

Monday, September 2, 2024  
Time of Issue: 0815 hours IST  
(MORNING)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### Weather Systems:

- ✓ The **Deep Depression (Remnant of Cyclonic Storm "ASNA")** over northwest Arabian Sea moved south-southwestwards with a speed of 10 kmph during past 6 hours, weakened into a **depression** and lay centered at 0530 hours IST of today, the 02nd September, 2024 over the same region near latitude 21.2°N and longitude 61.3°E, about 200 km southeast of Ras Al Hadd (Oman) and 410 km southeast of Muscat (Oman). It is likely to continue to move further south-southwestwards over northwest Arabian Sea and weaken gradually into a **well marked low pressure area** over the same region during next 6 hours.
- ✓ The **depression** over southeast Vidarbha and neighbourhood moved northwestwards with a speed of 8 kmph during the past 6 hours and lay centered at 0530 hours IST of 02nd September, 2024 over East Vidarbha and adjoining Telangana near latitude 19.6°N and longitude 80.0°E, about 220 km west-northwest of Jagdalpur (Chhattisgarh), 110 km north-northeast of Ramagundam (Telangana), 110km south of Bramhapuri (Maharashtra) and 80 km east-southeast of Chandrapur (Maharashtra). It is likely to move nearly northwestwards across Vidarbha and weaken into a **Well Marked Low Pressure Area** during next 12 hours.
- ✓ The western end of monsoon trough at mean sea level is near its normal position and its eastern end is south of its normal position. It is likely to continue so for next 24 hours.
- ✓ A shear zone runs roughly along 18°N over north Peninsular India in middle 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, Rayalaseema and Interior Karnataka; isolated to scattered rainfall over Tamil Nadu, Puducherry & Karaikal during the week.
- ✓ Isolated **very heavy rainfall** very likely over Coastal Andhra Pradesh & Yanam during 02<sup>nd</sup>-05<sup>th</sup> September.
- ✓ Isolated **heavy rainfall** very likely over Coastal Andhra Pradesh & Yanam during 02<sup>nd</sup>-05<sup>th</sup>; Telangana, Coastal Karnataka, North Interior Karnataka on 02<sup>nd</sup>; Kerala & Mahe during 02<sup>nd</sup>-04<sup>th</sup> September.

##### ❖ West & Central India:

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over West & Central India during the week.
- ✓ Isolated **extremely heavy rainfall** very likely over Vidarbha on 02<sup>nd</sup> September.
- ✓ Isolated **very heavy rainfall** also very likely over Gujarat Region on 02<sup>nd</sup> & 03<sup>rd</sup>; Saurashtra & Kutch on 03<sup>rd</sup>; West Madhya Pradesh, Vidarbha, Marathwada on 02<sup>nd</sup> September.
- ✓ Isolated **heavy rainfall** very likely over Konkan & Goa during next 7 days; Madhya Maharashtra during 02<sup>nd</sup>-08<sup>th</sup>; Gujarat Region during 02<sup>nd</sup> - 05<sup>th</sup>; Saurashtra & Kutch during 02<sup>nd</sup>- 04<sup>th</sup>; West Madhya Pradesh during 02<sup>nd</sup>-06<sup>th</sup>; East Madhya Pradesh and Marathwada on 02<sup>nd</sup>; Vidarbha on 02<sup>nd</sup> & 03<sup>rd</sup>; Chhattisgarh on 04<sup>th</sup> & 05<sup>th</sup> September.

##### ❖ East & Northeast India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Northeast India, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim; Scattered to Fairly widespread light/moderate rainfall very likely over Gangetic West Bengal, Bihar, Jharkhand & Odisha during the week.
- ✓ Isolated **very heavy rainfall** very likely over Assam & Meghalaya on 02<sup>nd</sup> August.
- ✓ Isolated **heavy rainfall** very likely over Nagaland, Manipur, Mizoram & Tripura during next 7 days; Arunachal Pradesh and Assam & Meghalaya during 02<sup>nd</sup>- 05<sup>th</sup>; Andaman & Nicobar Islands during 02<sup>nd</sup> -04<sup>th</sup>; Sub-Himalayan West Bengal & Sikkim on 04<sup>th</sup>; Odisha on 05<sup>th</sup> September.

##### ❖ Northwest India

- ✓ Scattered to Fairly widespread light/moderate rainfall very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Rajasthan; isolated to scattered rainfall over Punjab & Haryana-Chandigarh-Delhi during the week.
- ✓ Isolated **heavy rainfall** very likely over East Rajasthan during next 7 days; Himachal Pradesh on 03<sup>rd</sup>, Uttarakhand during 02<sup>nd</sup>-04<sup>th</sup>; West Uttar Pradesh on 03<sup>rd</sup> & 04<sup>th</sup>; East Uttar Pradesh & West Rajasthan on 04<sup>th</sup> & 05<sup>th</sup> September.

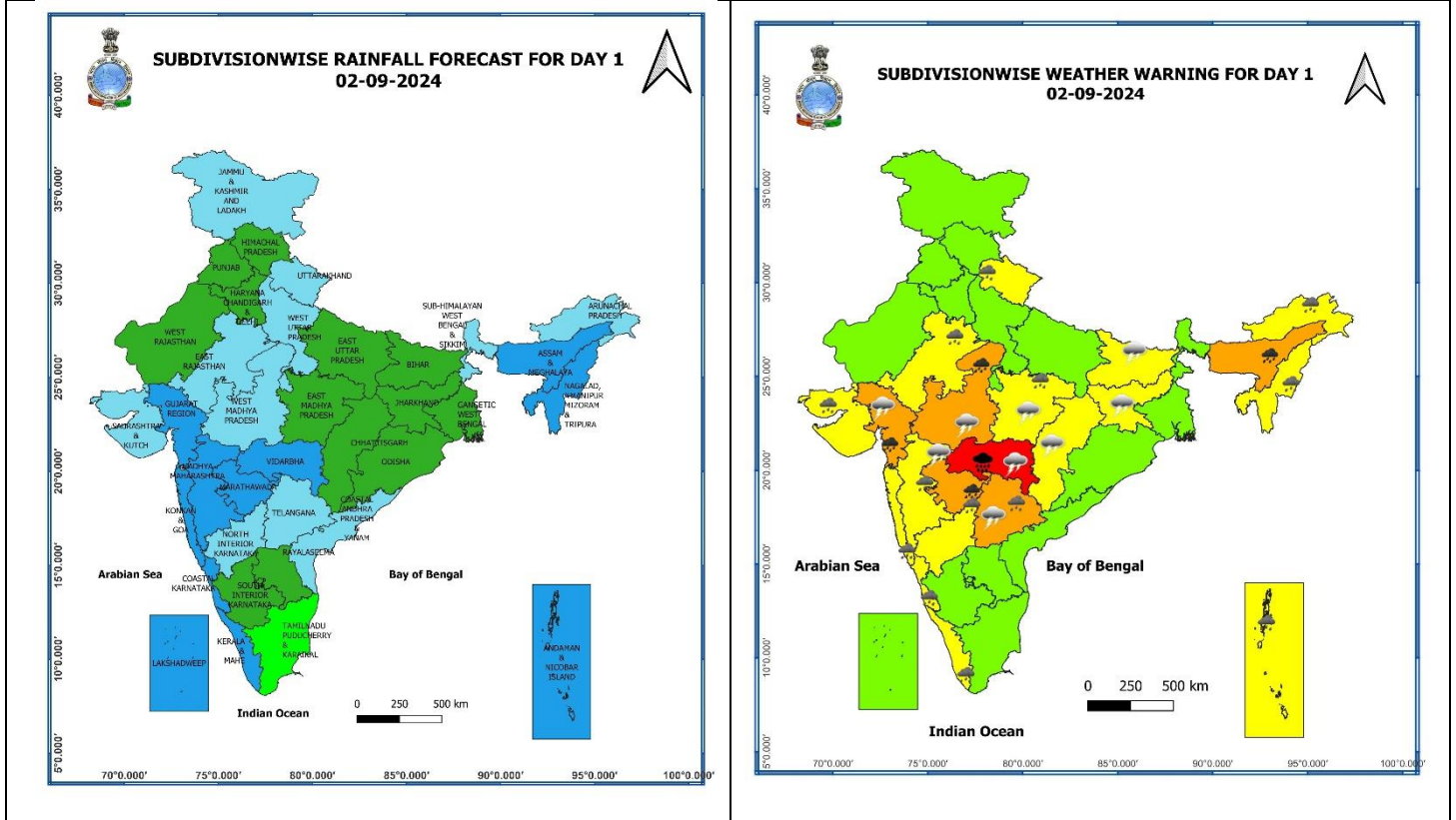
## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at many places** over Gangetic West Bengal, Kerala & Mahe and Coastal Karnataka; **at a few places** over Assam & Meghalaya, West Madhya Pradesh, Coastal Andhra Pradesh & Yanam and Sub-Himalayan West Bengal & Sikkim; **at isolated places** over Himachal Pradesh, Punjab, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, East Madhya Pradesh, East Rajasthan, Saurashtra & Kutch, Odisha, Madhya Maharashtra, Marathwada, Vidarbha, North Interior Karnataka, Telangana, Rayalaseema, Tamil Nadu, Puducherry & Karaikal and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Heavy rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday): **Heavy rainfall** at isolated places over Telangana and Marathwada.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Telangana:** Nagireddypet-11, Medak-8, Nizamabad, Ramgundam, Hanamkonda, Dundigal, Hakimpeth & Hyderabad-3 each; **Marathwada:** Parbhani-9, Bir-5; **North Interior Karnataka:** Udgir-5, Bidar-4; **East Rajasthan:** Jaipur-5; **Madhya Maharashtra:** Mahabaleshwar-3; Sholapur-2; **Vidarbha:** Washim-3; **West Madhya Pradesh:** Ujjain-3, Bhopal & Hoshangabad-2 each; **Assam & Meghalaya:** Lumding-3; **Gangetic West Bengal:** Kalikunda-3; **Odisha:** Talcher & Khordha-2 each; **Konkan & Goa:** Matheran-2; **Haryana:** Nahan-2; **East Madhya Pradesh:** Chhindwara-2.
- ❖ **Minimum Temperature Departures (as on 01-09-2024):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over East Madhya Pradesh, Odisha, Bihar; **above normal (1.6°C to 3.0°C)** at few places over East Uttar Pradesh; at isolated places over West Uttar Pradesh, Uttarakhand, Punjab, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Madhya Pradesh, Chhattisgarh, Vidarbha, Konkan & Goa, East Rajasthan, Gujarat Region, Tamil Nadu, Puducherry & Karaikal and Madhya Maharashtra. These were **below normal (-1.6°C to -3.0°C)** at isolated places over Coastal Andhra Pradesh & Yanam, Assam & Meghalaya and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature of 19.0°C** was reported at **Bulsar (Gujarat Region)** over the plains of the country. (Fig.4)
- ❖ **Maximum Temperature Departures (as on 01-09-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over West Uttar Pradesh and Madhya Pradesh; **above normal (1.6°C to 3.0°C)** at a few places over Gujarat state; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Haryana-Chandigarh-Delhi, East Uttar Pradesh, Vidarbha, Chhattisgarh and Gangetic West Bengal. These were **appreciably below normal (-3.1°C to -5.0°C)** at a few places over Coastal Andhra Pradesh & Yanam; at isolated places over Bihar and Rayalaseema; **below normal (-1.6°C to -3.0°C)** at isolated places over Kerala & Mahe and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature of 38.1°C** was reported at **Tiruchirappalli (Tamil Nadu)** over the country. (Fig. 2)

## Meteorological Analysis (Based on 0530 hours IST)

- ❖ The **Deep Depression (Remnant of Cyclonic Storm "ASNA")** over northwest Arabian Sea moved south-southwestwards with a speed of 10 kmph during past 6 hours, weakened into a **depression** and lay centered at 0530 hours IST of today, the 02nd September, 2024 over the same region near latitude 21.2°N and longitude 61.3°E, about 200 km southeast of Ras Al Hadd (Oman) and 410 km southeast of Muscat (Oman). It is likely to continue to move further south-southwestwards over northwest Arabian Sea and weaken gradually into a **well marked low pressure area** over the same region during next 6 hours.
- ❖ The **depression** over southeast Vidarbha and neighbourhood moved northwestwards with a speed of 8 kmph during the past 6 hours and lay centered at 0530 hours IST of 02nd September, 2024 over East Vidarbha and adjoining Telangana near latitude 19.6°N and longitude 80.0°E, about 220 km west-northwest of Jagdalpur (Chhattisgarh), 110 km north-northeast of Ramagundam (Telangana), 110km south of Bramhapuri (Maharashtra) and 80 km east-southeast of Chandrapur (Maharashtra). It is likely to move nearly northwestwards across Vidarbha and weaken into a **Well Marked Low Pressure Area** during next 12 hours.
- ❖ The **Monsoon trough** at mean sea level now passes through Sri Ganganagar, Kota, Raisen, Gondia, centre of **depression** over East Vidarbha and adjoining Telangana and thence southeastwards to westcentral Bay of Bengal.
- ❖ The **cyclonic circulation** over north Haryana and neighbourhood at 1.5 km above mean sea level persists.
- ❖ The **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 61°E to the north of Lat. 30°N persists.
- ❖ The **cyclonic circulation** over Nagaland and neighbourhood extending upto 0.9 km above mean sea level persists.
- ❖ The **shear zone** roughly along 18°N over north Peninsular India between 4.5 & 7.6 km above mean sea level persists.

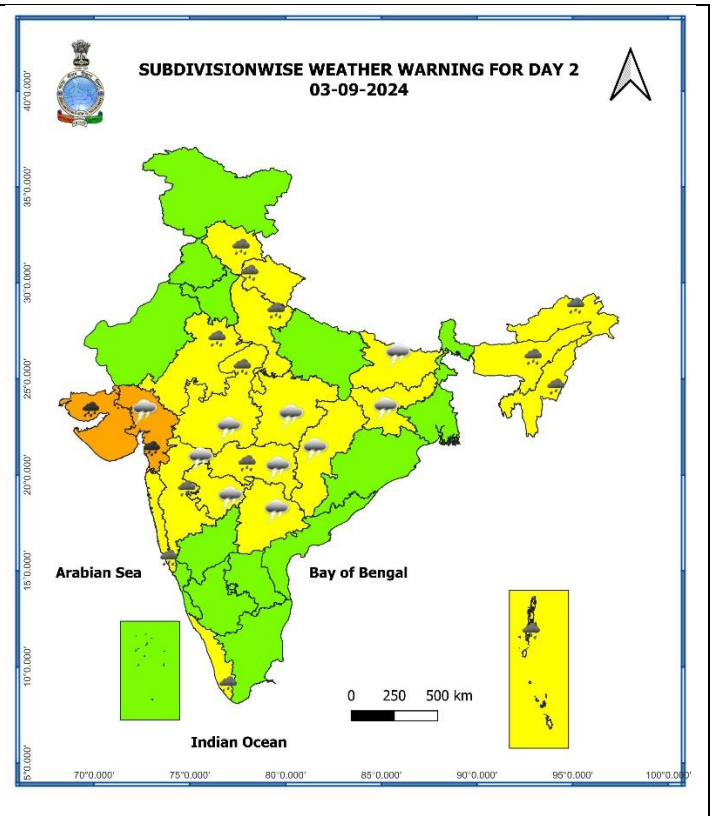
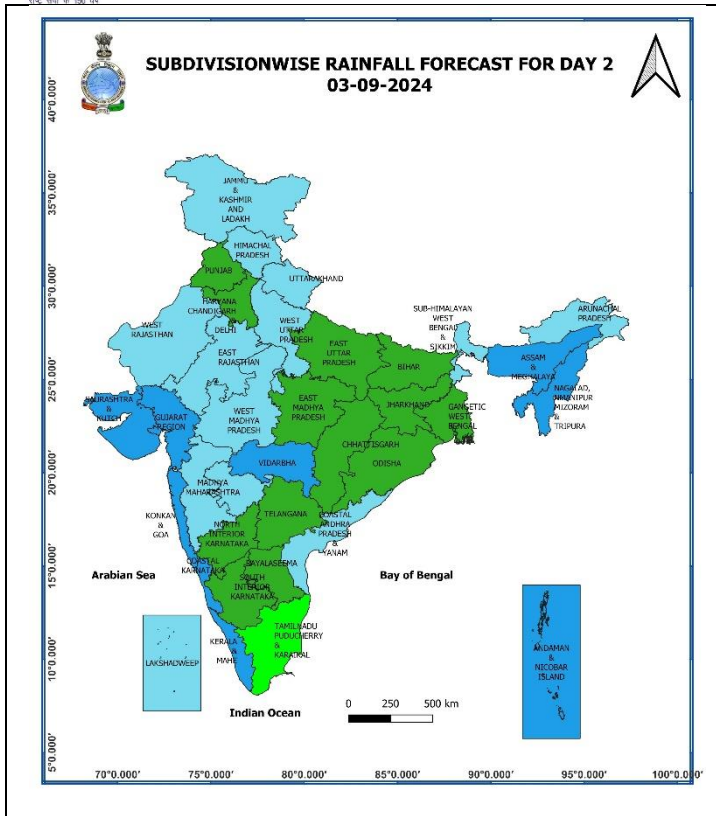
Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 09<sup>th</sup> September, 2024)



02 September (Day 1):

- ❖ **Heavy to very heavy rainfall ( $\geq 12$  cm) with extremely heavy falls ( $>20$  cm) very likely at isolated places over Vidarbha; Heavy to very heavy rainfall ( $\geq 12$  cm) very likely at isolated places over West Madhya Pradesh, Assam & Meghalaya, Gujarat Region, Marathwada ; Heavy rainfall ( $\geq 7$  cm) at isolated places over Uttarakhand, East Rajasthan, East Madhya Pradesh, Andaman & Nicobar Islands, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Saurashtra & Kutch, Madhya Maharashtra, Telangana, Coastal Karnataka, North Interior Karnataka, Kerala & Mahe.**
- ❖ **Thunderstorm accompanied with lighting and gusty winds (speed reaching 40-50 kmph) very likely at isolated places over Telangana; with lightning at isolated places over places over Bihar, Jharkhand, Gujarat region, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Pradesh, Vidarbha and Chhattisgarh.**
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph very likely over north Arabian sea, many parts of west central and northwest Arabian sea and adjoining areas, along and off Karnataka, Kerala, coast, Lakshadweep gulf of Mannar along and off Sri Lanka coast; southwest Bay of Bengal and adjoining parts of southeast Bay of Bengal, westcentral Bay of Bengal along and off south Odisha and Andhra Pradesh coast. Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph likely to prevail over many parts of westcentral, western parts of southwest Arabian sea, along and off Somalia, Yemen, south Oman coasts. Fishermen are advised not to venture into these areas.**

\* 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  
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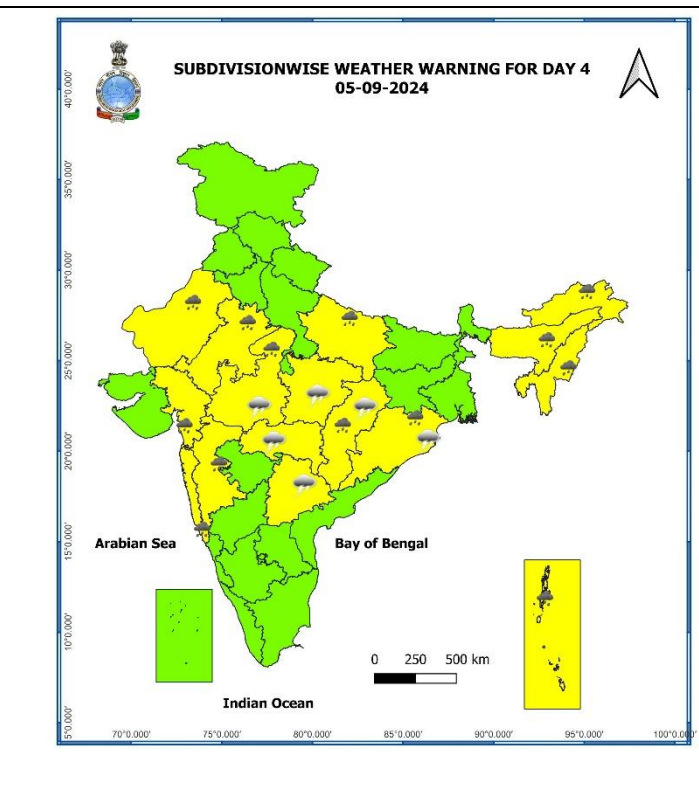
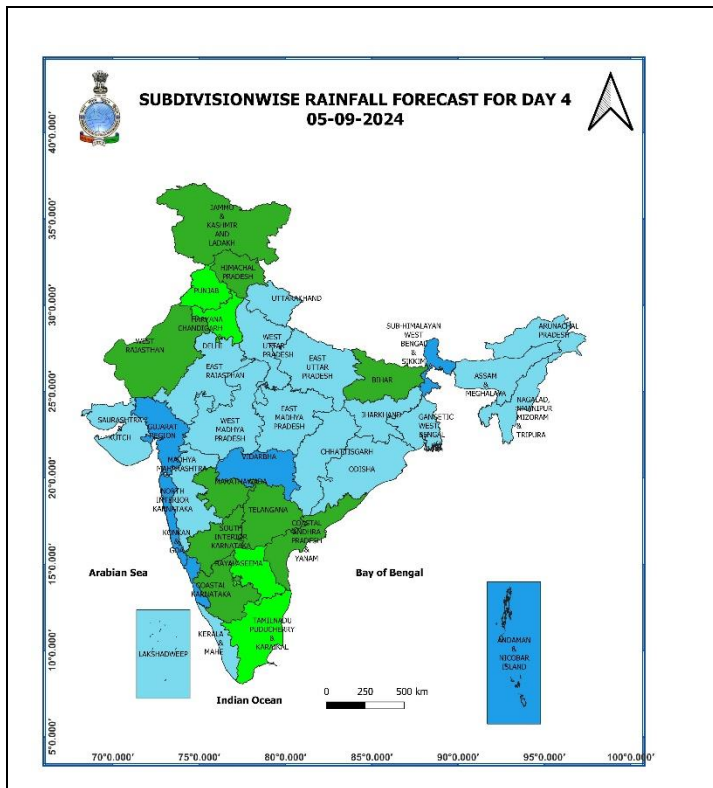


**03 September (Day 2):**

- ❖ **Heavy to very heavy rainfall ( $\geq 12$  cm)** very likely at isolated places over Gujarat State; **Heavy rainfall ( $\geq 7$  cm)** at isolated places over Madhya Maharashtra, Kerala & Mahe, Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Himachal Pradesh, Uttarakhand, West Uttar Pradesh, East Rajasthan, West Madhya Pradesh, Vidarbha.
- ❖ **Thunderstorm accompanied with lighting and gusty winds (speed reaching 30-40 kmph)** very likely at isolated places over Telangana; with **lightning** at isolated places over places over Bihar, Jharkhand, Gujarat region, Konkan & Goa, Coastal Andhra Pradesh & Yanam, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Pradesh, Vidarbha and Chhattisgarh.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** very likely over westcentral & adjoining eastcentral Arabian sea, northern parts of southwest Arabian sea, Karnataka coast, over gulf of Mannar, off Sri Lanka coast, many parts of central Bay of Bengal. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over many parts of westcentral, western parts of southwest Arabian sea, along and off Somalia, Yemen, south Oman coasts. Fishermen are advised not to venture into these areas.

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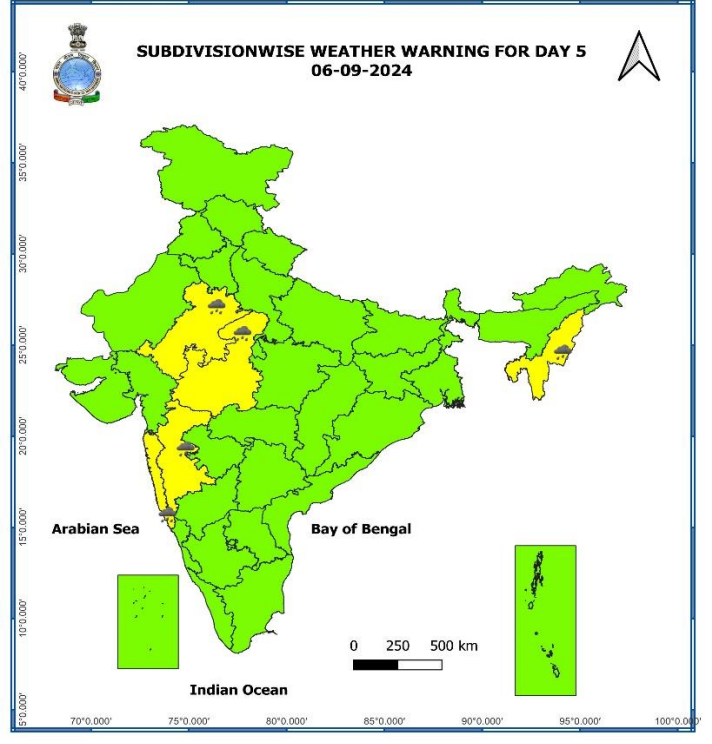
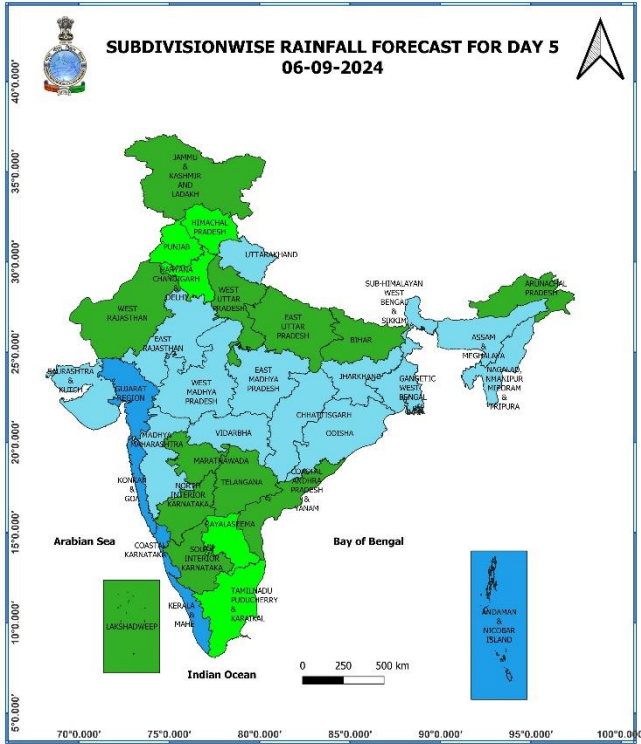




**05 September (Day 4):**

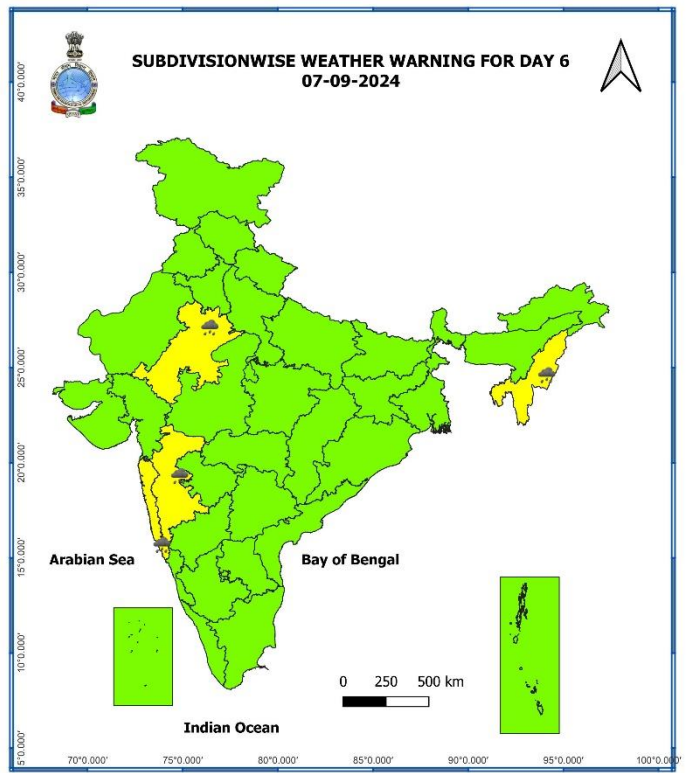
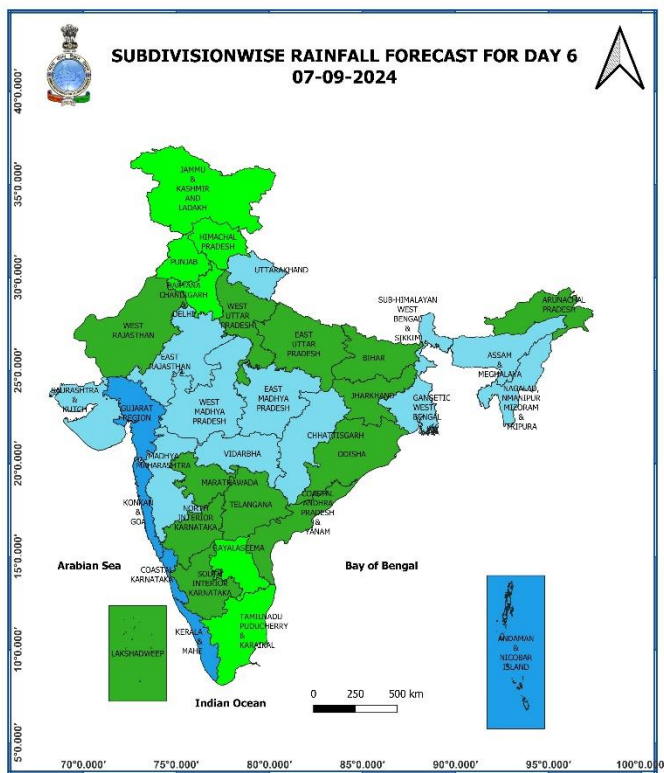
- ❖ **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over East Uttar Pradesh, Rajasthan, West Madhya Pradesh, Chhattisgarh, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Assam & Meghalaya, Gujarat Region, Madhya Maharashtra.
- ❖ **Thunderstorm accompanied with lighting** likely at isolated places over Coastal Andhra Pradesh & Yanam, Nagaland, Manipur, Mizoram & Tripura, Madhya Pradesh, Vidarbha, Odisha and Chhattisgarh.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** likely over gulf of Mannar, off Sri Lanka coast, most parts of central Bay of Bengal and north Andaman Sea. **squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over many parts of westcentral, western parts of southwest Arabian sea, along and off Somalia, Yemen, south Oman coasts. Fishermen are advised not to venture into these areas.

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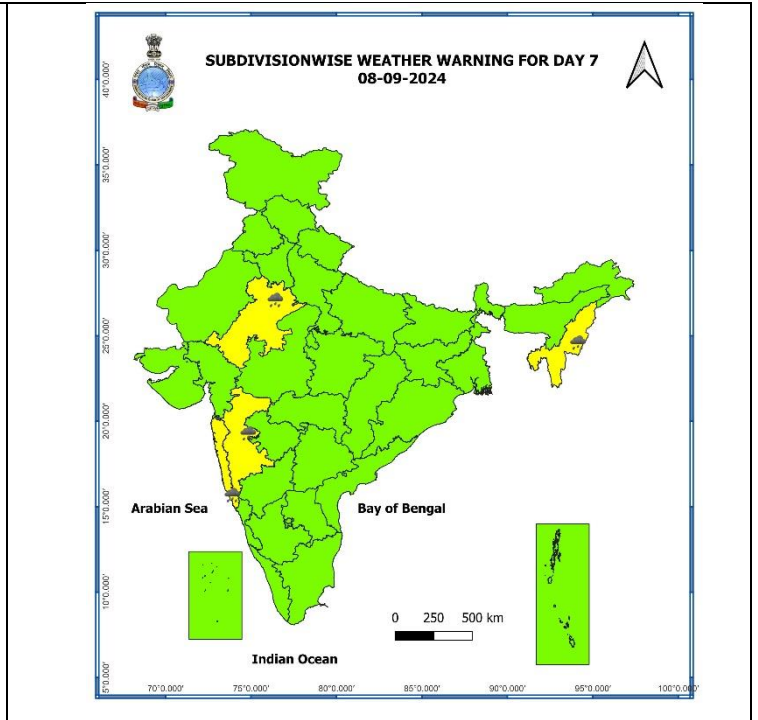
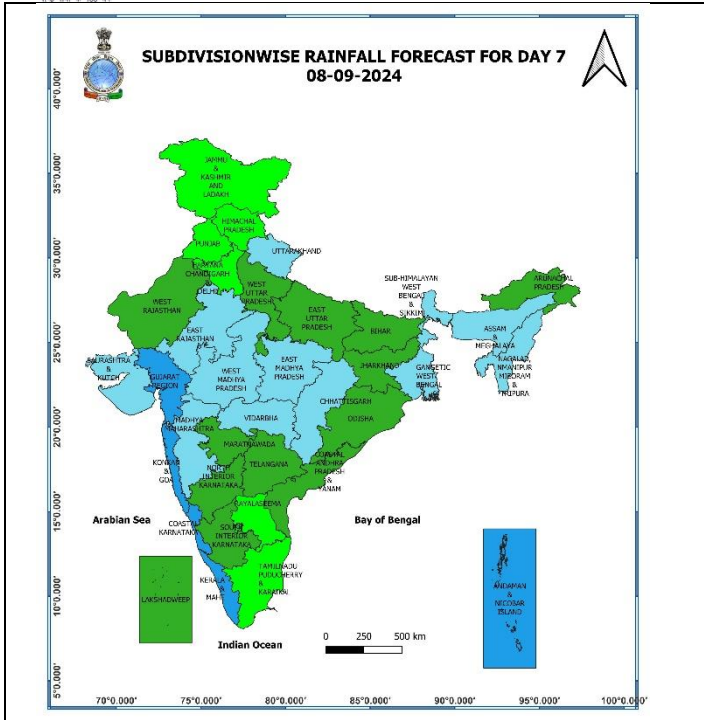
**06 September (Day 5):**

- ❖ **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over East Rajasthan, West Madhya Pradesh, Madhya Maharashtra, Nagaland, Manipur, Mizoram & Tripura.



**07 September (Day 6):**

- ❖ Heavy rainfall ( $\geq 7$  cm) likely at isolated places over East Rajasthan, Madhya Maharashtra, Nagaland, Manipur, Mizoram & Tripura.



### 08 September (Day 7):

- ❖ Heavy rainfall ( $\geq 7$  cm) likely at isolated places over East Rajasthan, Madhya Maharashtra, Nagaland, Manipur, Mizoram & Tripura.

### Weather Outlook for subsequent 3 days (During 09<sup>th</sup> September– 11<sup>th</sup> September, 2024)

- ❖ Fairly widespread to widespread rainfall likely over most parts of the country except Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Rajasthan, Punjab, Haryana-Chandigarh-Delhi and 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

- **Heavy to very heavy with isolated extremely heavy rainfall** very likely over Vidarbha on 02<sup>nd</sup> September.
- **Very heavy rainfall** at isolated over Marathwada, Assam & Meghalaya on 02<sup>nd</sup>, Gujarat Region on 02<sup>nd</sup> & 03<sup>rd</sup>; Saurashtra & Kutch on 03<sup>rd</sup> September.
- **Low to Moderate flash flood risk** likely over few watersheds & neighbourhoods of Himachal Pradesh, Uttarakhand, Telangana, West Madhya Pradesh, Vidarbha, Gujarat Region, Telangana and Marathwada on 02<sup>nd</sup> 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 field crops and horticultural crops in Arunachal Pradesh, Assam & Meghalaya, Odisha, East Rajasthan, Madhya Pradesh, Tamil Nadu, Kerala, Karnataka, Andhra Pradesh and Telangana.
- ✓ Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Konkan & Goa, Madhya Maharashtra, Marathwada, Vidarbha, Chhattisgarh, Gujrat Region and NMMT.
- ✓ Drain out excess water from maize, groundnut, ragi, vegetables and banana in South Odisha; from rice, maize, sugarcane, red gram, cotton, groundnut, vegetables and horticultural crops in Andhra Pradesh; from rice, soyabean, red gram, maize, cotton and Turmeric in Telangana to prevent water logging.
- ✓ Store the harvested produce of black gram and green gram at safer places in Vidarbha, Marathwada and Ghat areas of Madhya Maharashtra.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.

**Flash Flood Guidance:**

**ANNEXURE I**

**24 hours Outlook for the Flash Flood Risk (FFR) till 0530 IST of 03-09-2024 :**

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

**Telangana** - Nirmal, Nizamabad, Jagital, Peddapalle, Mancherial, Kamreddy, Sangareddy, Medak, Adilabad and Kumarabheen Asifabad districts.

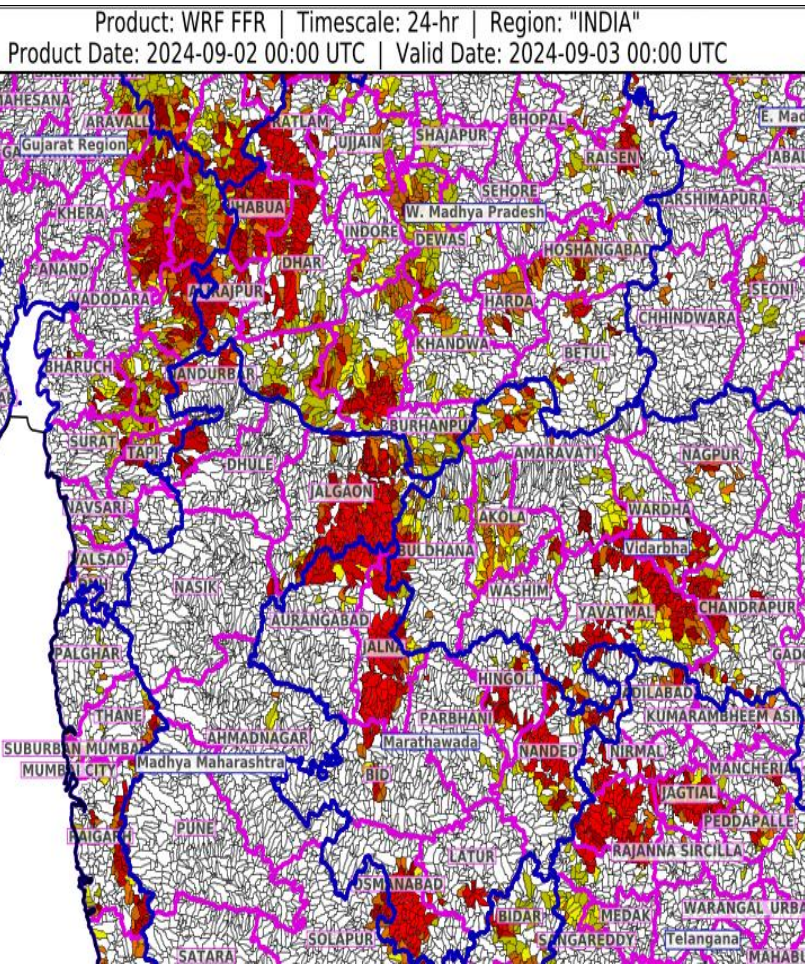
**Vidarbha** – Nagpur, Akola, Wardha, Washim, Buldhana, Amravari, Chandrapur and Yavatmal districts.

**Marathwada** – Parbhani, Hingoli, Osmanabad, Latur, Bid and Nanded districts.

**Gujarat Region** – Valsad, Tapi, Dahod, Mahisagar, Aravalli, Sagarkantha, Navsari, Surat, Narmada, Bharuch, Vadodra & Panchmahal districts.

**West Madhya Pradesh** – Jhabua, Alirajpur, Barwani, Mandsaur, Kargone, Dhar, Indore, Ratlam, Ujjain, Khandwa, Dewas, Sehore, Shajapur & Agar Malwa 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.

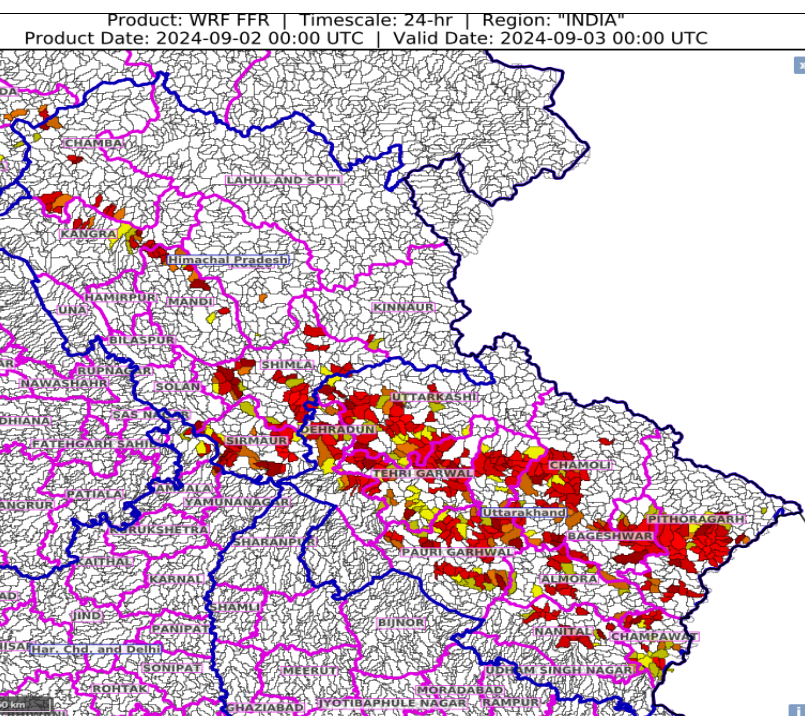


**24 hours Outlook for the Flash Flood Risk (FFR) till 0530 IST of 03-09-2024 :**

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

**Uttarakhand** – Almora, Bageshwar, Chamoli, Champawat, Dehradun, Haridwar, Nanital, Pauri Garhwal, Pithoragarh, Rudraprayag, Tehri Garwal, Udham Singh Nagar and Uttarkashi districts.

**Himachal Pradesh** – Mandi, Kangra, Chamba, Shimla, Sirmaur, Solan, Kullu & Kinnaur districts.



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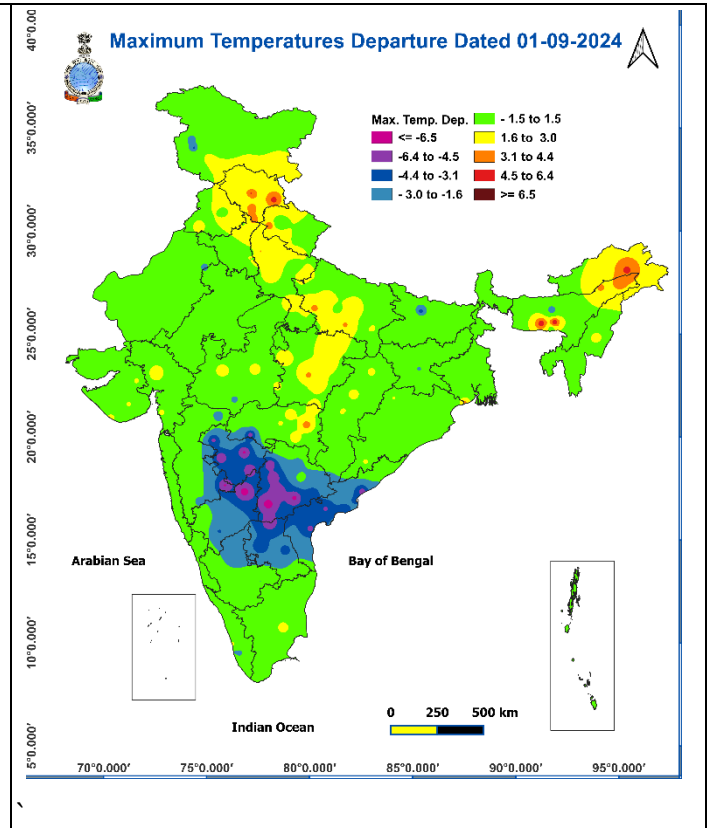
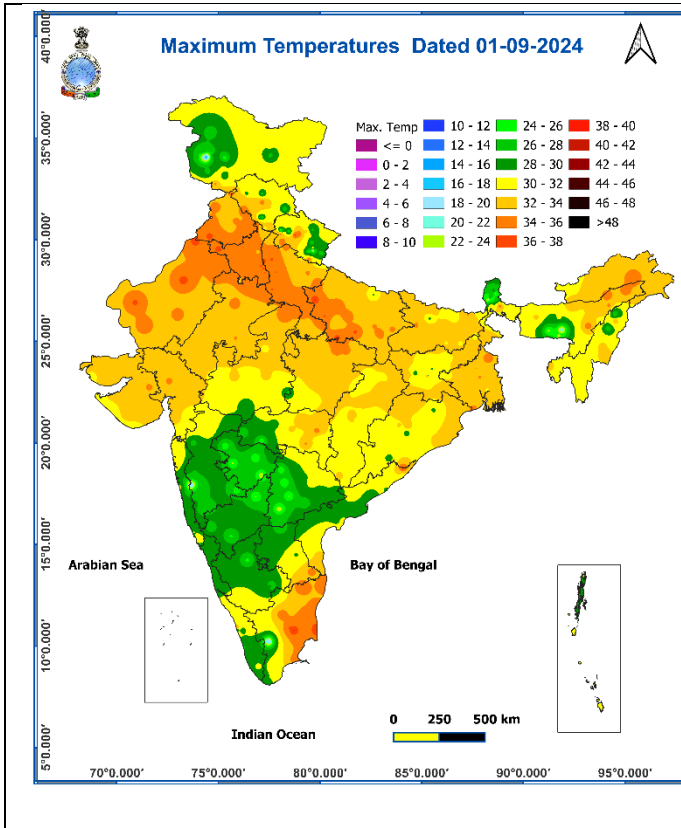
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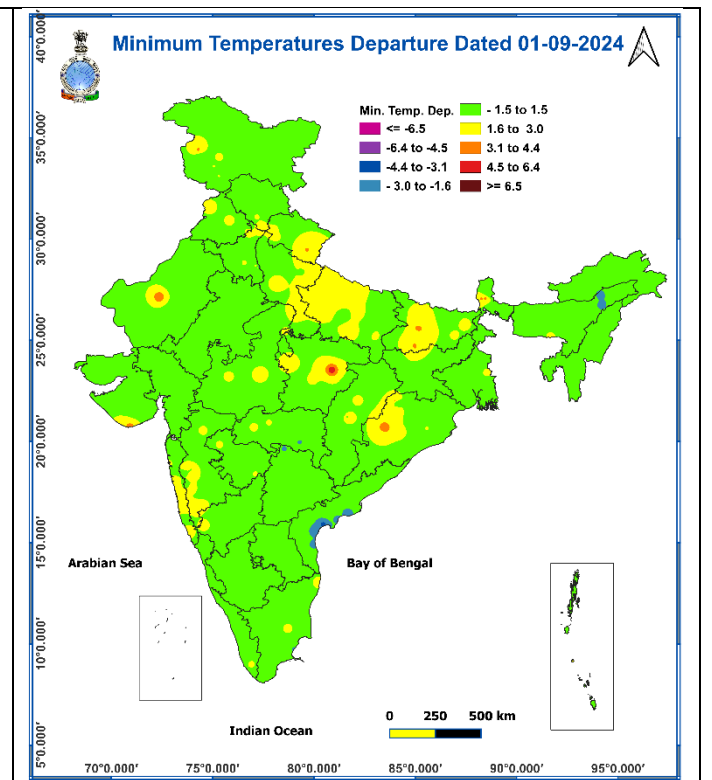
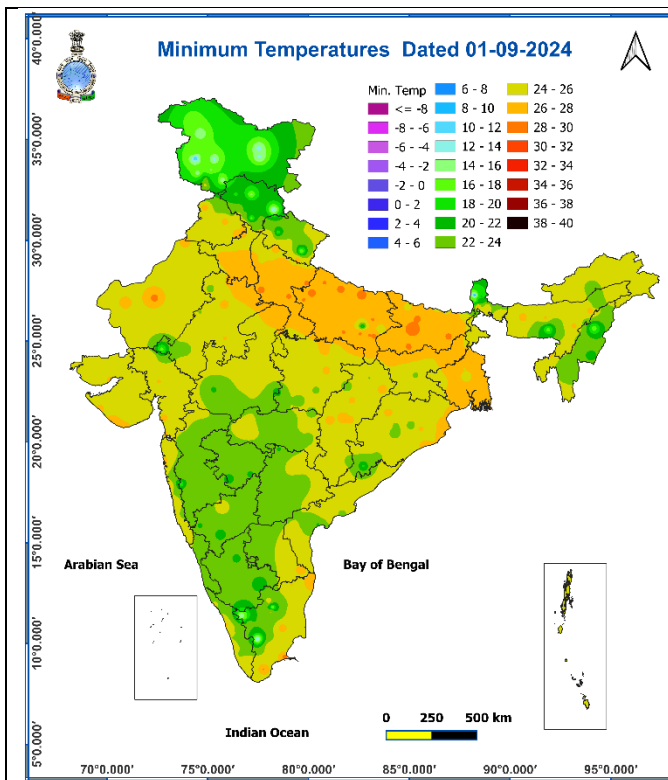
**Fig. 1: Maximum Temperatures**

**Fig. 2: Departure of Maximum Temperatures**



**Fig. 3: Minimum Temperatures**

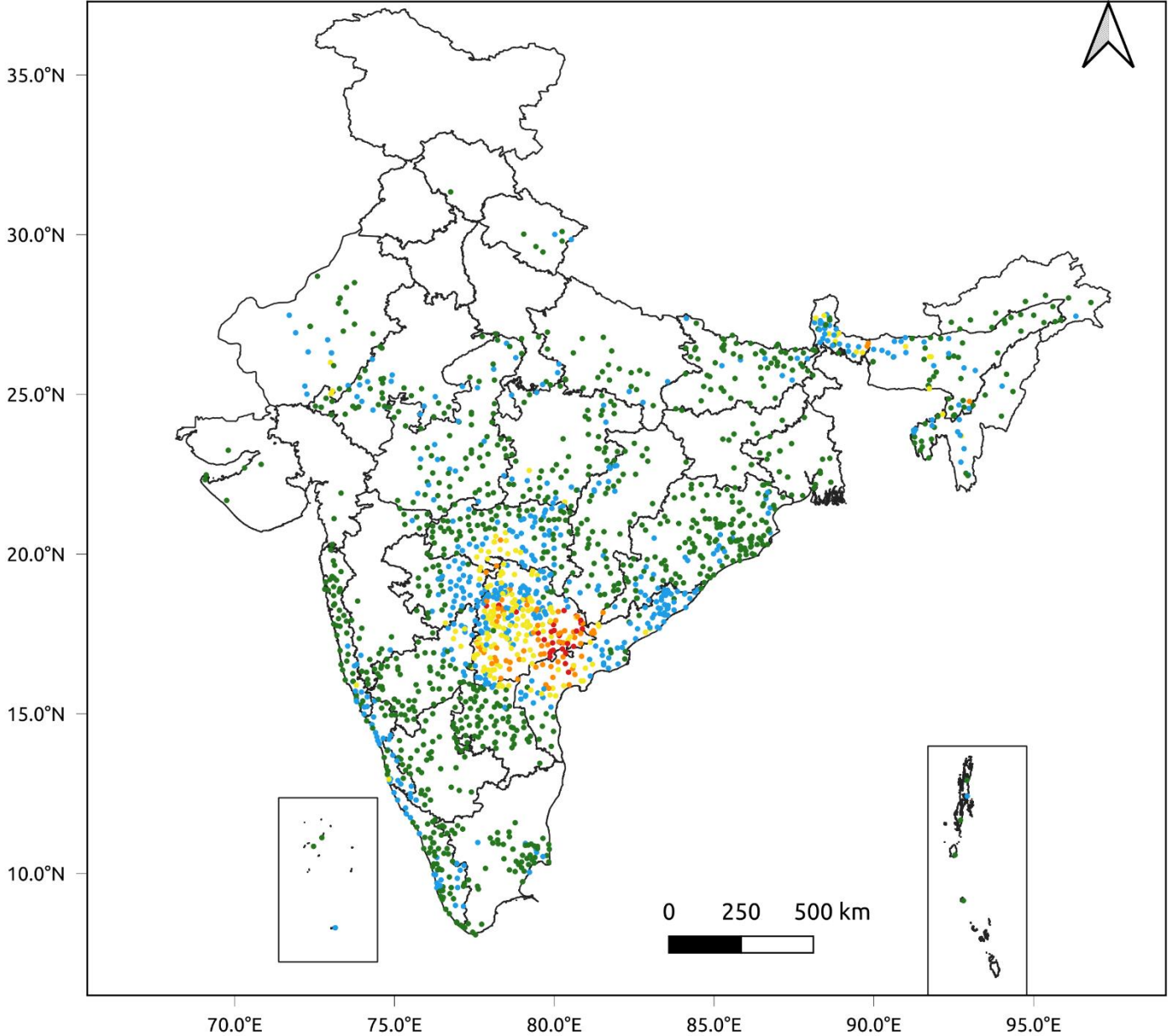
**Fig. 4: Departure of Minimum Temperatures**



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

24 Hr cumulative rainfall recorded over different stations during 0830 IST of 31-8-2024 to 0830 IST of 1-9-2024

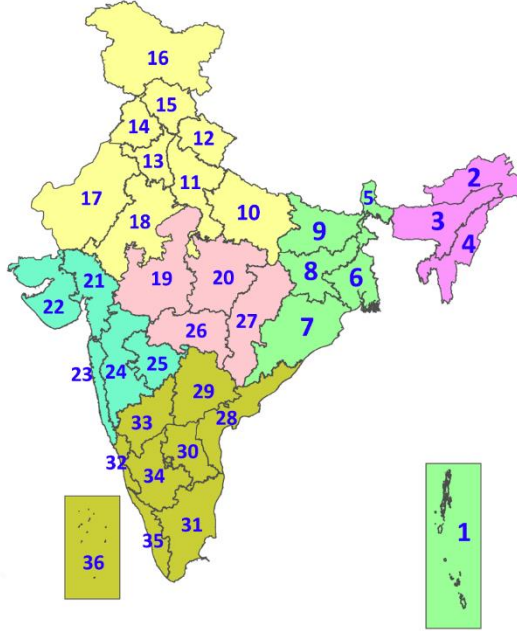


## Legends

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

## LEGENDS

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



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

## SPATIAL DISTRIBUTION (% of Stations reporting)

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



Fog



Heavy Snow



Cold Wave



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  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .

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  $40^\circ\text{C}$

Warm Night: When minimum temperature departure  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .

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  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .

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  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .

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)