राष्ट्रीय मौसम पूर्वानुमान केन्द्र
भारत मौसम विज्ञान विभाग
पृथ्वी विज्ञान मंत्रालय

National Weather Forecasting Centre
India Meteorological Department
Ministry of Earth Sciences

Wednesday, November 13, 2024
Time of Issue: 0800 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- A low pressure area lies over southwest & adjoining westcentral Bay of Bengal off north Tamil Nadu & adjoining south Andhra Pradesh coasts.
- A fresh Western Disturbance is likely to affect the Western Himalayan region from 14th November, 2024.

Forecast & Warnings (upto 7 days):

- ✓ Light to moderate rainfall at a few places accompanied with isolated thunderstorm and lightning very likely over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam and Rayalaseema during 13th-16th November.
- ✓ **Isolated heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal during 13th – 16th; Kerala & Mahe during 13th-17th; Coastal Andhra Pradesh & Yanam and Rayalaseema on 13th & 14th; South Interior Karnataka during 13th – 15th November, 2024.
- ✓ **Dense to very dense fog** conditions very likely to prevail in late night/early morning hours in isolated pockets of Punjab till 14th morning hours and dense fog for subsequent 2 days; Dense fog conditions very likely to prevail in late night/early morning hours in isolated pockets over Himachal Pradesh till 17th morning; Haryana & Uttar Pradesh till 15th November, 2024.

ii. Temperature conditions and Forecast:

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

No significant change in minimum temperature observed over most parts of the country during past 24 hours. Minimum temperatures continue to be above normal by 5-7°C at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, north Haryana, Punjab, northwest Uttar Pradesh & parts of northwest Rajasthan; above normal by 3-5°C over remaining parts of northwest India; most parts of Bihar, Jharkhand, Gangetic West Bengal and in isolated parts of north Odisha, Chhattisgarh and adjoining central India and near normal over remaining parts of the country. Yesterday, **the lowest minimum temperature** of **12.4°C** was reported at Ajmer **(Rajasthan)** over the plains of the country.

Forecast of temperature:

- No significant change in minimum temperatures very likely over northwest and central India during next 5 days. Gradual fall in minimum temperatures by 3-4°C very likely over East India during next 4 days.

iii. Weather forecast over Delhi/NCR during 13th Nov. to 15th Nov. 2024

Past Weather:

There has been slight rise in maximum and minimum temperature over Delhi/NCR during past 24hrs. The Maximum and Minimum temperature over Delhi is in the range of 30-33°C and 14 -19°C respectively. The maximum temperature was above normal by 2 –5°C over the region and minimum temperature was above normal by 4 -5°C over most places in the region.

Weather Forecast:

13.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Dense fog 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/ mist is likely in the evening/night.

14.11.2024: Mainly clear sky. The predominant surface wind is likely to be variable with speed less than 06 kmph during morning hours. Smog/mist/ shallow fog in the morning. The wind speed will gradually increase becoming 08- 10 kmph from north/northwest direction during afternoon. It will decrease thereafter becoming less than 06 kmph from northwest direction during evening and night. Smog/ mist is likely in the evening/night.

15.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with wind speed less than 08 kmph during morning hours. Smog/mist/ shallow fog in the morning. The wind speed will increase thereafter becoming 10 - 15 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 10 kmph from northwest directions during evening and night. Smog/ mist is likely in the evening/night.

Main Weather Observations:

- **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at a few places** over Coastal Andhra Pradesh & Yanam; **at isolated places** over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Rayalaseema, South Interior Karnataka, Odisha, Andaman & Nicobar Islands and Lakshadweep.

- **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Coastal Andhra Pradesh & Yanam:** Kavali-6, Ongole & Nellore-2 each.

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

- **Fog Observed (**at 0530 hours IST of today**)**: Dense to very Dense fog in isolated pockets of Punjab (Amritsar-0 m), West Uttar Pradesh (Hindon Airport 0 m); Dense fog in isolated pockets of Delhi (Palam 200 m) & Chandigarh (200 m).

- **Minimum Temperature Departures (as on 12-11-2024):** Minimum temperatures were **markedly above normal (5.1°C or more)** at isolated places over Punjab and Bihar; **appreciably above normal (3.1°C to 5.0°C)** at many places over Haryana-Chandigarh-Delhi and Uttar Pradesh; at a few places over West Rajasthan; at isolated places over Jammu-Kashmir Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand and East Rajasthan; **above normal (1.6°C to 3.0°C)** at many places over Himachal Pradesh and Jharkhand; at a few places over Madhya Pradesh, Chhattisgarh, West Bengal & Sikkim and Gujarat Region; at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura. Yesterday, **the lowest minimum temperature** of **12.4°C** was reported at **Ajmer (Rajasthan)** over the plains of the country. **(Fig.4)**

- **Maximum Temperature Departures (as on 12-11-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at a few places over Rajasthan and Delhi; at isolated places over West Uttar Pradesh, Gujarat state and Assam & Meghalaya; **above normal (1.6°C to 3.0°C)** at many places over East Madhya Pradesh; at a few places over East Uttar Pradesh, Odisha and Kerala & Mahe; at isolated places over Vidarbha, Chhattisgarh, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam, Coastal Karnataka and Tamil Nadu, Puducherry & Karaikal. Yesterday, **the highest maximum temperature** of **37.0°C** was reported at **Rajkot (Saurashtra & Kutch)** over the country. **(Fig. 2)**

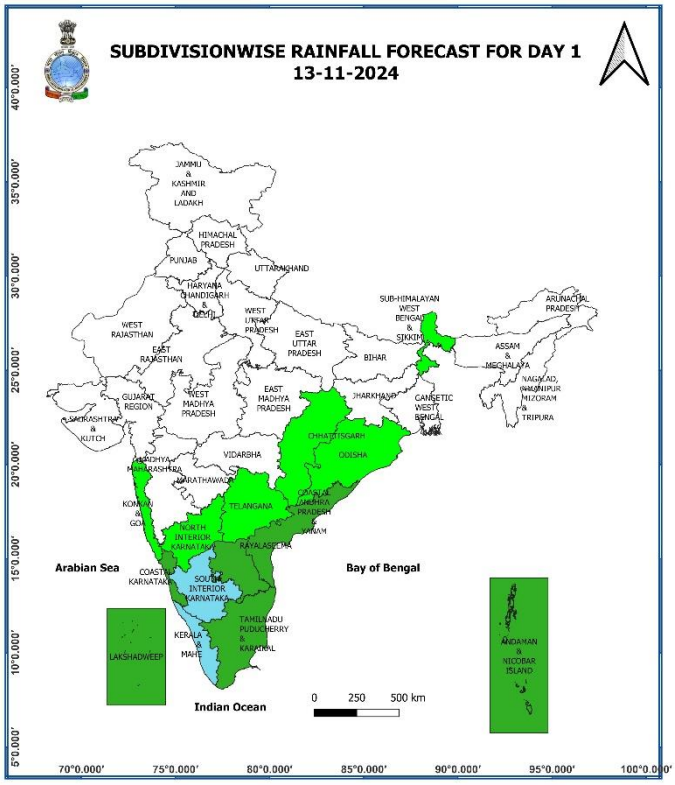
Meteorological Analysis (Based on 0530 hours IST)

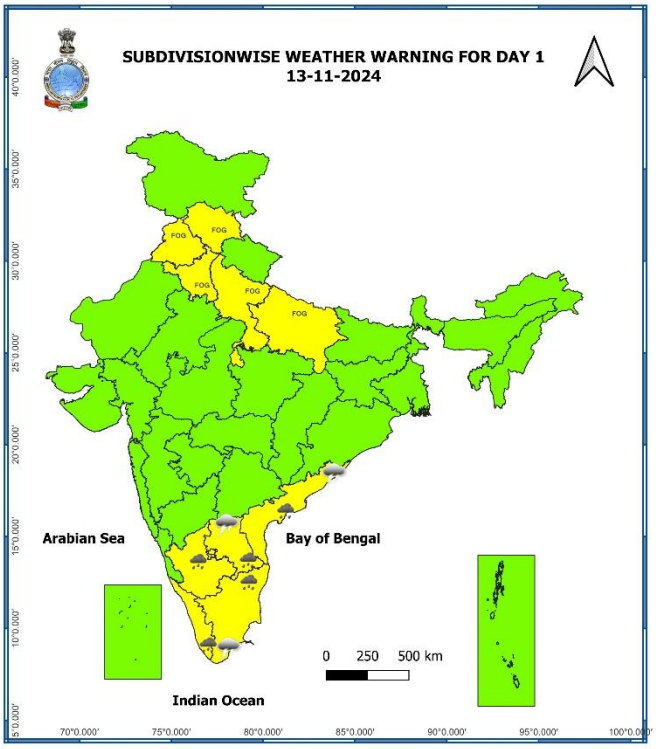
- The **low pressure area** over southwest & adjoining westcentral Bay of Bengal off north Tamil Nadu & adjoining south Andhra Pradesh coasts with the associated cyclonic circulation extending upto 4.5 km above mean sea level tilting southwestwards with height persists.

- The **cyclonic circulation** over southeast Arabian sea and adjoining Kerala coast extending upto 0.9 km above mean sea level persists.

- A **fresh Western Disturbance** is likely to affect Western Himalayan Region from 14th November, 2024.

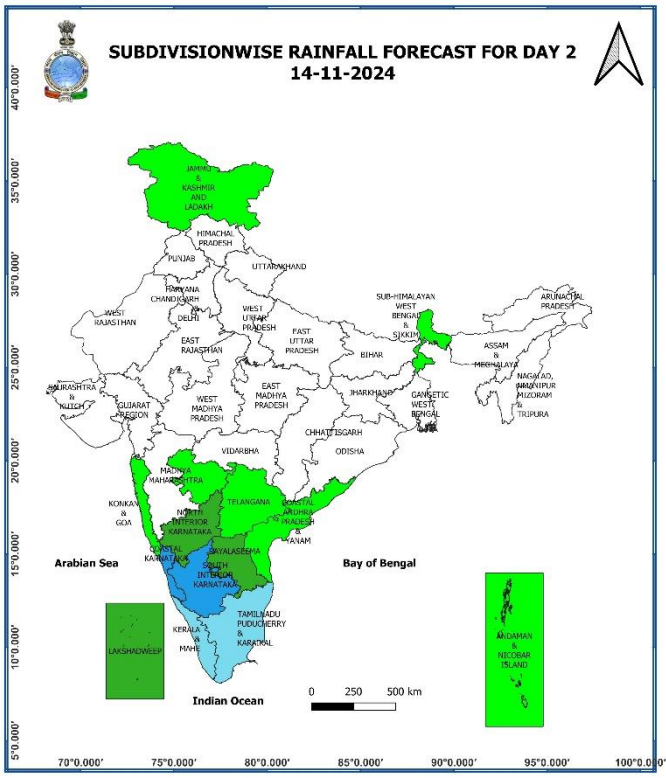
Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 20th November, 2024)

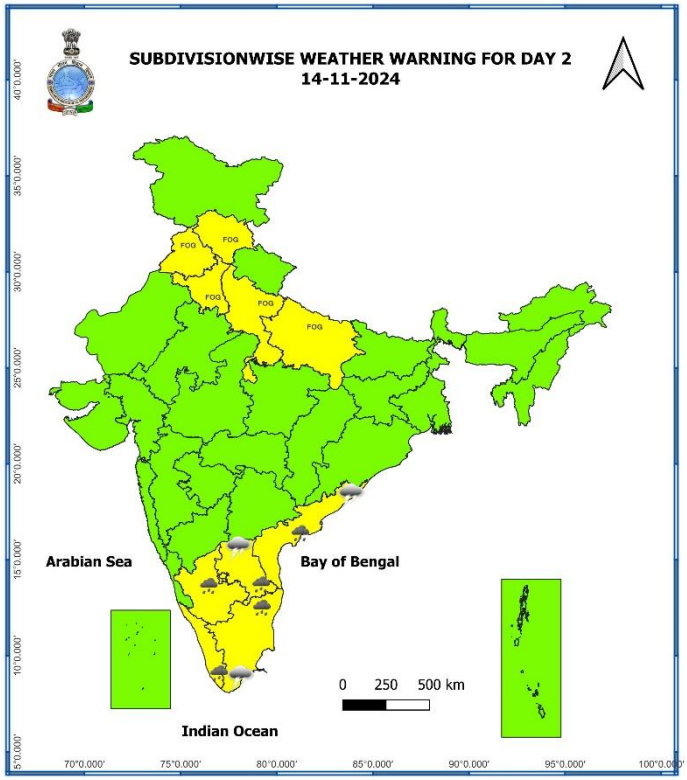




13 November (Day 1):

- **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Rayalaseema and South Interior Karnataka.
- **Dense to very dense fog conditions** very likely in isolated pockets of Punjab and **dense fog conditions** in isolated pockets of Himachal Pradesh, Haryana-Chandigarh-Delhi and Uttar Pradesh in the morning hours.
- **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, Coastal Karnataka and South Interior Karnataka.
- **Squally Weather with Wind Speed 35-45 Kmph Gusting To 55 Kmph** Over Parts of Southwest Bay Of Bengal, Along And Off Sri Lanka Coast, Along And Off Tamil Nadu, South Andhra Pradesh Coasts, Gulf Of Mannar and adjoining Comorin Area.



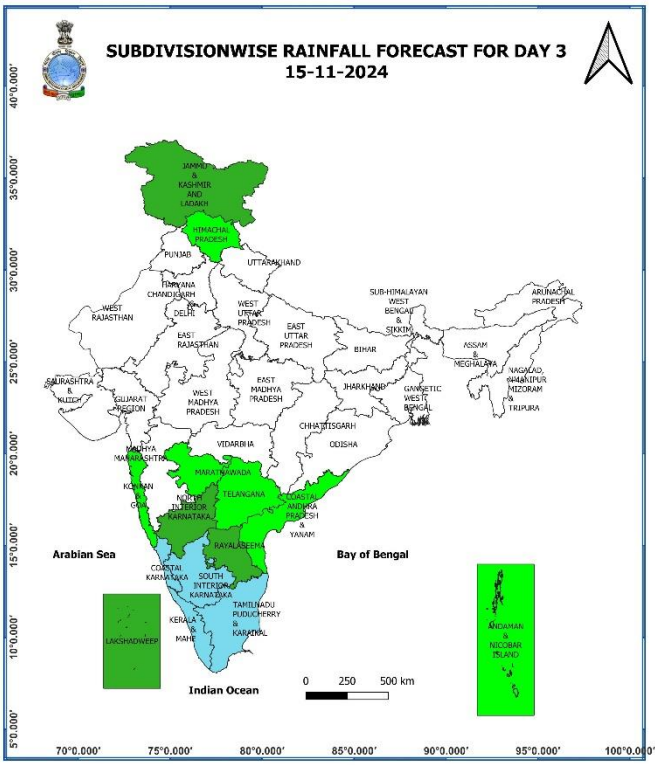


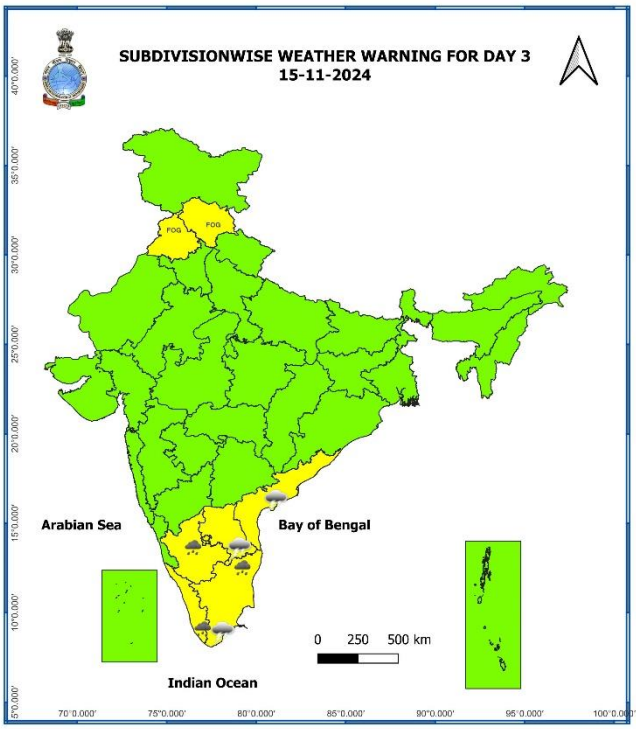
14 November (Day 2):

- **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, South Interior Karnataka, Rayalaseema, Coastal Andhra Pradesh & Yanam and Kerala & Mahe.

- **Dense fog** conditions very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi and Uttar Pradesh.

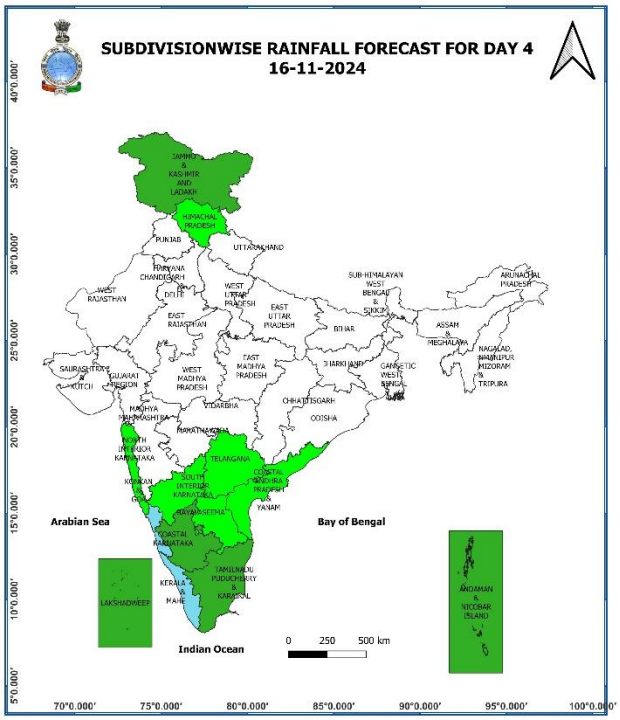
- **Thunderstorm accompanied with lightning** likely at isolated places over Konkan & Goa, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema and Karnataka.

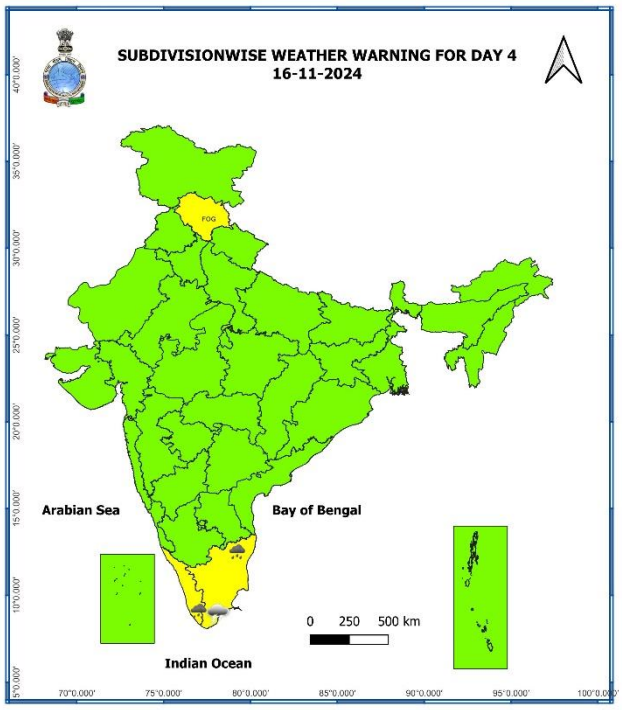




15 November (Day 3):

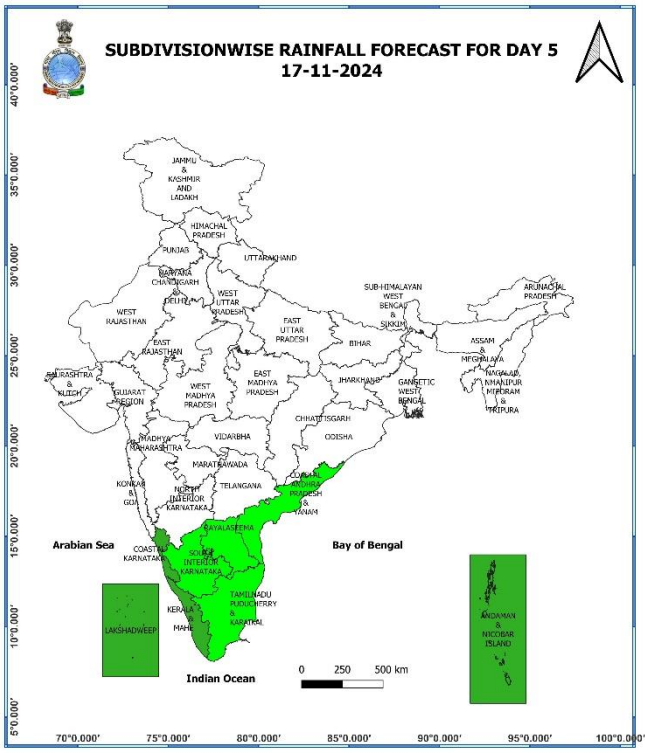
- **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, South Interior Karnataka and Kerala & Mahe.
- **Dense fog** conditions very likely in isolated pockets of Himachal Pradesh and Punjab.
- **Thunderstorm accompanied with lightning** likely at isolated places over Konkan & Goa, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema and South Interior Karnataka.

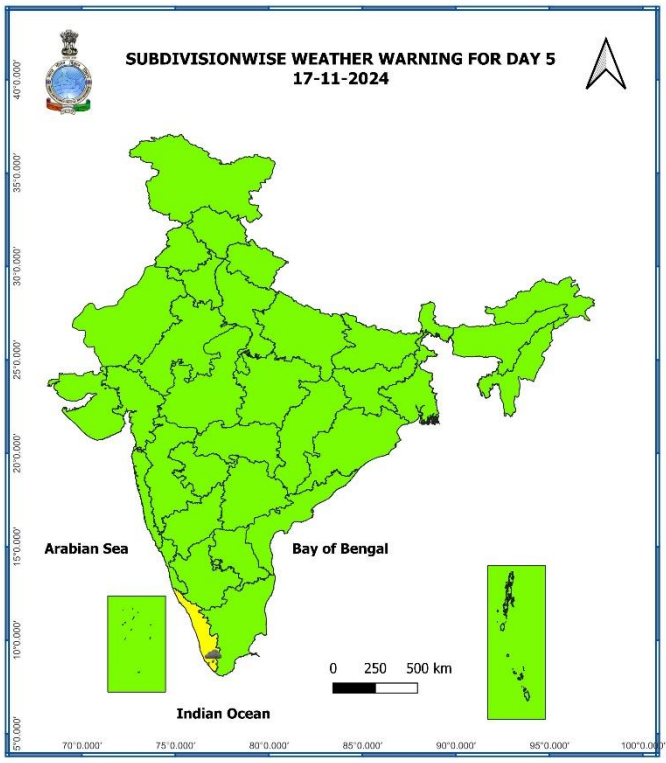




16 November (Day 4):

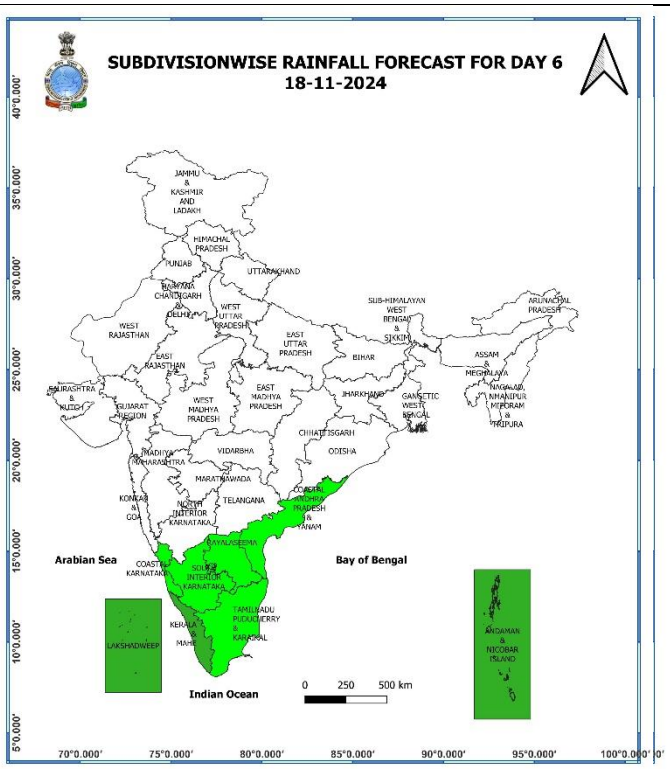
- **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- **Dense fog** conditions very likely in isolated pockets of Himachal Pradesh.
- **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

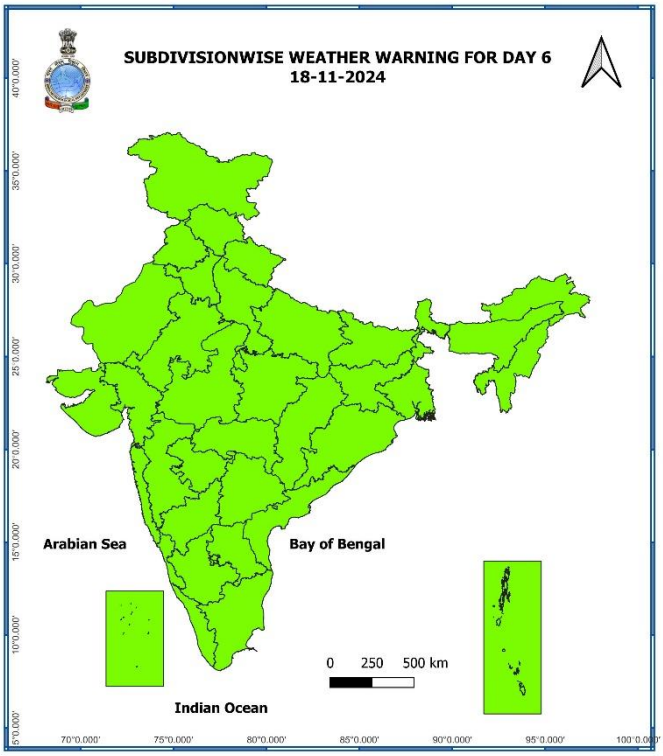




17 November (Day 5):

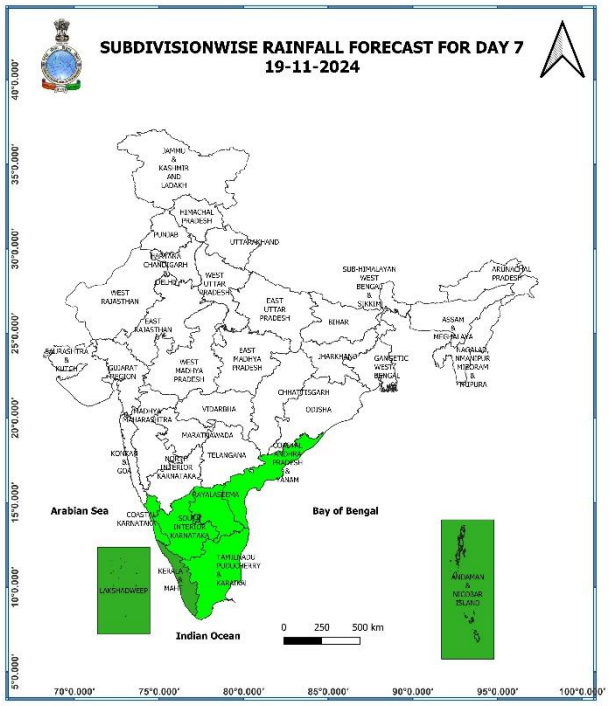
❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Kerala & Mahe.

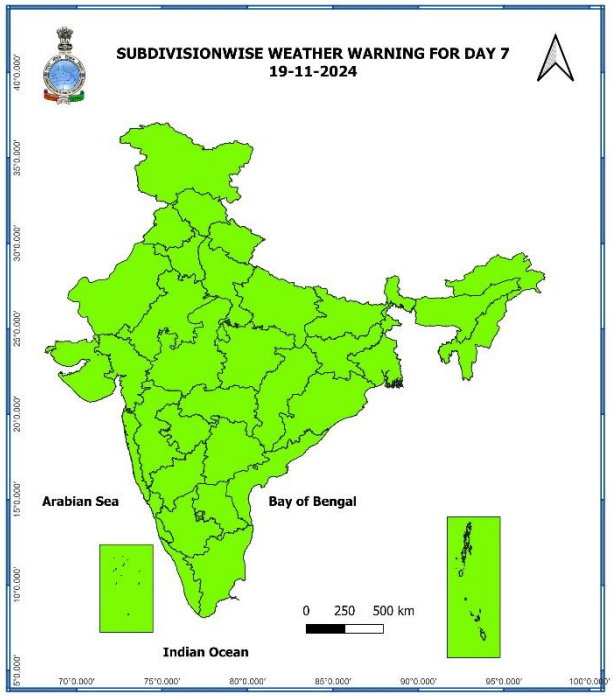




18 November (Day 6):

- **No Warning**





19 November (Day 7):

- **No Warning**

Weather Outlook for subsequent 3 days (During 20th November – 22nd 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 various parts of the country:

- ✓ Make arrangements to drain out excess water from the standing crop fields in Tamilnadu, Kerala, South Interior Karnataka and Andhra Pradesh.
- ✓ Keep the harvested produce at safer places.
- ✓ Provide mechanical support to horticultural crops and staking to vegetables.

Fig. 1: Maximum Temperatures

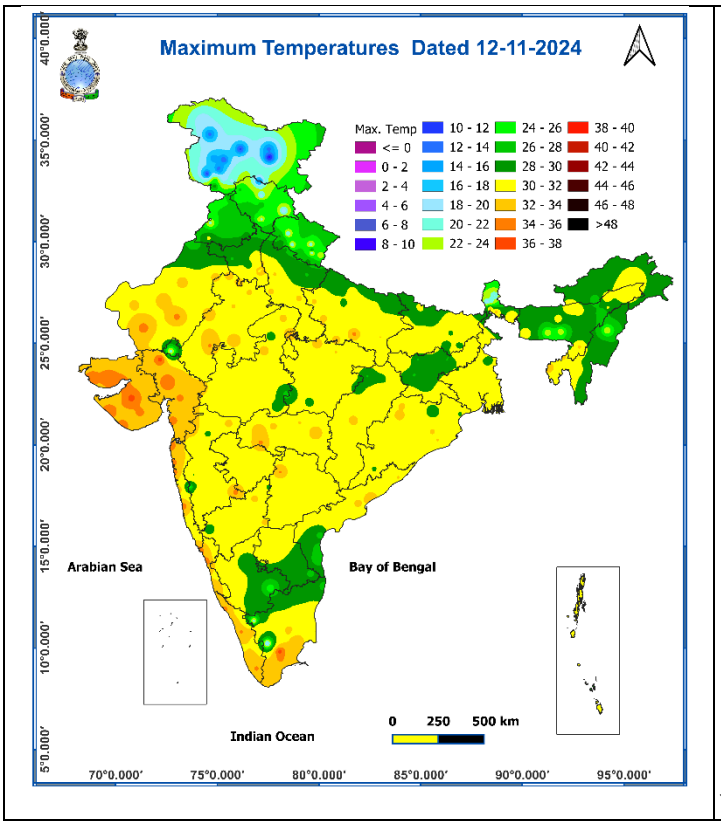


Fig. 2: Departure of Maximum Temperatures

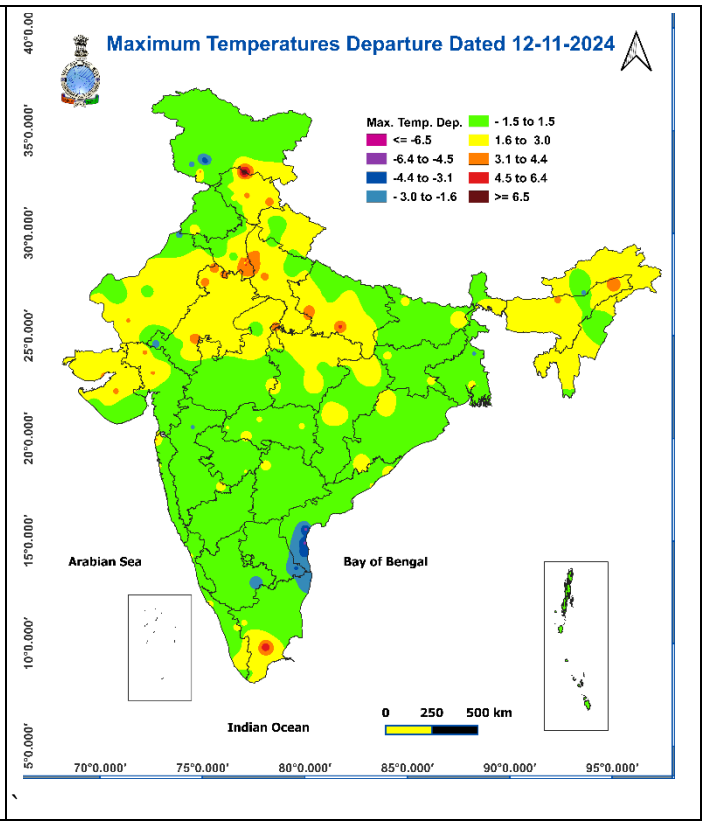


Fig. 3: Minimum Temperatures

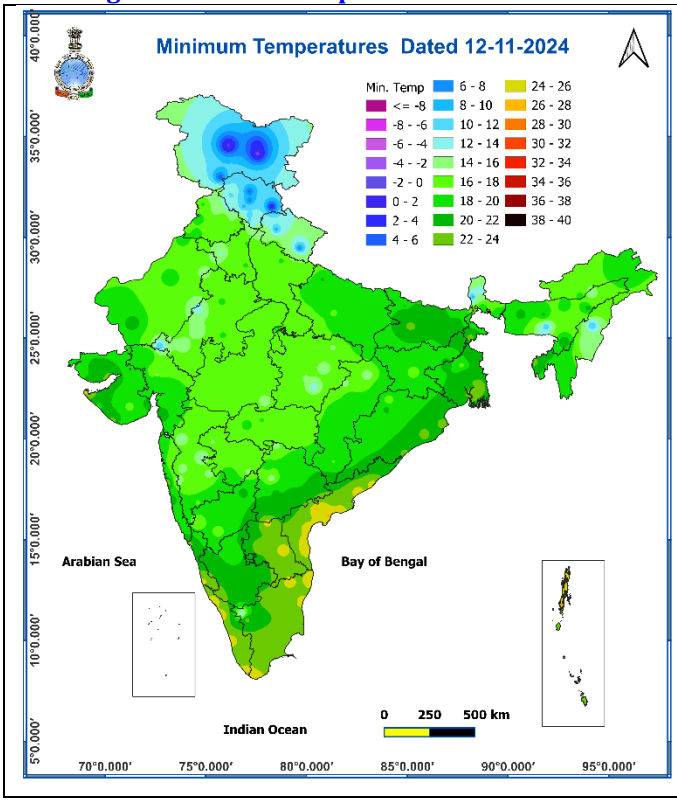


Fig. 4: Departure of Minimum Temperatures

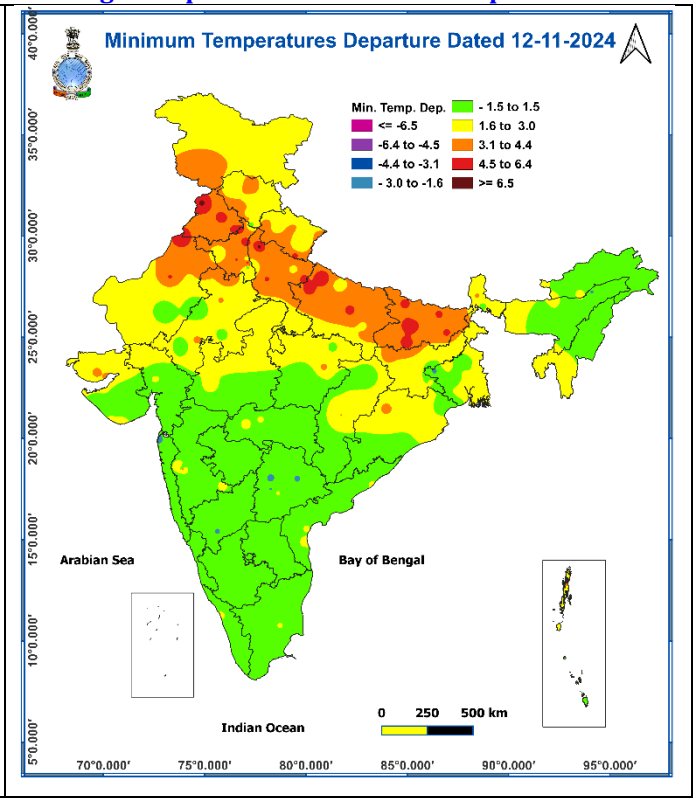


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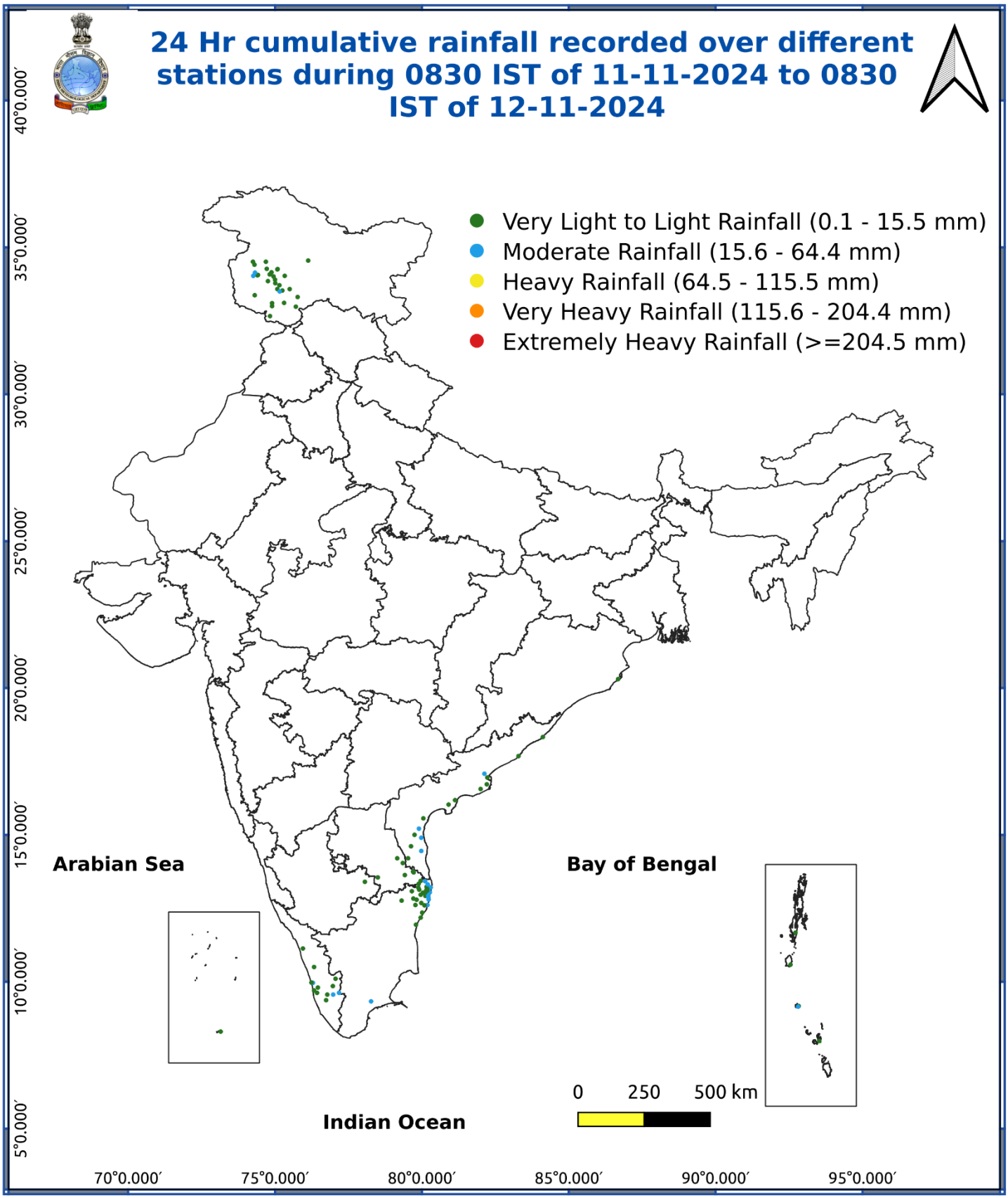
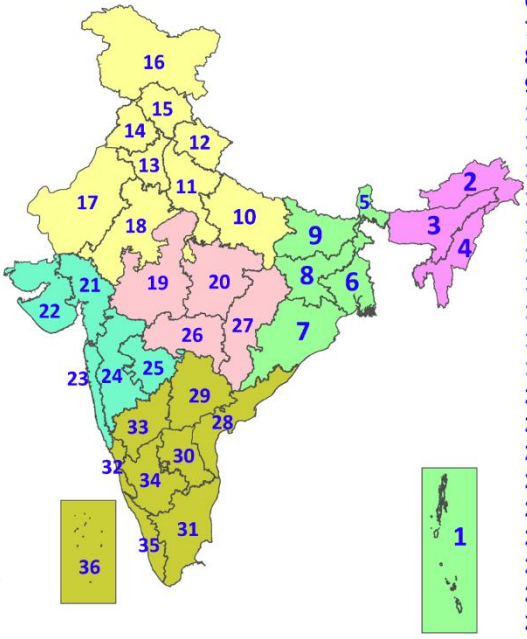
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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)

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