

Tuesday, September 17, 2024
Time of Issue: 1330 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- ✓ The **deep depression** over Gangetic West Bengal & adjoining Jharkhand weakened into a **depression** over Jharkhand and adjoining north Chhattisgarh at 0530 hours IST of today. It moved west-northwestwards and lay centered at 0830 hours IST of today over Northeast Chhattisgarh and adjoining Jharkhand near latitude 23.7° N and longitude 83.7° E, around 50 km southwest of Daltonganj (Jharkhand), 80 km northeast of Ambikapur (Chhattisgarh), 200 km east-southeast of Sidhi (Madhya Pradesh), 210 km east-northeast of Pendra Road (Chhattisgarh) and 290 km east of Umaria (Madhya Pradesh). It is likely to continue to move west-northwestwards across north Chhattisgarh, south Uttar Pradesh and adjoining northeast Madhya Pradesh and weaken into a **Well-Marked Low Pressure Area** during next 12 hours.
- ✓ The western end of monsoon trough is north of its normal position and eastern end is south of its normal position.

Forecast & Warnings (upto 7 days):

Central India:

- ✓ Scattered to Fairly Widespread light to moderate rainfall very likely over Madhya Pradesh, Vidarbha, Chhattisgarh during the week.
- ✓ Isolated **very heavy rainfall** very likely over north Madhya Pradesh on 17th September and isolated **heavy rainfall** very likely over Northwest Madhya Pradesh on 18th and over North Chhattisgarh on 17th September.

Northwest India

- ✓ Scattered to Fairly widespread light to moderate rainfall very likely over Uttarakhand & Uttar Pradesh and East Rajasthan on 17th & 18th and isolated light rainfall during subsequent 5 days; Isolated to scattered light/moderate rainfall very likely over the remaining region during the week.
- ✓ Isolated **very heavy rainfall** very likely over southeast Uttar Pradesh on 17th September and heavy rainfall on 18th September.
- ✓ Isolated **heavy rainfall** very likely over Uttarakhand & west Uttar Pradesh on 17th & 18th; Haryana and East Rajasthan on 18th September.

East & Northeast India

- ✓ Fairly widespread to Widespread light/moderate rainfall very likely over Andaman & Nicobar Islands; Isolated to scattered light/moderate rainfall very likely over East & Northeast India during the week.
- ✓ Isolated **heavy rainfall** very likely over Andaman & Nicobar Islands during 17th-20th; Bihar & Jharkhand on 17th; Assam & Meghalaya on 19th; Nagaland, Manipur, Mizoram & Tripura on 18th & 19th September.

West & South Peninsular India

- ✓ Fairly Widespread to Widespread light/moderate rainfall very likely over Konkan & Goa; Isolated to scattered light/moderate rainfall very likely over remaining region during the week.

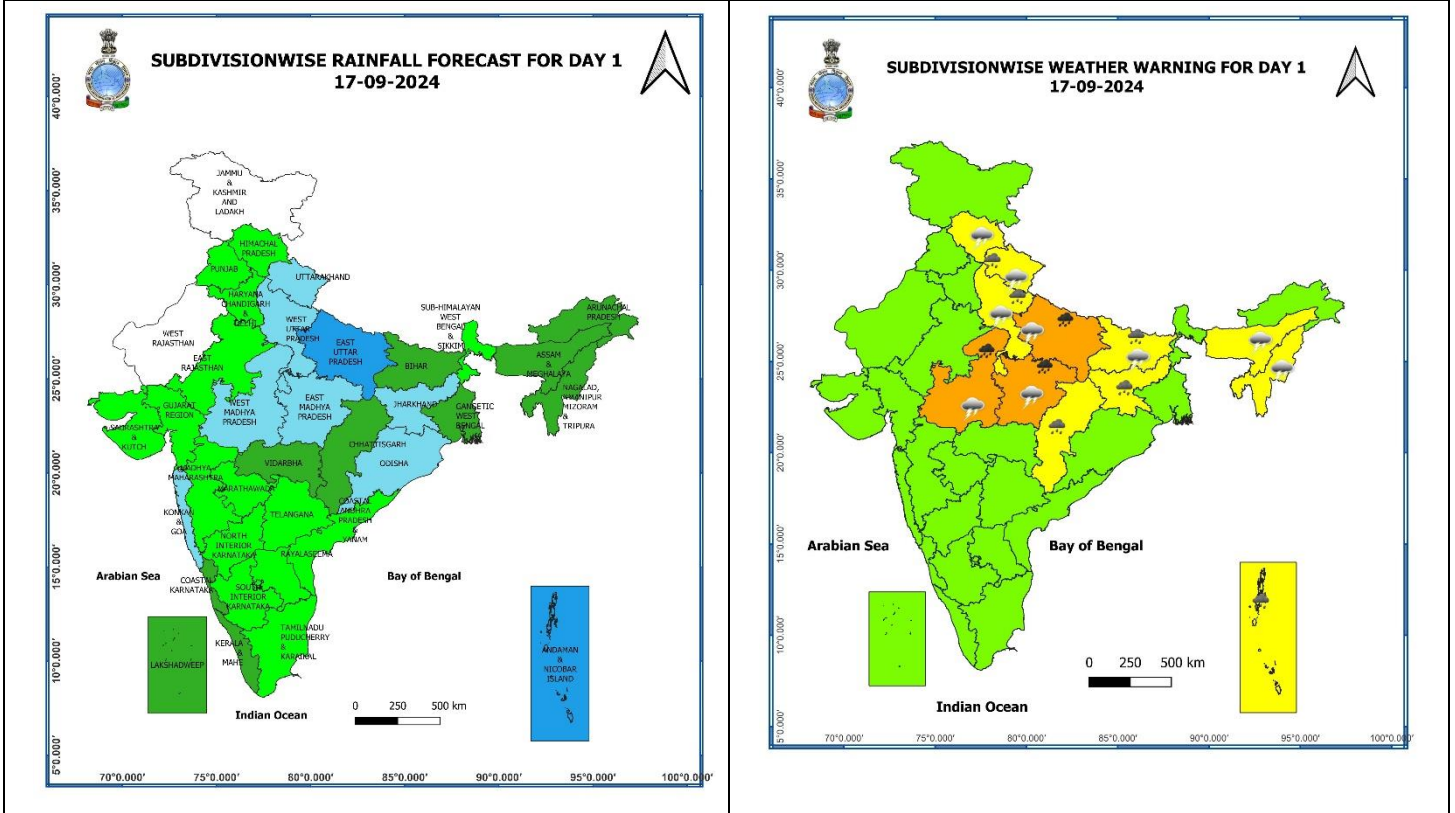
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most places** over East Madhya Pradesh, Andaman & Nicobar Islands, Gangetic West Bengal, Jharkhand, Konkan & Goa and Coastal Karnataka; **at many places** over Chhattisgarh, Odisha; **at a few places** over East Uttar Pradesh, Vidarbha, Sub-Himalayan West Bengal & Sikkim, Bihar, Lakshadweep; at **isolated places** over Himachal Pradesh, Uttarakhand, West Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Gujarat state, Konkan & Goa, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and interior Karnataka.
- ❖ **Heavy rainfall** recorded (from 0830 hours IST of yesterday to 0830 hours IST of today): **Heavy to very heavy rainfall** at isolated places over Jharkhand, Chhattisgarh, East Madhya Pradesh, Odisha; **Heavy rainfall** at isolated places over East Uttar Pradesh, Gangetic West Bengal & Bihar.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Jharkhand:** Latehar Balumat Kvk Aws (dist Latehar) 20, Nandadih (dist Giridih) 15, Chandankiary (dist Bokaro) 12, Ranchi Aero (dist Ranchi) 12, Garu (dist Latehar) 12, Saryu (dist Latehar) 11, Hendigir (dist Hazaribag) 11, Chakradharpur (dist West Singhbhum) 11, Bariyatu (dist Latehar) 11, Putki (dist Dhanbad) 11, Icar Namkum (dist Ranchi) 10, Nawadih, (dist Bokaro) 10, Pathalgada (dist Chatra) 10, Barkisuriya (dist Giridih) 10; **Chhattisgarh:** Kusmi (dist Balrampur) 15, Ramchandrapur (dist Balrampur) 14, Samari (dist Balrampur) 12, Biharpur (dist Surajpur) 12, Ramanujganj (dist Balrampur) 11; **East Madhya Pradesh:** Churhat (dist Sidhi) 14, Panagar (dist Jabalpur) 12, Bilhari (dist Katni) 10, Jabalpur-aws (dist Jabalpur) 10, Bargi (dist Jabalpur) 1; **Odisha:** Bhandaripokhari (Bhadrak) 12, Bari (Jajpur) 12, Kantapada (Cuttack) 10, Akhuapada (Bhadrak) 10, Dhamnagar (Bhadrak) 10, Jajpur (Jajpur) 10; **Gangetic West Bengal:** Kharidwar (dist Purulia) 11, Kansabati Dam (dist Bankura) 9; **East Uttar Pradesh:** Rihand Dam Fmo (dist Sonbhadra) 10, Dudhi (dist Sonbhadra) 9, Churk (dist Sonbhadra) 9, Robertsganj (dist Sonbhadra) 8; **Bihar:** Adhwara (dist Bhabua) 9, Rohtas (dist Rohtas) 9, Bhagwanpur (dist Bhabua) 7, Rajpur (dist Rohtas) 7.
- ❖ **Minimum Temperature Departures (as on 17-09-2024):** Minimum temperatures are **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at isolated places over Punjab, Vidarbha, Kerala & Mahe, Rayalaseema, Telangana, Assam & Meghalaya. These are **below normal (-1.6°C to -3.0°C)** at isolated places over Gangetic West Bengal, Madhya Pradesh, Konkan & Goa, North Interior Karnataka and Madhya Maharashtra and **near normal** over rest parts of the country. Today, **the lowest minimum temperature of 19.0°C** is reported at **Dhar (West Madhya Pradesh)** over the plains of the country. (Fig.4)
- ❖ **Maximum Temperature Departures (as on 16-09-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Uttarakhand, Arunachal Pradesh, Assam & Meghalaya, Tamil Nadu, Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at most places over Kerala & Mahe, Himachal Pradesh; at many places over Nagaland, Manipur, Mizoram & Tripura; at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Coastal Andhra Pradesh & Yanam, Rayalaseema, South Interior Karnataka, Andaman & Nicobar Islands; at isolated places over Punjab, Vidarbha & Marathwada. These were **markedly below normal (-5.1°C or less)** at few places over Gangetic West Bengal and at isolated places over Jharkhand, Odisha, Chhattisgarh & Bihar; **below normal (-1.6°C to -3.0°C)** at a few places over East Rajasthan; at isolated places over East Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature of 40.3°C** was reported at **Madurai (Tamil Nadu)** over the country. (Fig. 2)

Meteorological Analysis (Based on 0830 hours IST)

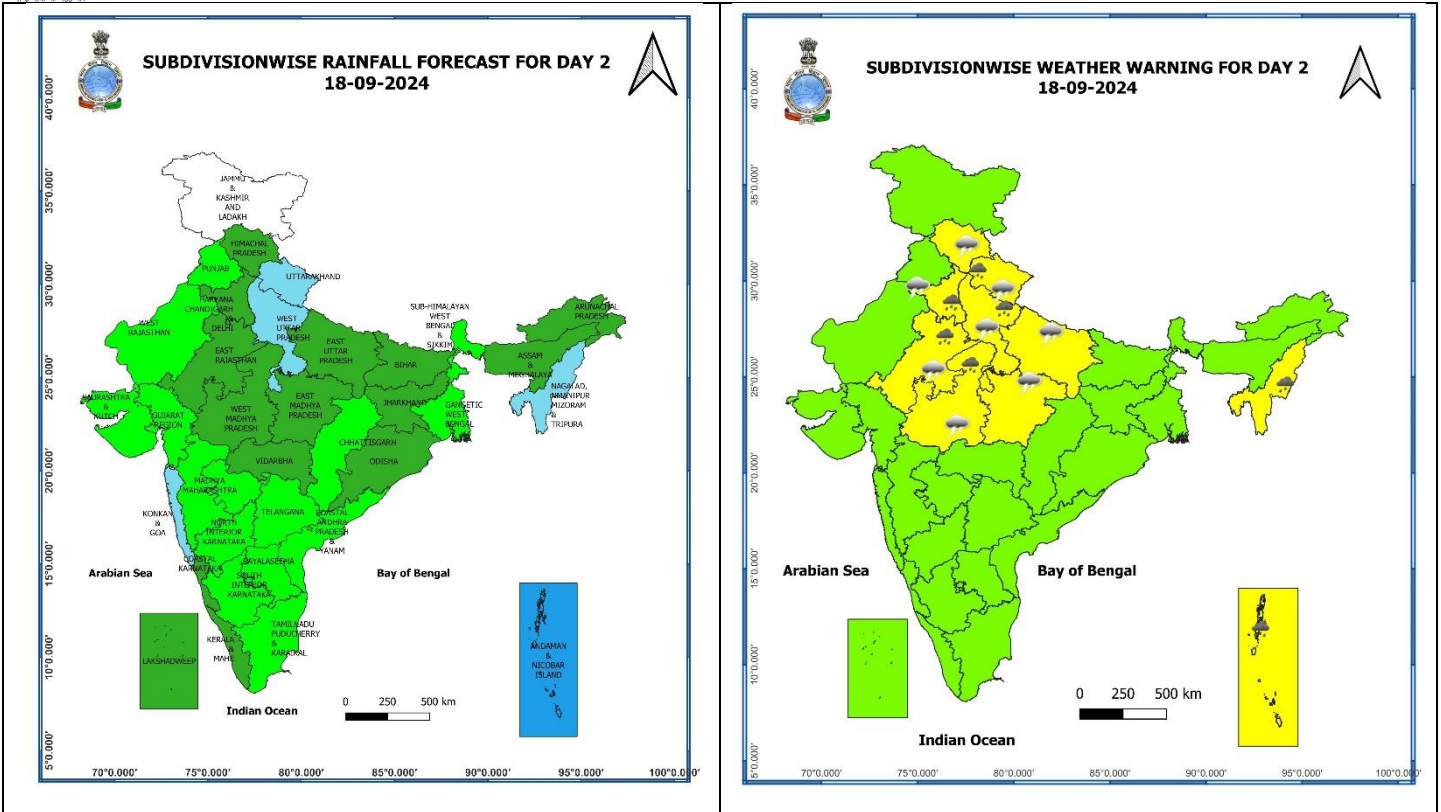
- ❖ The **Depression** over Jharkhand and adjoining north Chhattisgarh moved west-northwestwards with a speed of 12 kmph during past 6 hours and lay centered at 0830 hours IST of today, the 17th September 2024, over Northeast Chhattisgarh and adjoining Jharkhand near latitude 23.7° N and longitude 83.7° E, around 50 km southwest of Daltonganj (Jharkhand), 80 km northeast of Ambikapur (Chhattisgarh), 200 km east-southeast of Sidhi (Madhya Pradesh), 210 km east-northeast of Pendra Road (Chhattisgarh) and 290 km east of Umaria (Madhya Pradesh). It is likely to continue to move west-northwestwards across north Chhattisgarh, south Uttar Pradesh and adjoining northeast Madhya Pradesh and weaken into a **Well-Marked Low Pressure Area** during next 12 hours.
- ❖ The **Monsoon trough** at mean sea level now passes through Dehradun, Orai, the centre of **depression** over Northeast Chhattisgarh and adjoining Jharkhand, Gopalpur and thence southeastwards to westcentral Bay of Bengal.
- ❖ The **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 67° E to the north of Lat. 28° N.
- ❖ The **cyclonic circulation** over Haryana & neighbourhood now lies over North Haryana & neighbourhood between 1.5 & 3.1 km above mean sea level.

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



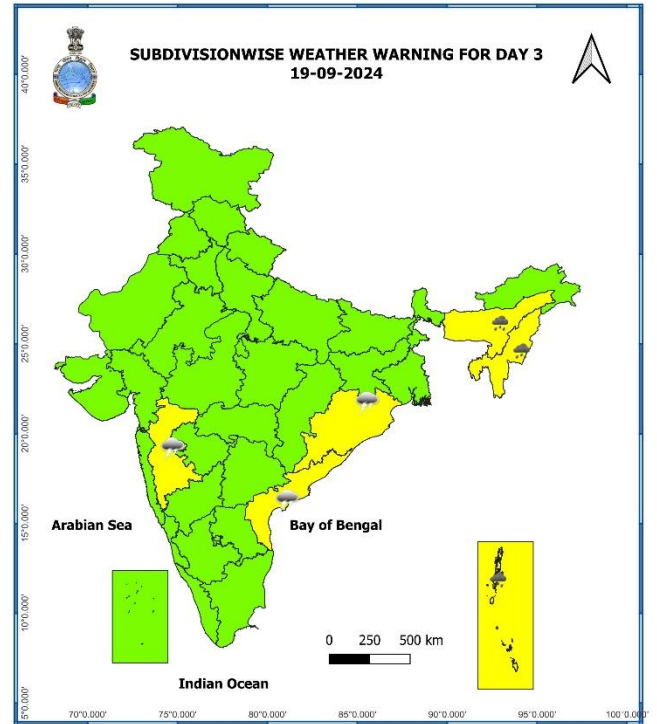
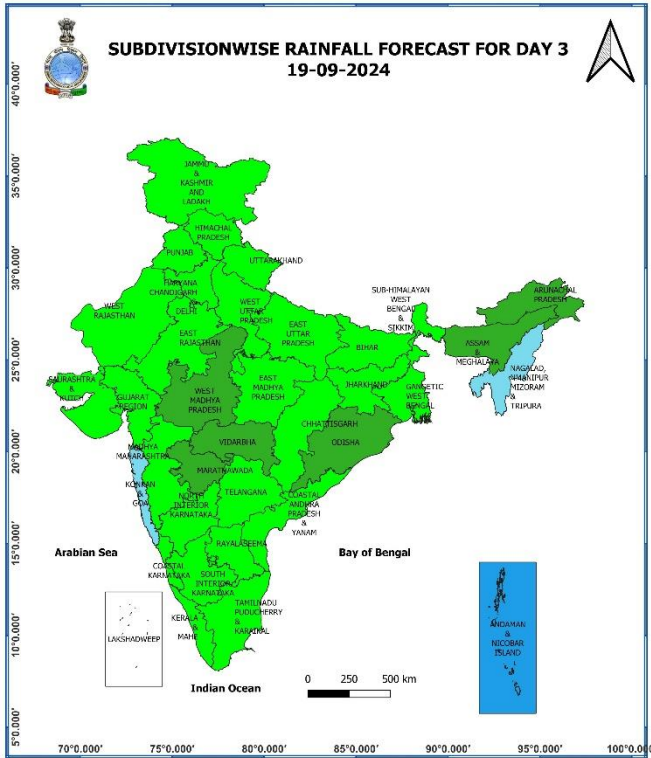
17 September (Day 1):

- ❖ **Heavy to very heavy rainfall (≥ 12 cm)** very likely at isolated places over north Madhya Pradesh and southeast Uttar Pradesh; **Heavy rainfall (≥ 7 cm)** at isolated places over Uttarakhand, West Uttar Pradesh, Chhattisgarh, Andaman & Nicobar Islands, south Bihar and Jharkhand.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Bihar, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over few parts of west central Arabian sea, off Sri Lanka coast, most parts of south Bay of Bengal. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over gulf of Mannar. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over western parts of southwest Arabian sea & adjoining parts of westcentral Arabian sea, along and off Somalia coast. Fishermen are advised not to venture into these areas.



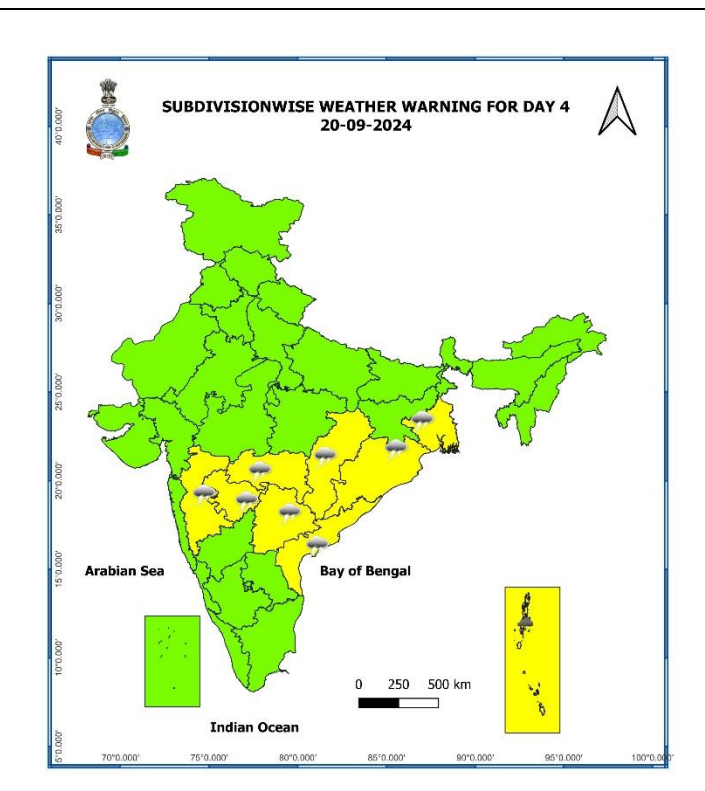
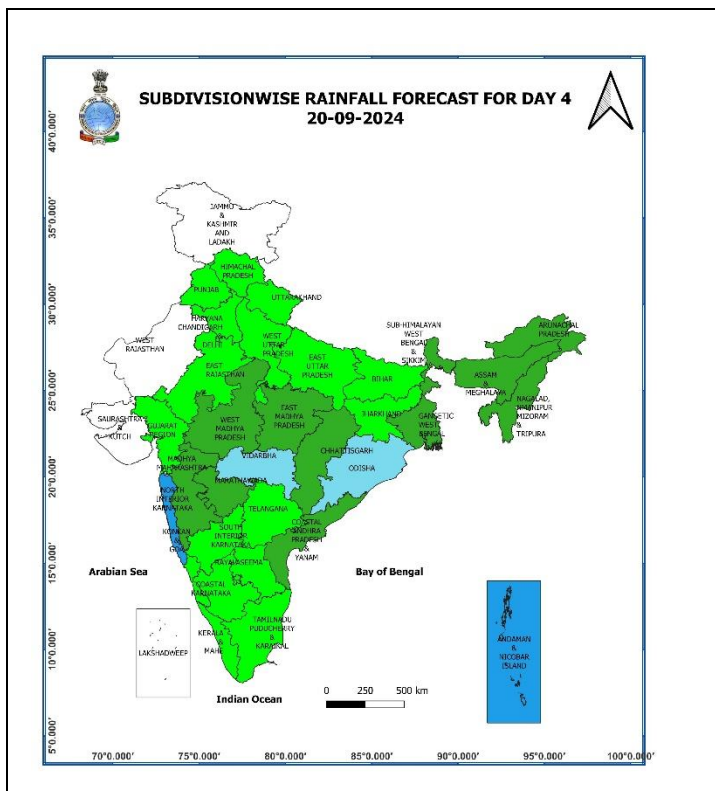
18 September (Day 2):

- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Uttarakhand, Haryana, West Uttar Pradesh, East Rajasthan, northwest Madhya Pradesh, Andaman & Nicobar Islands, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Himachal Pradesh, Uttarakhand, Haryana-Chandigarh-Delhi, Uttar Pradesh, East Rajasthan, Madhya Pradesh.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over many parts of westcentral adjoining southwest Arabian sea over gulf of Mannar, off Sri Lanka coast, most parts of south Bay of Bengal. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over western parts of southwest Arabian sea along and off Somalia coast. Fishermen are advised not to venture into these areas.



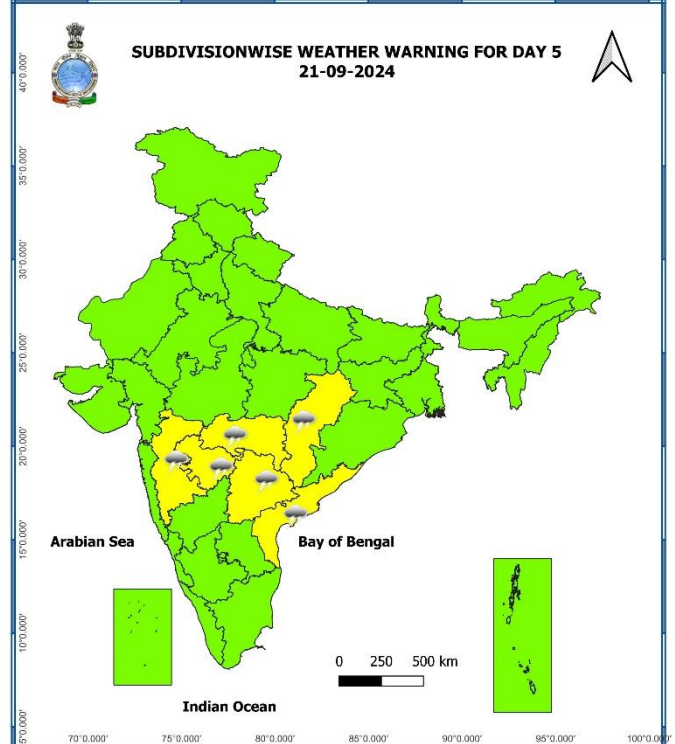
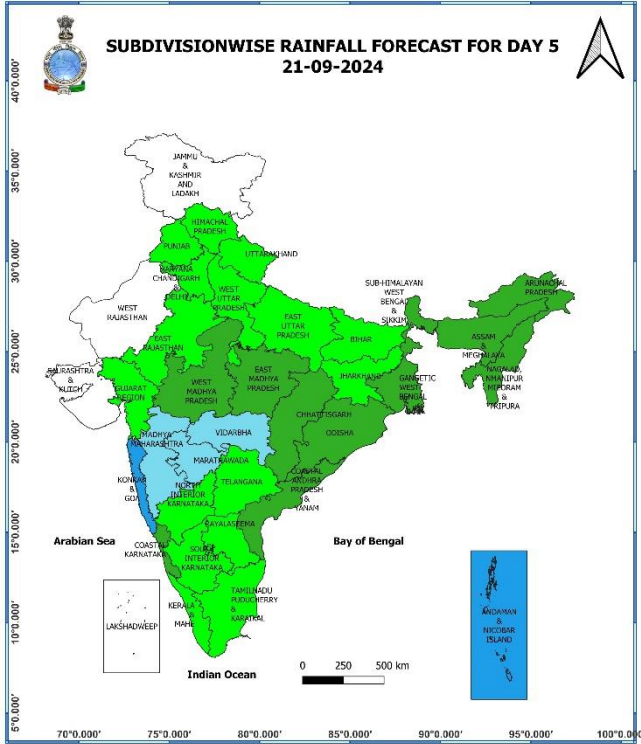
19 September (Day 3):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Odisha, Madhya Maharashtra and Coastal Andhra Pradesh & Yanam.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail few parts of westcentral adjoining southwest Arabian sea over gulf of Mannar, off Sri Lanka coast, most parts of south Bay of Bengal. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over western parts of southwest Arabian sea adjoining west central Arabian sea along and off Somalia coast. Fishermen are advised not to venture into these areas.



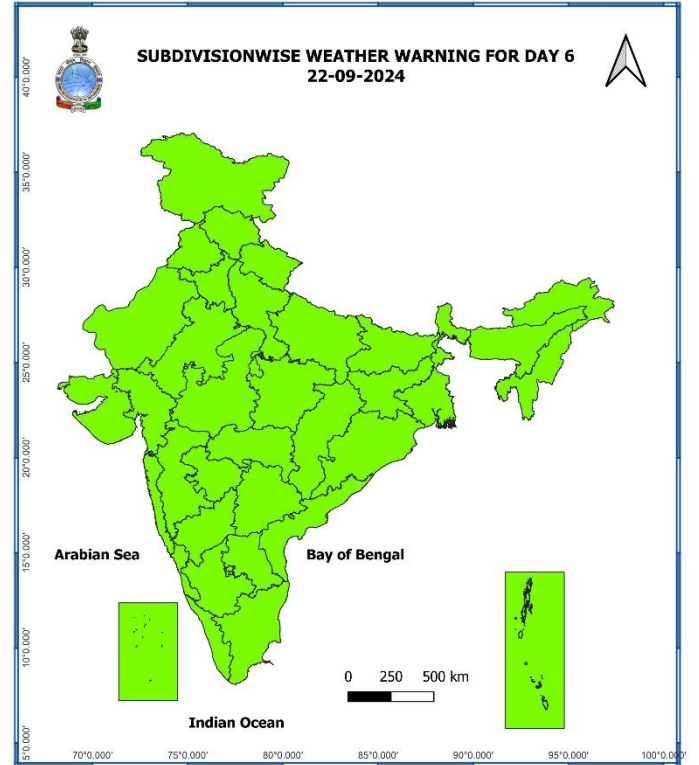
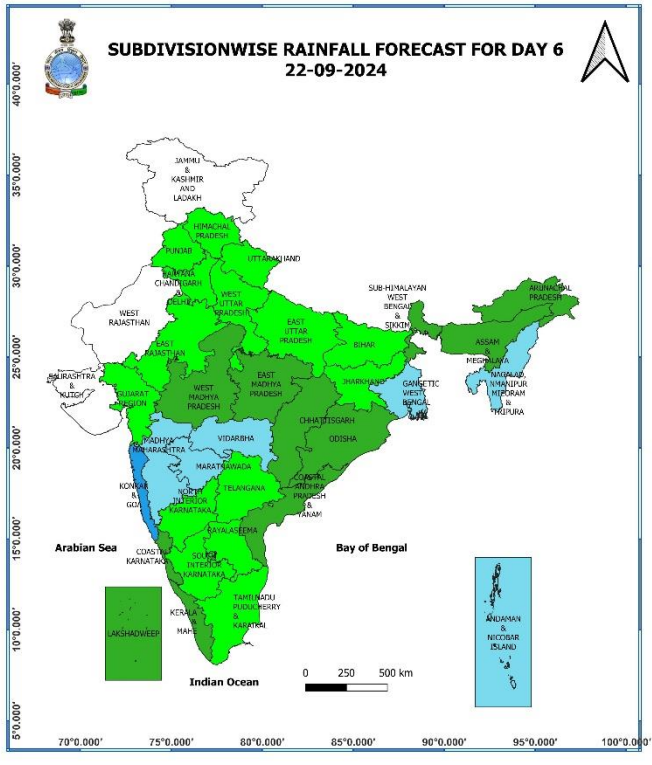
20 September (Day 4):

- ❖ Heavy rainfall (≥ 7 cm) likely at isolated places over Andaman & Nicobar Islands.
- ❖ Thunderstorm accompanied with lightning likely at isolated places over Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Madhya Maharashtra, Marathwada, Telangana and Coastal Andhra Pradesh & Yanam.
- ❖ Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph likely to prevail over gulf of Mannar, off Sri Lanka coast, most parts of south Bay of Bengal. Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph likely to prevail over western parts of southwest Arabian sea along and off Somalia coast. Fishermen are advised not to venture into these areas.



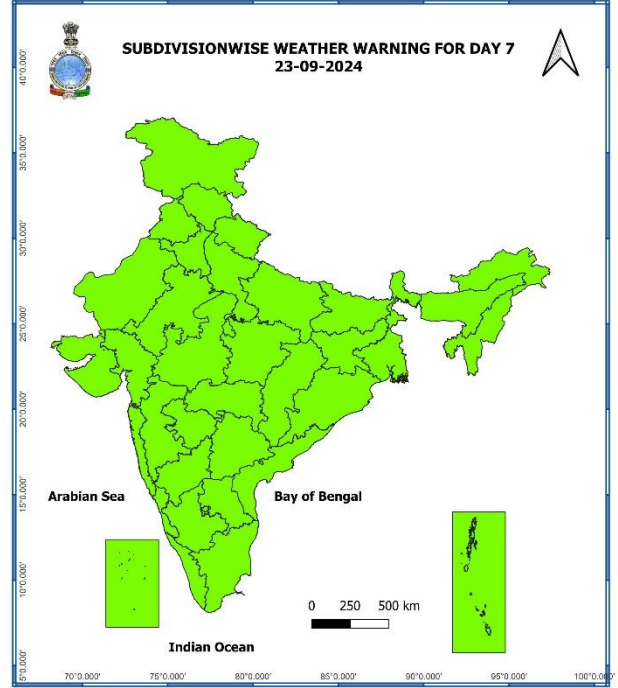
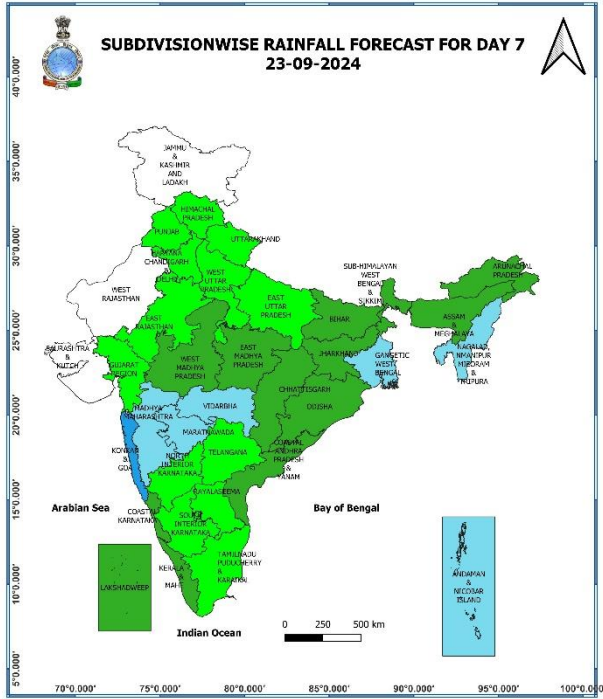
21 September (Day 5):

- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Vidarbha, Chhattisgarh, Madhya Maharashtra, Marathwada, Telangana and Coastal Andhra Pradesh & Yanam.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over gulf of Mannar, off Sri Lanka coast, many parts of south Bay of Bengal. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over western parts of southwest Arabian sea adjoining west central Arabian sea along and off Somalia coast. Fishermen are advised not to venture into these areas.



22 September (Day 6):

❖ **No weather warning.**



23 September (Day7):

❖ No weather warning.

Weather Outlook for subsequent 3 days (During 24th September- 26th September, 2024)

❖ Fairly widespread to widespread rainfall likely over most parts of the country except Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Rajasthan, Gujarat state, Punjab, Tamil Nadu, Puducherry & Karaikal 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.

Impact due to

- ✓ **Very heavy rainfall** at isolated places over East Uttar Pradesh & Madhya Pradesh on 17th September.
- ✓ **Low to Moderate flash flood risk** likely over few watersheds & neighbourhoods of Uttar Pradesh and Madhya Pradesh on 17th & 18th September. **(ANNEXURE I)**

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 and roadways 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 and wind.
- ✓ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

Action Suggested

- ✓ Judicious regulation of surface transports including railways and roadways.
- ✓ 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 maize, pulses and millets in **Chhattisgarh**; from cotton, maize, soybean, pulses and vegetables in **East Madhya Pradesh**; from rice, groundnut, brinjal, cucurbits and betel vine gardens in **Gangetic West Bengal**; from pulse crops and vegetables in **Jharkhand** to prevent water logging.
- ✓ Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Andaman & Nicobar Islands, Bihar, Uttarakhand, East Uttar Pradesh and West Madhya Pradesh.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.
- ✓ Keep the harvested produce at safer place.

Flash Flood Guidance:

ANNEXURE I

**24 hours Outlook for the Flash Flood Risk (FFR)
till 1130 IST of 18-09-2024:**

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

East Uttar Pradesh - Banda district
West Uttar Pradesh - Hamirpur, Jhansi, Lalitpur and Mahoba districts.

East Madhya Pradesh - Chhatarpur, Damoh, Jabalpur, Katni, Mandla, Narshimpura, Panna, Sagar and Seoni districts.

West Madhya Pradesh - Ashoknagar, Bhind, Datia, Gwalior, Shivpuri and Videsha 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.

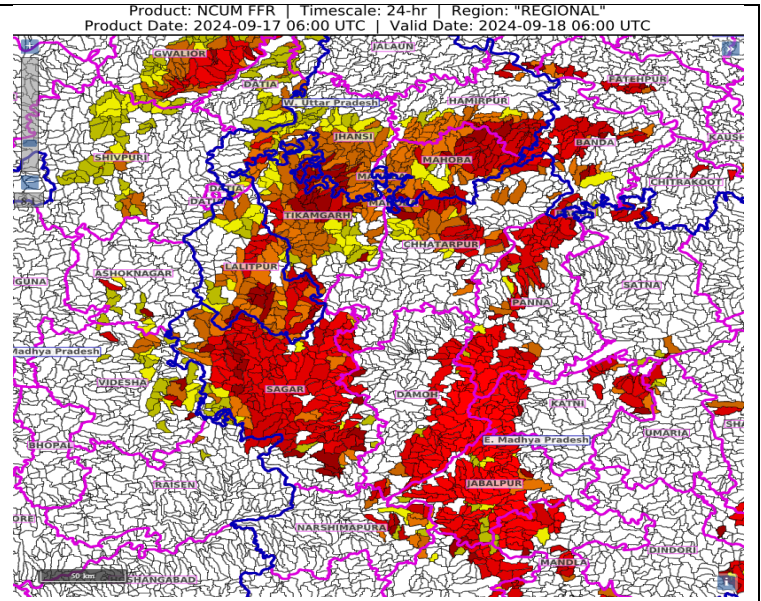
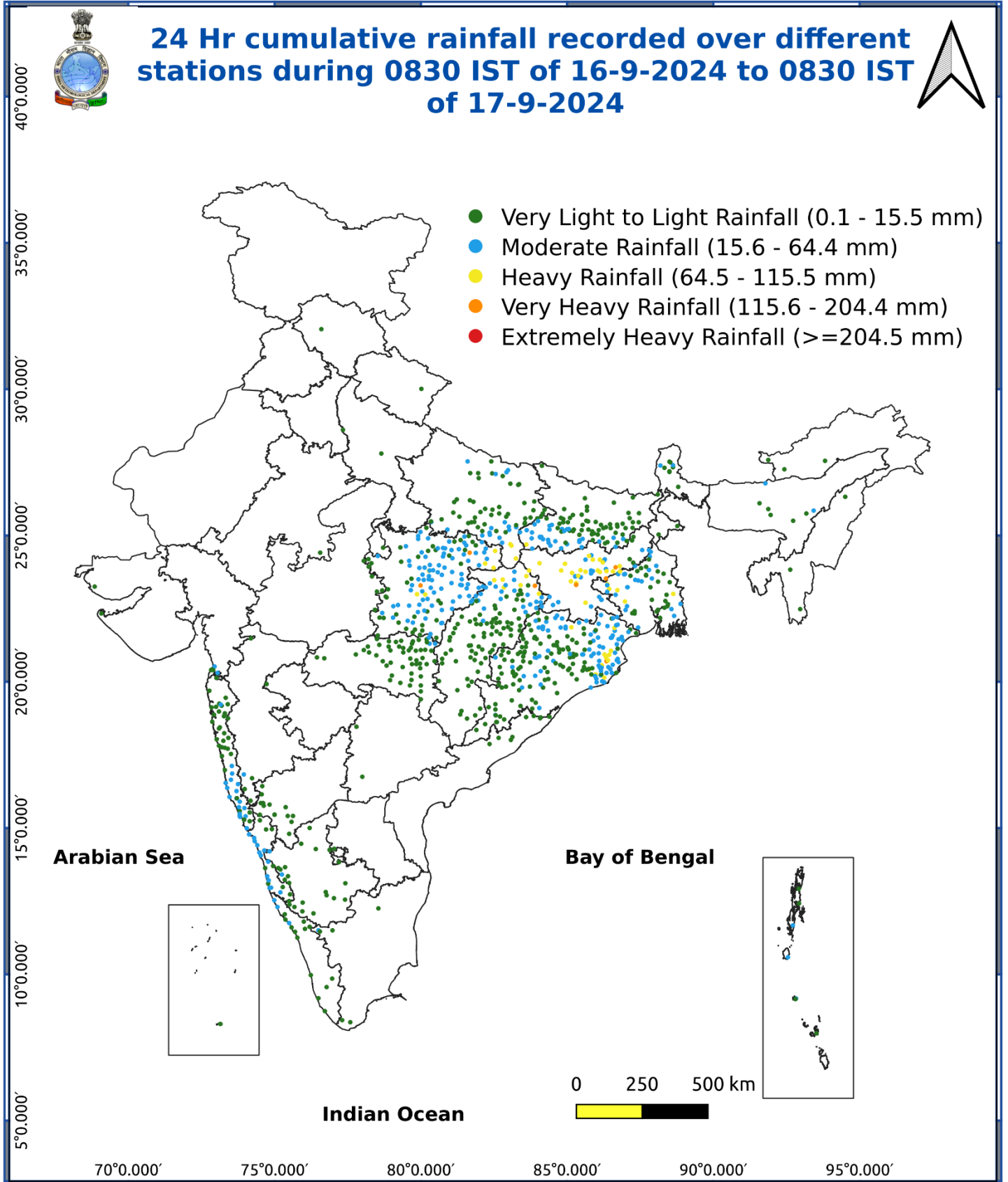
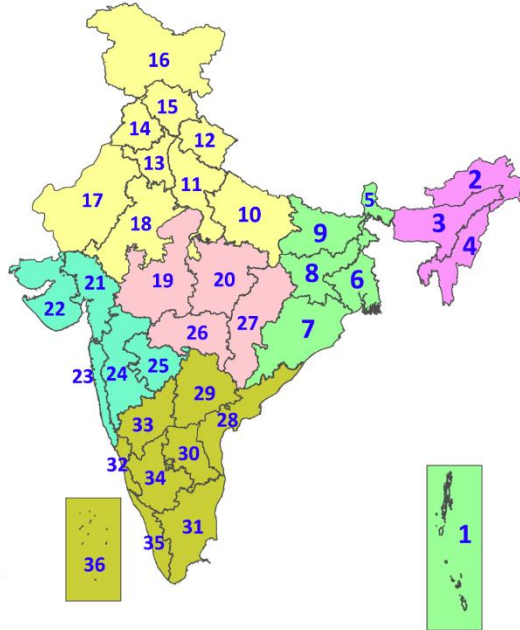


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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 *	<p>Heavy: 64.5 to 115.5 mm/cm *</p> <p>Very Heavy: 115.6 to 204.4 mm/cm*</p> <p>Extremely Heavy: > 204.4 mm/cm *</p>
Heat Wave	<p>When maximum temperature of a station reaches $\geq 40^\circ\text{C}$ for plains and $\geq 30^\circ\text{C}$ for hilly regions</p> <p>(a) Based on Departure from normal</p> <p>Heat Wave: Maximum Temperature Departure from normal 4.5°C to 6.4°C.</p> <p>Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^\circ\text{C}$</p> <p>(b). Based on Actual maximum temperature</p> <p>Heat Wave: When actual maximum temperature $\geq 45^\circ\text{C}$.</p> <p>Severe Heat Wave: When actual maximum temperature $\geq 47^\circ\text{C}$</p> <p>(c). Criteria for heat wave for coastal stations</p> <p>When maximum temperature departure is $>4.5^\circ\text{C}$ from normal. Heat Wave may be described provided maximum temperature $\geq 37^\circ\text{C}$</p>
Warm Night	<p>When maximum temperature remains 40°C</p> <p>Warm Night: When minimum temperature departure 4.5°C to 6.4°C.</p> <p>Severe Warm Night: When minimum temperature departure $>6.4^\circ\text{C}$.</p>
Cold Wave	<p>When minimum temperature of a station $\leq 10^\circ\text{C}$ for plains and $\leq 0^\circ\text{C}$ for hilly regions.</p> <p>(a). Based on departure</p> <p>Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C.</p> <p>Severe Cold Wave: Minimum Temperature Departure from normal $\leq -6.5^\circ\text{C}$</p> <p>(b) Based on actual Minimum Temperature (for Plains only)</p> <p>Cold Wave : When Minimum Temperature is $\leq 4.0^\circ\text{C}$</p> <p>Severe Cold Wave: When Minimum Temperature is $\leq 2.0^\circ\text{C}$</p> <p>(c) For Coastal Stations</p> <p>When Minimum Temperature departure is $\leq -4.5^\circ\text{C}$ & actual Minimum Temperature is $\leq 15^\circ\text{C}$</p>
Cold Day	<p>When minimum temperature of a station $\leq 10^\circ\text{C}$ for plains and $\leq 0^\circ\text{C}$ for hilly regions</p> <p>Based on departure</p> <p>Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C.</p> <p>Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^\circ\text{C}$</p>
Fog	<p>Phenomenon of small droplets suspended in air and the horizontal visibility $< 1\text{km}$</p> <p>Moderate Fog: When the visibility between 500-200 metres</p> <p>Dense Fog: when the visibility between 50- 200 metres</p> <p>Very Dense Fog: when the visibility < 50 metres</p>
Thunderstorm	<p>Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)</p>
Dust/Sand Storm	<p>An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.</p>
Frost	<p>Ice deposits on ground</p> <p>Air temperature $\leq 4^\circ\text{C}$ (over Plains)</p>
Squall	<p>A strong wind that rises suddenly, lasts for atleast 1 minute.</p> <p>Moderate: Wind speed 52-61 kmph</p> <p>Severe: Wind speed 62-87 kmph</p> <p>Very Severe: Wind speed >87 kmph</p>
Sea State	<p>Effect of various waves in the sea over specific area</p> <p>Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre</p> <p>High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre</p> <p>Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre</p>
Cyclone	<p>Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)</p> <p>Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)</p> <p>Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)</p> <p>Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)</p> <p>Super Cyclone Strom: Wind speed >220 kmph (>119 knots)</p>