

Tuesday, September 10, 2024
Time of Issue: 1330 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- ✓ Yesterday's **depression** over North Chhattisgarh & adjoining interior Odisha moved west-northwestwards with a speed of 20 kmph during past 6 hours and lay centered at 0830 hours IST of today, the 10th September, 2024 over North Chhattisgarh near latitude 21.9°N and longitude 82.8°E, 70 km east-southeast of Bilaspur (Chhattisgarh), 140 km northeast of Raipur (Chhattisgarh) and 220 km east of Malanjkhand (East Madhya Pradesh). It is very likely to move west-northwestwards across north Chhattisgarh and weaken into a **well marked low pressure area** over Chhattisgarh and adjoining East Madhya Pradesh around evening of 10th September.
- ✓ The **monsoon trough** is active and south of its normal position at mean sea level. It is likely to continue so for next 3-4 days.
- ✓ A **cyclonic circulation** lies over south Gujarat at lower tropospheric levels.

Forecast & Warnings (upto 7 days):

❖ South Peninsular India:

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Coastal Karnataka, Kerala & Mahe, Lakshadweep; Scattered to Fairly widespread light/moderate rainfall over Coastal Andhra Pradesh & Yanam, Telangana; isolated to scattered rainfall over Rayalaseema, Tamil Nadu, Puducherry & Karaikal and Interior Karnataka during the week.
- ✓ Isolated **heavy rainfall** very likely over Kerala & Mahe on 10th; South Interior Karnataka on 10th & 11th; Coastal Karnataka during 10th -12th September.

East & Northeast India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Nagaland, Manipur, Mizoram & Tripura, Assam & Meghalaya, Andaman & Nicobar Islands, West Bengal & Sikkim, Jharkhand during the week; Scattered to Fairly widespread light/moderate rainfall very likely over Arunachal Pradesh, Bihar, Odisha during the week.
- ✓ **Isolated extremely heavy rainfall very likely over Tripura, Mizoram and south Manipur on 13th September.**
- ✓ Isolated **very heavy rainfall** very likely over Assam & Meghalaya on 13th & 14th; south Mizoram on 12th September.
- ✓ Isolated **heavy rainfall** very likely over Assam & Meghalaya during next 6 days; Arunachal Pradesh on 10th and during 13th -16th; Nagaland, Manipur, Mizoram & Tripura during 10th -14th; West Bengal & Sikkim, Bihar during 12th -14th; Jharkhand on 13th & 14th; Odisha on 10th, during 12th-14th September.

West & Central India:

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Central India and Konkan & Goa during the week; Scattered to Fairly widespread light/moderate rainfall very likely over Madhya Maharashtra, Marathwada, Gujarat State during the week.
- ✓ **Isolated extremely heavy rainfall very likely over East Madhya Pradesh on 10th and over West Madhya Pradesh on 11th September.**
- ✓ **Isolated very heavy rainfall very likely over** Gujarat Region, Chhattisgarh on 10th; Vidarbha on 10th & 11th; Madhya Pradesh during 10th -14th September.
- ✓ Isolated **heavy rainfall** very likely over Madhya Pradesh during next 7 days; Vidarbha, Konkan & Goa, ghats areas of Madhya Maharashtra, Gujarat Region on 10th & 11th; Chhattisgarh during 14th -16th September.

Northwest India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Uttarakhand, East Rajasthan, Uttar Pradesh; isolated to scattered rainfall over the remaining region during the week.
- ✓ Isolated **very heavy rainfall** very likely over Uttarakhand, Uttar Pradesh, East Rajasthan during 11th -13th; Haryana on 12th September.
- ✓ Isolated **heavy rainfall** very likely over Himachal Pradesh on 10th; Uttarakhand, Haryana during 10th -14th; Uttar Pradesh, East Rajasthan during 10th -15th September.

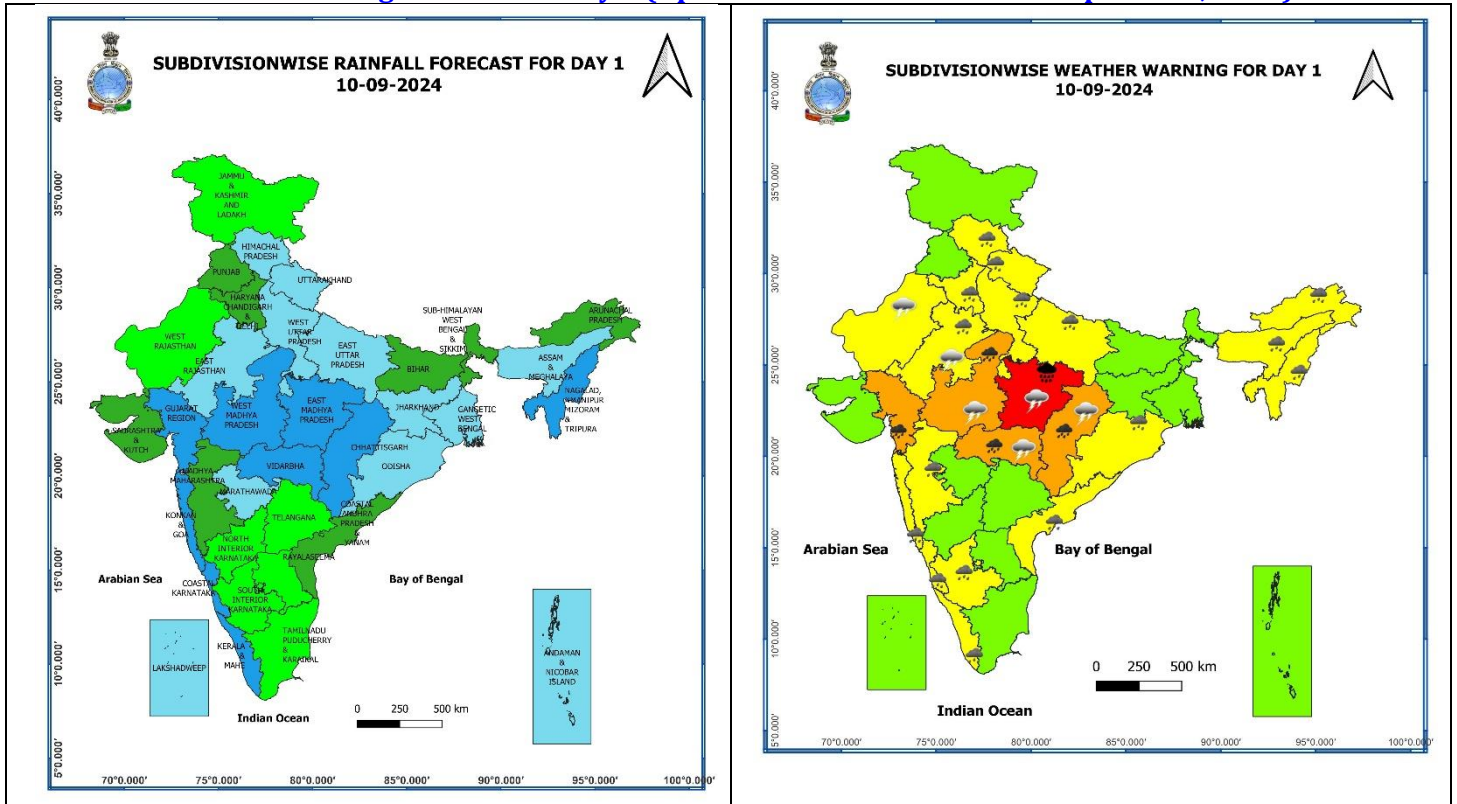
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most places** over Konkan & Goa, Kerala & Mahe, Coastal Karnataka, Chhattisgarh, Himachal Pradesh, Gangetic West Bengal and Odisha; **at many places** over Jharkhand, Andaman & Nicobar Islands, Gujarat Region, Lakshadweep, Coastal Andhra Pradesh & Yanam, Madhya Pradesh and Vidarbha ; **at a few places** over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Telangana, South Interior Karnataka, Uttarakhand, Uttar Pradesh and East Rajasthan; **at isolated places** over Sub-Himalayan West Bengal & Sikkim, Bihar, Arunachal Pradesh, Marathwada, Saurashtra & Kutch, Tamil Nadu, Puducherry & Karaikal, Rayalaseema, North Interior Karnataka, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Haryana-Chandigarh-Delhi and West Rajasthan.
- ❖ **Heavy rainfall recorded** (from 0830 hours IST of yesterday to 0830 hours IST of today): **Heavy to very heavy rainfall with isolated extremely heavy falls** at a few places over Chhattisgarh and Odisha, **Heavy to very heavy rainfall** at isolated places over East Madhya Pradesh, Madhya Maharashtra and Gujarat Region; **Heavy rainfall** at isolated places over West Madhya Pradesh, Punjab, Uttarakhand, East Rajasthan, East Uttar Pradesh Himachal Pradesh, Konkan & Goa, Coastal Karnataka and South Interior Karnataka.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Chhattisgarh:** Lal Bahadur Nagar (dist Rajnandgaon) 24, Sukma (dist Sukma) 19, Dongargarh (dist Rajnandgaon) 19, Gurur (dist Balod) 19, Rajnandgaon (dist Rajnandgaon) 18, Bhanupratappur (dist Kanker) 18, Khairagarh (dist Khairagarh Chh Gandai) 17, Balod (dist Balod) 16, Durgkondal (dist Kanker) 16, Baloda Bazar (dist Baloda Bazar) 16, Mohla (dist Mohala Manpur Chowki) 15, Lawan (dist Baloda Bazar) 15, Chhuria (dist Rajnandgaon) 15, Dhanora (dist Kondagaon) 15, Dongargaon (dist Rajnandgaon) 15, Bhatapara (dist Baloda Bazar) 15, Marri Bangla Deori (dist Balod) 15, Pallari/palari (dist Baloda Bazar) 14, Charama (dist Kanker) 14, Pithora (dist Mahasamund) 14, Dhamtari (dist Dhamtari) 14, Keshkal (dist Kondagaon) 14, Gangalur (dist Bijapur) 14, Doundi (dist Balod) 14, Pakhanjur (dist Kanker) 14, Khadgaon (dist Mohala Manpur Chowki) 14, Nerharpur (dist Kanker) 13, Suhela (dist Baloda Bazar) 13, Kukrel (dist Dhamtari) 13, Sonakhan (dist Baloda Bazar) 13, Antagarh (dist Kanker) 13; **East Madhya Pradesh:** Kirnapur (dist Balaghat) 20, Matiyari (dist Mandla) 13, Baihar (dist Balaghat) 13, Lanji (dist Balaghat) 12; **Gujarat Region:** Umerpada (dist Surat) 19, Sagbara (dist Narmada) 13, Gandevis (dist Navsari) 10, Dediapada (dist Narmada) 8; **Madhya Maharashtra:** Akkalkuwa (dist Nandurbar) 14; **Punjab:** Ballawal Saunkri (dist Sbs Nagar) 10; **West Madhya Pradesh:** Raoti (dist Ratlam) 10, Satwas (dist Dewas) 9, Gogawan (dist Khargone) 9; **East Rajasthan:** Chothkabarwara Sr (dist Sawai Madhopur) 9, Mounnt Abu (dist Sirohi) 8, Anta Sr (dist Baran) 8; **Himachal Pradesh:** Naina Davi (dist Bilaspur) 9, Barthin (dist Bilaspur) 8; **Konkan & Goa:** Khed (dist Ratnagiri) 7, Valpoi (dist North Goa) 7, Chiplun (dist Ratnagiri) 7; **Coastal Karnataka:** Honavar Obsv (dist Uttara Kannada) 7; **South Interior Karnataka:** Kottigehara (dist Chikkamagaluru) 7; **East Uttar Pradesh:** Tirwa (dist Kannauj) 7; **Uttarakhand:** Ukhimath (rudraprayag) 7.
- ❖ **Minimum Temperature Departures (as on 10-09-2024):** Minimum temperatures are **appreciably above normal (3.1°C to 5.0°C)** at isolated places over East Rajasthan and Bihar; **above normal (1.6°C to 3.0°C)** at a few places over West Rajasthan, Himachal Pradesh, Vidarbha; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, Madhya Pradesh, Odisha, Coastal Andhra Pradesh & Yanam, Madhya Maharashtra, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Assam & Meghalaya, Rayalaseema, Kerala & Mahe and Gujarat state. These are **below normal (-1.6°C to -3.0°C)** at isolated places over Chhattisgarh and **near normal** over rest parts of the country. Today, **the lowest minimum temperature of 18.8°C** is reported at **Bulsar (Gujarat Region)** over the plains of the country. (Fig.4)
- ❖ **Maximum Temperature Departures (as on 09-09-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Sub-Himalayan West Bengal & Sikkim, East Madhya Pradesh, Uttarakhand, Jammu division and East Uttar Pradesh; **above normal (1.6°C to 3.0°C)** at many places over West Uttar Pradesh and Bihar; at a few places over Himachal Pradesh and Punjab; at isolated places over Haryana-Chandigarh-Delhi, Gangetic West Bengal, Chhattisgarh, West Madhya Pradesh, Madhya Maharashtra, Saurashtra & Kutch and Tamil Nadu, Puducherry & Karaikal. These were **markedly below normal (-5.1°C or Less)** at isolated places over Telangana; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Coastal Andhra Pradesh & Yanam and Odisha and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature of 38.2°C** was reported at **Madurai (Tamil Nadu)** over the country. (Fig. 2)

Meteorological Analysis (Based on 0830 hours IST)

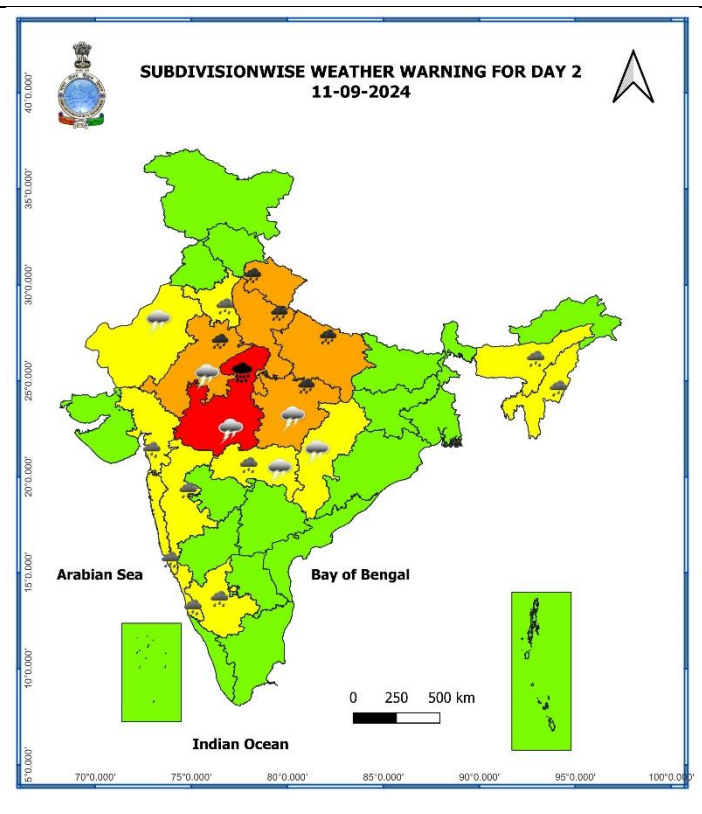
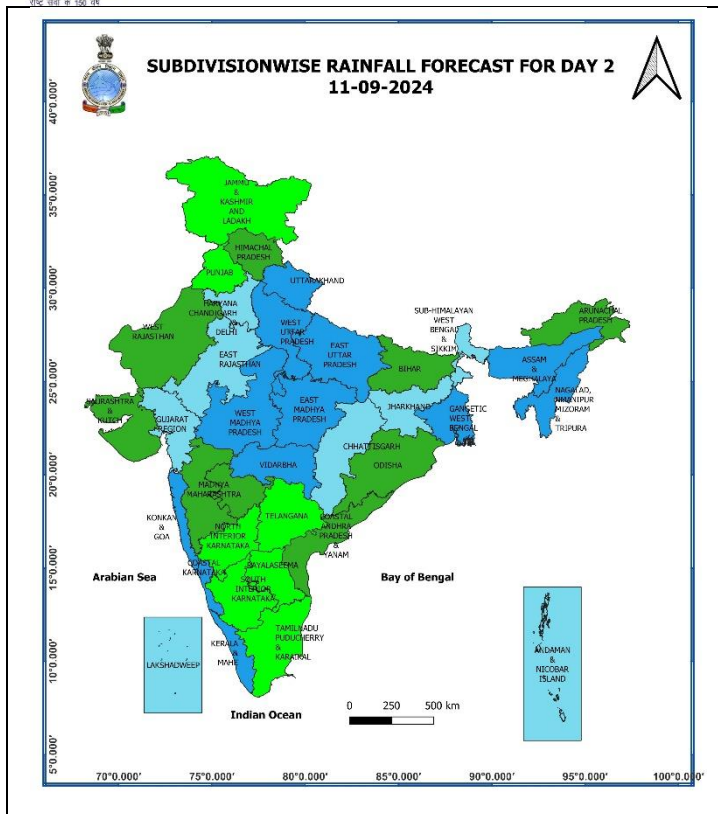
- ❖ The **depression** over North Chhattisgarh & adjoining interior Odisha moved west-northwestwards with a speed of 20 kmph during past 6 hours and lay centered at 0830 hours IST of today, the 10th September, 2024 over North Chhattisgarh near latitude 21.9°N and longitude 82.8°E, 70 km east-southeast of Bilaspur (Chhattisgarh), 140 km northeast of Raipur (Chhattisgarh) and 220 km east of Malanjkhanda (East Madhya Pradesh). It is very likely to move west-northwestwards across north Chhattisgarh and weaken into a **well marked low pressure** area over Chhattisgarh and adjoining East Madhya Pradesh around evening of 10th September.
- ❖ The **Monsoon trough** at mean sea level now passes through Bikaner, Kota, Guna, Umaria, the centre of **depression** over North Chhattisgarh, Puri and thence southeastwards to central Bay of Bengal and extends upto 1.5 km above mean sea level.
- ❖ Yesterday's **trough** from Southwest Uttar Pradesh to the centre of **depression** over North Chhattisgarh & adjoining interior Odisha across north Madhya Pradesh extending upto 3.1 km above mean sea level tilting southwards with height has merged with the above **Monsoon trough**.
- ❖ 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. 32°N persists.
- ❖ An **off-shore trough** at mean sea level runs along south Gujarat to central Kerala coast.
- ❖ A **cyclonic circulation** lies over south Gujarat at 3.1km above mean sea level.
- ❖ A **cyclonic circulation** lies over northeast Assam and extends upto 3.1km above mean sea level.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 17th September, 2024)



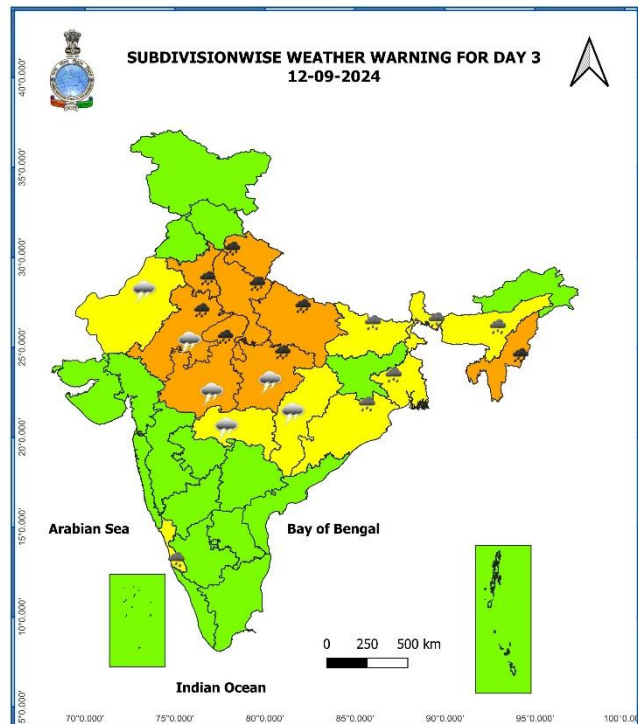
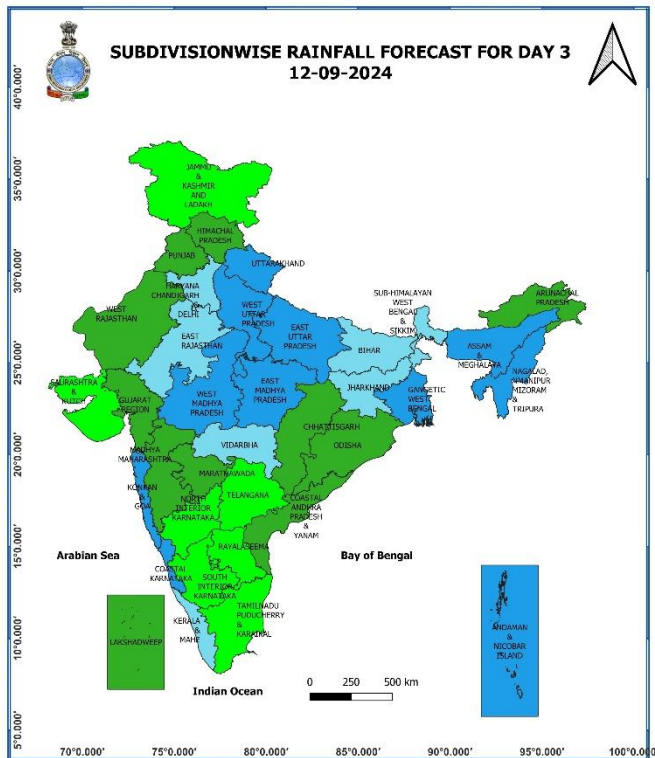
10 September (Day 1):

- ❖ **Heavy to very heavy rainfall (≥ 12 cm) with extremely heavy falls (> 20 cm) very likely at isolated places over East Madhya Pradesh; Heavy to very heavy rainfall (≥ 12 cm) very likely at isolated places over Gujarat Region, Vidarbha, West Madhya Pradesh and Chhattisgarh; Heavy rainfall (≥ 7 cm) at isolated places over Odisha, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, ghat areas of Madhya Maharashtra, Kerala & Mahe, Coastal & South Interior Karnataka, Himachal Pradesh, Uttarakhand, Haryana-Chandigarh-Delhi, Uttar Pradesh and East Rajasthan.**
- ❖ **Thunderstorm accompanied with lightning very likely at isolated places over Madhya Pradesh, Vidarbha, Chhattisgarh, and Rajasthan.**
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph is likely to prevail over few parts of east central and west central Arabian sea, northern parts of southwest and adjoining south east Arabian sea, off Sri Lanka coast, many parts of south Bay of Bengal, most parts of central Bay of Bengal and adjoining parts of northwest Bay of Bengal, off Andhra Pradesh coast. Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph is likely to prevail over gulf of Mannar, over few parts of westcentral 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 parts of westcentral Arabian sea, along and off Somalia coast, along and off Tamil Nadu coast. Fishermen are advised not to venture into these areas.**



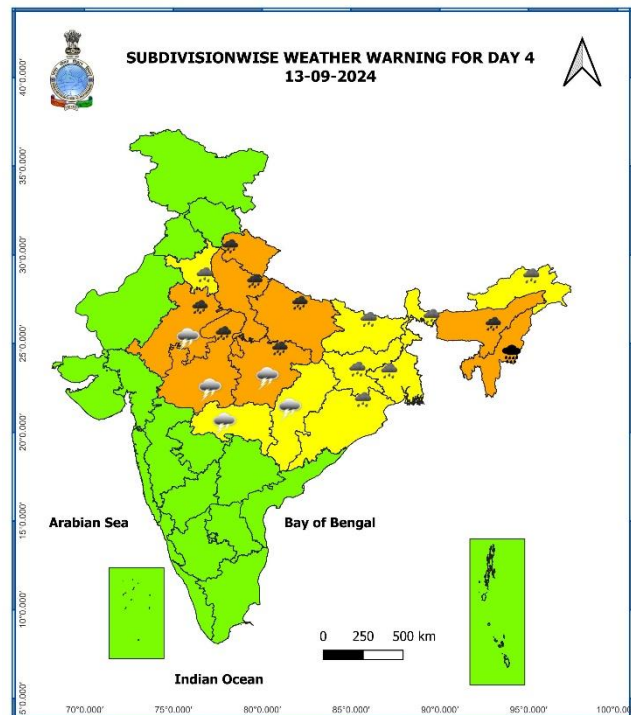
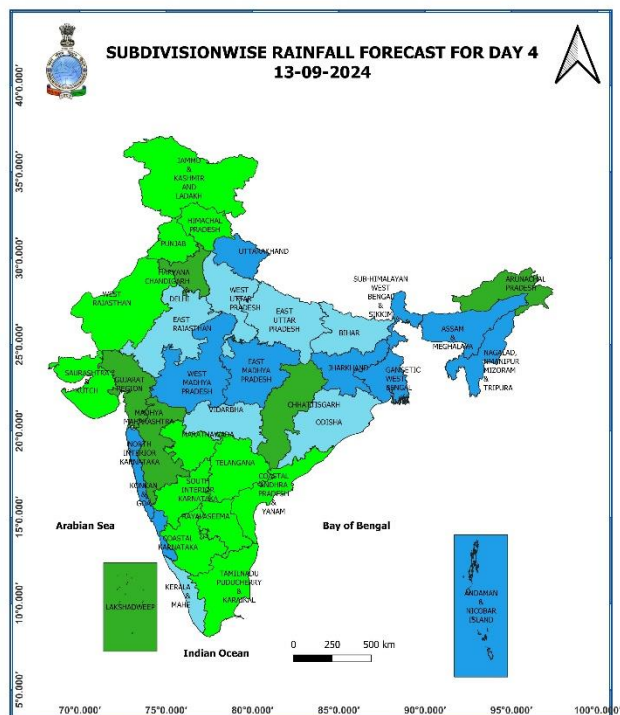
11 September (Day 2):

- ❖ **Heavy to very heavy rainfall (≥ 12 cm) with extremely heavy falls (> 20 cm)** very likely at isolated places over West Madhya Pradesh; **Heavy to very heavy rainfall (≥ 12 cm)** very likely at isolated places over Uttarakhand, Uttar Pradesh, East Rajasthan, Vidarbha and East Madhya Pradesh; **Heavy rainfall (≥ 7 cm)** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, ghat areas of Madhya Maharashtra, Gujarat Region, Coastal & South Interior Karnataka, Uttarakhand and Haryana-Chandigarh-Delhi.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Madhya Pradesh, Vidarbha, Chhattisgarh, and Rajasthan.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over few parts of east central and west central Arabian sea, northern parts of southwest and adjoining south east Arabian sea, off Sri Lanka coast, many parts of south Bay of Bengal, most parts of central Bay of Bengal and adjoining parts of northwest Bay of Bengal, off north Andhra Pradesh coast. **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 parts of westcentral Arabian sea, along and off Somalia coast, along and off Tamil Nadu coast. Fishermen are advised not to venture into these areas.



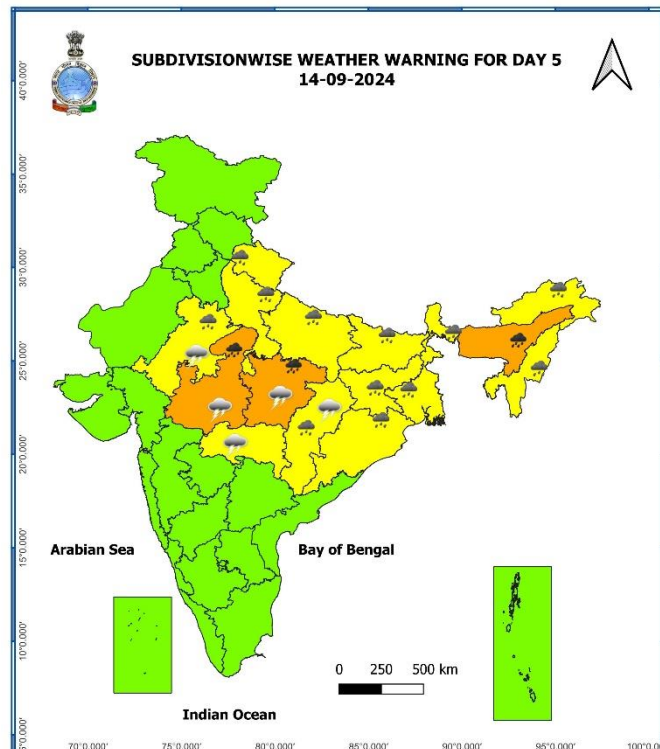
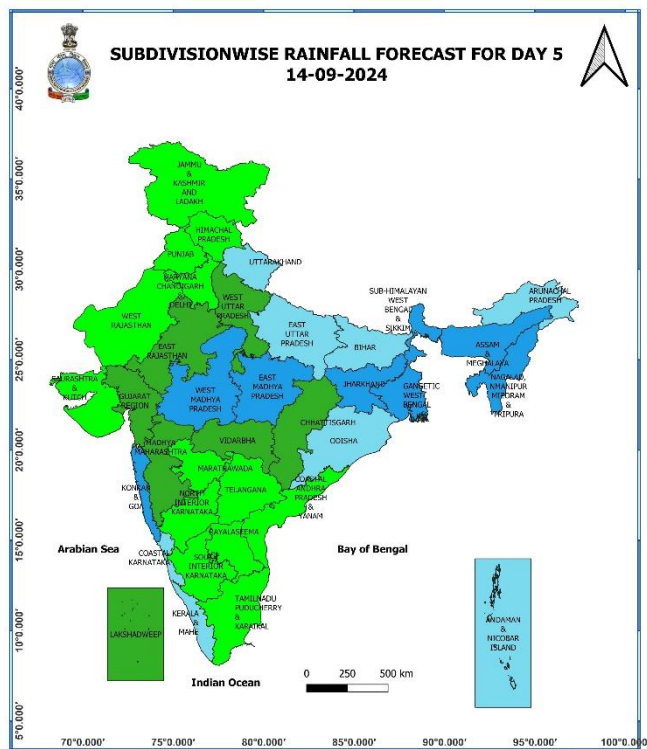
12 September (Day 3):

- ❖ **Heavy to very heavy rainfall (≥ 12 cm)** very likely at isolated places over Madhya Pradesh, Uttarakhand, Haryana-Chandigarh-Delhi, Uttar Pradesh, East Rajasthan and south Mizoram; **Heavy rainfall (≥ 7 cm)** at isolated places over Assam & Meghalaya, West Bengal & Sikkim, Bihar, Odisha and Coastal Karnataka.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Madhya Pradesh, Chhattisgarh and Rajasthan.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over many parts of central Arabian sea, northern parts of southwest & adjoining southeast Arabian sea, over gulf of Mannar, off Sri Lanka coast, many parts of south and central Bay of Bengal. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevail over many parts of southeast & adjoining parts of eastcentral 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 & southwestern parts of westcentral Arabian sea, along and off Somalia coast. Fishermen are advised not to venture into these areas.



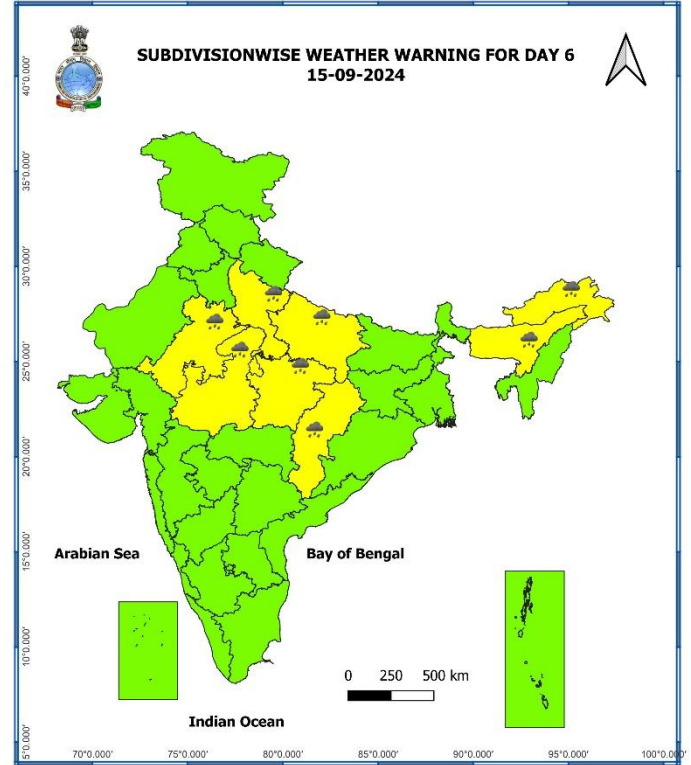
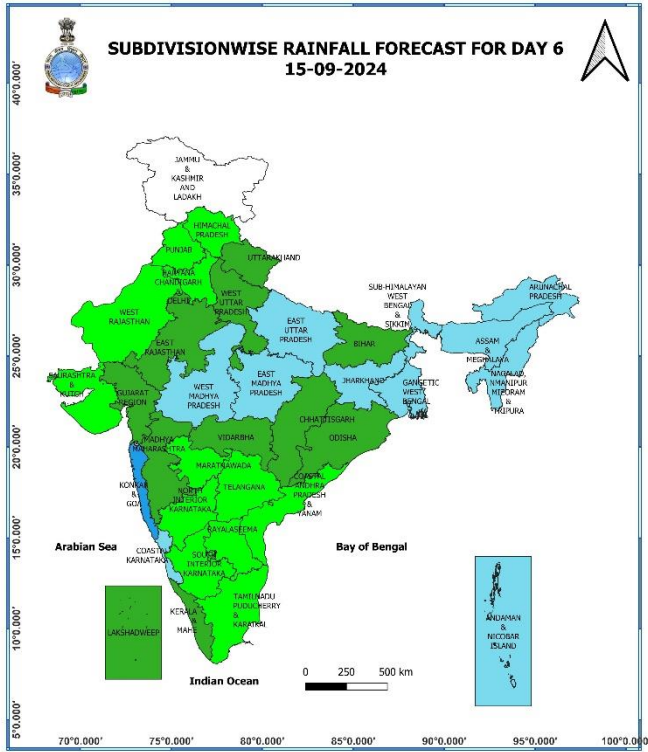
13 September (Day 4):

- ❖ **Heavy to very heavy rainfall (≥ 12 cm) with extremely heavy falls (> 20 cm)** very likely at isolated places over Tripura, Mizoram & south Manipur; **Heavy to very heavy rainfall (≥ 12 cm)** likely at isolated places over Assam & Meghalaya, Madhya Pradesh, Uttarakhand, Uttar Pradesh and East Rajasthan; **Heavy rainfall (≥ 7 cm)** likely at isolated places Haryana-Chandigarh-Delhi, Arunachal Pradesh, West Bengal & Sikkim, Bihar, Jharkhand and Odisha.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Madhya Pradesh and East Rajasthan.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over western parts of eastcentral Arabian sea, over gulf of Mannar, off Sri Lanka coast, many parts of south and central Bay of Bengal, southern parts of northwest Bay of Bengal. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevail over many parts of southeast & adjoining parts of eastcentral 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 & southwestern parts of westcentral Arabian sea, along and off Somalia coast. Fishermen are advised not to venture into these areas.



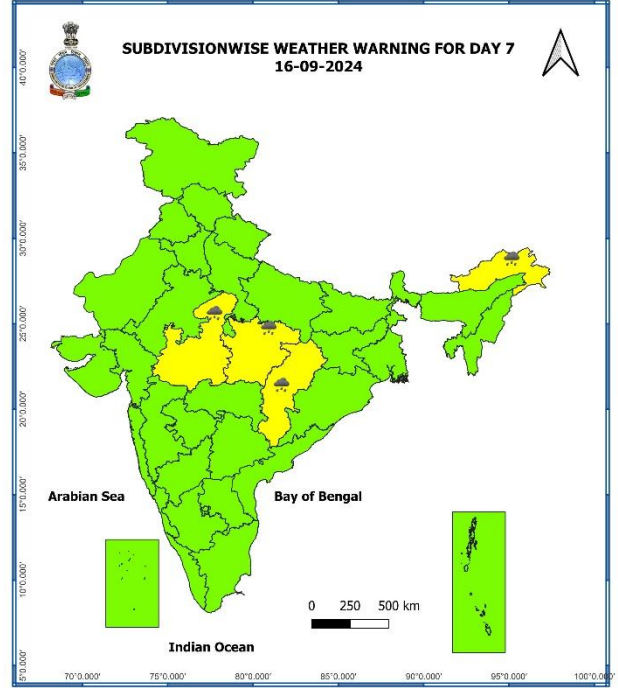
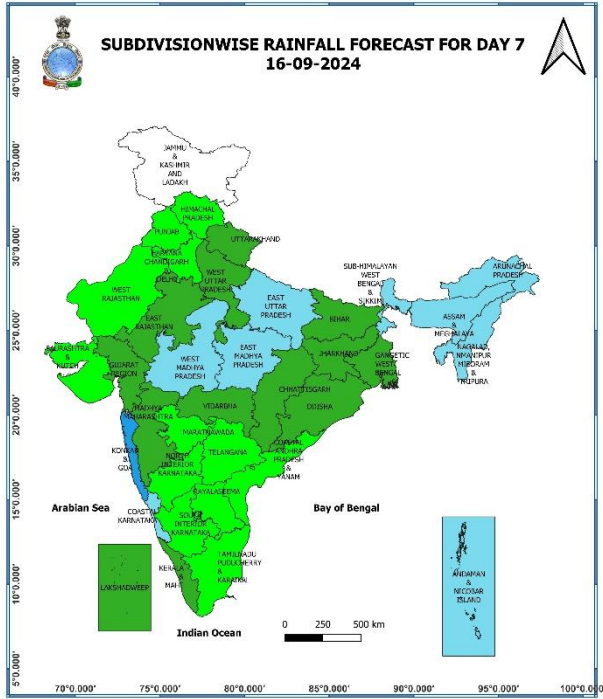
14 September (Day 5):

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



15 September (Day 6):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Madhya Pradesh, Chhattisgarh, Uttar Pradesh, East Rajasthan, Arunachal Pradesh and Assam & Meghalaya.



16 September (Day 7):

- ❖ Heavy rainfall (≥ 7 cm) likely at isolated places over Madhya Pradesh, Chhattisgarh and Arunachal Pradesh.

Weather Outlook for subsequent 3 days (During 17th September- 19th 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 East Madhya Pradesh on 10th; West Madhya Pradesh on 11th; Tripura, Mizoram and south Manipur on 13th September.
- ✓ **Very heavy rainfall** at isolated places over Gujarat Region, Chhattisgarh on 10th; Vidarbha on 10th & 11th; Madhya Pradesh during 10th -14th; Assam & Meghalaya on 13th & 14th; south Mizoram on 12th; Uttarakhand, Uttar Pradesh, East Rajasthan during 11th -13th; Haryana on 12th September.
- ✓ **Moderate to High flash flood risk** likely over East Madhya Pradesh; **Low to Moderate flash flood risk** likely over few watersheds & neighbourhoods of Himachal Pradesh, Uttarakhand, East Rajasthan, Vidarbha, Chhattisgarh and West Madhya Pradesh on 10th & 11th 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.
- ✓ Reduction of visibility over sea area due to sea spray induced by strong wind and 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

- ✓ Judicious regulation of offshore/onshore Operations
- ✓ 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 rice, finger millet, maize and groundnut in **Odisha**; from rice, maize, sugarcane, black gram, horse gram and niger crops in **Chhattisgarh**; from rice, cotton, soybean, pigeon pea, orchards and vegetables in **Vidarbha**; from cotton, maize, soybean, pulses and vegetables in **Madhya Pradesh** to prevent water logging.
- ✓ Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Uttarakhand, East Rajasthan, Konkan & Goa, Madhya Maharashtra, Gujrat region, Kerala and Coastal Karnataka.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.
- ✓ Keep the harvested produce at safer place.

Flash Flood Guidance:

24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 11-09-2024 :

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

East Rajasthan - Banswara, Baran, Bundi, Dungarpur, Jhalawar and Kota districts.

Chhattisgarh - Balod, Bilaspur, Durg, Mungeli and Rajnandgaon districts.

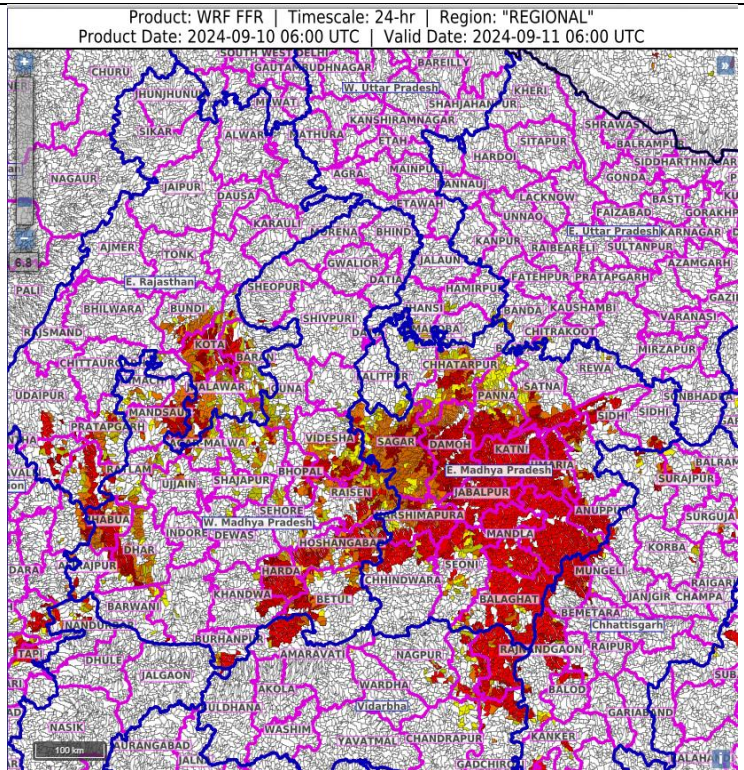
Vidarbha - Bhandara, Gadchiroli, Gondiya and Nagpur districts.

West Madhya Pradesh - Agar-Malwa, Bhopal, Burhanpur, Dhar, Guna, Harda, Jhabua, Khandwa, Raisen, Rajgarh, Ratlam, Videsha and Hoshangabad districts.

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

East Madhya Pradesh - Anuppur, Balaghat, Chhatarpur, Chhindwara, Damoh, Dindori, Jabalpur, Katni, Mandla, Narshimapura, Niwari, Panna, Rewa, Sagar, Satna, Seoni, Shahdol, Sidhi, Singrauli, Tikamgarh and Umaria 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.



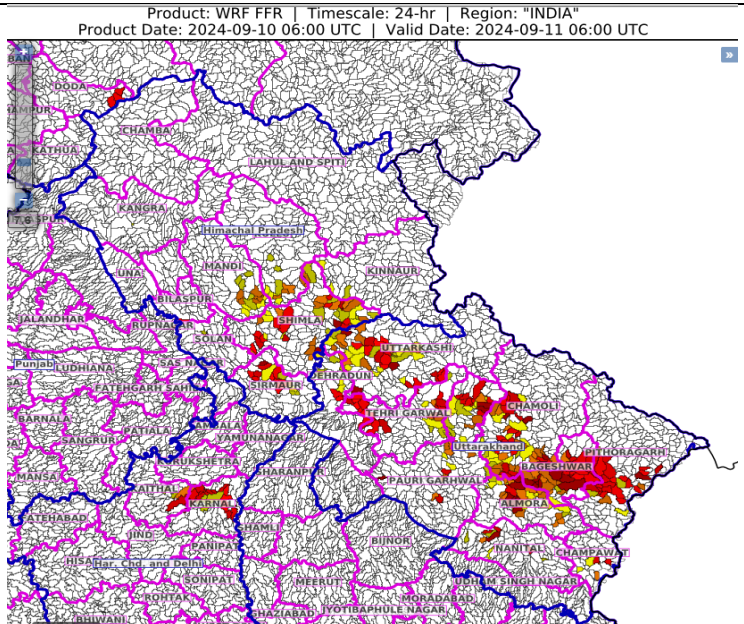
24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 11-09-2024 :

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

Himachal Pradesh - Kinnaur, Kullu, Mandi, Shimla, Sirmaur and Solan districts.

Uttarakhand - Almora, Bageshwar, Chamoli, Dehradun, Nanital, Pauri Garhwal, Pithoragarh, Rudraprayag, Tehri Garwal and Uttarkashi 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.



* 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)

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

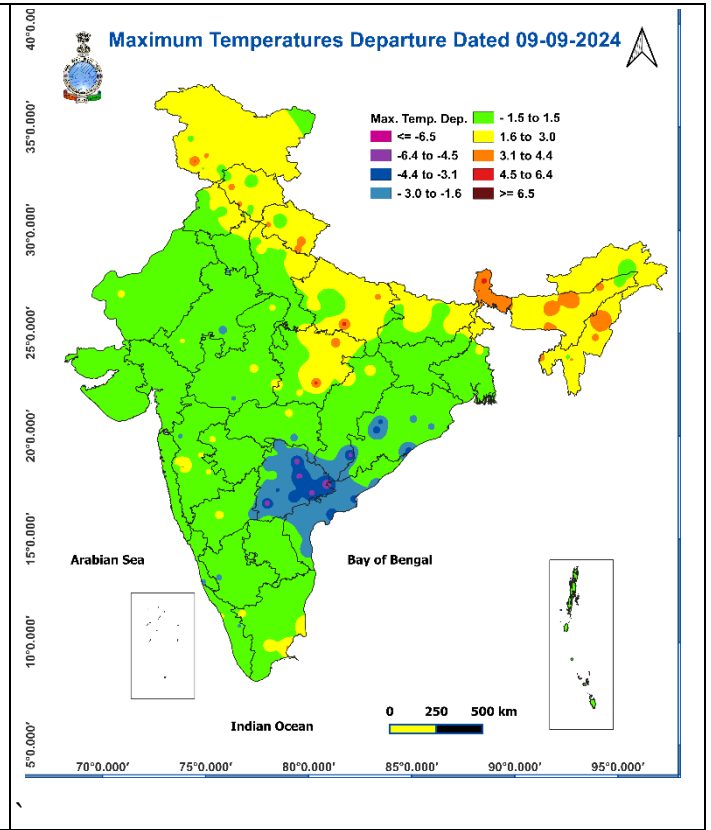
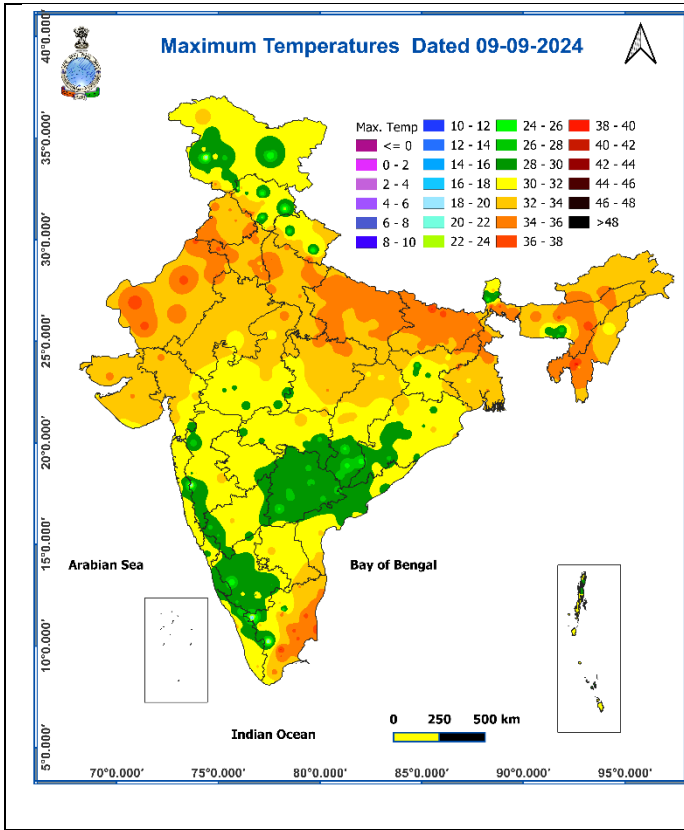


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

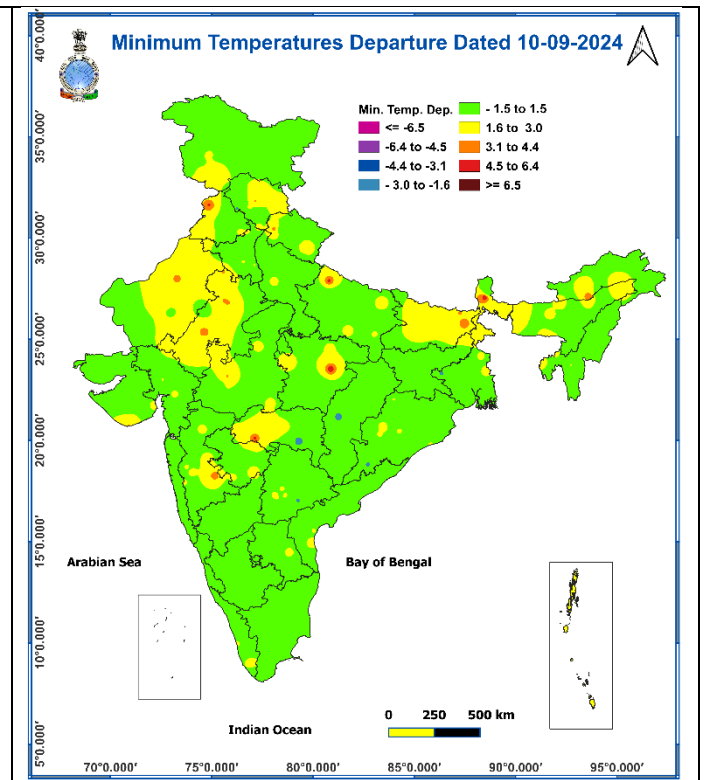
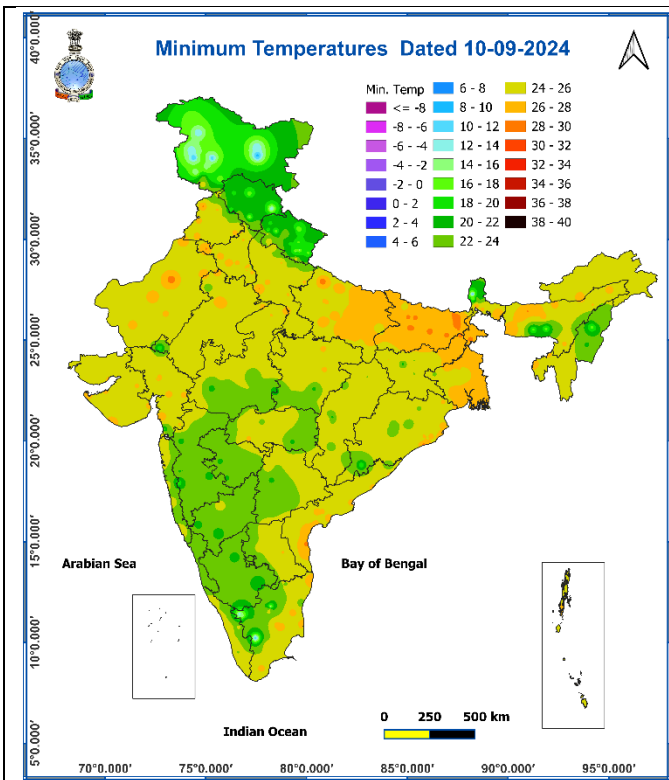
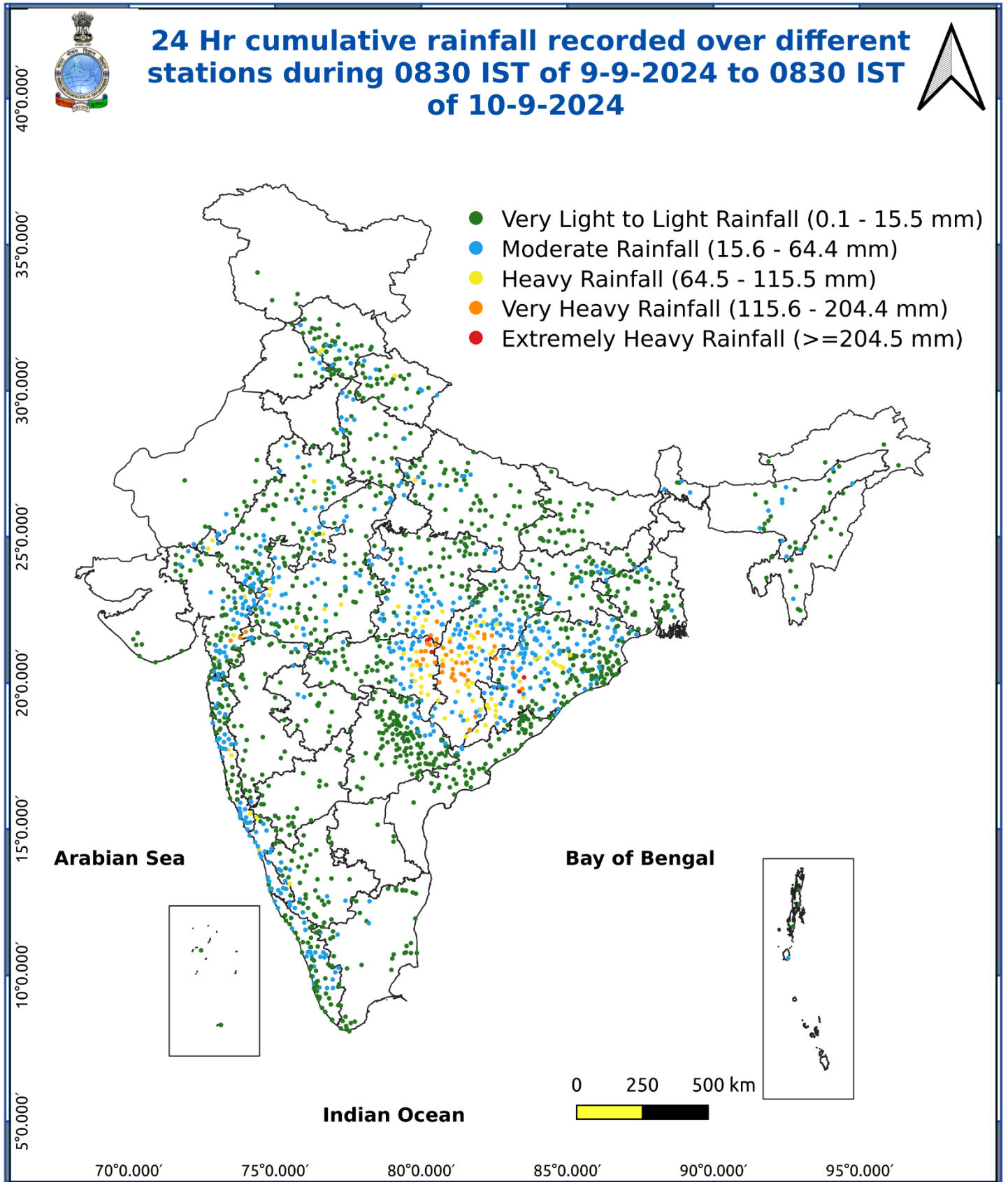


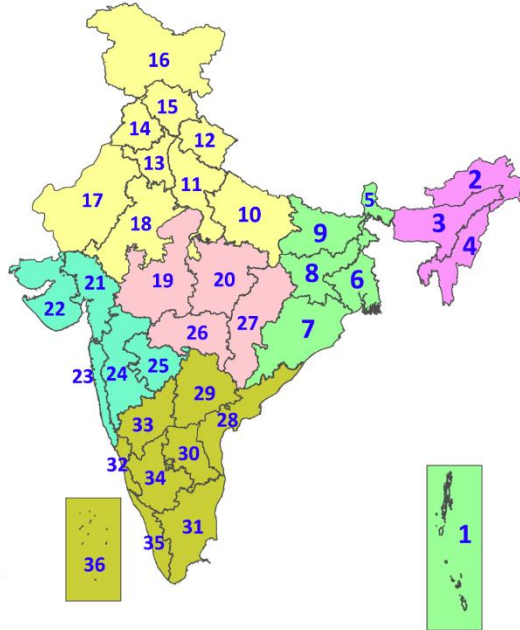
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599
(Service to the Nation since 1875)

LEGENDS

1. अंडमान और निकोबार द्वीपसमूह
2. अरुणाचल प्रदेश
3. असम और मेघालय
4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
5. उप-हिमालयी पश्चिम बंगाल और सिक्किम
6. गंगीय पश्चिम बंगाल
7. ओडिशा
8. झारखंड
9. बिहार
10. पूर्वी उत्तर प्रदेश
11. पश्चिम उत्तर प्रदेश
12. उत्तराखंड
13. हरियाणा, चंडीगढ़ और दिल्ली
14. पंजाब
15. हिमाचल प्रदेश
16. जम्मू और कश्मीर और लद्दाख
17. पश्चिम राजस्थान
18. पूर्वी राजस्थान
19. पश्चिम मध्य प्रदेश
20. पूर्वी मध्य प्रदेश
21. गुजरात
22. सौराष्ट्र
23. कोंकण और गोवा
24. मध्य महाराष्ट्र
25. मराठवाड़ा
26. विदर्भ
27. छत्तीसगढ़
28. तटीय आंध्र प्रदेश और यनम
29. तेलंगाना
30. रायलसीमा
31. तमिलनाडु, पुडुचेरी और कराईकल
32. तटीय कर्नाटक
33. आंतरिक उत्तरी कर्नाटक
34. आंतरिक दक्षिणी कर्नाटक
35. केरल और माहे
36. लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Odisha
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chandigarh & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathwada
26. Vidarbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. Lakshadweep

SPATIAL DISTRIBUTION (% of Stations reporting)

% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/A Few Places)
51-75	Fairly Widespread (FWS/Many Places)	1-25	Isolated (ISOL)

- | | | |
|----------------------|----------------------|--------------|
| Fog | Heavy Snow | Cold Wave |
| Heavy Rain | Dust Storm | Cold Day |
| Very Heavy Rain | Heat Wave | Ground Frost |
| Extremely Heavy Rain | Warm Night | |
| Thunder & Lightning | Hot Day | |
| Hailstorm | Hot & Humid | |
| Dust Raising Winds | Strong Surface Winds | |

COLOUR CODED WARNING

No Warning (No Action)
Watch (Be Aware)
Alert (Be Prepared To Take Action)
Warning (Take Action)

Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

DEFINITION/CRITERIA

Rain/ Snow *

Heavy: 64.5 to 115.5 mm/cm *
Very Heavy: 115.6 to 204.4 mm/cm*
Extremely Heavy: > 204.4 mm/cm *

Heat Wave

When maximum temperature of a station reaches $\geq 40^\circ\text{C}$ for plains and $\geq 30^\circ\text{C}$ for hilly regions

(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal 4.5°C to 6.4°C .

Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^\circ\text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature $\geq 45^\circ\text{C}$.

Severe Heat Wave: When actual maximum temperature $\geq 47^\circ\text{C}$

(c). Criteria for heat wave for coastal stations

When maximum temperature departure is $>4.5^\circ\text{C}$ from normal. Heat Wave may be described provided maximum temperature $\geq 37^\circ\text{C}$

Warm Night

When maximum temperature remains 40°C

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

Severe Warm Night: When minimum temperature departure $>6.4^\circ\text{C}$.

Cold Wave

When minimum temperature of a station $\leq 10^\circ\text{C}$ for plains and $\leq 0^\circ\text{C}$ for hilly regions.

(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C .

Severe Cold Wave: Minimum Temperature Departure from normal $\leq -6.5^\circ\text{C}$

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

Cold Wave : When Minimum Temperature is $\leq 4.0^\circ\text{C}$

Severe Cold Wave: When Minimum Temperature is $\leq 2.0^\circ\text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is $\leq -4.5^\circ\text{C}$ & actual Minimum Temperature is $\leq 15^\circ\text{C}$

Cold Day

When minimum temperature of a station $\leq 10^\circ\text{C}$ for plains and $\leq 0^\circ\text{C}$ for hilly regions

Based on departure

Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C .

Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^\circ\text{C}$

Fog

Phenomenon of small droplets suspended in air and the horizontal visibility $< 1\text{km}$

Moderate Fog: When the visibility between 500-200 metres

Dense Fog: when the visibility between 50- 200 metres

Very Dense Fog: when the visibility < 50 metres

Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)

Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.

Frost

Ice deposits on ground

Air temperature $\leq 4^\circ\text{C}$ (over Plains)

Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph

Severe: Wind speed 62-87 kmph

Very Severe: Wind speed >87 kmph

Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre

High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre

Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre

Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)

Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)

Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)

Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)

Super Cyclone Strom: Wind speed >220 kmph (>119 knots)