Thursday, September 12, 2024
Time of Issue: 1430 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- ✓ The **depression** over Northwest Madhya Pradesh and neighbourhood moved north-northeastwards with a speed of 10 kmph during past 6 hours and lay centred at 0830 hours IST of today, the 12th September over Southwest Uttar Pradesh and neighbourhood near latitude 27.0°N and longitude 78.5°E, about 50 km east-southeast of Agra (Uttar Pradesh), 90 km north-northeast of Gwalior (Madhya Pradesh), 110 km south-southeast of Aligarh (Uttar Pradesh) and 180 km south-southwest of Bareilly(Uttar Pradesh). It is likely to continue to move north-northeastwards and maintain its intensity today, the 12th September and weaken gradually thereafter from tomorrow, the 13th September. The system is under continuous surveillance of Doppler Weather Radars at Delhi and Lucknow.
- ✓ An upper air **cyclonic circulation** lies over southeast Bangladesh & neighbourhood in lower & middle tropospheric levels. Under its influence, a low pressure area is likely to form over coastal Bangladesh & adjoining north Bay of Bengal during next 24 hours. Thereafter, it is likely to move slowly west-northwestwards and concentrate into a depression over coastal west Bengal and adjoining northwest Bay of Bengal during subsequent 48 hours.
- ✓ The **monsoon trough** is near normal position at mean sea level.

Forecast & Warnings (upto 7 days):

Northwest India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Uttarakhand, West Uttar Pradesh; Scattered to Fairly widespread light/moderate rainfall very likely over Haryana-Chandigarh-Delhi, East Uttar Pradesh, East Rajasthan, Himachal Pradesh; Isolated to scattered rainfall over the remaining region during the week.
- ✓ **Isolated extremely heavy rainfall** very likely over Uttarakhand on 12th & 13th; West Uttar Pradesh on 12th September.
- ✓ Isolated **very heavy rainfall** very likely over Haryana-Chandigarh-Delhi, East Uttar Pradesh & East Rajasthan on 12th; West Uttar Pradesh on 12th & 13th September.
- ✓ Isolated **heavy rainfall** very likely over Himachal Pradesh, Haryana-Chandigarh-Delhi, West Uttar Pradesh & East Rajasthan on 12th & 13th; Uttarakhand during 12th-14th; East Uttar Pradesh during 12th -17th September.

West & Central India:

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Madhya Pradesh, Konkan & Goa; Scattered to Fairly widespread light/moderate rainfall very likely over Vidarbha, Chhattisgarh; Isolated to Scattered light/moderate rainfall very likely over Madhya Maharashtra, Marathwada, Gujarat State during the week.
- ✓ **Isolated very heavy rainfall very likely over** West Madhya Pradesh on 12th; East Madhya Pradesh & Chhattisgarh on 16th & 17th September.
- ✓ Isolated **heavy rainfall** very likely over West Madhya Pradesh during 12th, 13th, 17th & 18th; East Madhya Pradesh during 12th, 13th & 15th -18th; Chhattisgarh during 15th -17th; Madhya Maharashtra, Konkan & Goa on 12th September.

East & Northeast India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Nagaland, Manipur, Mizoram & Tripura, Jharkhand, Odisha, Gangetic West Bengal, Andaman & Nicobar Islands; Scattered to Fairly widespread light/moderate rainfall very likely over Assam & Meghalaya, Arunachal Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim during the week.
- ✓ Isolated **very heavy rainfall** very likely over Assam & Meghalaya on 14th & 15th; Nagaland, Manipur, Mizoram & Tripura on 12th & 13th; Gangetic West Bengal & Odisha on 13th & 14th; Jharkhand on 14th & 15th September.
- ✓ Isolated **heavy rainfall** very likely over Assam & Meghalaya during the next 7 days; Arunachal Pradesh during 14th -16th; Nagaland, Manipur, Mizoram & Tripura during 12th -17th; Gangetic West Bengal during 12th -15th; Bihar during 12th -16th; Jharkhand 13th -16th; Odisha during 13th -15th September.

South Peninsular India:

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Coastal Karnataka, Coastal Andhra Pradesh & Yanam; Scattered to Fairly widespread light/moderate rainfall over Lakshadweep, Kerala & Mahe; isolated to scattered rainfall over Tamil Nadu, Puducherry & Karaikal, Rayalaseema, Telangana & Interior Karnataka during the week.

Main Weather Observations:

- **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most places** over Uttarakhand, Uttar Pradesh, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Konkan & Goa, Kerala & Mahe, Coastal Karnataka; **at many places** over East Rajasthan, Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura; **at a few places** over Himachal Pradesh, Haryana-Chandigarh-Delhi, Vidarbha, Gangetic West Bengal, Bihar, Jharkhand, Madhya Maharashtra, Saurashtra & Kutch, South Interior Karnataka; **at isolated places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, West Rajasthan, Chhattisgarh, Odisha, Marathwada, Gujarat Region, Tamil Nadu, Puducherry & Karaikal, Telangana and North Interior Karnataka.

- **Heavy rainfall recorded** (from 0830 hours IST of yesterday to 0830 hours IST of today): **Exceptionally heavy rainfall (in cm) occurred** at isolated places over **West Madhya Pradesh**: Biaora (dist Rajgarh) 36, **Heavy to very heavy rainfall with isolated extremely heavy falls** at a few places over East Rajasthan, Madhya Pradesh, West Uttar Pradesh; **Heavy to very heavy rainfall** at isolated places over Uttarakhand; **Heavy rainfall** at isolated places over East Uttar Pradesh, Nagaland, Manipur, Mizoram & Tripura.

- **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today): (in cm): **West Madhya Pradesh**: Biaora (dist Rajgarh) 36, Gohad (dist Bhind) 22, Karera (dist Shivpuri) 22, Narwar (dist Shivpuri) 21, Rajgarh (dist Rajgarh) 21, Gwalior (dist Gwalior) 20, Mau (dist Bhind) 20, Bhander (dist Datia) 19, Sabalgarh (dist Morena) 19, Datia-aws (dist Datia) 19, Dabra (dist Gwalior) 18, Ater (dist Bhind) 17, Ambah (dist Morena) 17, Porsa (dist Morena) 17, Ghatigaon (dist Gwalior) 17, Bhitarwar (dist Gwalior) 17, Mihona (dist Bhind) 16, Mehgaon (dist Bhind) 16, Lahar (dist Bhind) 16, Chinor (dist Gwalior) 15, Gormi (dist Bhind) 15, Bhind-aws (dist Bhind) 15, Badoda (dist Sheopur) 15; **West Uttar Pradesh**: Agra (cwc) (dist Agra) 29, Jalesar (dist Etah) 23, Sadabad (dist Hathras) 23, Sikandra Rao (dist Hathras) 20, Hathras (dist Hathras) 19, Tundla (dist Firozabad) 17, Khairagarh (dist Agra) 17, Kasganj (dist Kasganj) 17, Sahawar (dist Kasganj) 17, Tahrauli (dist Jhansi) 15, Jhansi (dist Jhansi) 14, Fatehabad (dist Agra) 13; **East Rajasthan**: Rajakhera (dist Dholpur) 24, Dholpur Tehsil Sr (dist Dholpur) 19, Sawaimadhopur Tesil Sr (dist Sawai Madhopur) 16, Aklera (dist Jhalawar) 13; **East Madhya Pradesh:** Prithvipur (dist Niwari) 23, Orchha (dist Niwari) 15, Niwari (distNiwari) 12, Chahtarpur-aws (dist Chhatarpur) 12, Nowgong (dist Chhatarpur) 11; **Uttarakhand:** Banbasa (Champawat): 12, Champawat (Champawat):9,Pantnagar (Udhamsingh Nagar): 8, Lohaghat (Champawat) : 8, Haldwani (Nainital) : 7; **East Uttar Pradesh:** Itwa (dist Siddharth Nagar) 11, Bhanpur (dist Basti) 7,**Nagaland, Manipur, Mizoram & Tripura:** Sonamura (dist Sipahijala) 7.

- **Minimum Temperature Departures (as on 12-09-2024):** Minimum temperatures are **appreciably above normal (3.1°C to 5.0°C)** at isolated places over West Rajasthan; **above normal (1.6°C to 3.0°C**) at many places over Bihar; at a few places over Odisha and Andaman & Nicobar Islands; at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, West Bengal & Sikkim, Madhya Pradesh, East Rajasthan, Gujarat state, Vidarbha, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Haryana-Chandigarh. These are **below normal (-1.6°C to -3.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Delhi and **near normal** over rest parts of the country. Today, **the lowest minimum temperature** of **19.6°C** is reported at **Delhi-Ridge (New Delhi)** over the plains of the country. **(Fig.4)**

- **Maximum Temperature Departures (as on 11-09-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C**) at a few places over Sub-Himalayan West Bengal & Sikkim; **above normal (1.6°C to 3.0°C** at many places over Nagaland, Manipur, Mizoram & Tripura; at a few places over Assam & Meghalaya and Bihar; at isolated places over Arunachal Pradesh, Gangetic West Bengal, Punjab, Himachal Pradesh, Haryana-Chandigarh-Delhi, Uttarakhand, Odisha, Jharkhand, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal. These were **markedly below normal (-5.1°C or less**) at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Uttar Pradesh and Madhya Pradesh; **below normal (-1.6°C to -3.0°C)** at a few places over East Rajasthan**; at isolated places** over West Rajasthan, East Uttar Pradesh, Gujarat Region and Telangana and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature** of **39.0°C** is reported at **Madurai (Tamil Nadu)** over the country. **(Fig. 2)**

Meteorological Analysis (Based on 0830 hours IST)

- The **depression** over northwest Madhya Pradesh and neighbourhood moved north-northeastwards with a speed of 10 kmph during past 06 hours and lay centred at 0830 hours IST of today, the 12th September over Southwest Uttar Pradesh & neighbourhood near latitude 27.0°N and longitude 78.5°E, about 50 km east-southeast of Agra (Uttar Pradesh), 90 km north-northeast of Gwalior (Madhya Pradesh), 110 km south-southeast of Aligarh (Uttar Pradesh) and 180 km south-southwest of Bareilly (Uttar Pradesh). It is likely to continue to move north-northeastwards and maintain its intensity today, the 12th September and weaken gradually thereafter from tomorrow, the 13th September. The system is under continuous surveillance of Doppler Weather Radars at Delhi and Lucknow.

- The **Monsoon trough** at mean sea level now passes through Amritsar, Delhi, the centre of **depression** over Southwest Uttar Pradesh & neighbourhood, Nowgong, Churk, Dehri, Purulia, Canning and thence southeastwards to northeast Bay of Bengal.

- The **off-shore trough** at mean sea level now runs along South Gujarat to Karnataka coast.

- The upper air **cyclonic circulation** over westcentral Myanmar & neighbourhood now lay over southeast Bangladesh and neighbourhood extending upto 7.6 km above mean sea level at 0830 IST of today, the 12th September 2024. Under its influence, a low pressure area is likely to form over coastal Bangladesh and adjoining north Bay of Bengal during next 24 hours. Thereafter, it is likely to move slowly west-northwestwards and concentrate into a depression over coastal west Bengal and adjoining northwest Bay of Bengal during subsequent 48 hours.

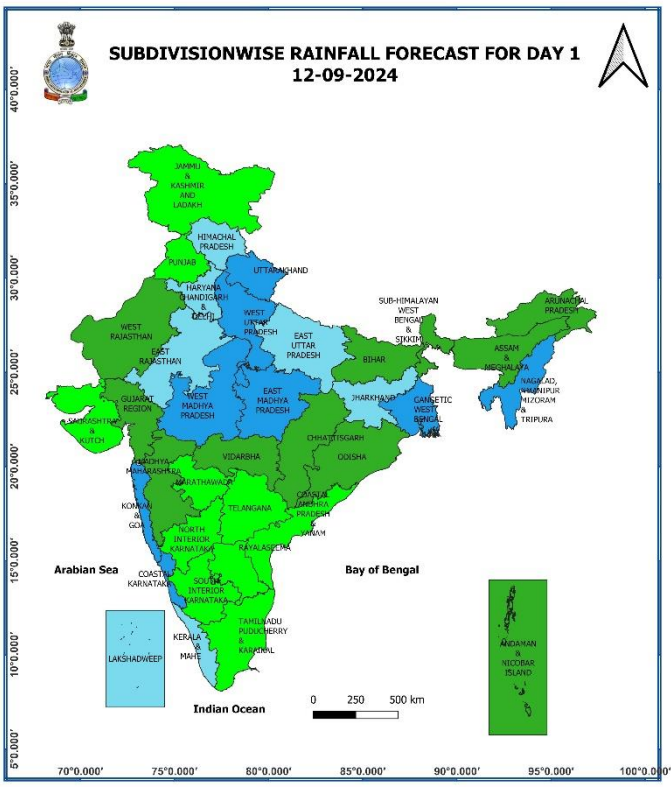
- The **cyclonic circulation** over south Gujarat now lies over Saurashtra & neighbourhood between 3.1 & 4.5 km above mean sea level.

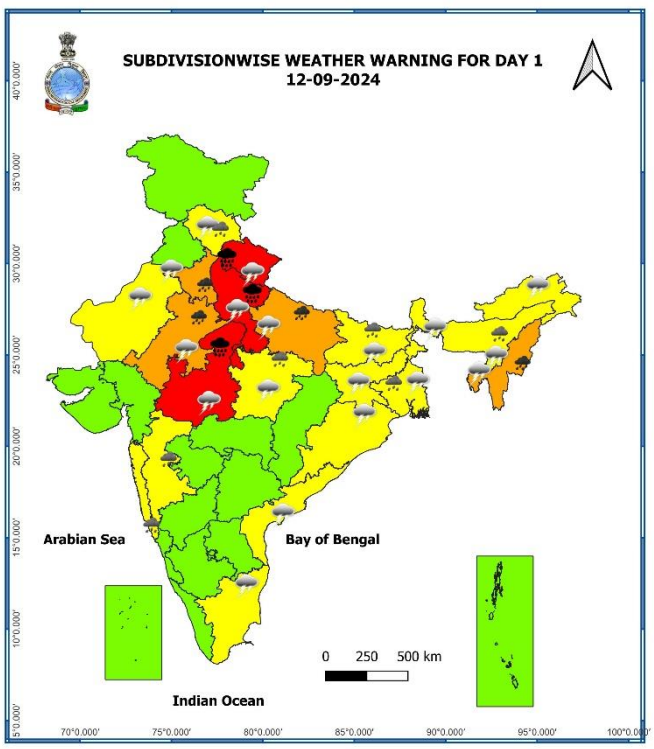
- A **cyclonic circulation** lies over Punjab & adjoining Haryana at 3.1 km above mean sea level.

- The **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 72°E to the north of Lat. 28°N persists.

- The **cyclonic circulation** over central Assam extending upto 0.9 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 19th September, 2024)



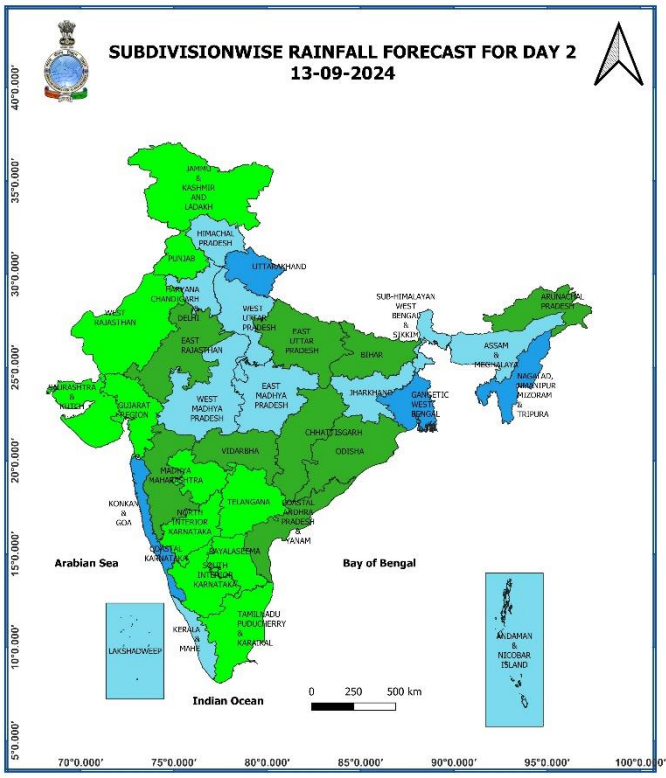


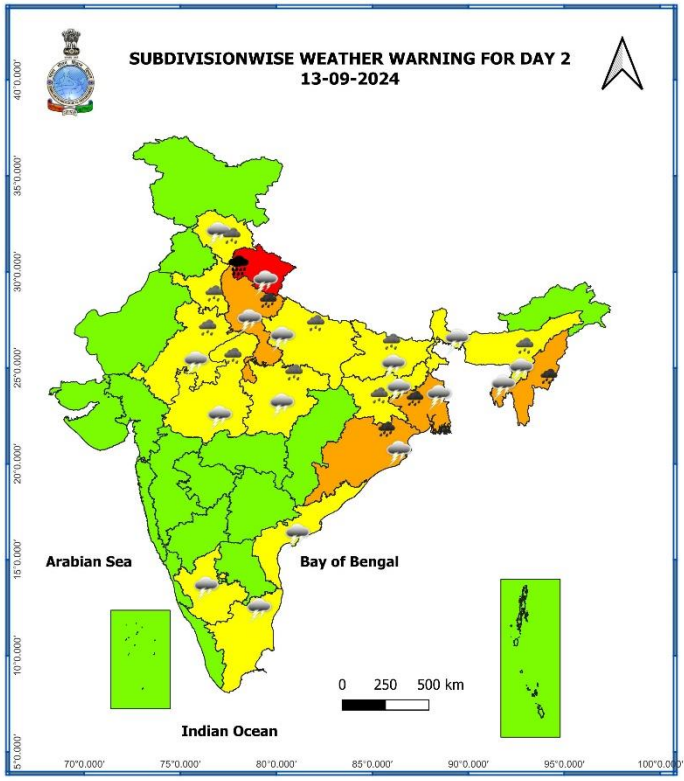
12 September (Day 1):

- **Heavy to very heavy rainfall (≥12 cm) with extremely heavy falls (>20 cm)** very likely at isolated places over Uttarakhand, West Uttar Pradesh; **Heavy to very heavy rainfall (≥12 cm)** very likely at isolated places over Haryana-Chandigarh, East Rajasthan, East Uttar Pradesh, West Madhya Pradesh, Nagaland, Manipur, Mizoram & Tripura; **Heavy rainfall (≥7 cm)** at isolated places over Himachal Pradesh, East Madhya Pradesh. Gangetic West Bengal, Bihar, Assam & Meghalaya, Konkan & Goa and Madhya Maharashtra.

- **Thunderstorm accompanied with lightning** very likely at isolated places over Himachal Pradesh, Uttarakhand, Haryana-Chandigarh-Delhi, Uttar Pradesh. Rajasthan, Madhya Pradesh, West Bengal & Sikkim, Bihar, Jharkhand, Odisha, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal.

- **Squally weather with wind speed reaching 30 kmph to 40 kmph gusting to 50 kmph** is very likely to prevail over many parts of west central Arabian Sea and adjoining east central Arabian Sea, northern parts of southwest Arabian Sea, off Sri Lanka coast, most parts of south Bay of Bengal, most parts of north Bay of Bengal adjoining east central Bay of Bengal, along and off north Odisha, West Bengal and Bangladesh, Myanmar coasts. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** is 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 some parts of westcentral Arabian Sea along and off Somalia coast. Fishermen are advised not to venture into these areas.



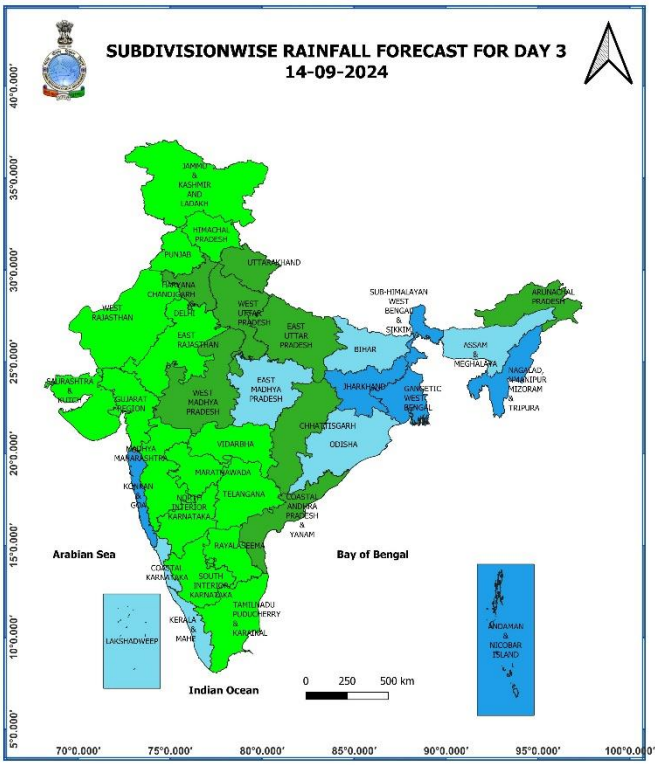


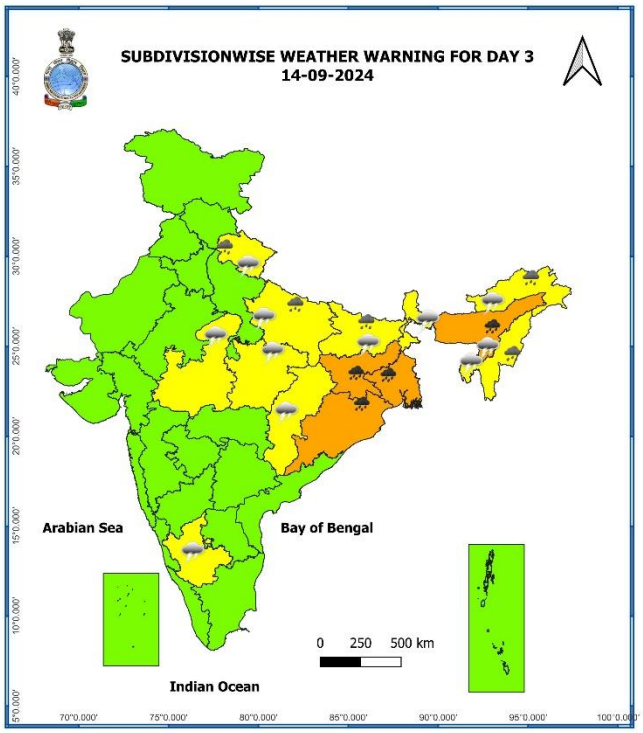
13 September (Day 2):

- **Heavy to very heavy rainfall (≥12 cm) with extremely heavy falls (>20 cm)** very likely at isolated places over Uttarakhand; **Heavy to very heavy rainfall (≥12 cm)** very likely at isolated places over West Uttar Pradesh, Gangetic West Bengal, Odisha, Nagaland, Manipur, Mizoram & Tripura; **Heavy rainfall (≥7 cm)** at isolated places over Himachal Pradesh, Haryana-Chandigarh, East Uttar Pradesh, East Rajasthan, Madhya Pradesh, Bihar, Jharkhand, Assam & Meghalaya.

- **Thunderstorm accompanied with lightning** very likely at isolated places over Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, East Rajasthan, West Bengal & Sikkim, Bihar, Jharkhand, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, South Interior Karnataka.

- **Squally weather with wind speed: reaching 30 kmph to 40 kmph gusting to 50 kmph** is very likely to prevail over most parts of west central Arabian Sea and adjoining east central Arabian Sea, northern parts of southwest Arabian Sea, off Sri Lanka coast, most parts of south Bay of Bengal, many parts of central Bay of Bengal, most parts of north Bay of Bengal, and along and off Odisha, west Bengal and Bangladesh, Myanmar coasts. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** is 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 some parts of westcentral Arabian Sea, along and off Somalia coast, and off Oman coast. Fishermen are advised not to venture into these areas.



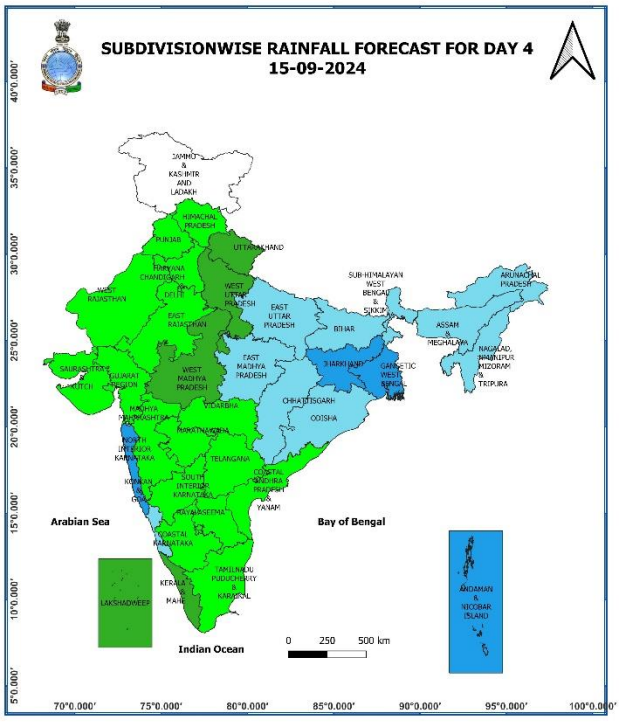


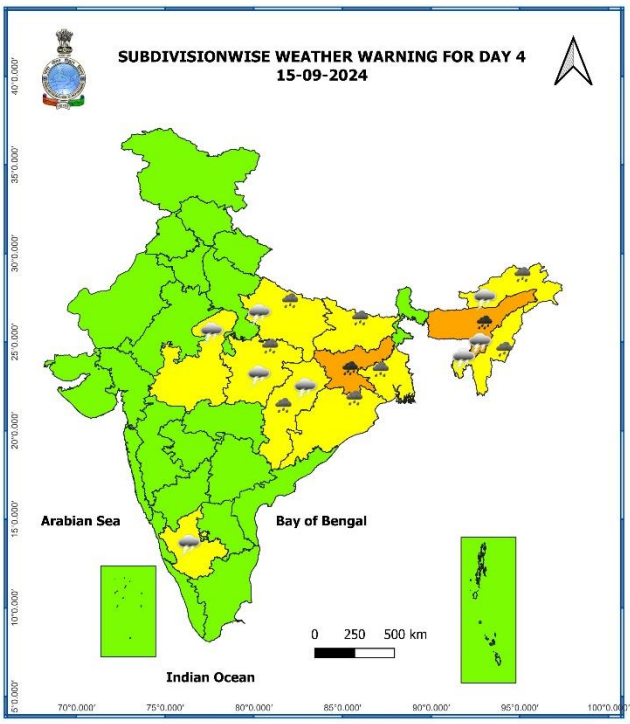
14 September (Day 3):

- **Heavy to very heavy rainfall (≥12 cm)** is very likely at isolated places over Gangetic West Bengal, Jharkhand, Assam & Meghalaya, Odisha; **Heavy rainfall (≥7 cm)** likely at isolated places over Uttarakhand, East Uttar Pradesh, Bihar, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura.

- **Thunderstorm accompanied with lightning** is very likely at isolated places over Uttarakhand, East Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Bihar, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam, South Interior Karnataka.

- **Squally weather with wind speed reaching 30 kmph to 40 kmph gusting to 50 kmph** is very likely to prevail over central parts of central Arabian Sea, over gulf of Mannar, off silence coast, most parts of south Bay of Bengal, many parts of central Bay of Bengal, most parts of north Bay of Bengal, along and off Odisha, West Bengal and Bangladesh, off Myanmar coasts. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevail along and off West Bengal and Bangladesh coast. squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph likely to prevail over western parts of southwest Arabian Sea; southwestern parts of westcentral Arabian Sea, along and off Somalia coast. Fishermen are advised not to venture into these areas.



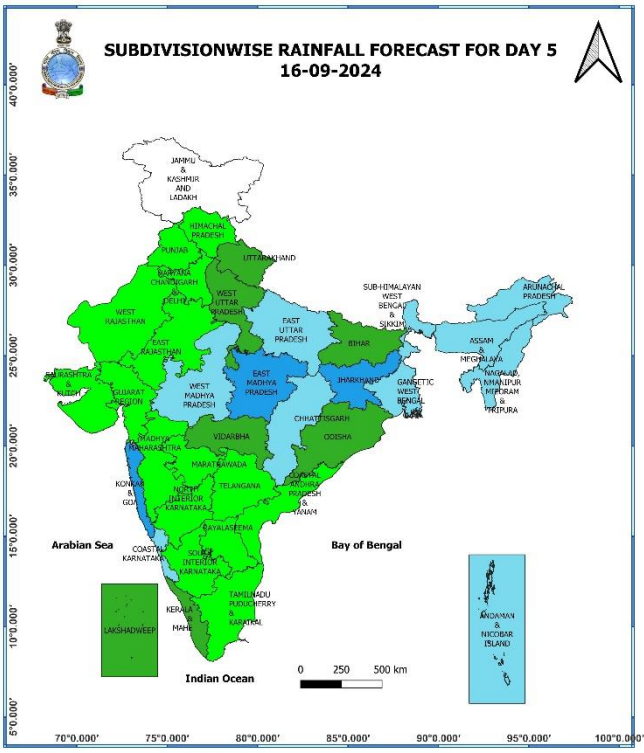


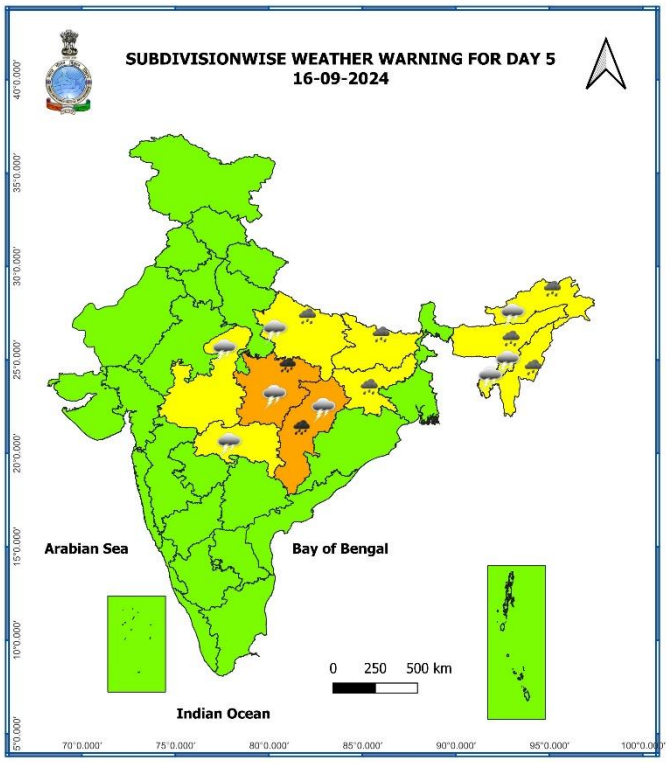
15 September (Day 4):

- **Heavy to very heavy rainfall (≥12 cm)** likely at isolated places over Jharkhand, Assam & Meghalaya; **Heavy rainfall (≥7 cm)** at isolated places over East Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, Gangetic West Bengal, Bihar, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura.

- **Thunderstorm accompanied with lightning** very likely at isolated places over East Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, South Interior Karnataka.

- **Squally weather with wind speed reaching 30 kmph to 40 kmph gusting to 50** kmph is likely to prevail over central parts of central Arabian Sea, over gulf of Mannar, off silence coast, most parts of south Bay of Bengal, many parts of central Bay of Bengal, most parts of north Bay of Bengal, along and off Odisha, West Bengal and Bangladesh, off Myanmar coasts. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevail along and off north Odisha coast. squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph likely to prevail over western parts of southwest Arabian Sea; southwestern parts of westcentral Arabian Sea, along and off Somalia coast. Fishermen are advised not to venture into these areas.

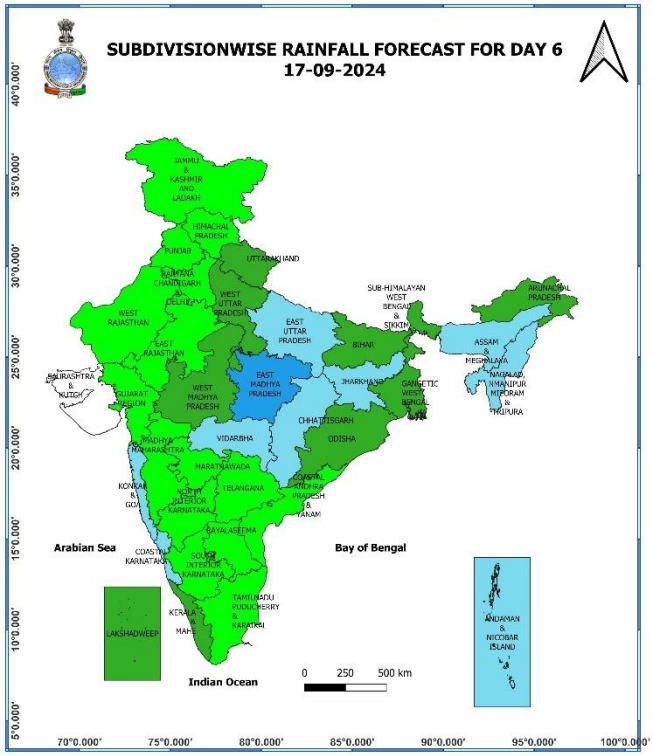


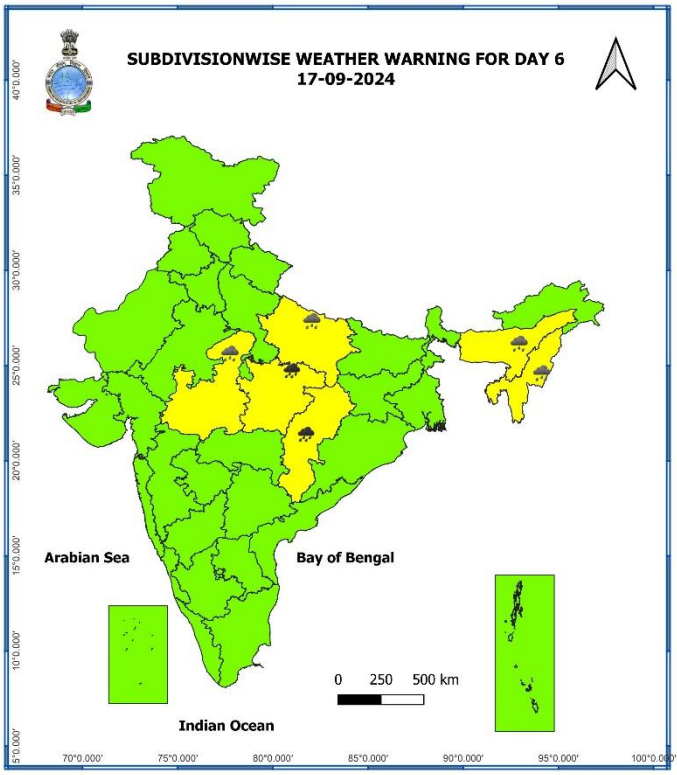


16 September (Day 5):

- **Heavy to very heavy rainfall (≥12 cm)** likely at isolated places over East Madhya Pradesh, Chhattisgarh; **Heavy rainfall (≥7 cm)** at isolated places over East Uttar Pradesh, Bihar, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- **Thunderstorm accompanied with lightning** very likely at isolated places over East Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.

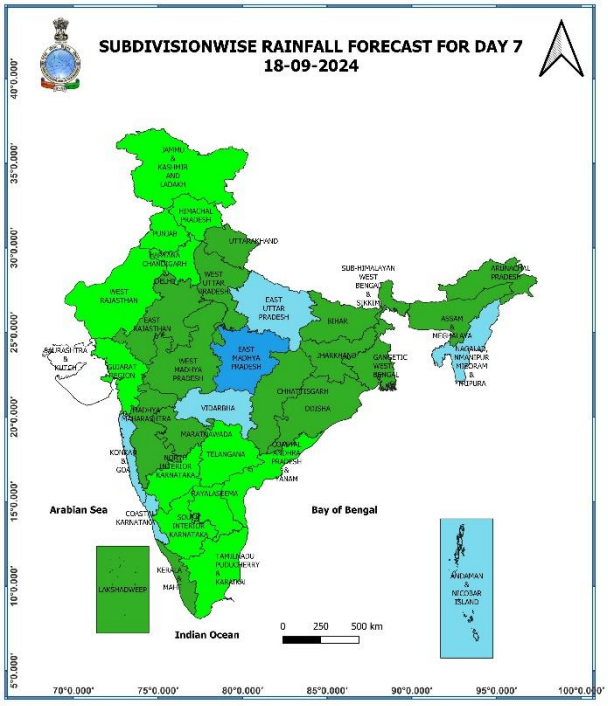
- **Squally weather with wind speed reaching 30 kmph to 40 kmph gusting to 50 kmph** is likely to prevail over many parts of west central Arabian Sea and adjoining east central Arabian Sea, northern parts of southwest Arabian Sea, over gulf of Mannar, off silence coast, most parts of south Bay of Bengal; adjoining parts of central Bay of Bengal, along and off Odisha, west Bengal coasts. **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 some parts of westcentral Arabian Sea along and off Somalia coast. Fishermen are advised not to venture into these areas.

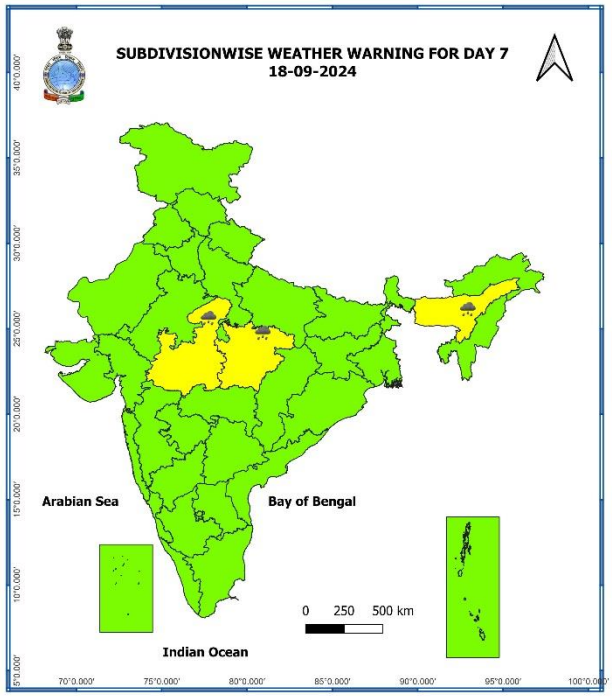




17 September (Day 6):

- **Heavy to very heavy rainfall (≥12 cm)** likely at isolated places over East Madhya Pradesh, Chhattisgarh; **Heavy rainfall (≥7 cm)** at isolated places over East Uttar Pradesh, West Madhya Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.





18 September (Day 7):

- **Heavy rainfall (≥7 cm)** likely at isolated places over Madhya Pradesh, Assam & Meghalaya.

Weather Outlook for subsequent 3 days (During 19th September– 21st September, 2024)

- Fairly widespread to widespread rainfall likely over most parts of the country except Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Rajasthan, 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

- ✓ Isolated **extremely heavy rainfall** very likely over Uttarakhand on 12th & 13th; West Uttar Pradesh on 12th September**.**
- ✓ **Very heavy rainfall** at isolated places over Haryana-Chandigarh-Delhi, East Uttar Pradesh, West Madhya Pradesh & East Rajasthan on 12th; West Uttar Pradesh on 13th; East Madhya Pradesh, Chhattisgarh on 16th & 17th; Gangetic West Bengal on 13th & 14th; Jharkhand, Assam & Meghalaya on 14th & 15th; Odisha on 13th & 14th; Nagaland, Manipur, Mizoram & Tripura on 12th & 13th September.
- ✓ **Moderate to High flash flood risk** likely over Uttarakhand, Himachal Pradesh, West Uttar Pradesh, East Uttar Pradesh, Madhya Pradesh, East Rajasthan September. **(ANNEXURE IV)**

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 cotton, maize, soybean, pulses and vegetables in **Madhya Pradesh;** from maize, sorghum, pearl millet, groundnut, pulses and vegetables in **East Rajasthan;** from rice, maize, groundnut, sesame, arhar, black gram and vegetables in **Uttar Pradesh**; from rice, maize, soybean, finger millet, pigeon pea and vegetables in **Uttarakhand** to prevent water logging**.**
- ✓ Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Assam & Meghalaya, NMMT, Gangetic West Bengal, Odisha, Jharkhand, Himachal Pradesh and Haryana.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.
- ✓ Keep the harvested produce at safer place.

ANNEXURE I

Flash Flood Guidance:

24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 13-09-2024:

Moderate to High flash flood risk likely over few watersheds & neighbourhoods of

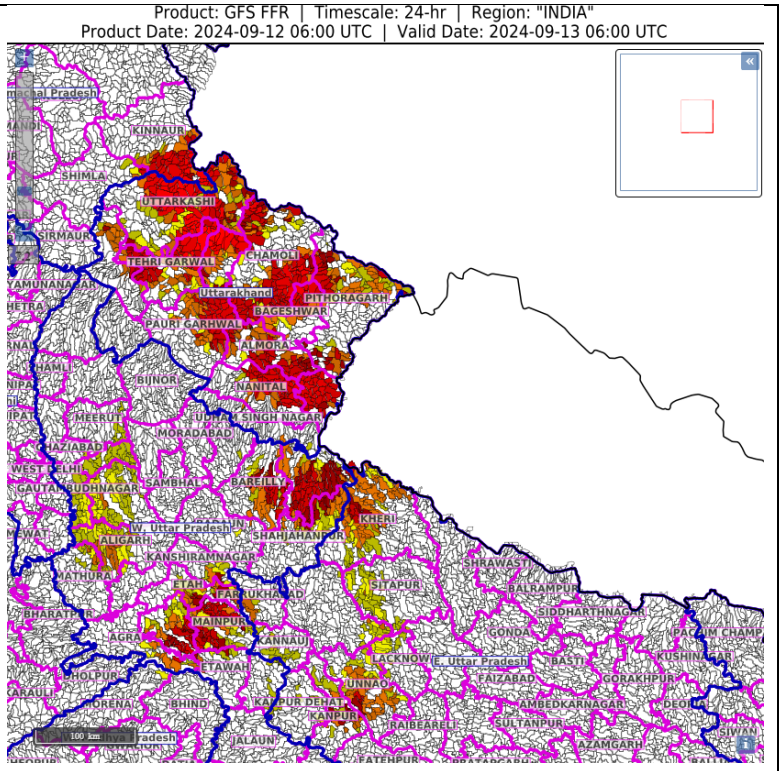
Uttarakhand – Pauri Garwal, Tehri Garwal, Dehradun, Uttarkashi, Rudraprayag, Bageshwar, Almora, Nainital, Champawat, Chamoli and Pithoragarh districts

Himachal Pradesh – Simla, Sirmour, and Kinnaur districts

West Uttar Pradesh – Bareily, Philiphit, Shahjahanpur, Gautam Budh Nagar, Aligarh, Mathura, Mainpuri, Etawah, Etah, Auraiya, Kanshiram Nagar, Firozabad and Agra districts.

East Uttar Pradesh – Kheri, Sitapur, Lacknow, Unnao, Kanpur Dehat, Kanpur, Kannauj, Hardoi 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.



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 13-09-2024:

Moderate flash flood risk likely over few watersheds & neighbourhoods of

East Madhya Pradesh - Chhatarpur, Damoh and Sagar districts.

West Madhya Pradesh – Agarmalwa, Ashoknagar, Bhind, Bhopal, Datia, Guna, Morena, Rajgarh, Sheopur, Shivpuri, Raisen and Videsha districts.

East Rajasthan – Kota, Baraj, Jhalawar, Pratapgarh, Alwar, Dausa, Bundi, Karauli and Bharatpur 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.

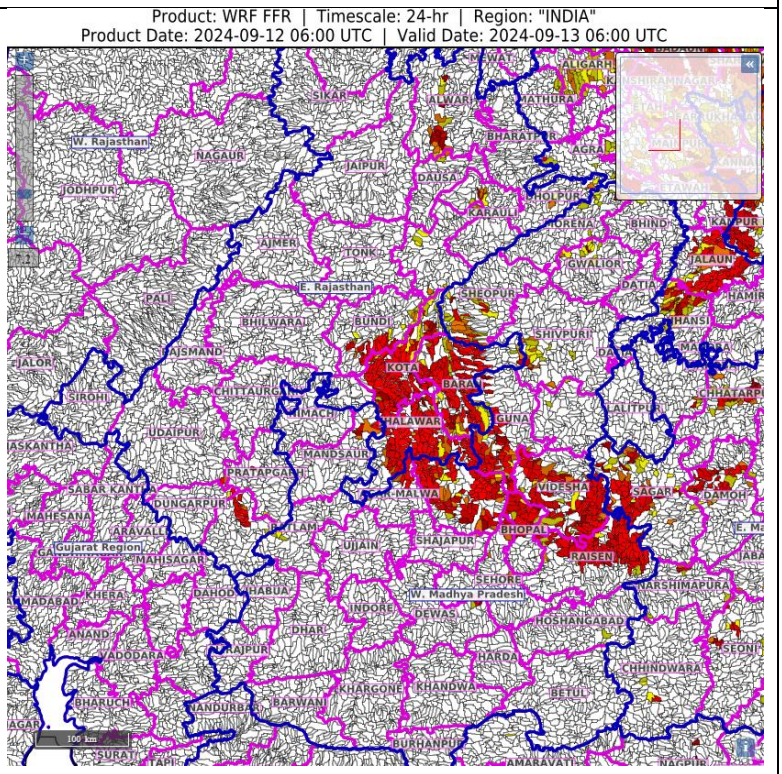


Fig. 1: Maximum Temperatures

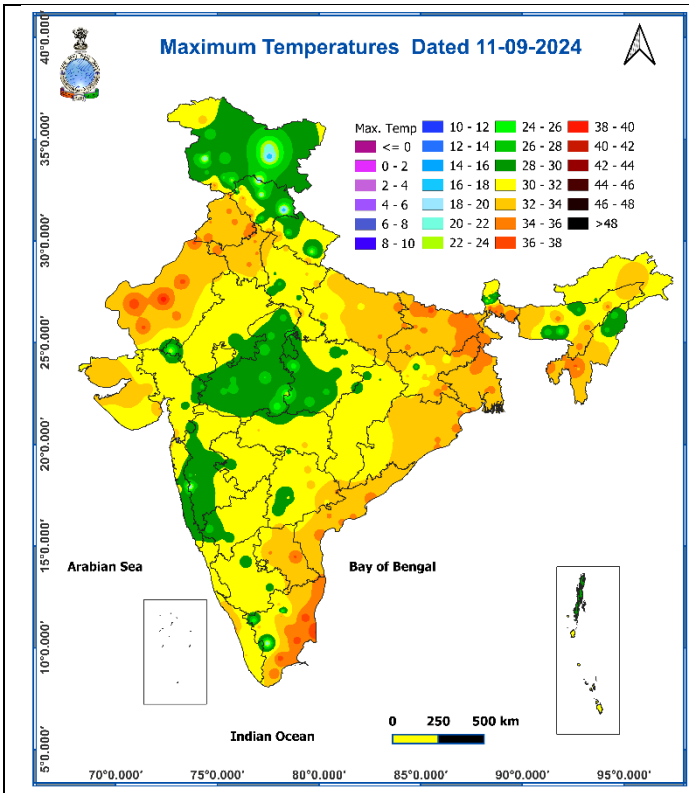


Fig. 2: Departure of Maximum Temperatures

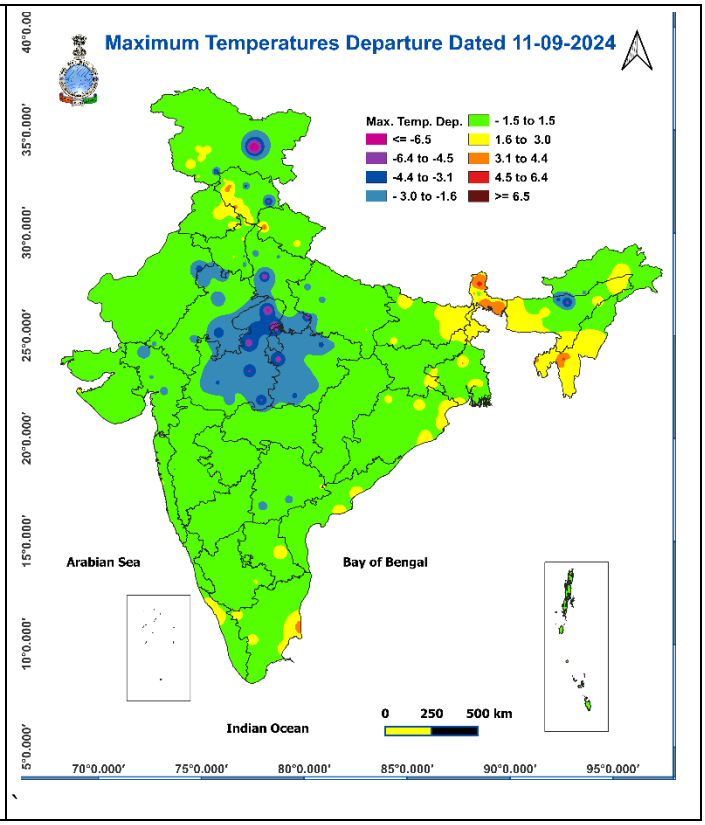


Fig. 3: Minimum Temperatures

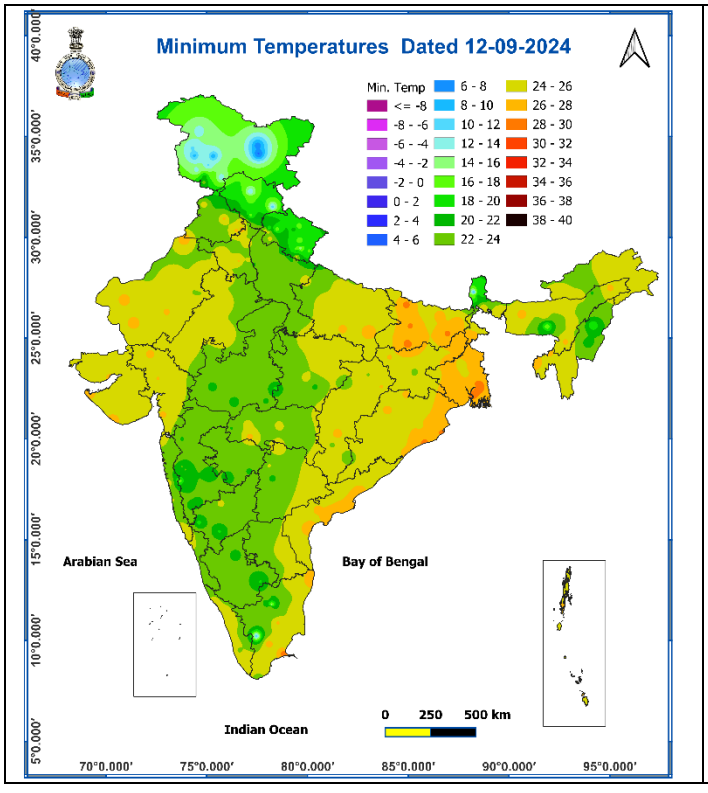


Fig. 4: Departure of Minimum Temperatures

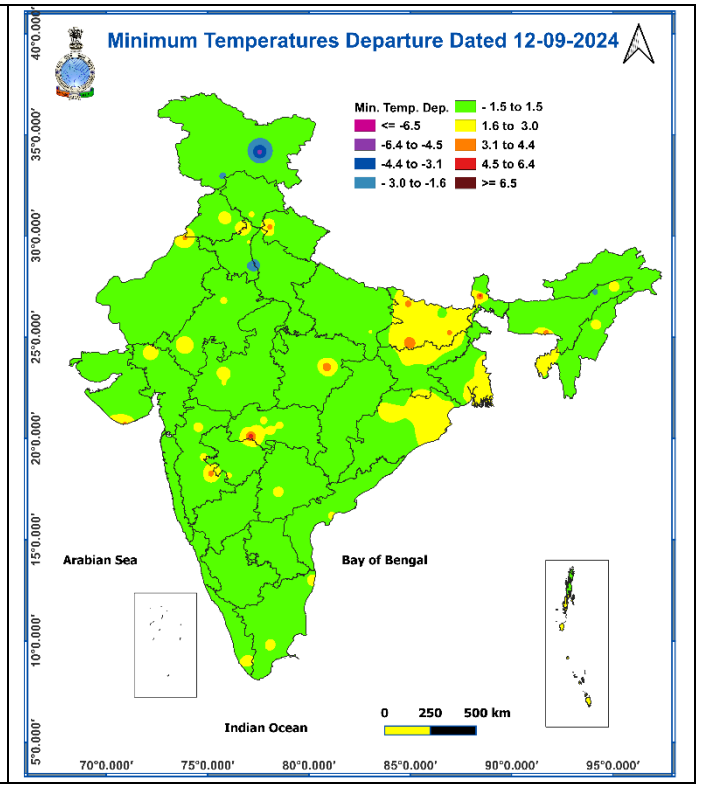


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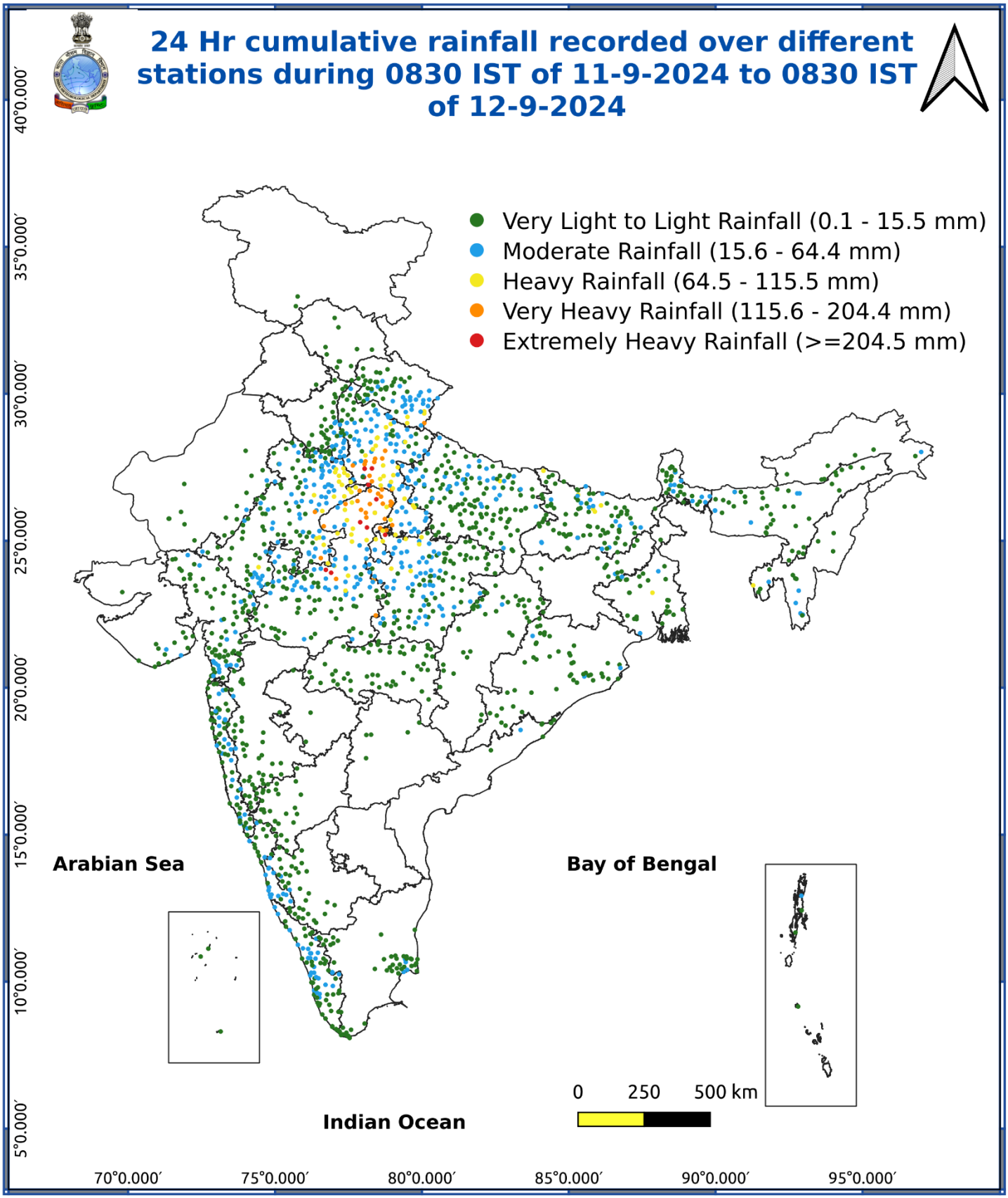
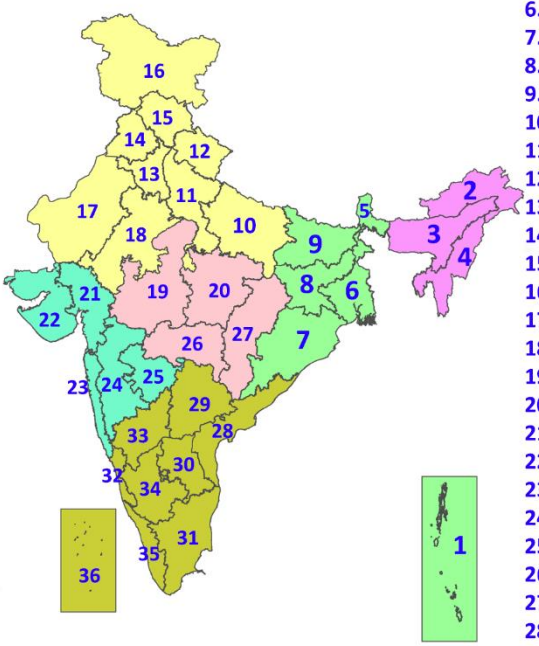
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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 Rain
Very Heavy Rain
Extremely Heavy Rain
Thunder & Lightning
Hailstorm
Dust Raising Winds

Heavy Snow
Dust Storm
Heat Wave
Warm Night
Hot Day
Hot & Humid
Strong Surface Winds

Cold Wave
Cold Day
Ground Frost

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

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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 ≥40° C for plains and ≥30° 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 ≥6.5° C

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature ≥45°C.
Severe Heat Wave: When actual maximum temperature ≥47°C

(c). Criteria for heat wave for coastal stations
When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum temperature ≥37°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 °C.

Cold Wave

When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °C

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave : When Minimum Temperature is ≤ 4.0 °C
Severe Cold Wave: When Minimum Temperature is ≤ 2.0 °C

(c) For Coastal Stations
When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C

Cold Day

When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °C

Fog

Phenomenon of small droplets suspended in air and the horizontal visibility < 1km

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 ≤4°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)

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