

Tuesday, September 3, 2024  
Time of Issue: 0745 hours IST  
(MORNING)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### Weather Systems:

- ✓ The **well marked low pressure** area over northwest Arabian Sea now lies over northwest & adjoining westcentral Arabian Sea. It is likely to continue to move further south-southwestwards and weaken gradually into a low pressure area during next 12 hours.
- ✓ The **Well marked low pressure** area over central parts of Vidarbha & neighbourhood persists. It is likely to move further nearly northwestwards across Vidarbha and adjoining West Madhya Pradesh and weaken into a low pressure area during next 24 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 20°N over north Peninsular India in middle tropospheric levels.
- ✓ A fresh **low pressure area** is likely to form over westcentral and adjoining northwest Bay of Bengal around 05<sup>th</sup> September, 2024.

#### Forecast & Warnings (upto 7 days):

##### ❖ 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 Gujarat Region on 03<sup>rd</sup> September.
- ✓ Isolated **very heavy rainfall** also very likely over West Madhya Pradesh on 03<sup>rd</sup>; Gujarat State on 03<sup>rd</sup> & 04<sup>th</sup> September.
- ✓ Isolated **heavy rainfall** very likely over Madhya Maharashtra during next 7 days; West Madhya Pradesh, Vidarbha, Saurashtra & Kutch during 03<sup>rd</sup>-05<sup>th</sup>; Chhattisgarh, Konkan & Goa during 05<sup>th</sup>-09<sup>th</sup>; Gujarat Region during 02<sup>nd</sup>-06<sup>th</sup> September.

##### ❖ 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 **heavy rainfall** very likely over Kerala & Mahe on 03<sup>rd</sup> & 04<sup>th</sup>; Coastal Karnataka on 03<sup>rd</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 **heavy rainfall** very likely over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 03<sup>rd</sup>-04<sup>th</sup>; Arunachal Pradesh, Andaman & Nicobar Islands during 03<sup>rd</sup>-05<sup>th</sup>; Sub-Himalayan West Bengal & Sikkim on 04<sup>th</sup> & 05<sup>th</sup>; Bihar on 04<sup>th</sup>; Odisha on 05<sup>th</sup> & 06<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 **very heavy rainfall** very likely over East Rajasthan during 07<sup>th</sup>-09<sup>th</sup> September.
- ✓ Isolated **heavy rainfall** very likely over Uttarakhand, East Rajasthan during next 7 days; Jammu-Kashmir, Himachal Pradesh, Punjab, Haryana-Chandigarh 03<sup>rd</sup>; West Uttar Pradesh on 03<sup>rd</sup> & 04<sup>th</sup>; East Uttar Pradesh on 06<sup>th</sup>; West Rajasthan during 03<sup>rd</sup>-09<sup>th</sup> September.

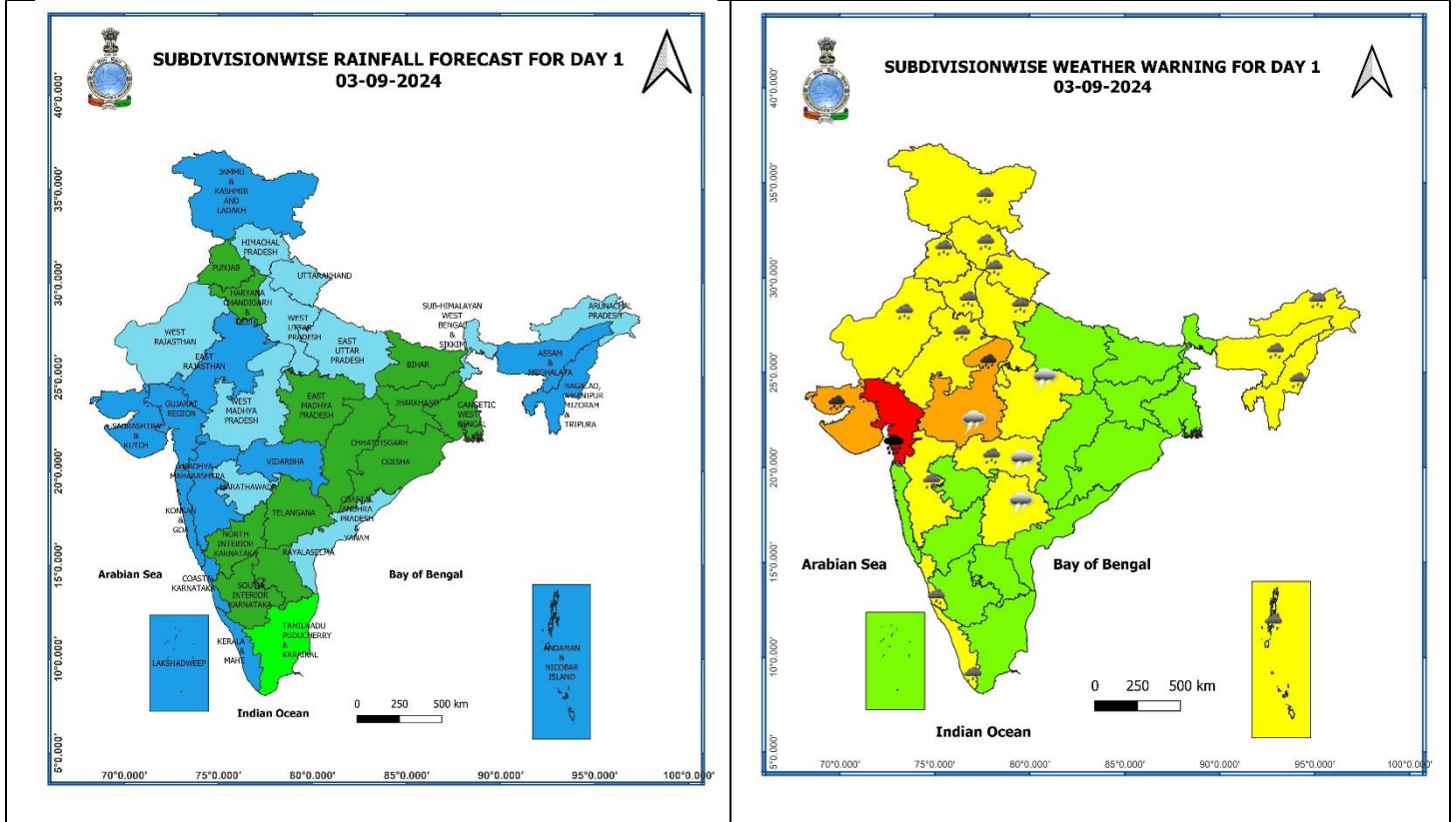
## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at most places** over Kerala & Mahe, Uttarakhand, Madhya Maharashtra; **at many places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Gujarat Region, Konkan & Goa; **at a few places** over Telangana, Jharkhand, Odisha, Nagaland, Manipur, Mizoram & Tripura, East Rajasthan, Haryana-Chandigarh-Delhi; **at isolated places** over Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Saurashtra & Kutch, Bihar, Assam & Meghalaya, Arunachal Pradesh, West Rajasthan, Sub-Himalayan West Bengal & Sikkim, Vidarbha, Marathwada, Interior Karnataka, Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal .
- ❖ **Heavy rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday): **Heavy to very heavy rainfall** at isolated places over Gujarat Region; **Heavy rainfall** at isolated places over East Rajasthan.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Gujarat Region:** Tapi 21, Navsari 15, Bharuch 14, Dang 10, Surat 7, Sabar kantha 6, Ahmadabad 3; **East Rajasthan:** Banswara 7, Alwar 6; **West Rajasthan:** Sri Ganganagar 6; **Konkan & Goa:** Ratnagiri 5, Bombay Santacruz 2; **Vidarbha:** Akola 4, Yeotmal 4, Washim 3, Wardha 2; **Meghalaya:** Barapani 3; **West Madhya Pradesh:** Sarwsawa 3, **Delhi:** Safdarjung 2, **Himachal Pradesh:** Dharamsala 2, Sundernagar 2, **Odisha:** Rourkela 2, **Telangana:** Najibabad 2.
- ❖ **Minimum Temperature Departures (as on 02-09-2024):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Nagaland, Manipur, Mizoram & Tripura; **above normal (1.6°C to 3.0°C)** at few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Rajasthan, Gujarat state, Konkan & Goa; at isolated places over Madhya Maharashtra, East Madhya Pradesh, Odisha, Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya. These were **below normal (-1.6°C to -3.0°C)** at isolated places over East Rajasthan, Coastal Andhra Pradesh & Yanam and Marathwada and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature of 19.8°C** was reported at **Dhar (West Madhya Pradesh)** over the plains of the country. **(Fig.4)**
- ❖ **Maximum Temperature Departures (as on 02-09-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim, Madhya Pradesh, Tamil Nadu, Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at isolated places over Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal, Jharkhand, West Uttar Pradesh, Chhattisgarh. These were **markedly below normal (-5.1°C or Less)** at isolated places over Telangana, Madhya Maharashtra, Marathwada; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Himachal Pradesh, Coastal Andhra Pradesh & Yanam; **below normal (-1.6°C to -3.0°C)** at isolated places over Haryana-Chandigarh-Delhi, Gujarat state, Vidarbha and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature of 39.2°C** was reported at **Pokhran (West Rajasthan)** over the country. **(Fig. 2)**

## Meteorological Analysis (Based on 0530 hours IST)

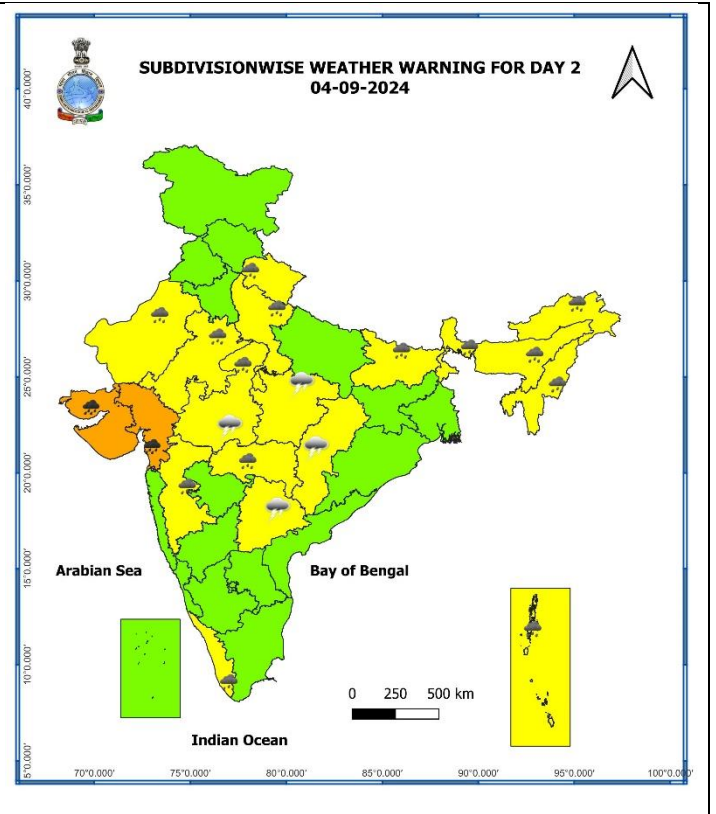
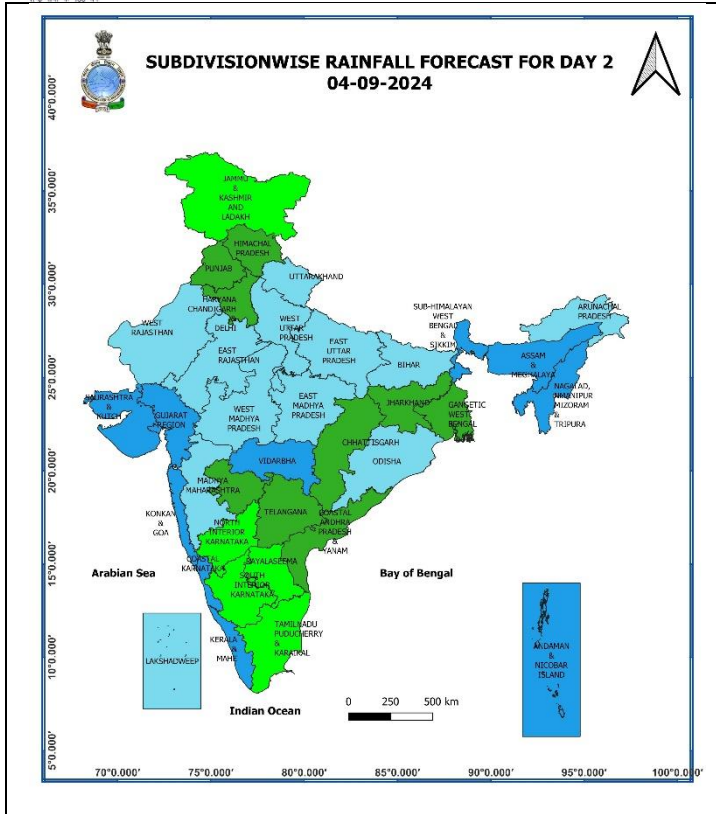
- ❖ The **well marked low pressure** area over northwest Arabian Sea now lies over northwest & adjoining westcentral Arabian Sea. It is likely to continue to move further south-southwestwards and weaken gradually into a low pressure area during next 12 hours.
- ❖ The **Well marked low pressure** area over central parts of Vidarbha & neighbourhood persists. It is likely to move further nearly northwestwards across Vidarbha and adjoining West Madhya Pradesh and weaken into a low pressure area during next 24 hours.
- ❖ The **Monsoon trough** at mean sea level now passes through Jaisalmer, Udaipur, Indore, centre of well marked low pressure area over central parts of Vidarbha & neighbourhood, Ramagundam, Visakhapatnam and thence southeastwards to eastcentral Bay of Bengal.
- ❖ The **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 65°E to the north of Lat. 31°N.
- ❖ The **cyclonic circulation** over central Pakistan and adjoining West Rajasthan between 1.5 km & 3.1 km above mean sea level persists.
- ❖ The **shear zone** roughly along 20°N over north Peninsular India between 3.1 km & 5.8 km above mean sea level persists.
- ❖ The **off-shore trough** at mean sea level along south Gujarat to north Kerala coast persists.
- ❖ A fresh **low pressure area** is likely to form over westcentral and adjoining northwest Bay of Bengal around 05<sup>th</sup> September, 2024.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 10<sup>th</sup> September, 2024)



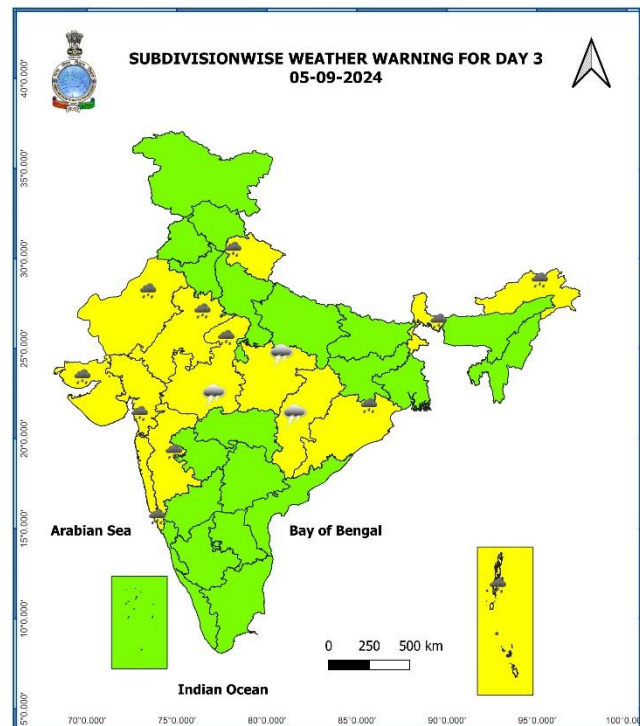
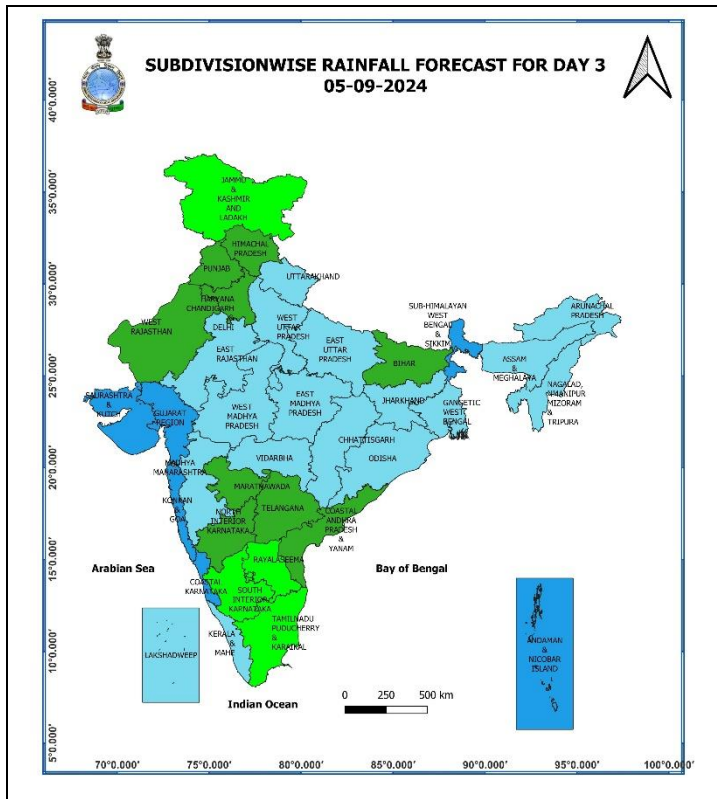
**03 September (Day 1):**

- ❖ **Heavy to very heavy rainfall ( $\geq 12$  cm) with extremely heavy falls ( $>20$  cm) very likely at isolated places over Gujarat Region; Heavy to very heavy rainfall ( $\geq 12$  cm) very likely at isolated places over Saurashtra & Kutch and West Madhya Pradesh; Heavy rainfall ( $\geq 7$  cm) at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, West Uttar Pradesh, Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Vidarbha, East Madhya Pradesh, Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Kerala & Mahe and Coastal Karnataka.**
- ❖ **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 Madhya Pradesh and Vidarbha.**
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph is very likely to prevail over westcentral & adjoining eastcentral Arabian sea, northern parts of southwest Arabian sea, along and off south Gujarat, Karnataka coast, over gulf of Mannar, off Sri Lanka coast, many parts of south and 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.**



#### 04 September (Day 2):

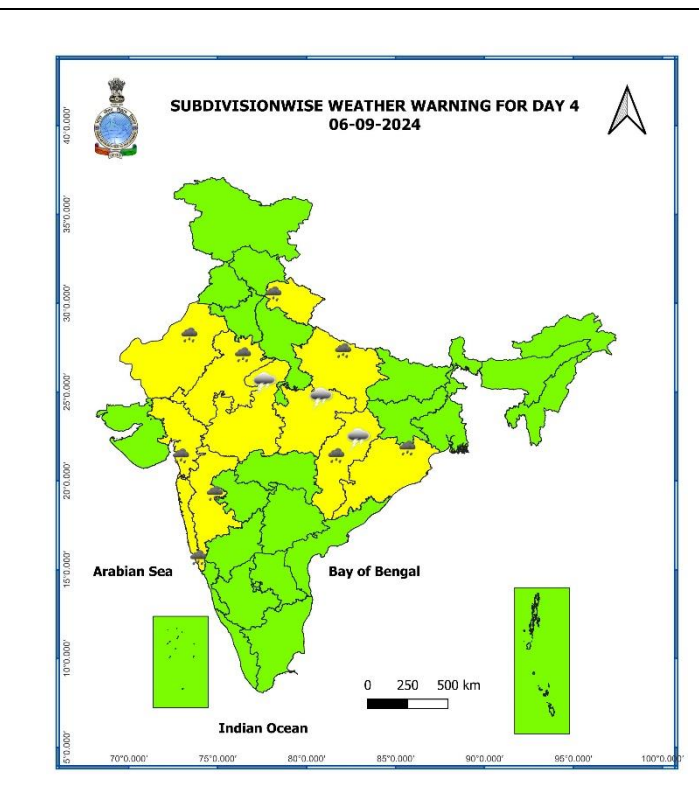
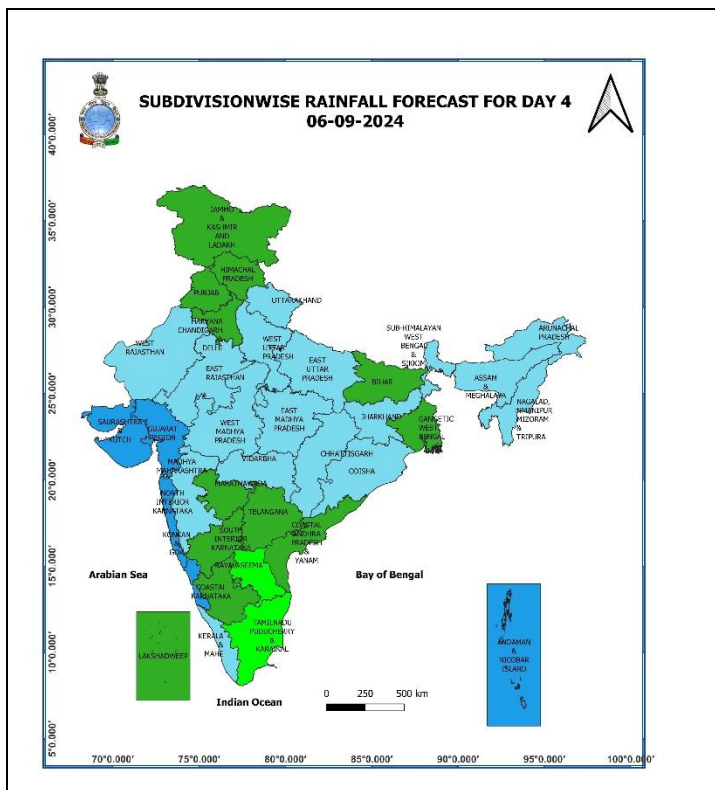
- ❖ **Heavy to very heavy rainfall ( $\geq 12$  cm)** very likely at isolated places over Gujarat state; **Heavy rainfall ( $\geq 7$  cm)** at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Kerala & Mahe, Uttarakhand, West Uttar Pradesh, Rajasthan, West Madhya Pradesh, Vidarbha, Sub-Himalayan West Bengal & Sikkim and Bihar.
- ❖ **Thunderstorm accompanied with lighting and gusty winds (speed reaching 30-40 kmph)** very likely at isolated places over Telangana; **with lightning** at isolated places Madhya Pradesh and Chhattisgarh.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over westcentral Arabian sea, northern parts of southwest Arabian sea, over gulf of Mannar, off Sri Lanka coast, many parts of south and central Bay of Bengal off north Andhra Pradesh coasts and 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.



**05 September (Day 3):**

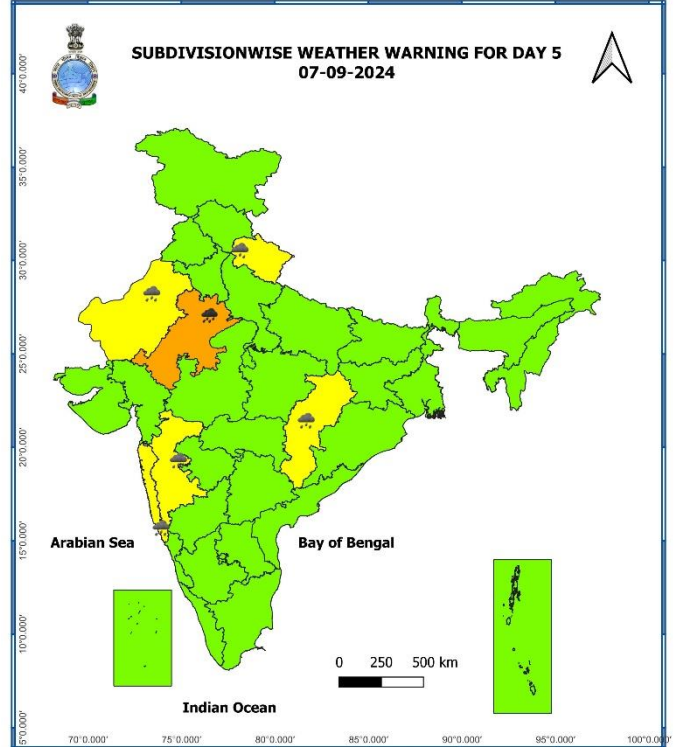
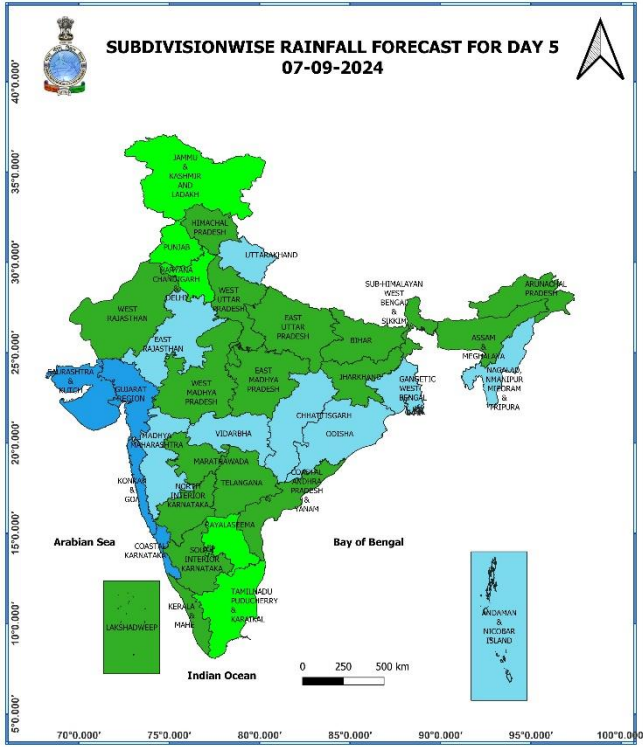
- ❖ **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Gujarat state, Uttarakhand, Rajasthan, West Madhya Pradesh, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim and Odisha.
- ❖ **Thunderstorm accompanied with lighting** very likely at isolated places over Madhya Pradesh and Chhattisgarh.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over off south Gujarat and Maharashtra coasts, central Arabian sea and north parts of southwest Arabian sea, gulf of Mannar, off Sri Lanka coast, most parts of south and central Bay of Bengal and Andaman Sea. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over some parts of central adjoining southeast 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.

\* 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)



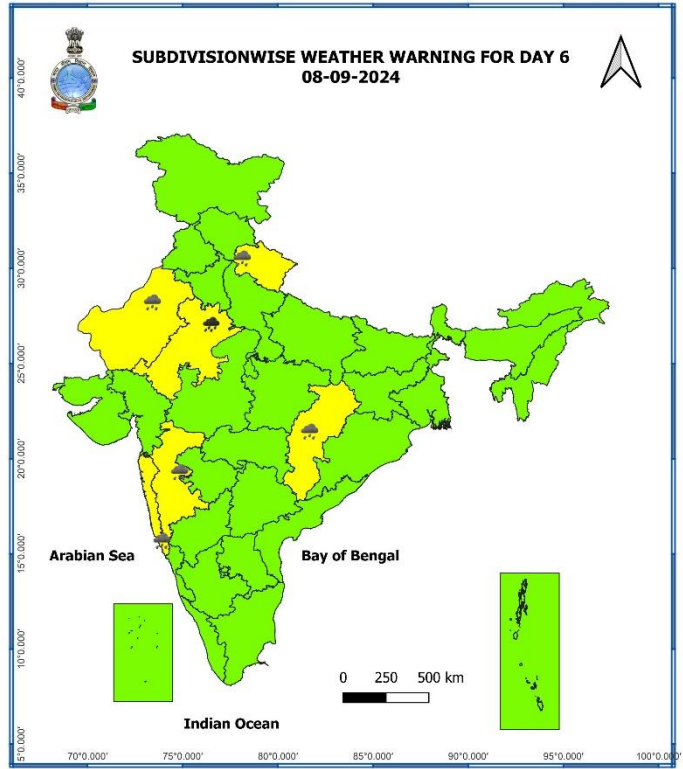
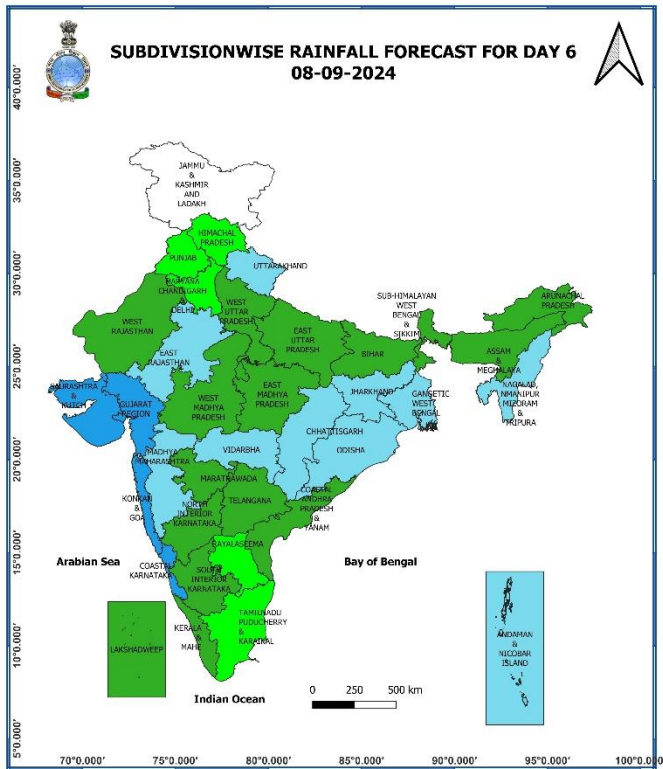
### 06 September (Day 4):

- ❖ **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Gujarat Region, Uttarakhand, East Uttar Pradesh, Rajasthan, Chhattisgarh and Odisha.
- ❖ **Thunderstorm accompanied with lighting** likely at isolated places over Madhya Pradesh and Chhattisgarh.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over many parts of central and adjoining northeast Arabian sea, gulf of Mannar, off Sri Lanka coast, most parts of south and central Bay of Bengal and Andaman Sea. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over some parts of central adjoining southeast 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.



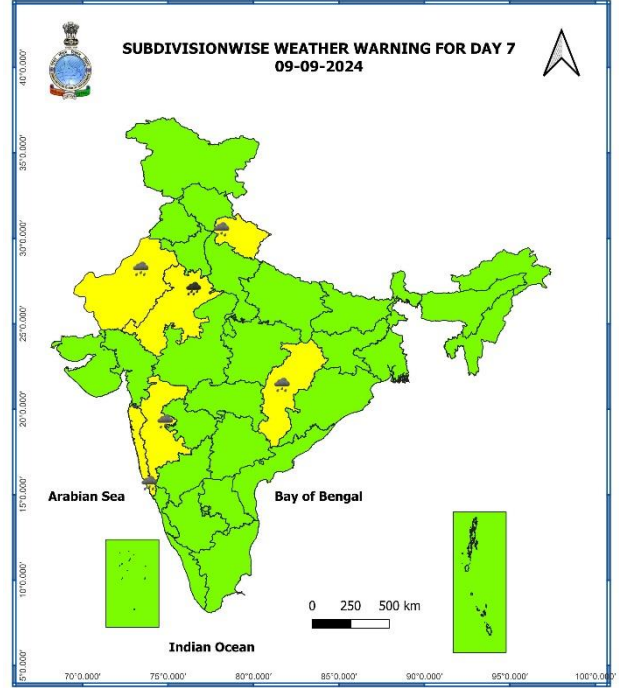
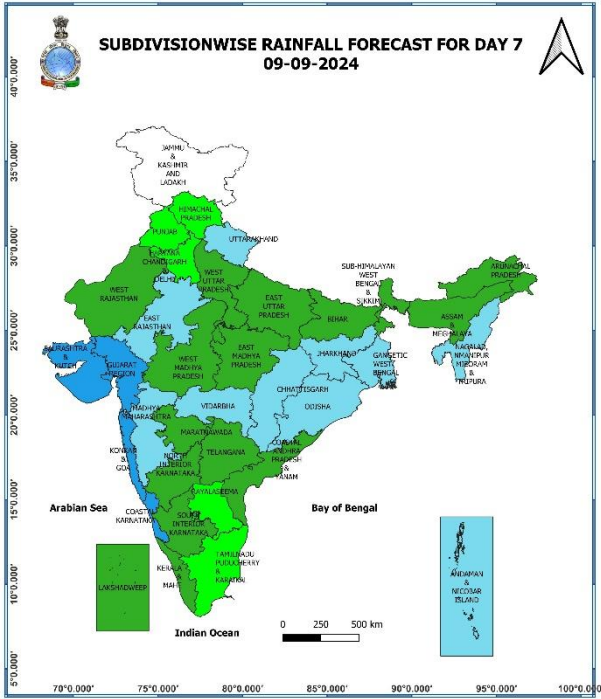
### 07 September (Day 5):

- ❖ **Heavy to very heavy rainfall ( $\geq 12$  cm)** likely at isolated places over East Rajasthan; **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over Uttarakhand, West Rajasthan Chhattisgarh, Konkan & Goa and Madhya Maharashtra.



**08 September (Day 6):**

❖ **Heavy to very heavy rainfall ( $\geq 12$  cm)** likely at isolated places over East Rajasthan; **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over Uttarakhand, West Rajasthan Chhattisgarh, Konkan & Goa and Madhya Maharashtra.



### 09 September (Day 7):

- ❖ **Heavy to very heavy rainfall ( $\geq 12$  cm)** likely at isolated places over East Rajasthan; **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over Uttarakhand, West Rajasthan Chhattisgarh, Konkan & Goa and Madhya Maharashtra.

### Weather Outlook for subsequent 3 days (During 10<sup>th</sup> September– 12<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, 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 Gujarat Region on 03<sup>rd</sup> September.
- **Very heavy rainfall** at isolated over West Madhya Pradesh on 03<sup>rd</sup>; Gujarat State on 03<sup>rd</sup> & 04<sup>th</sup>; East Rajasthan during 07<sup>th</sup> - 09<sup>th</sup> September.
- **Low to Moderate flash flood risk** likely over few watersheds & neighbourhoods of East Rajasthan, West Madhya Pradesh and Gujarat State on 03<sup>rd</sup> & 04<sup>th</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 kutch 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 Himachal Pradesh, Uttarakhand, East Rajasthan, West Madhya Pradesh, Marathwada, Vidarbha, Madhya Maharashtra, North Interior Karnataka and Telangana.
- ✓ Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Andaman & Nicobar Islands and Kerala.
- ✓ Drain out excess water from rice, castor, cotton, pearl millet, groundnut, sesame and maize fields in **Gujarat**; from rice, soybean, 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 04-09-2024:**

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

**Gujarat Region** - Sabar Kantha, Patan, Mahesana, Khera, Anand, Valsad, Tapi, Dahod, Mahisagar, Aravalli, Navsari, Surat, Narmada, Bharuch, Chhota Udepur, Dangs, Vadodra & Panchmahal districts.

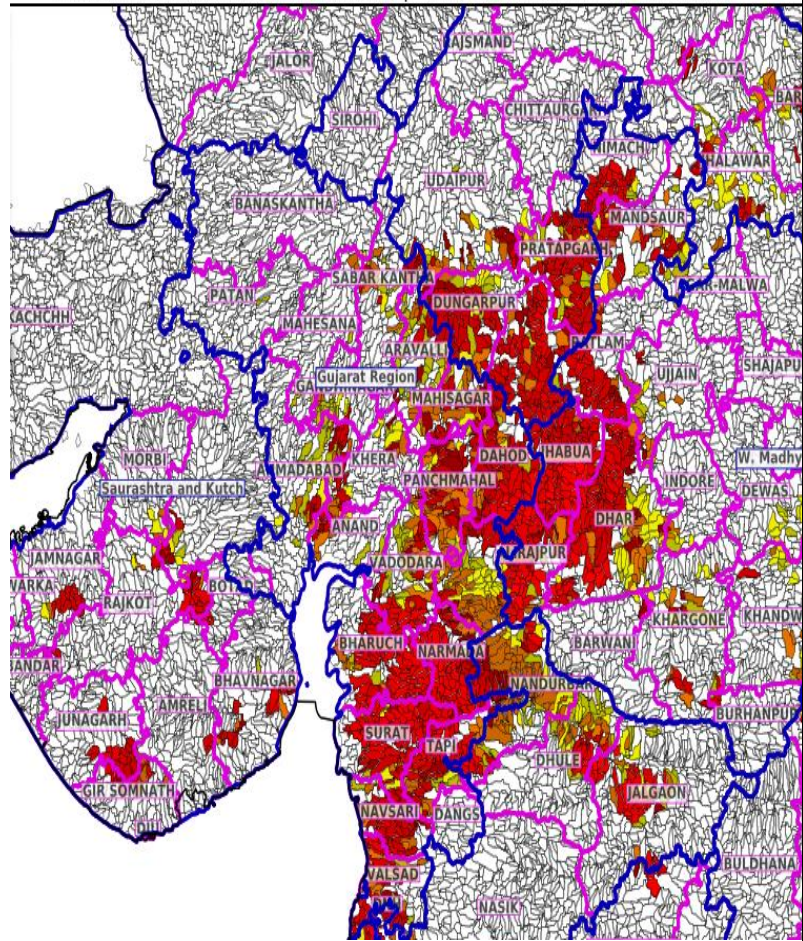
**West Madhya Pradesh** - Jhabua, Alirajpur, Barwani, Mandsaur, Khargone, Dhar, Indore, Ratlam, Ujjain, Khandwa and Dewas districts.

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

**Saurashtra & Kutch** - Jamnagar, Porbandar, Junagarh, Gir Somnath, Amreli, Bhavnagar, Botad, Morbi, Rajkot and Surendranagar 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.

Product: WRF FFR | Timescale: 24-hr | Region: "INDIA"  
Product Date: 2024-09-03 00:00 UTC | Valid Date: 2024-09-04 00:00 UTC



\* 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

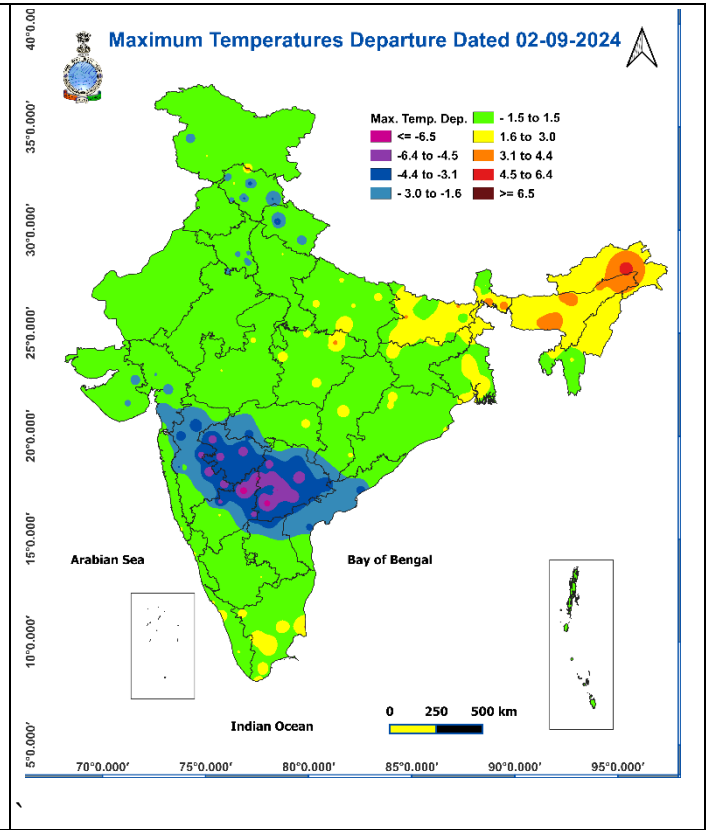
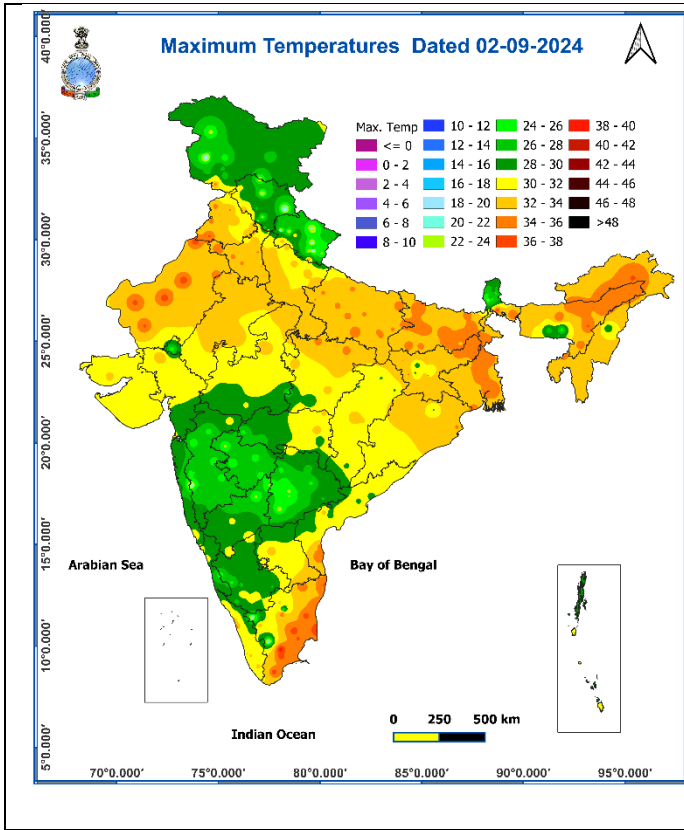
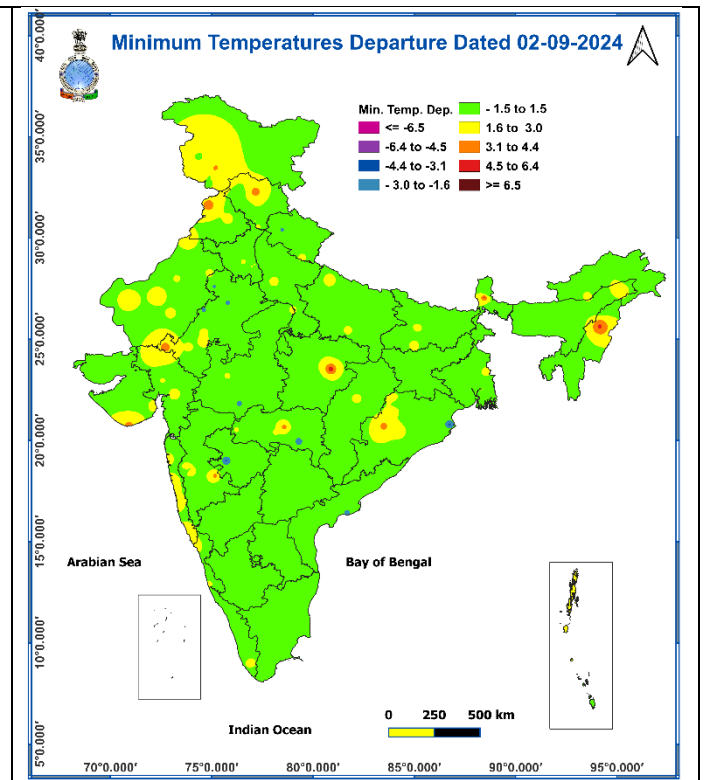
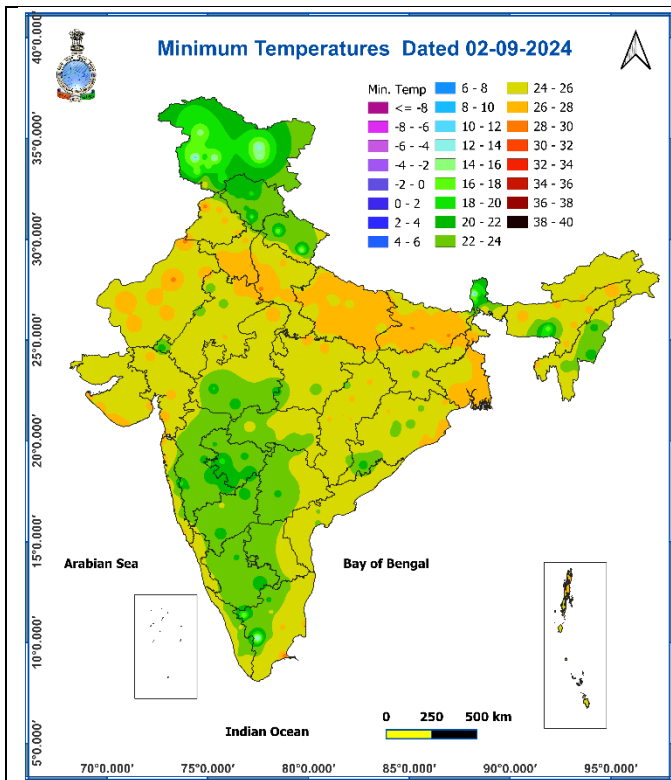


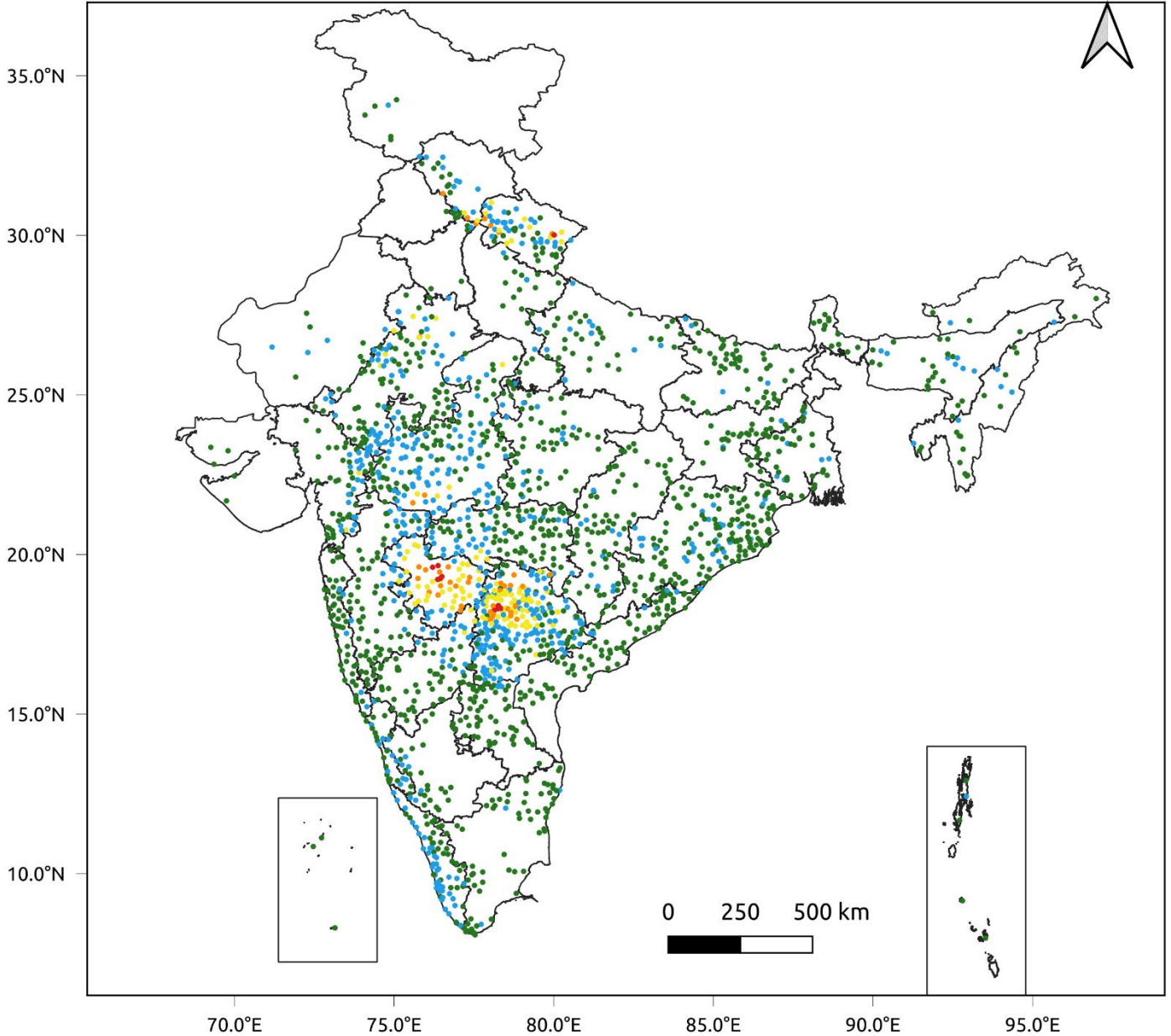
Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures



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

24 Hr cumulative rainfall recorded over different stations during 0830 IST of 1-9-2024 to 0830 IST of 2-9-2024

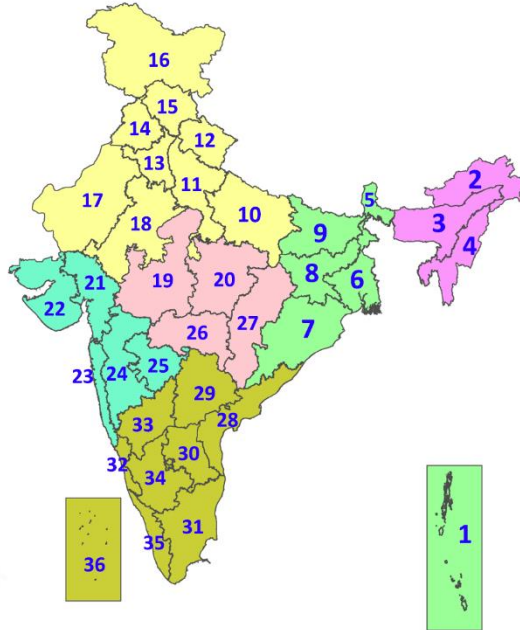


## Legends

- 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)