



Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 14<sup>th</sup> September, 2024

Time of Issue: 1315 hours IST

**Subject: Deep depression over Gangetic West Bengal and adjoining Bangladesh and is likely to move west-northwestwards and cause isolated very heavy to extremely heavy rainfall over Gangetic West Bengal & Odisha on 14<sup>th</sup>; Jharkhand on 14<sup>th</sup> & 15<sup>th</sup>; Chhattisgarh on 15<sup>th</sup> and East Madhya Pradesh on 16<sup>th</sup> September.**

**Realised weather during past 24 hours till 0830 hours IST of today (Annexure I)**

**Heavy to very heavy rainfall with isolated extremely heavy falls** at a few places over Haryana; **Heavy to very heavy rainfall** at a few places over Gangetic West Bengal and at isolated places over Uttarakhand; **Heavy rainfall** at isolated places over Himachal Pradesh, Delhi, Uttar Pradesh, Chhattisgarh, Bihar, Sub-Himalayan West Bengal and Jharkhand.

**Weather Systems:**

- ✓ Yesterday's **deep depression** over Bangladesh and adjoining Gangetic West Bengal moved west-northwestwards with a speed of 28 kmph during past 6 hours and lay centered at 0830 hours IST of today, the 14<sup>th</sup> September 2024, over Gangetic West Bengal and adjoining Bangladesh near latitude 22.9° N and longitude 88.6° E, 50 km northeast of Kolkata (West Bengal), 160 km east-southeast of Bankura (West Bengal), 250 km east of Jamshedpur (Jharkhand) and 340 km east of Ranchi (Jharkhand). It is likely to continue to move west-northwestwards across Gangetic West Bengal and maintain its intensity of deep depression today, the 14<sup>th</sup> September. Thereafter, it will continue to move west-northwestwards across Jharkhand, north Chhattisgarh and Madhya Pradesh as a depression during subsequent 48 hours.
- ✓ The **low-pressure area** over northwest Uttar Pradesh and adjoining Uttarakhand has become less marked. The associated cyclonic circulation lies over the same region in middle tropospheric levels.
- ✓ Monsoon trough lies close to its normal position.

**Forecast & Warnings (upto 7 days) (Annexure II & III):**

**West & Central India:**

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

- ✓ **Isolated very heavy rainfall** very likely over Chhattisgarh on 14<sup>th</sup>; East Madhya Pradesh during 15<sup>th</sup> -17<sup>th</sup> September.
- ✓ Isolated **heavy rainfall** very likely over Chhattisgarh on 16<sup>th</sup>; West Madhya Pradesh on 17<sup>th</sup> & 18<sup>th</sup> September.

### East & Northeast India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over East India; Scattered to Fairly widespread light/moderate rainfall very likely over Northeast India during the week.
- ✓ **Isolated extremely heavy rainfall** very likely over Gangetic West Bengal & north Odisha on 14<sup>th</sup> and over Jharkhand on 14<sup>th</sup> & 15<sup>th</sup> September.
- ✓ Isolated **very heavy rainfall** very likely over Bihar and Odisha on 14<sup>th</sup> & 15<sup>th</sup> September.
- ✓ Isolated **heavy rainfall** very likely over Arunachal Pradesh, Sub-Himalayan West Bengal & Sikkim on 14<sup>th</sup>; Gangetic West Bengal on 15<sup>th</sup>; Bihar, Jharkhand, Odisha, Nagaland, Manipur, Mizoram & Tripura during 14<sup>th</sup> -16<sup>th</sup>; Assam & Meghalaya on 14<sup>th</sup> and during 18<sup>th</sup> -20<sup>th</sup> September.

### Northwest India

- ✓ Scattered to Fairly widespread light/moderate rainfall very likely over Uttar Pradesh; Isolated to scattered rainfall over the remaining region during the week.
- ✓ Isolated **heavy rainfall** very likely over Uttarakhand on 14<sup>th</sup>; East Uttar Pradesh on 16<sup>th</sup> & 17<sup>th</sup> and over West Uttar Pradesh on 17<sup>th</sup> September.

### South Peninsular India:

- ✓ Scattered to Fairly widespread light/moderate rainfall over Coastal Karnataka, Kerala & Mahe, Lakshadweep; Isolated to Scattered rainfall over the remaining region during the week.

### Wind warning

- ✓ Squally wind speed reaching 50-60 kmph gusting to 70 kmph is likely to over north Bay of Bengal and along & off Bangladesh, West Bengal, and north Odisha coasts till night of today, the 14<sup>th</sup> September. It is likely to become 40-50 kmph gusting to 60 kmph till evening of 15<sup>th</sup> September and decrease thereafter.
- ✓ Squally wind speed reaching 45-55 kmph gusting to 50 kmph likely over Gangetic west Bengal (including Kolkata) and adjoining north Odisha & Jharkhand from night of 14<sup>th</sup> till morning of 15<sup>th</sup> September.
- ✓ Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely over north Chhattisgarh and adjoining east Madhya Pradesh & southeast Uttar Pradesh from evening of 15<sup>th</sup> till evening of 16<sup>th</sup> September.

**For more details, kindly refer:**

[https://mausam.imd.gov.in/responsive/all\\_india\\_forecast\\_bulletin.php](https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php)

**For District wise warnings refer:**

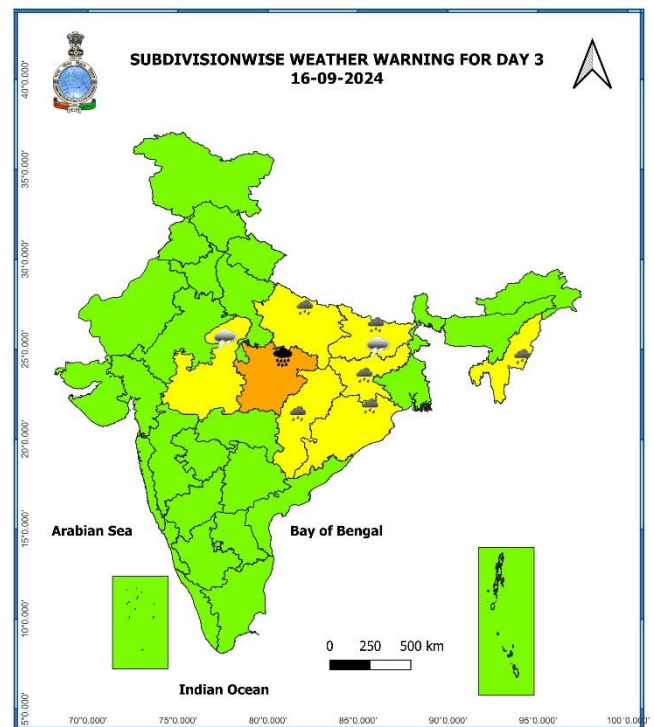
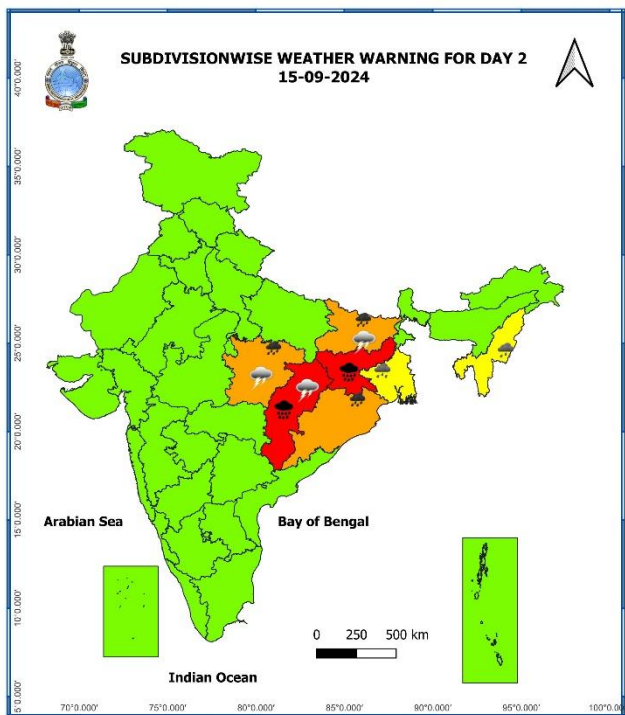
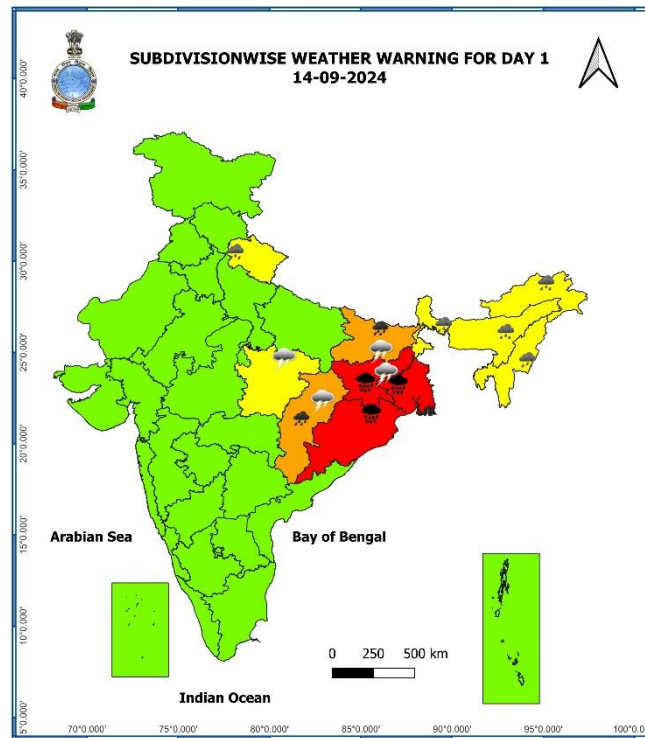
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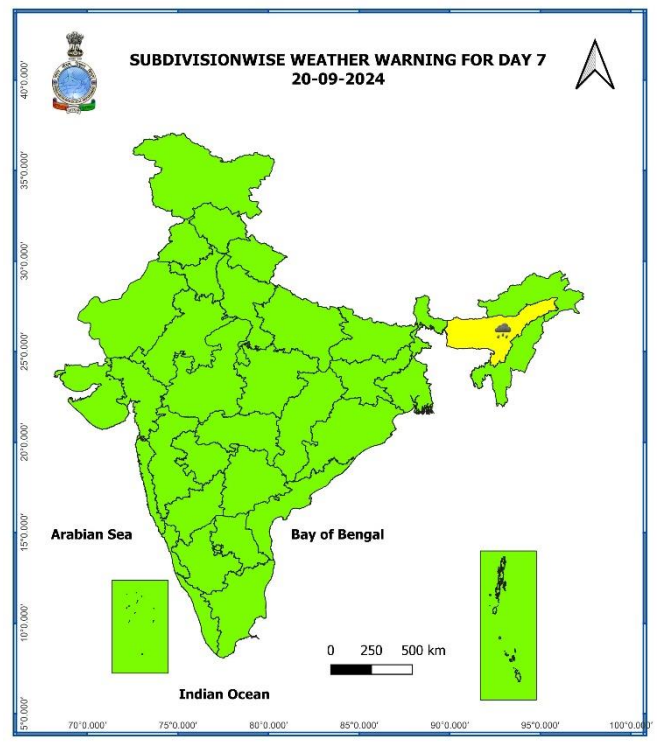
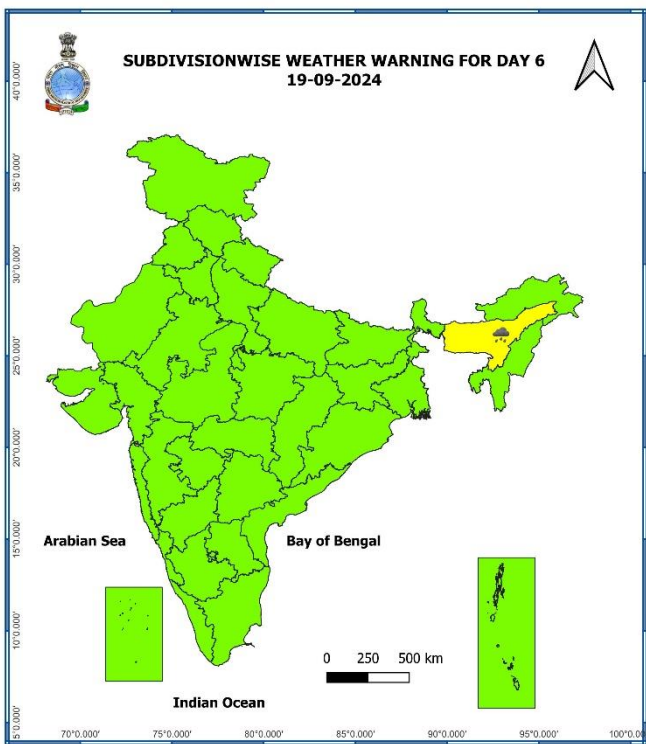
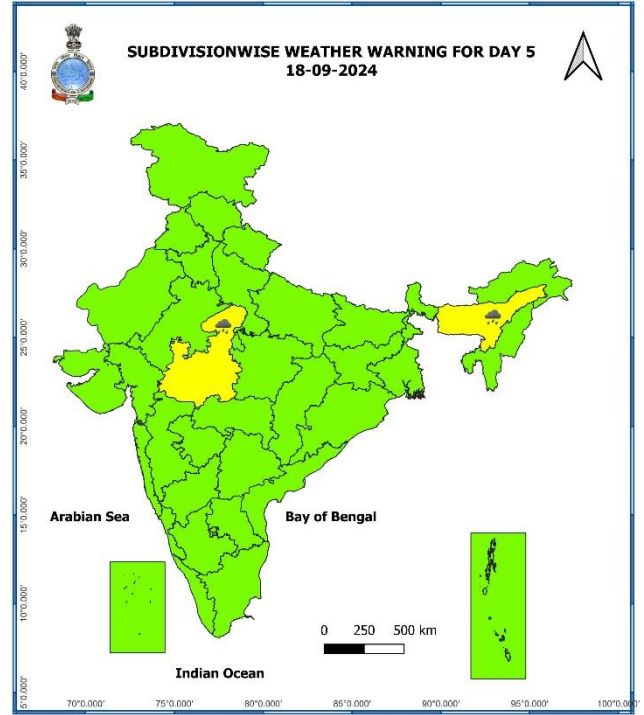
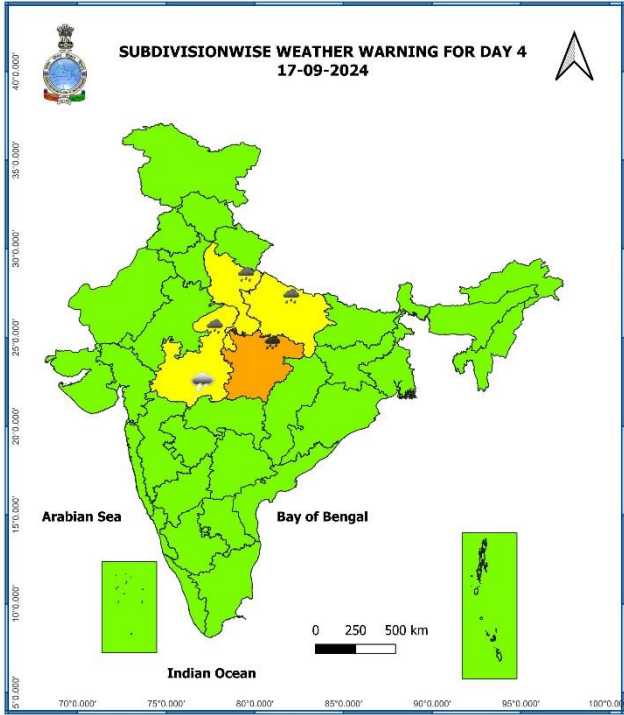
**Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 14.09.2024 (in cm):**

- ❖ **Haryana-Chandigarh:** Pataudi (dist Gurgaon) 21, Nahar Rev (dist Rewari) 13, Kosli (dist Rewari) 13, Palhawas Rev (dist Rewari) 9, Taoru (dist Nuh) 8, Faridabad (dist Faridabad) 8, Dadri (dist Charkhi Dadri) 7, Sohana (dist Gurgaon) 7, Nuh (dist Nuh) 7, Bhadkal (dist Faridabad) 7;
- ❖ **Gangetic West Bengal:** Contai (dist East Midnapore) 18, Durgachack (dist East Midnapore) 17, Digha (dist East Midnapore) 12, Bagati (dist Hooghly) 11, Sagar Island (South 24 Parganas) 11, Durgapur (dist Paschim Bardhaman) 10, Diamond Harbour (dist South 24 Parganas) 9, Panagarh (iaf) (dist Paschim Bardhaman) 9, Suri (pto) (dist Birbhum) 9, Jangipur (dist Murshidabad) 8, Dum Dum (dist North 24 Parganas) 8, Alipore (dist Kolkata) 8, Salar (dist Murshidabad) 8, Suri (cwc) (dist Birbhum) 8, Basirhat(pt) (dist North 24 Parganas) 7, Kalyani Smo (dist Nadia) 7, Berhampore (dist Murshidabad) 7, Hetampur (dist Birbhum) 7, Tilpara Barrage (dist Birbhum) 7, Mo Salt lake (dist North 24 Parganas) 7, Sri Niketan (dist Birbhum) 7, Gheropara (dist Birbhum) 7,
- ❖ **Uttarakhand:** Champawat (Champawat): 18, Haldwani (Nainital): 16, Nainital (Nainital): 15, Lohaghat (Champawat): 11, Pantnagar (Udham Singh Nagar): 9, Pithoragarh (Pithoragarh): 9, Ghansali (Tehri Garhwal): 8, Banbasa (Champawat): 7, Bhagwanpur (Haridwar): 7;
- ❖ **Odisha:** Kusumi (dist Mayurbhanj) 14, Bhograi (dist Balasore) 10, Jaleswar (dist Balasore) 7,
- ❖ **Bihar:** Beldaur (dist Khagaria) 9, Khaira (dist Jamui) 9, Lakhisarai (dist Lakhisarai) 8, Nabinagar (dist Aurangabad) 8, Halsi (dist Lakhisarai) 8, Jamui (dist Jamui) 8, Gogri (dist Khagaria) 7, Bausi (dist Banka) 7, Begusarai (dist Begusarai) 7;
- ❖ **West Uttar Pradesh:** Kasba Tanda (dist Rampur) 9, Bijnor (dist Bijnor) 8, Suar (dist Rampur) 7;
- ❖ **Himachal Pradesh:** Kataula (dist Mandi) 8, Palampur (dist Kangra) 7;
- ❖ **Delhi:** Palam (dist South West Delhi) 8, Aya Nagar (dist South Delhi) 7, Lodi Road Aws (dist New Delhi) 7;
- ❖ **Jharkhand:** Giridih Bengbad Kvk Aws (dist Giridih) 8, Bengabad (dist Giridih) 8, Sujani (dist Deoghar) 7, Pakuria (dist Pakur) 7;
- ❖ **Chhattisgarh:** Surajpur (dist Surajpur) 7;
- ❖ **Sub-Himalayan West Bengal:** Malda (dist Malda) 7;
- ❖ **East Uttar Pradesh:** Katarniaghat (dist Bahraich) 7;

7 Days Rainfall Forecast								
S. No.	Subdivision	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	FWS	FWS	FWS	WS	WS	WS	FWS
2	ARUNACHAL PRADESH	SCT	SCT	SCT	SCT	SCT	SCT	SCT
3	ASSAM & MEGHALAYA	FWS	SCT	SCT	SCT	SCT	SCT	SCT
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	FWS	FWS	SCT	SCT	FWS	FWS	FWS
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	WS	FWS	SCT	SCT	SCT	SCT	SCT
6	GANGETIC WEST BENGAL	WS	WS	FWS	SCT	SCT	SCT	SCT
7	ODISHA	WS	WS	FWS	SCT	ISOL	SCT	SCT
8	JHARKHAND	WS	WS	WS	SCT	SCT	SCT	SCT
9	BIHAR	WS	WS	FWS	SCT	ISOL	ISOL	SCT
10	EAST UTTAR PRADESH	ISOL	SCT	FWS	FWS	SCT	ISOL	ISOL
11	WEST UTTAR PRADESH	ISOL	ISOL	ISOL	SCT	SCT	ISOL	ISOL
12	UTTARAKHAND	SCT	ISOL	ISOL	SCT	SCT	SCT	SCT
13	HARYANA CHANDIGARH & DELHI	SCT	ISOL	ISOL	ISOL	SCT	SCT	ISOL
14	PUNJAB	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
15	HIMACHAL PRADESH	SCT	ISOL	ISOL	ISOL	SCT	SCT	ISOL
16	JAMMU & KASHMIR AND LADAKH	SCT	ISOL	DRY	DRY	DRY	DRY	DRY
17	WEST RAJASTHAN	ISOL	ISOL	DRY	DRY	DRY	ISOL	ISOL
18	EAST RAJASTHAN	ISOL	ISOL	ISOL	ISOL	SCT	SCT	ISOL
19	WEST MADHYA PRADESH	SCT	SCT	SCT	FWS	FWS	WS	SCT
20	EAST MADHYA PRADESH	SCT	SCT	FWS	FWS	WS	SCT	SCT
21	GUJARAT REGION	SCT	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
22	SAURASHTRA & KUTCH	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
23	KONKAN & GOA	WS	WS	WS	FWS	FWS	FWS	FWS
24	MADHYA MAHARASHTRA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
25	MARATHAWADA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	SCT
26	VIDARBHA	ISOL	ISOL	ISOL	SCT	SCT	SCT	SCT
27	CHHATTISGARH	FWS	WS	FWS	SCT	SCT	SCT	SCT
28	COASTAL ANDHRA PRADESH & YANAM	ISOL	ISOL	ISOL	ISOL	ISOL	SCT	SCT
29	TELANGANA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
30	RAYALASEEMA	DRY	DRY	DRY	DRY	DRY	ISOL	ISOL
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
32	COASTAL KARNATAKA	FWS	FWS	FWS	FWS	FWS	SCT	SCT
33	NORTH INTERIOR KARNATAKA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
34	SOUTH INTERIOR KARNATAKA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
35	KERALA & MAHE	FWS	SCT	SCT	SCT	SCT	SCT	SCT
36	LAKSHADWEEP	FWS	SCT	SCT	SCT	SCT	SCT	SCT

- As the lead period increases forecast accuracy decreases.





- 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 Gangetic West Bengal & north Odisha on 14<sup>th</sup>; Jharkhand on 14<sup>th</sup> & 15<sup>th</sup>; Chhattisgarh on 15<sup>th</sup>; East Madhya Pradesh on 16<sup>th</sup> September.
- ✓ **Very heavy rainfall** at isolated places over Chhattisgarh on 14<sup>th</sup>; Bihar and Odisha on 14<sup>th</sup> & 15<sup>th</sup>; East Madhya Pradesh during 15<sup>th</sup> -17<sup>th</sup> September.
- ✓ **Moderate flash flood risk** likely over few watersheds & neighbourhoods of Bihar, Odisha, Gangetic West Bengal, Jharkhand on 14<sup>th</sup> & 15<sup>th</sup> September. (**ANNEXURE IV**)

## Impact Expected

- ✓ Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- ✓ Occasional reduction in visibility due to heavy rainfall.
- ✓ Disruption of traffic in major cities and roadways due to water logging in roads leading to increased travel time.
- ✓ Minor damage to kutcha roads.
- ✓ Possibilities of damage to vulnerable structure.
- ✓ Localized Landslides/Mudslides/landslips/mud slips/land sinks/mud sinks.
- ✓ Damage to horticulture and standing crops in some areas due to inundation and wind.
- ✓ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

## Action Suggested

- ✓ Judicious regulation of surface transports including railways and roadways.
- ✓ Check for traffic congestion on your route before leaving for your destination.
- ✓ Follow any traffic advisories that are issued in this regard.
- ✓ Avoid going to areas that face the water logging problems often.
- ✓ Avoid staying in vulnerable structure

## Agromet advisories for Heavy Rainfall likely over various parts of the country

- Drain out excess water from rice, groundnut, brinjal, cucurbits and betel vine gardens in **Gangetic West Bengal**; from maize, green gram, black gram, rice, vegetables and other standing crops in **Odisha**; from pulse crops and vegetables in **Jharkhand**; from maize, pulses and millets in **Chhattisgarh**; from rice, maize, soybean, finger millet, pigeon pea and vegetables in **Uttarakhand** to prevent water logging.
- Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Arunachal Pradesh, Assam & Meghalaya, NMMT, Bihar and East Madhya Pradesh.
- 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 15-09-2024:**

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

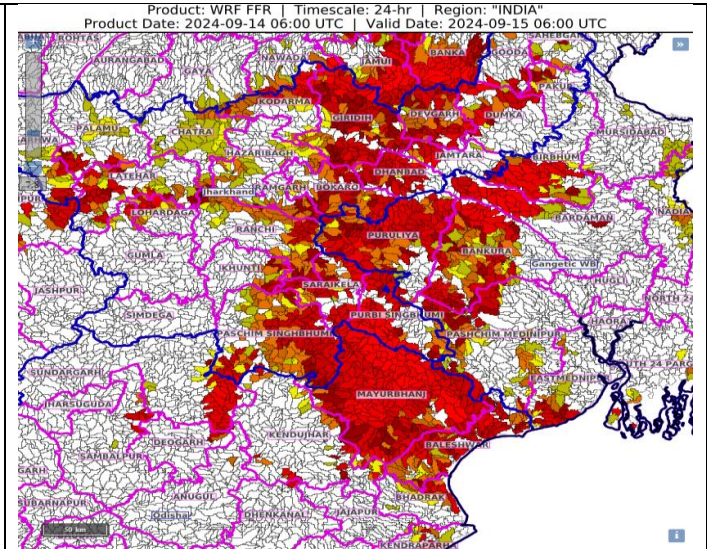
**Bihar** - Banka, Jamui, Lakhisarai and Munger districts.

**Odisha** - Baleshwar, Bhadrak, Kendraparha, Kendujhar, Mayurbhanj and Sundargarh districts.

**Gangetic West Bengal** - Bankura, Bardaman, Birbhum, East mednipur, Pashchim Medinipur and Puruliya districts.

**Jharkhand** - Bokaro, Chatra, Deoghar, Dhanbad, Dumka, East Singhbhum, Garhwa, Giridih, Godda, Hazaribagh, Jamtara, Khunti, Koderma, Latehar, Lohardaga, Pakur, Palamu, Ramgarh, Ranchi, Sahebganj, Saraikela and West Singhbhum districts.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over area of concern as shown in map due to expected rainfall occurrence in next 24 hours.

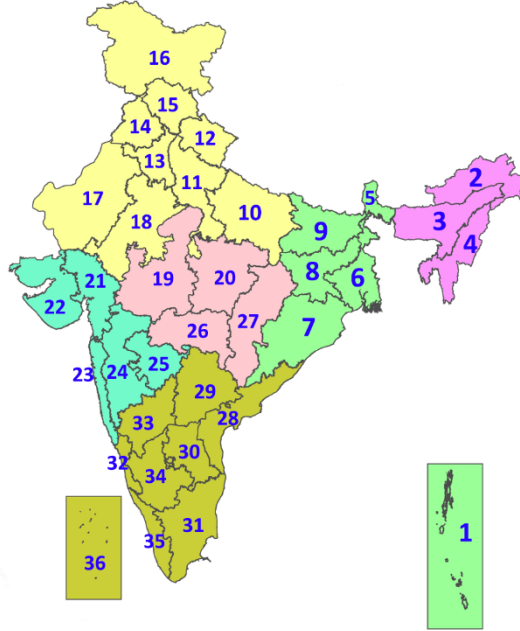
**Legends & abbreviations:**

- ❖ **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome, **IAF:** Indian Air Force.
- ❖ **Region wise classification of meteorological Sub-Divisions:**
  - **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
  - **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
  - **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
  - **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
  - **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathawada.
  - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.



## 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

\* 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)

## 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 Storm: Wind speed  $> 220$  kmph ( $> 119$  knots)

\* 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)