



Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 03<sup>rd</sup> July, 2024

Time of Issue: 1320 hours IST

**Subject: Heavy to very heavy rainfall spell likely over Northwest & East India and very heavy to extremely heavy rainfall over Northeast India during next 4-5 days.**

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

- ❖ **Heavy to very heavy rainfall with extremely heavy falls occurred** at isolated places over Gujarat Region, East Uttar Pradesh, Bihar; **Heavy to very heavy rainfall** at isolated places over West Uttar Pradesh, East Rajasthan, Himachal Pradesh; Heavy rainfall at isolated places over Haryana, Konkan & Goa, Madhya Maharashtra, Odisha and Vidarbha.
- ❖ **Gusty winds/squally winds** data reported over the country is attached in [Annexure II](#).

**Weather Systems and Forecast & Warnings: (Annexure III)**

- ❖ The monsoon trough is north of its normal position at mean sea level and a cyclonic circulation lies over Himachal Pradesh and a trough runs from southeast Pakistan to Bangladesh at lower tropospheric levels. Under their influence;
  - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning very likely over Northwest and Central India during next 5 days.
  - ✓ Isolated heavy rainfall very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Haryana-Chandigarh during 04<sup>th</sup> – 07<sup>th</sup>; Punjab, East Rajasthan during 03<sup>rd</sup> – 07<sup>th</sup>; West Madhya Pradesh during 03<sup>rd</sup> – 05<sup>th</sup> East Madhya Pradesh on 03<sup>rd</sup> & 04<sup>th</sup> and over Chhattisgarh on 03<sup>rd</sup> July.
  - ✓ **Isolated very heavy rainfall likely over Himachal Pradesh, Haryana-Chandigarh on 3<sup>rd</sup>, Uttarakhand on 07<sup>th</sup>, Uttar Pradesh during 03<sup>rd</sup> – 07<sup>th</sup> July.**
  - ✓ **Isolated extremely heavy rainfall very likely over Uttarakhand during 03<sup>rd</sup> – 06<sup>th</sup> July.**
- ❖ A cyclonic circulation lies over Manipur and a trough runs from from northeast Madhya Pradesh to Manipur, in lower tropospheric levels. Another cyclonic circulation over Bangladesh in lower and middle tropospheric levels. Under the influence of these systems;
  - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning very likely over East & Northeast India during next 5 days.
  - ✓ Isolated **heavy rainfall** very likely over Andaman & Nicobar Islands on 04<sup>th</sup> & 05<sup>th</sup>; Sub-Himalayan West Bengal & Sikkim on 07<sup>th</sup>; Odisha during 03<sup>rd</sup>–07<sup>th</sup>; Gangetic West Bengal, Jharkhand on 04<sup>th</sup>, Bihar, Nagaland, Manipur, Mizoram & Tripura on 06<sup>th</sup> & 07<sup>th</sup> July.
  - ✓ **Isolated very heavy rainfall likely over Sub-Himalayan West Bengal & Sikkim during 03<sup>rd</sup> – 06<sup>th</sup>; Gangetic West Bengal on 03<sup>rd</sup>; Bihar during 03<sup>rd</sup> – 05<sup>th</sup>, Jharkhand on 03<sup>rd</sup>, Arunachal Pradesh on 03<sup>rd</sup>, 04<sup>th</sup> & 07<sup>th</sup>; Assam & Meghalaya on 03<sup>rd</sup> & 07<sup>th</sup>; Nagaland, Manipur, Mizoram & Tripura during 03<sup>rd</sup> – 05<sup>th</sup>.**

- ✓ **Isolated extremely heavy rainfall very likely over Arunachal Pradesh on 05th & 06th; Assam & Meghalaya during 04th – 06th July.**
- ❖ A cyclonic circulation lies over Gujarat in middle tropospheric levels. The off-shore trough at mean sea level runs along south Gujarat- Kerala coasts. Under their influence:
  - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Kerala & Mahe, Lakshadweep, Coastal Karnataka, Konkan & Goa, Gujarat State; scattered to fairly widespread light to moderate rainfall over Madhya Maharashtra, Coastal Andhra Pradesh & Yanam and Interior Karnataka; isolated to scattered light to moderate rainfall over Marathwada, Tamil Nadu, Puducherry & Karaikal, Rayalaseema, Telangana during next 5 days.
  - ✓ Isolated **heavy rainfall** very likely over Konkan & Goa, Kerala & Mahe, Karnataka State during 03<sup>rd</sup> – 07<sup>th</sup>; Madhya Maharashtra on 03<sup>rd</sup> & 04<sup>th</sup>; Saurashtra & Kutch on 03<sup>rd</sup>; Gujarat Region on 04<sup>th</sup> & 05<sup>th</sup> July.
  - ✓ **Isolated very heavy rainfall very likely over Gujarat Region on 03<sup>rd</sup> and over Ghat areas of Madhya Maharashtra during 05<sup>th</sup> – 07<sup>th</sup> July.**

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)

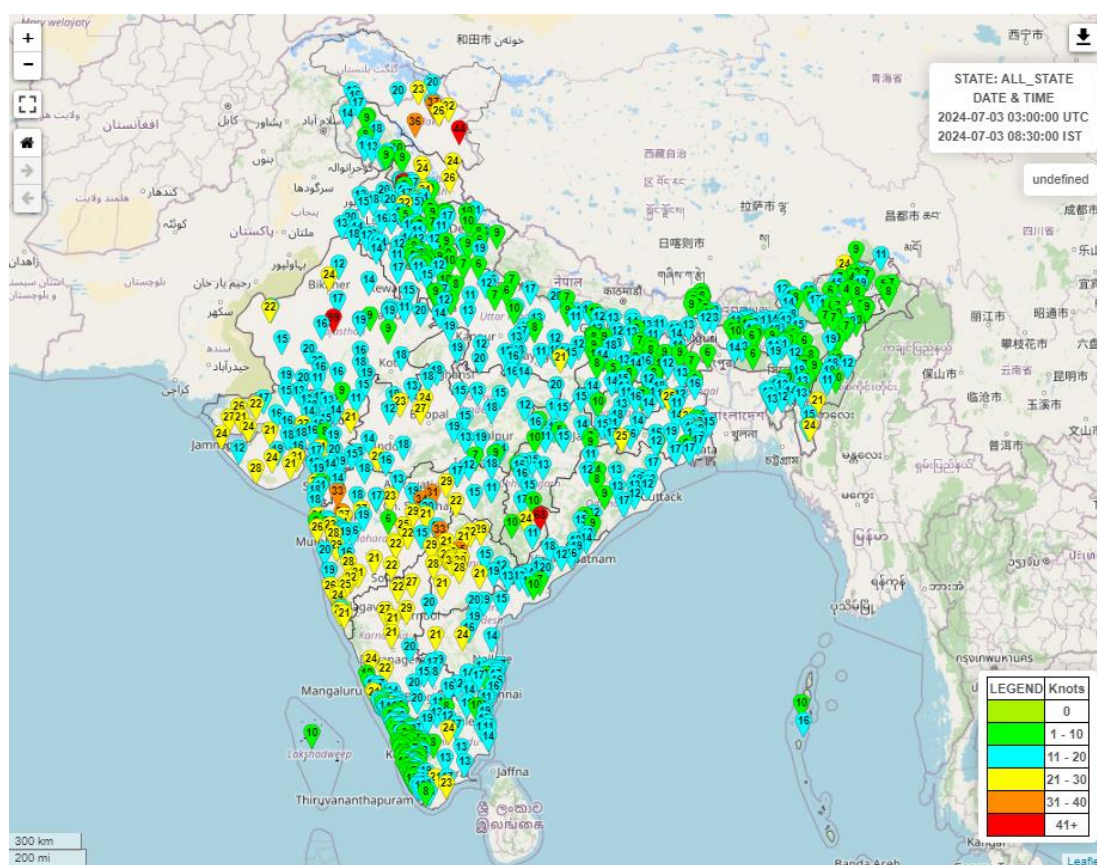
**Significant Rainfall during past 24 hours till 0830 hours IST of today (in cm):**

- ❖ **Gujarat Region:** Lakhani (dist Banaskantha) 27, Mahesana (dist Mehsana) 10, Becharaji (dist Mehsana) 10, Chikhli (dist Navsari) 9, Dantiwada (dist Banaskantha) 9, Wav (dist Banaskantha) 8, Suigam (dist Banaskantha) 8, Modasa (dist Aravalli) 7, Waghai (dist Dangs) 7;
- ❖ **East Uttar Pradesh:** Basti Cwc (dist Basti) 24, Fatehpur Tehsil (dist Barabanki) 20, Mukhlispur (dist Gorakhpur) 15, Ghanghata (dist Sant Kabir Nagar) 15, Nichlaul (dist Maharajganj) 15, Gaighat (Bla Fmo) (dist Ballia) 12, Muhammadi (dist Kheri) 12, Bansgaon (dist Gorakhpur) 11, Maharajganj (dist Maharajganj) 11, Mehdawal (dist Sant Kabir Nagar) 11;
- ❖ **Bihar:** Barharia (dist Siwan) 23, Ramnagar (dist West Champaran) 22, Baltara (dist Khagaria) 19, Kucchaikot (dist Gopalganj) 17, Bhore (dist Gopalganj) 15, Raghunathpur (dist Siwan) 15, Salakhua (dist Saharsa) 15, Nautan (dist Siwan) 14, Motipur (dist Muzaffarpur) 14, Gopalganj (dist Gopalganj) 14, Mohanpur (dist Samastipur) 13, Ziradei (dist Siwan) 13, Arrah (dist Bhojpur) 13, Katihar (dist Katihar) 13, Bagaha (dist West Champaran) 12, Madhubani (dist West Champaran) 12, Sikta (dist West Champaran) 12, Motihari (dist East Champaran) 12, Thawe (dist Gopalganj) 11, Jalalpur (dist Saran) 11, Khagadia (dist Khagaria) 11, Fatehpur (dist Gaya) 11, Chautham (dist Khagaria) 10, Hathwa (dist Gopalganj) 10, Siswan (dist Siwan) 10;
- ❖ **West Uttar Pradesh:** Nagina (dist Bijnor) 16, Baheri (dist Bareilly) 13, Shahjahapur Obsy (dist Shahjahanpur) 13, Dhampur (dist Bijnor) 13, Nawabganj (dist Bareilly) 12, Moradabad (dist Moradabad) 11;
- ❖ **Himachal Pradesh:** Kataula (dist Mandi) 15, Pandoh (dist Mandi) 11, Sujanpur Tira (dist Hamirpur) 8;
- ❖ **East Rajasthan:** Dhambola (dist Dungarpur) 13, Sagwara (dist Dungarpur) 10, Veja Sr (dist Dungarpur) 6, Pipalkhunt Sr (dist Pratapgarh) 3;
- ❖ **Madhya Maharashtra:** Ajra (dist Kolhapur) 11, Gaganbawada (dist Kolhapur) 9, Shahuwadi (dist Kolhapur) 8, Patan (dist Satara) 7, Chandgad (dist Kolhapur) 7;
- ❖ **Punjab:** Ludhiana (dist Ludhiana) 9, Mohali Aws (dist Sas Nagar (mohali)) 5;
- ❖ **Konkan & Goa:** Valpoi (dist North Goa) 8, Vaibhavwadi (dist Sindhudurg) 6;
- ❖ **Odisha:** Atabira (Bargarh) 8, Banspal (Keonjhar) 7, Barkote (Deogarh) 7;
- ❖ **Vidarbha:** Desaiganj (dist Gadchiroli) 7, Kurkheda (dist Gadchiroli) 4,
- ❖ **Haryana:** Chandigarh (dist Chandigarh) 7, Chandigarh Aws (dist Chandigarh) 6, Tajewala (dist Yamuna Nagar) 6;
- ❖ **Assam & Meghalaya:** Mawsynram (dist East Khasi Hills) 6, Bhaghmara (dist South Garo Hills) 6;
- ❖ **Nagaland, Manipur, Mizoram & Tripura:** Bishnupur\_ Aws (dist Bishnupur) 9;

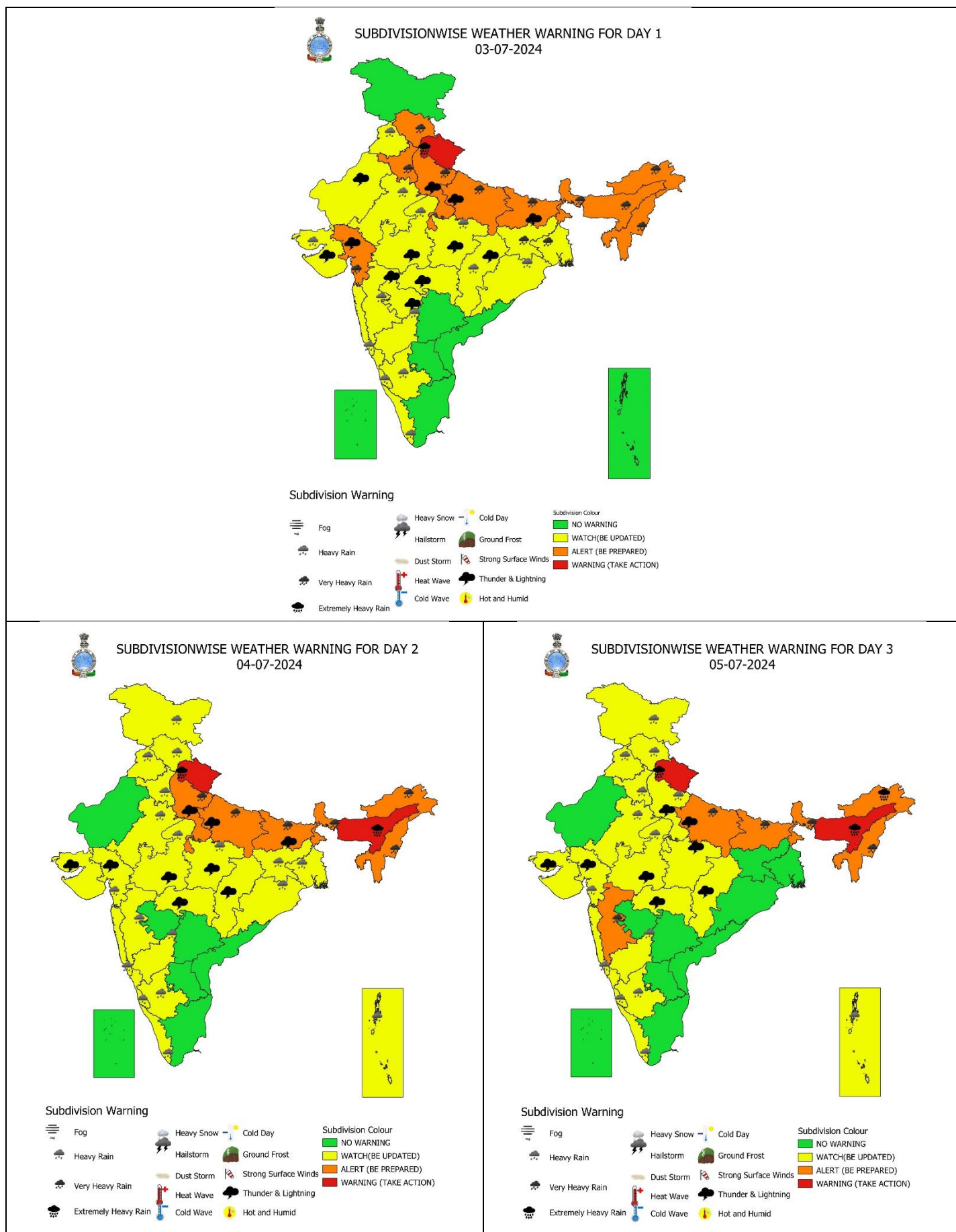
### Reported maximum wind speed (in kmph) during past 24 hours till 0830 hours IST of today:

- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Leh 68, Kargil 67, Leh 48;
- ❖ **Telangana:** Siddipet 65, Nizamabad 61, Ranga\_Reddy 55, Hyderabad 54, Vikarabad, Sangareddy 52;
- ❖ **Maharashtra:** Hingoli 63, Nashik 61, Pune 59, Yavatmal 37, Yavatmal, Satara 54, Sindhudurg, Raigad 48 each;
- ❖ **West Bengal:** South\_Twenty\_Four\_Parganas 59, Hooghly 44;
- ❖ **Karnataka:** Bidar, Koppal 54 each, Yadgir, Gadag 50;
- ❖ **Kerala:** Wayanad 52;
- ❖ **Gujarat State:** Gir Somnath 52, Ahmedabad, Kachchh 50 each, Dwarka, Amreli 44 each;
- ❖ **Madhya Pradesh:** Sehore 50, Shajapur 42;
- ❖ **Himachal Pradesh:** Kinnaur 48, Kullu, Lahual\_And\_Spiti 34 each;
- ❖ **Jharkhand:** Kiriburu 46;
- ❖ **Andhra Pradesh:** Kadapa 44;
- ❖ **Tamil Nadu:** Karur 44, Thoothukudi 42;

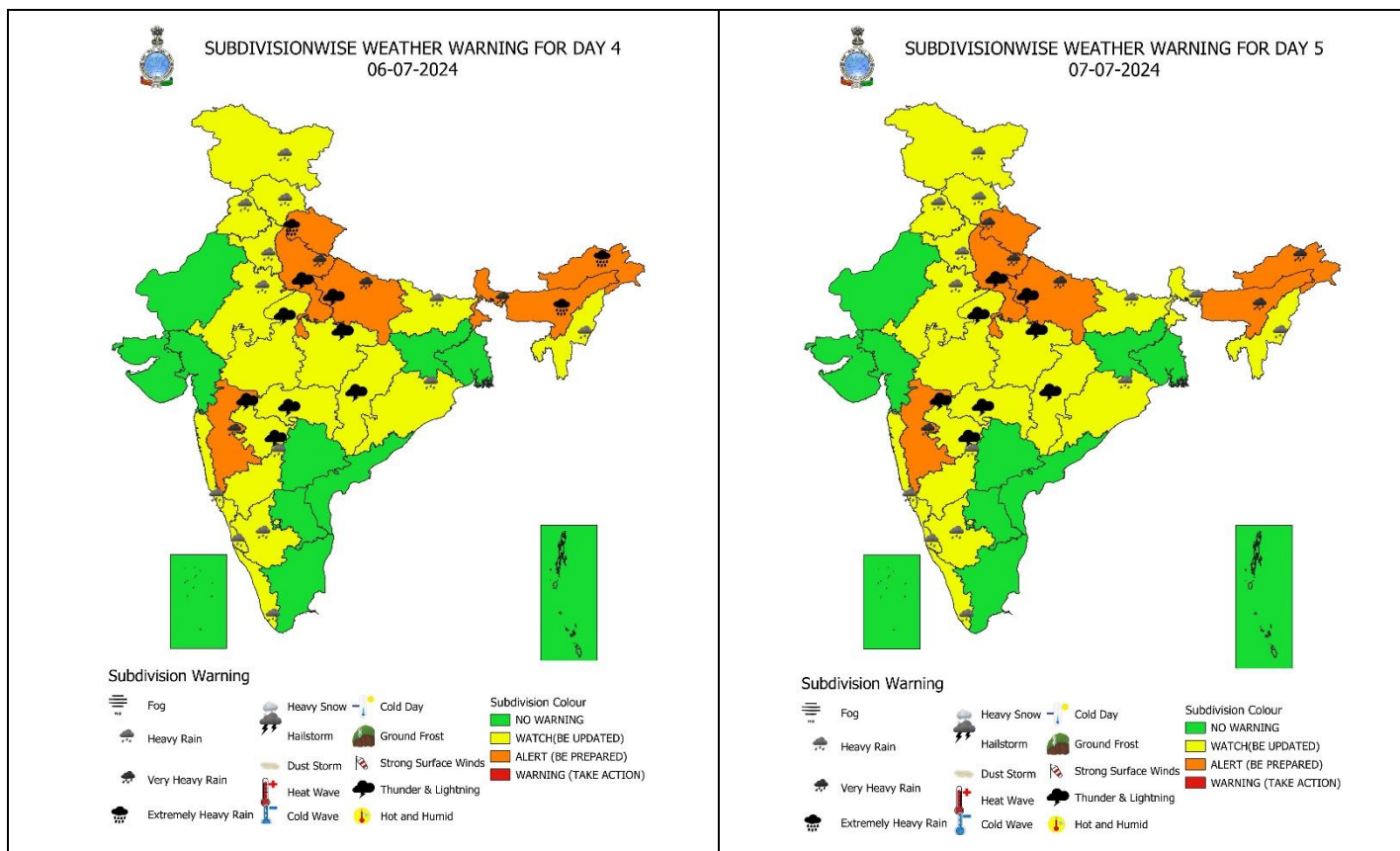
**Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 02.07.2024 to 0830 hrs IST of 03.07.2024**



For more details, kindly refer: <http://aws.imd.gov.in:8091/>







### IMPACT & ACTION SUGGESTED due to

- **Isolated extremely heavy rainfall very likely over Uttarakhand during 03rd – 06th; Arunachal Pradesh on 05th & 06th; Assam & Meghalaya during 04th – 06th July.**
- **Isolated very heavy rainfall very likely over Himachal Pradesh, Haryana-Chandigarh, Gangetic West Bengal, Jharkhand, Gujarat Region on 3rd, Uttarakhand on 07th, West Uttar Pradesh during 03rd – 07th; over Sub-Himalayan West Bengal & Sikkim during 03rd – 06th; Bihar, Nagaland, Manipur, Mizoram & Tripura during 03rd – 05th; Arunachal Pradesh on 03rd, 04th & 07th; Assam & Meghalaya on 03rd & 07th; Madhya Maharashtra during 05th – 07th July.**
- 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 due to water logging in roads leading to increased travel time.
- Minor damage to kutchha roads.
- Possibilities of damage to vulnerable structure.
- Localized Landslides/Mudslides/landslips/mud slips/landsinks/mudsinks.
- 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

- 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, Gusty winds and Heat Wave likely over various parts of the country:

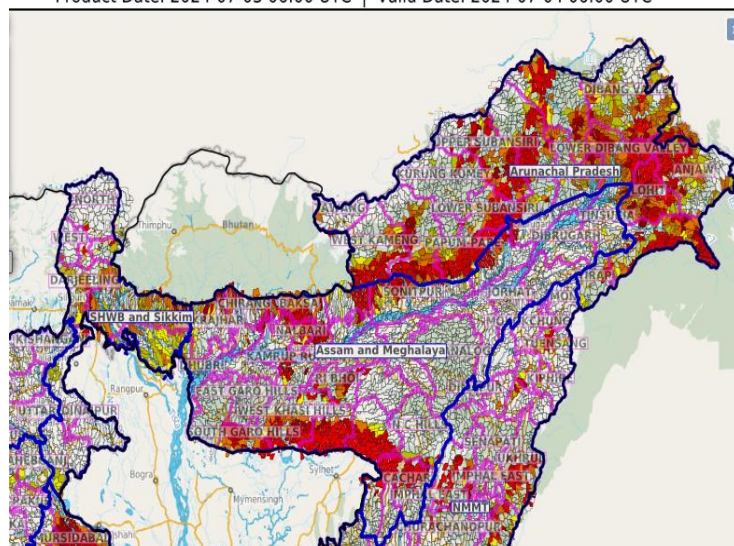
- Make provision for draining out excess water from crop fields to avoid water stagnation in North Eastern States, West Bengal & Sikkim, Bihar, Jharkhand, Odisha, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Gujarat State, Kerala and Karnataka.
- Postpone nursery sowing of *Sali* rice in Assam; sowing of millets and transplanting of *Sali* rice in Meghalaya; sowing of *kharif* maize and transplanting of rice in Uttarakhand.
- Provide mechanical support to horticultural crops & staking to vegetables.

### 24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 04-07-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Arunachal Pradesh, southern and western parts of Assam & Meghalaya adjoining SHWB & Sikkim Met Sub-divisions during next 24 hours.

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.

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Product Date: 2024-07-03 06:00 UTC | Valid Date: 2024-07-04 06:00 UTC

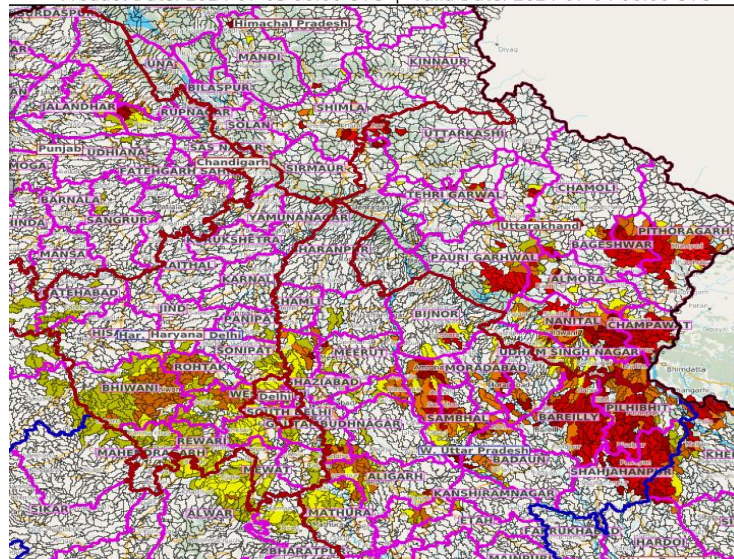


### 24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 04-07-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Haryana - Chandigarh, Uttarakhand and West Uttar Pradesh Met Sub-divisions during next 24 hours.

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.

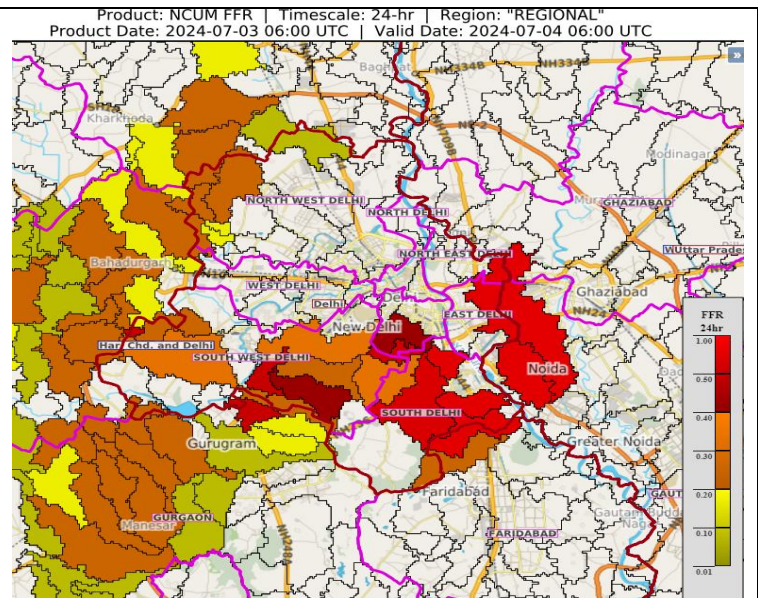
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24 hours Outlook for the Urban Flood Risk (FFR) till 1130 IST of 04-07-2024:

Low to Moderate urban flood risk likely over few watersheds & neighbourhoods of Delhi state during next 24 hours.

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.





### 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; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome.
- ❖ **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.

| 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)               |



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













## LEGENDS

### WARNING

|                         |
|-------------------------|
| WARNING (TAKE ACTION)   |
| ALERT ( BE PREPARED)    |
| WATCH (BE UPDATED)      |
| NO WARNING ( NO ACTION) |

### Probabilistic Forecast

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

|   |   |
|---|---|
| <br><b>Rain/ Snow *</b>      | <b>Heavy:</b> 64.5 to 115.5 mm/cm *<br><b>Very Heavy:</b> 115.6 to 204.4 mm/cm*<br><b>Extremely Heavy:</b> > 204.4 mm/cm *  |
| <br><b>Heat Wave</b>         | <p>When maximum temperature of a station reaches <math>\geq 40^{\circ}\text{C}</math> for plains and <math>\geq 30^{\circ}\text{C}</math> for hilly regions</p> <p><b>(a) Based on Departure from normal</b></p> <p><b>Heat Wave:</b> Maximum Temperature Departure from normal <math>4.5^{\circ}\text{C}</math> to <math>6.4^{\circ}\text{C}</math>.<br/> <b>Severe Heat Wave:</b> Maximum Temperature Departure from normal <math>\geq 6.5^{\circ}\text{C}</math></p> <p><b>(b). Based on Actual maximum temperature</b></p> <p><b>Heat Wave:</b> When actual maximum temperature <math>\geq 45^{\circ}\text{C}</math>.<br/> <b>Severe Heat Wave:</b> When actual maximum temperature <math>\geq 47^{\circ}\text{C}</math></p> <p><b>( c). Criteria for heat wave for coastal stations</b><br/>           When maximum temperature departure is <math>&gt; 4.5^{\circ}\text{C}</math> from normal. Heat Wave may be described provided maximum temperature <math>\geq 37^{\circ}\text{C}</math></p> |
| <br><b>Warm Night</b>        | <p><b>When maximum temperature remains <math>40^{\circ}\text{C}</math></b></p> <p><b>Warm Night:</b> When minimum temperature departure <math>4.5^{\circ}\text{C}</math> to <math>6.4^{\circ}\text{C}</math>.<br/> <b>Severe Warm Night:</b> When minimum temperature departure <math>&gt; 6.4^{\circ}\text{C}</math>.</p>  |
| <br><b>Cold Wave</b>         | <p>When minimum temperature of a station <math>\leq 10^{\circ}\text{C}</math> for plains and <math>\leq 0^{\circ}\text{C}</math> for hilly regions.</p> <p><b>(a). Based on departure</b></p> <p><b>Cold Wave:</b> Minimum Temperature Departure from normal <math>-4.5^{\circ}\text{C}</math> to <math>-6.4^{\circ}\text{C}</math>.<br/> <b>Severe Cold Wave:</b> Minimum Temperature Departure from normal <math>\leq -6.5^{\circ}\text{C}</math></p> <p><b>(b) Based on actual Minimum Temperature (for Plains only)</b></p> <p><b>Cold Wave :</b> When Minimum Temperature is <math>\leq 4.0^{\circ}\text{C}</math><br/> <b>Severe Cold Wave:</b> When Minimum Temperature is <math>\leq 2.0^{\circ}\text{C}</math></p> <p><b>( c) For Coastal Stations</b><br/>           When Minimum Temperature departure is <math>\leq -4.5^{\circ}\text{C}</math> &amp; actual Minimum Temperature is <math>\leq 15^{\circ}\text{C}</math></p>  |
| <br><b>Cold Day</b>         | <p>When minimum temperature of a station <math>\leq 10^{\circ}\text{C}</math> for plains and <math>\leq 0^{\circ}\text{C}</math> for hilly regions</p> <p><b>Based on departure</b></p> <p><b>Cold Day:</b> Maximum Temperature Departure from normal <math>-4.5^{\circ}\text{C}</math> to <math>-6.4^{\circ}\text{C}</math>.<br/> <b>Severe Cold Day:</b> Maximum Temperature Departure from normal <math>\leq -6.5^{\circ}\text{C}</math></p>   |
| <br><b>Fog</b>             | <p><b>Phenomenon of small droplets suspended in air and the horizontal visibility &lt; 1km</b></p> <p><b>Moderate Fog:</b> When the visibility between 500-200 metres<br/> <b>Dense Fog:</b> when the visibility between 50- 200 metres<br/> <b>Very Dense Fog:</b> when the visibility &lt; 50 metres</p>  |
| <br><b>Thunderstorm</b>    | <p>Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)</p>   |
| <br><b>Dust/Sand Storm</b> | <p>An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.</p>   |
| <br><b>Frost</b>           | <p><b>Ice deposits on ground</b></p> <p>Air temperature <math>\leq 4^{\circ}\text{C}</math> ( over Plains)</p>  |
| <br><b>Squall</b>          | <p><b>A strong wind that rises suddenly, lasts for atleast 1 minute.</b></p> <p><b>Moderate:</b> Wind speed 52-61 kmph<br/> <b>Severe:</b> Wind speed 62-87 kmph<br/> <b>Very Severe:</b> Wind speed <math>&gt; 87</math> kmph</p>  |
| <br><b>Sea State</b>       | <p><b>Effect of various waves in the sea over specific area</b></p> <p><b>Rough to very rough:</b> Wind speed 41-62 kmph (22-33 knots) &amp; Wave height 2.5-6 metre<br/> <b>High to very high:</b> Wind speed 63-117 kmph ( 34-63 knots) &amp; Wave height 6-14 metre<br/> <b>Phenomenal:</b> Wind speed <math>&gt; 117</math> kmph (<math>&gt; 63</math> knots) &amp; Wave height <math>&gt; 14</math> metre</p>  |
| <br><b>Cyclone</b>         | <p><b>Cyclonic Storm:</b> Wind speed 62-87 kmph (34-47 knots)<br/> <b>Severe Cyclonic Storm:</b> Wind speed 88-117 kmph (48-63 knots)<br/> <b>Very Severe Cyclonic Storm:</b> Wind speed 118-165 kmph (64 - 89 knots)<br/> <b>Extremely Severe Cyclonic Storm:</b> Wind speed 166-220 kmph (90 -119 knots)<br/> <b>Super Cyclone Strom:</b> Wind speed <math>&gt; 220</math> kmph (<math>&gt; 119</math> knots)</p>   |