



Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 04<sup>th</sup> July, 2024

Time of Issue: 1335 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 Coastal and South interior Karnataka, East Uttar Pradesh and **Very heavy rainfall** at isolated places over Kerala & Mahe, Konkan & Goa, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, West Uttar Pradesh ; **Heavy rainfall** at isolated places over Arunachal Pradesh, Assam & Meghalaya, Kerala & Mahe, North Interior Karnataka, Andaman & Nicobar Islands, West Bengal & Sikkim, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Haryana, Delhi, Punjab, East Rajasthan, Gujarat Region.
- ❖ **Gusty winds/squally winds** data reported over the country is attached in **Annexure II**.

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

- ❖ Monsoon trough is near normal position at mean sea level and a cyclonic circulation lies over southeast Pakistan 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 on 04<sup>th</sup> & 06<sup>th</sup>; Himachal Pradesh on 06<sup>th</sup> & 07<sup>th</sup>; Uttarakhand on 08<sup>th</sup>; Punjab on 04<sup>th</sup>, 06<sup>th</sup> & 07<sup>th</sup>; Haryana-Chandigarh during 04<sup>th</sup>- 06<sup>th</sup>; Uttar Pradesh during 04<sup>th</sup> – 08<sup>th</sup>, West Rajasthan, Vidarbha on 04<sup>th</sup>; East Rajasthan on 05<sup>th</sup> & 06<sup>th</sup>; West Madhya Pradesh on 05<sup>th</sup>; East Madhya Pradesh on 04<sup>th</sup> & 05<sup>th</sup>; Chhattisgarh on 04<sup>th</sup>, 07<sup>th</sup> & 08<sup>th</sup> July.
  - ✓ **Isolated very heavy rainfall likely over Jammu Division on 05<sup>th</sup>; over Himachal Pradesh on 04<sup>th</sup> & 05<sup>th</sup>; over Uttarakhand during 04<sup>th</sup> – 07<sup>th</sup>; Punjab on 05<sup>th</sup>; Uttar Pradesh on 05<sup>th</sup> & 06<sup>th</sup>; East Rajasthan on 04<sup>th</sup>; West Madhya Pradesh on 04<sup>th</sup> July.**
- ❖ A cyclonic circulation lies over northeast Rajasthan and a trough runs from northeast Rajasthan to Bangladesh and a trough runs roughly along Long. 93°E to the north of Lat. 24°N in lower tropospheric levels. Another cyclonic circulation lies over west Jharkhand in lower & 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 Gangetic West Bengal on 04<sup>th</sup>; Andaman & Nicobar Islands on 04<sup>th</sup> & 05<sup>th</sup>; ; Jharkhand on 04<sup>th</sup> & 05<sup>th</sup>; Odisha on 04<sup>th</sup>, 06<sup>th</sup> & 08<sup>th</sup>; Bihar during 06<sup>th</sup>-08<sup>th</sup>; Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura on 07<sup>th</sup>& 08<sup>th</sup> and Assam & Meghalaya on 08<sup>th</sup> July.

- ✓ **Isolated very heavy rainfall likely over Bihar on 04<sup>th</sup> & 05<sup>th</sup>, Sub-Himalayan West Bengal & Sikkim during 04<sup>th</sup> – 06<sup>th</sup>, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura on 06<sup>th</sup>; Assam & Meghalaya on 06<sup>th</sup> & 07<sup>th</sup> and over Odisha on 07<sup>th</sup> July.**
- ✓ **Isolated extremely heavy rainfall very likely over Arunachal Pradesh and Assam & Meghalaya on 04<sup>th</sup> & 05<sup>th</sup> July.**
- ❖ A cyclonic circulation lies over south Gujarat in middle tropospheric levels. The off-shore trough at mean sea level runs along south Gujarat- Karnataka coasts. Under the influence of these systems;
  - ✓ 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, Marathwada Coastal Andhra Pradesh & Yanam and Interior Karnataka; isolated to scattered light to moderate rainfall over Tamil Nadu, Puducherry & Karaikal, Rayalaseema, Telangana during next 5 days.
  - ✓ Isolated **heavy rainfall** very likely over Konkan & Goa on 07<sup>th</sup> & 08<sup>th</sup>, Gujarat Region on 05<sup>th</sup>, Tamil Nadu, Puducherry & Karaikal on 04<sup>th</sup>; Kerala & Mahe during 04<sup>th</sup> – 08<sup>th</sup>; Coastal Andhra Pradesh & Yanam, Telangana on 07<sup>th</sup> & 08<sup>th</sup>; Coastal Karnataka on 08<sup>th</sup>; South Interior Karnataka on 05<sup>th</sup> & 08<sup>th</sup> July.
  - ✓ **Isolated very heavy rainfall very likely over Konkan & Goa during 04<sup>th</sup> – 06<sup>th</sup>; Madhya Maharashtra during 04<sup>th</sup> – 08<sup>th</sup>; Saurashtra & Kutch on 04<sup>th</sup>; Coastal Karnataka during 04<sup>th</sup> – 07<sup>th</sup>; South Interior Karnataka on 04<sup>th</sup>, 06<sup>th</sup> & 07<sup>th</sup> July.**
  - ✓ **Isolated extremely heavy rainfall very likely over south Gujarat Region today.**

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):**

- ❖ **South Interior Karnataka:** Agumbe Emo (dist Shivamogga) 25, Kammardi (dist Chikkamagaluru) 20, Linganamakki Hms (dist Shivamogga) 19, Sringeri Hms (dist Chikkamagaluru) 15, Bhagamandala (dist Kodagu) 11, Koppa (dist Chikkamagaluru) 10, Jayapura (dist Chikkamagaluru) 10, Hunchadakatte (dist Shivamogga) 10, Kottigehara (dist Chikkamagaluru) 10, Kalasa (dist Chikkamagaluru) 9;
- ❖ **Coastal Karnataka:** Gersoppa (dist Uttara Kannada) 24, Siddapura (dist Udupi) 23, Kadra (dist Uttara Kannada) 15, Siddapur (dist Uttara Kannada) 15, Kundapur (dist Udupi) 13, Manki (dist Uttara Kannada) 12, Karkala (dist Udupi) 11, Shirali Pto (dist Uttara Kannada) 11, Kumta (dist Uttara Kannada) 10, Honavar Obsy (dist Uttara Kannada) 10, Dharmasthala (dist Dakshina Kannada) Ankola (dist Uttara Kannada) 9, Gokarna (dist Uttara Kannada) 9;
- ❖ **East Uttar Pradesh:** Ramnagar (dist Barabanki) 21, Bhanpur (dist Basti) 17, Rudhauri (dist Basti) 17, Fatehpur Tehsil (dist Barabanki) 12, Ghanghata (dist Sant Kabir Nagar) 11, Hardoi Teh (dist Hardoi) 11, Pharenda (dist Maharajganj) 10, Hardoi Obsy (dist Hardoi) 10, Bansi Tehsil (dist Siddharth Nagar) 10, Palliakalan (dist Kheri) 9, Ballia Obsy (dist Ballia) 9, Bansi Cwc (dist Siddharth Nagar) 8, Uska Bazar Fmo (dist Siddharth Nagar) 8, Azamgarh (dist Azamgarh) 8, Regoli (dist Gorakhpur) 8, Varanasi/bab Aero (dist Varanasi) 8, Tulasipur (dist Balrampur) 7, Sitapur (dist Sitapur) 7, Dabri Fmo (dist Farrukhabad) 7, Sawayajpur (dist Hardoi) 7;
- ❖ **West Uttar Pradesh:** Tahrauli (dist Jhansi) 19, Jasrana (dist Firozabad) 10, Thakurdwara (dist Moradabad) 7, Mainpuri (dist Mainpuri) 7, Ghiror (dist Mainpuri) 7, Etah (dist Etah) 7;
- ❖ **Gujarat Region:** Kadi (dist Mehsana) 13, Idar (dist Sabarkantha) 8, Hansot (dist Bharuch) 5;
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Zone 15 Sholinganallur (dist Chennai) 9, Chennai (N) (dist Chennai) 7, Tirumayam (dist Pudukkottai), Zone 09 Teynampet (dist Chennai), Avadi (dist Tiruvallur), Ayanavaram Taluk Office (dist Chennai) 6 each;
- ❖ **Madhya Maharashtra:** Chandgad (dist Kolhapur) 14, Gaganbawada (dist Kolhapur) 9, Ajra (dist Kolhapur) 9,
- ❖ **Kerala & Mahe:** Vadakara (dist Kozhikode) 12, Ayyankunnu Aws (dist Cannur) 11, Mahe (dist Mahe) 10, Padinjathara Dam Aws (dist Wynad) 9, Ams Kannur (dist Cannur) 8, Panathur Aws (dist Kasargod) 8, Irikkur (dist Cannur) 7, Pinarayi Aws (dist Cannur) 7, Tellichery (dist Cannur) 7, Vadakara Aws (dist Kozhikode) 7, Taliparamba (dist Cannur) 7, Vyttili (dist Wynad) 7;
- ❖ **Kerala & Mahe:** Vadakara (dist Kozhikode) 12, Ayyankunnu Aws (dist Cannur) 11, Mahe (dist Mahe) 10, Padinjathara Dam Aws (dist Wynad) 9, Ams Kannur (dist Cannur) 8, Panathur Aws (dist Kasargod) 8, Irikkur (dist Cannur) 7, Pinarayi Aws (dist Cannur) 7, Tellichery (dist Cannur) 7, Vadakara Aws (dist Kozhikode) 7, Taliparamba (dist Cannur) 7, Vyttili (dist Wynad) 7;
- ❖ **Konkan & Goa:** Valpoi (dist North Goa) 12, Sanguem (dist South Goa) 8, Mandangad (dist Ratnagiri) 7, Kankavli (dist Sindhudurg) 7;
- ❖ **Arunachal Pradesh:** Pasighat\_ Aero (dist East Siang) 12, Deomali (dist Tirap) 8, Tuting\_ Aws (dist Upper Siang) 7, Tuting (dist Upper Siang) 7, Oyan Arg (dist East Siang) 7;
- ❖ **Gangetic West Bengal:** Burdwan (pto) (dist Purba Bardhaman) 12, Bankura (dist Bankura) 7;
- ❖ **Himachal Pradesh:** Sundarnagar (dist Mandi) 11, Palampur (dist Kangra) 11, Shimla (dist Shimla) 8, Gohar (dist Mandi) 8, Solan (dist Solan) 8, Mashobra (dist Shimla) 8, Jogindarnagar (dist Mandi) 7, Baijnath (dist Kangra) 7;
- ❖ **East Rajasthan:** Jaipur Tehsil Sr (dist Jaipur) 10, Behror (dist Alwar) 9, Devel Sr (dist Dungarpur) 9, Kotputli (dist Jaipur) 9, Jamwaramgarh Sr (dist Jaipur) 8, Alwar Sr (dist Alwar) 8, Malakhera Sr (dist Alwar) 8, Alwar Obs (dist Alwar) 7, Sapau Sr (dist Dholpur) 7;
- ❖ **Assam & Meghalaya:** Mawsynram (dist East Khasi Hills) 10, Cherrapunji(rkm) (dist East Khasi Hills) 8, Bhaghmara (dist South Garo Hills) 8, D/mohanbari Aero (dist Dibrugarh) 7, Mawkyrwat (dist South West Khasi Hills) 6, Margherita (dist Tinsukia) 6;
- ❖ **Uttarakhand:** Chakrata (Dehradun) 11, Haripur (Dehradun): 9, Khatima (Udham Singh Nagar) 8, Ranikhet (Almora): 6, Haldwani (Nainital): 6, Chaukhutiya (Almora) 6;
- ❖ **North Interior Karnataka:** Londa (dist Belagavi) 9, Manthala (dist Bidar) 5;

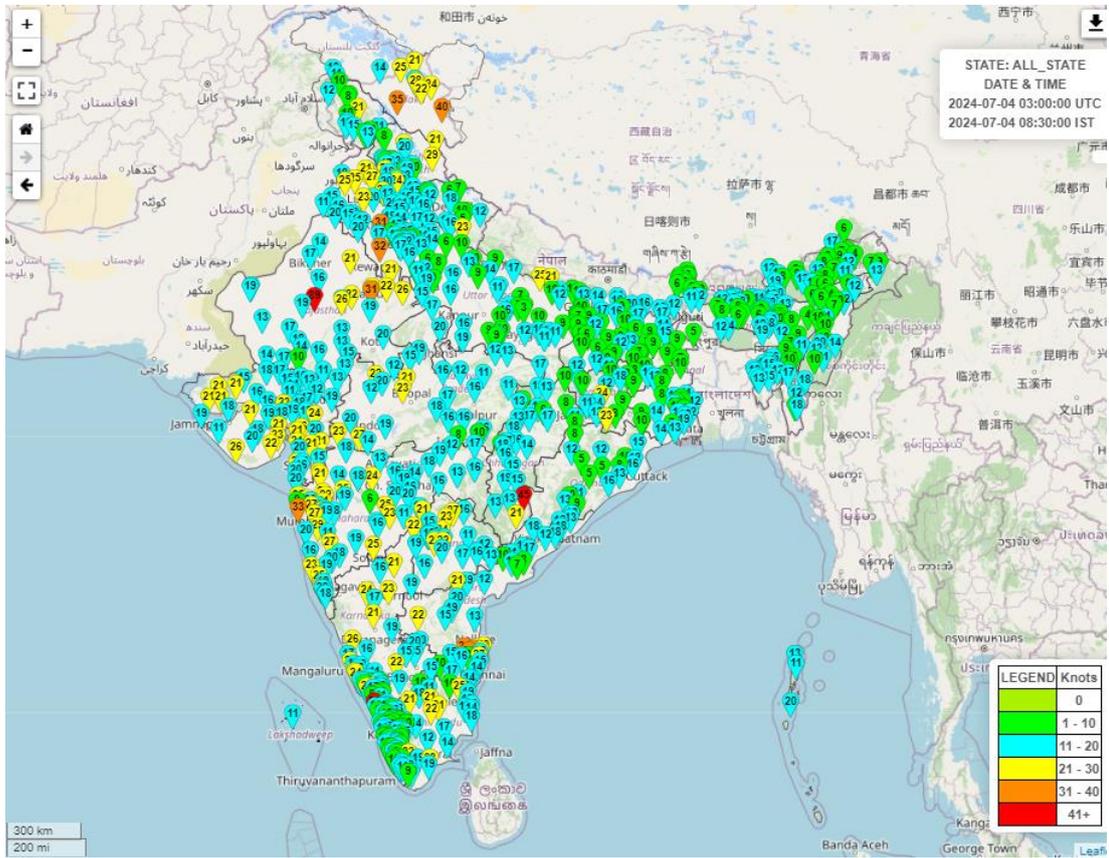
- ❖ **Haryana-Chandigarh:** Jhirka (dist Nuh) 8, Ambala Rev (dist Ambala) 7, Badli Rev (dist Jhajjar) 6, Beri (dist Jhajjar) 6, Barwala Rev (dist Hisar) 6, Sohana (dist Gurgaon) 6;
- ❖ **Delhi:** Dhansa (dist South West Delhi) 9, Aya Nagar (dist South Delhi) 4, President House (dist New Delhi) 2, Palam (dist South West Delhi) 2, Safdarjung (dist New Delhi) 1;
- ❖ **Punjab:** Payal Rev (dist Ludhiana) 8, Dhuri (dist Sangrur) 7, Jagraon (dist Ludhiana) 6;
- ❖ **Sub-Himalayan West Bengal & Sikkim:** Siliguri Pto (dist Darjeeling) 7;
- ❖ **Andaman & Nicobar Islands:** Maya Bandar (dist North & Middle Andaman) 7;
- ❖ **Nagaland, Manipur, Mizoram & Tripura:** Tamenglong (dist Tamenglong) 6, Zunheboto Nsdma\_aws (dist Zunheboto) 5, Bishnupur (dist Bishnupur) 5;
- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Udampur(iaf) (dist Udampur) 7;

## ANNEXURE II

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

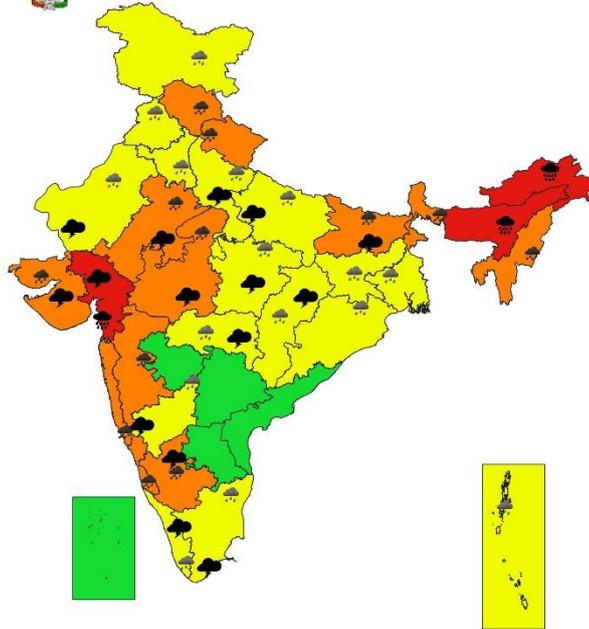
- ❖ **Chhattisgarh:** Bastar 83;
- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Leh 74, Kargil 65;
- ❖ **Tamil Nadu:** Tiruvallur, Ranipet 63, Chennai, Chengalpattu 50, Thiruninravur 46;
- ❖ **Haryana:** Mahendragarh 60, Jind 57;
- ❖ **Maharashtra:** Raigad 61, Nashik 55, Satara 54, Pune 50;
- ❖ **Rajasthan:** Jaipur 57, Ajmer, Karauli 48 each;
- ❖ **Himachal Pradesh:** Kinnaur 54;
- ❖ **Kerala:** Wayanad 53, Kozhikode 48;
- ❖ **Punjab:** Ludhiana 50, Faridkot, Moga, Mohali 46 each;
- ❖ **Telangana:** Karimnagar 50, Siddipet 44;
- ❖ **Karnataka:** Shivamogga 48;
- ❖ **Gujarat State:** Gir Somnath, Bharuch 48, Chhotaudepur 44;
- ❖ **Uttar Pradesh:** Siddharth\_Nagar 46;
- ❖ **Uttarakhand:** Udham\_Singh\_Nagar 43;

**Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 03.07.2024 to 0830 hrs IST of 04.07.2024**



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

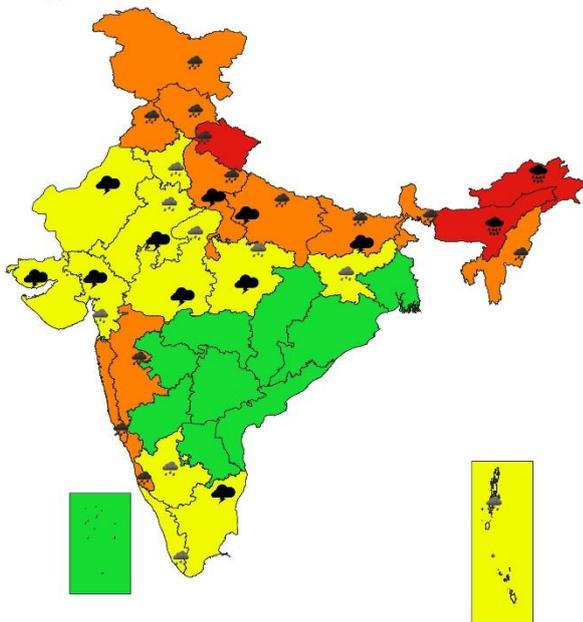
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 1**  
04-07-2024



**Subdivision Warning**

- |                      |            |                      |                           |
|----------------------|------------|----------------------|---------------------------|
| Fog                  | Heavy Snow | Cold Day             | <b>Subdivision Colour</b> |
| Heavy Rain           | Hailstorm  | Ground Frost         | NO WARNING                |
| Very Heavy Rain      | Dust Storm | Strong Surface Winds | WATCH (BE UPDATED)        |
| Extremely Heavy Rain | Heat Wave  | Thunder & Lightning  | ALERT (BE PREPARED)       |
|                      | Cold Wave  | Hot and Humid        | WARNING (TAKE ACTION)     |

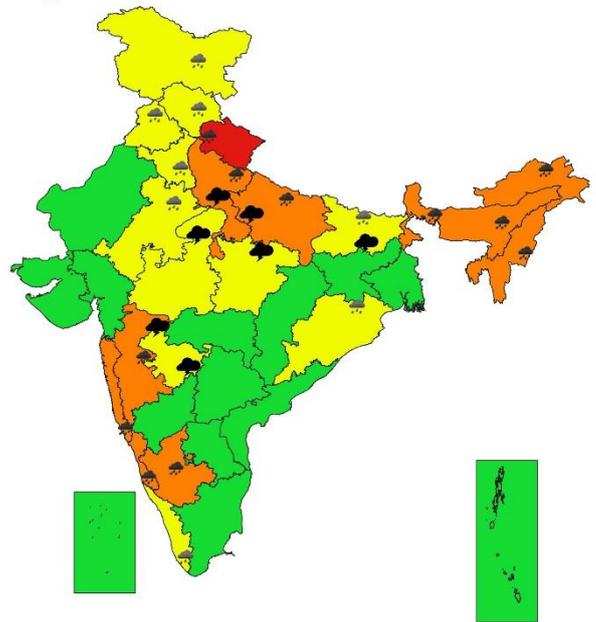
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 2**  
05-07-2024



**Subdivision Warning**

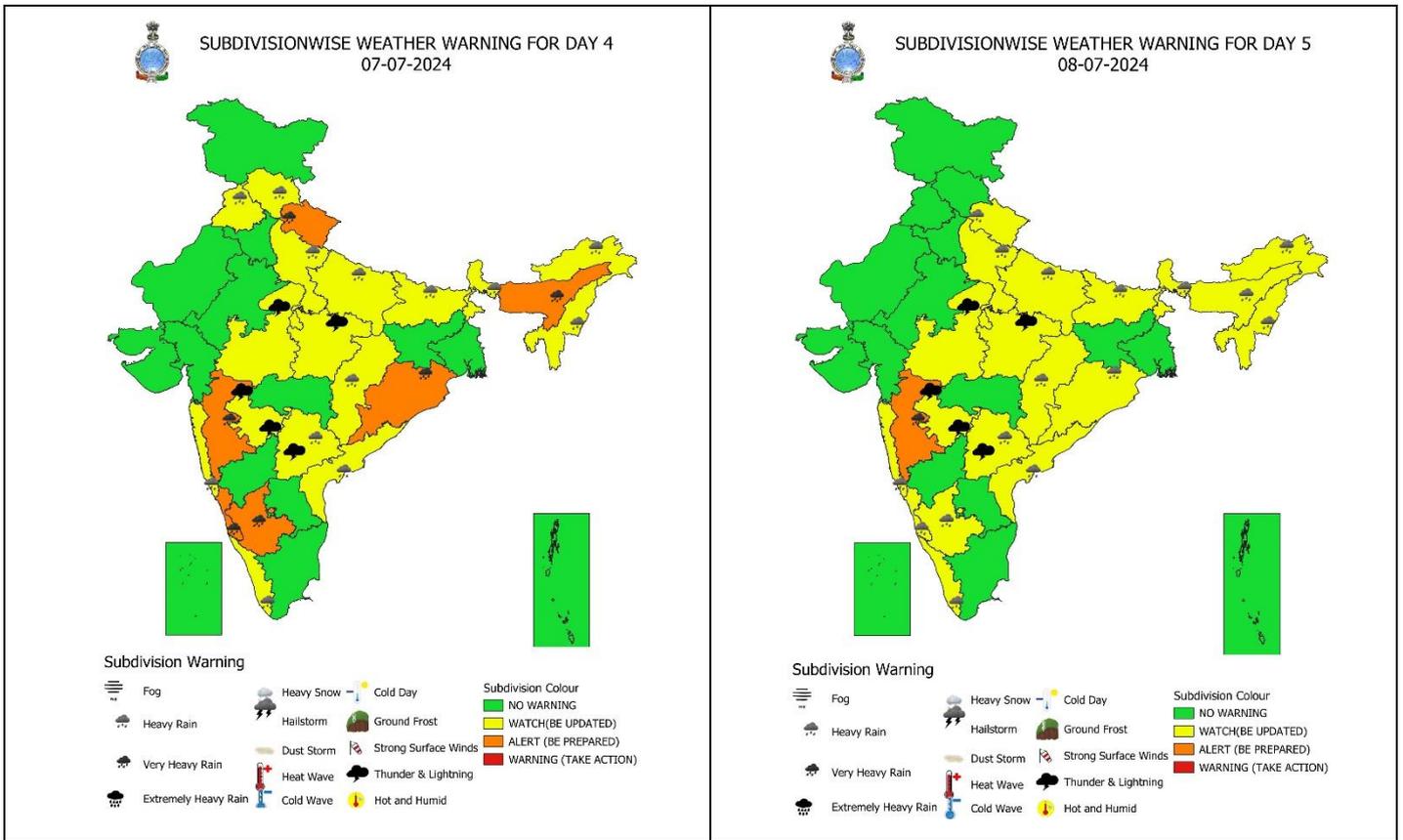
- |                      |            |                      |                           |
|----------------------|------------|----------------------|---------------------------|
| Fog                  | Heavy Snow | Cold Day             | <b>Subdivision Colour</b> |
| Heavy Rain           | Hailstorm  | Ground Frost         | NO WARNING                |
| Very Heavy Rain      | Dust Storm | Strong Surface Winds | WATCH (BE UPDATED)        |
| Extremely Heavy Rain | Heat Wave  | Thunder & Lightning  | ALERT (BE PREPARED)       |
|                      | Cold Wave  | Hot and Humid        | WARNING (TAKE ACTION)     |

**SUBDIVISIONWISE WEATHER WARNING FOR DAY 3**  
06-07-2024



**Subdivision Warning**

- |                      |            |                      |                           |
|----------------------|------------|----------------------|---------------------------|
| Fog                  | Heavy Snow | Cold Day             | <b>Subdivision Colour</b> |
| Heavy Rain           | Hailstorm  | Ground Frost         | NO WARNING                |
| Very Heavy Rain      | Dust Storm | Strong Surface Winds | WATCH (BE UPDATED)        |
| Extremely Heavy Rain | Heat Wave  | Thunder & Lightning  | ALERT (BE PREPARED)       |
|                      | Cold Wave  | Hot and Humid        | WARNING (TAKE ACTION)     |



**IMPACT & ACTION SUGGESTED due to**

- **Isolated extremely heavy rainfall very likely over south Gujarat Region on 04<sup>th</sup>; Arunachal Pradesh and Assam & Meghalaya on 04<sup>th</sup> & 05<sup>th</sup> July.**
- **Isolated very heavy rainfall very likely over East Rajasthan, West Madhya Pradesh, Saurashtra & Kutch, South Interior Karnataka on 04<sup>th</sup> Jammu Division, Punjab on 05<sup>th</sup>; over Himachal Pradesh, Bihar on 04<sup>th</sup> & 05<sup>th</sup>; over Uttarakhand, Coastal Karnataka during 04<sup>th</sup> – 07<sup>th</sup>; Uttar Pradesh on 05<sup>th</sup> & 06<sup>th</sup>; Sub-Himalayan West Bengal & Sikkim during 04<sup>th</sup> – 06<sup>th</sup> , Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura on 06<sup>th</sup> ; Assam & Meghalaya on 06<sup>th</sup> & 07<sup>th</sup> and over Odisha on 07<sup>th</sup>; over Konkan & Goa during 04<sup>th</sup> – 06<sup>th</sup>; Madhya Maharashtra during 04<sup>th</sup> – 08<sup>th</sup> 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 kutcha 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:**

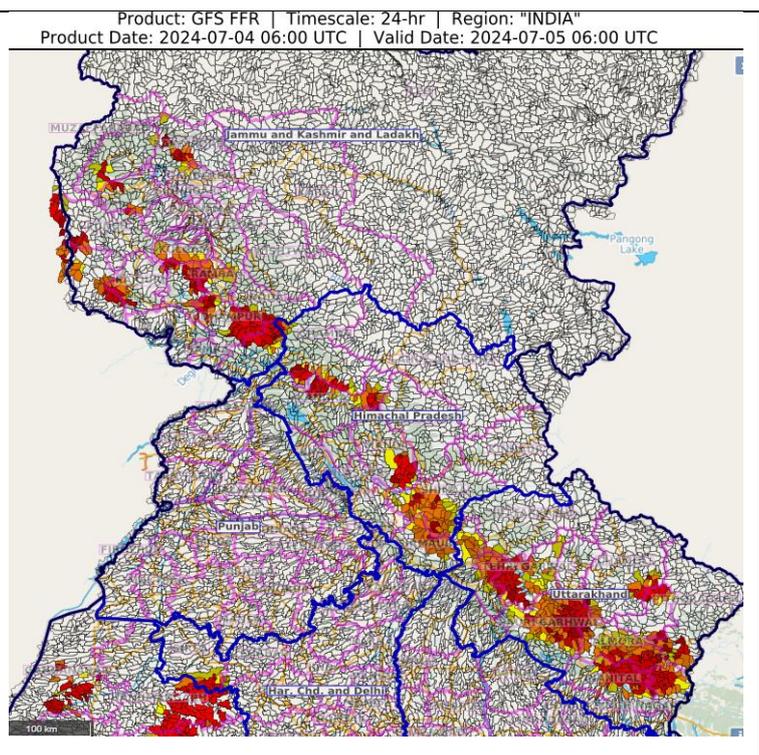
- Make provision for draining out excess water from crop fields to avoid water stagnation in North Eastern States, West Bengal & Sikkim, Bihar, Jharkhand, Odisha, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Gujarat State,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

**24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 05-07-2024 :**

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

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Himachal Pradesh and Jammu & Kashmir & Ladakh Met Sub-divisions during next 24 hours.

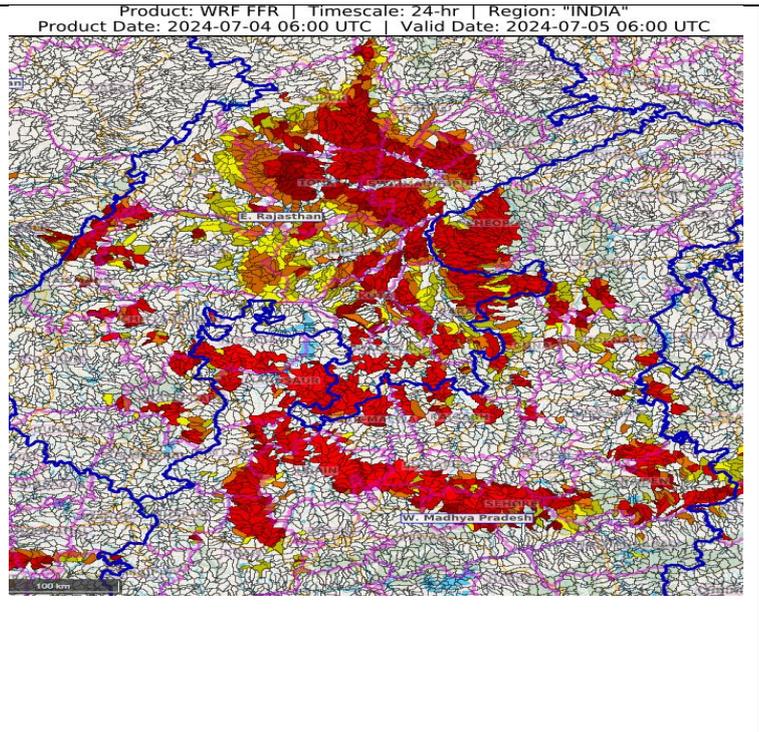
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



**24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 05-07-2024 :**

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of East Rajasthan and West Madhya 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.

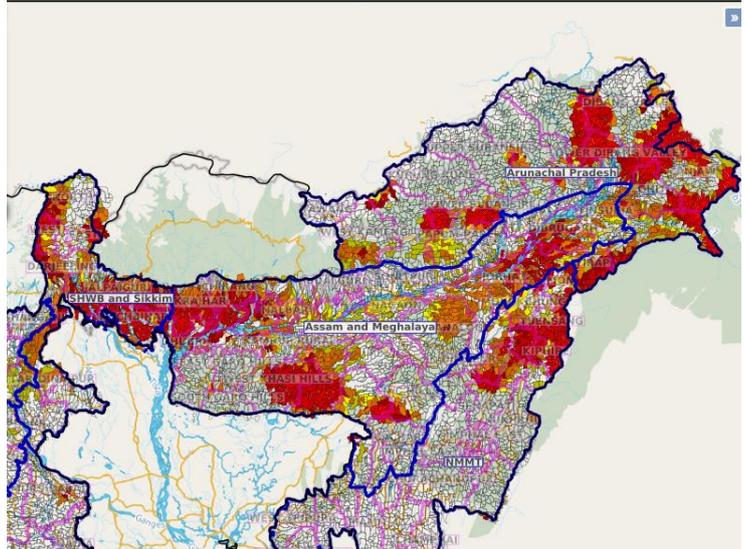


24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 05-07-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of SHWB & Sikkim adjoining Assam & Meghalaya and north eastern Assam & Meghalaya adjoining Arunachal Pradesh & NMMT 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.

Product: GFS FFR | Timescale: 24-hr | Region: "INDIA"  
Product Date: 2024-07-04 06:00 UTC | Valid Date: 2024-07-05 06:00 UTC

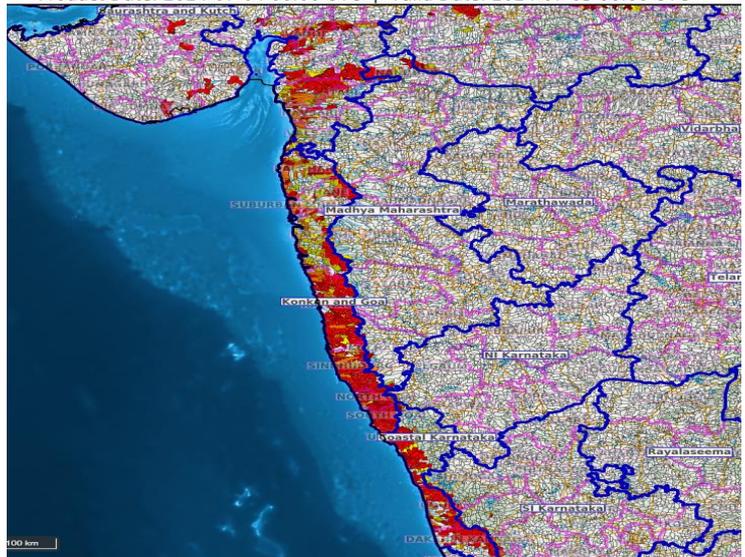


24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 05-07-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of south Gujarat Region, Konkan & Goa and Coastal Karnataka 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.

Product: WRF FFR | Timescale: 24-hr | Region: "INDIA"  
Product Date: 2024-07-04 06:00 UTC | Valid Date: 2024-07-05 06:00 UTC



**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)

 Fog  
 Heavy Rain  
 Very Heavy Rain  
 Extremely Heavy Rain

 Heavy Snow  
 Hailstorm  
 Dust Storm  
 Heat Wave  
 Cold Wave

 Cold Day  
 Ground Frost  
 Strong Surface Winds  
 Thunder & Lightning  
 Hot and Humid

Subdivision Colour

NO WARNING

WATCH(BE UPDATED)

ALERT (BE PREPARED)

WARNING (TAKE ACTION)

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

## LEGENDS

### WARNING

<b>WARNING (TAKE ACTION)</b>
<b>ALERT ( BE PREPARED)</b>
<b>WATCH (BE UPDATED)</b>
<b>NO WARNING ( NO ACTION)</b>

### Probabilistic Forecast

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



**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)	
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**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)	