

Friday, April 18, 2025
Time of Issue: 1430 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems, Forecast and Warnings:

- ❖ A **Western Disturbance** as a cyclonic circulation over north Iran & neighbourhood in lower to upper tropospheric levels and an upper air cyclonic circulation lies over south Punjab in lower tropospheric levels. Under its influence:
 - ✓ **Light to moderate rainfall at most places accompanied with Thunderstorm, lightning & squally winds (speed 50-60 kmph gusting to 70 kmph)** likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during 18th-21st April; Himachal Pradesh, Uttarakhand on 19th; with **gusty winds (speed 30-40 kmph gusting to 50 kmph)** over Himachal Pradesh, Uttarakhand on 18th & 20th April.
 - ✓ **Isolated Hailstorm** likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 18th & 19th; Uttarakhand on 19th April.
 - ✓ **Isolated heavy rainfall** likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 18th & 19th April.
 - ✓ Isolated rainfall along with **thunderstorm, lightning & squally winds (speed 50-60 kmph gusting to 70 kmph)** likely over Punjab, Haryana, Uttar Pradesh on 18th and **thunderstorm, lightning & gusty winds (speed 30-40 kmph gusting to 50 kmph)** is likely over the region on 19th & 20th April, 2025.
 - Isolated Duststorm/Thunderstorm **gusty winds (speed 30-40 kmph gusting to 50 kmph)** likely over West Rajasthan on 18th & 19th April.
- ❖ An **upper air cyclonic circulation** lies over central parts of Uttar Pradesh, 2nd over north Bangladesh & neighbourhood and 3th over northeast Assam in lower tropospheric levels.
- ❖ A **trough** runs from south Punjab to Jharkhand; 2nd trough north Madhya Maharashtra to Gulf of Mannar and 3rd trough from Jharkhand to central Assam in lower tropospheric levels.
- ❖ Under the influence of these systems:
 - ✓ **Scattered to fairly widespread** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed reaching 40-50 kmph gusting to 60 kmph)** likely over Northeast & East India during next 5 days.
 - ✓ **Heavy rainfall** likely over Sub-Himalayan West Bengal & Sikkim on 18th & 19th; Gangetic West Bengal and adjoining districts of northeast Jharkhand and southeast Bihar, north Odisha on 18th; Arunachal Pradesh during 22nd- 24th; Assam & Meghalaya during 18th, 19th & during 21st-24th; Nagaland, Manipur, Mizoram & Tripura on 24th April.
 - ✓ **Isolated Hailstorm** likely over Odisha on 18th April.
 - ✓ **Thundersquall (wind speed reaching 50-60 kmph gusting to 70 kmph)** very likely at isolated places over West Bengal & Sikkim on 18th & Odisha on 18th & 21st April.
 - ✓ **Scattered to fairly widespread** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 40-50 kmph gusting to 60 kmph)** likely over Kerala & Mahe and **Isolated to Scattered** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (wind speed reaching 40-50 kmph gusting to 60 kmph)** likely over remaining parts of south peninsular India during next 7 days.

Temperature Forecast:

- ❖ No significant change in maximum temperatures likely over Northwest India during next 24 hours; gradual fall by 2-3°C during subsequent 3 days and rise by 2-3°C during subsequent 3 days.
- ❖ Gradual rise in maximum temperatures by 2-3°C likely over Central India during next 5 days and no significant change during subsequent 2 days.
- ❖ No significant change in maximum temperatures likely over East India during next 48 hours and gradual rise by 3-5°C over Bihar & Jharkhand and 2-4°C over Odisha & West Bengal during subsequent 5 days.
- ❖ No significant change in maximum temperatures likely over Gujarat State during next 24 hours; gradual fall by 2-3°C during subsequent 3 days and gradual rise by 2-3°C during subsequent 3 days.
- ❖ No significant change in maximum temperatures likely over Maharashtra during next 4 Days hour; gradual fall by 2-3°C during subsequent 3 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** at many/some places with **severe heat wave conditions** at isolated parts likely over Rajasthan on 18th April and heat wave conditions at isolated parts thereafter on 18th April.
- ❖ **Heat wave conditions** are very likely at isolated places over Saurashtra & Kutch on 18th April.
- ❖ **Hot & humid** weather is likely to prevail over Marathwada & Madhya Maharashtra during 18th- 21st; over Gujarat State during 22nd-24th April.

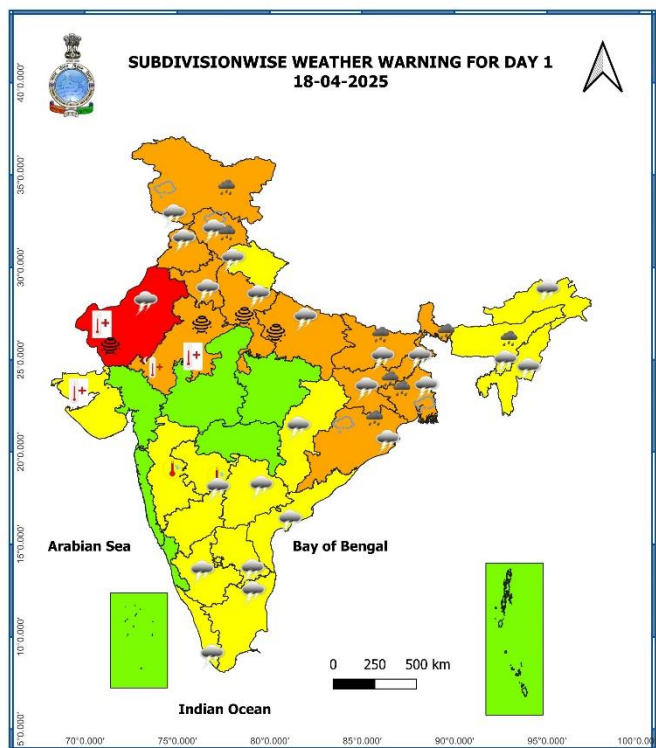
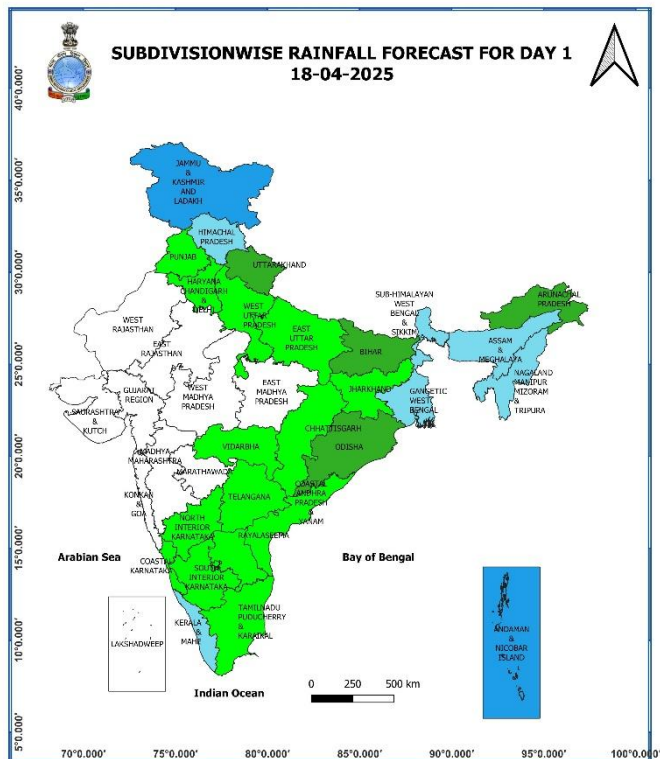
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): at most places over West Bengal & Sikkim; at many places over Nagaland, Manipur, Mizoram & Tripura, Bihar, Andaman & Nicobar Islands; at a few places over Arunachal Pradesh, Assam & Meghalaya, Odisha, Jharkhand; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttar Pradesh, West Madhya Pradesh, Chhattisgarh, Tamilnadu Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana, Interior Karnataka.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Odisha:** Muruda (dist Mayurbhanj) 10, Sarasakana (dist Mayurbhanj) 8, Chandbali (distBhadrak) 7, Baripada (dist Mayurbhanj) 7, Remuna (dist Balasore) 6, Rasagovindapur (dist Mayurbhanj) 6, Nilgiri (dist Balasore) 6, Samakhunta (dist Mayurbhanj) 6, Balasore (dist Balasore) 6, Bonth (dist Bhadrak) 5, Rajkanika (dist Kendrapara) 5, Bangiriposi (dist Mayurbhanj) 5, Suliapada (dist Mayurbhanj) 5, Jaleswar (dist Balasore) 5, Betanati (dist Mayurbhanj) 5, Bahanga (dist Balasore) 5, Rajnagar (dist Kendrapara) 4, Tihidi (dist Bhadrak) 3, Athgarh (dist Cuttack) 3, Udala (dist Mayurbhanj) 3; **Nagaland, Manipur, Mizoram & Tripura:** Karbook (dist Gomati) 8, Gandechera (dist Dhalai) 7, Khowai (dist Khowai) 5, Bishalgarh (dist Sipahijala) 4, Cti Arg (dist Sipahijala) 4; **Gangetic West Bengal:** Barrackpur (dist North 24 Parganas) 6, Mo Saltlake (dist North 24 Parganas) 5, Suri (dist Birbhum) 4, Jhargram (dist Jhargram) 4, Panagarh (dist Paschim Bardhaman) 4, Sri Niketan (dist Birbhum) 3; **Sub-Himalayan West Bengal & Sikkim:** Majitar (dist Pakyong) 3, Damthang (dist Namchi) 3, Ravangla Arg (dist Namchi) 3; **Kerala & Mahe:** Palode Aws (dist Thiruvananthapuram) 3, Konni (dist Pathanamthitta) 3, Kottayam (dist Kottayam) 3, Perumkadavila Arg (dist Thiruvananthapuram) 3, Kurudamannil (dist Pathanamthitta) 3; **Assam & Meghalaya:** Baghmara_aws (dist South Garo Hills) 3, Shillong C.s.o. (dist East Khasi Hills) 3.
- ❖ **Thunderstorm** accompanied with Squally/Gusty winds prevailed at isolated places over West Bengal & Sikkim, Odisha, Jharkhand, Bihar, East Uttar Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Hailstorm** occurred at isolated places over Gangetic West Bengal, north Odisha, East Uttar Pradesh.
- ❖ **Heavy rainfall** has been recorded at isolated places over north Odisha and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Heat wave to severe heat wave conditions** prevailed at a few places over East Rajasthan; **Heat wave conditions** at many places over West Rajasthan.
- ❖ **Warm Night conditions** prevailed in isolated places over Rajasthan.
- ❖ **Minimum Temperature Departures (as on 18-04-2025):** Minimum temperatures are **markedly above normal (5.1°C or more)** at isolated places over Rajasthan; **appreciably above normal (3.1°C to 5.0°C)** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Madhya Pradesh; at isolated places over West Uttar Pradesh and Vidarbha; **above normal (1.6°C to 3.0°C)** at a few places over East Uttar Pradesh, Coastal Andhra Pradesh & Yanam, Gujarat state; at isolated places over Bihar, Odisha, Madhya Maharashtra, Telangana, Rayalaseema, Tamil Nadu, Puducherry & Karaikal. These are **appreciably below normal (-3.0°C to -1.6°C)** at a few places over Gangetic West Bengal; **below normal (-1.6°C to -3.0°C)** at isolated places over Nagaland, Manipur, Mizoram & Tripura and normal over rest parts of the country (**Fig. 4**). Today, the **lowest minimum temperature** of **18.7°C** is reported at **Nahan (Himachal Pradesh)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 17-04-2025):** Maximum Temperatures were **markedly above normal (5.1°C or more)** at many places over West Rajasthan; at isolated places over East Rajasthan; **appreciably above normal (3.1°C to 5.0°C)** at many places over Haryana-Chandigarh-Delhi, Punjab; at isolated places over Saurashtra & Kutch, West Madhya Pradesh, Himachal Pradesh, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Arunachal Pradesh; **above normal (1.6°C to 3.0°C)** at many places over Madhya Maharashtra, Marathwada, Konkan & Goa; at isolated places over Coastal Andhra Pradesh & Yanam, Vidarbha, Odisha, East Madhya Pradesh, Assam & Meghalaya, Gujarat Region, West Uttar Pradesh and Uttarakhand. These were **markedly below normal (-5.1°C or less)** at isolated places over Bihar; **below normal (-3.0°C to -1.6°C)** at a few places over Andaman & Nicobar Islands; at isolated places over Gangetic West Bengal, Jharkhand, Nagaland, Manipur, Mizoram & Tripura, South Interior Karnataka, East Uttar Pradesh and normal over rest parts of the country (**Fig. 2**). Yesterday, the highest **maximum temperature** of **45.1°C** was reported at **Bikaner (West Rajasthan)** over the country.

Meteorological Analysis (Based on 0830 hours IST)

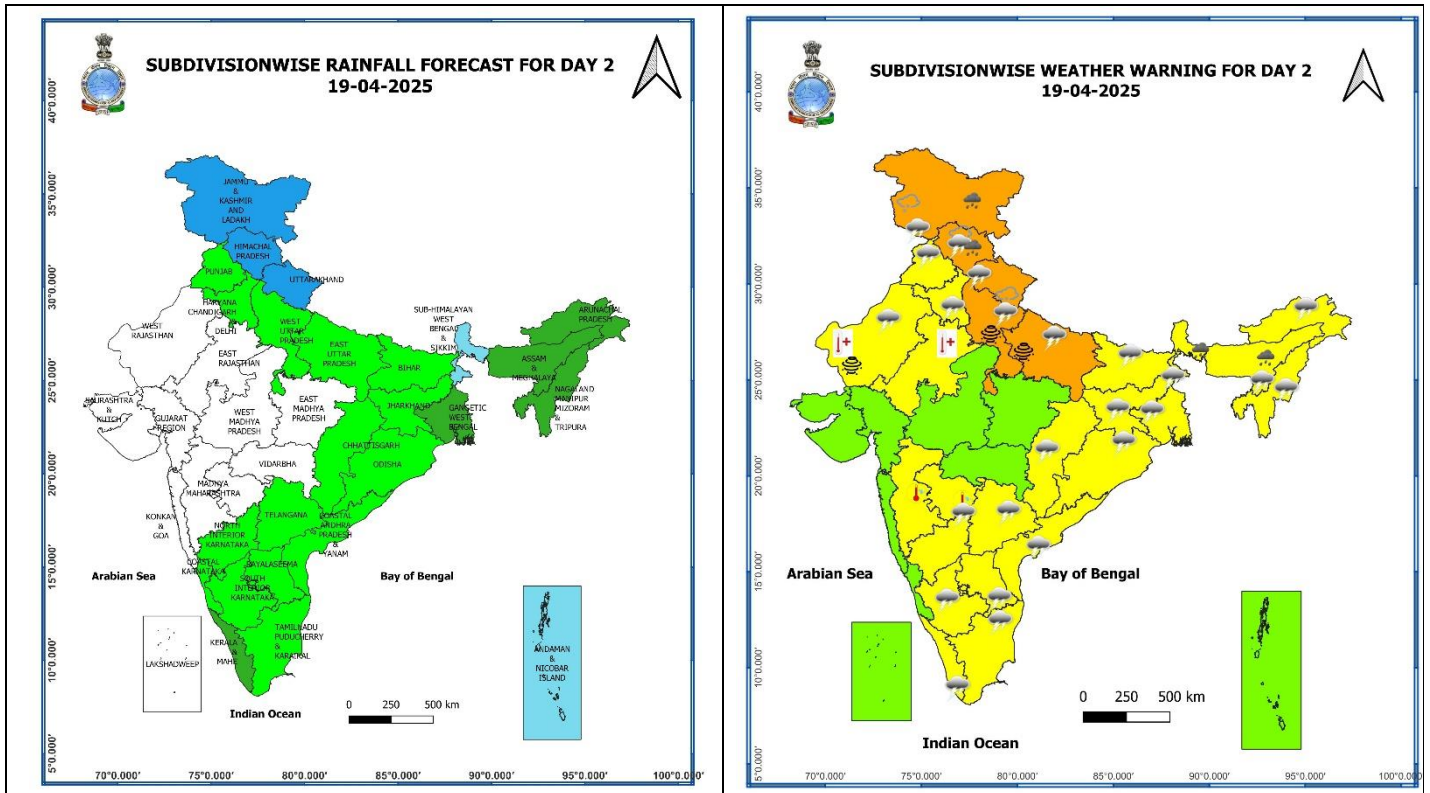
- ❖ The **Western Disturbance** as a cyclonic circulation over northern parts of Iran & neighbourhood now lies over northeast Iran adjoining Afghanistan and extends between 3.1 & 9.6 km above mean sea level.
- ❖ The upper air **cyclonic circulation** over south Punjab & neighbourhood at 1.5 km above mean sea level persists.
- ❖ The upper air **cyclonic circulation** over central parts of south Uttar Pradesh at 1.5 km above mean sea level persists.
- ❖ The **trough** runs from cyclonic circulation over south Punjab & neighbourhood to Jharkhand across Haryana, cyclonic circulation over central parts of south Uttar Pradesh at 1.5 km above mean sea level persists.
- ❖ The **trough** from Marathwada to Gulf of Mannar now runs from north Madhya Maharashtra to Gulf of Mannar across Marathwada, interior Karnataka, Rayalaseema, Tamil Nadu at 0.9 km above mean sea level.
- ❖ The upper air **cyclonic circulation** over east Assam now lies over northeast Assam at 3.1 km above mean sea level.
- ❖ The upper air **cyclonic circulation** over north Bangladesh & neighbourhood extending upto 1.5 km above mean sea level persists.
- ❖ The east-west **trough** from Jharkhand to east Assam now runs from Jharkhand to central Assam across Gangetic West Bengal and cyclonic circulation over north Bangladesh at 0.9 km above mean sea level.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 25th April, 2025)



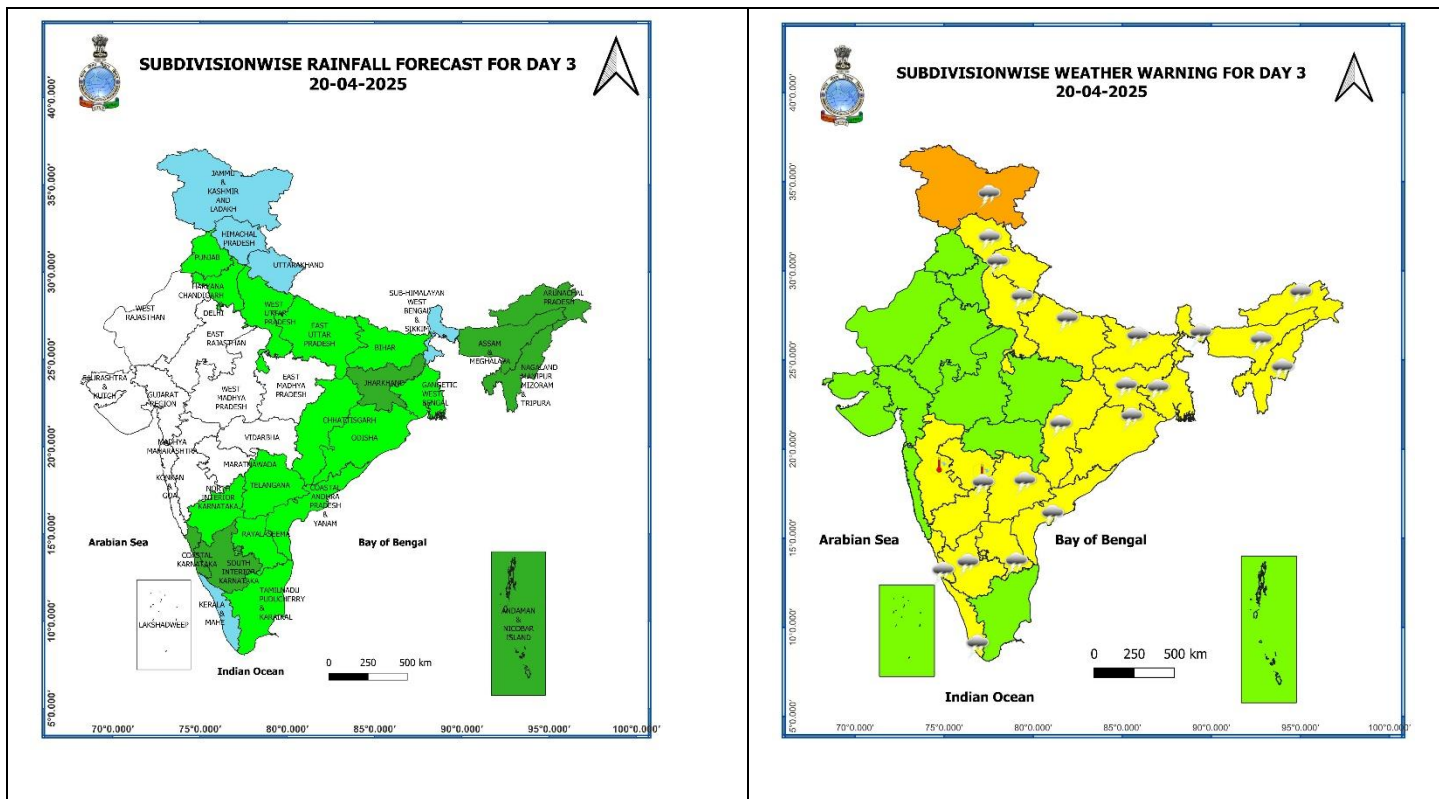
18th April (Day 1):

- ❖ **Heavy rainfall/snowfall** very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, West Bengal & Sikkim southeast Bihar, northeast Jharkhand, north Odisha and Assam & Meghalaya.
- ❖ **Thundersquall accompanied with lightning, gusty winds (speed reaching 50 - 60 kmph gusting to 70 kmph), Hailstorm** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Gangetic West Bengal and Odisha; **Thundersquall accompanied with lightning, gusty winds (speed reaching 50 - 60 kmph gusting to 70 kmph)** likely at isolated places over Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Jharkhand; **with lightning, gusty winds (speed reaching 40 - 50 kmph gusting to 60 kmph)** at isolated places over Bihar, Assam & Meghalaya, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema and North Interior Karnataka ; **with lightning, gusty winds (speed reaching 30 - 40 kmph gusting to 50 kmph), hailstorm** at isolated places over Himachal Pradesh; **with lightning, gusty winds (speed reaching 30-40 kmph gusting to 50 kmph)** at isolated places Chhattisgarh, Uttarakhand, Rajasthan, Coastal Karnataka ; **with lightning** at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Telangana and South Interior Karnataka.
- ❖ **Heat wave to severe heat wave** very likely at isolated places with **Heat wave conditions** likely at many places over Rajasthan, at isolated places over Saurashtra & Kutch.
- ❖ **Hot and Humid** very likely at isolated places over Madhya Maharashtra, Marathwada.
- ❖ **Duststorm** very likely at isolated places over Rajasthan and Uttar Pradesh.
- ❖ **Warm night condition** very likely at isolated places of East Rajasthan
- ❖ **Squally wind with 45-50 kmph gusting to 55 kmph** along and off north Odisha and adjoining West Bengal coasts and over adjoining sea area.



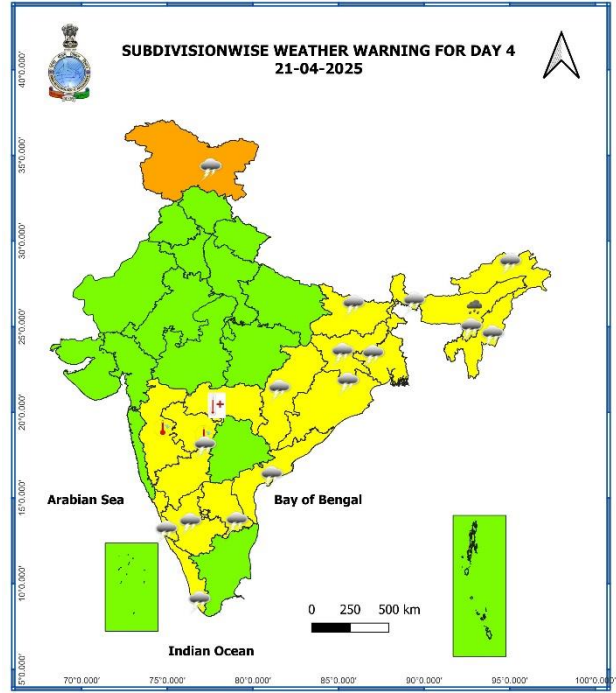
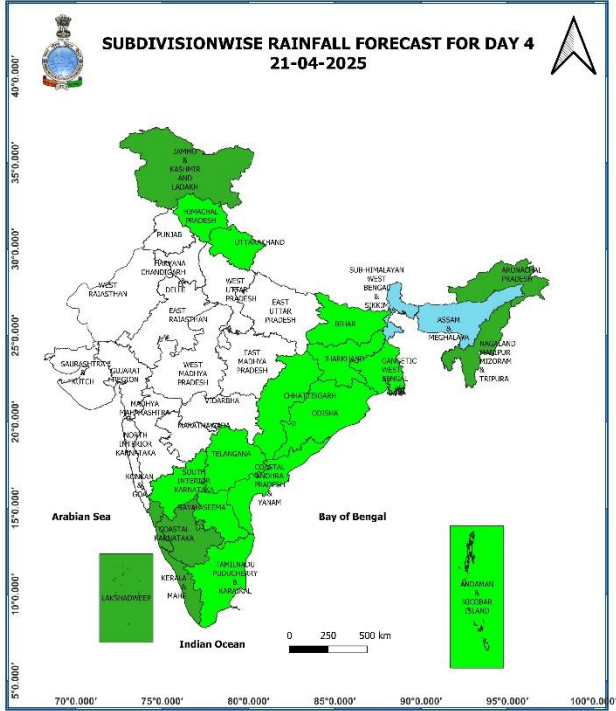
19th April (Day 2):

- ❖ **Heavy rainfall/snowfall** very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya.
- ❖ **Thundersquall accompanied with lightning, gusty winds (speed reaching 50 - 60 kmph gusting to 70 kmph) & Hailstorm** very likely at Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand; **with lightning, gusty winds (speed reaching 40- 50 kmph gusting to 60 kmph)** at isolated places over Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning, gusty winds (speed reaching 30 - 40 kmph gusting to 50 kmph)** at isolated places over Punjab, Haryana-Chandigarh-Delhi, Chhattisgarh, Bihar, Jharkhand, Odisha, Gangetic West Bengal, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, Telangana, Interior Karnataka; **with lightning** at isolated places over Arunachal Pradesh, Tamil Nadu, Puducherry & Karaikal.
- ❖ **Heat wave conditions** very likely at many places over Rajasthan.
- ❖ **Hot and Humid** very likely at isolated places over Madhya Maharashtra and Marathwada.
- ❖ **Duststorm** very likely at isolated places over Uttar Pradesh and West Rajasthan.
- ❖ **Dust raising wind (20- 30 kmph)** very likely at isolated places over Gujarat state.



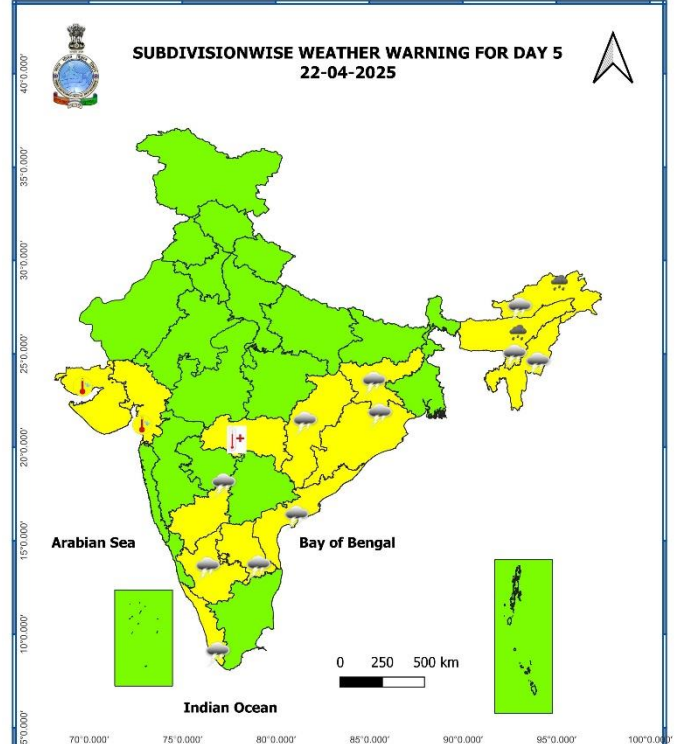
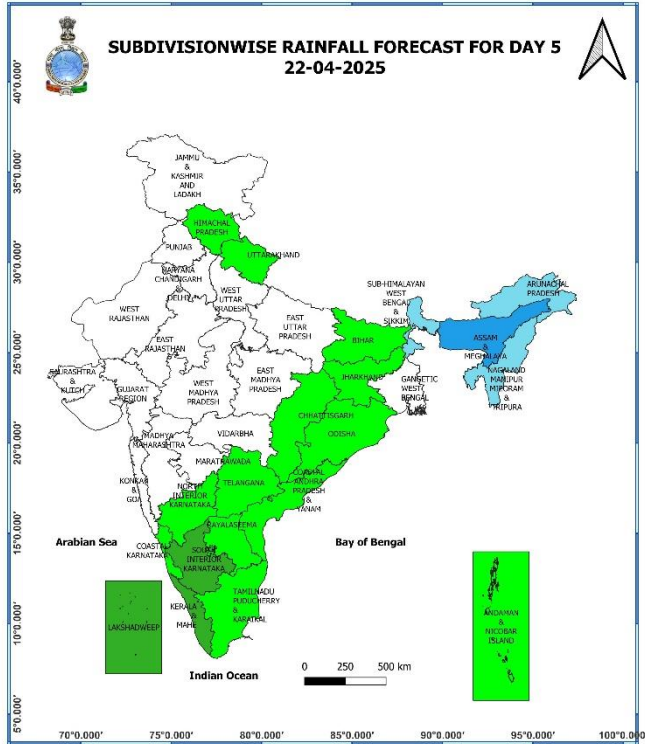
20th April (Day 3):

- ❖ **Thundersquall accompanied with lightning, gusty winds (speed reaching 50 - 60 kmph gusting to 70 kmph)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; **Thundersquall accompanied with lightning, gusty winds (speed reaching 40 - 50 kmph gusting to 60 kmph)** at isolated places over Bihar, Jharkhand; **Thunderstorm accompanied with lightning, gusty winds (speed reaching 30 - 40 kmph gusting to 50 kmph)** likely at isolated places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Karnataka; **with lightning** at isolated places over Coastal Karnataka, Gangetic West Bengal, Arunachal Pradesh.
- ❖ **Hot and Humid** likely at isolated places over Madhya Maharashtra and Marathwada.
- ❖ **Dust raising wind (20- 30 kmph)** very likely at isolated places over Gujarat state.



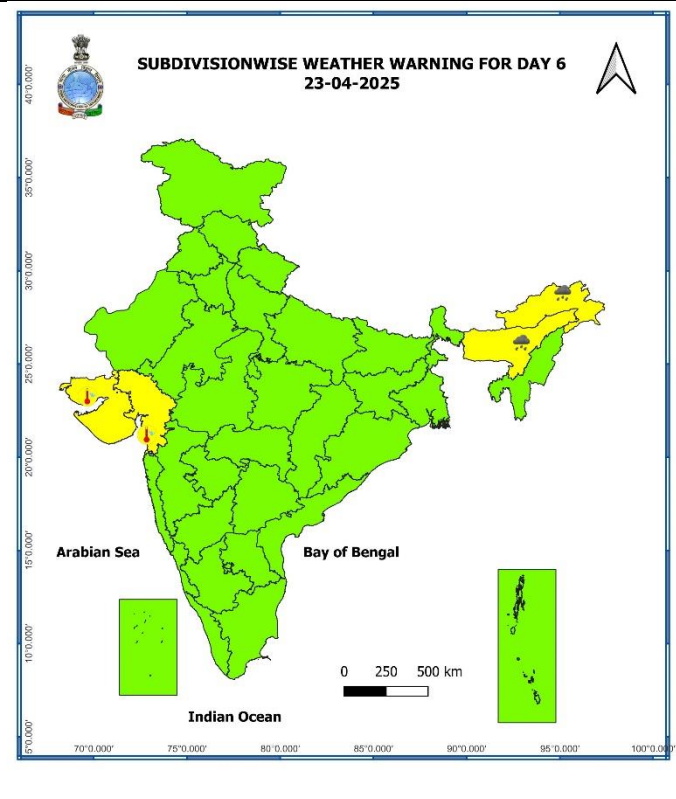
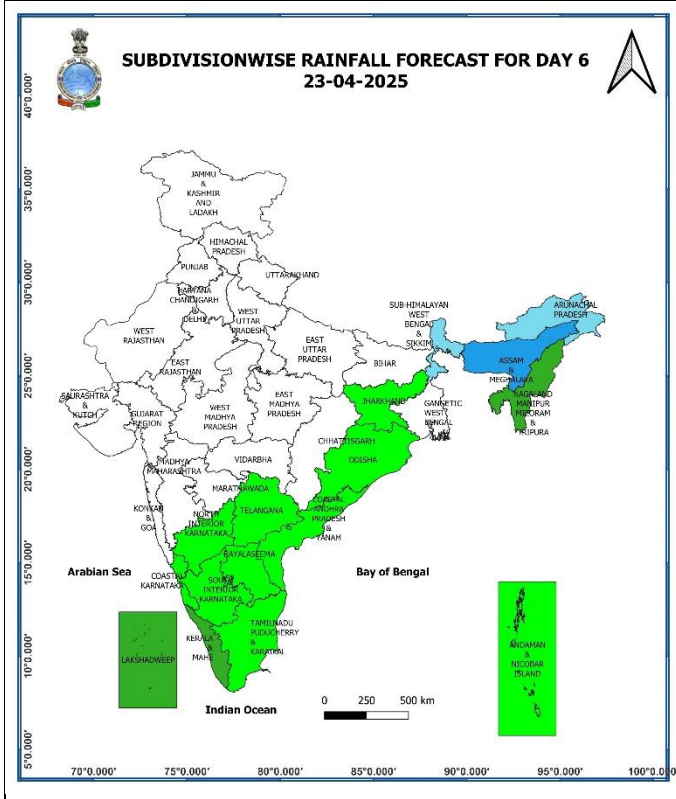
21st April (Day 4):

- ❖ **Heavy rainfall** likely at isolated places over Assam & Meghalaya
- ❖ **Thundersquall accompanied with lightning, gusty winds (speed reaching 50 - 60 kmph gusting to 70 kmph)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Odisha
- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed reaching 30 - 40 kmph gusting to 50 kmph)** likely at isolated places Sub-Himalayan West Bengal & Sikkim, Bihar, Jharkhand, Assam & Meghalaya Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam, Rayalaseema, interior Karnataka ; **with lightning** at isolated places over Chhattisgarh, Gangetic West Bengal, Arunachal Pradesh, Coastal Karnataka and Kerala & Mahe.
- ❖ **Heat wave conditions** likely at isolated places over Vidarbha,
- ❖ **Hot and Humid** likely at isolated places over Madhya Maharashtra and Marathwada.



22nd April (Day 5):

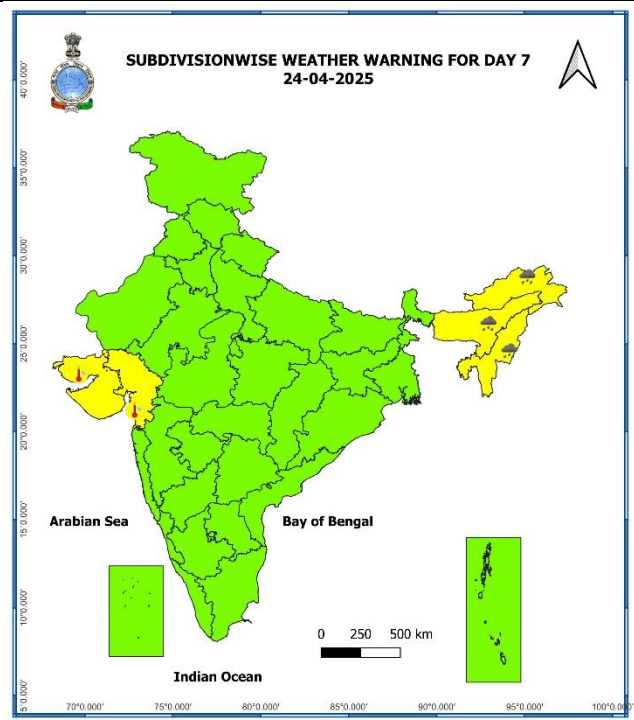
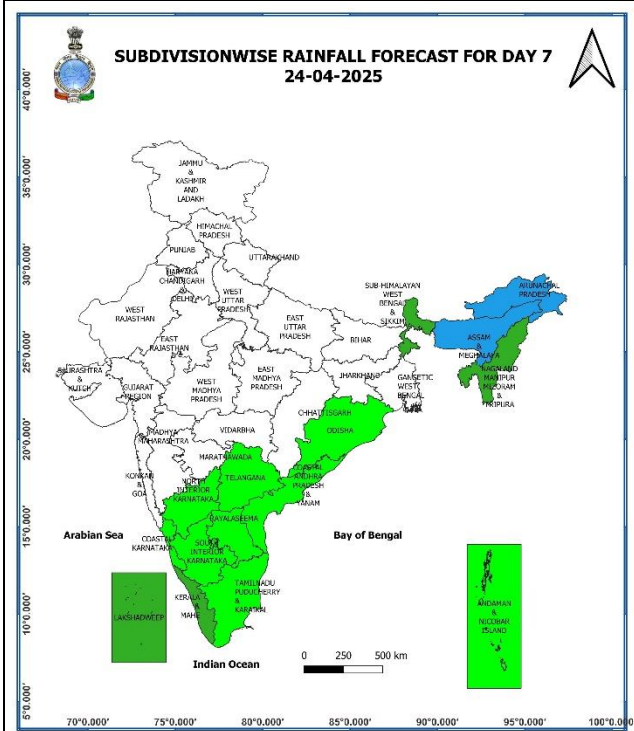
- ❖ **Heavy rainfall** likely at isolated places over Assam & Meghalaya and Arunachal Pradesh
- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed reaching 30 - 40 kmph gusting to 50 kmph)** likely at isolated places Jharkhand, Odisha, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam, Rayalaseema and interior Karnataka; **with lightning** at isolated places over Chhattisgarh, Arunachal Pradesh and Kerala & Mahe.
- ❖ **Heat wave conditions** likely at isolated places over Vidarbha,
- ❖ **Hot and Humid** likely at isolated places over Gujarat state
- ❖ **Squally weather with wind speed 35-45 kmph gusting to 55 kmph** over Gulf of Mannar and adjoining Comorin area.



23rd April (Day 6)

- ❖ Heavy rainfall likely at isolated places over Assam & Meghalaya and Arunachal Pradesh
- ❖ Hot and Humid likely at isolated places over Gujarat state

* 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.
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24th April (Day 7)

- ❖ Heavy rainfall likely at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Arunachal Pradesh.
- ❖ Hot and Humid likely at isolated places over Gujarat state

Weather Outlook for subsequent 3 days (During 25th April- 27th 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

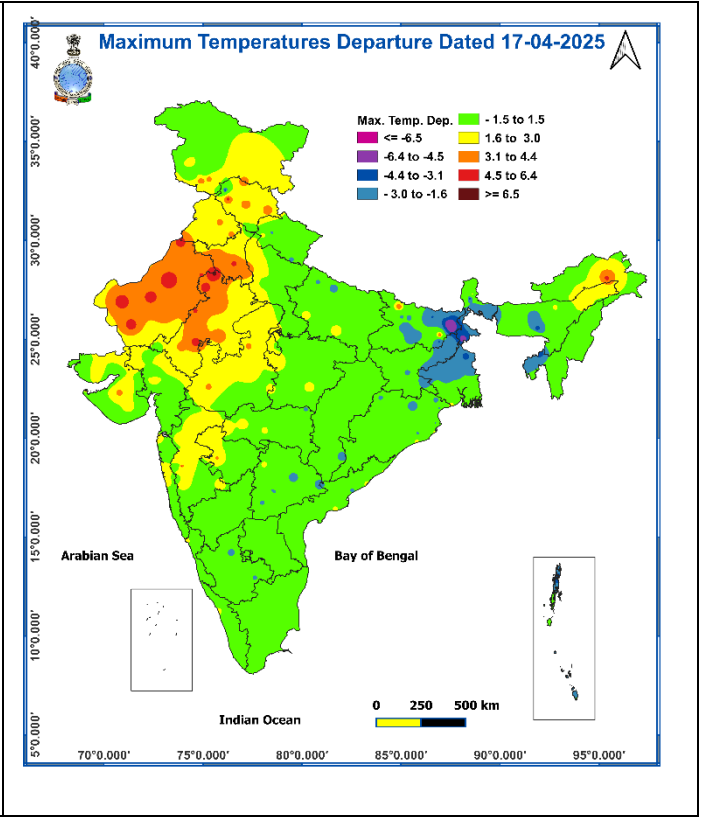
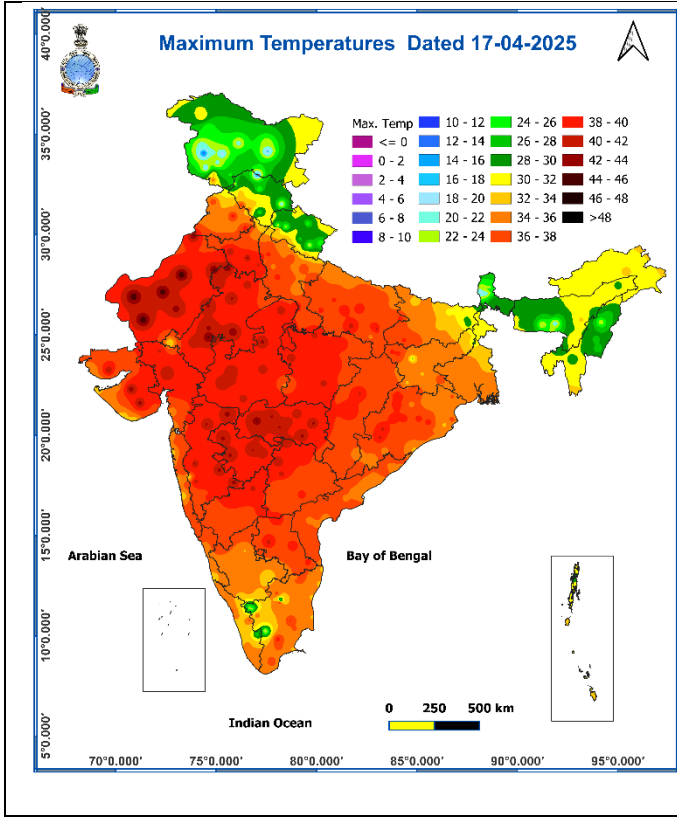


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

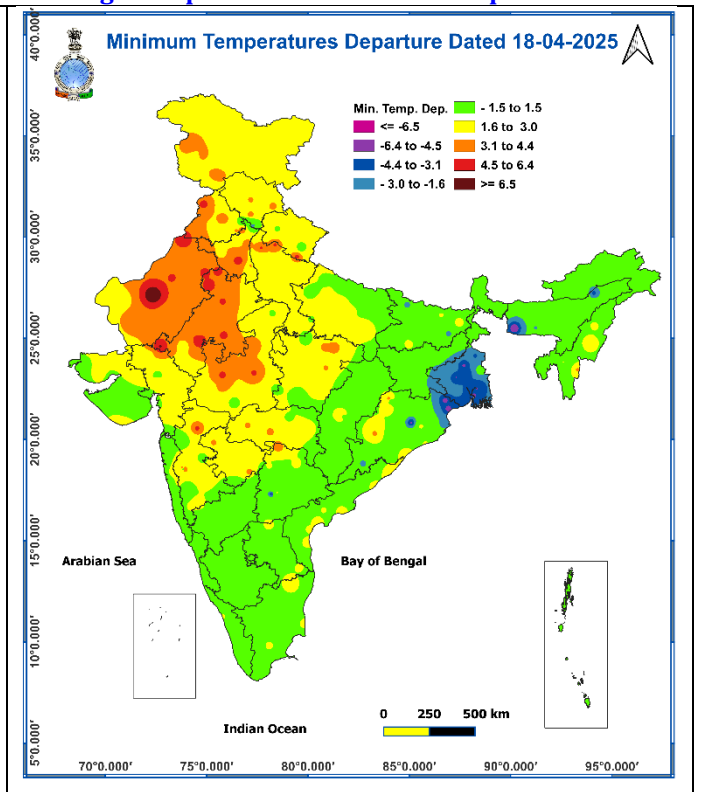
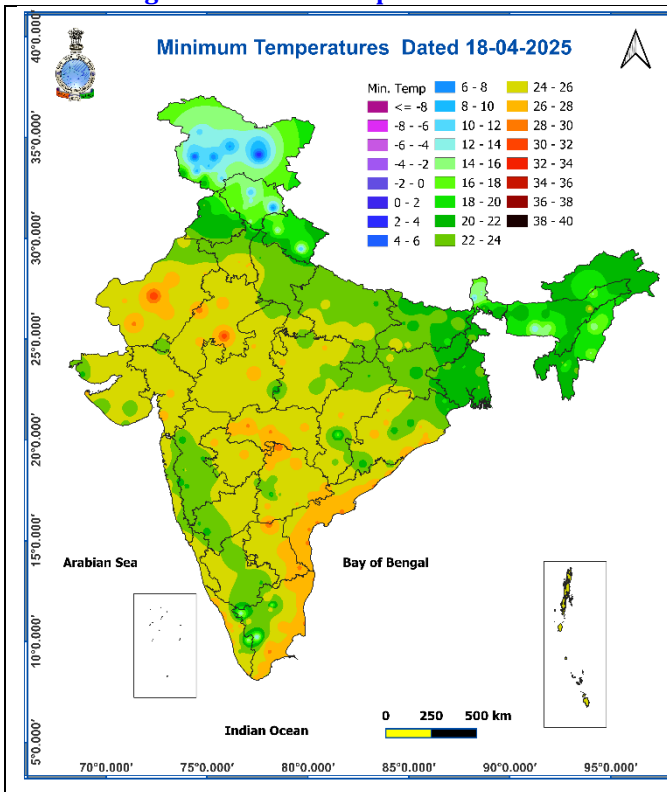
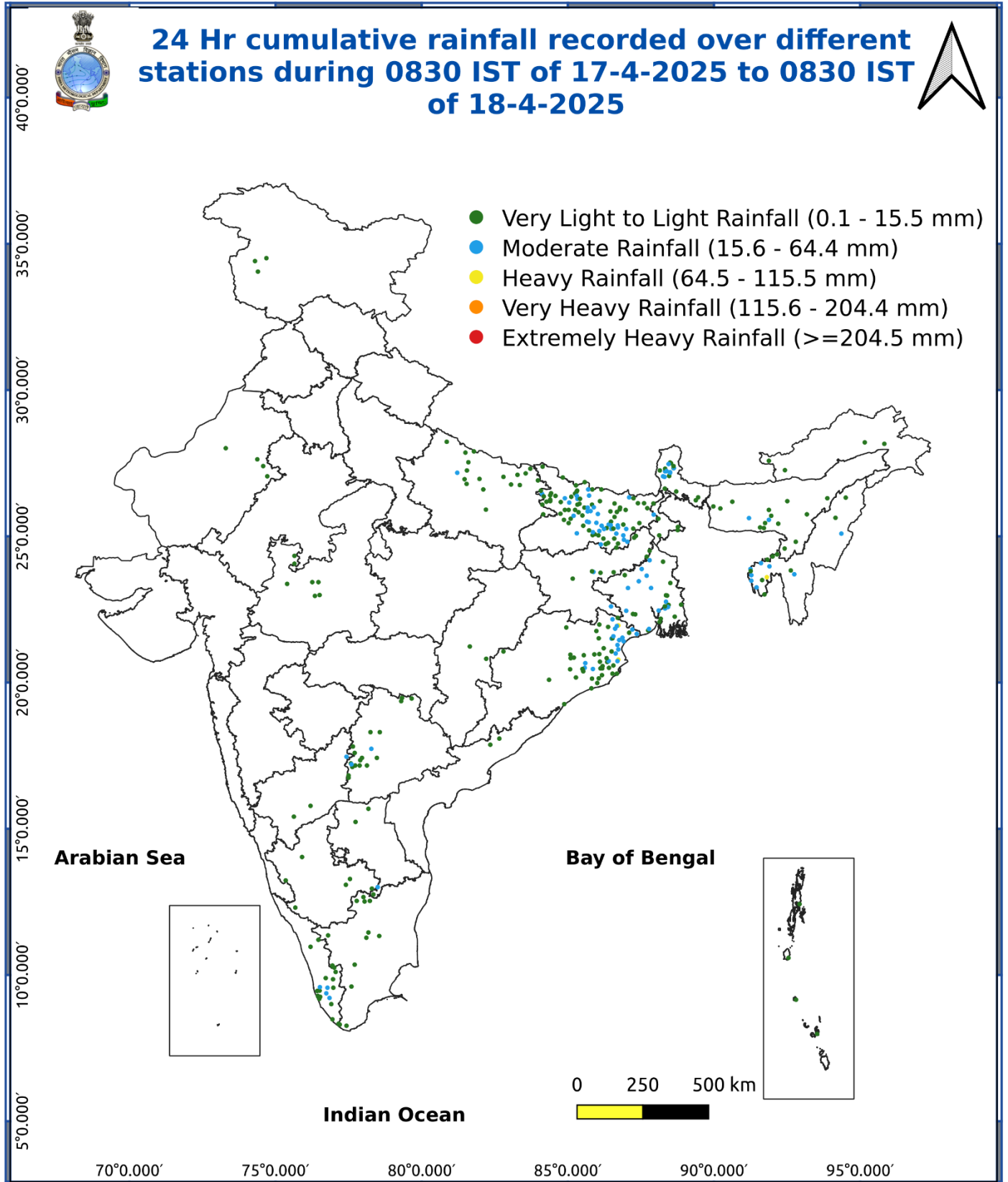


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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Impact expected and action suggested due to isolated thunderstorm with lightning/gusty & Squally winds & Hailstorm over

- (i) **Isolated Hailstorm** likely over Odisha on 18th; Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 18th & 19th; Uttarakhand on 19th April.
- (ii) **Light to moderate rainfall at most places accompanied with Thunderstorm, lightning & squally winds (speed 50-60 kmph gusting to 70 kmph)** likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during 18th-21st April; West Bengal & Sikkim on 18th & Odisha on 18th & 21st; Himachal Pradesh, Uttarakhand on 19th 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 over

- ❖ **Heat wave conditions** at many/some places with **severe heat wave conditions** at isolated parts likely over Rajasthan on 18th April and heat wave conditions at isolated parts thereafter on 18th April.
- ❖ **Heat wave conditions** are very likely at isolated places over Saurashtra & Kutch on 18th 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 / Heat wave

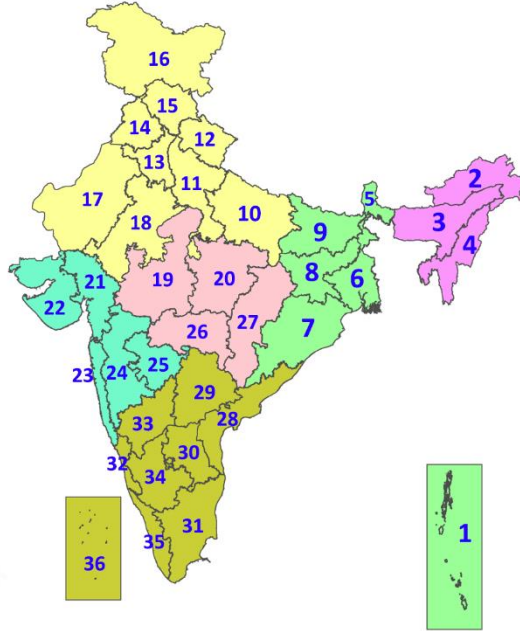
- In **Jammu & Kashmir, Himachal Pradesh** and **Odisha**, use hail net and hail caps to prevent mechanical damage in vegetables and orchards due to possibility of hailstorms. Drain out excess water from standing crops and vegetable fields.
- In **Assam and Meghalaya, West Bengal** and **Bihar**, drain out excess water from standing crops and vegetable fields.
- In **Rajasthan** and **Saurashtra & Kutch**, 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)

- | | | |
|----------------------|----------------------|--------------|
| 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)