

Wednesday, April 23, 2025  
Time of Issue: 0745 hours IST  
(MORNING)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### Weather Systems, Forecast and Warnings:

- ❖ An upper air cyclonic circulation lies over northwest Bihar in lower tropospheric levels. A north-south trough runs from this cyclonic circulation to Gulf of Mannar and an east-west trough runs from this cyclonic circulation to Manipur in lower tropospheric levels. Another upper air cyclonic circulation lies over northeast Assam in lower tropospheric levels.
- ❖ Under the influence of these systems:
  - ✓ **Fairly widespread to widespread** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed reaching 40-50 kmph gusting to 60 kmph)** likely over Northeast India during next 7 days.
  - ✓ **Heavy to very heavy rainfall** likely over Assam & Meghalaya, Arunachal Pradesh during 23<sup>rd</sup>-27<sup>th</sup> and **heavy rainfall** over Nagaland, Manipur, Mizoram & Tripura on 23<sup>rd</sup> & 25<sup>th</sup> April.
  - ✓ **Isolated to Scattered** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed reaching 30-40 kmph gusting to 50 kmph)** likely over Karnataka, Coastal Andhra Pradesh & Yanam, Rayalaseema, Kerala & Mahe; **with lightning** over Tamilnadu Puducherry & Karaikal during next 7 days and over East India during 26<sup>th</sup>-28<sup>th</sup> April.
- ❖ A fresh Western Disturbance is likely to affect Western Himalayan region from 24<sup>th</sup> April, 2025. Under its influence;
  - ✓ **Isolated to scattered** light rainfall with **thunderstorm & lightning** likely over Western Himalayan Region during 24<sup>th</sup>-26<sup>th</sup> April.

#### Temperature Forecast:

- ❖ Gradual rise in maximum temperatures by 2-3°C likely over Northwest India during next 5 days and no significant change during subsequent 2 days.
- ❖ Rise in maximum temperatures by about 2°C likely over Central India during next 2 Days and no significant change during subsequent 5 days.
- ❖ Rise in maximum temperatures by about 2-3°C likely over Gujarat during next 3 Days and no significant change during subsequent 4 days.
- ❖ Gradual rise in maximum temperatures by 3-5°C likely over East India during next 3 Days and no significant change during subsequent 2 days; fall by 3-4°C for subsequent 2 days.
- ❖ No significant change in maximum temperatures likely over rest parts of the country.

#### Heat wave, warm night and Hot & Humid weather warning:

- ❖ **Heat wave conditions** very likely in isolated pockets over East Madhya Pradesh during 23<sup>rd</sup>-28<sup>th</sup>; West Uttar Pradesh during 23<sup>rd</sup>-27<sup>th</sup>; East Uttar Pradesh, Bihar, Odisha during 23<sup>rd</sup> -26<sup>th</sup>; Punjab, Haryana & Delhi, Rajasthan, West Madhya Pradesh during 24<sup>th</sup>-28<sup>th</sup>; Gangetic West Bengal during 23<sup>rd</sup>-26<sup>th</sup> and Jharkhand on 25<sup>th</sup> & 26<sup>th</sup> April.
- ❖ **Warm night conditions** very likely in isolated pockets over Bihar during 23<sup>rd</sup>-25<sup>th</sup>; Odisha on 23<sup>rd</sup> & 24<sup>th</sup>; East Uttar Pradesh on 23<sup>rd</sup> and Gangetic West Bengal on 23<sup>rd</sup> & 24<sup>th</sup> April.
- ❖ **Hot & humid weather** is likely to prevail over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema during 23<sup>rd</sup>-26<sup>th</sup>; Jharkhand, Gujarat State on 23<sup>rd</sup> & 24<sup>th</sup>; Konkan & Goa on 23<sup>rd</sup>; Madhya Maharashtra, Marathawada during 23<sup>rd</sup>-25<sup>th</sup> April.

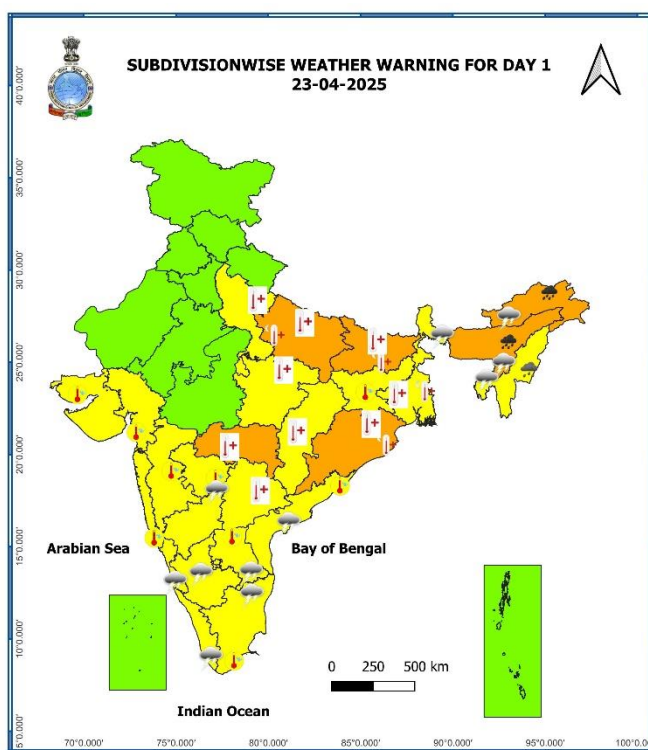
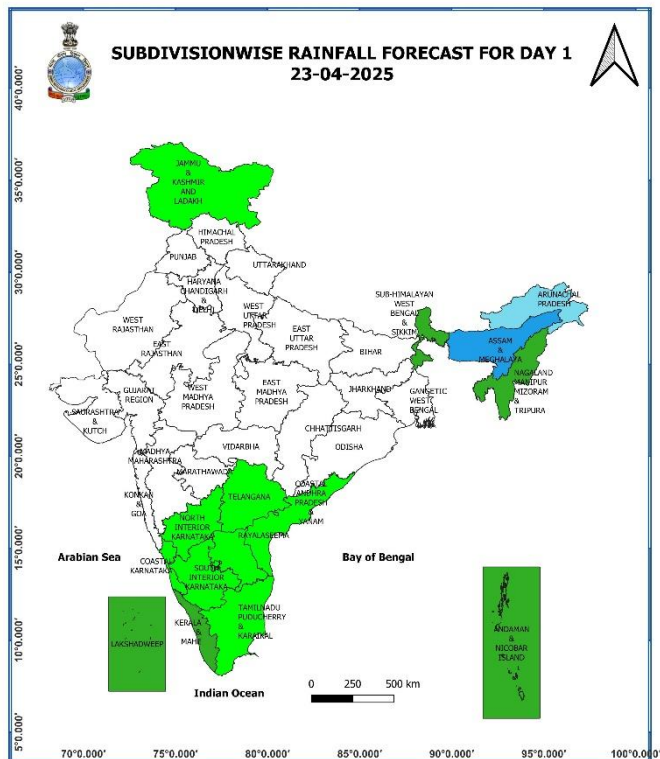
## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): at a few places over Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim; at isolated places over Nagaland, Manipur, Mizoram & Tripura, Odisha, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Coastal Karnataka, North Interior Karnataka.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday): (in cm): **Assam & Meghalaya:** Jorhat 3, Rangia 2.
- ❖ Yesterday, **Heat wave conditions** prevailed in isolated pockets of Vidarbha.
- ❖ **Minimum Temperature Departures (as on 22-04-2025):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at a few places over Assam & Meghalaya, Gangetic West Bengal; at isolated places over Bihar, Uttar Pradesh, Odisha, Madhya Maharashtra, Sub-Himalayan West Bengal & Sikkim; **above normal (1.6°C to 3.0°C)** at a few places over Marathwada and Chhattisgarh; at isolated places over Nagaland, Manipur, Mizoram & Tripura, East Madhya Pradesh, Uttarakhand, Chandigarh, north Telangana, north Coastal Andhra Pradesh & Yanam, north Kerala & Mahe. These were **appreciably below normal (-5.0°C to -3.1°C)** at isolated places over West Rajasthan; **below normal (-3.0°C to -1.6°C)** at isolated places over East Rajasthan, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and normal over rest parts of the country (**Fig. 4**). Yesterday, the **lowest minimum temperature of 17.0°C** was reported at **Bathinda (Punjab)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 22-04-2025):** Maximum Temperatures were **appreciably above normal (3.1°C to 5.0°C)** at many places over Vidarbha; at a few places over East Uttar Pradesh, Saurashtra & Kutch; at isolated places over West Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Jharkhand, Bihar; **above normal (1.6°C to 3.0°C)** at a few places over Haryana-Chandigarh-Delhi, Punjab, Madhya Maharashtra, Marathwada; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Gujarat Region, Telangana, Odisha, Gangetic West Bengal, Assam & Meghalaya. These were **below normal (-3.0°C to -1.6°C)** at a few places over Andaman & Nicobar Islands; at isolated places over South Interior Karnataka, Telangana, and normal over rest parts of the country (**Fig. 2**). Yesterday, the highest **maximum temperature of 46.2°C** was reported at **Jharsuguda (Odisha)** over the country.

## Meteorological Analysis (Based on 0530 hours IST)

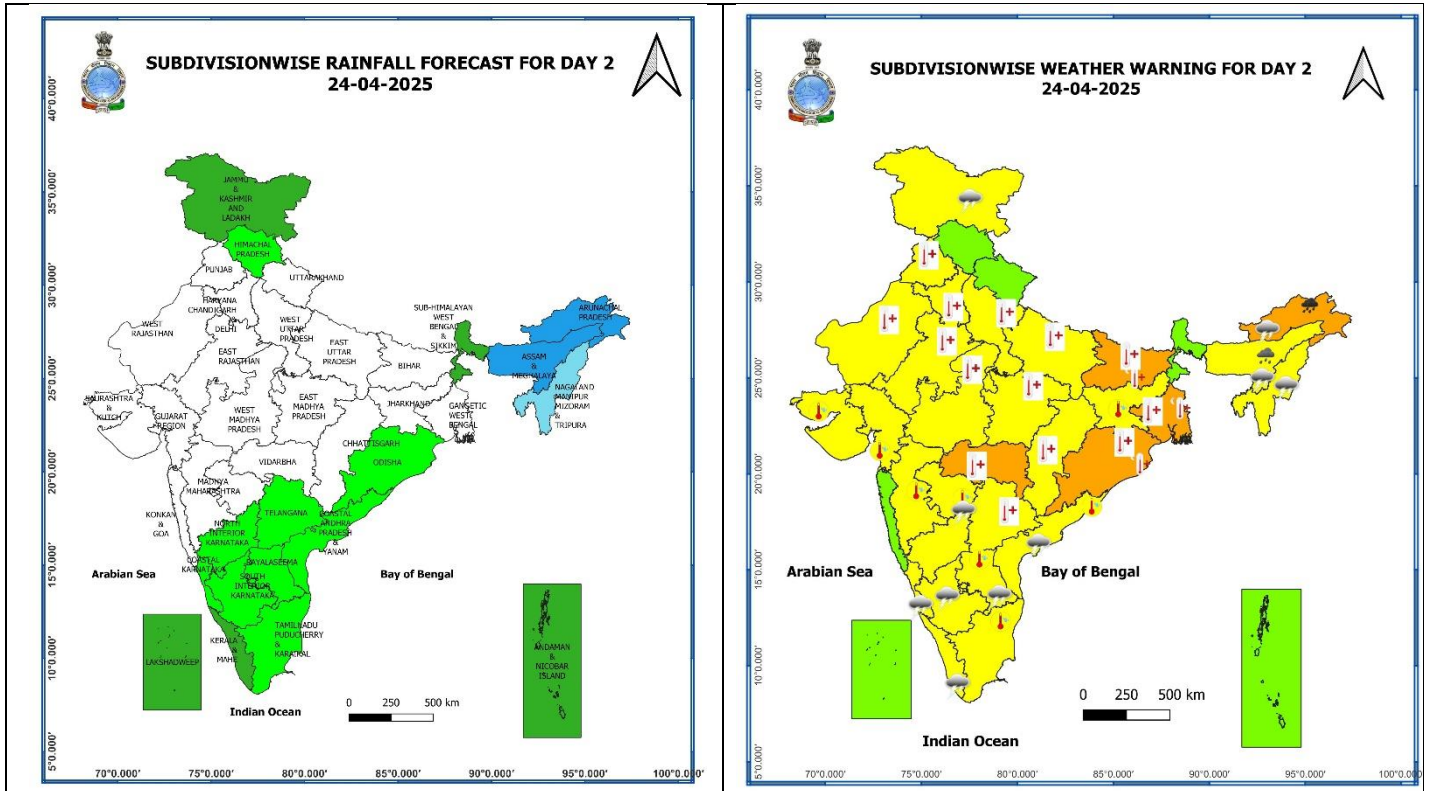
- ❖ The **Western Disturbance** as a cyclonic circulation over north Pakistan & adjoining Jammu now seen as a **trough** in middle tropospheric level roughly along Long. 70°E to the north of Lat. 37°N.
- ❖ The **trough** from central Pakistan to northwest Uttar Pradesh across Punjab & Haryana at 1.5 km above mean sea level persists.
- ❖ The upper air **cyclonic circulation** over northwest Bihar & neighbourhood at 0.9 km above mean sea level persists.
- ❖ Another **trough** from above cyclonic circulation over northwest Bihar & neighbourhood to Manipur across Sub-Himalayan West Bengal, Bangladesh and south Assam at 0.9 km above mean sea level persists.
- ❖ The north-south **trough** from cyclonic circulation over northwest Bihar & neighbourhood to Gulf of Mannar across Chhattisgarh, East Vidarbha, Telangana, Interior Karnataka and Tamil Nadu at 0.9 km above mean sea level persists.
- ❖ The upper air **cyclonic circulation** over northeast Assam & neighbourhood between 1.5 & 3.1 km above mean sea level persists.
- ❖ The upper air **cyclonic circulation** over south coastal Tamil Nadu at 1.5 km above mean sea level persists.
- ❖ A fresh **Western Disturbance** is likely to affect Western Himalayan region from 24<sup>th</sup> April, 2025.

**Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 30<sup>th</sup> April, 2025)**



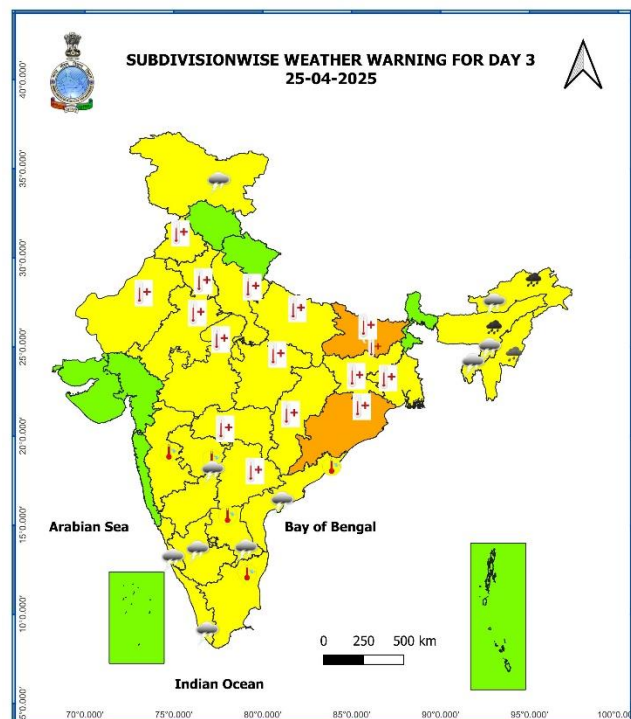
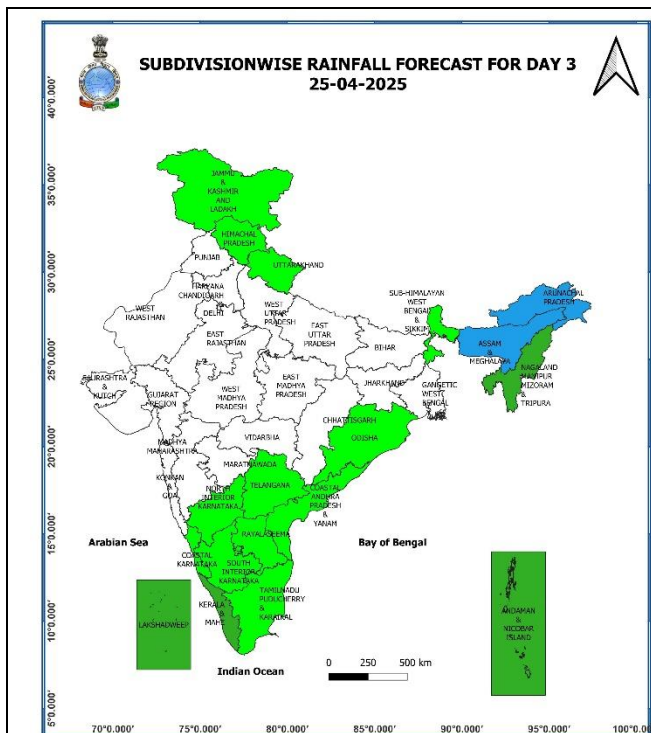
**23<sup>rd</sup> April (Day 1)**

- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed reaching 40 - 50 kmph gusting to 60 kmph)** very likely at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura; **with lightning & gusty winds (speed reaching 30 - 40 kmph gusting to 50 kmph)** at isolated places over Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, Interior Karnataka; **with lightning** at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Tamil Nadu, Puducherry & Karaikal and Coastal Karnataka.
- ❖ **Heavy to very heavy rainfall** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and **heavy rainfall** at isolated places over Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Heat wave conditions** very likely in isolated pockets over Uttar Pradesh, East Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Bihar, Odisha and Telangana.
- ❖ **Hot and Humid** very likely at isolated places over Jharkhand, Konkan & Goa, Madhya Maharashtra, Marathwada, Gujarat state, Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Warm Night conditions** very likely at isolated places over East Uttar Pradesh, Gangetic West Bengal, Bihar and Odisha.



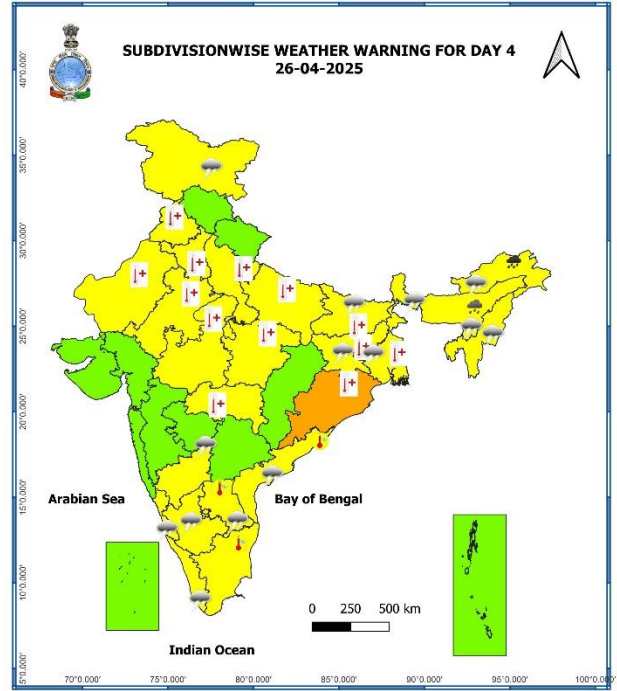
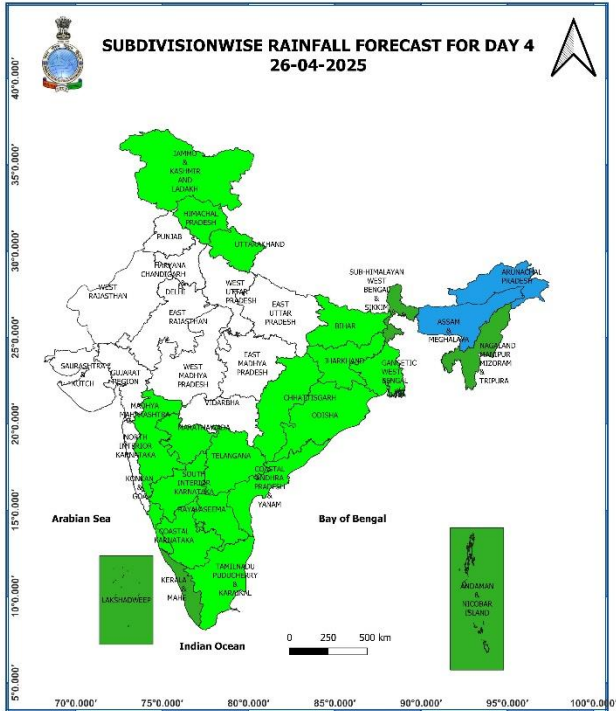
## 24<sup>th</sup> April (Day 2)

- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed reaching 40 - 50 kmph gusting to 60 kmph)** very likely at isolated places over Assam & Meghalaya; **with lightning, gusty winds (speed reaching 30 - 40 kmph gusting to 50 kmph)** at isolated places over Nagaland, Manipur, Mizoram & Tripura, Interior Karnataka, Coastal Andhra Pradesh & Yanam and Rayalaseema; **with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Arunachal Pradesh, Kerala & Mahe and Coastal Karnataka.
- ❖ **Heavy to very heavy rainfall** very likely at isolated places over Arunachal Pradesh and **heavy rainfall** at isolated places over Assam & Meghalaya.
- ❖ **Heat wave conditions** very likely in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, north Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Bihar, Odisha and Telangana.
- ❖ **Hot and Humid** very likely at isolated places over Jharkhand, Madhya Maharashtra, Marathwada, Gujarat state, Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Warm Night conditions** very likely at isolated places over Gangetic West Bengal, Bihar and Odisha.



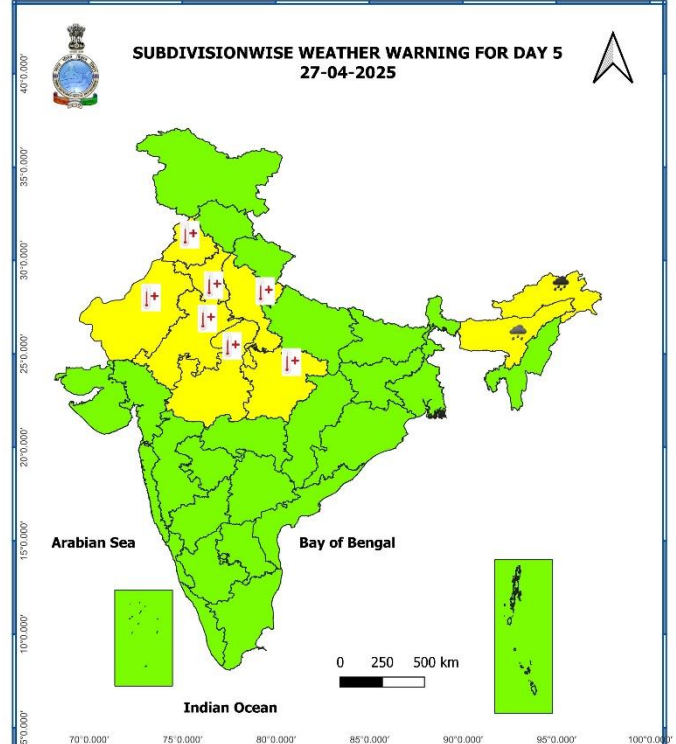
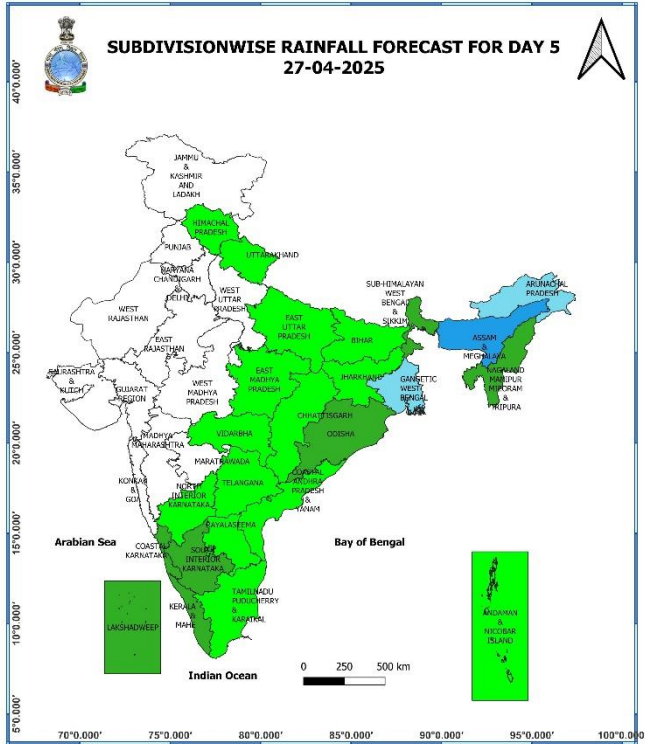
## 25<sup>th</sup> April (Day 3)

- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 30 - 40 kmph gusting to 50 kmph)** likely at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Interior Karnataka, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Arunachal Pradesh, Kerala & Mahe and Coastal Karnataka.
- ❖ **Heavy to very heavy rainfall** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and **heavy rainfall** at isolated places over Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Heat wave conditions** likely in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, north Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Bihar, Jharkhand, Odisha and Telangana.
- ❖ **Hot and Humid** likely at isolated places over Madhya Maharashtra, Marathwada, Gujarat state, Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Warm Night conditions** likely at isolated places over Bihar.



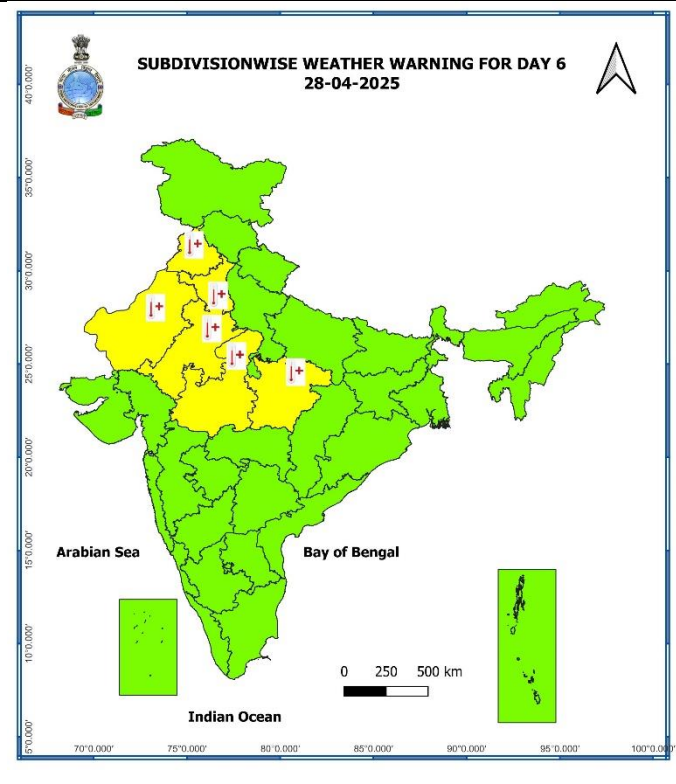
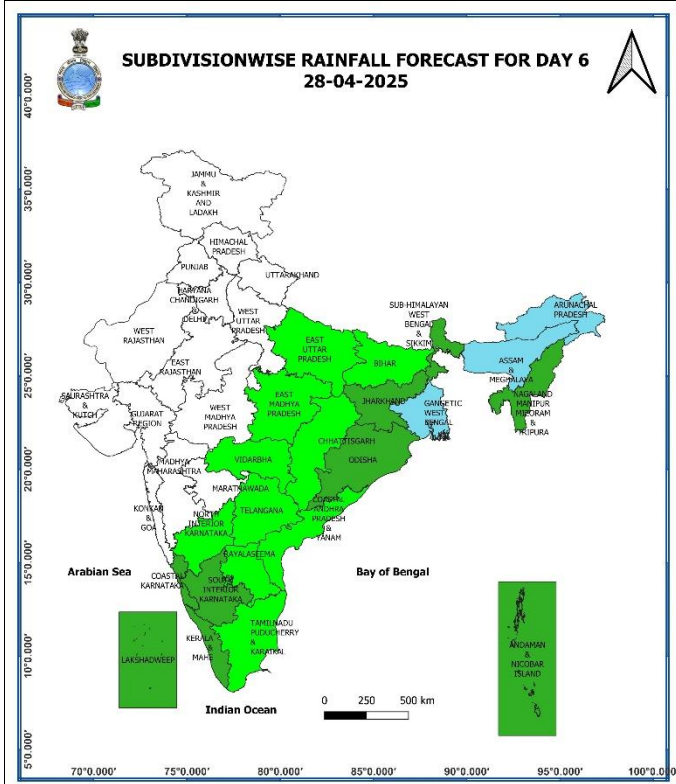
## 26<sup>th</sup> April (Day 4)

- ❖ **Thundersquall accompanied with lightning & gusty winds (speed reaching 50 - 60 kmph gusting to 70 kmph)** very likely at isolated places over Bihar; **Thunderstorm accompanied with lightning & gusty winds (speed reaching 40 - 50 kmph gusting to 60 kmph)** at isolated places over Gangetic West Bengal; **with lightning & gusty winds (speed reaching 30 - 40 kmph gusting to 50 kmph)** at isolated places over Sub-Himalayan West Bengal & Sikkim, Jharkhand, Assam & Meghalaya, Interior Karnataka, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe and Coastal Karnataka.
- ❖ **Heavy to very heavy rainfall** likely at isolated places over Arunachal Pradesh and **heavy Rainfall** at isolated places over Assam & Meghalaya.
- ❖ **Heat wave conditions** likely in some parts of north Rajasthan; in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Madhya Pradesh, Vidarbha, Gangetic West Bengal, Bihar, Jharkhand and Odisha.
- ❖ **Hot and Humid** likely at isolated places over Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamil Nadu, Puducherry & Karaikal.



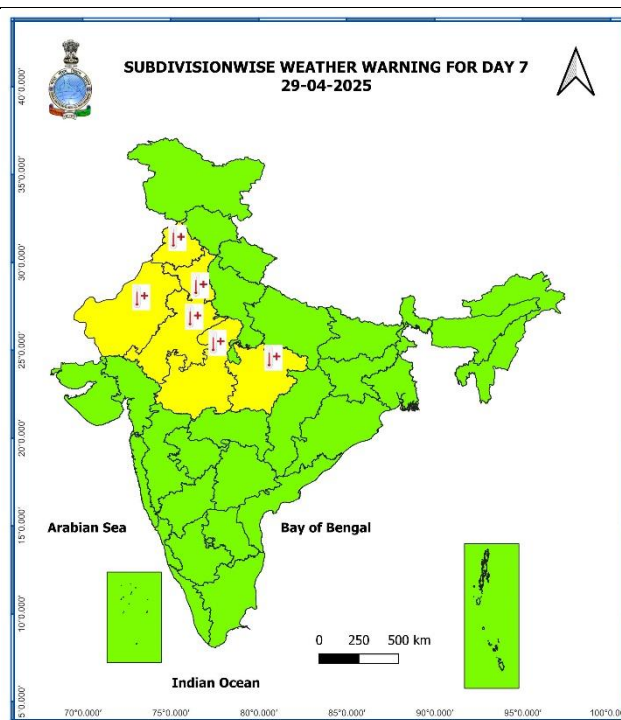
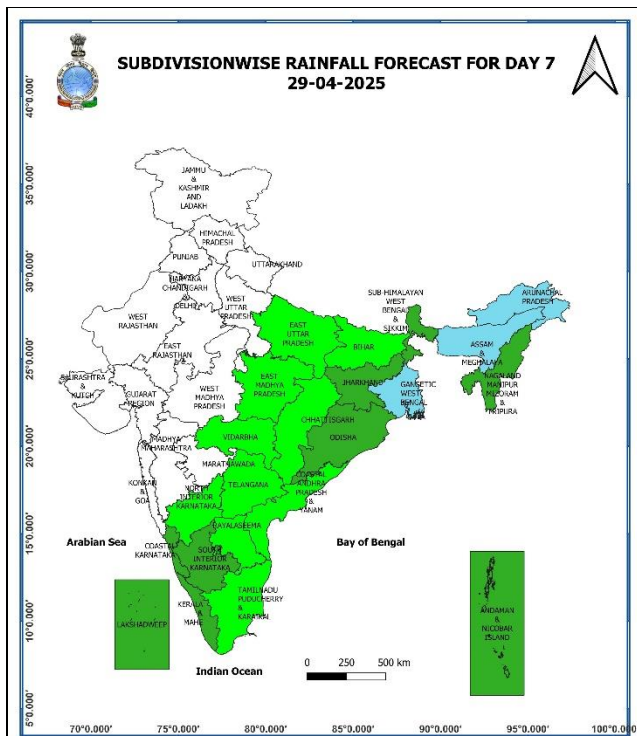
## 27<sup>th</sup> April (Day 5)

- ❖ **Heavy to very heavy rainfall** likely at isolated places over Arunachal Pradesh and **Heavy Rainfall** at isolated places over Assam & Meghalaya.
- ❖ **Heat wave conditions** likely in some parts of north Rajasthan; in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh and Madhya Pradesh.



## 28<sup>th</sup> April (Day 6)

- ❖ **Heat wave conditions** likely in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, north Rajasthan and Madhya Pradesh.



## 29<sup>th</sup> April (Day 7)

- ❖ **Heat wave conditions** likely in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, north Rajasthan and Madhya Pradesh.

## Weather Outlook for subsequent 3 days (During 30<sup>th</sup> April- 02<sup>nd</sup> May, 2025)

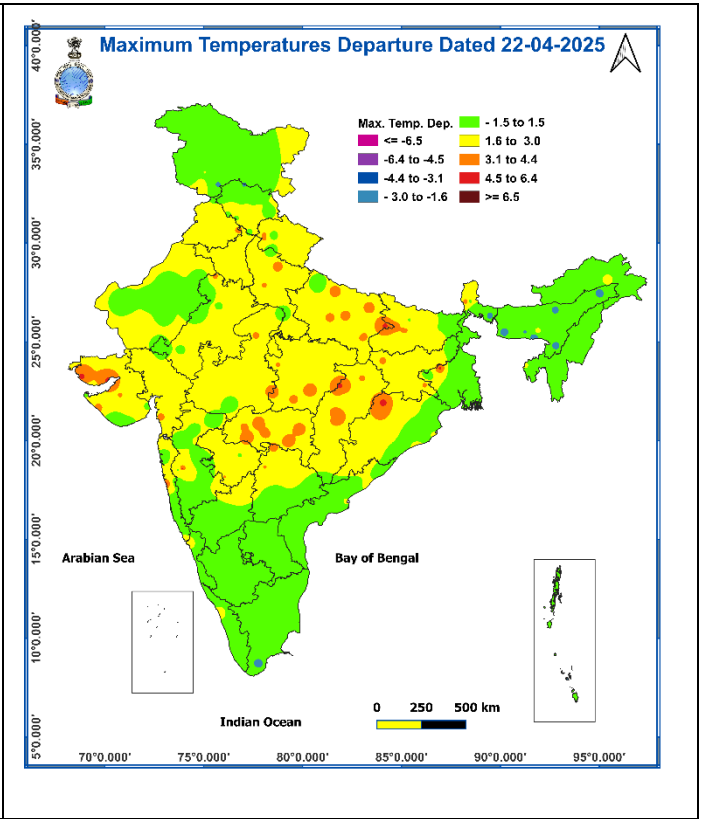
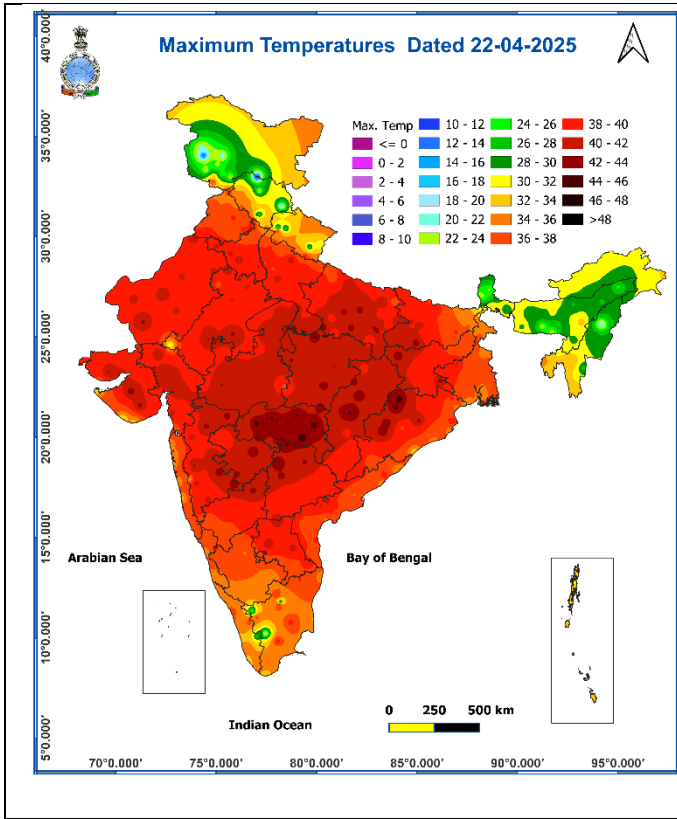
- ❖ **Fairly widespread to widespread** rainfall activity likely over east & northeast India, Kerala.
- ❖ **Isolated to scattered** rainfall likely over Uttarakhand, north Uttar Pradesh, remaining parts of south peninsular India and Andaman & Nicobar Islands.

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.

**Fig. 1: Maximum Temperatures**

**Fig. 2: Departure of Maximum Temperatures**



**Fig. 3: Minimum Temperatures**

**Fig. 4: Departure of Minimum Temperatures**

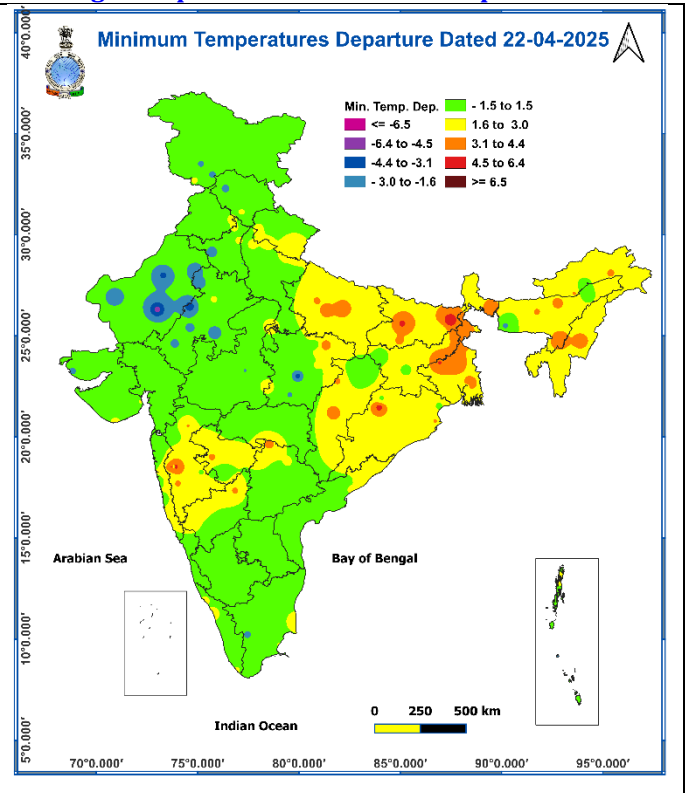
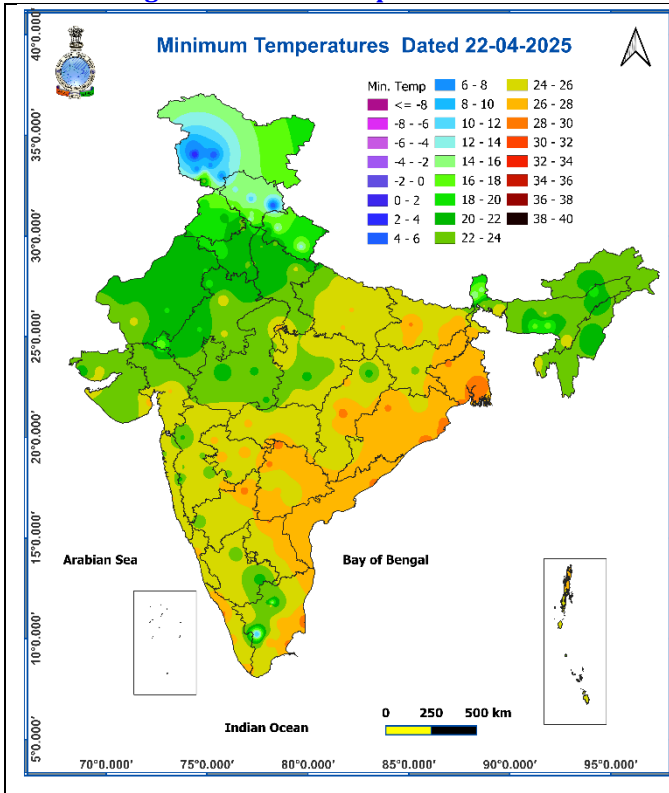
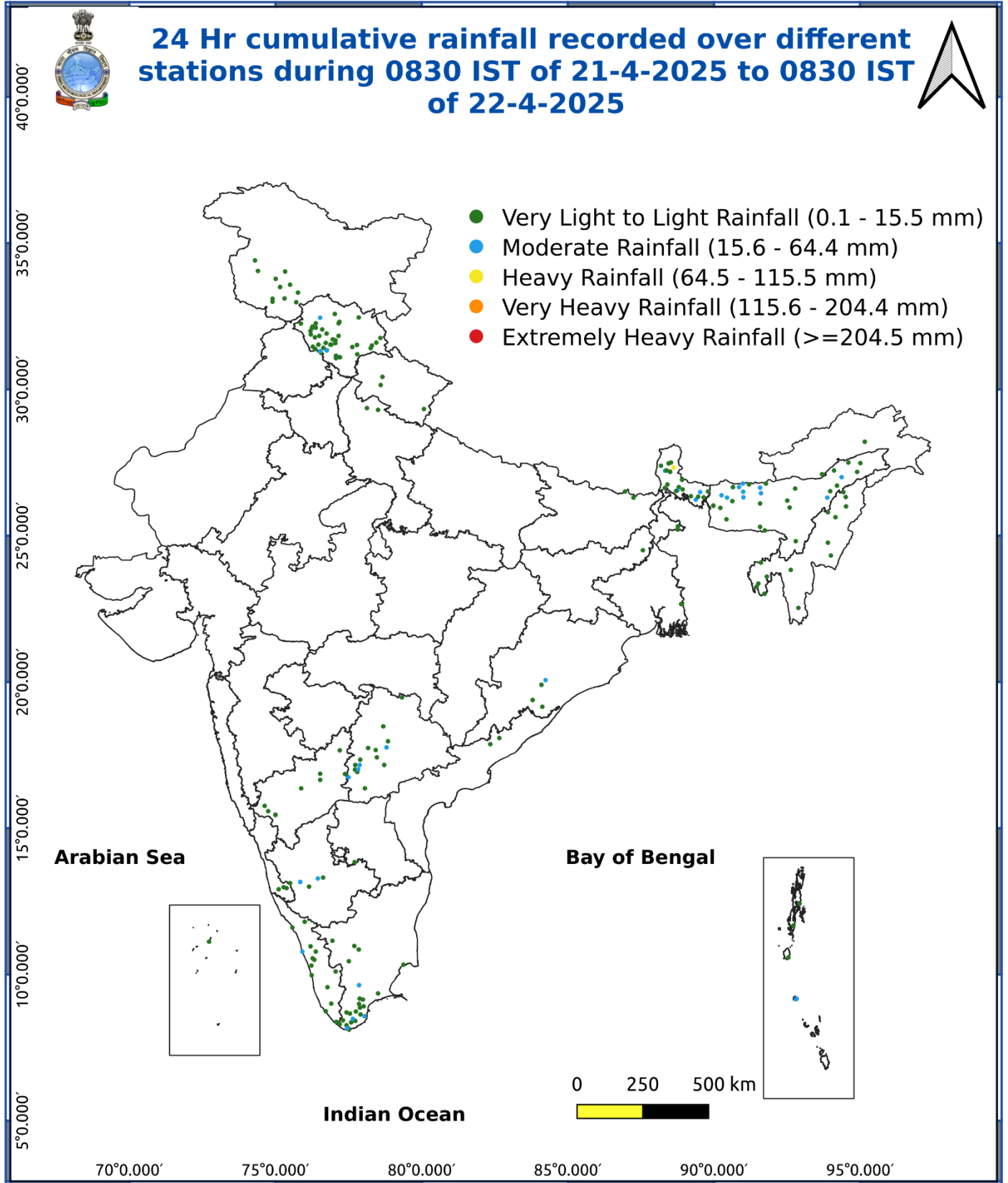


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



\* 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 and action suggested due to isolated thunderstorm with lightning/gusty & Squally winds & Hailstorm

### Impact expected:

- Breaking of tree branches, uprooting of large avenue trees. Large dead limbs blown from trees. Damage to Standing crops.
- Minor to Major damage to banana and papaya trees.
- Minor to major damage to power and communication lines due to breaking of branches.
- Strong wind/hail may damage plantation, horticulture and standing crops.
- Hail may injure people and cattle at open places.
- Partial damage to vulnerable structures due to strong winds.
- Minor damage to kutcha houses/walls and huts.
- Loose objects may fly.

### Action suggested:

- People are advised to keep a watch on the weather for worsening conditions and be ready to move to safer places accordingly.
- Stay indoors, close windows & doors and avoid travel if possible.
- Take safe shelters; do not take shelter under trees.
- Do not lie on concrete floors and do not lean against concrete walls.
- Unplug electrical/ electronic appliances.
- Immediately get out of water bodies.
- Keep away from all the objects that conduct electricity.

## Impact expected and action suggested due to Heat wave conditions over Central India and plains of Northwest India till 28th and East India till 26th April.

### Yellow alert Areas

- Moderate temperature & heat is tolerable for general public but moderate health concern likely for vulnerable people e.g. infants, elderly, people with chronic diseases.
- Avoid heat exposure.
- Wear lightweight, light colour, loose, cotton clothes.
- Cover your head, use a cloth, hat or umbrella.

## Impact & Action Suggested due to heavy to very heavy rainfall over Arunachal Pradesh during 23<sup>rd</sup> -26<sup>th</sup> and Assam & Meghalaya on 23<sup>rd</sup> April.

### 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).

### 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 likely impact of Heavy Rainfall / Gusty Winds / Heat wave

- In **North Eastern States**, make provision to drain out excess water from standing crop and vegetable fields.
- In **Madhya Pradesh, Chhattisgarh, Vidarbha, Uttar Pradesh, Rajasthan, Haryana, Punjab, Odisha, Bihar, Jharkhand, Gangetic West Bengal and Telangana**, apply light and frequent irrigation to standing crops, vegetables and orchards in the evening to protect them from adverse effects of heat waves and high temperatures.
- Shift the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields. Tie the harvested crops properly and cover them to minimise the risk of displacement due to strong surface winds.
- Provide mechanical support to horticultural crops and staking to vegetables to avoid lodging.

### Livestock / Poultry / Fishery

- Keep the animals inside the shed during heavy rainfall / hailstorm and provide them balanced feed.
- Store feed and fodder in a safe place to prevent spoilage.
- To reduce the effect of heat wave/high temperature, cover the roof of poultry sheds with grass. Also, provide clean, hygienic and plenty of drinking water to animals.
- Construct an outlet with proper netting around the ponds to drain out excess water, thereby preventing fish from escaping in case of overflow.

## 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)



### 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)