

Saturday, August 17, 2024
Time of Issue: 0830 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- ✓ A **Low Pressure** area lies over north Bay of Bengal and adjoining areas of Bangladesh-West Bengal coasts. It is likely to move north-northwestwards during next 2 days and become a Well-marked Low pressure area over Bangladesh & adjoining Gangetic West Bengal. Thereafter, it is likely to move west-northwestwards across Gangetic West Bengal, Jharkhand & adjoining areas during subsequent 3 days.
- ✓ The **Monsoon trough** at mean sea level is likely to remain active and near its normal position during the week.
- ✓ A **cyclonic circulation** lies over northwest Rajasthan & neighbourhood extending upto middle tropospheric levels.
- ✓ A **cyclonic circulation** lies over South Interior Karnataka & neighbourhood extending upto middle tropospheric level. The trough now runs from North Interior Karnataka to Comorin area across the cyclonic circulation in lower tropospheric levels.

Forecast & Warnings (upto 7 days):

❖ Northwest India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Himachal Pradesh & Uttarakhand; scattered to fairly widespread rainfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttar Pradesh, East Rajasthan; isolated to scattered rainfall over Punjab, Haryana-Chandigarh-Delhi, West Rajasthan during the week.
- ✓ Isolated **heavy rainfall** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 19th & 20th; Himachal Pradesh and Uttarakhand during 17th -20th; Haryana-Chandigarh-Delhi on 20th; West Uttar Pradesh during 18th -22nd; East Uttar Pradesh during 17th -22nd; West Rajasthan on 17th August.

❖ West & Central India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Madhya Pradesh, Vidarbha, Konkan & Goa, Chhattisgarh; scattered to fairly widespread rainfall over Gujarat Region, Marathwada; isolated to scattered rainfall over Madhya Maharashtra and Saurashtra & Kutch during the week.
- ✓ Isolated **Heavy rainfall** very likely over Madhya Pradesh during 17th -22nd; Vidarbha during 17th -20th; Chhattisgarh during 17th -21st; Konkan & Goa during 18th -21st; Madhya Maharashtra on 19th & 20th August.
- ✓ Isolated **very heavy rainfall** very likely over Chhattisgarh on 17th August.

❖ East & Northeast India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over east India and scattered to fairly widespread rainfall over northeast during the week.
- ✓ Isolated **heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim during 20th -22nd; Gangetic West Bengal, Jharkhand & Odisha during 17th-20th; Bihar during 18th -20th; Arunachal Pradesh on 22nd; Assam & Meghalaya on 17th & during 20th -22nd; Nagaland, Manipur, Mizoram & Tripura during 17th -22nd August.
- ✓ Isolated **very heavy rainfall** very likely over Gangetic West Bengal during 17th-19th; Jharkhand on 18th & 19th; Odisha on 17th; Nagaland, Manipur, Mizoram & Tripura on 22nd August.

❖ South Peninsular India:

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Kerala & Mahe, Lakshadweep, Coastal Karnataka; scattered to fairly widespread rainfall over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Interior Karnataka during the week.
- ✓ Isolated **heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal during 17th - 18th; Lakshadweep on 17th - 20th; Coastal Karnataka on 19th & 20th; North Interior Karnataka on 17th & 20th; South Interior Karnataka on 17th August.
- ✓ Isolated **very heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe on 17th August.

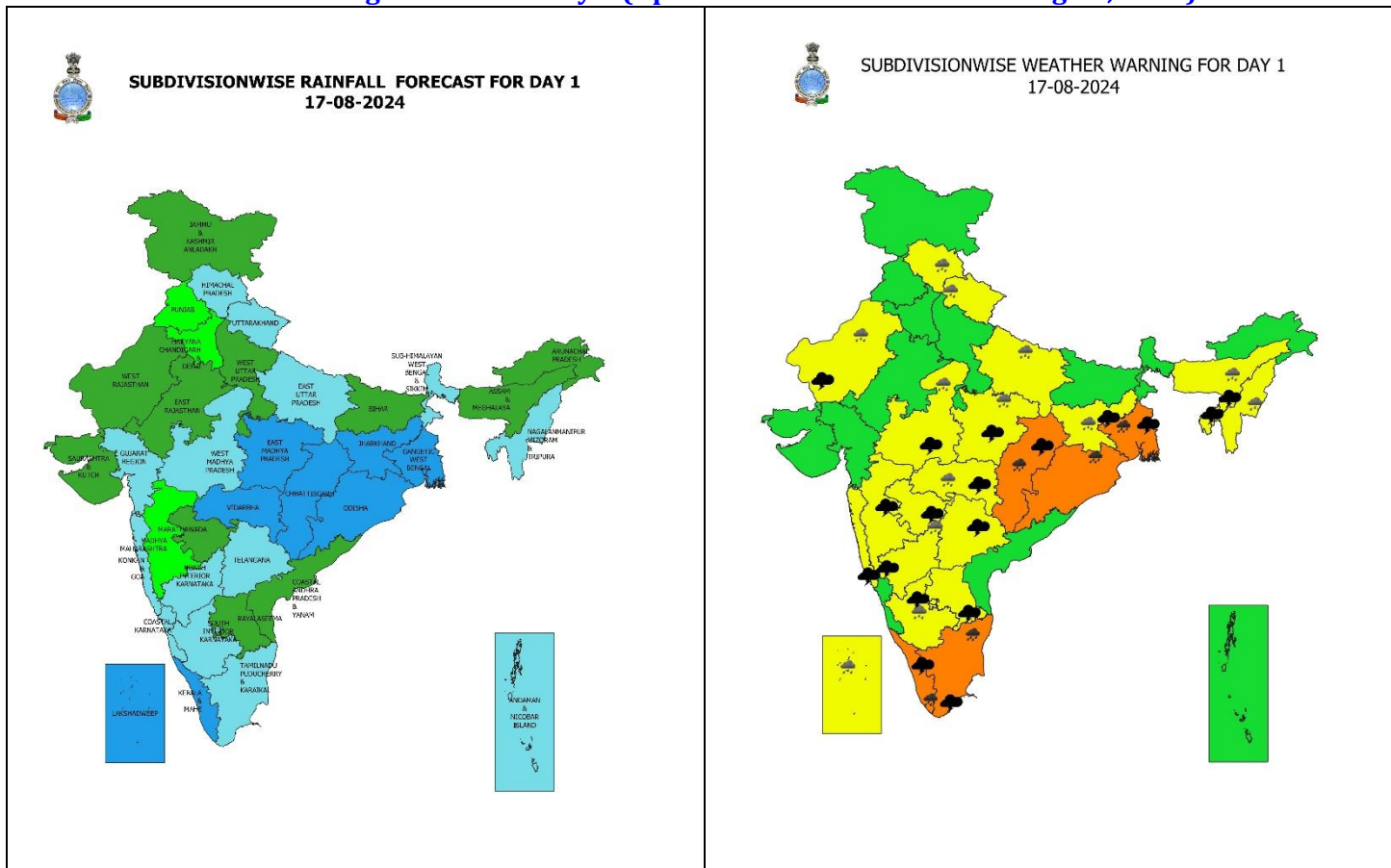
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at many places** over Gangetic West Bengal, Odisha and Coastal Karnataka; **at a few places** over Rajasthan, Vidarbha, East Madhya Pradesh, Telangana; **at isolated places** over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, Gujarat state, West Madhya Pradesh, Chhattisgarh, Konkan & Goa, Madhya Maharashtra, Marathwada, Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya Nagaland, Manipur, Mizoram & Tripura, Lakshadweep and Andaman & Nicobar Islands.
- ❖ **Heavy rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday): at isolated places over Mizoram.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday): (in cm): **Mizoram**-Aizwal-10; **Lakshadweep**: Agathi-6, Minicoy-3; **West Rajasthan**: Phalodi-4, Sri Ganganagar, Bikaner & Jaisalmer-1; **Telangana**: Nizamabad-4, Medak-2; **Gangetic West Bengal**: hawrah-3, Salt Lake-2 and Purulia-1; **Himachal Pradesh**: Shimla-2; **Uttarakhand**: Dehradun-2; **South Interior Karnataka**: Shimoga-2, Bangaluru-2; **Odisha**: Paralakhemundi-2, Dhankanal-1; **Haryana**: Bhiwani-1; **West Uttar Pradesh**: Bareilly-1; **East Rajasthan**: Alwar & Pilani-1; **West Madhya Pradesh**: Indor-1; **Vidarbha**: Amravati & Chandrapur-1; **Andaman & Nicobar Islands**: Port Blair, Nancowry & Mayabandar-1..
- ❖ **Minimum Temperature Departures (as on 16-08-2024)**: Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Madhya Maharashtra and Marathwada; **above normal (1.6°C to 3.0°C)** at most places over Rayalaseema, Coastal Karnataka and Kerala & Mahe; at many places over Interior Karnataka; at a few places over Coastal Andhra Pradesh & Yanam, Konkan & Goa and Tamil Nadu, Puducherry & Karaikal; at isolated places over Himachal Pradesh, Punjab, Uttarakhand, Uttar Pradesh, Bihar, East Rajasthan, Sub-Himalayan West Bengal & Sikkim, Odisha, Chhattisgarh, Vidarbha, Madhya Pradesh, Gujarat state, Telangana and Andaman & Nicobar Islands and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature of 19.0°C** was reported at **Bulsar-Valsad (Gujarat Region)** over the plains of the country (Fig.4).
- ❖ **Maximum Temperature Departures (as on 16-08-2024)**: Maximum temperatures were **markedly above normal (5.1°C or more)** at isolated places over Konkan & Goa; **appreciably above normal (3.1°C to 5.0°C)** at a few places over Assam & Meghalaya; at isolated places over Bihar, East Uttar Pradesh, Himachal Pradesh, Madhya Maharashtra and Vidarbha; **above normal (1.6°C to 3.0°C)** at a few places over East Madhya Pradesh and Gangetic West Bengal; at isolated places over Jammu division, Himachal Pradesh, Punjab, West Uttar Pradesh, West Madhya Pradesh, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Konkan & Goa, Gujarat Region, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Karnataka and Andaman & Nicobar Islands. These were **markedly below normal (-5.1°C or less)** at isolated places over West Rajasthan; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Odisha; **below normal (-1.6°C to -3.0°C)** at isolated places over East Rajasthan and Lakshadweep and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature of 37.4°C** was reported at **Varanasi/Babatpur (East Uttar Pradesh)** over the country (Fig. 2).

Meteorological Analysis (Based on 0530 hours IST)

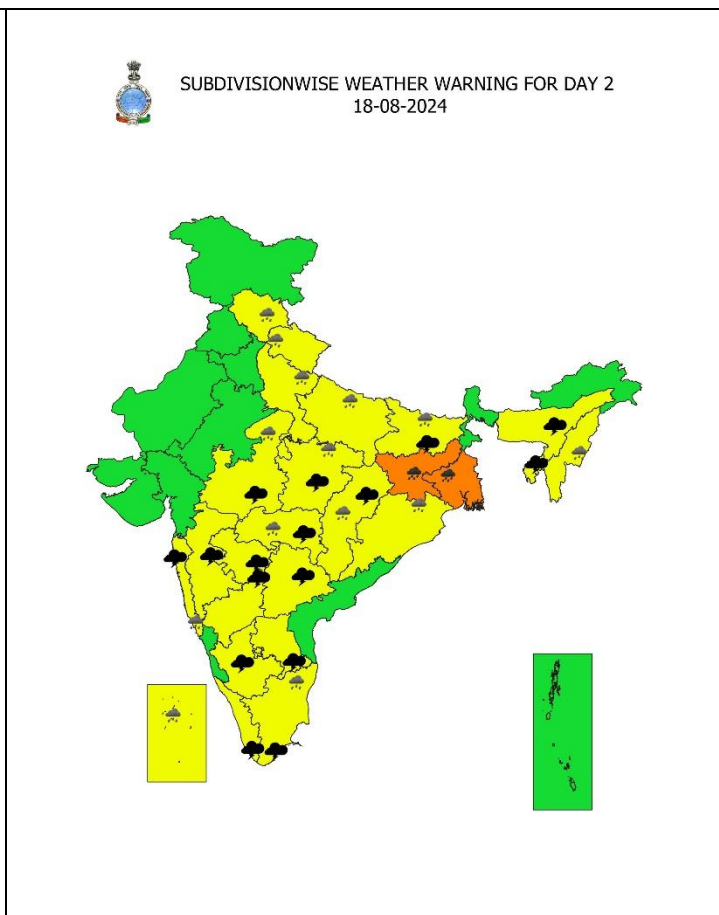
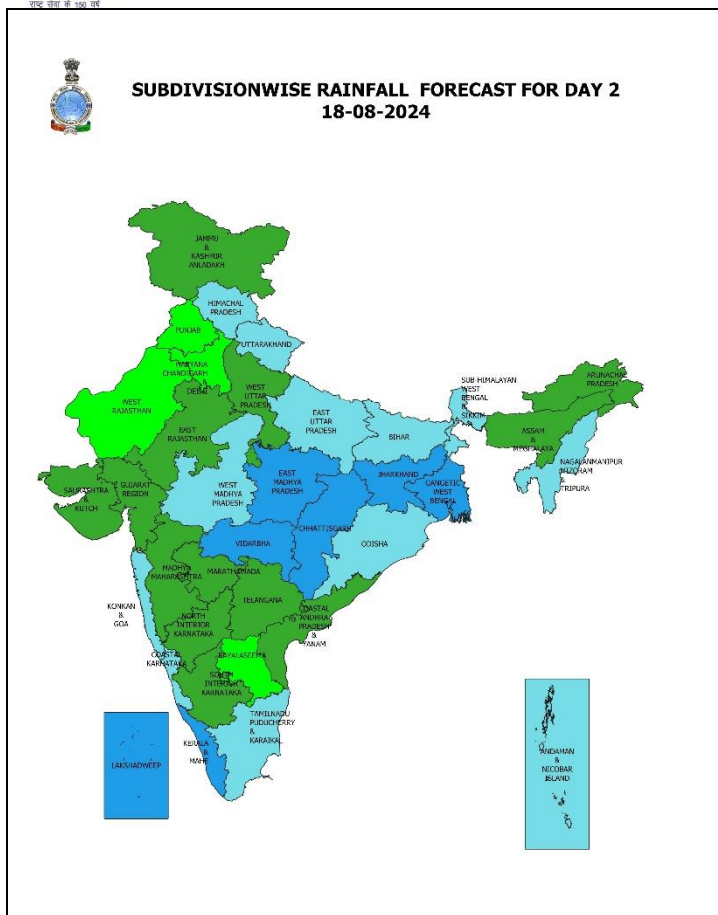
- ❖ The **low pressure** area over Northwest Bay of Bengal and adjoining areas of West Bengal and Bangladesh now lies over north Bay of Bengal and adjoining areas of Bangladesh-West Bengal coasts at 0530 hrs IST of today, the 17th August 2024. The associated cyclonic circulation extends upto 5.8 km above mean sea level tilting southwestwards with height. It is likely to move north-northwestwards during next 2 days and become a Well-marked Low pressure area over Bangladesh and adjoining Gangetic West Bengal. Thereafter, it is likely to move west-northwestwards, across Gangetic West Bengal, Jharkhand and adjoining areas during subsequent 3 days.
- ❖ The **Monsoon trough** at mean sea level now passes through Bikaner, Sikar, Gwalior, Churk and centre of low-pressure area over north Bay of Bengal and adjoining areas of Bangladesh-West Bengal coasts extending upto 0.9 km above mean sea level.
- ❖ The **cyclonic circulation** over northwest Rajasthan & neighbourhood between 1.5 km & 5.8 km above mean sea level tilting southwestwards with height persists.
- ❖ The **cyclonic circulation** over South Interior Karnataka & neighbourhood extending upto 5.8 km above mean sea level tilting southwestwards with height persists.
- ❖ The **trough** from North Interior Karnataka to Comorin area across the above cyclonic circulation over South Interior Karnataka & neighbourhood extending upto 1.5 km above mean sea level persists.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 23rd August, 2024)



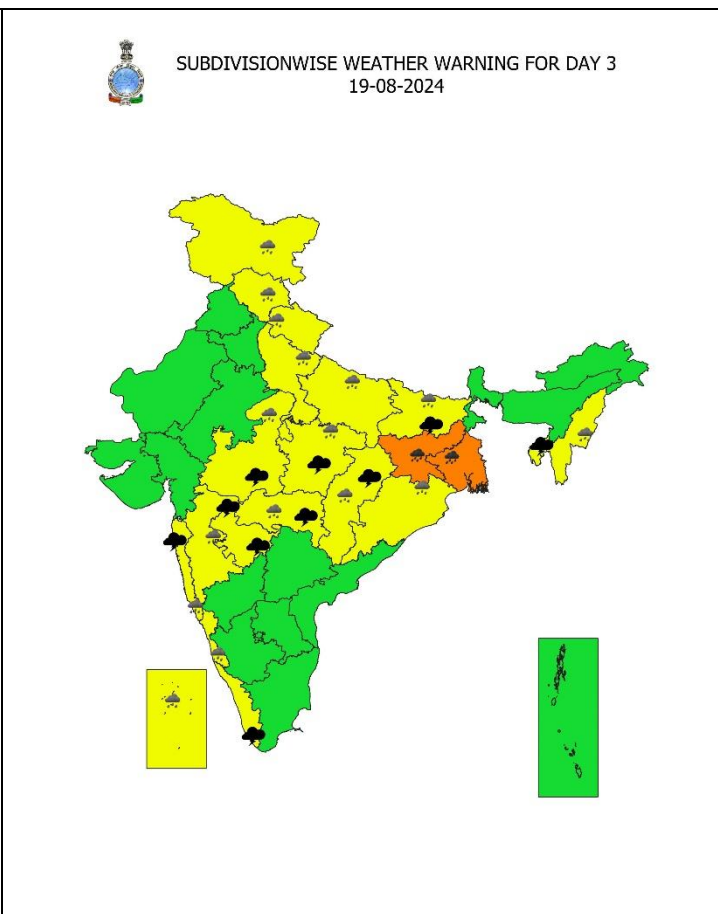
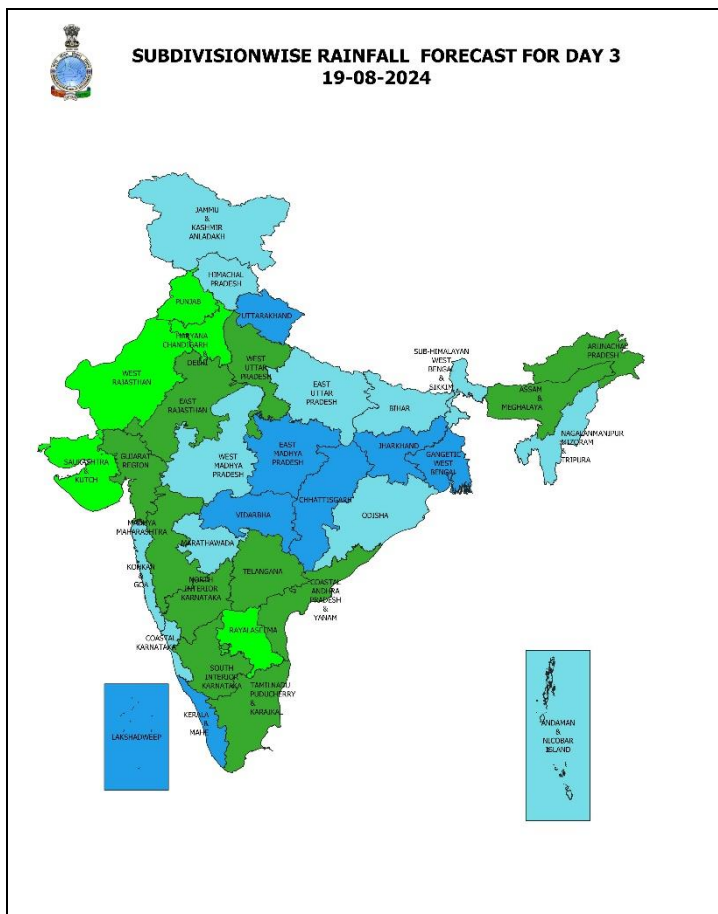
17 August (Day 1):

- ❖ **Heavy to very heavy rainfall (≥ 12 cm)** very likely at isolated places over Chhattisgarh, Gangetic West Bengal, Odisha, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe; **Heavy rainfall (≥ 7 cm)** at isolated places over Himachal Pradesh, Uttarakhand, East Uttar Pradesh, West Rajasthan, Madhya Pradesh, Vidarbha, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Lakshadweep and Interior Karnataka.
- ❖ **Thunderstorm accompanied with lighting** very likely over West Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Rayalaseema, Telangana and Interior Karnataka.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** is very likely to prevail over southern parts of northwest Arabian sea, many parts of westcentral Arabian sea, few parts of southwest Arabian sea, along and off Karnataka, Kerala coasts, over Lakshadweep, Maldives and adjoining southeast Arabian sea, Comorin area, gulf of Mannar, off Sri Lanka coast, many parts of southwest Bay of Bengal, few parts of southeast Bay of Bengal, southcentral parts of central Bay of Bengal, north bay off Gangetic west Bengal coast, off Odisha coast. **squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral & adjoining eastcentral Arabian sea, western parts of southwest Arabian sea, along & off Somalia, Oman coasts. Fishermen are advised not to venture into these areas.



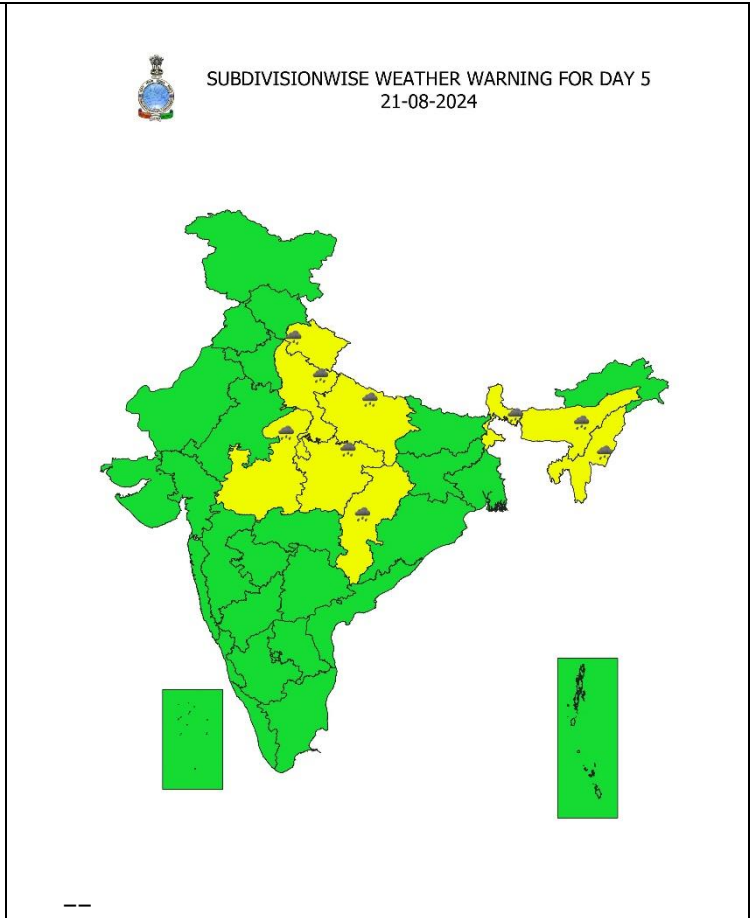
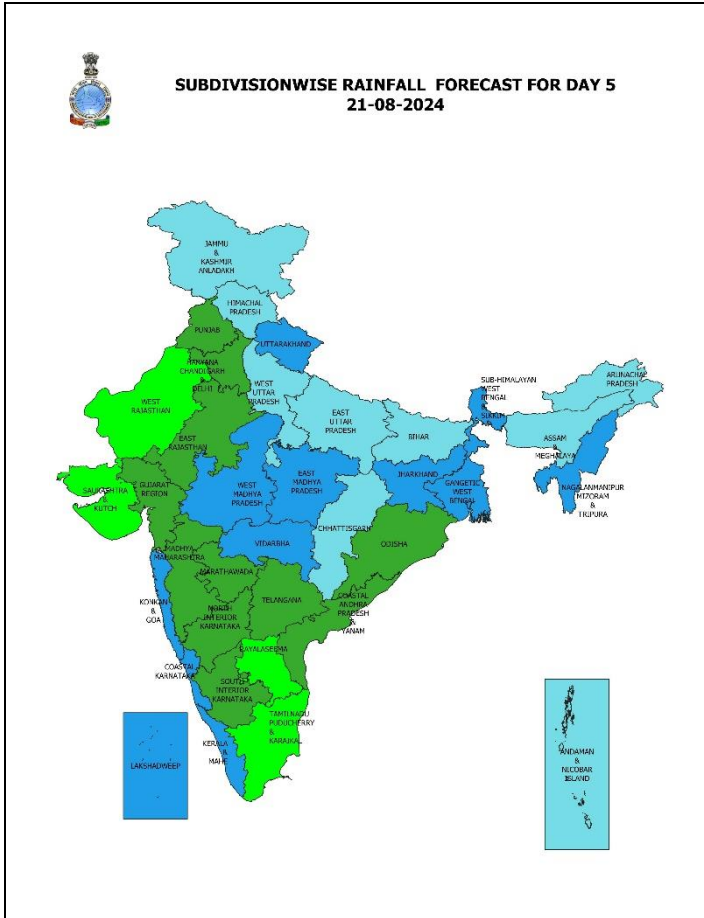
18 August (Day 2):

- ❖ **Heavy to very heavy rainfall (≥ 12 cm)** very likely at isolated places over Gangetic West Bengal and Jharkhand; **Heavy rainfall (≥ 7 cm)** at isolated places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Odisha, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.
- ❖ **Thunderstorm accompanied with lighting** very likely over Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Rayalaseema, Telangana and Interior Karnataka.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** is very likely to prevail over southcentral parts of north Arabian sea, many parts of westcentral Arabian sea, few parts of southwest Arabian sea, along and off Kerala coast, over Lakshadweep area, Maldives, Comorin area, gulf of Mannar, north bay off Gangetic west Bengal coast, off Odisha coast. **squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral & adjoining eastcentral Arabian sea, western parts of southwest Arabian sea, along & off Somalia, Oman coasts. Fishermen are advised not to venture into these areas.



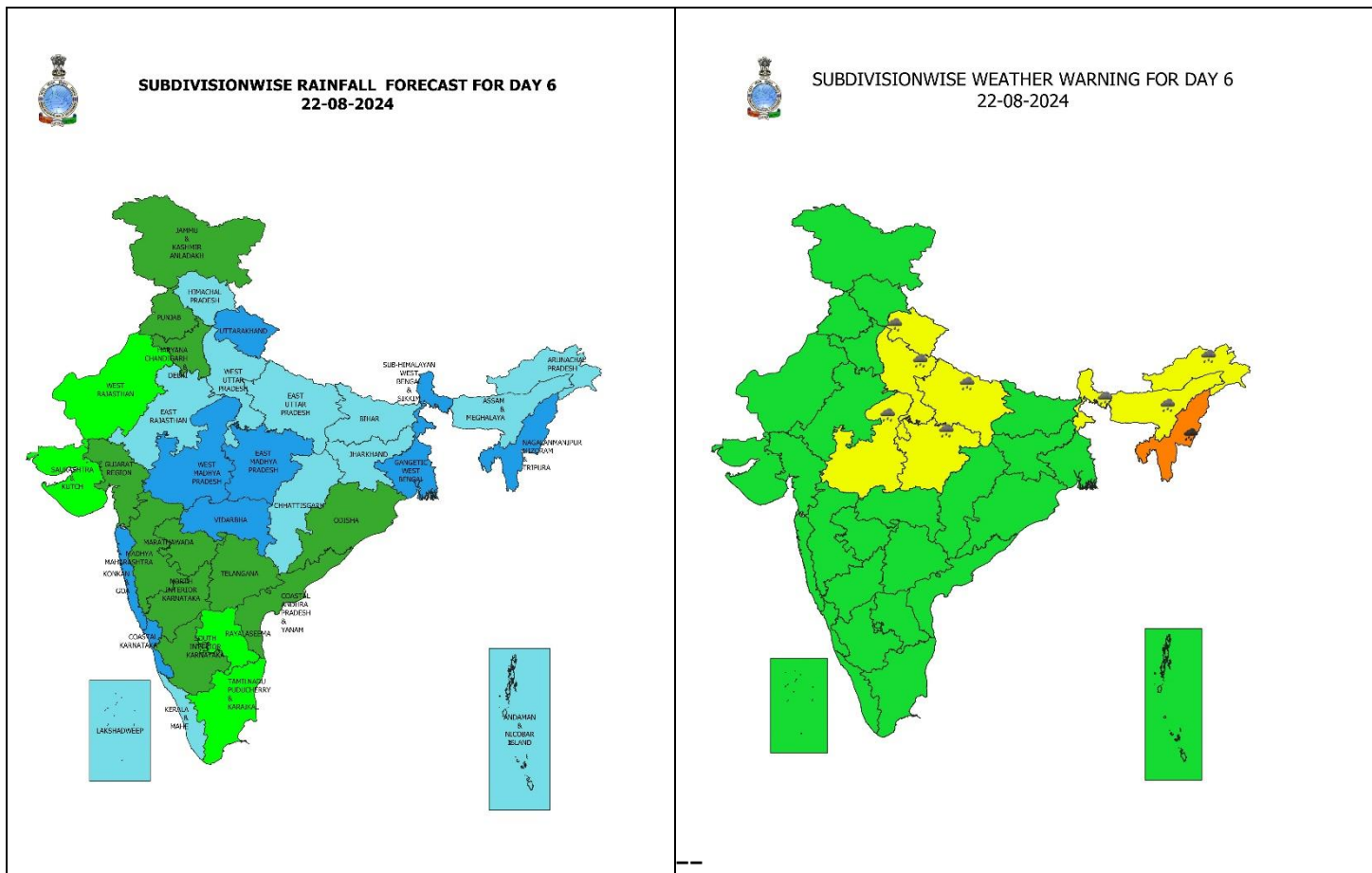
19 August (Day 3):

- ❖ **Heavy to very heavy rainfall (≥ 12 cm)** likely at isolated places over Gangetic West Bengal and Jharkhand; **Heavy rainfall (≥ 7 cm)** likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Odisha, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Lakshadweep and Coastal Karnataka.
- ❖ **Thunderstorm accompanied with lighting** likely over Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada and Kerala & Mahe.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over many parts of westcentral Arabian sea, few parts of southwest Arabian sea, along and off Kerala coast, over Lakshadweep area, Maldives, Comorin area, gulf of Mannar, north bay off Gangetic west Bengal coast, off Odisha coast. **squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral Arabian sea, western parts of southwest Arabian sea, along & off Somalia, Oman coasts. Fishermen are advised not to venture into these areas.



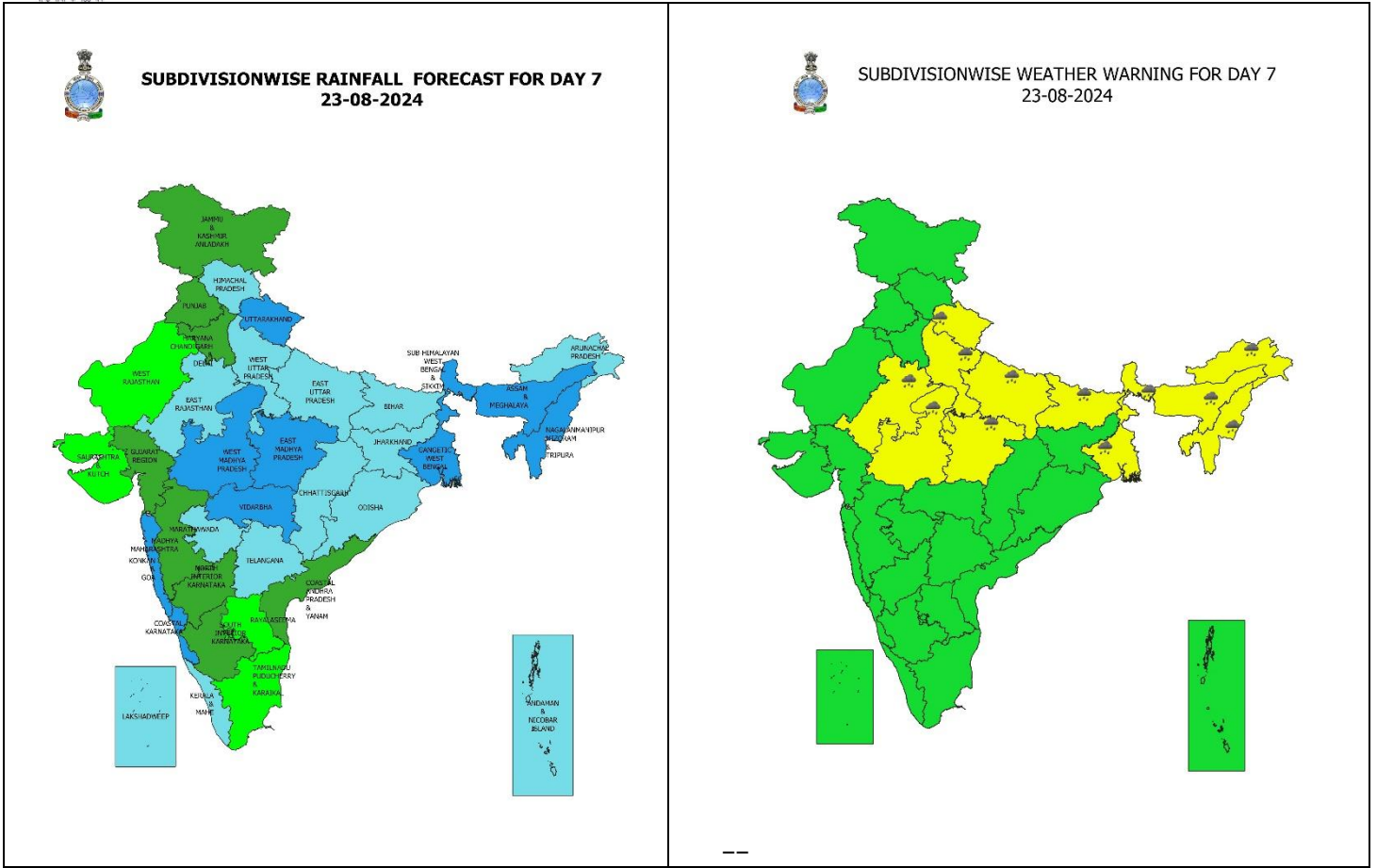
21 August (Day 5):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Uttarakhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.



22 August (Day 6):

- ❖ **Heavy to very heavy rainfall (≥ 12 cm)** likely at isolated places over Nagaland, Manipur, Mizoram & Tripura; **Heavy rainfall (≥ 7 cm)** likely at isolated places over Uttarakhand, Uttar Pradesh, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Assam & Meghalaya.



23 August (Day 7):

❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Uttarakhand, Uttar Pradesh, East Rajasthan, Madhya Pradesh, West Bengal & Sikkim, Bihar, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura and Assam & Meghalaya.

Weather Outlook for subsequent 3 days (During 24th August – 26th August, 2024)

❖ Fairly widespread to widespread rainfall likely over most parts of the country except southwest Rajasthan, interior Maharashtra, Coastal & North Interior Karnataka where isolated to scattered rainfall likely.

- 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 due to

- **Very heavy rainfall** at isolated over Chhattisgarh, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Odisha on 17th; Gangetic West Bengal during 17th -19th; Jharkhand on 18th & 19th; Nagaland, Manipur, Mizoram & Tripura on 22nd August.
- **Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Chhattisgarh, Odisha, Gangetic West Bengal on 17th August. (ANNEXURE I)**
 - ✓ 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/landslips/mud slips/land sinks/mud sinks.
 - ✓ 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 Heavy Rainfall likely over various parts of the country

- ✓ Drain out excess water from field crops and horticultural crops in Jammu & Kashmir, Himachal Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Gangetic West Bengal, Odisha, Jharkhand, Tamil Nadu, Kerala, Lakshadweep, Karnataka and Telangana.
- ✓ In **Himachal Pradesh**, harvest the matured apples and vegetable immediately during the clear weather and store them at safe places.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.

Flash Flood Guidance:

24 hours Outlook for the Flash Flood Risk (FFR) till 0530 IST of 18-08-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 24 hours.

Chhattisgarh - Korea, Balarampur, Jashpur, Korba Surajpur and Surguja districts.

Odisha – Sambalpur, Subarnapur, Jharsuguda, Kendujhar, Mayurbhanj, Deogarh and Anugul districts.

Gangetic West Bengal – Eastmednipur, Nadia, North 24 Pragana, Haora and South 24 Parganas districts

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.

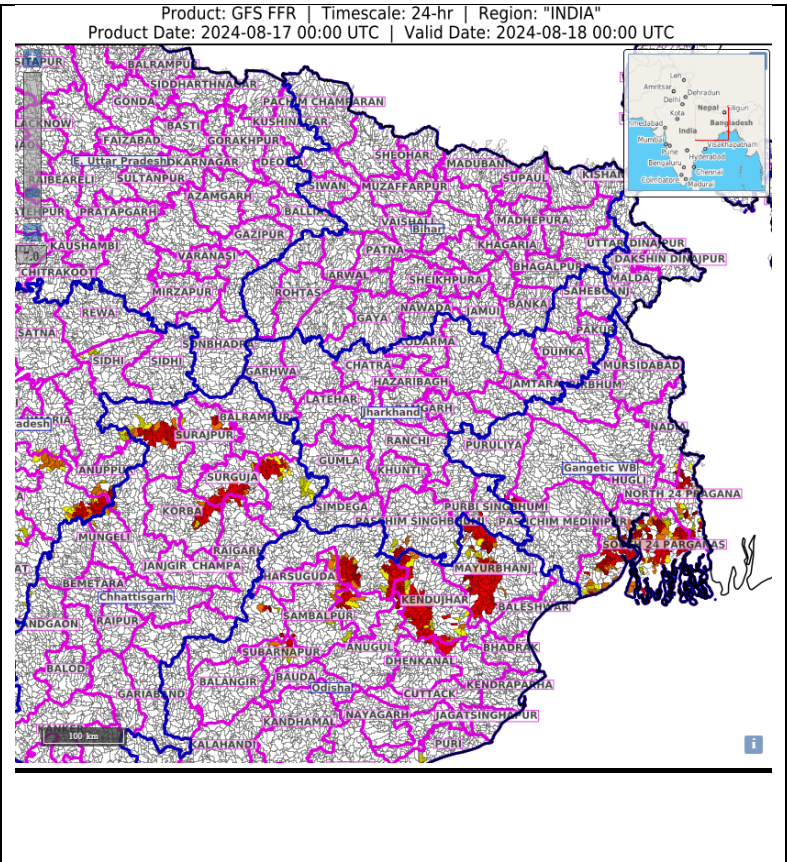


Fig. 1: Maximum Temperatures

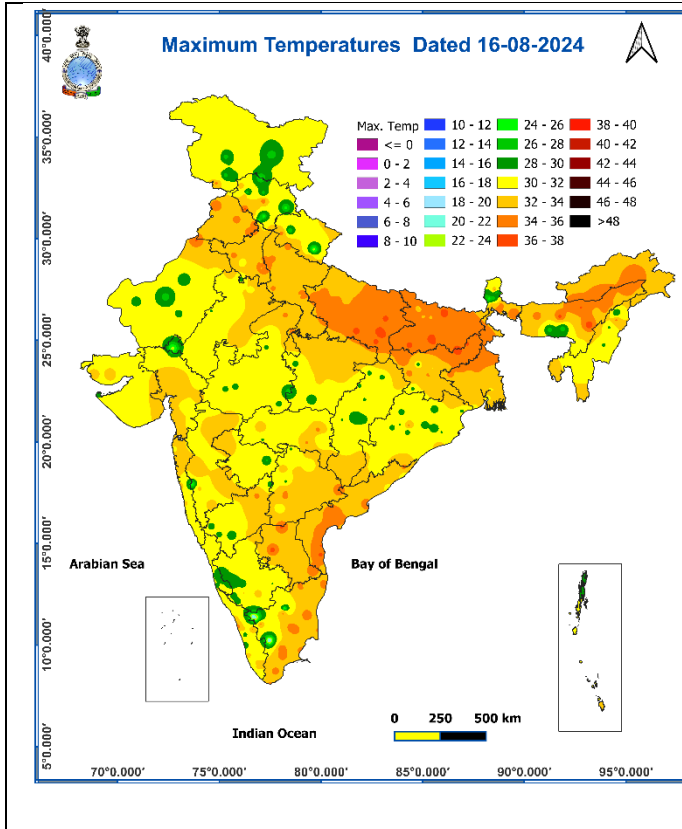


Fig. 2: Departure of Maximum Temperatures

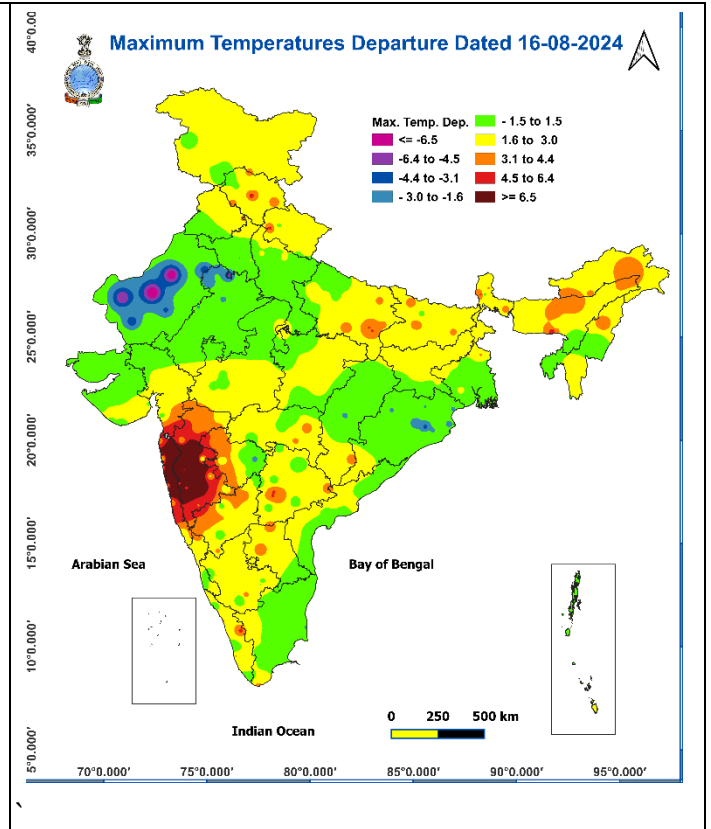


Fig. 3: Minimum Temperatures

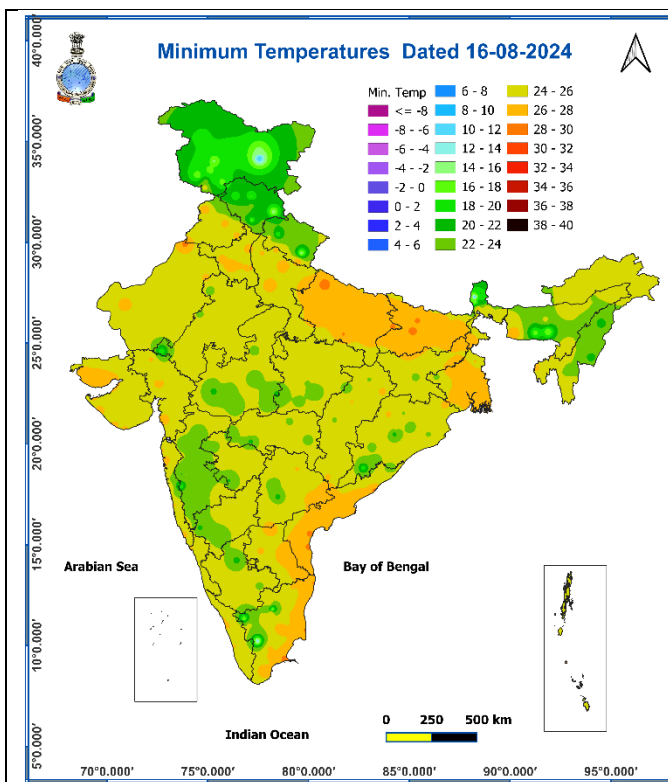


Fig. 4: Departure of Minimum Temperatures

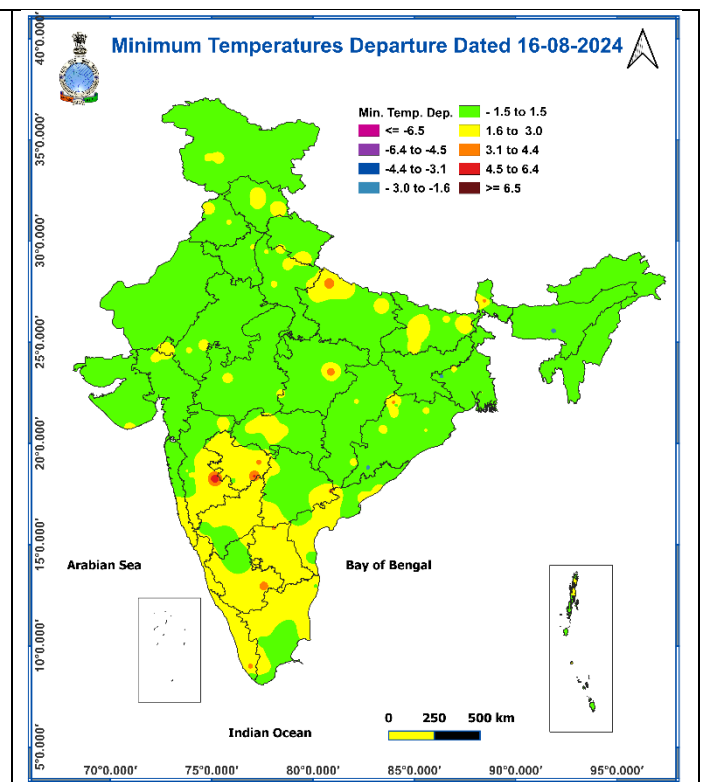
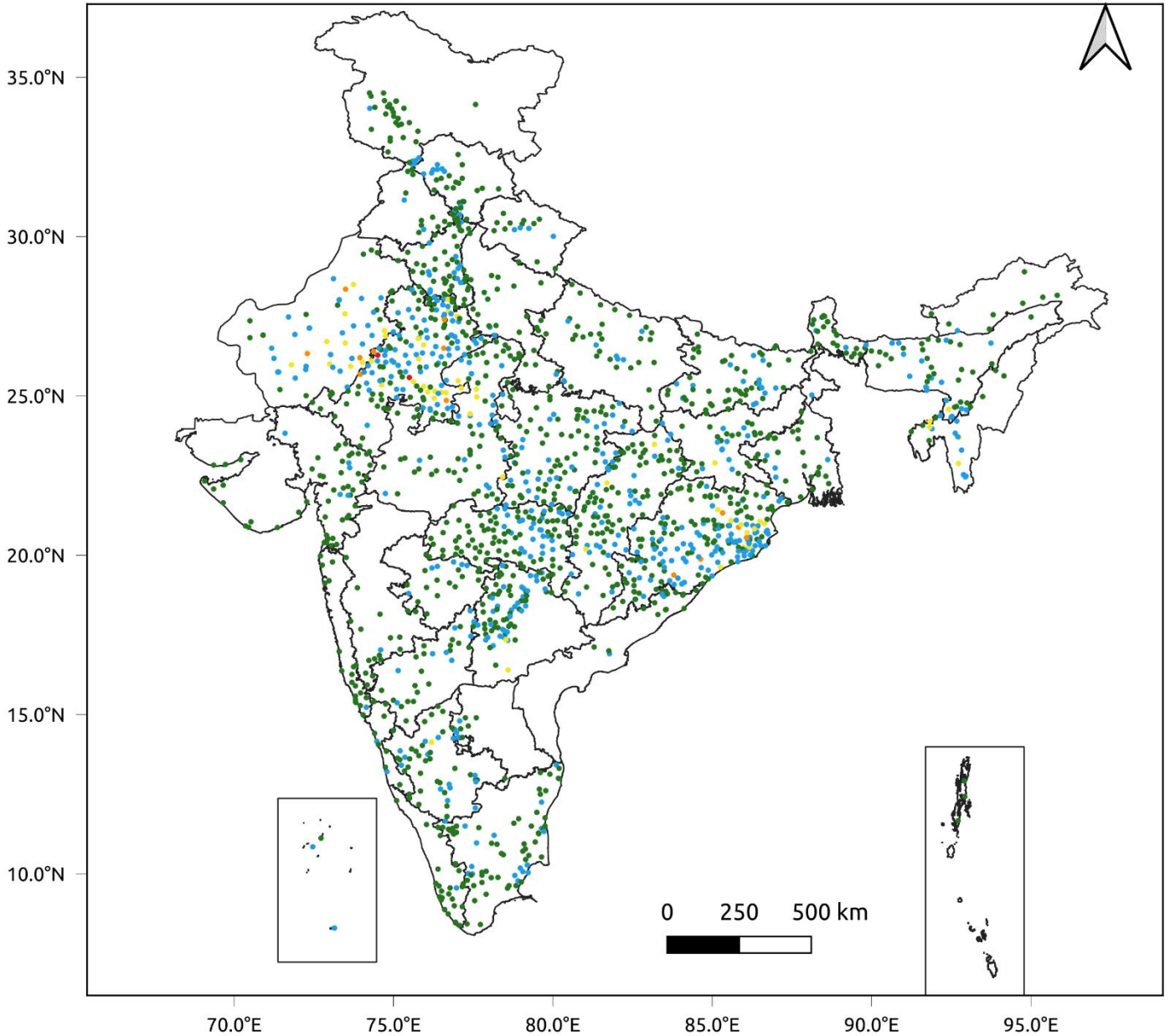


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



24 Hr cumulative rainfall recorded over different stations during 0830 IST of 15-8-2024 to 0830 IST of 16-8-2024

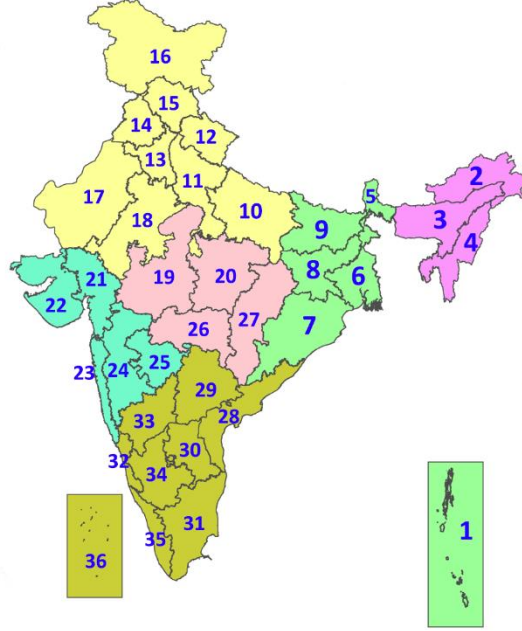


Legends

- Very Light to Light Rainfall (0.1 - 15.5 mm)
- Moderate Rainfall (15.6 - 64.4 mm)
- Heavy Rainfall (64.5 - 115.5 mm)
- Very Heavy Rainfall (115.6 - 204.4 mm)
- Extremely Heavy Rainfall (≥ 204.5 mm)

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

COLOUR CODED WARNING

No Warning (No Action)

Watch (Be Aware)

Alert (Be Prepared To Take Action)

Warning (Take Action)



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

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)