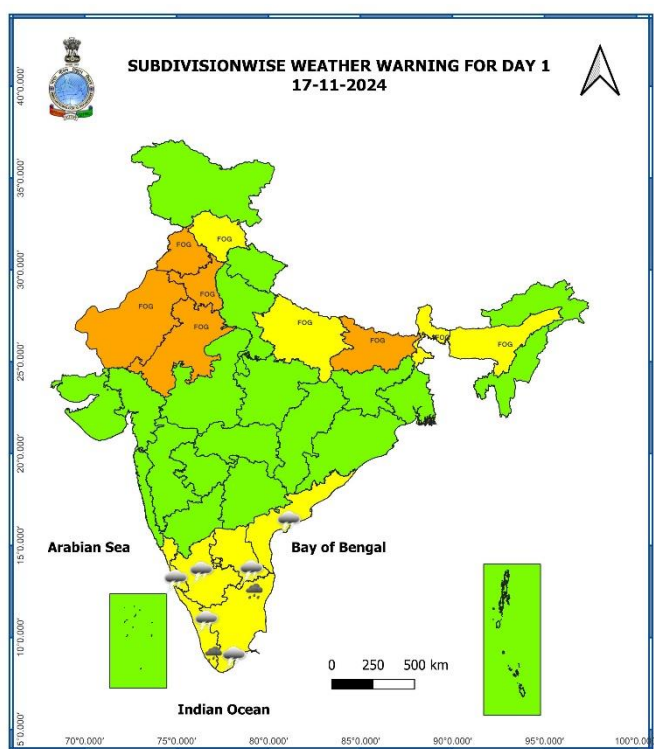
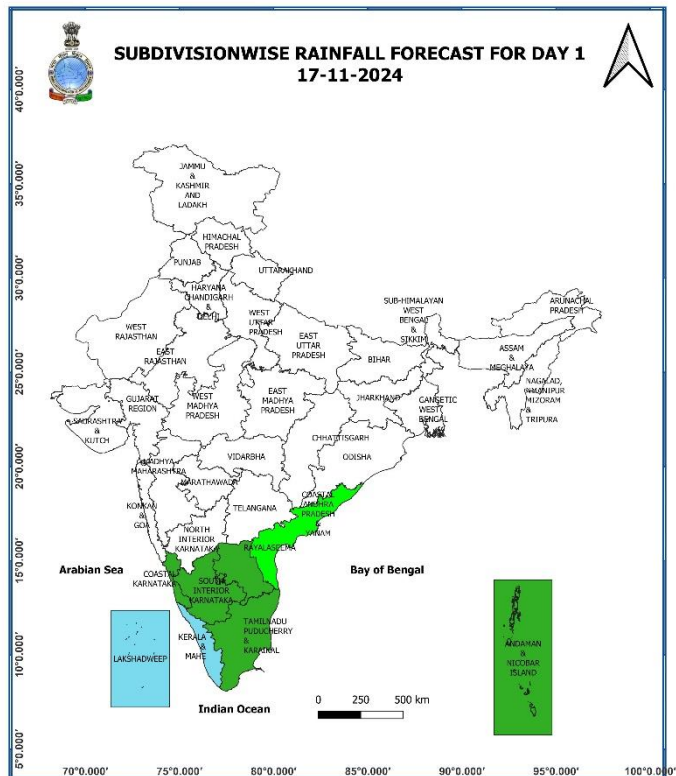
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most places** over Tamil Nadu, Puducherry & Karaikal; **at many places** over Kerala & Mahe; **at a few places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Rayalaseema, Lakshadweep and South Interior Karnataka; **at isolated places** over Punjab, Assam & Meghalaya, Andaman & Nicobar Islands, Coastal Andhra Pradesh & Yanam and Coastal & North Interior Karnataka.
- ❖ **Heavy rainfall recorded** (from 0830 hours IST of yesterday to 0830 hours IST of today): **Heavy rainfall** at isolated places over Rayalaseema and Tamil Nadu.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Rayalaseema:** Tirupati Aero (dist Tirupati) 10; **Tamil Nadu, Puducherry & Karaikal:** Nalumukku & Oothu 10, Vanamadevi & Vettikadu 9, Budalur, kakkachi & Cuddalore 8.
- ❖ **Fog conditions observed** (at 0830 hours IST of today): **Fog conditions observed** (at 0830-hours IST of today): **Dense to very dense fog** reported in isolated pockets of Punjab, Haryana, Chandigarh, north Rajasthan, northeast Uttar Pradesh and North Bihar.
- ❖ **Visibility reported** (at 0830 hours IST of today) (<500metres): **Punjab:** Amritsar & Patiala 0 each; **Haryana-Chandigarh-Delhi:** Chandigarh & Nahan 0 each, Hissar & Bhiwani 200 each; **West Rajasthan:** Churu 200; **East Rajasthan:** Pilani 0; **East Uttar Pradesh:** Gorakhpur 0; **Bihar:** Supaul 0 & Purnia 200.
- ❖ **Minimum Temperature Departures (as on 17-11-2024):** Minimum temperatures are **markedly above normal (5.1°C or more)** at isolated places over West Rajasthan; **appreciably above normal (3.1°C to 5.0°C)** at many places over Punjab; at a few places over Madhya Maharashtra and Delhi ; at isolated places over West Uttar Pradesh and Gujarat Region; **above normal (1.6°C to 3.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, East Uttar Pradesh, East Rajasthan, Bihar, Nagaland, Manipur, Mizoram & Tripura, East Madhya Pradesh, Saurashtra & Kutch, Coastal Andhra Pradesh & Yanam, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal and near normal over rest parts of the country. Today, **the lowest minimum temperature of 11.8°C** is reported at **Ridge (Delhi)** over the plains of the country. **(Fig.4)**
- ❖ **Maximum Temperature Departures (as on 16-11-2024):** Maximum temperatures were **above normal (1.6°C to 3.0°C)** at a few places over East Rajasthan, Telangana, Assam & Meghalaya; at isolated places over West Rajasthan, Uttar Pradesh, Madhya Pradesh, Gujarat state, Coastal Andhra Pradesh & Yanam, Kerala & Mahe. These were **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Bihar, Tamil Nadu, Puducherry & Karaikal; **below normal (-1.6°C to -3.0°C)** at isolated places over Haryana-Chandigarh, Gangetic West Bengal, Rayalaseema and near normal over rest parts of the country. Yesterday, **the highest maximum temperature of 36.6°C** was reported at **Karwar (Coastal Karnataka)** over the country. **(Fig. 2)**

Meteorological Analysis (Based on 0830 hours IST)

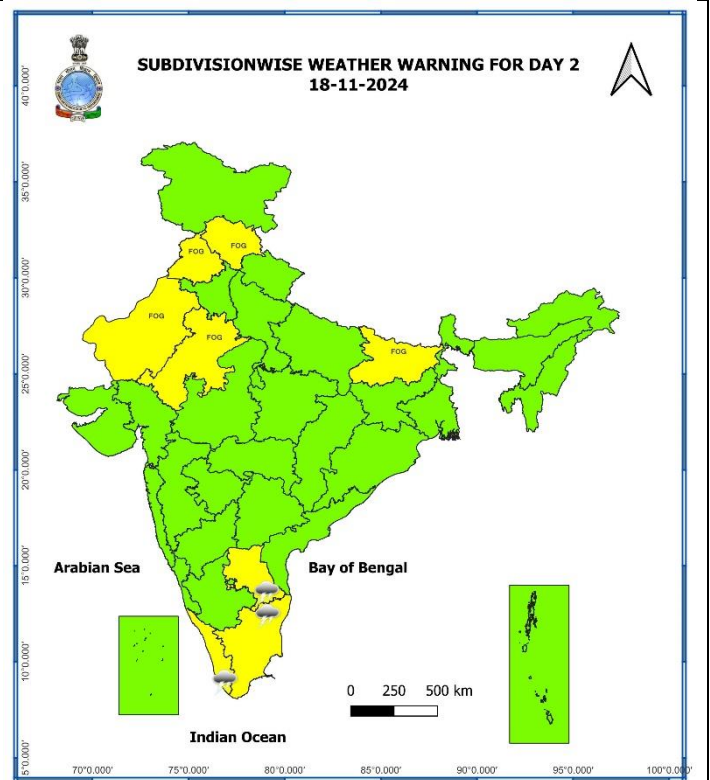
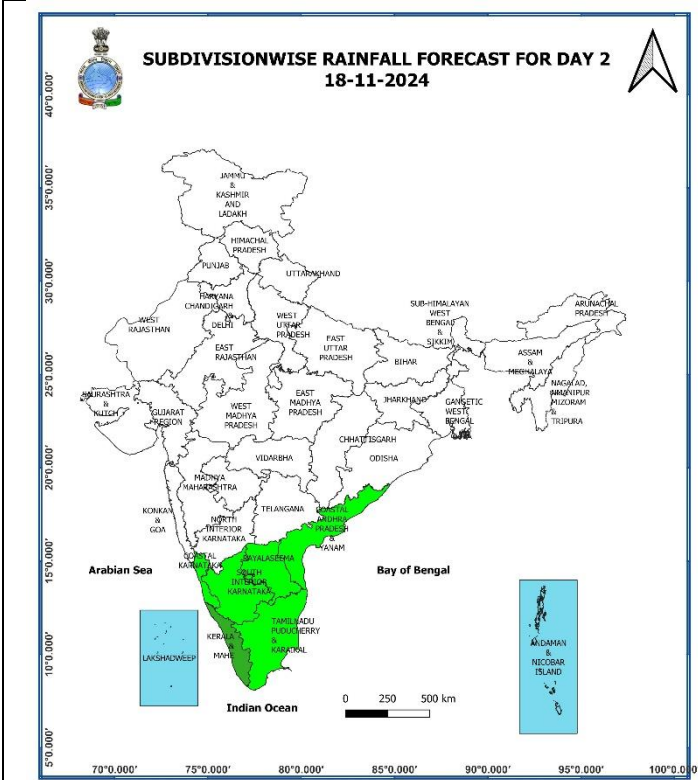
- ❖ A **cyclonic circulation** lies over Maldives & adjoining Equatorial Indian Ocean at 0.9 km above mean sea level.
- ❖ A **trough** runs from the above **cyclonic circulation** over Maldives & adjoining Equatorial Indian Ocean to southeast Arabian Sea at 0.9 km above mean sea level.
- ❖ A **cyclonic circulation** lies over south Bangladesh & neighbourhood at 1.5 km above mean sea level.
- ❖ **Jet Stream Winds** of the order upto 100 knots at 12.6 km above mean sea level are prevailing over North India.
- ❖ The **trough** from Comorin area to southwest Bay of Bengal has become less marked.
- ❖ The **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 82°E to the north of Lat. 32°N has moved away east-northeastwards.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 24th November, 2024)



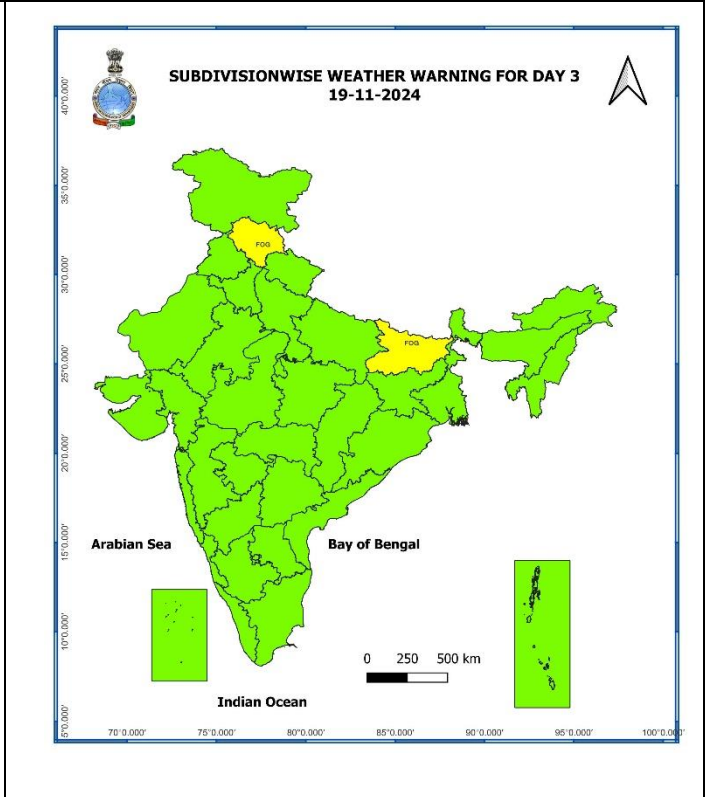
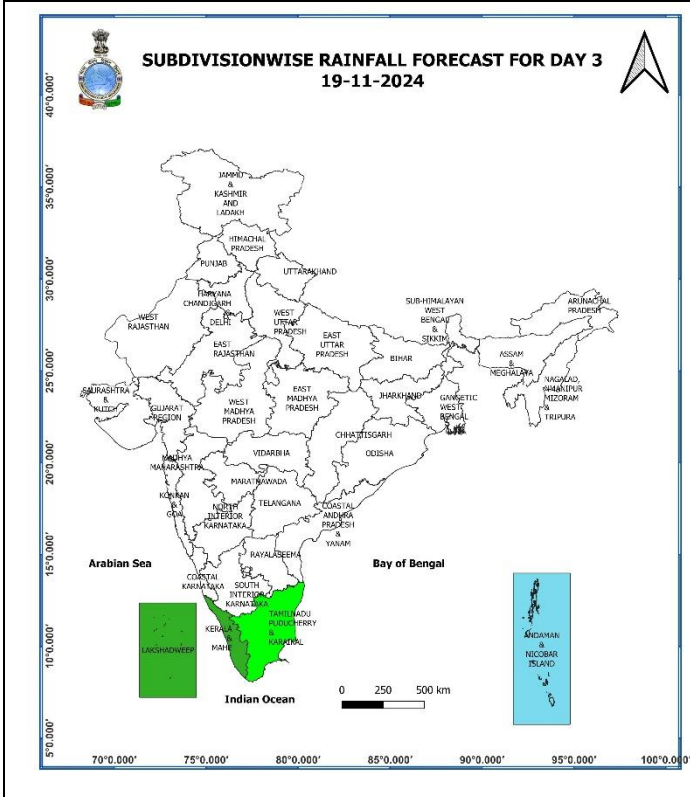
17 November (Day 1):

- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ **Dense to Very Dense fog conditions** very likely in isolated pockets of Punjab, Haryana-Chandigarh, north Rajasthan and terai belt of Bihar; **Dense fog conditions** very likely in isolated pockets of Himachal Pradesh (Bilaspur & adjoining area), terai belt of East Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim and west Assam & Meghalaya in night/morning hours.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Coastal Andhra Pradesh & Yanam, Rayalaseema, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and Coastal & South Interior Karnataka.
- ❖ **Thunderstorm accompanied with lightning & Squally winds speed 30-40 kmph** very likely over southeast Arabian Sea, Comorin area, Lakshadweep area & south Andaman Sea & Nicobar Islands. Fishermen are advised not to venture into these areas.



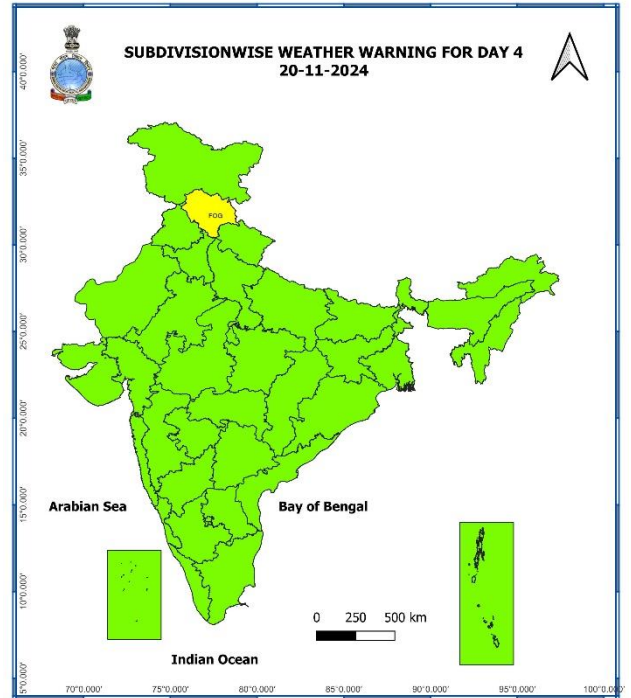
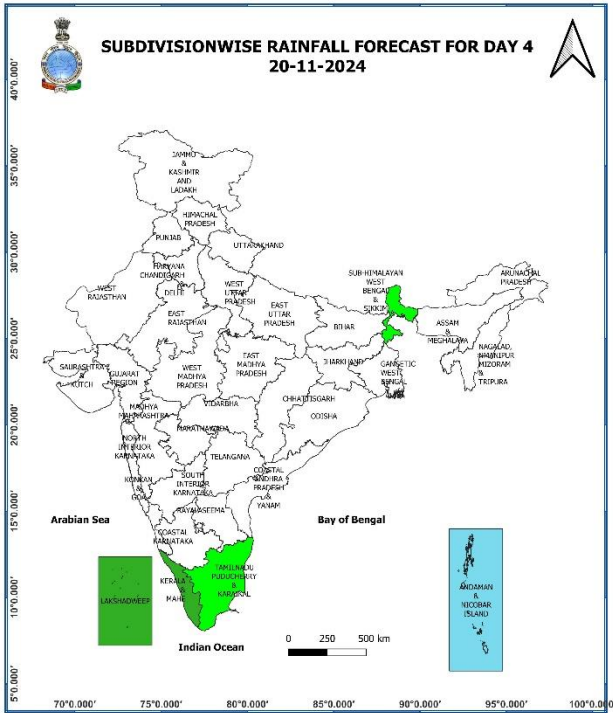
18 November (Day 2):

- ❖ **Dense fog conditions** very likely in isolated pockets of Himachal Pradesh (Bilaspur & adjoining area), Punjab, north Rajasthan and terai belt of Bihar; **Shallow to Moderate fog** in isolated pockets of west Assam & Meghalaya in night/morning hours.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Rayalaseema, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.



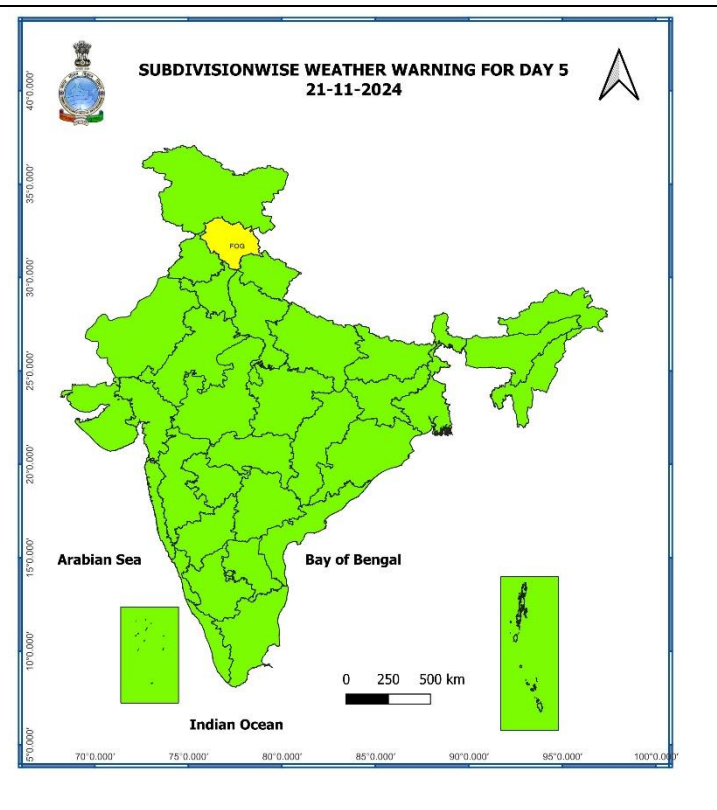
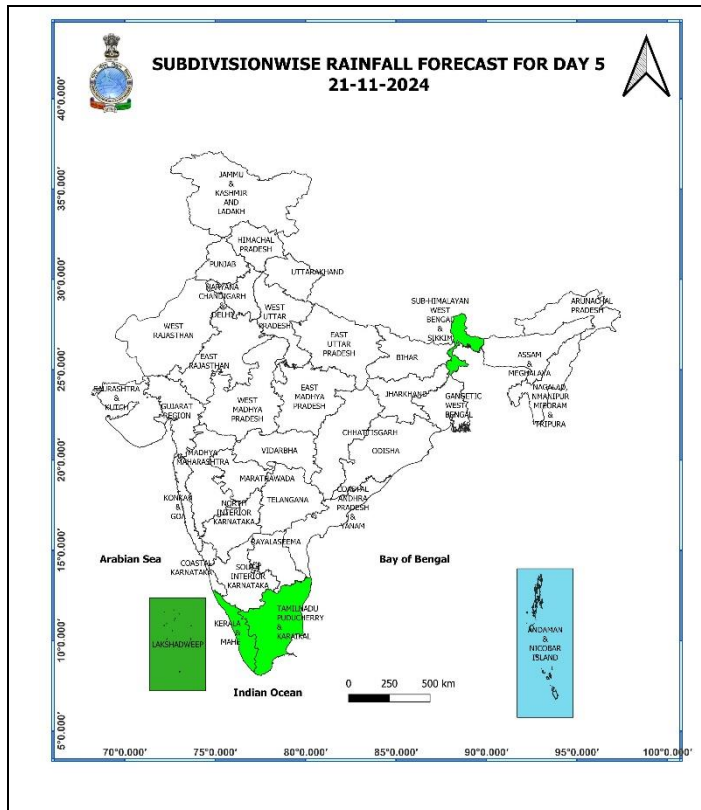
19 November (Day 3):

- ❖ **Dense fog conditions** very likely in isolated pockets of Himachal Pradesh (Bilaspur & adjoining area) and terai belt of Bihar; **Shallow to Moderate fog** in isolated pockets of west Assam & Meghalaya in night/morning hours.



20 November (Day 4):

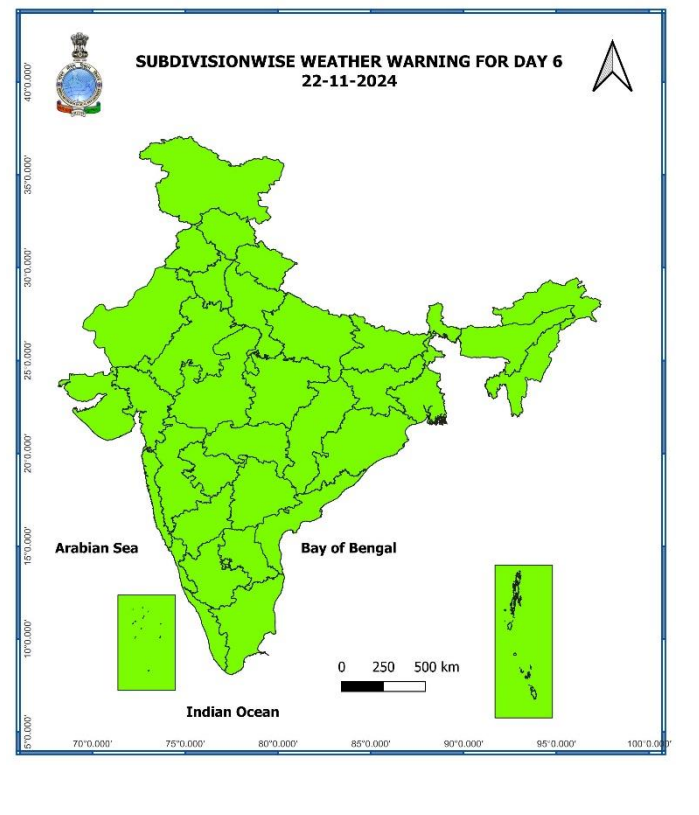
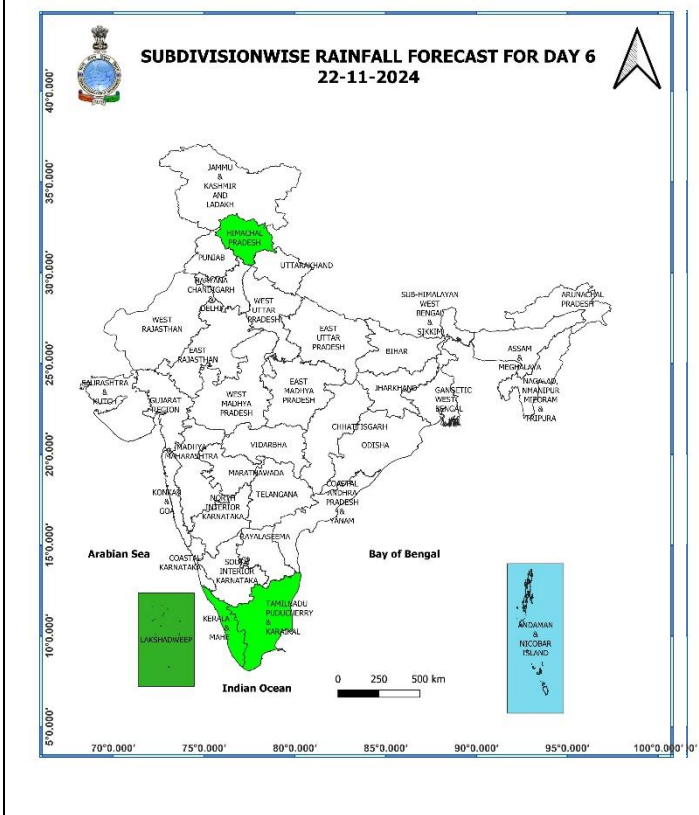
- ❖ **Dense fog conditions** likely in isolated pockets of Himachal Pradesh; **Shallow to Moderate fog** in isolated pockets of west Assam & Meghalaya in night/morning hours.



21 November (Day 5):

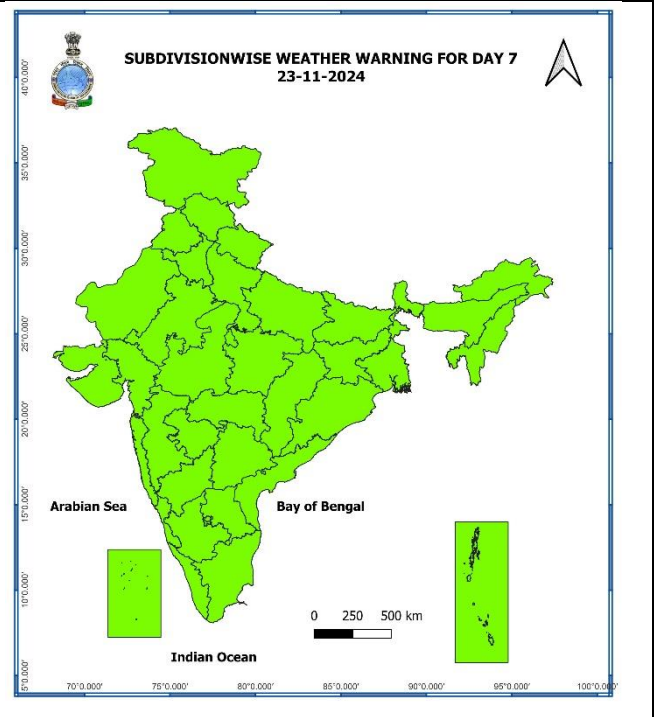
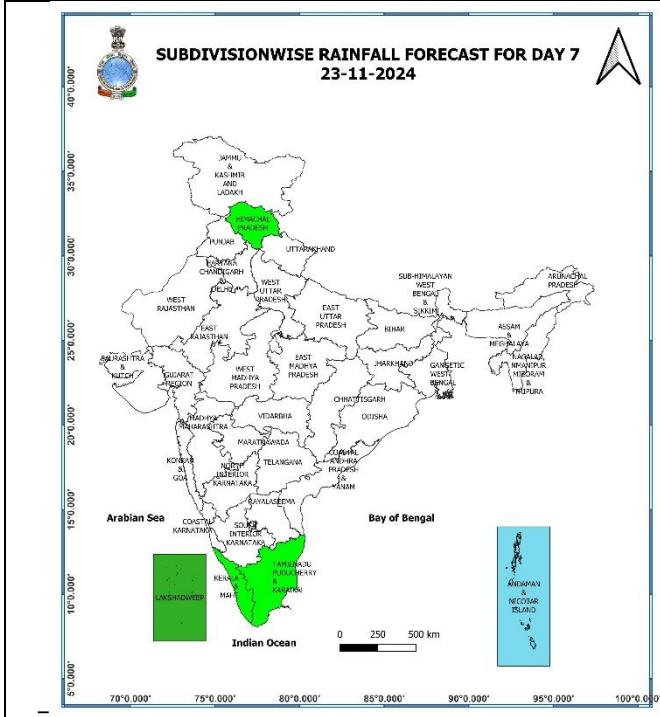
Dense fog conditions likely in isolated pockets of Himachal Pradesh; **Shallow to Moderate fog** in isolated pockets of west Assam & Meghalaya in night/morning hours.

* 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)



22 November (Day 6):

❖ **No Warning**



23 November (Day 7):

❖ **No Warning**

Weather Outlook for subsequent 3 days (During 23rd November – 25th 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.

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

- ✓ In **Tamil Nadu**, provide adequate drainage 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.
- ✓ In **Kerala**, provide proper drainage in rice, ginger and vegetable fields. Provide mechanical support to banana plants and strengthen the vegetable pandals.

Impact expected due to dense to very dense fog in the late night /morning hours over parts of Northwest (Punjab, Haryana-Chandigarh-Delhi, East Uttar Pradesh, north Rajasthan), East (Bihar and Sub-Himalayan West Bengal & Sikkim) & Northeast India (Assam & Meghalaya) 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

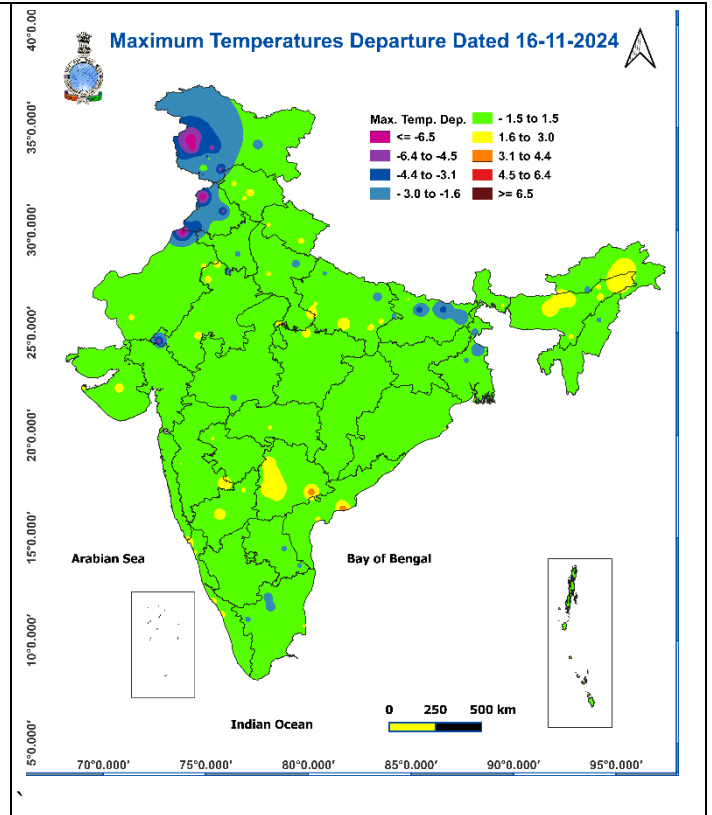
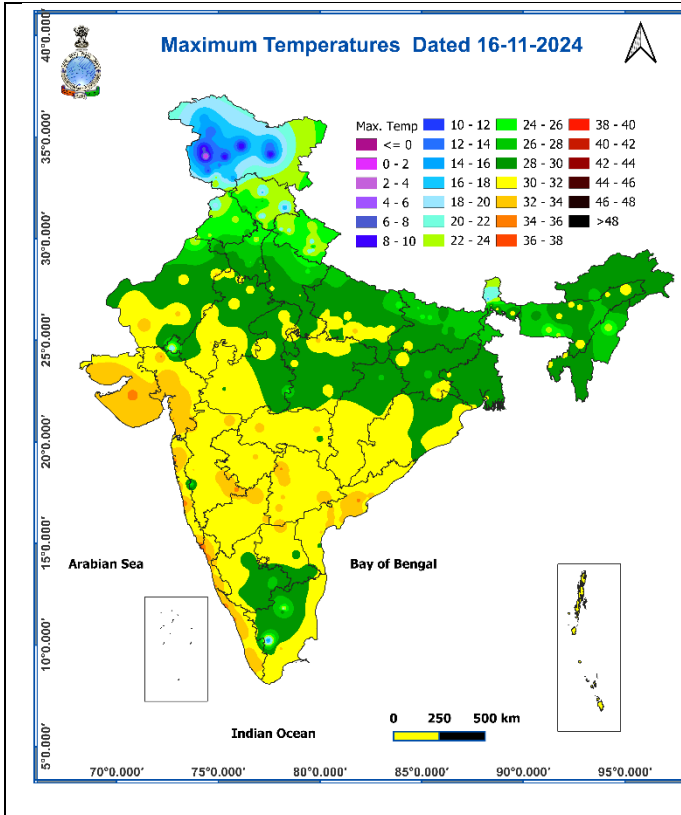


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

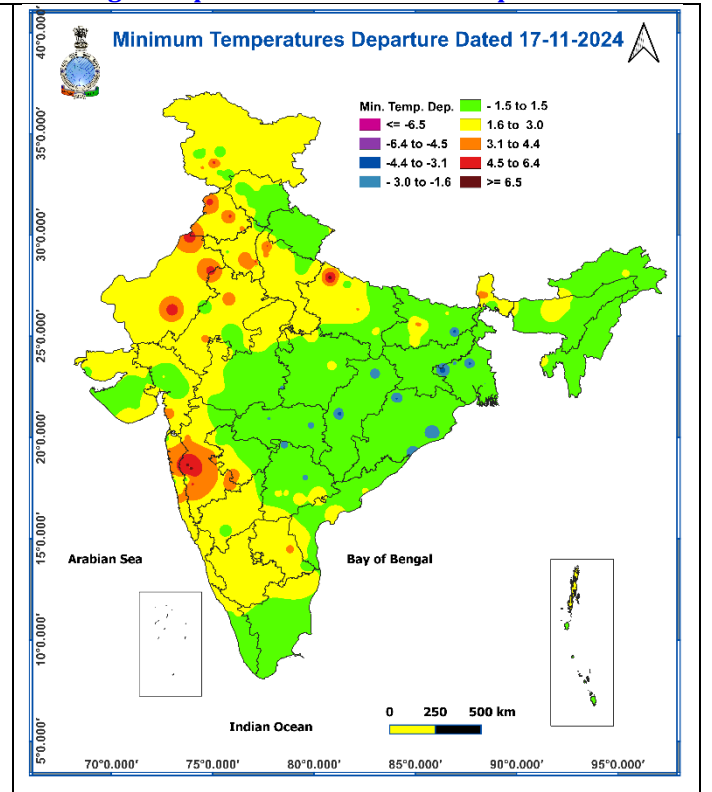
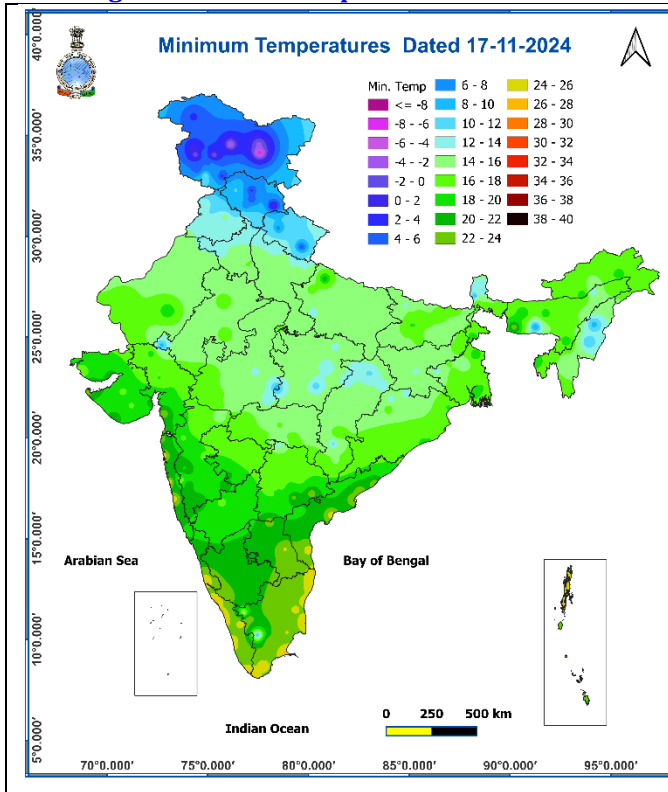
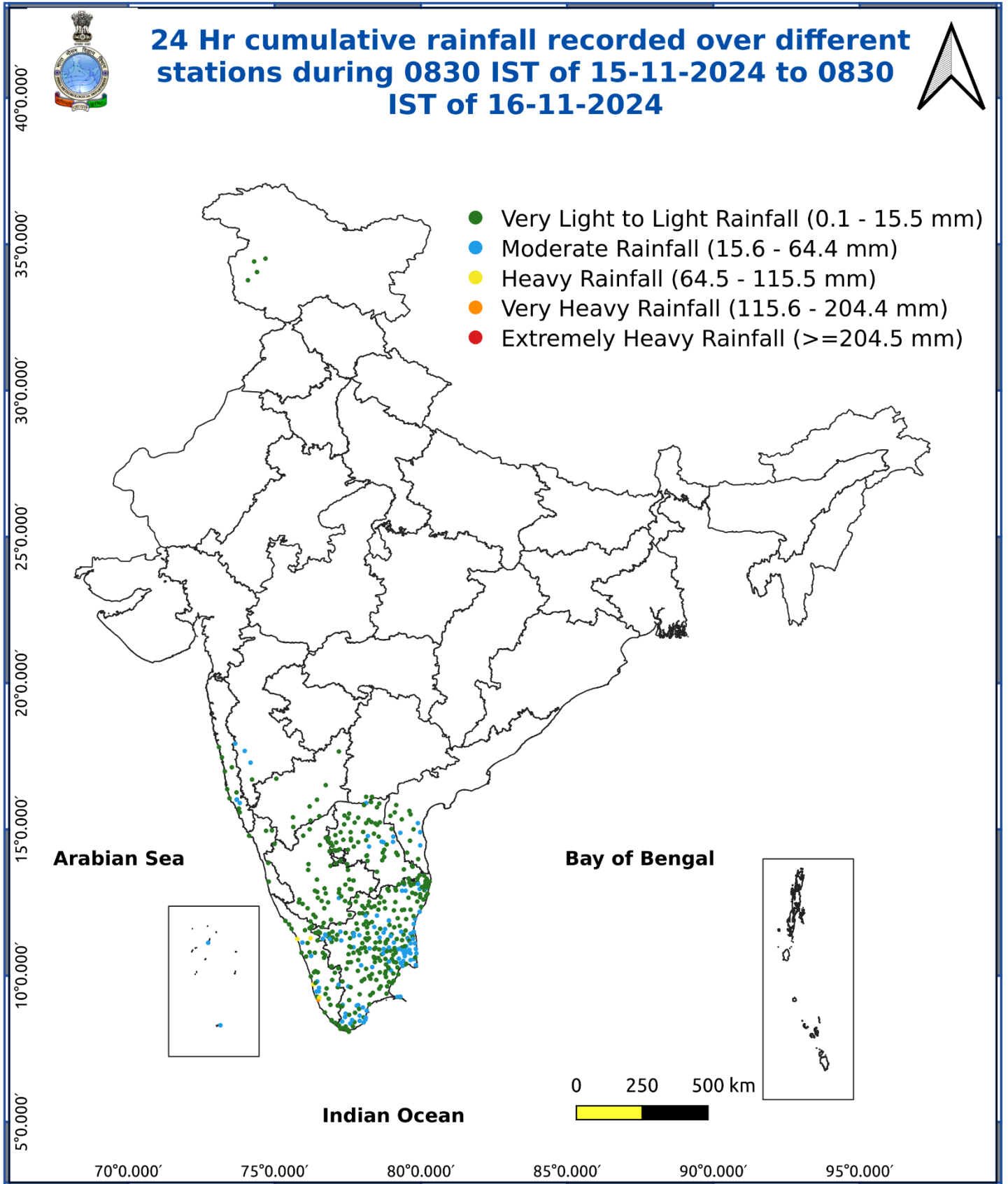


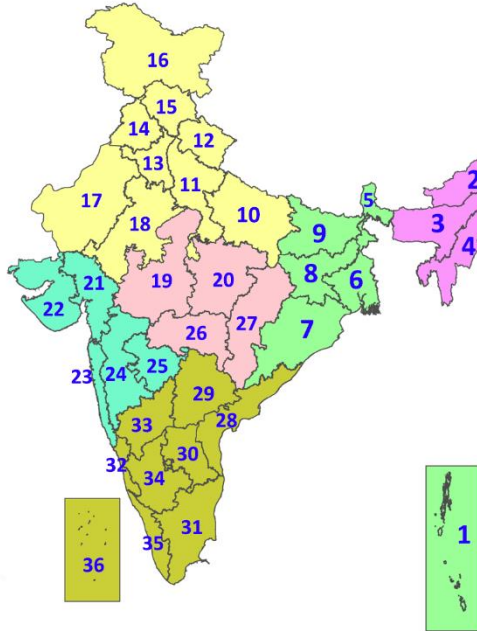
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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 *	<p>Heavy: 64.5 to 115.5 mm/cm *</p> <p>Very Heavy: 115.6 to 204.4 mm/cm*</p> <p>Extremely Heavy: > 204.4 mm/cm *</p>
Heat Wave	<p>When maximum temperature of a station reaches $\geq 40^\circ\text{C}$ for plains and $\geq 30^\circ\text{C}$ for hilly regions</p> <p>(a) Based on Departure from normal</p> <p>Heat Wave: Maximum Temperature Departure from normal 4.5°C to 6.4°C.</p> <p>Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^\circ\text{C}$</p> <p>(b). Based on Actual maximum temperature</p> <p>Heat Wave: When actual maximum temperature $\geq 45^\circ\text{C}$.</p> <p>Severe Heat Wave: When actual maximum temperature $\geq 47^\circ\text{C}$</p> <p>(c). Criteria for heat wave for coastal stations</p> <p>When maximum temperature departure is $>4.5^\circ\text{C}$ from normal. Heat Wave may be described provided maximum temperature $\geq 37^\circ\text{C}$</p>
Warm Night	<p>When maximum temperature remains 40°C</p> <p>Warm Night: When minimum temperature departure 4.5°C to 6.4°C.</p> <p>Severe Warm Night: When minimum temperature departure $>6.4^\circ\text{C}$.</p>
Cold Wave	<p>When minimum temperature of a station $\leq 10^\circ\text{C}$ for plains and $\leq 0^\circ\text{C}$ for hilly regions.</p> <p>(a). Based on departure</p> <p>Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C.</p> <p>Severe Cold Wave: Minimum Temperature Departure from normal $\leq -6.5^\circ\text{C}$</p> <p>(b) Based on actual Minimum Temperature (for Plains only)</p> <p>Cold Wave : When Minimum Temperature is $\leq 4.0^\circ\text{C}$</p> <p>Severe Cold Wave: When Minimum Temperature is $\leq 2.0^\circ\text{C}$</p> <p>(c) For Coastal Stations</p> <p>When Minimum Temperature departure is $\leq -4.5^\circ\text{C}$ & actual Minimum Temperature is $\leq 15^\circ\text{C}$</p>
Cold Day	<p>When minimum temperature of a station $\leq 10^\circ\text{C}$ for plains and $\leq 0^\circ\text{C}$ for hilly regions</p> <p>Based on departure</p> <p>Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C.</p> <p>Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^\circ\text{C}$</p>
Fog	<p>Phenomenon of small droplets suspended in air and the horizontal visibility $< 1\text{km}$</p> <p>Moderate Fog: When the visibility between 500-200 metres</p> <p>Dense Fog: when the visibility between 50- 200 metres</p> <p>Very Dense Fog: when the visibility < 50 metres</p>
Thunderstorm	<p>Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)</p>
Dust/Sand Storm	<p>An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.</p>
Frost	<p>Ice deposits on ground</p> <p>Air temperature $\leq 4^\circ\text{C}$ (over Plains)</p>
Squall	<p>A strong wind that rises suddenly, lasts for atleast 1 minute.</p> <p>Moderate: Wind speed 52-61 kmph</p> <p>Severe: Wind speed 62-87 kmph</p> <p>Very Severe: Wind speed >87 kmph</p>
Sea State	<p>Effect of various waves in the sea over specific area</p> <p>Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre</p> <p>High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre</p> <p>Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre</p>
Cyclone	<p>Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)</p> <p>Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)</p> <p>Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)</p> <p>Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)</p> <p>Super Cyclone Strom: Wind speed >220 kmph (>119 knots)</p>