राष्ट्रीय मौसम पूर्वानुमान केन्द्र
भारत मौसम विज्ञान विभाग
पृथ्वी विज्ञान मंत्रालय

National Weather Forecasting Centre
India Meteorological Department
Ministry of Earth Sciences

Saturday, November 23, 2024
Time of Issue: 1345 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- Under the influence of upper air cyclonic circulation over east Equatorial Indian Ocean and adjoining south Andaman Sea & southeast Bay of Bengal, a **low pressure area** has formed over east Equatorial Indian Ocean and adjoining southeast Bay of Bengal at 0830 hours IST of today, the 23rd November, 2024. It is likely to move west-northwestwards and intensify into a **depression** over central parts of south Bay of Bengal around 25th November. Thereafter, it is likely to move northwestwards towards Tamil Nadu-Sri Lanka coasts during subsequent 2 days.
- A **Western disturbance** now seen as a cyclonic circulation over Afghanistan & neighbourhood in lower tropospheric levels.

i. 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 during 25th-27th, Kerala & Mahe, Coastal Andhra Pradesh & Yanam & Rayalaseema on 26th & 27th November.
- ✓ Light to moderate rainfall at many places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 23rd November and Andaman & Nicobar Islands during the week.
- ✓ Isolated **heavy to very heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal during 25th- 28th November and isolated heavy rainfall on 29th November.
- ✓ Isolated **heavy rainfall** very likely over Nicobar Islands on 23rd & 24th, Kerala & Mahe during 26th - 29th and Coastal Andhra Pradesh & Yanam & Rayalaseema during 27th - 29th November.
- ✓ **Dense fog conditions** very likely to prevail during early morning hours in isolated pockets of Punjab & Haryana-Chandigarh on 24th and 28th - 30th, Himachal Pradesh during 27th-29th and Uttar Pradesh during 28th -30th November.

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 **appreciably above normal (3°C to 5°C)** at isolated places over Punjab & northwest Rajasthan; **above normal (1°C to 3°C)** at a few places over north Bihar; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Haryana-Chandigarh-Delhi, Uttar Pradesh, Assam & Meghalaya, West Bengal & Sikkim. These are **below normal (1°C to 3°C)** at a few places over Madhya Pradesh, Coastal & North Interior Karnataka; at isolated places over East Rajasthan, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra, Telangana, Chhattisgarh, South Interior Karnataka and near normal over rest parts of the country. Today, **the lowest minimum temperature** of **8.0°C** is reported at Hissar **(Haryana)** and 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.

iii. Weather forecast over Delhi/NCR during 23rd November to 25th November 2024

Past Weather:

There has been a slight rise in minimum and maximum temperatures over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 25 to 27°C and 10 to 13°C respectively. The maximum temperature was near normal and the minimum temperature was near normal most places over the region. Mainly smog/ shallow fog condition with predominant surface wind from west direction with wind speed reaching 06 to 08 kmph prevailed during daytime and calm wind during night time on 22.11.2024. Moderate fog reported at Safdarjung airport during early morning today. Safdarjung airport recorded lowest visibility 300 m during 0630 hours to 0900 hours IST which improved thereafter becoming 500m at 0930 hours IST. Palam airport recorded lowest visibility 800 m during 0730 hours to 0900 hours IST which improved thereafter becoming 1000 m at 0930 hours IST. Mainly smog condition with wind speed less than 06 kmph variable direction prevailed over the region in the forenoon today.

Weather Forecast:

23.11.2024: Mainly clear sky. The predominant surface wind is likely to be variable direction with wind speed upto 04-06 kmph till evening. It would decrease thereafter becoming less than 04 kmph from variable direction during night. Smog/shallow fog is likely in the evening/night.
24.11.2024: Mainly clear sky. The predominant surface wind is likely to be from west direction with speed less than 04 kmph during morning hours. Smog/ moderate 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.

25.11.2024: 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.

26.11.2024: 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 08-10 kmph from north direction during afternoon. It will gradually decrease becoming less than 04 kmph from variable direction 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 many places** over Andaman & Nicobar Islands**; at isolated places** over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Sub-Himalayan West Bengal & Sikkim, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal.

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

- **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm**Andaman & Nicobar Islands:** Car Nicobar (dist Nicobar) 3, Iaf Carnicobar (dist Nicobar) 3, Hut Bay (dist South Andaman) 3, Nancowry (dist Nicobar) 2**; Tamil Nadu, Puducherry & Karaikal:** Cincona (dist Coimbatore) 1; **Kerala & Mahe:** Vellathooval (dist Idukki) 1.

- **Fog conditions observed (at 0830 hours IST of today)**: **Shallow to moderate (visibility 201-500m)** fog observed in isolated pockets over Uttar Pradesh, Haryana-Chandigarh-Delhi, Bihar, West Madhya Pradesh and Punjab.

- **Visibility reported (at 0830 hours IST of today) (≤ 500metres) (in m): Punjab:** Amritsar- 500; **Uttar Pradesh:** Varanasi -200; Bareilly, Fursatganj, Bahraich, Gorakhpur, Aligarh, Allahabad & Ballia -500 each; **Haryana:** Karnal-500; **Delhi:** Safdarjung and Palam- 500 each; **Bihar:** Patna - 500; **West Madhya Pradesh:** Gwalior -500.

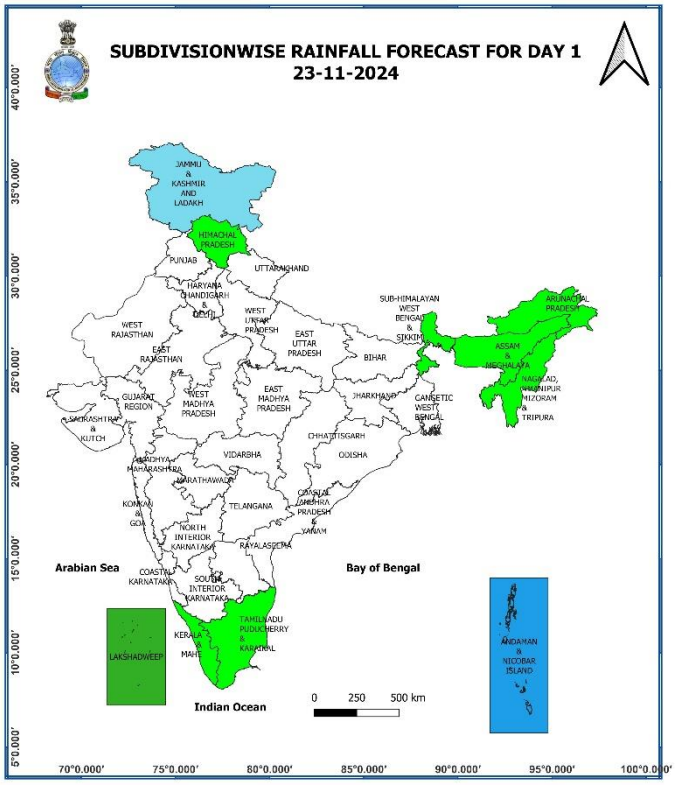
- **Minimum Temperature Departures (as on 23-11-2024):** Minimum temperatures are **above normal (2°C to 3°C)** at a few places over Bihar; at isolated places over Himachal Pradesh and Tamil Nadu, Puducherry & Karaikal. These are **below normal (-1.6°C to -3°C)** at a few places over Madhya Pradesh, Coastal & North Interior Karnataka; at isolated places over East Rajasthan, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and South Interior Karnataka and near normal over rest parts of the country. Today, **the lowest minimum temperature** of **8.0°C** is reported at Hissar **(Haryana)** and Sikar **(East Rajasthan)** over the plains of the country. **(Fig.4)**

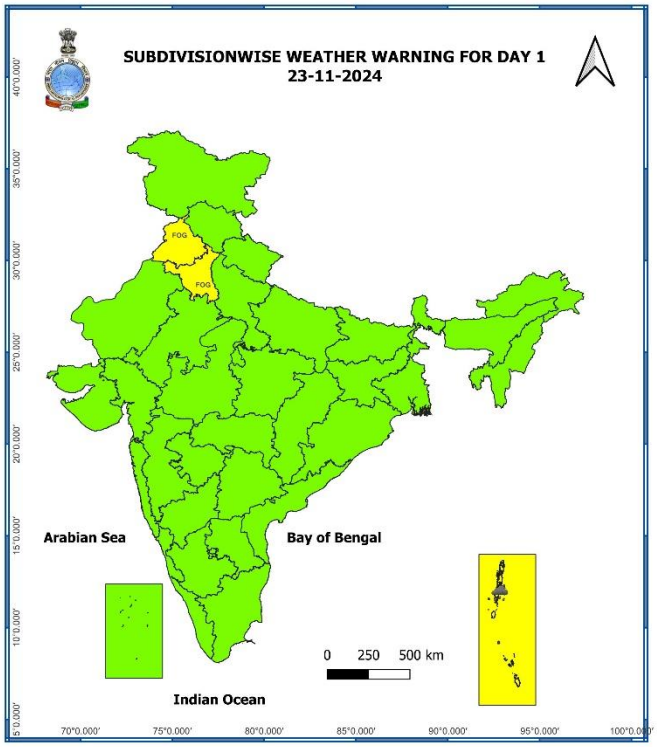
- **Maximum Temperature Departures (as on 22-11-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Himachal Pradesh and Tamil Nadu, Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Kerala & Mahe; at isolated places over Punjab, West Rajasthan, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal and South Interior Karnataka. These were **below normal (-1.6°C to -3.0°C)** at isolated places over Haryana-Chandigarh-Delhi, East Uttar Pradesh, West Rajasthan, Odisha, Madhya Pradesh, Madhya Maharashtra, Vidarbha, Telangana, Gujarat state. Yesterday, **the highest maximum temperature** of **35.2°C** was reported at **Kannur (Kerala & Mahe)** over the country. **(Fig. 2)**

Meteorological Analysis (Based on 0830 hours IST)

- The **cyclonic circulation** over east Bangladesh & neighbourhood persists and extends upto 1.5 km above mean sea level.
- The **Western disturbance** now lies as a cyclonic circulation over Afghanistan & neighbourhood at 3.1 km above mean sea level.
- Under the influence of the upper air cyclonic circulation over east Equatorial Indian Ocean and adjoining south Andaman Sea & southeast Bay of Bengal, a **low pressure area** formed over east Equatorial Indian Ocean and adjoining southeast Bay of Bengal, at 0830 hours IST of today, the 23rd November 2024. It is likely to continue to move west-northwestwards and intensify into a **depression** over central parts of south Bay of Bengal around 25th November. Thereafter, its likely to move northwestwards towards Tamil Nadu- Sri Lanka coast during subsequent 2 days.
- The **trough** from the cyclonic circulation over Equatorial Indian Ocean to Gulf of Mannar now runs from the cyclonic circulation associated with the low pressure system over east Equatorial Indian Ocean and adjoining southeast Bay of Bengal to Comorin area and extends upto 3.1 km above mean sea level tilting southwards with height.
- The **cyclonic circulation** over south Kerala and neighbourhood at 1.5 km above mean sea level has become less marked.

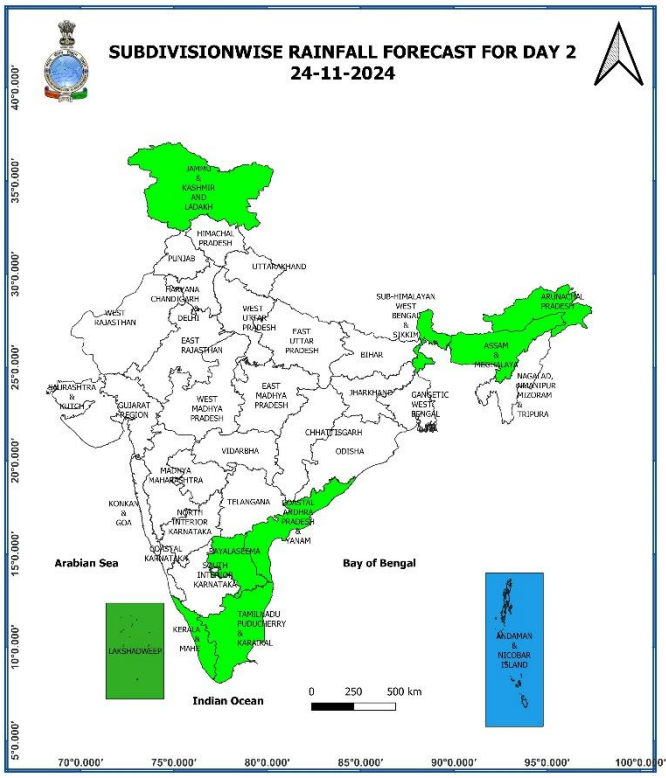
Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 30th November, 2024)

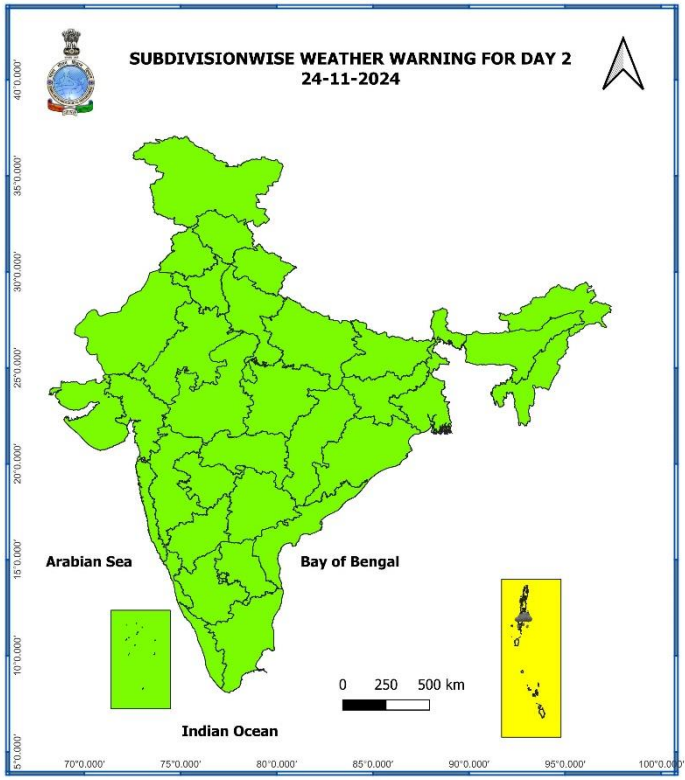




23 November (Day 1):

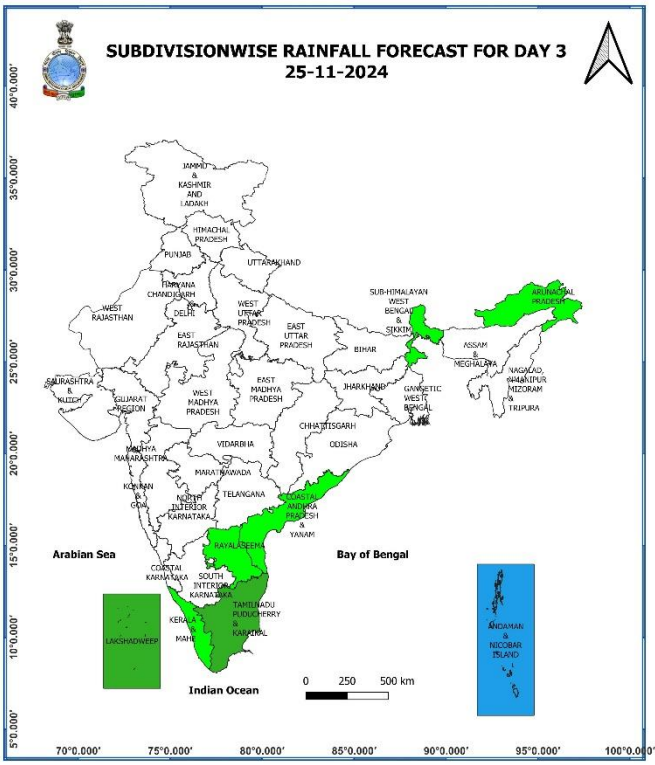
- **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Andaman & Nicobar Islands.
- **Dense fog** very likely in isolated pockets of Punjab and Haryana-Chandigarh-Delhi in night/morning hours.
- **Thunderstorm accompanied with lightning** likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over many parts of southeast Bay of Bengal, south Andaman sea and adjoining North Andaman Sea. Fishermen are advised not to venture into these areas.

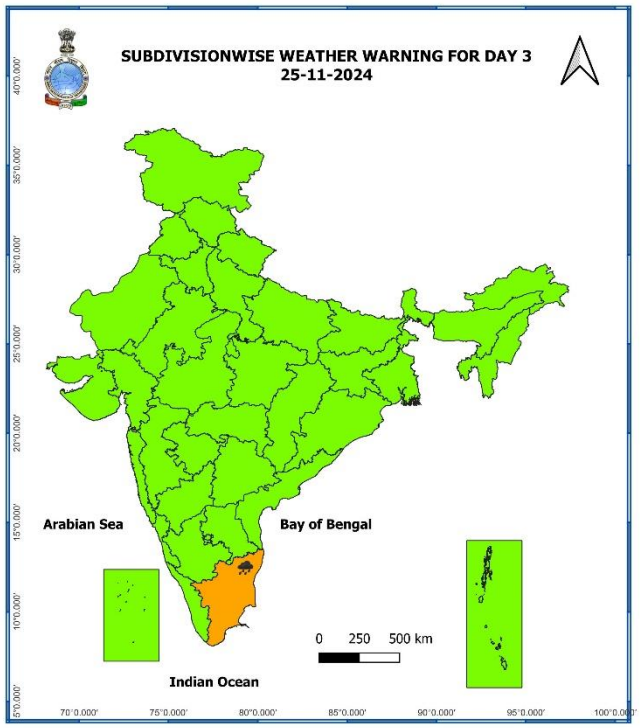




24 November (Day 2):

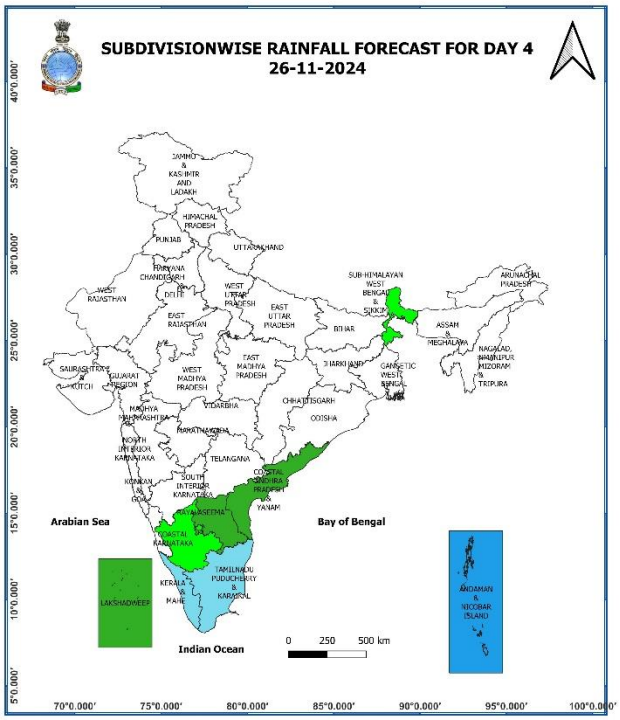
- **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Andaman & Nicobar Islands.
- **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over most parts of southeast Bay of Bengal and adjoining parts of southwest Bay of Bengal, Andman sea. Fishermen are advised not to venture into these areas.

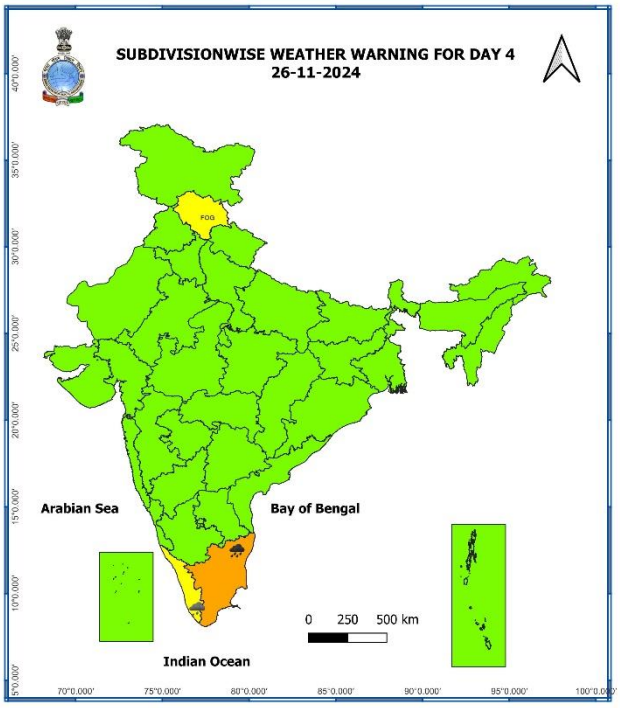




25 November (Day 3):

- **Heavy to very Heavy rainfall (≥ 12 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over gulf of Mannar and adjoining Comorin area, over most parts of southwest Bay of Bengal and adjoining parts of southeast Bay of Bengal, off Sri Lanka Coast and Andaman Sea. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevailing over central parts of south Bay of Bengal. Fishermen are advised not to venture into these areas.





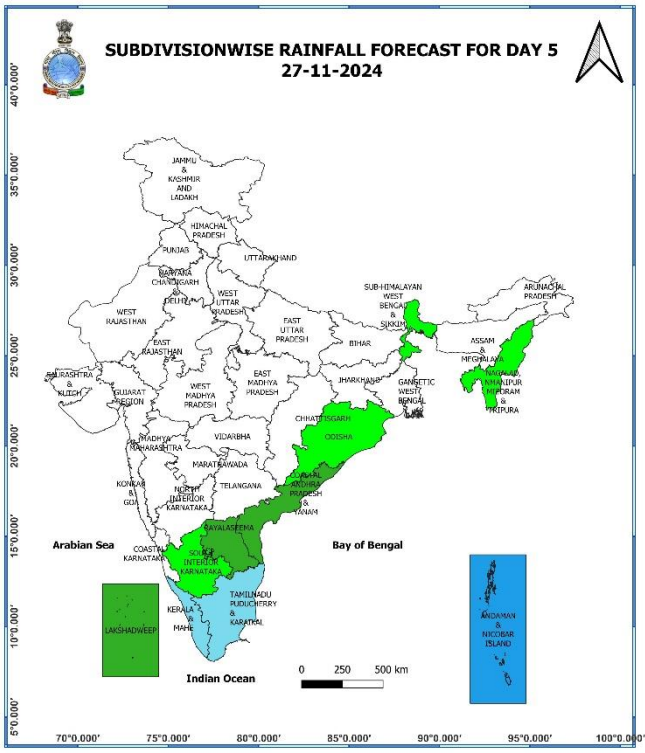
26 November (Day 4):

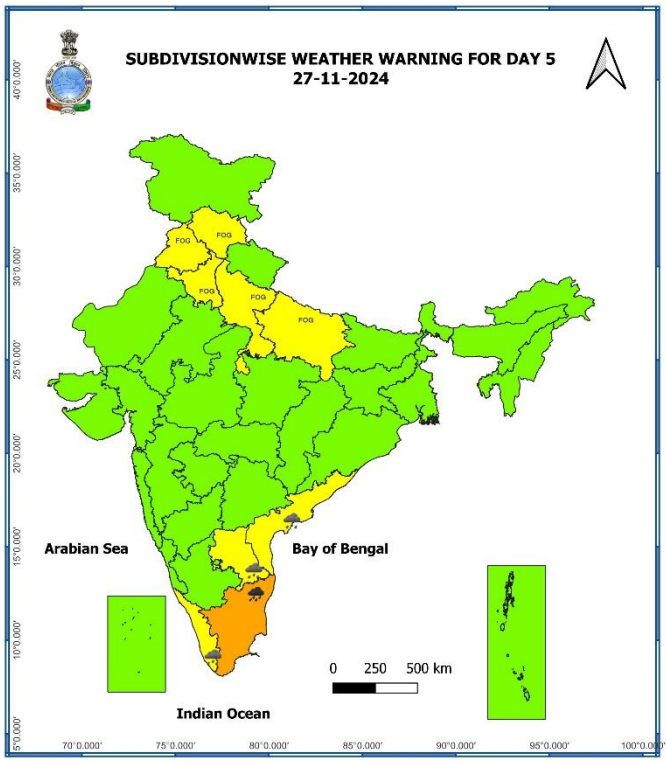
- **Heavy to very Heavy rainfall (≥ 12 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal; **Heavy rainfall (≥ 7 cm)** likely at isolated places over Kerala & Mahe.

- **Dense fog** very likely in isolated pockets of Himachal Pradesh in night/morning hours.

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

- **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing along and off south Kerala coast, over Gulf of Mannar and adjoining Comorin Area, over most parts of southwest Bay of Bengal and adjoining parts of southeast and west central Bay of Bengal, along and off Sri Lanka coast, over Andaman Sea. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevailing central parts of southeast Bay of Bengal. Fishermen are advised not to venture into these areas.





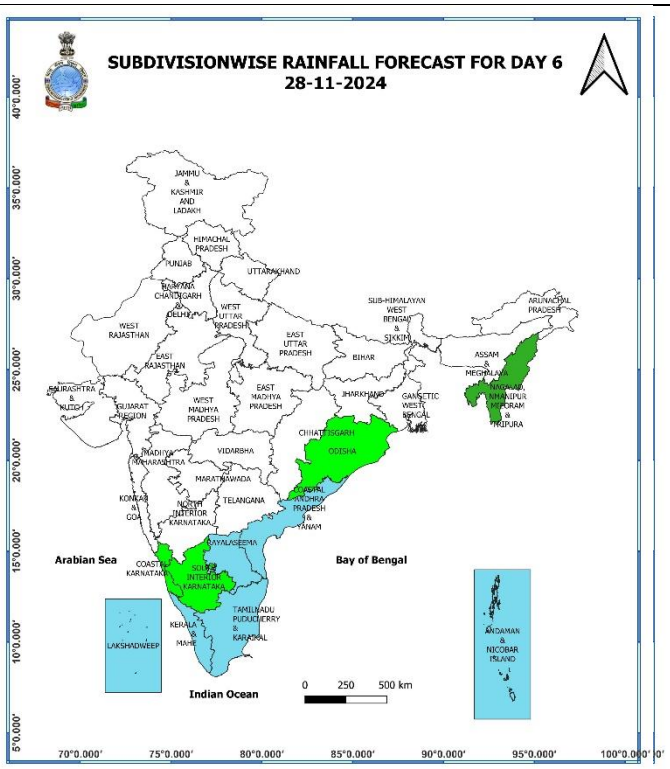
27 November (Day 5):

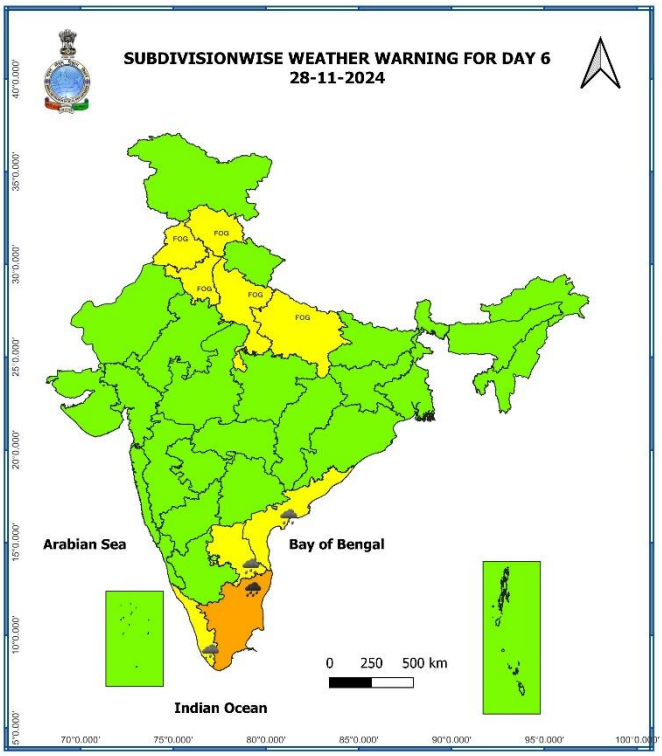
- **Heavy to very Heavy rainfall (≥ 12 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal; **Heavy rainfall (≥ 7 cm)** likely at isolated places over Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Rayalaseema.

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

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

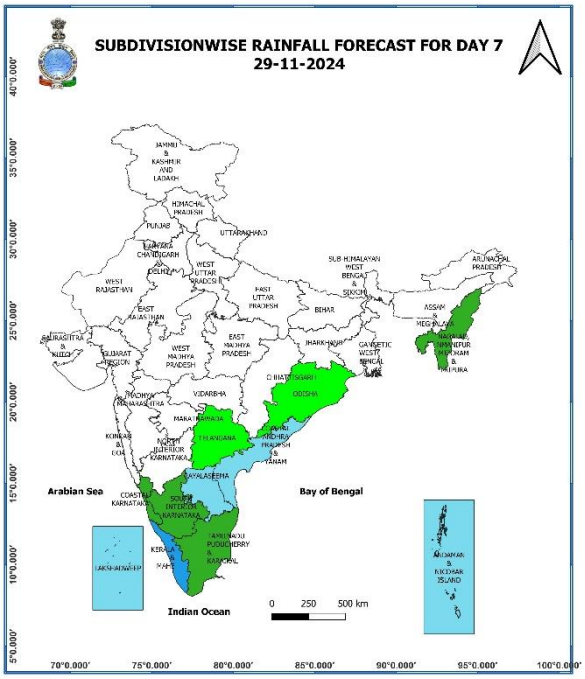
- **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing along and off south Kerala coast, over Gulf of Mannar and adjoining Comorin Area, over most parts of southwest Bay of Bengal and adjoining parts of southeast and west central Bay of Bengal, along and off Sri Lanka coast, over Tamil Nadu coast. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevailing many parts of southeast Bay of Bengal. Fishermen are advised not to venture into these areas.

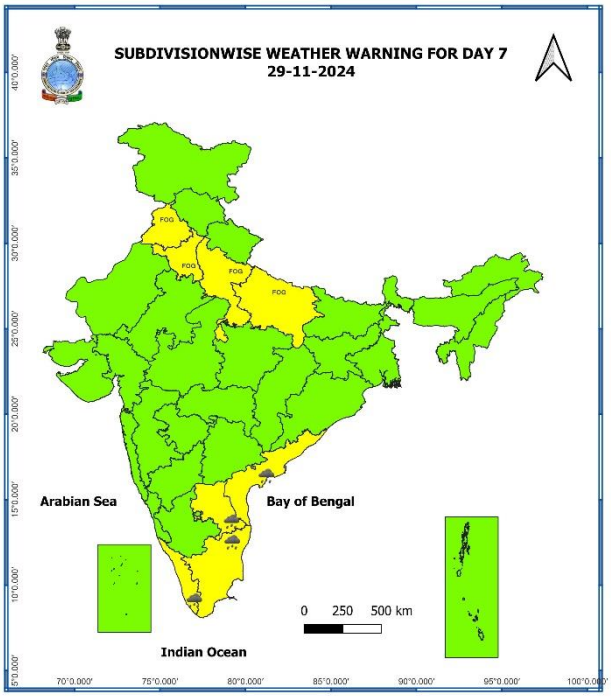




28 November (Day 6):

- **Heavy to very Heavy rainfall (≥ 12 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal; **Heavy rainfall (≥ 7 cm)** at isolated places over Kerala & Mahe**,** Coastal Andhra Pradesh & Yanam and Rayalaseema.





29 November (Day 7):

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

Weather Outlook for subsequent 3 days (During 30th November – 02nd December, 2024)

- Isolated to Scattered to light to moderate rainfall likely over some parts of south peninsular India and light rainfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- 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.**

Impact & Action Suggested due to heavy rainfall over Tamil Nadu, Puducherry & Karaikal during 25th - 28th.

A. Impact Expected

- ❖ Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- ❖ Occasional reduction in visibility due to heavy rainfall.
- ❖ Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
- ❖ Minor damage to kutcha roads.
- ❖ Possibilities of damage to vulnerable structure.
- ❖ Localized Landslides/Mudslides
- ❖ Damage to horticulture and standing crops in some areas due to inundation.
- ❖ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC).

B. Action Suggested

- ❖ Check for traffic congestion on your route before leaving for your destination.
- ❖ Follow any traffic advisories that are issued in this regard.
- ❖ Avoid going to areas that face the water logging problems often.
- ❖ Avoid staying in vulnerable structure.

Impact expected due to dense/ very dense fog in the late night /morning hours over parts of Northwest India during 25th -29th November 2024.

❖ 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.

Agromet advisories for Heavy Rainfall likely over Andaman & Nicobar Islands and Tamil Nadu:

- In **Andaman & Nicobar Islands**, shift the harvested produce of rice, coconut and areca not in safe place. In transplanted vegetable fields, keep the bunds open and provide drainage facilities.
- ✓ 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

Fig. 1: Maximum Temperatures

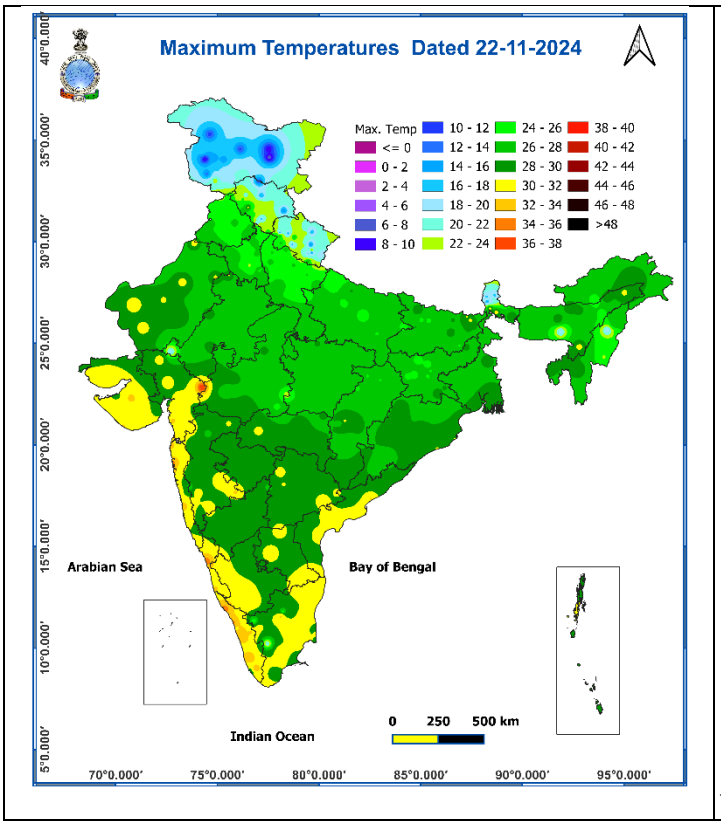


Fig. 2: Departure of Maximum Temperatures

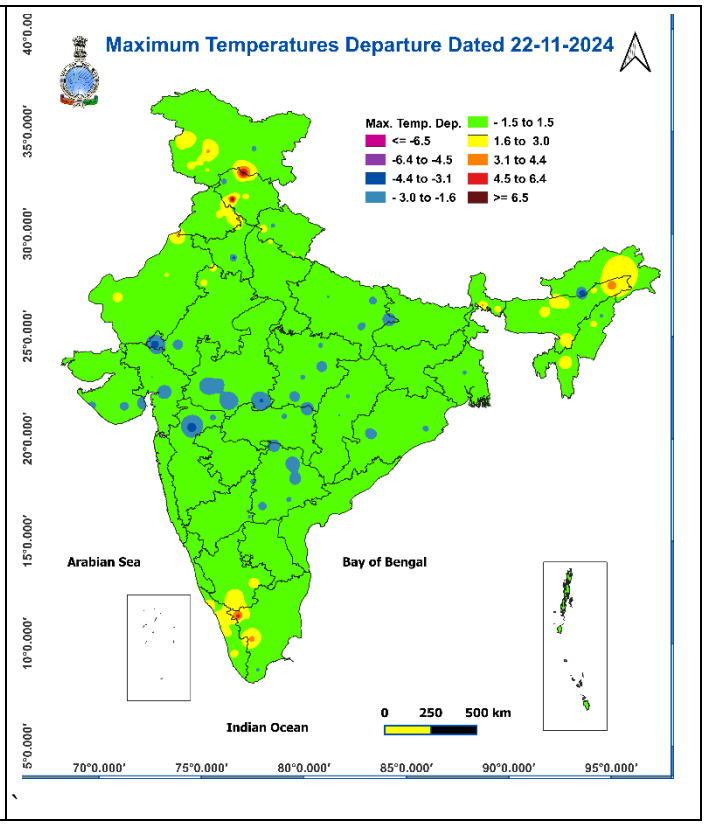


Fig. 3: Minimum Temperatures

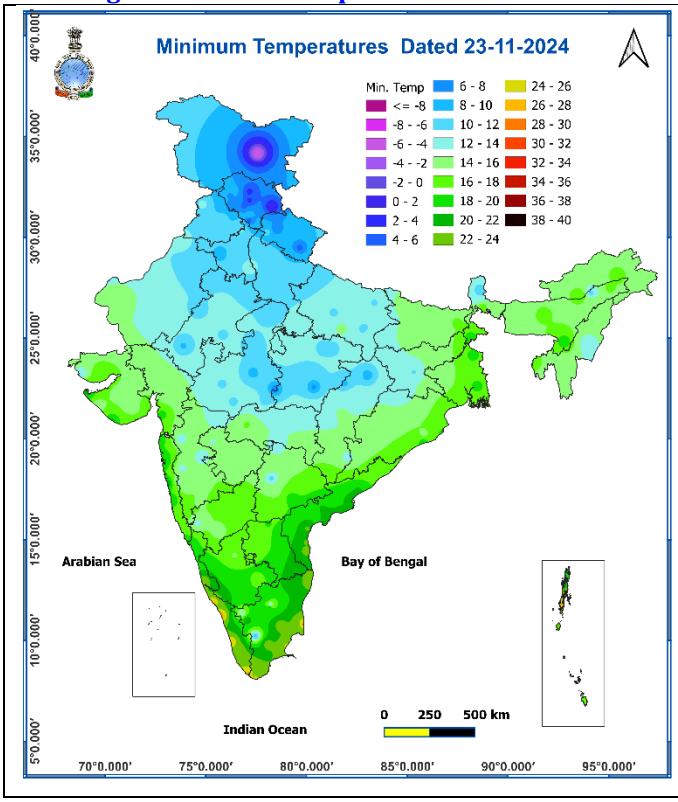
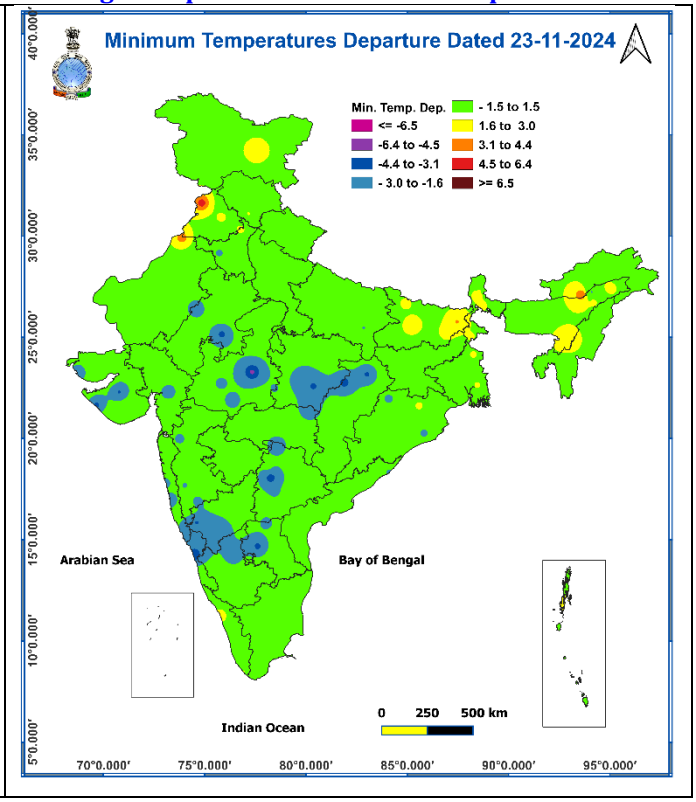
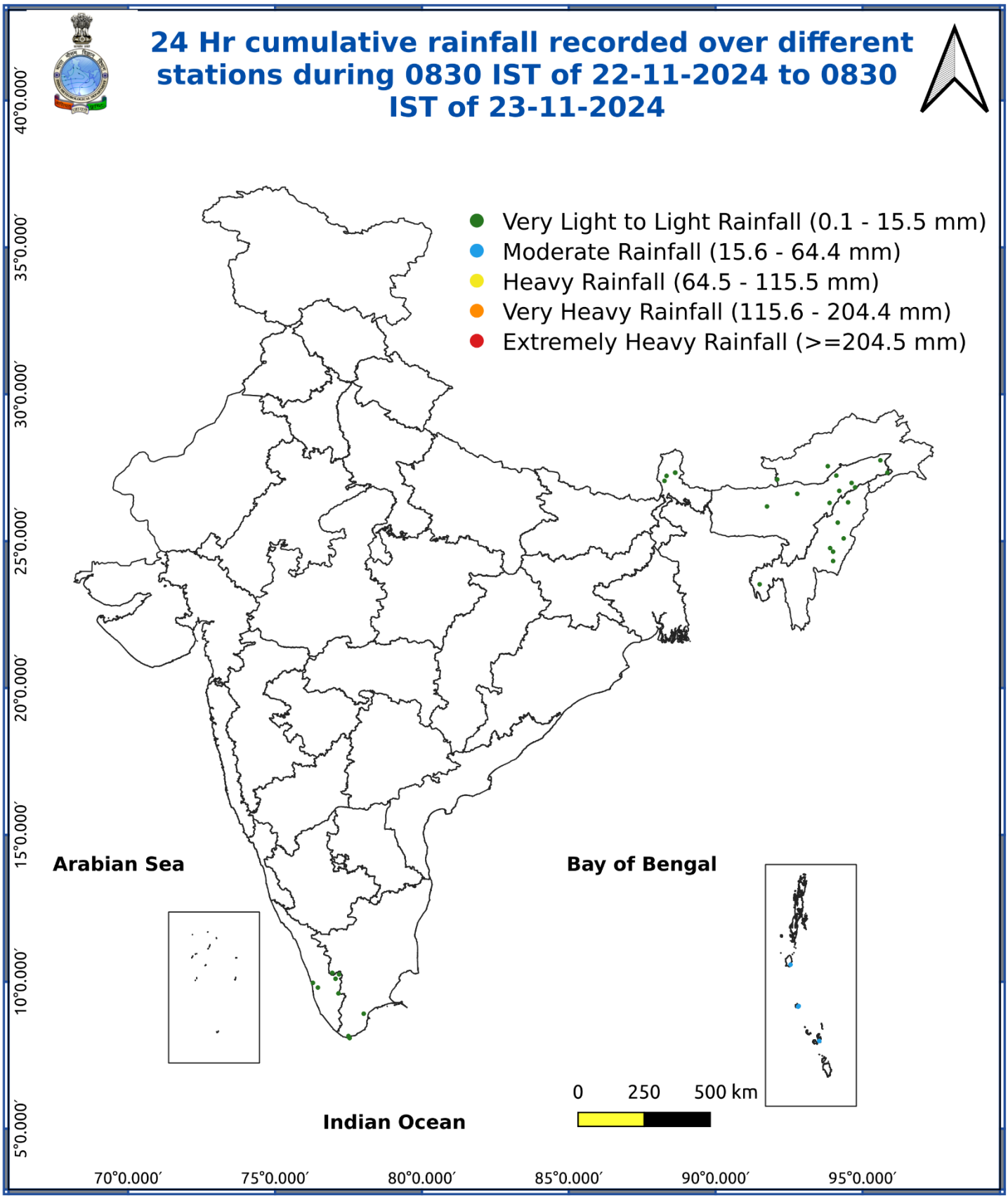


Fig. 4: Departure of Minimum Temperatures



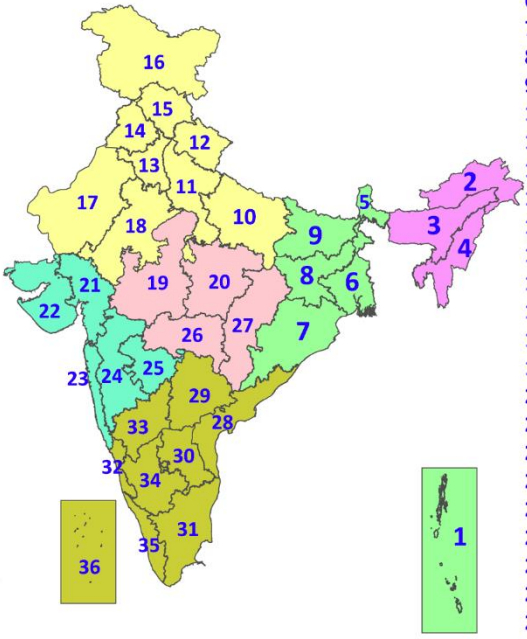
* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.
For more details, kindly visit https://mausam.imd.gov.in or contact: 011-2434-4599
(Service to the Nation since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

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

* 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)

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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