



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

Press Release

Date: 19th July, 2023

Time of Issue: 1400 hours IST

Subject: i) Exceptionally heavy rainfall has occurred over Saurashtra (Gir Somnath-54 cm). Extremely heavy rainfall activity likely to continue over Konkan & Goa, Madhya Maharashtra & Gujarat State on 19th July and isolated heavy to very heavy rainfall thereafter. Isolated heavy to very heavy rainfall very likely to continue over Odisha next 05 days and over Chhattisgarh, Vidarbha & Telangana during next 02 days.

ii) Subdued rainfall activity likely over northeast & adjoining east India during next 5 days.

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

Significant Weather features:

- ❖ A cyclonic circulation lies over Northwest & adjoining Westcentral Bay of Bengal and adjoining areas of north Andhra Pradesh-south Odisha coasts extending upto mid-tropospheric levels tilting southwards with height. Under its influence, a low-pressure area is likely to form over Northwest & adjoining Westcentral Bay of Bengal during next 24 hours.
- ❖ The Monsoon Trough at mean sea level runs south of its normal position and now passes through Phalodi, Kota, Raisen, Seoni, Raipur, Puri and thence east-southeastwards to Eastcentral Bay of Bengal.
- ❖ A cyclonic circulation lies over south Chhattisgarh and another cyclonic circulation lies over south Punjab in lower tropospheric levels.
- ❖ The shear zone now runs roughly along Lat. 20° N between 3.1 km & 7.6 km above mean sea level tilting southwards with height.

Weather Forecast and Warning (Annexure II):

Northwest India: Light/moderate Fairly widespread to widespread rainfall with isolated **heavy rainfall** is very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand and Rajasthan during 19th-23rd; over Punjab and Haryana on 19th, 22nd & 23rd July 2023.

Isolated very heavy rainfall also very likely over Jammu & Kashmir on 19th and over Uttarakhand on 22nd 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 very heavy rainfall** also likely over Madhya Pradesh on 19th and over Vidarbha & Chhattisgarh on 19th & 20th July.

West India: Light/moderate fairly widespread to widespread rainfall with **isolated heavy to very heavy rainfall** very likely to continue over Konkan & Goa, ghat areas of Madhya Maharashtra and Gujarat state during next 5 days.

Isolated heavy to very heavy rainfall very likely to continue over Mumbai during next 02 days.

Isolated extremely heavy rainfall likely over Konkan & Goa, ghat areas of Madhya Maharashtra on 19th and Gujarat state on 19th & 21st July.

South India: Light/moderate fairly widespread to widespread rainfall with **isolated heavy rainfall** very likely to over Kerala, Karnataka & Telangana during next 5 days; over coastal Andhra Pradesh on 19th, 22nd & 23rd and over Tamilnadu on 19th July. **Isolated very heavy rainfall** also likely over coastal Andhra Pradesh & north interior Karnataka on 19th and over Telangana and coastal Karnataka on 19th, 20th & 23rd July.

East India: Light/moderate widespread rainfall with isolated **heavy to very heavy rainfall** very likely over Odisha during

19th to 23rd and isolated **heavy rainfall** over Andaman & Nicobar Islands during 21st-23rd July.

Northeast India: Light/moderate Scattered to Fairly widespread rainfall likely over the region. **Isolated heavy rainfall** likely over Assam & Meghalaya on 21st & 22nd and over Tripura on 21st July.

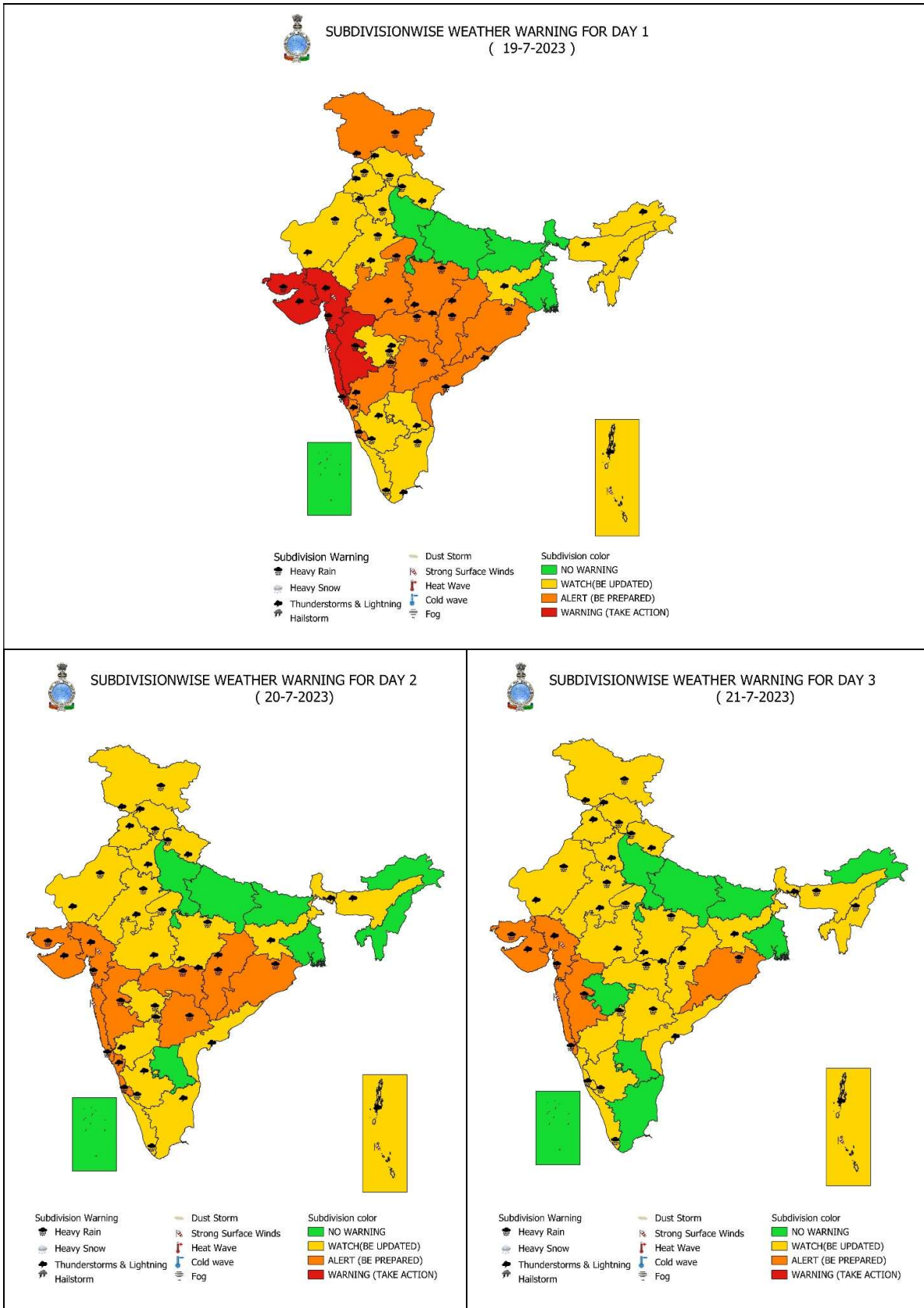
For more details kindly refer: https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php

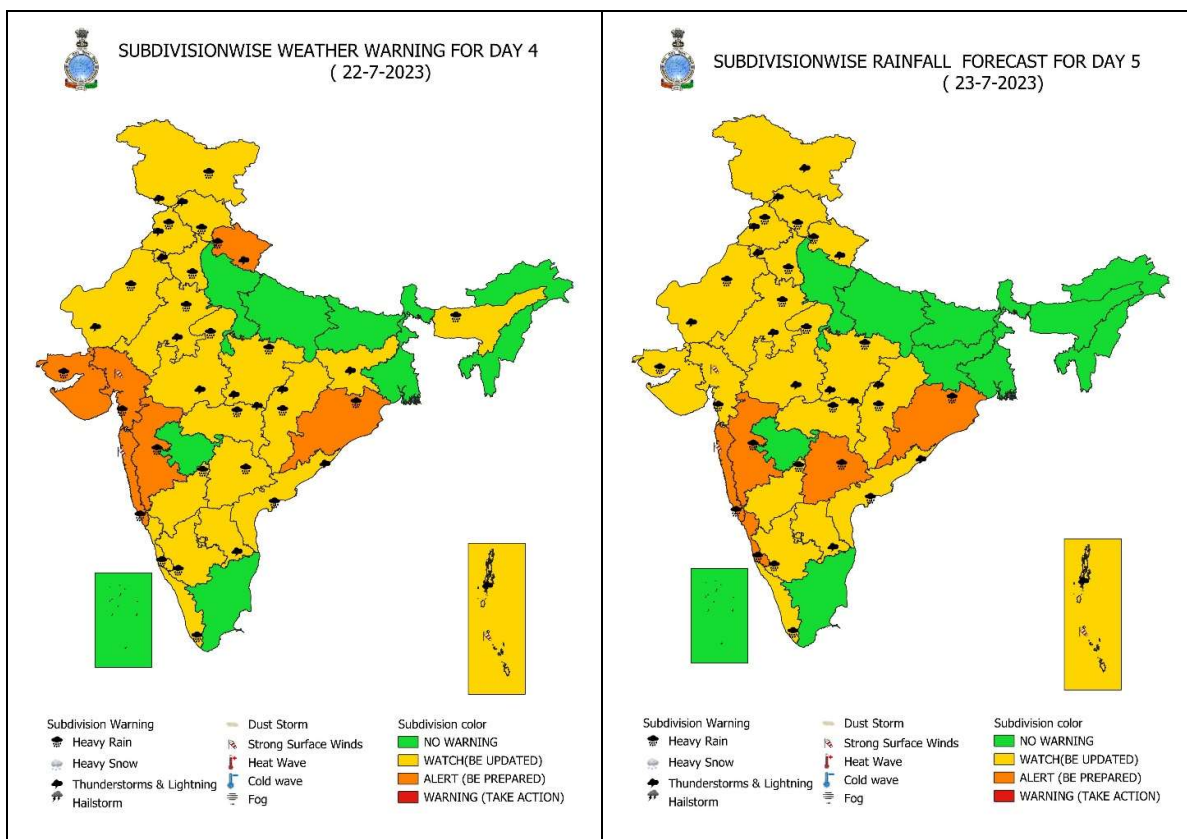
Annexure I

Rainfall Observations: (from 0830 hours IST of yesterday to 0830 hours IST of today, the 17th July 2023):

- **Heavy Rainfall observed: Exceptionally heavy rainfall** at isolated places over Saurashtra & Kutch; **Extremely heavy rainfall** at isolated places over Vidarbha, Konkan & Goa, Madhya Maharashtra, Gujarat Region, Jammu-Kashmir; **Very heavy rainfall** at isolated places over Himachal Pradesh, Uttarakhand, Telangana, Coastal Karnataka, Interior Karnataka, Odisha and **heavy rainfall** at isolated places over Punjab, Rajasthan, Madhya Pradesh, Marathwada, Coastal Andhra Pradesh & Yanam, Kerala & Mahe.
- **Significant rainfall recorded (in cm):**
- **SAURASHTRA & KUTCH:** Sutrapada (dist Gir Somnath) 54, Veraval (dist Gir Somnath) 52, Talala (dist Gir Somnath) 30, Dhoraji (dist Rajkot) 29, Kodinar (dist Gir Somnath) 22, Mangrol(j) (dist Junagadh) 19, Jamkandorna (dist Rajkot) 18, Upleta (dist Rajkot) 12, Mendarda (dist Junagadh) 11, Malia (dist Junagadh) 11, Dasada (dist Surendranagar) 8
 - **GUJARAT REGION:** Daman (dist Daman) 23, Daman Fmo (dist Daman) 21, Daman_arg (dist Daman) 21, Petlad (dist Anand) 10, Lunawada (dist Mahisagar) 9, Vapi (dist Valsad) 8, Silvassa (dist Dadara & Nagar Haveli) 7, Valsad_Kvk Aws (dist Valsad) 7
 - **KONKAN & GOA:** Matheran (dist Raigad) 34, Karjat_agri (dist Raigad) 25, Pen (dist Raigad) 23, Poladpur (dist Raigad) 22, Khalapur (dist Raigad) 21, Valpoi (dist North Goa) 20, Mahad (dist Raigad) 19, Sawantwadi (dist Sindhudurg) 17, Sudhagad Pali (dist Raigad) 17, Uran (dist Raigad) 17, Kalyan (dist Thane) 16, Chiplun (dist Ratnagiri) 16, Devgad (dist Sindhudurg) 15, Lanja (dist Ratnagiri) 15, Khed (dist Ratnagiri) 15, Wakwali_agri (dist Ratnagiri) 15, Mulde_Agri (dist Sindhudurg) 15, Kankavli (dist Sindhudurg) 14, Kudal (dist Sindhudurg) 13, Dodamarg (dist Sindhudurg) 13, Mangaon (dist Raigad) 13, Dapoli_agri (dist Ratnagiri) 12, Alibag - Imd Part Time (dist Raigad) 12, Panvel_agri (dist Raigad) 11, Vaibhavwadi (dist Sindhudurg) 11, Mandangad (dist Ratnagiri) 11, Malvan (dist Sindhudurg) 11, Mapusa (dist North Goa) 11, Thane (dist Thane) 11, Palghar_agri (dist Palghar) 11, Panjim - Imd Obsy (dist North Goa) 10, Bhiwandi (dist Thane) 10, Ambernath (dist Thane) 10, Murbad (dist Thane) 10, Colaba - Imd Obsy (dist Mumbai City) 10, Ulhasnagar (dist Thane) 10, Tala (dist Raigad) 10, Mhasla (dist Raigad) 9, Harnai Imd Obsy (dist Ratnagiri) 9, Quepem (dist South Goa) 9, Pernem (dist North Goa) 9, Rajapur (dist Ratnagiri) 9, Vasai (dist Palghar) 8, Sangameshwar Devrukh (dist Ratnagiri) 8, Ponda (dist North Goa) 8, Tbia Imd Part Time (dist Thane) 7, Roha (dist Raigad) 7, Sanguem (dist South Goa) 7,
 - **MADHYA MAHARASHTRA:** Mahabaleshwar- Imd Obsy (dist Satara) 28, Lonavala_agri (dist Pune) 21, Gaganbawada (dist Kolhapur) 14, Chandgad (dist Kolhapur) 9, Ajra (dist Kolhapur) 8, Radhanagari (dist Kolhapur) 8, Shahuwadi (dist Kolhapur) 8,
 - **MARATHWADA:** Dharmabad (dist Nanded) 8, Bhokar (dist Nanded) 7, Mudkhed (dist Nanded) 7, Umarga (dist Dharashiv) 7, Billoli (dist Nanded) 7, Ardhapur (dist Nanded) 7, Bhum (dist Dharashiv) 7, Nanded - Imd Parttime (dist Nanded) 7, Parbhani - Imd Obsy (dist Parbhani) 7, Hadgaon (dist Nanded) 7,
 - **ORISSA:** Chitrakunda K Guma (dist Malkangiri) 20, Korukunda (dist Malkangiri) 19, Malkangiri (dist Malkangiri) 18, Padia (dist Malkangiri) 9, Mathili (dist Malkangiri) 8,
 - **KERALA & MAHE:** Padinjarathara Dam Aws (dist Wynad) 8,
 - **COASTAL KARNATAKA:** Castle Rock (dist Uttara Kannada) 24, Yellapur (dist Uttara Kannada) 14, Joida (dist Uttara Kannada) 12, Siddapura (dist Udupi) 10, Manchikere (dist Uttara Kannada) 9, Kadra (dist Uttara Kannada) 9, Siddapur (dist Uttara Kannada) 8, Haliyal (dist Uttara Kannada) 7,
 - **NORTH INTERIOR KARNATAKA:** Londa (dist Belagavi) 15, Khajuri (dist Kalaburgi) 7, Belagavi Pto (dist Belagavi) 7,
 - **SOUTH INTERIOR KARNATAKA:** Linganamakki Hms (dist Shivamogga) 9, Kammardi (dist Chikkamagaluru) 9, Koppa (dist Chikkamagaluru) 8, Sringeri Hms (dist Chikkamagaluru) 7,
 - **COASTAL ANDHRA PRADESH:** Chintur (dist Alluri Sitharamaraju) 8, Paderu (dist Alluri Sitharamaraju) 7,

- **TELANGANA:** Manuguru (dist B. Kothagudem) 14, Aswapuram (dist B. Kothagudem) 12, Venkatapuram (dist Mulugu) 10, Sadasivanagar (dist Kamareddy) 9, Mirdoddi (dist Siddipet) 9, Pinapaka (dist B. Kothagudem) 9, Navipet (dist Nizamabad) 9, Dilawarpur (dist Nirmal) 8, Jainoor (dist Kumaram Bheem) 7, Ranjal (dist Nizamabad) 7, Sirpuru (dist Kumaram Bheem) 7, Tamsi (dist Adilabad) 7, Nallabelly (dist Warangal) 7, Adilabad (dist Adilabad) 7, Nizamabad (dist Nizamabad) 7, Tadwai Mlg (dist Mulugu) 7, Gandhari (dist Kamareddy) 7, Makloor (dist Nizamabad) 7, Kotgiri (dist Nizamabad) 7, Mudhole (dist Nirmal) 7, Tadwai (dist Kamareddy) 7,
- **VIDARBHA:** Chandrapur (dist Chandrapur) 20, Ballarpur (dist Chandrapur) 15, Maregaon (dist Yeotmal) 14, Chamorshi (dist Gadchiroli) 11, Pombhurna (dist Chandrapur) 11, Telhara (dist Akola) 10, Wani (dist Yeotmal) 10, Warora (dist Chandrapur) 10, Ralegaon (dist Yeotmal) 9, Shegaon (dist Buldhana) 9, Saoli (dist Chandrapur) 9, Pandherikawara (dist Yeotmal) 9, Mul (dist Chandrapur) 9, Jalgaon Jamod (dist Buldhana) 9, Mangrulpir (dist Washim) 8, Sangrampur (dist Buldhana) 8, Malkapur (dist Buldhana) 7, Zarizamni (dist Yeotmal) 7, Mulchera (dist Gadchiroli) 7, Gondpipri (dist Chandrapur) 7, Bhandara (dist Bhandara) 7,
- **HIMACHAL PRADESH:** Dharmsala (dist Kangra) 13, Palampur (dist Kangra) 11, Jogindarnagar (dist Mandi) 8, Chuari (dist Chamba) 7,
- **CHHATTISGARH:** Gidam (dist Dantewada) 17, Bhairamgarh (dist Bijapur) 13, Sukma (dist Sukma) 11, Dantewara (dist Dantewada) 11, Bijapur (dist Bijapur) 11, Katekalyan (dist Dantewada) 10, Pakhanjur (dist Kanker) 9, Bastanar (dist Bastar) 9, Chhindgarh (dist Sukma) 8, Kuakonda (dist Dantewada) 7, Konta (dist Sukma) 7,
- **JAMMU & KASHMIR:** Katra 31, Udhampur 30, Reasi 21, Chatha 14, Jammu 13, Jammu Aws 12
- **UTTARAKHAND:** Rishikesh 13, Uttar kashi 7,
- **PUNJAB:** Patiala and Malikpur 7 each
- **EAST RAJASTHAN:** Pahari 9, Pachpahar 7
- **WEST RAJASTHAN:** Makrana 8





Agromet advisories for heavy rainfall likely over various parts of the country

- Drain out excess water from crop fields to avoid water stagnation in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Rajasthan, Odisha, Madhya Pradesh, Chhattisgarh, Gujarat State, Konkan & Goa, ghat areas of Madhya Maharashtra, Marathwada, Vidarbha, Kerala, Karnataka, Coastal Andhra Pradesh and Telangana.
- Postpone transplanting of rice in Uttarakhand and South Gujarat. Postpone direct sowing of rice in Telangana.
- Postpone sowing of maize, soybean and vegetables in Uttarakhand; castor and pigeon pea in Saurashtra region.
- Postpone transplanting of finger millet in Konkan region of Maharashtra.

Impact & Action Suggested due to very heavy rainfall over Jammu & Kashmir on 19th; over Uttarakhand on 22nd July; over Madhya Pradesh on 19th; over Vidarbha & Chhattisgarh on 19th & 20th July; Konkan & Goa, ghat areas of Madhya Maharashtra and Gujarat state during next 5 days; over Mumbai during next 02 days; over Coastal Andhra Pradesh & north interior Karnataka on 19th; over Telangana and coastal Karnataka on 19th, 20th & 23rd July; over Odisha during 19th to 23rd July.

A. Impact Expected

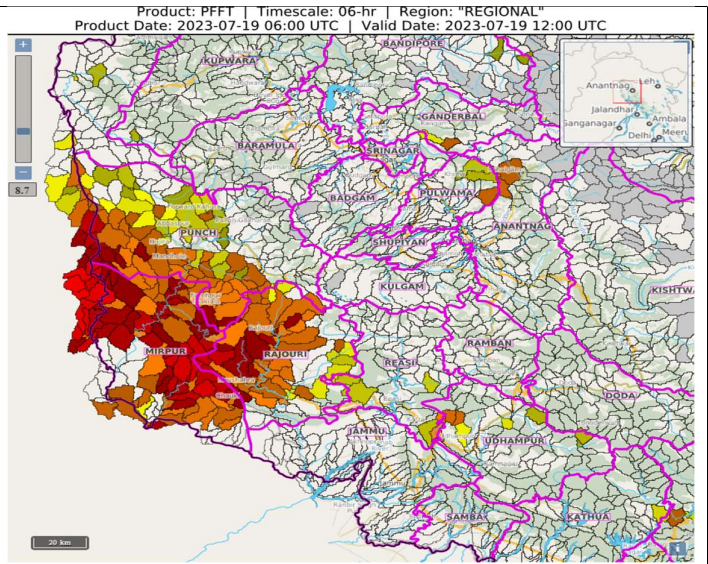
- ❖ Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- ❖ Occasional reduction in visibility due to heavy rainfall.
- ❖ Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
- ❖ Minor damage to kutchha roads.
- ❖ Possibilities of damage to vulnerable structure.
- ❖ Localized Landslides/Mudslides in the hilly areas.
- ❖ 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) till 1730 IST of 19-07-2023:
- ❖ Moderate flash flood threat likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 6 hours.
- ❖ Jammu & Kashmir & Ladakh - Anantnag, Ganderwal, Pulwama, Punch, Rajouri, Riasi and Udhampur 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 19-07-2023:

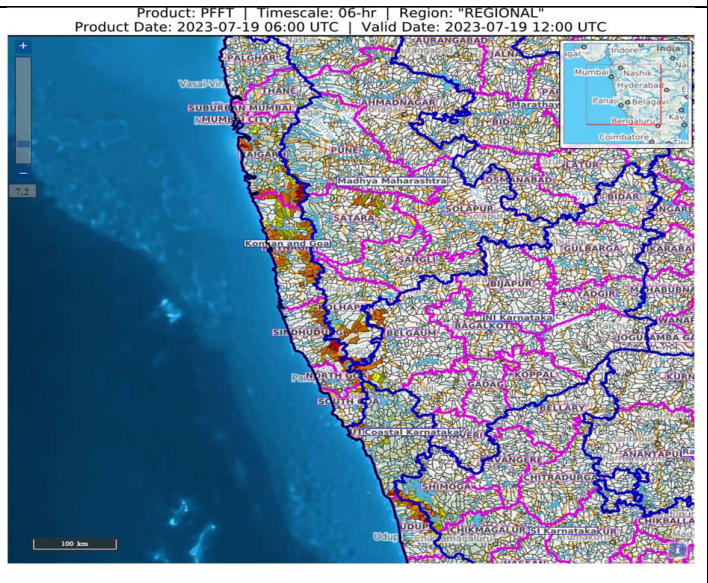
Moderate to High flash flood threat likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 6 hours.

Coastal Karnataka - Udupi and Uttar Kannada districts.

Gujarat Region - Dadar & Nagar Haveli district.

Konkan & Goa - North Goa, South Goa, Palghar, Raigarh, Ratnagiri and Sindhudurg districts. Madhya Maharashtra - Kolhapur and Satara 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.

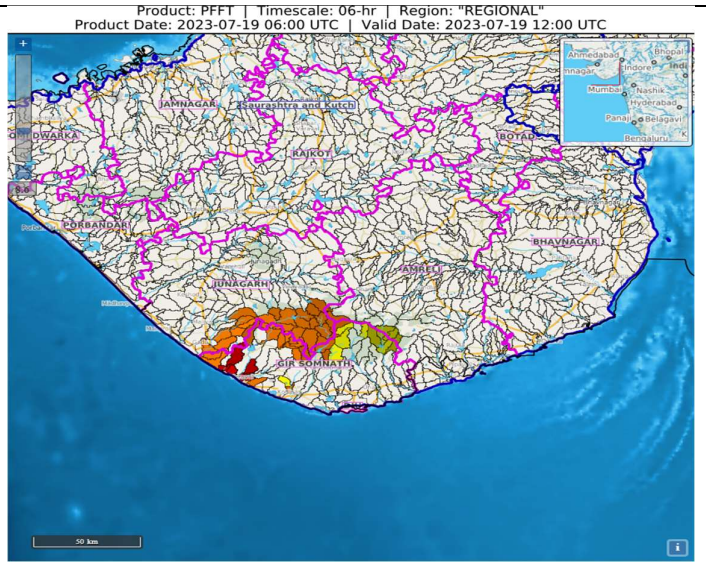


Persistent Flash Flood Threat (PFFT) till 1730 IST of 19-07-2023:

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

Saurashtra & Kutch - Amreli, Gir Somnath and Junagarh districts.

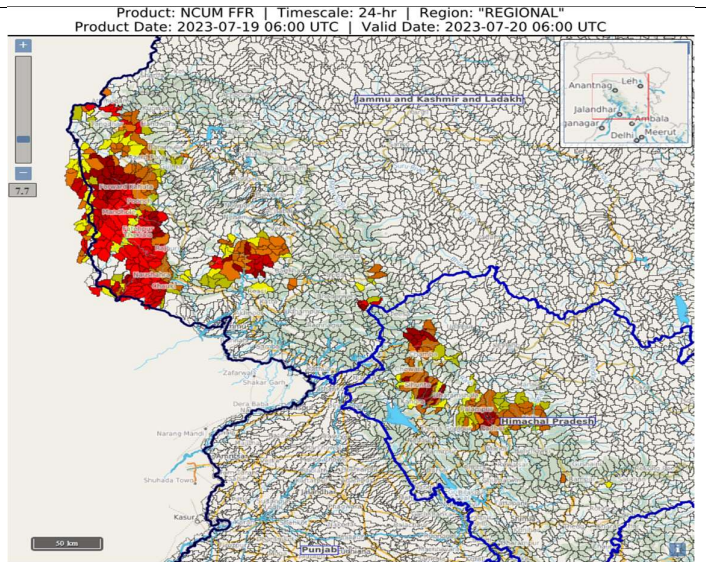
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 6 hours.



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 20-07-2023:

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

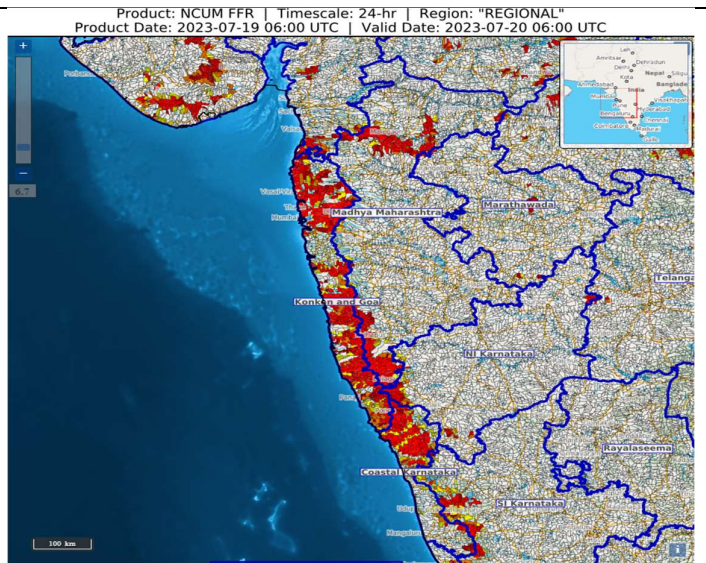
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 20-07-2023:

Moderate to High flash flood risk likely over few watersheds & neighbourhoods of Coastal Karnataka, Konkan & Goa and adjoining South Gujarat Region and Saurashtra & Kutch Met Sub-divisions during next 24 hours.

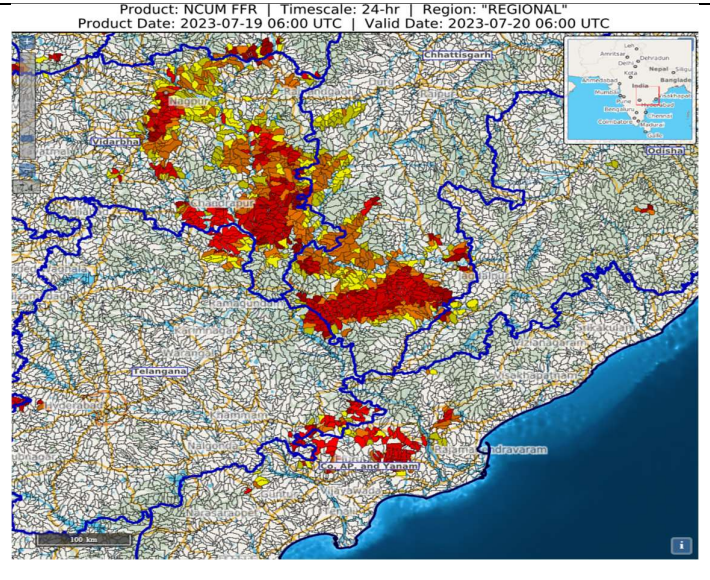
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 20-07-2023:

Moderate flash flood risk likely over few watersheds & neighbourhoods of Chhattisgarh and Vidarbha 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.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station
- ❖ **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	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)

Probabilistic Forecast

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