



**Government of India
Ministry of Earth Sciences
India Meteorological Department**

**Press Release
Date: 09th July, 2023**

Time of Issue: 1300 hours IST

Subject: Extremely heavy rainfall over Himachal, Uttarakhand and adjoining areas of Punjab & Haryana today, the 09th July and decrease significantly thereafter.

Weather observed during past 24 hours ending at 0830 hours IST of today (Annexure I):

Significant Weather features, Forecast and Warning during next 5 days: (Annexure II)

- ❖ The monsoon trough is active with its western end to the south of its normal position and eastern end to the north of its normal position.
- ❖ A cyclonic circulation lies over central Rajasthan in lower tropospheric levels.
- ❖ A Western Disturbance in lower & mid-tropospheric westerlies runs from north Pakistan to northeast Arabian Sea.
- ❖ The off-shore trough at mean sea level runs from south Gujarat coast to north Kerala coast.

Weather Forecast and Warning:

Northwest India: Light/moderate fairly widespread to widespread rainfall with **isolated heavy to very heavy rainfall** is very likely Western Himalayan Region, Punjab, Haryana-Chandigarh-Delhi, Rajasthan during 09th-10th and Uttar Pradesh during next 5 days. **Isolated extremely heavy rainfall also very likely Uttarakhand, Himachal Pradesh and adjoining districts of Punjab, Haryana-Chandigarh on 09th July. Isolated heavy to very heavy rainfall likely over Uttar Pradesh during 10th-13th July.**

West India: Light/moderate widespread rainfall with **isolated heavy rainfall** very likely to continue over Konkan & Goa, ghat areas of Madhya Maharashtra and Gujarat state during next 3 days and decrease thereafter.

East & adjoining Northeast India: Fairly widespread to widespread light/moderate rainfall with **isolated Heavy to very heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Assam- & Meghalaya, Arunachal Pradesh, Nagaland, Manipur during next 5 days. **Isolated heavy rainfall** likely over Odisha during next 5 days; Jharkhand during 10th-12th; Andaman & Nicobar Islands during 09th-10th July and **isolated heavy to very heavy rainfall** over Bihar during 11th-13th July.

Central India: Light/moderate fairly widespread to widespread rainfall with **isolated heavy rainfall** is very likely over the region during next 5 days. **Isolated heavy to very heavy rainfall likely over West Madhya Pradesh during 09th-10th July.**

South India: Light/moderate widespread rainfall with **isolated heavy rainfall** very likely to over Coastal Karnataka and Kerala during next 5 days.

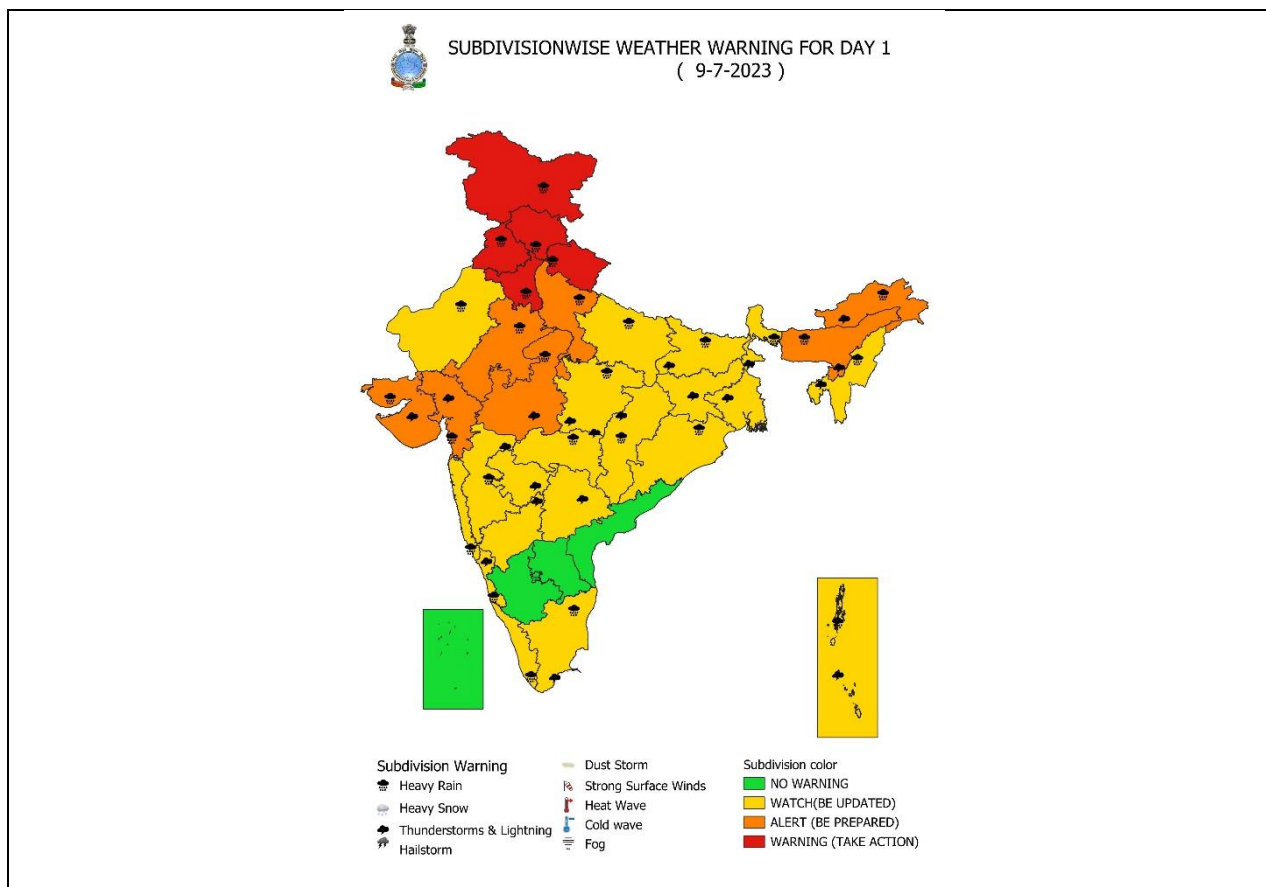
No significant weather likely over rest parts of the country.

For more details kindly refer:

https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php

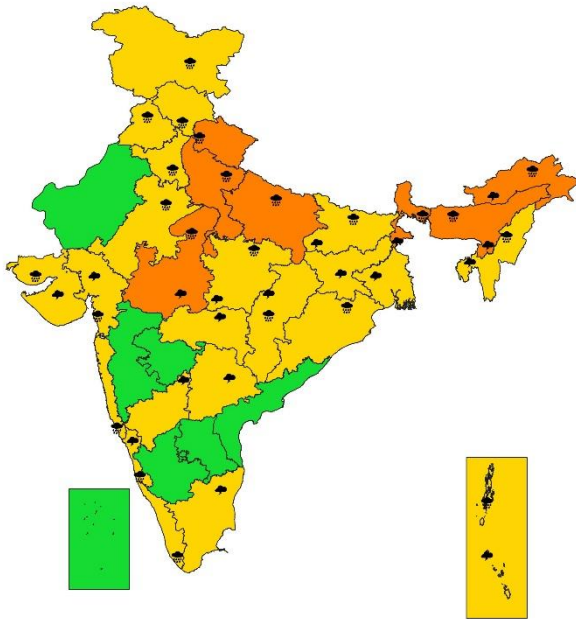
Rainfall Observations: (from 0830 hours IST of yesterday to 0830 hours IST of today, the 09th July 2023):

- **Heavy Rainfall observed: Extremely heavy rainfall** at isolated places over Jammu, Haryana-Chandigarh, Punjab & Himachal Pradesh; **Heavy to Very heavy rainfall** at isolated places over Uttarakhand, Delhi, West Uttar Pradesh, Sub-Himalaya West Bengal & Sikkim, Rajasthan, Saurashtra & Kutch, Madhya Pradesh, Coastal Karnataka and **Heavy rainfall** at isolated places over Gujarat Region, Kerala & Mahe, Jharkhand, Vidarbha, Konkan & Goa, Madhya Maharashtra
- **Significant rainfall recorded (in cm):**
 - **HARYANA, CHANDIGARH:** Chandigarh (dist Chandigarh) 30, Chandigarh Iaf (dist Chandigarh) 29, Chandigarh Aws (dist Chandigarh) 29, Radaur (dist Yamuna Nagar) 25, Kalka (dist Panchkula) 24, Panchkula (dist Panchkula) 24, Raipur Rani (dist Panchkula) 23, Morni (dist Panchkula) 23, Ambala (dist Ambala) 22, Barwala (dist Panchkula) 22;
 - **PUNJAB:** Nangal (dist Rupnagar) 28, Ropar (dist Rupnagar) 27, Ballawal Saunkri (dist Sbs Nagar) 27, Balachaur Aws (dist Sbs Nagar) 27, Tibri (dist Gurdaspur) 25, Ropar Kvk Aws (dist Rupnagar) 24, Gurudaspur (dist Gurdaspur) 21;
 - **HIMACHAL PRADESH:** Una Rampur Aws (dist Una) 23, R L Bmb (dist Bilaspur) 22, Rohru (dist Shimla) 19, Sangraha (dist Sirmaur) 18;
 - **JAMMU-KASHMIR-LADAKH-GILGIT-BALTISTAN-MUZAFFARABAD:** Kathua-22, Bhadarwa-13;
 - **EAST MADHYA PRADESH:** Barghat (dist Seoni) 16, Mohkheda (dist Chindwara) 11, Mandla (dist Mandla) 11, Narayanganj (dist Mandla) 10, Balaghat-aws (dist Balaghat) 10, Lalburra (dist Balaghat) 10;
 - **DELHI:** Safdarjung (New Delhi) 15, Delhi Ridge (North Delhi) 13, Lodi Road (New Delhi) 12;
 - **WEST UTTAR PRADESH:** Nakur (dist Saharanpur) 15, Baheri (dist Bareilly) 13, Sambhal (dist Sambhal) 8, Behat (dist Saharanpur) 8, Moradabad Cwc (dist Moradabad) 8, Saharanpur (dist Saharanpur) 8, Baraut (dist Baghpat) 7, Jasrana (dist Firozabad) 7, Baghpat (dist Baghpat) 7;
 - **WEST RAJASTHAN:** Sangaria Sr (dist Hanumangarh) 15, Marwar Junction (dist Pali) 8, Pali (dist Pali) 8;
 - **WEST MADHYA PRADESH:** Bhainsdehi (dist Betul) 15, Multai (dist Betul) 8, Prabhat Pattan (dist Betul) 7;
 - **COASTAL KARNATAKA:** Mulki (dist Dakshina Kannada) 15, Manki (dist Uttara Kannada) 12, Kadra (dist Uttara Kannada) 10, Sulya (dist Dakshina Kannada) 8.
 - **SUB-HIMALAYA WEST BENGAL & SIKKIM:** Mathabhanga (Cooch Behar) 14; Amfu Pundibari (Cooch Behar) 10; Alipurduar (Jalpaiguri) 8; Buxaduar (Jalpaiguri) 8;
 - **UTTARAKHAND:** Chorgalia-13, Koti-10, Gular Bhoj-8;
 - **SAURASHTRA & KUTCH:** Naliya (dist Kutch) 13, Jamnagar (dist Jamnagar) 12, Talala (dist Gir Somnath) 11, Veraval (dist Gir Somnath) 7;
 - **EAST RAJASTHAN:** Udaipur-wati (dist Jhunjhunu) 12, Malsisar Sr (dist Jhunjhunu) 11, Jhunjhunu (dist Jhunjhunu) 9, Mangliawas Sr (dist Ajmer) 8, Nawalgarh (dist Jhunjhunu) 8, Sikar (dist Sikar) 7;
 - **GUJARAT REGION:** Vijapur (dist Mehsana) 10, Gandhinagar (dist Gandhinagar) 9, Mandvi (dist Surat) 7, Harij (dist Patan) 7;
 - **KERALA & MAHE:** Kudulu (dist Kasargod) 10, Bayar Aws (dist Kasargod) 9, Ponnani (dist Malappuram) 7;
 - **VIDARBHA:** Bramhapuri (dist Chandrapur) 9, Nagbhir (dist Chandrapur) 9, Bhiwapur (dist Nagpur) 8, Desaiganj (dist Gadchiroli) 8, Armori (dist Gadchiroli) 8, Kurkheda (dist Gadchiroli) 7, Sindewahi (dist Chandrapur) 7, Kuhi (dist Nagpur) 7, Mohadi (dist Bhandara) 7;
 - **KONKAN & GOA:** Canacona (dist South Goa) 8, Pen (dist Raigad) 7;
 - **MADHYA MAHARASHTRA:** Gaganbawada (dist Kolhapur) 8, Radhanagari (dist Kolhapur) 7;
 - **JHARKHAND:** Simdega (Dist Simdega) 7;





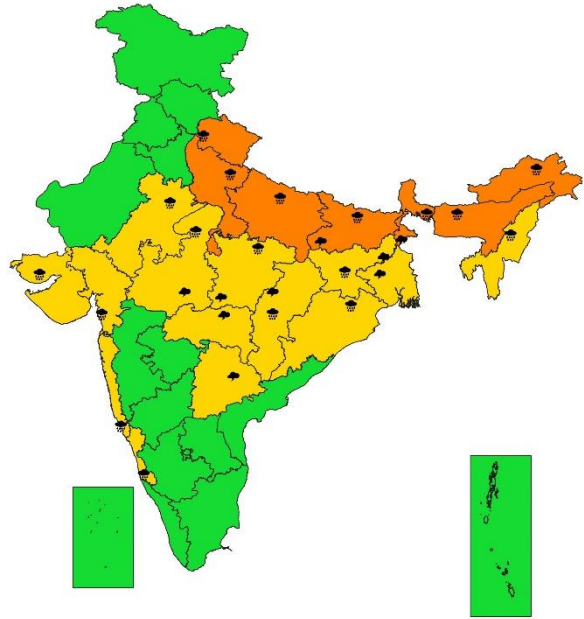
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
(10-7-2023)**



- | | | |
|----------------------------|----------------------|--------------------------|
| Subdivision Warning | Dust Storm | Subdivision color |
| Heavy Rain | Strong Surface Winds | NO WARNING |
| Heavy Snow | Heat Wave | WATCH (BE UPDATED) |
| Thunderstorms & Lightning | Cold wave | ALERT (BE PREPARED) |
| Hailstorm | Fog | WARNING (TAKE ACTION) |



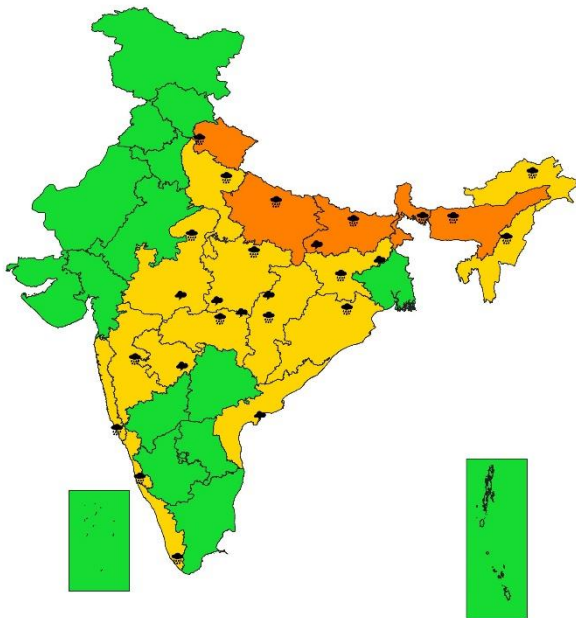
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
(11-7-2023)**



- | | | |
|----------------------------|----------------------|--------------------------|
| Subdivision Warning | Dust Storm | Subdivision color |
| Heavy Rain | Strong Surface Winds | NO WARNING |
| Heavy Snow | Heat Wave | WATCH (BE UPDATED) |
| Thunderstorms & Lightning | Cold wave | ALERT (BE PREPARED) |
| Hailstorm | Fog | WARNING (TAKE ACTION) |



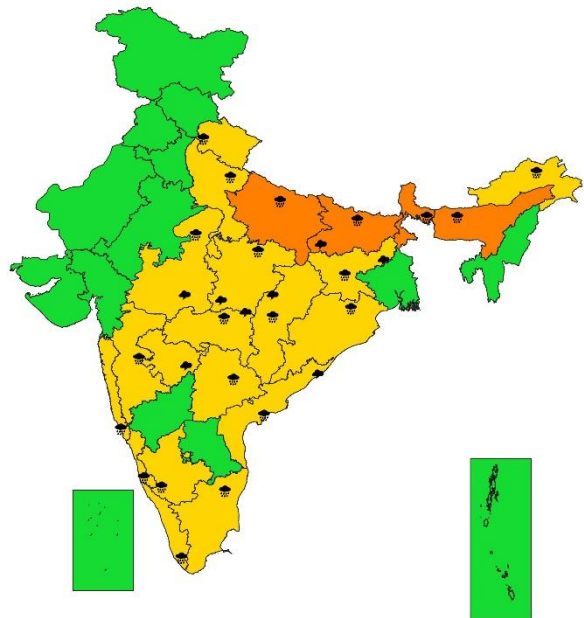
**SUBDIVISIONWISE WEATHER WARNING FOR DAY 4
(12-7-2023)**



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|----------------------------|----------------------|--------------------------|
| Subdivision Warning | Dust Storm | Subdivision color |
| Heavy Rain | Strong Surface Winds | NO WARNING |
| Heavy Snow | Heat Wave | WATCH (BE UPDATED) |
| Thunderstorms & Lightning | Cold wave | ALERT (BE PREPARED) |
| Hailstorm | Fog | WARNING (TAKE ACTION) |



**SUBDIVISIONWISE RAINFALL FORECAST FOR DAY 5
(13-7-2023)**



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|----------------------------|----------------------|--------------------------|
| Subdivision Warning | Dust Storm | Subdivision color |
| Heavy Rain | Strong Surface Winds | NO WARNING |
| Heavy Snow | Heat Wave | WATCH (BE UPDATED) |
| Thunderstorms & Lightning | Cold wave | ALERT (BE PREPARED) |
| Hailstorm | Fog | WARNING (TAKE ACTION) |

Agromet advisories for rainfall, thunderstorms likely over various parts of the country:

- ❖ Drain out excess water from crop fields to avoid water stagnation in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Rajasthan, Andaman & Nicobar Islands, Sub Himalayan West Bengal & Sikkim, Odisha, Madhya Pradesh, Chhattisgarh, Gujarat, Konkan & Goa, Madhya Maharashtra, Tamil Nadu, Kerala, Coastal and South Interior Karnataka and North Eastern States.
- ❖ Postpone transplanting of rice in Jammu & Kashmir, Himachal Pradesh and Uttarakhand.
- ❖ Postpone sowing of maize, kharif pulses and vegetables in Jammu & Kashmir; maize, soybean and vegetables in Uttarakhand.
- ❖ Provide staking to vegetables.

Impact & Action Suggested due to very heavy/extremely heavy rainfall and likely Flash Flood (for Flash Flood details, refer below)

09th July: Himachal Pradesh, Uttarakhand, north Punjab, north Haryana-Chandigarh, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Uttar Pradesh, Rajasthan, West Madhya Pradesh, Assam & Meghalaya, Arunachal Pradesh, Gujarat State, rest parts of Punjab & Haryana-Chandigarh-Delhi **10th July:** Uttarakhand, Uttar Pradesh, Arunachal Pradesh, West Madhya Pradesh, Assam & Meghalaya, Gujarat Region, Sub-Himalaya West Bengal & Sikkim;

11th July: Sub-Himalaya West Bengal & Sikkim, Uttarakhand, Uttar Pradesh, Arunachal Pradesh, Assam & Meghalaya and Bihar;

12th July: Uttarakhand, Assam & Meghalaya, Sub-Himalaya West Bengal & Sikkim, Bihar and East Uttar Pradesh

13th July: East Uttar Pradesh, Sub-Himalaya West Bengal & Sikkim, Bihar, Konkan & Goa and Assam & Meghalaya

A. 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 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
- ❖ 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).

B. Action Suggested

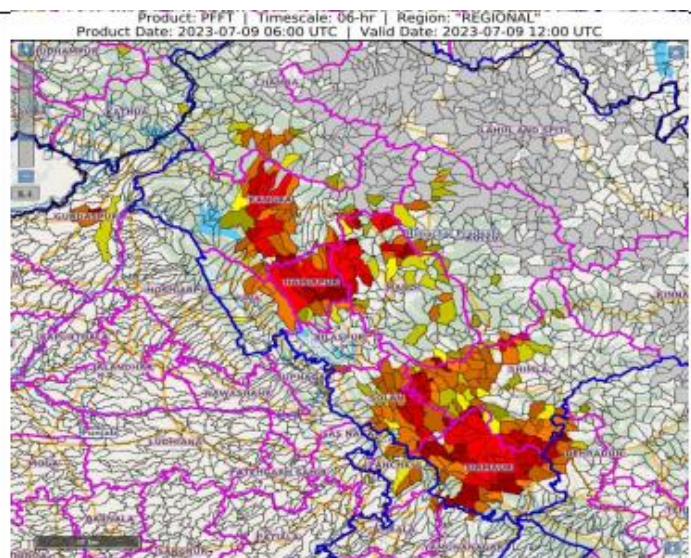
- ❖ Check for traffic congestion on your route before leaving for your destination.
- ❖ Follow any traffic advisories that are issued in this regard.
- ❖ Avoid going to areas that face the water logging problems often.
- ❖ Avoid staying in vulnerable structure.
- ❖ **Persistent Flash Flood Threat (PFFT) over Himachal Pradesh, Uttarakhand, Haryana-Chandigarh-Delhi till 1730 IST of 09-07-2023**

Persistent Flash Flood Threat (PFFT) till 1730 IST of 09-07-2023 :

Moderate to High flash flood threat likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 6 hours.

Har - Chd & Delhi - Panchkula district.
Himachal Pradesh - Chamba, Hamirpur, Kangra, Kullu, Mandi, Shimla, Sirmaur, Solan and Una 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 6 hours.

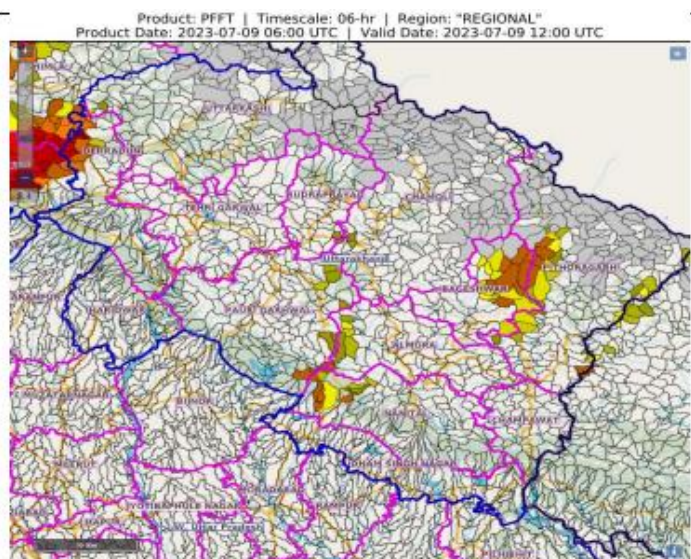


Persistent Flash Flood Threat (PFFT) till 1730 IST of 09-07-2023 :

Moderate flash flood threat likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 6 hours.

Uttarakhand - Almora, Bageshwar, Dehradun, Nanital, Pauri Garhwal and Pithoragarh 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 6 hours.

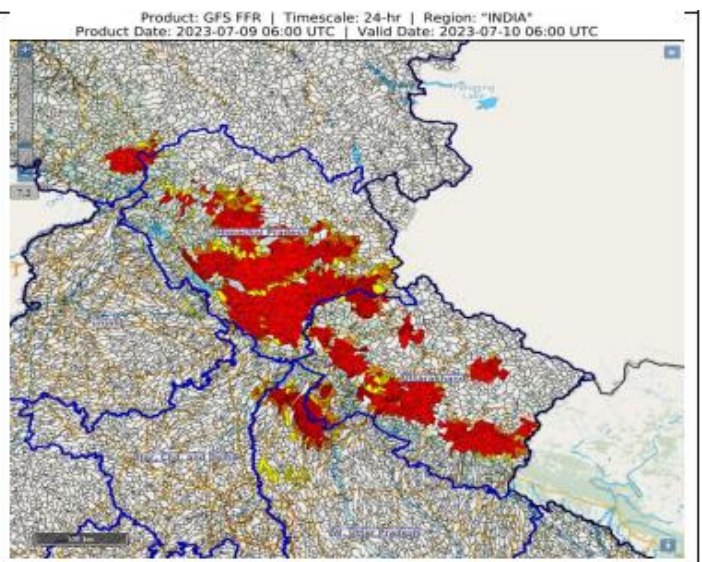


24 hours Outlook for the Flash Flood Risk (FFR) over Himachal Pradesh & adjoining Jammu & Kashmir and Uttarakhand & adjoining West Uttar Pradesh till 1130 IST of 10-07-2023:

24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 10-07-2023 :

Moderate flash flood risk likely over few watersheds & neighbourhoods of **Himachal Pradesh & adjoining Jammu & Kashmir and Uttarakhand & adjoining 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.



Legends:

- ❖ **Heavy Rain:** 64.5 to 115.5 mm; **Very Heavy Rain:** 115.6 to 204.4 mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **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-Himalaya 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 Marathwada.
 - **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)

Subdivision Warning	Subdivision color
 Heavy Rain	 NO WARNING
 Heavy Snow	 WATCH(BE UPDATED)
 Thunderstorms & Lightning	 ALERT (BE PREPARED)
 Hailstorm	 WARNING (TAKE ACTION)
 Dust Storm	
 Strong Surface Winds	
 Heat Wave	
 Cold wave	
 Fog	

Probabilistic Forecast

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