

**Tuesday, December 3, 2024**  
**Time of Issue: 0820 hours IST**  
**(MORNING)**

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### Weather Systems:

- ❖ **The Low pressure Area (Remnant of Cyclonic Storm "FENGAL")** over North Interior Tamil and adjoining South Interior Karnataka moved west-northwestwards and become **well marked low pressure area** over Coastal Karnataka and adjoining east central Arabian sea at 0530 hours IST of today, the 03<sup>rd</sup> December, 2024. It is likely to move west-northwestwards over eastcentral Arabian sea during next 2 days.
- ❖ A **Western disturbance** lies as a trough in middle tropospheric westerlies roughly along Long. 68°E to the north of Lat. 30°N.

#### Forecast & Warnings (upto 7 days):

- ✓ **North interior Tamil Nadu: Heavy rainfall** at isolated places very likely over Tamil Nadu on 03<sup>rd</sup> December.
- ✓ **Kerala: Heavy to very heavy rainfall** at isolated places very likely over Kerala on 03<sup>rd</sup> December.
- ✓ **South Interior Karnataka: Heavy rainfall** at isolated places very likely over South Interior Karnataka on 03<sup>rd</sup> December.
- ✓ **Coastal Karnataka: Heavy to very Heavy rainfall** at isolated places very likely on 03<sup>rd</sup> December.
- ✓ **Lakshadweep: Isolated heavy rainfall** very likely over Lakshadweep on 03<sup>rd</sup> & 04<sup>th</sup> December.

#### ii. Temperature conditions and Forecast:

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

Minimum temperatures were **markedly above normal (5°C or more)** at a few places over Telangana and Odisha; **appreciably above normal (3°C to 5°C)** at a few places over Gangetic West Bengal and Coastal Andhra Pradesh & Yanam; at isolated places over Punjab, Bihar, Maharashtra, Nagaland, Manipur, Mizoram & Tripura; **above normal (1°C to 3°C)** at many places over Rajasthan, Tamil Nadu, Puducherry & Karaikal; at a few places over Kerala & Mahe; at isolated places over Haryana-Chandigarh-Delhi, Uttar Pradesh, Chhattisgarh, East Madhya Pradesh and Andaman & Nicobar Islands. These were **appreciably below normal (-5°C to -3°C)** at isolated places over Assam & Meghalaya; **below normal (-3°C to -1°C)** at isolated places over West Madhya Pradesh, Saurashtra & Kutch and near normal over rest parts of the country. Yesterday, **the lowest minimum temperature of 7.8°C** was reported at **Nowgong (East Madhya Pradesh)** over the plains of the country.

##### Forecast of temperature:

- ❖ No significant change in minimum temperatures likely over Northwest, Central & East India during next 2-3 days and gradual fall by 2-4°C thereafter.
- ❖ No significant change in minimum temperatures likely over West India during next 4-5 days.

##### Weather forecast (during 03<sup>rd</sup> Dec. to 05<sup>th</sup> Dec. 2024) over Delhi/NCR

**03.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/ shallow fog is likely in the morning. The wind speed will increase thereafter becoming less than 12 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 10 kmph from northwest direction during evening and night. Smog/mist is likely in the evening/night.

**04.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/shallow fog is likely in the morning. The wind speed will gradually increase becoming 12-16 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 10 kmph from northwest direction during evening and night. Smog/mist is likely in the evening/night.

**05.12.2024:** 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/shallow 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 direction during evening and night. Smog/ mist is likely in the evening/night.

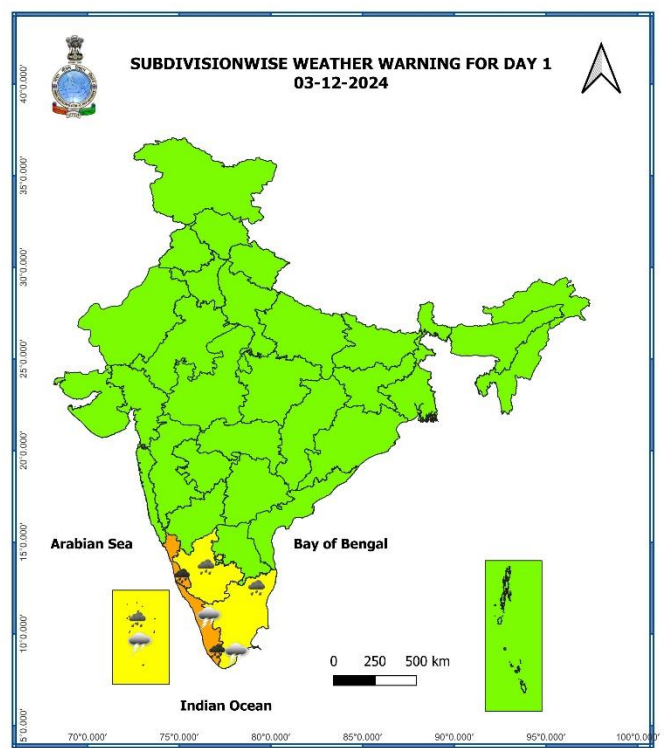
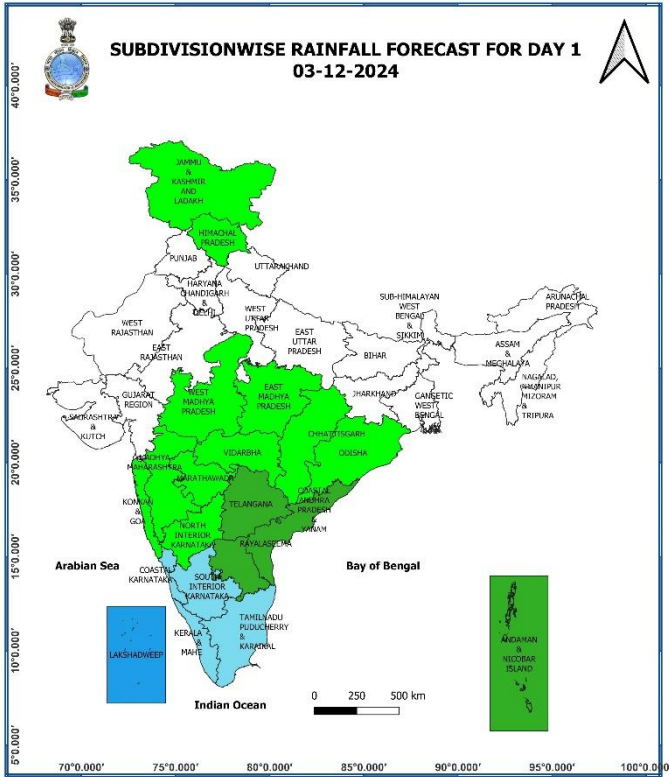
## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at most places** over Kerala & Mahe; **at many places** over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam and Rayalaseema; **at isolated** places over Karnataka, Telangana, Marathwada and Odisha.
- ❖ **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): **South Interior Karnataka:** Bangalore-2; **Coastal Karnataka:** Mangalore-2; **Kerala & Mahe:** Kannur & Kozhikode- 2each.
- ❖ **Fog conditions observed (at 0530 hours IST of today):** **Very dense fog** reported in isolated pockets of East Uttar Pradesh; **Dense fog** in isolated pockets of Bihar and **Moderate fog** in isolated pockets West Uttar Pradesh and Tripura.
- ❖ **Visibility reported (at 0530 hours IST of today) ( $\leq 500$ metres):** **East Uttar Pradesh:** Varanasi-0; **West Uttar Pradesh:** Bareilly-500; **Bihar:** Purnea-200; Patna & Bhagalpur-500 each; **Tripura:** Kailashahar-500.
- ❖ **Minimum Temperature Departures (as on 02-12-2024):** Minimum temperatures were **markedly above normal ( $5.1^{\circ}\text{C}$  or more)** at a few places over Telangana and Odisha; **appreciably above normal ( $3.1^{\circ}\text{C}$  to  $5.0^{\circ}\text{C}$ )** at a few places over Gangetic West Bengal and Coastal Andhra Pradesh & Yanam; at isolated places over Punjab, Bihar, Maharashtra, Nagaland, Manipur, Mizoram & Tripura; **above normal ( $1.6^{\circ}\text{C}$  to  $3.0^{\circ}\text{C}$ )** at many places over Rajasthan, Tamil Nadu, Puducherry & Karaikal; at a few places over Kerala & Mahe; at isolated places over Haryana-Chandigarh-Delhi, Uttar Pradesh, Chhattisgarh, East Madhya Pradesh and Andaman & Nicobar Islands. These were **appreciably below normal ( $-5.0^{\circ}\text{C}$  to  $-3.1^{\circ}\text{C}$ )** at isolated places over Assam & Meghalaya; **below normal ( $-3.0^{\circ}\text{C}$  to  $-1.6^{\circ}\text{C}$ )** at isolated places over West Madhya Pradesh, Saurashtra & Kutch and near normal over rest parts of the country. Yesterday, **the lowest minimum temperature** of  $7.8^{\circ}\text{C}$  was reported at **Nowgong (East Madhya Pradesh)** over the plains of the country. **(Fig.4)**
- ❖ **Maximum Temperature Departures (as on 02-12-2024):** Maximum temperatures were **appreciably above normal ( $3.1^{\circ}\text{C}$  to  $5.0^{\circ}\text{C}$ )** at few places over Punjab; at isolated places over Haryana-Chandigarh, West Uttar Pradesh, Assam & Meghalaya and Tamil Nadu, Puducherry & Karaikal; **above normal ( $1.6^{\circ}\text{C}$  to  $3.0^{\circ}\text{C}$ )** at few places over Delhi and East Uttar Pradesh; at isolated places over Himachal Pradesh, Nagaland, Manipur, Mizoram & Tripura. These were **markedly below normal ( $-5.1^{\circ}\text{C}$  or less)** at a few places over Kerala & Mahe; **appreciably below normal ( $-5.0^{\circ}\text{C}$  to  $-3.1^{\circ}\text{C}$ )** at isolated places over Coastal Andhra Pradesh & Yanam, Odisha, Madhya Maharashtra; **below normal ( $-1.6^{\circ}\text{C}$  to  $-3.0^{\circ}\text{C}$ )** at few places over Gangetic West Bengal; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Madhya Pradesh, Marathwada, Vidarbha, Chhattisgarh, Coastal & North Interior Karnataka and Telangana. Yesterday, **the highest maximum temperature** of  $34.9^{\circ}\text{C}$  was reported at **Bombay Santacruz (Konkan & Goa)** over the country. **(Fig. 2)**

## Meteorological Analysis (Based on 0530 hours IST)

- ❖ **The Low pressure Area (Remnant of Cyclonic Storm “FENGAL”)** over North Interior Tamil and adjoining South Interior Karnataka moved west-northwestwards and become **well marked low pressure area** over Coastal Karnataka and adjoining east central Arabian sea at 0530 hours IST of today, the 03<sup>rd</sup> December, 2024. It is likely to move west-northwestwards over eastcentral Arabian sea during next 2 days.
- ❖ The **Western disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 68°E to the north of Lat. 30°N.
- ❖ The **Cyclonic circulation** over East Bangladesh & neighbourhood at 1.5 km above men sea level persists.
- ❖ The **Cyclonic circulation** over northeast Assam at 3.1 km above men sea level persists.
- ❖ **Jet Stream Winds** of the order upto 120 knots at 12.6 km above mean sea level continue to prevail over North India.

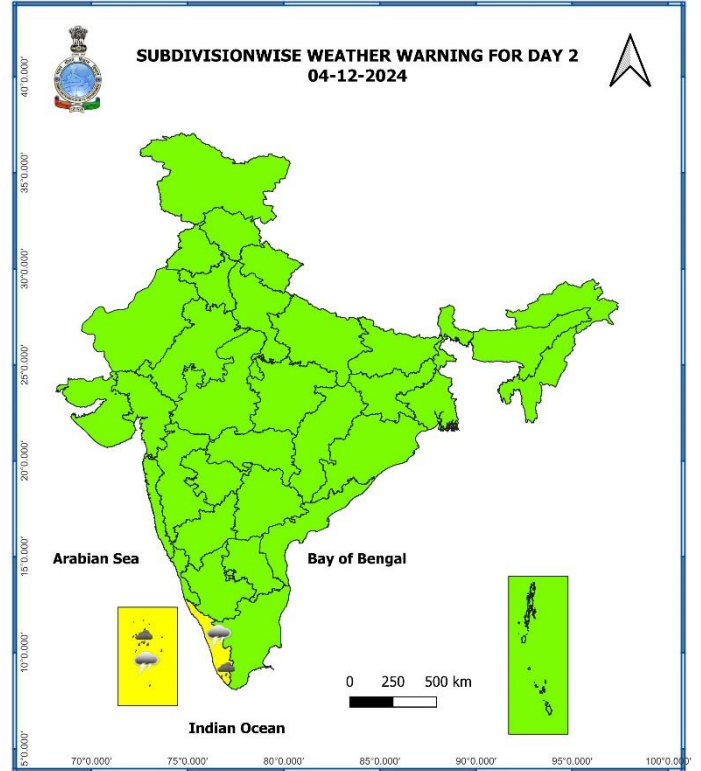
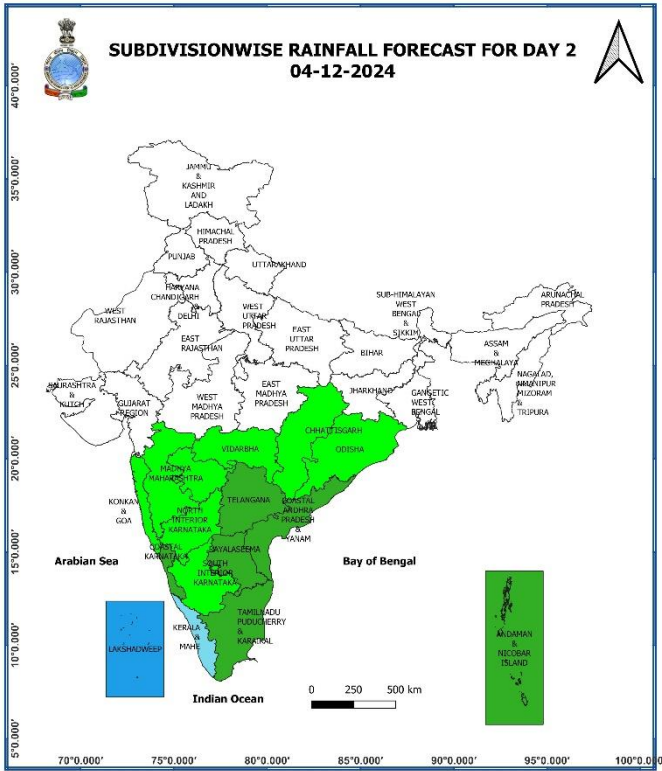
**Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 10<sup>th</sup> December, 2024)**



**03 December (Day 1):**

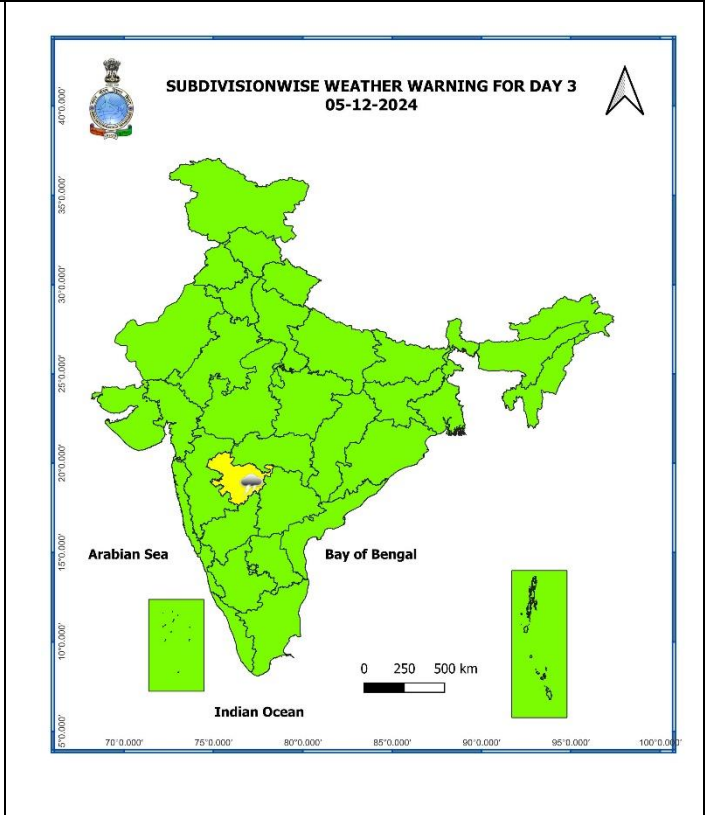
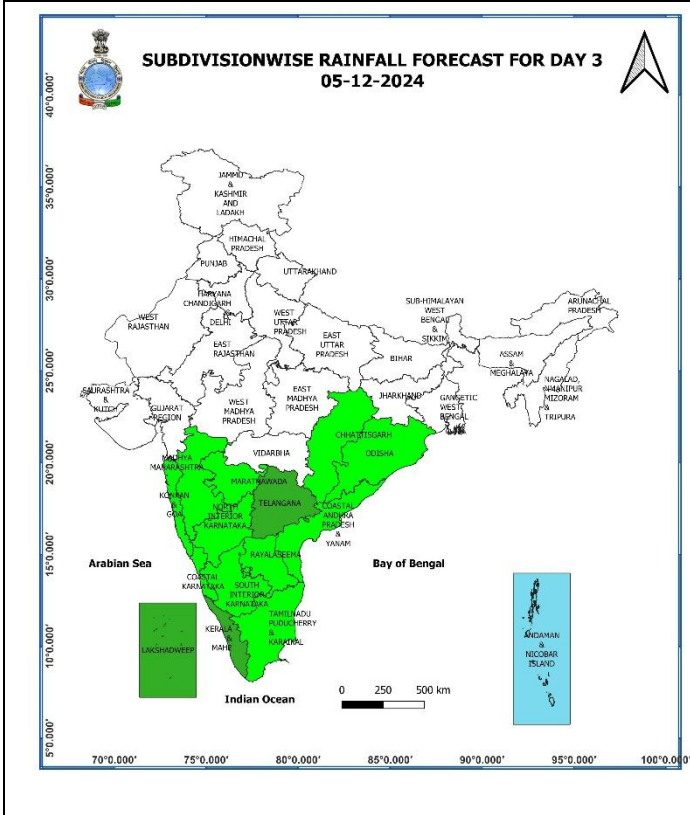
- ❖ **Heavy to very heavy rainfall** at isolated places is very likely over north Kerala and Coastal Karnataka; **Light to moderate rainfall** at many places with **heavy rainfall** at isolated places over north interior Tamil Nadu, Puducherry & Karaikal, Lakshadweep, South Interior Karnataka.
- ❖ **Thunderstorm accompanied lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over Kerala & Mahe; **Thunderstorm with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Lakshadweep.

**Squally wind speed reaching 35-45 kmph gusting to 55 kmph** very likely to prevail over along and off Kerala, Karnataka, goa coasts, over Lakshadweep area, over gulf of Mannar & adjoining parts of Comorin area. Fishermen are advised not to venture into these areas.



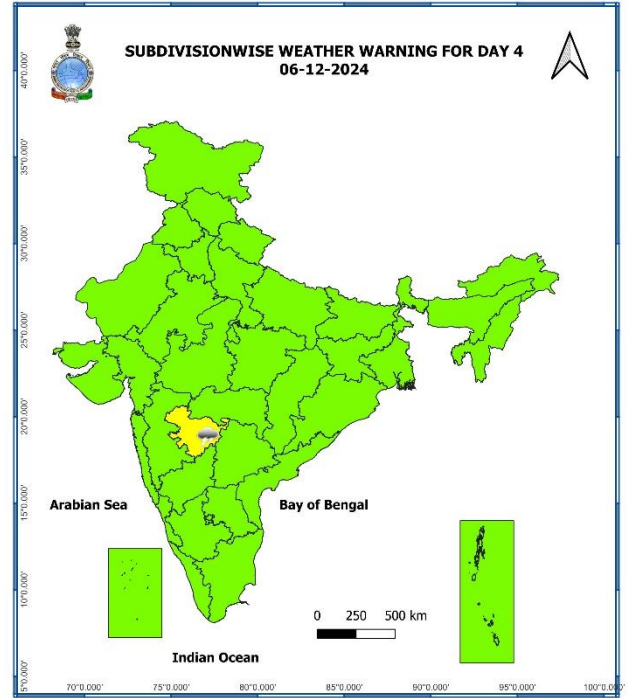
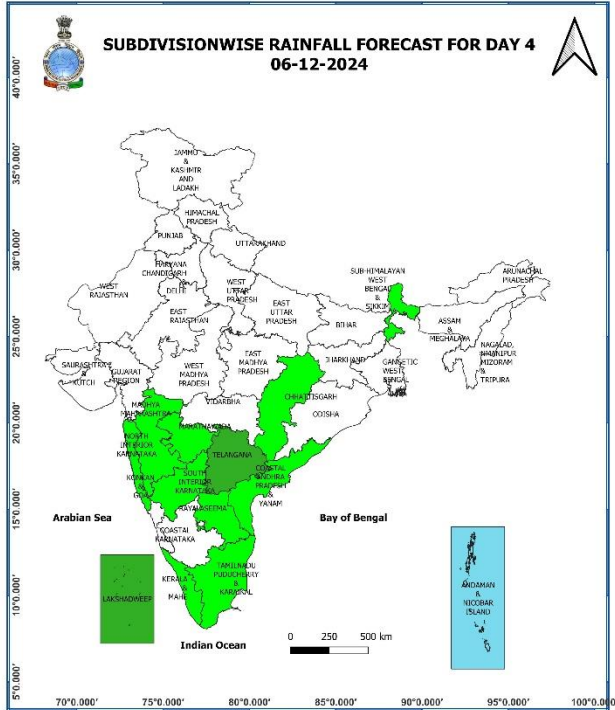
### 04 December (Day 2):

- ❖ **Heavy rainfall ( $\geq 7$  cm)** at isolated places over Kerala & Mahe and Lakshadweep.
- ❖ **Thunderstorm accompanied lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over Kerala & Mahe; **Thunderstorm with lightning** likely at isolated places over Lakshadweep.
- ❖ **Squally wind speed reaching 35-45 kmph gusting to 55 kmph** likely to prevail over Lakshadweep area, adjoining southeast Arabian sea, southern parts of eastcentral Arabian sea. Fishermen are advised not to venture into these areas.



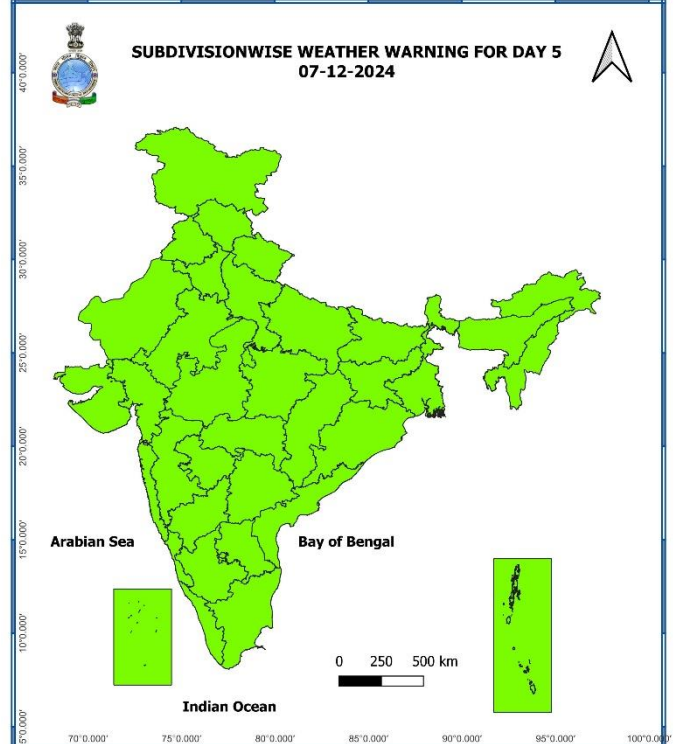
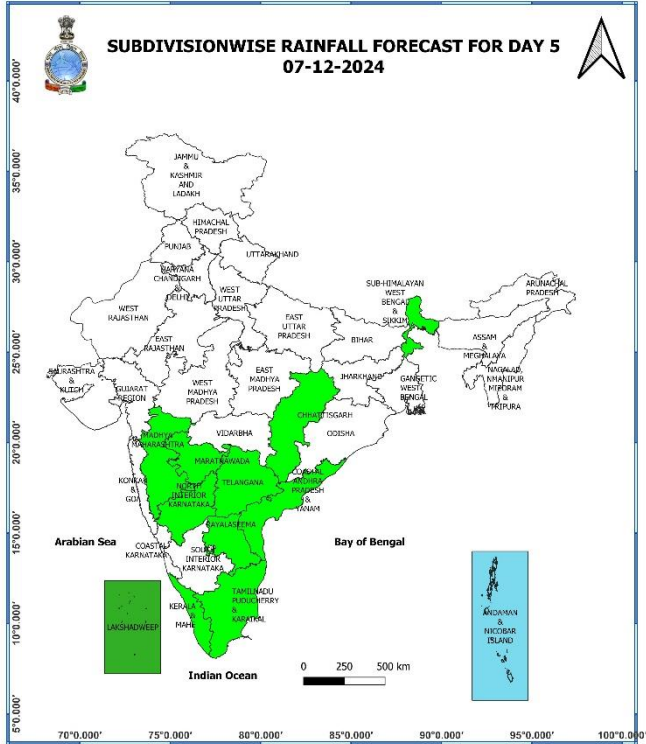
**05 December (Day 3):**

- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Marathwada.
- ❖ **Squally wind speed reaching 35-45 kmph gusting to 55 kmph** likely to prevail over southcentral parts of central Arabian sea, adjoining parts of south Arabian sea and adjoining Lakshadweep area. Fishermen are advised not to venture into these areas.



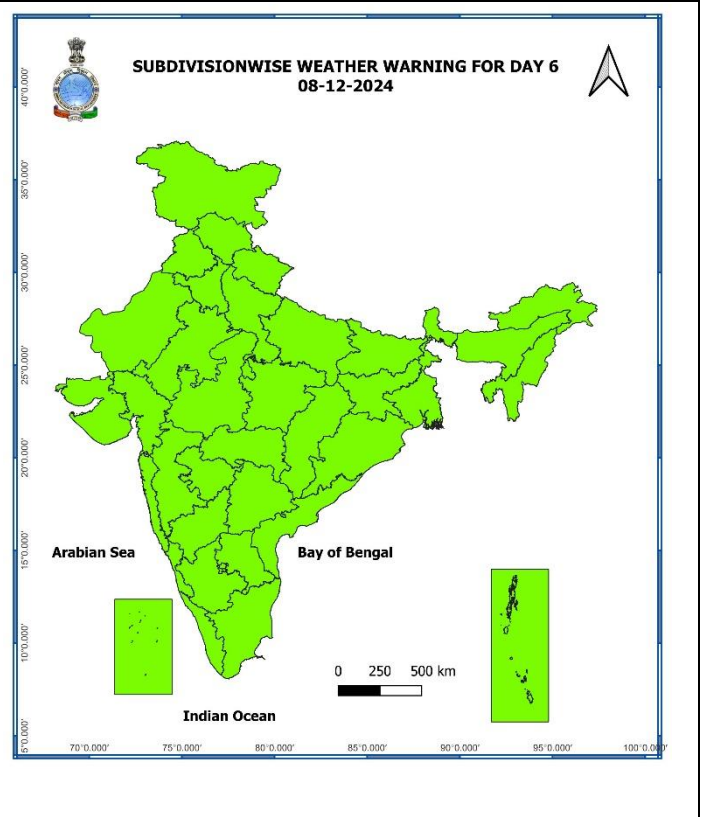
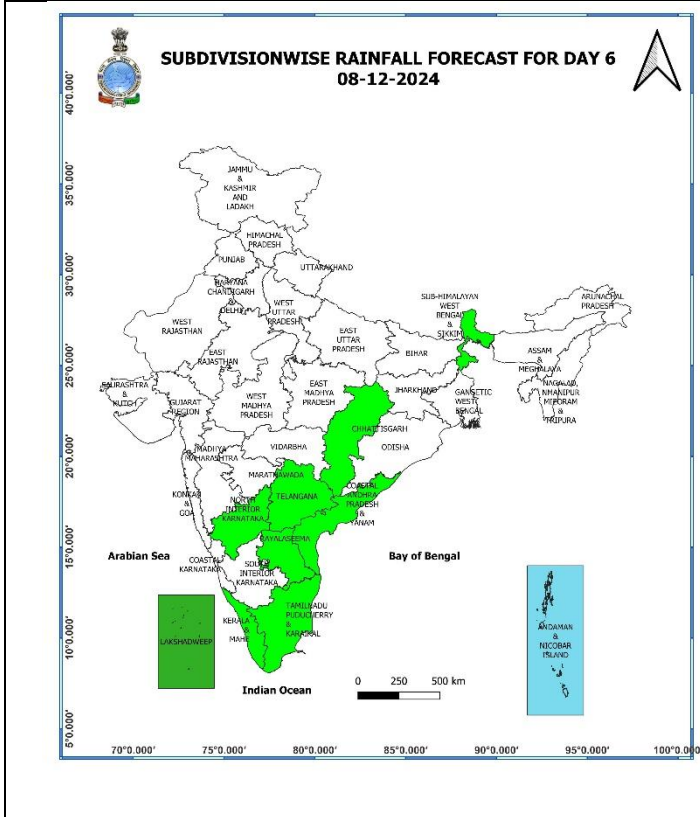
### 06 December (Day 4):

- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Marathwada.
- ❖ **Squally wind speed reaching 35-45 kmph gusting to 55 kmph** likely to prevail over central parts of south Arabian sea, adjoining parts of central Arabian sea areas. Fishermen are advised not to venture into these areas.



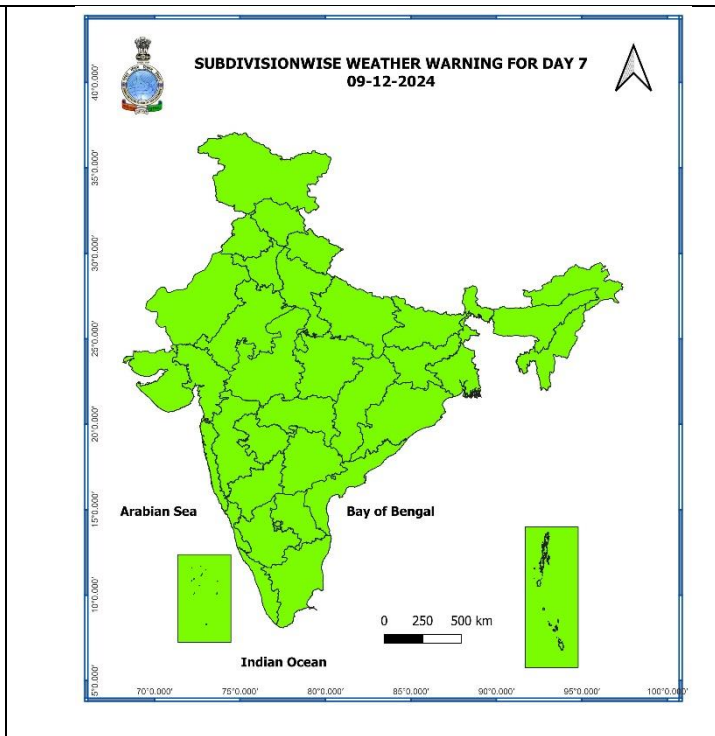
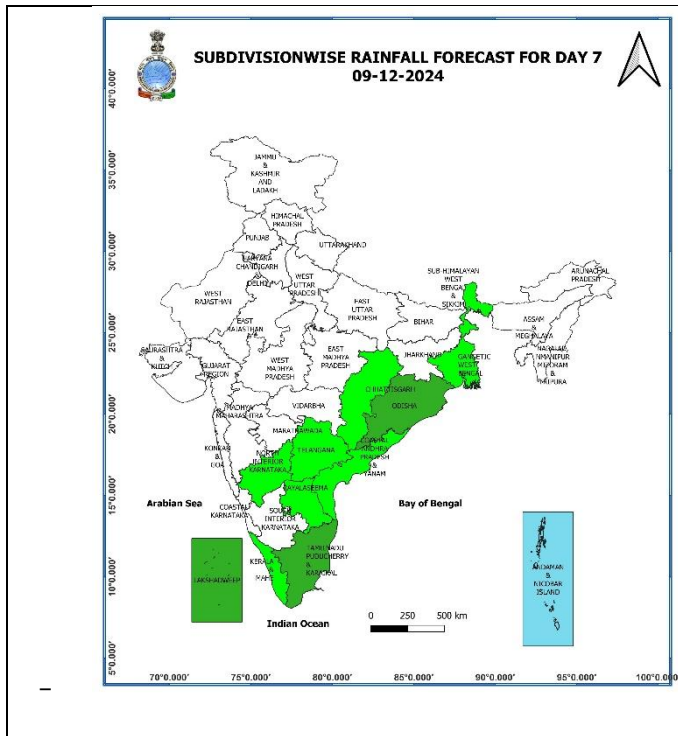
**07 December (Day 5):**

❖ **No Warning.**



**08 December (Day 6):**

❖ **No Warning.**



**09 December (Day 7):**

❖ **No Warning.**

**Weather Outlook for subsequent 3 days (During 10<sup>th</sup> December – 12<sup>th</sup> 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.

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

## Impact expected due to Heavy Rainfall

- ✓ **Isolated heavy to very heavy rainfall** over Kerala & Mahe and Coastal Karnataka on 03<sup>rd</sup> December.

### 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.

## Agromet advisories for Heavy Rainfall likely over Tamil Nadu, Kerala, South Interior Karnataka Coastal Andhra Pradesh and Rayalaseema:

- Drain out excess water from rice, sugarcane, cotton, turmeric, vegetables, and other standing crop fields, as well as coconut and banana orchards in **Tamil Nadu**; from rice, coffee, banana, coconut, areca nut, ginger, pepper, cardamom and other standing crops in **Kerala** and from cotton, rice, maize, groundnut, finger millet, pigeon pea, arecanut, fruits and vegetables in **South Interior Karnataka**.
- Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields.
- Provide adequate drainage facilities for the removal of excess water from standing crop fields and fruit orchards in Coastal Karnataka.
- Provide mechanical support to horticultural crops and staking to vegetables.

### Livestock and Fishery

- Keep the animals inside the shed during heavy rainfall and provide balanced feed.
- Store the feed and fodder at safer place to avoid spoilage from rainfall.
- Hang gunny bags all around poultry sheds.
- Construct an outlet with proper netting around the pond to drain out excess rain water, thereby preventing fishes/fingerlings from escaping in case of overflowing.
- Check and repair dykes around the ponds to avoid entry of runoff water from the catchment areas.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

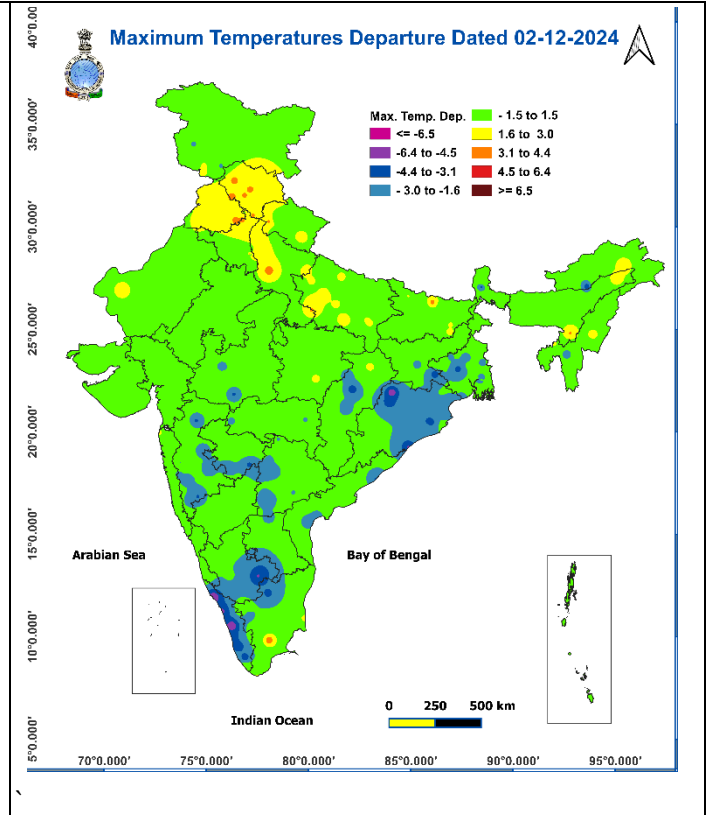
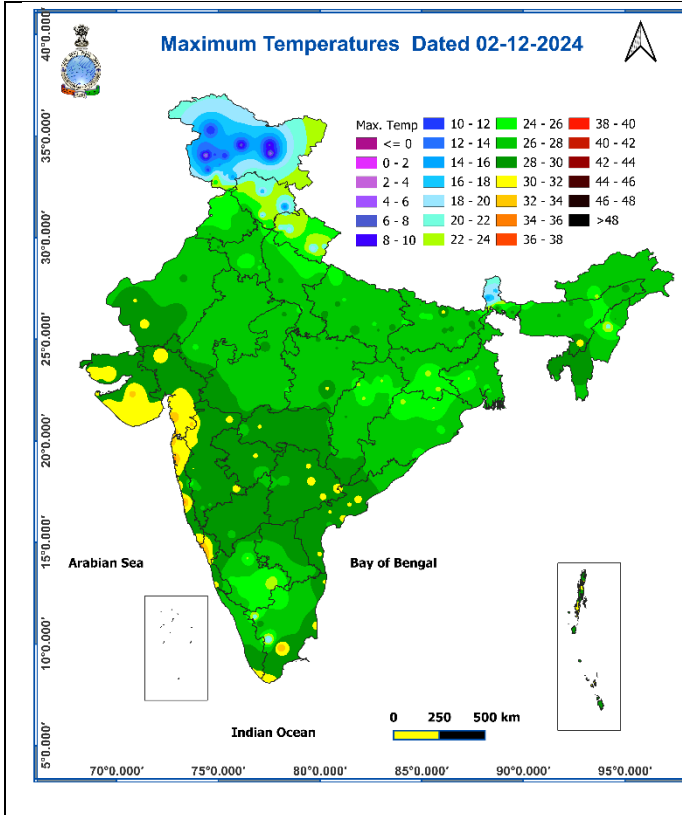


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

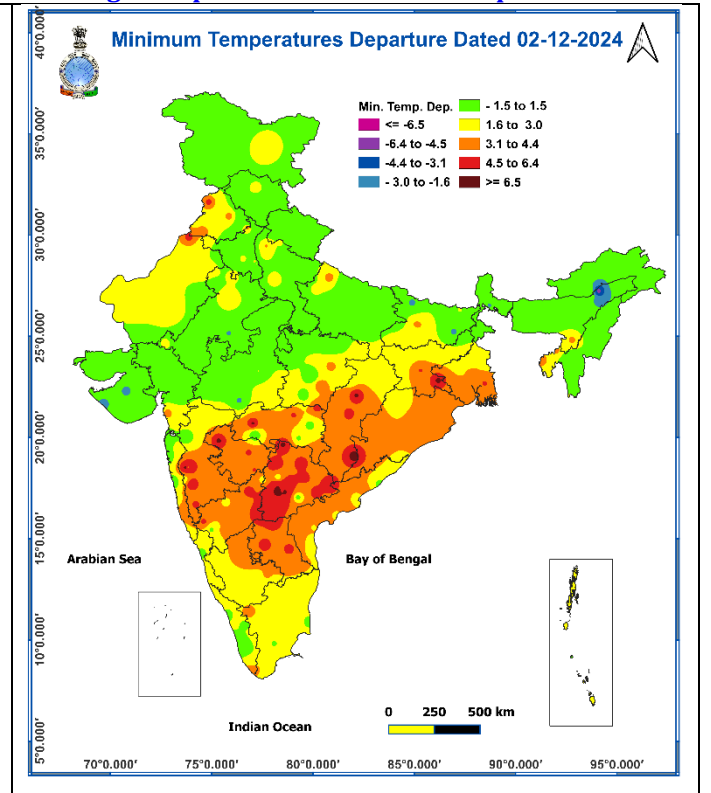
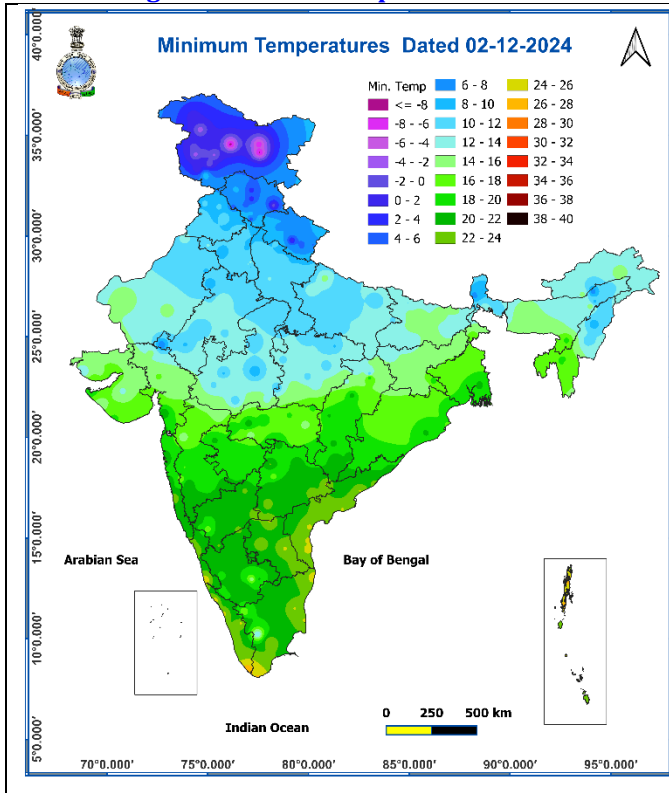
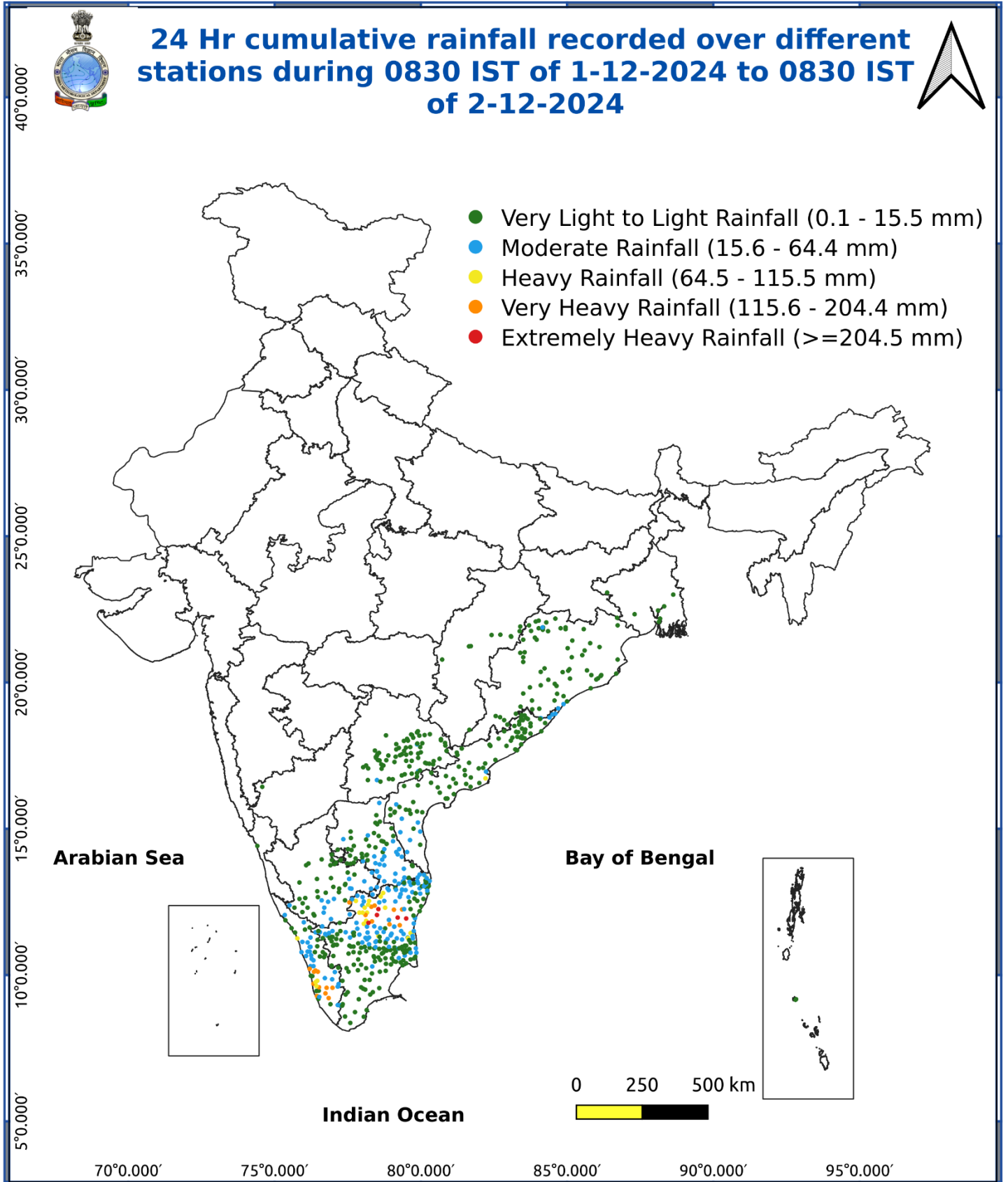


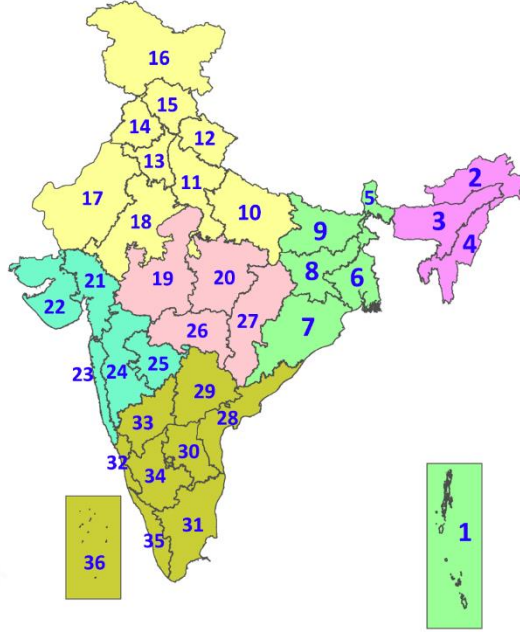
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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 \*

Heavy: 64.5 to 115.5 mm/cm \*  
Very Heavy: 115.6 to 204.4 mm/cm\*  
Extremely Heavy: > 204.4 mm/cm \*

### Heat Wave

When maximum temperature of a station reaches  $\geq 40^\circ\text{C}$  for plains and  $\geq 30^\circ\text{C}$  for hilly regions  
(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
Severe Heat Wave: Maximum Temperature Departure from normal  $\geq 6.5^\circ\text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature  $\geq 45^\circ\text{C}$ .  
Severe Heat Wave: When actual maximum temperature  $\geq 47^\circ\text{C}$

(c) Criteria for heat wave for coastal stations

When maximum temperature departure is  $> 4.5^\circ\text{C}$  from normal. Heat Wave may be described provided maximum temperature  $\geq 37^\circ\text{C}$

### Warm Night

When maximum temperature remains  $40^\circ\text{C}$

Warm Night: When minimum temperature departure  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
Severe Warm Night: When minimum temperature departure  $> 6.4^\circ\text{C}$ .

### Cold Wave

When minimum temperature of a station  $\leq 10^\circ\text{C}$  for plains and  $\leq 0^\circ\text{C}$  for hilly regions.  
(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
Severe Cold Wave: Minimum Temperature Departure from normal  $\leq -6.5^\circ\text{C}$

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave : When Minimum Temperature is  $\leq 4.0^\circ\text{C}$   
Severe Cold Wave: When Minimum Temperature is  $\leq 2.0^\circ\text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is  $\leq -4.5^\circ\text{C}$  & actual Minimum Temperature is  $\leq 15^\circ\text{C}$

### Cold Day

When minimum temperature of a station  $\leq 10^\circ\text{C}$  for plains and  $\leq 0^\circ\text{C}$  for hilly regions  
Based on departure

Cold Day: Maximum Temperature Departure from normal  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
Severe Cold Day: Maximum Temperature Departure from normal  $\leq -6.5^\circ\text{C}$

### Fog

Phenomenon of small droplets suspended in air and the horizontal visibility  $< 1\text{km}$

Moderate Fog: When the visibility between 500-200 metres  
Dense Fog: when the visibility between 50- 200 metres  
Very Dense Fog: when the visibility  $< 50$  metres

### Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)

### Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.

### Frost

Ice deposits on ground

Air temperature  $\leq 4^\circ\text{C}$  ( over Plains)

### Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph  
Severe: Wind speed 62-87 kmph  
Very Severe: Wind speed  $> 87$  kmph

### Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre  
High to very high: Wind speed 63-117 kmph ( 34-63 knots) & Wave height 6-14 metre  
Phenomenal: Wind speed  $> 117$  kmph ( $> 63$  knots) & Wave height  $> 14$  metre

### Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)  
Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)  
Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)  
Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)  
Super Cyclone Strom: Wind speed  $> 220$  kmph ( $> 119$  knots)