

Sunday, April 13, 2025
Time of Issue: 1355 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems, Forecast and Warnings:

- ❖ The **Western Disturbance** as a trough in westerlies in middle tropospheric levels runs roughly along Long. 81°E to the north of Lat. 21°N. An **upper air cyclonic circulation** lies over southeast Madhya Pradesh and a **trough** runs from this cyclonic circulation to central parts of Telangana and a **trough** from central parts of West Rajasthan to cyclonic circulation over Southeast Madhya Pradesh and another **trough** runs from central parts of Bihar to North Coastal Odisha in lower tropospheric levels.
- ❖ **An Upper air cyclonic circulations** also lie over south Assam & another over central parts of Coastal Andhra Pradesh & Yanam in lower tropospheric levels.
- ❖ Under the influence of these systems:
 - ✓ **Scattered to fairly widespread** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 40-50 kmph)** likely over Northeast and adjoining East India during next 5 days.
 - ✓ Isolated to scattered rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 40-50 kmph)** likely over plains of Central India and Maharashtra on 13th & 14th April.
 - ✓ **Heavy rainfall** likely over Sub-Himalayan West Bengal & Sikkim on 13th; Assam & Meghalaya during 14th-16th; Odisha on 15th & 16th April.
 - ✓ **Isolated Hailstorm** likely over Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam and Madhya Pradesh on 13th; Jharkhand on 14th & 15th April.
 - ✓ **Thundersquall (wind speed reaching 50-60 kmph)** very likely at isolated places over Gangetic **West Bengal**, Odisha, Coastal Andhra Pradesh & Yanam and Madhya Pradesh on 13th April.
 - ✓ **Scattered to fairly widespread** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 30-40 kmph)** likely over Tamilnadu Puducherry & Karaikal, North interior Karnataka, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana during next 5 days. **Isolated to Scattered** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 40-50 kmph)** likely over South Interior Karnataka, Kerala & Mahe during next 3 days.

Temperature Forecast:

- ❖ Gradual Rise in maximum temperatures by 3-5°C likely over Northwest India during next 5-6 days during 13-18 April.
- ❖ No significant change in maximum temperatures likely over Central India during next 24 hours and gradual rise by 2-4°C during subsequent 6 days.
- ❖ Rise in maximum temperatures by 2-4°C likely over West India during next 5 days and no significant change thereafter during 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 at isolated/some places over West Rajasthan on 14th & 15th with severe heat wave conditions at many parts during 16th-18th and at isolated pockets on 19th April.
- ❖ **Heat wave conditions** are very likely at isolated places over north Tamil Nadu on 13th; Telangana on 13th & 14th; West Madhya Pradesh during 15th-19th; Gujarat state from 15th-17th; Punjab, Haryana during 16th-18th April and over East Rajasthan during 16th-19th April.
- ❖ **Hot & humid** weather is likely to prevail over Coastal Andhra Pradesh & Yanam on 13th; Gujarat State during 15th-17th April.

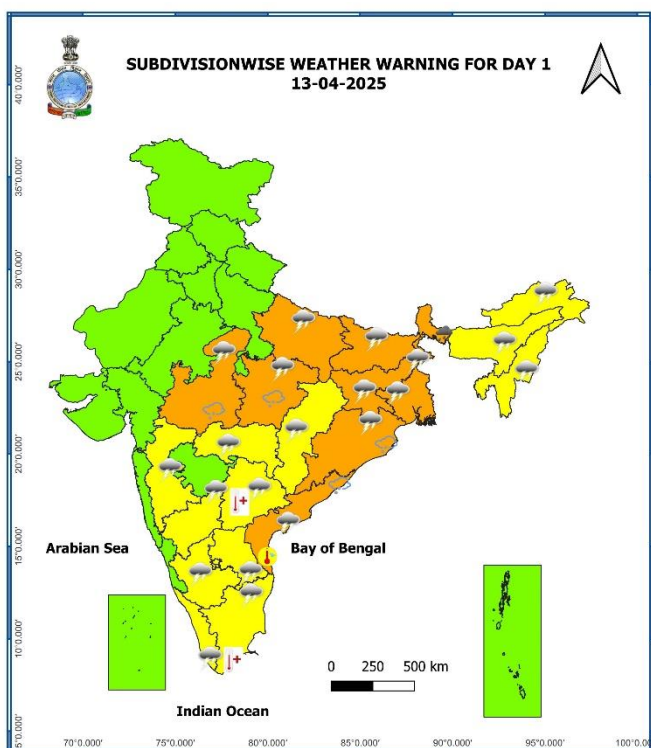
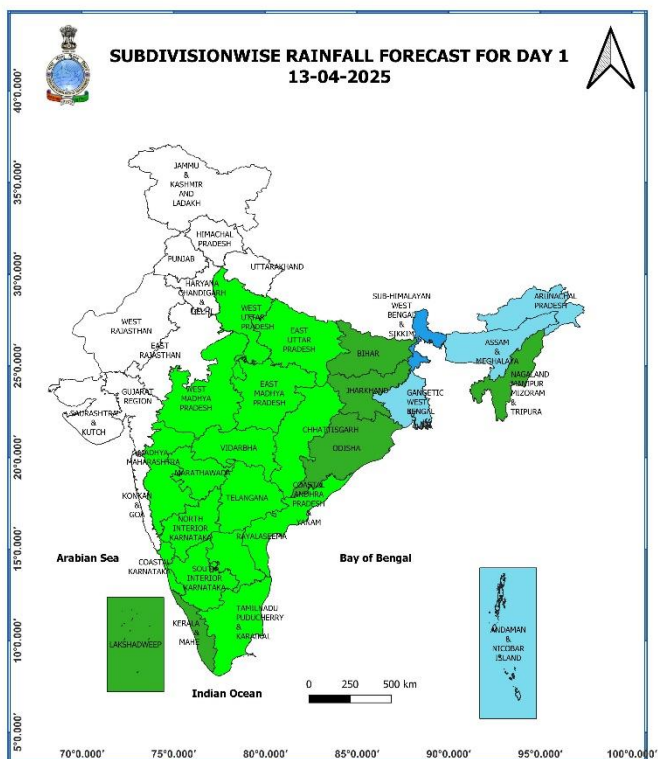
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most places** over Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim; **at many places** over Himachal Pradesh, Uttarakhand; **at a few places** over Bihar, Odisha, Arunachal Pradesh, Assam & Meghalaya, East Madhya Pradesh; **at isolated places** over Punjab, Haryana Chandigarh & Delhi, up, Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Jharkhand, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Sub-Himalayan West Bengal & Sikkim:** Falakata-7, Amfu Pundibari (dist Cooch Behar) 6, Kabi (dist Mangan) 5, Cooch Behar (dist Cooch Behar) 4; **Assam & Meghalaya:** Dudhnoi ARG (dist Goalpara) 5, Barpeta/sarbhog_aws (dist Barpeta) 5, Kajolgaon_aws (dist Chirang) 4; **Tamil Nadu:** Vellore (dist Vellore), Tirupuvanam (dist Sivagangai), Melur (dist Madurai), Mullanginavillai (dist Kanyakumari), Kelavarapalli Dam (dist Krishnagiri) 3 each; **Kerala & Mahe:** Kunnamkulam (Thrissur district) 4, Kunnamkulam (Thrissur district), Pothundy Dam & Kanjirapuzha (both in Palakkad district) 3 each; **South Interior Karnataka:** N R Pura (dist Chikkamagaluru) 4, Jayapura (dist Chikkamagaluru) 3; **Royalaseema:** Chittoor (dist Chittoor) 4, Chinnamandem (dist Annamayya District) 3.
- ❖ **Thunderstorm** accompanied with Squally/Gusty winds prevailed at a few places over Odisha and at isolated locations over Assam & Meghalaya, Tripura, Himachal Pradesh, Uttarakhand, Haryana, Uttar Pradesh, East Rajasthan, West Bengal & Sikkim, Jharkhand, Bihar, Madhya Pradesh, Vidarbha, Chhattisgarh.
- ❖ **Hailstorm** occurred at isolated places over Himachal Pradesh, West Uttar Pradesh, Madhya Pradesh, Vidarbha, Madhya Maharashtra and Odisha.
- ❖ **Heavy rainfall** recorded at isolated places over Sub-Himalayan West Bengal & Sikkim.
- ❖ **Duststorm** recorded at isolated places over East Uttar Pradesh.
- ❖ **Minimum Temperature Departures (as on 13-04-2025):** Minimum temperatures are **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Rajasthan, Coastal Andhra Pradesh & Yanam; **above normal (1.6°C to 3.0°C)** at a few places over Gujarat Region; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttar Pradesh, Bihar, Arunachal Pradesh, Assam & Meghalaya, West Madhya Pradesh, Saurashtra & Kutch, Marathwada, Madhya Maharashtra, Royalaseema and Tamil Nadu, Puducherry & Karaikal. These are **appreciably below normal (-5.0°C to -3.1°C)** at isolated places over Himachal Pradesh, Uttarakhand, East Madhya Pradesh; **below normal (-3.0°C to -1.6°C)** at a few places over Odisha; at isolated places over Gangetic West Bengal, Coastal and South Interior Karnataka and normal over rest parts of the country (**Fig. 4**). Today, the **lowest minimum temperature of 16.8°C** is reported at **Chandigarh (Chandigarh)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 12-04-2025):** Maximum Temperatures were **markedly below normal (5.1°C or more)** at isolated places over Coastal Andhra Pradesh & Yanam; **appreciably above normal (3.1°C to 5.0°C)** at a few places over Tamil Nadu, Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at a few places over West Rajasthan, Assam and Coastal Karnataka; at isolated places Saurashtra & Kutch, Odisha and Arunachal Pradesh. These were **markedly below normal (-5.1°C or less)** at isolated places over Himachal Pradesh, Punjab; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over East Uttar Pradesh, Bihar, Gangetic West Bengal and Andaman & Nicobar Islands; **below normal (-3.0°C to -1.6°C)** at many places over North Interior Karnataka; at a few places Haryana-Chandigarh-Delhi, Jharkhand and South Interior Karnataka; at isolated places over West Uttar Pradesh, Madhya Pradesh, Gujarat Region, Madhya Maharashtra, Manipur and Kerala & Mahe and normal over rest parts of the country (**Fig. 2**). Yesterday, the highest **maximum temperature of 42.3°C** was reported at **Rajkot (Saurashtra & Kutch)** over the country.

Meteorological Analysis (Based on 0830 hours IST)

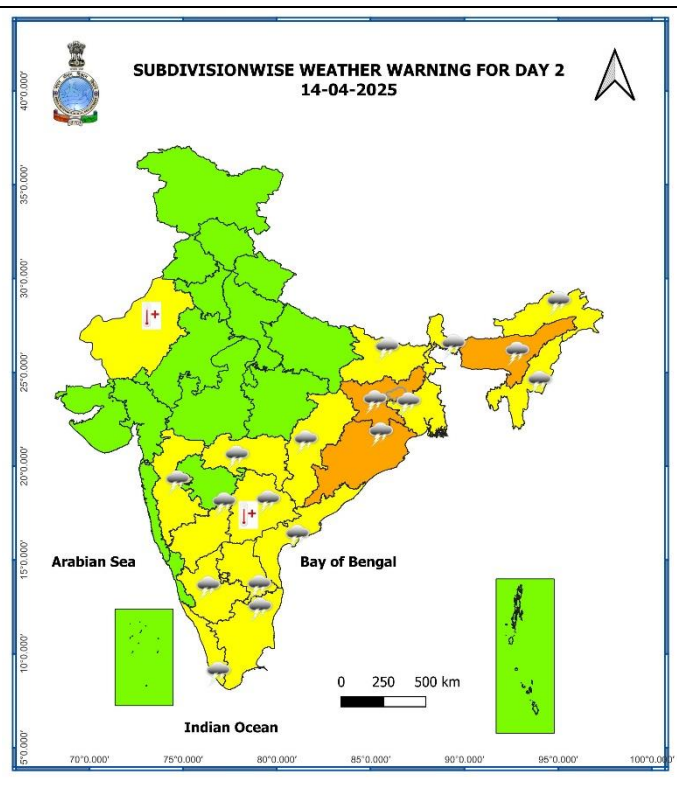
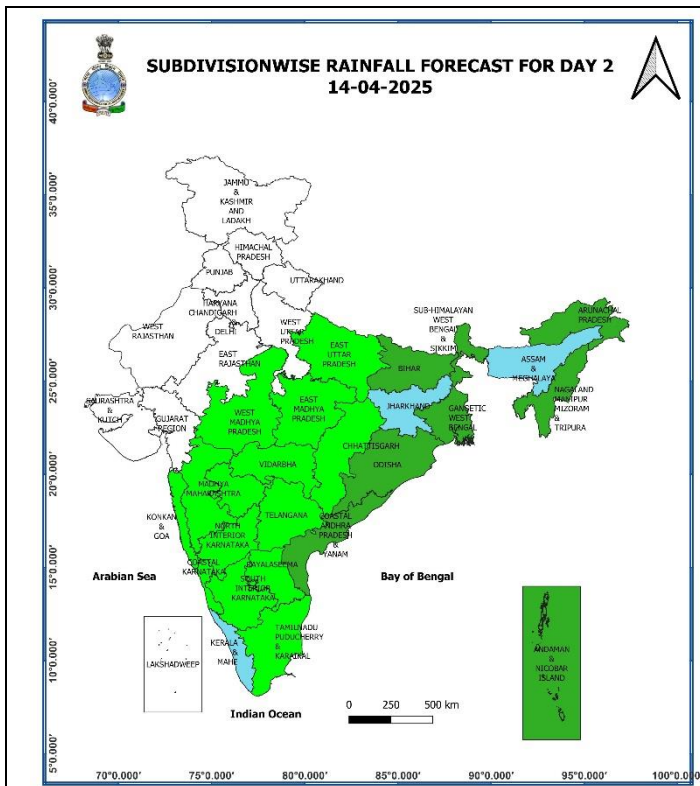
- ❖ The **Western Disturbance** as a trough in middle to upper tropospheric levels with its axis at 5.8 km above mean sea level now runs roughly along Long. 82°E to north of Lat. 21°N.
- ❖ The upper air **cyclonic circulation** over southeast Madhya Pradesh at 0.9 km above mean sea level persists.
- ❖ The **trough** from the above cyclonic circulation over southeast Madhya Pradesh & neighbourhood to central parts of Telangana across Vidarbha at 0.9 km above mean sea level persists.
- ❖ The **trough** from the central parts of West Rajasthan to cyclonic circulation southeast Madhya Pradesh across northeast Rajasthan, northwest Madhya Pradesh at 0.9 km above mean sea level persists.
- ❖ A **trough** runs from central parts of Bihar to North Coastal Odisha across Jharkhand at 3.1 km above mean sea level.
- ❖ An upper air **cyclonic circulation** lies over central parts of Coastal Andhra Pradesh & Yanam & neighbourhood at 0.9 km above mean sea level.
- ❖ The upper air **cyclonic circulation** over Meghalaya & neighbourhood now lies over south Assam at 1.5 km above mean sea level.
- ❖ A fresh **Western Disturbance** is likely to affect Western Himalayan region from 16th April, 2025.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 19th April, 2025)



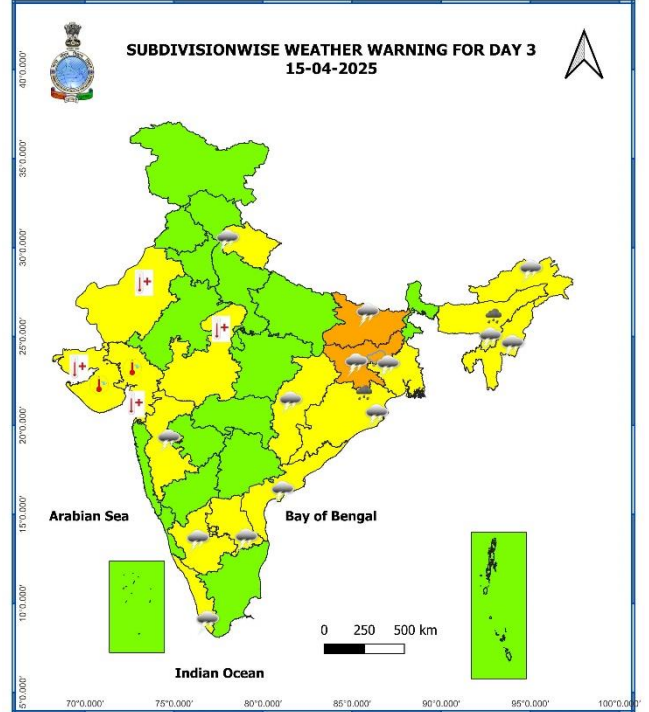
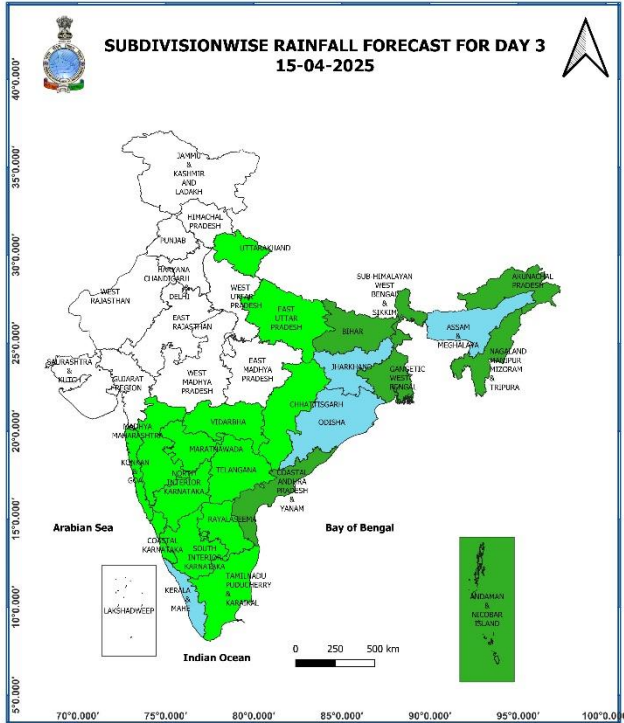
13th April (Day 1):

- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim.
- ❖ **Thundersquall accompanied with lightning, gusty winds (speed reaching 50 - 60 kmph) & hailstorm** Madhya Pradesh, Odisha and Coastal Andhra Pradesh & Yanam; **with lightning, gusty winds (speed reaching 50 - 60 kmph)** very likely at isolated places over Gangetic West Bengal, Bihar; **with lightning & gusty winds (speed reaching 40 - 50 kmph)** at isolated places over East Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Jharkhand, Assam & Meghalaya, Kerala & Mahe, South Interior Karnataka; **with lightning & gusty winds (speed reaching 30 - 40 kmph)** at isolated places over Vidarbha, Chhattisgarh, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Rayalaseema, Telangana, North Interior Karnataka; **with lightning** at isolated places over Arunachal Pradesh and Madhya Maharashtra.
- ❖ **Hailstorm** likely at isolated places over Madhya Pradesh, Odisha and Coastal Andhra Pradesh & Yanam.
- ❖ **Heat wave conditions** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Telangana.
- ❖ **Hot and Humid** very likely at isolated places over Coastal Andhra Pradesh & Yanam.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over gulf of Mannar & adjoining Comorin area. Fishermen are advised not to venture into these areas.



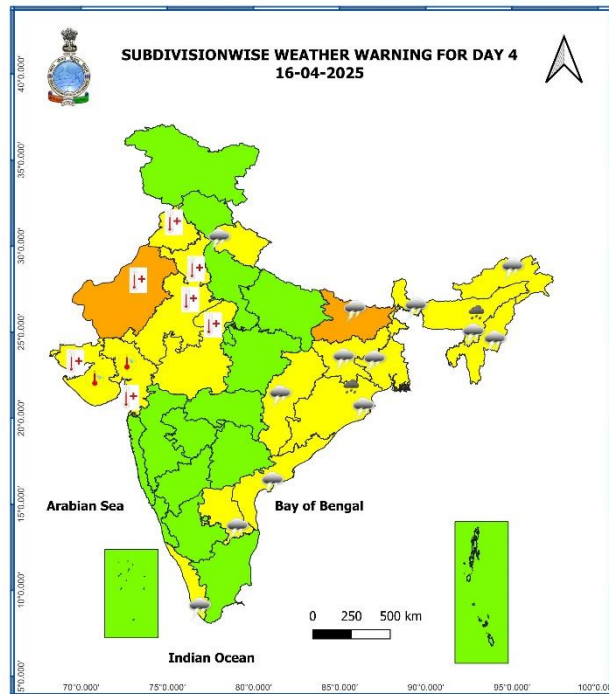
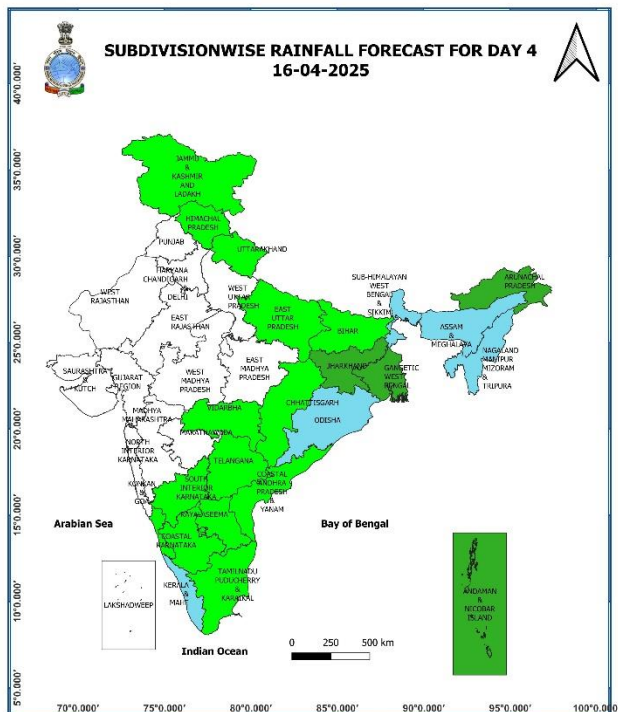
14th April (Day 2):

- ❖ Heavy rainfall (≥ 7 cm) likely at isolated places over Assam & Meghalaya.
- ❖ Thundersquall accompanied with lightning, gusty winds (speed reaching 50 - 60 kmph) Odisha; with lightning & gusty winds (speed reaching 40 - 50 kmph) & hailstorm at isolated places over Jharkhand; with lightning & gusty winds (speed reaching 40 - 50 kmph) at isolated places over Gangetic West Bengal, Bihar, Assam & Meghalaya, Kerala & Mahe, South Interior Karnataka; with lightning & gusty winds (speed reaching 30 - 40 kmph) at isolated places over Vidarbha, Chhattisgarh, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana, North Interior Karnataka; with lightning at isolated places over Arunachal Pradesh and south Madhya Maharashtra.
- ❖ Heat wave conditions very likely in isolated pockets over West Rajasthan and Telangana.



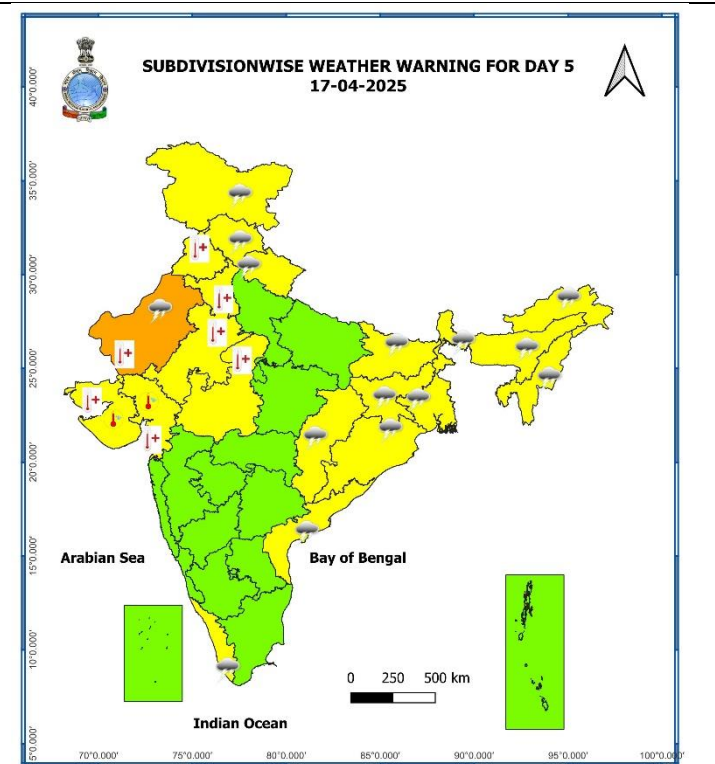
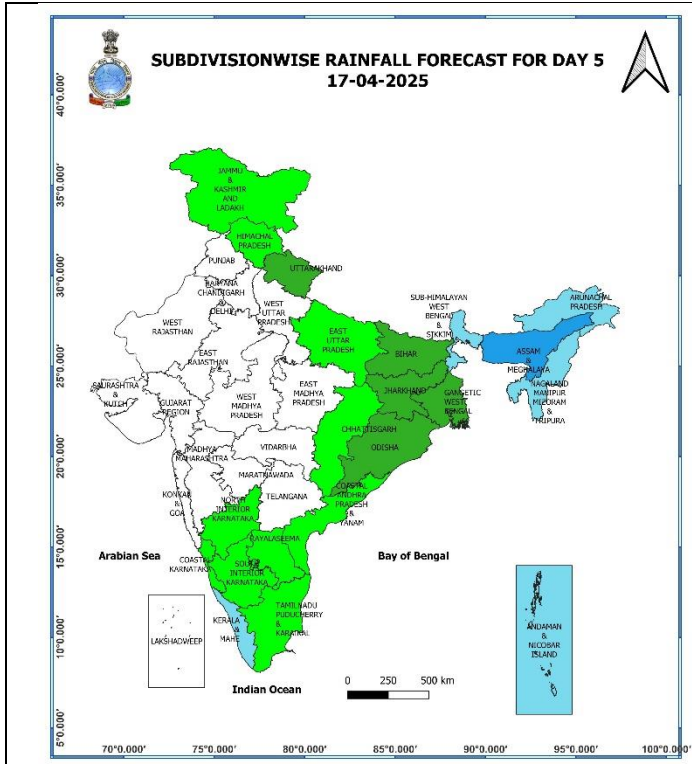
15th April (Day 3):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Odisha and Assam & Meghalaya.
- ❖ **Thundersquall accompanied with lightning, gusty winds (speed reaching 40 - 50 kmph) & hailstorm** at isolated places over Jharkhand; **with lightning & gusty winds (speed reaching 40 - 50 kmph)** at isolated places over Bihar, Assam & Meghalaya, South Interior Karnataka; **with lightning & gusty winds (speed reaching 30 - 40 kmph)** at isolated places over Chhattisgarh, Gangetic West Bengal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning** at isolated places over Arunachal Pradesh and Madhya Maharashtra.
- ❖ **Heat wave** likely in isolated pockets over West Rajasthan, West Madhya Pradesh and Gujarat state.
- ❖ **Hot and Humid** very likely at isolated places over Gujarat state.



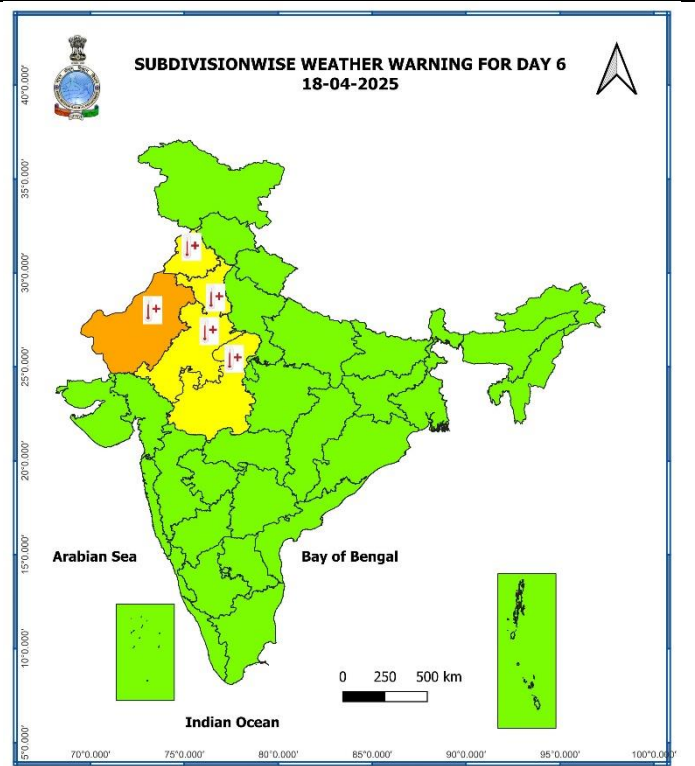
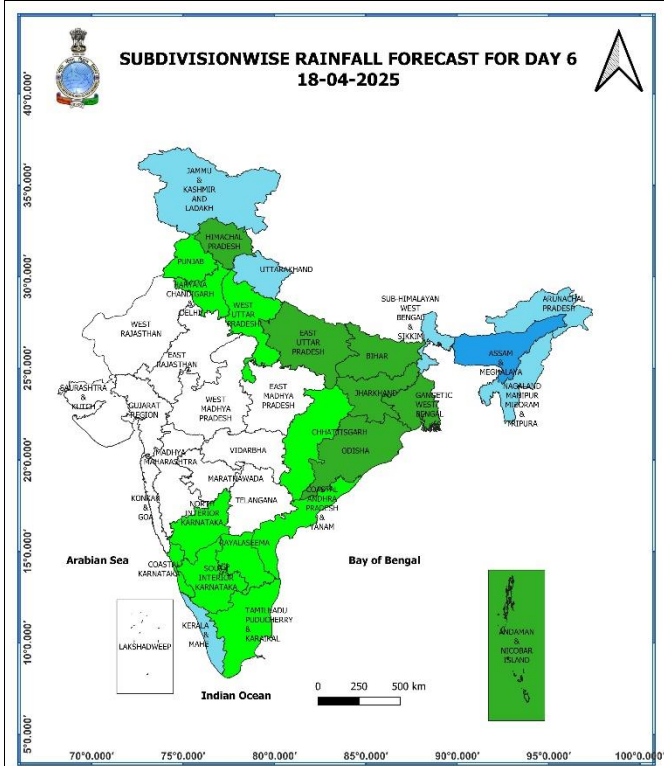
16th April (Day 4):

- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Odisha and Assam & Meghalaya.
- ❖ **Thundersquall accompanied with lightning, gusty winds (speed reaching 40 - 50 kmph)** at isolated places over Chhattisgarh, Bihar, Jharkhand, Odisha, Assam & Meghalaya; **with lightning & gusty winds (speed reaching 30 - 40 kmph)** at isolated places over West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning** at isolated places over Arunachal Pradesh and Kerala & Mahe.
- ❖ **Heat wave at some places with severe Heat wave conditions** likely at many places of West Rajasthan; **Heat wave conditions** in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, East Rajasthan, West Madhya Pradesh and Gujarat state.
- ❖ **Hot and Humid** very likely at isolated places over Gujarat state.



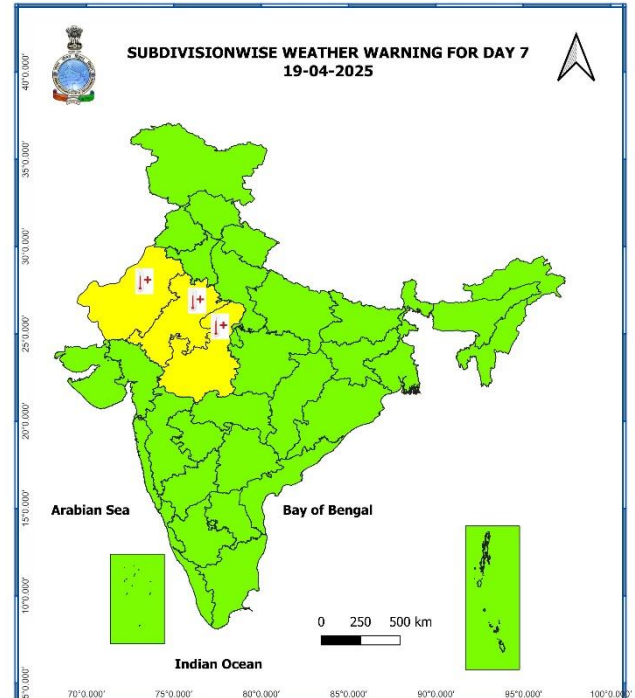
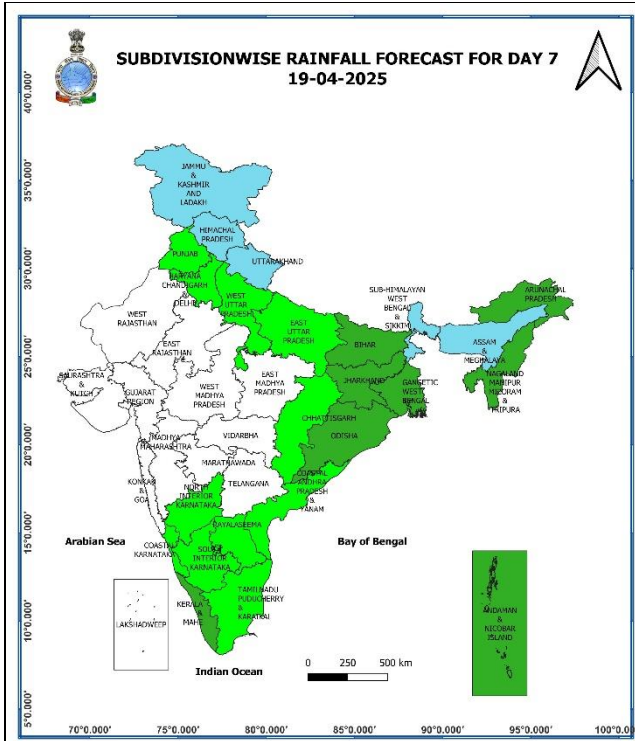
17th April (Day 5):

- ❖ **Thundersquall accompanied with lightning, gusty winds (speed reaching 40 - 50 kmph)** at isolated places over Bihar, Jharkhand, Odisha; **with lightning & gusty winds (speed reaching 30 - 40 kmph)** at isolated places over Rajasthan, West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam; **with lightning** at isolated places over East Uttar Pradesh, Arunachal Pradesh and Kerala & Mahe.
- ❖ **Heat wave at some places with severe Heat wave conditions** likely at many places of West Rajasthan; **Heat wave conditions** in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, East Rajasthan, West Madhya Pradesh and Gujarat state.
- ❖ **Hot and Humid** very likely at isolated places over Gujarat state.



18th April (Day 6):

❖ **Heat wave at some places with severe Heat wave conditions** likely at many places of West Rajasthan; **Heat wave conditions** in isolated pockets over East Rajasthan, Punjab, Haryana-Chandigarh-Delhi and West Madhya Pradesh.



19th April (Day 7):

- ❖ Heat wave at some places with severe Heat wave conditions likely in isolated pockets of West Rajasthan; Heat wave conditions in isolated pockets over East Rajasthan and West Madhya Pradesh.

Weather Outlook for subsequent 3 days (During 20th April- 22nd April, 2025)

Fairly widespread to widespread rainfall activity likely over east & northeast India, Kerala. Isolated to scattered rainfall likely over Western Himalayan region, 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

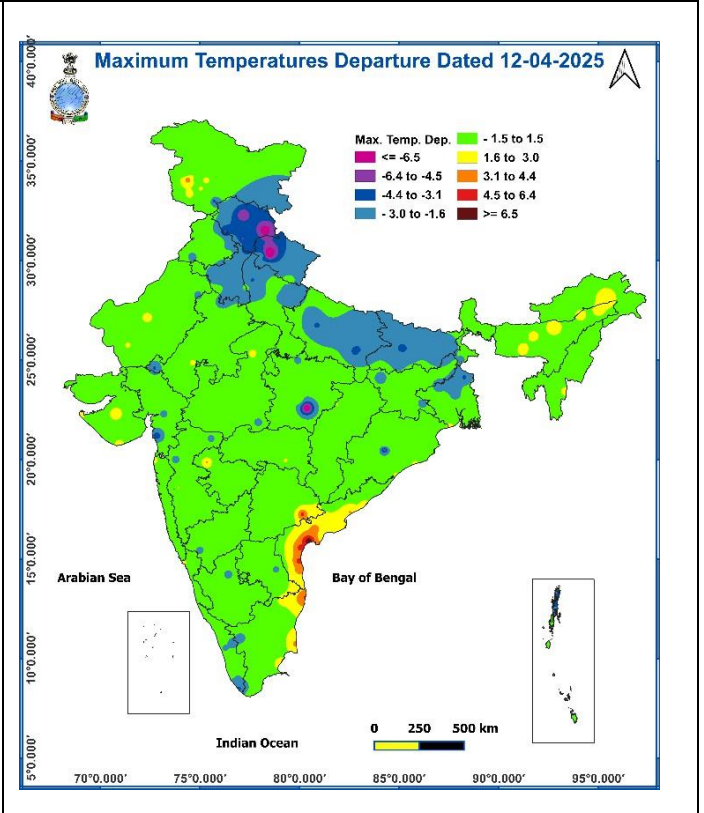
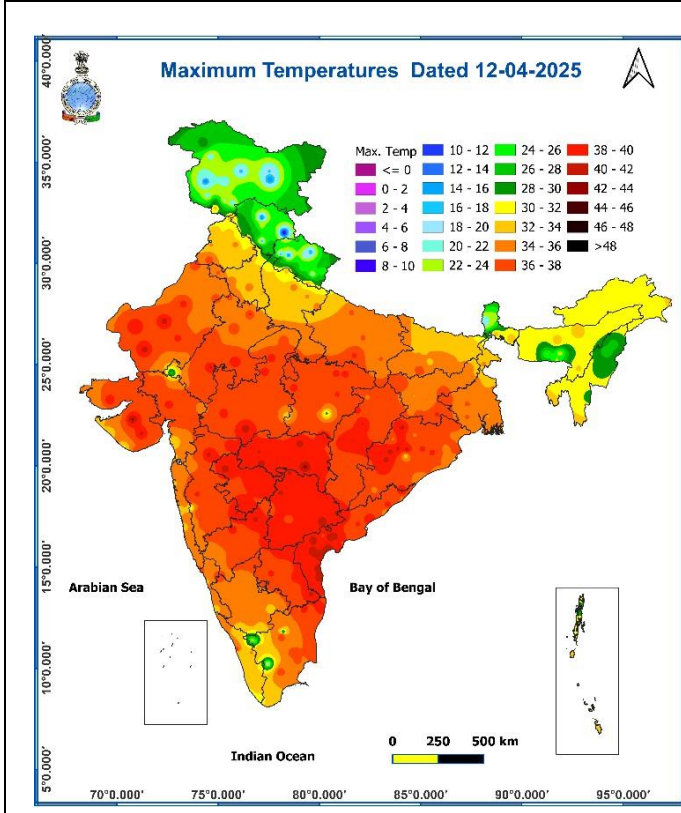
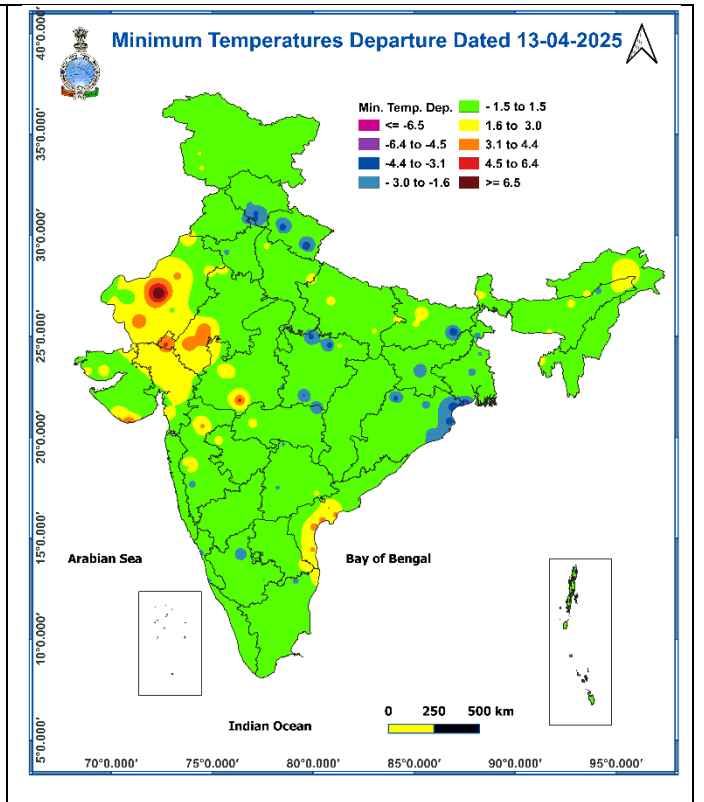
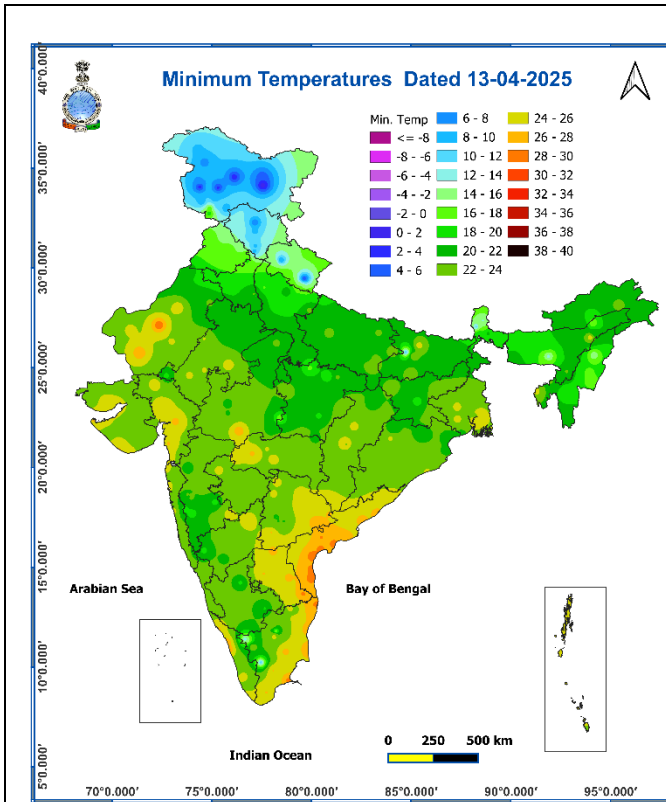


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures



Impact expected and action suggested due to isolated thunderstorm with lightning/gusty winds & Hailstorm over Gangetic West Bengal, Odisha, Coastal Andhra Pradesh & Yanam and Madhya Pradesh on 13th; Jharkhand on 14th & 15th April.

Impact expected:

- 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:

- 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 to severe heat wave conditions at West Rajasthan during 14th-19th April.

Red alert Areas

- Very high likelihood of developing heat illness and heat stroke in all ages.
- Extreme care needed for vulnerable people.

Orange alert Areas

- High temperature & increased likelihood of heat illness symptoms in people who are either exposed to sun for a prolonged period or doing heavy work.
- High health concern for vulnerable people e.g. infants, elderly, people with chronic diseases.
- Avoid heat exposure- keep cool. Avoid dehydration.
- Drink sufficient water- even if not thirsty.
- Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated.

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.

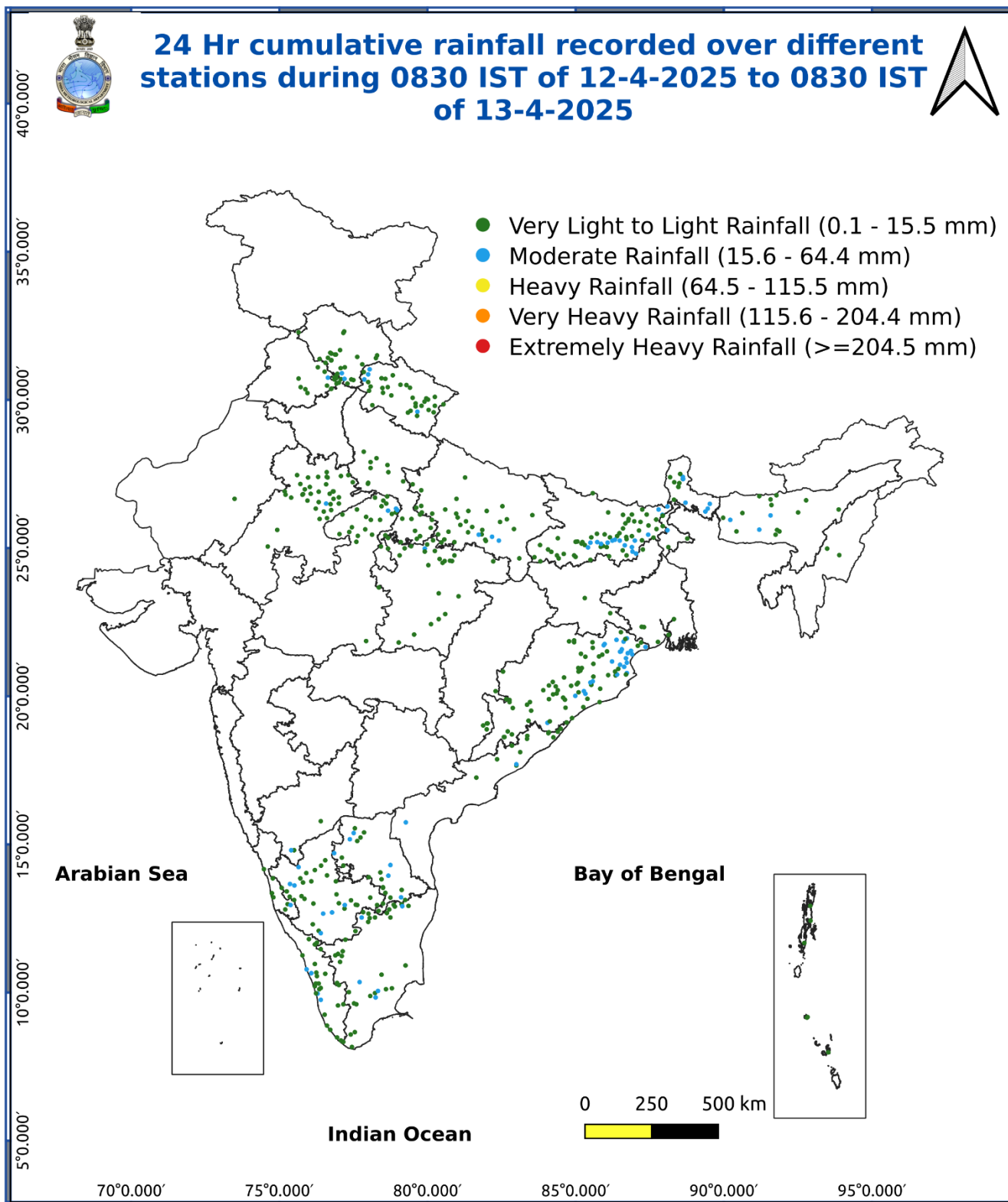
Agromet advisories for likely impact of Hailstorm / Heavy Rainfall / Gusty Winds

- In **Odisha, Jharkhand, Madhya Pradesh** and **Coastal Andhra Pradesh**, immediately shift the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields to avoid the adverse impact of likely hailstorm. Use hail net and hail caps to prevent mechanical damage in orchards due to hailstorms.
- In **Arunachal Pradesh, Meghalaya, Sub Himalayan West Bengal & Sikkim** and **Odisha**, immediately harvest the mature crops, fruits and vegetables and shift the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields. Also make provision to drain out excess water from standing crop and vegetable fields.
- In **West Rajasthan, Gujarat, Telangana** and **North Tamil Nadu**, apply light and frequent irrigation to standing crops in the evening to protect them from heat waves.
- 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.

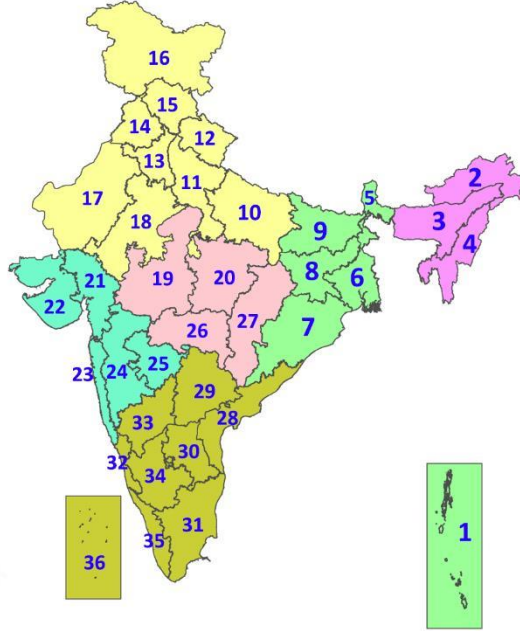
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



* 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)

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°C to 6.4°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°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°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°C to -6.4°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°C to -6.4°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)

Hot and Humid: When maximum temperatures remains 3°C above normal along with the above normal relative humidity.