



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 11th July, 2024

Time of Issue: 1315 hours IST

Subject: (1) Heavy to very heavy rainfall with isolated extremely heavy falls likely over Northeast India during next 2 days and decrease in intensity thereafter.

(2) Heavy to very heavy rainfall likely over Konkan & Goa, Madhya Maharashtra and Coastal Karnataka during 12th-15th July.

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** at isolated places over Meghalaya; **Heavy to very heavy rainfall** at isolated places over Konkan & Goa, Uttarakhand, Assam; **Heavy rainfall** at isolated places over East Rajasthan, West Uttar Pradesh, West Madhya Pradesh, Chhattisgarh, Yanam, Madhya Maharashtra, Tamil Nadu, Bihar, West Bengal & Sikkim, Arunachal Pradesh, South Interior Karnataka and Coastal Karnataka.

Weather Systems

- ✓ The Monsoon trough is near its normal position at mean sea levels.
- ✓ The off-shore trough at mean sea level runs along south Gujarat-north Kerala coasts.
- ✓ A cyclonic circulation over Odisha and another over north Madhya Maharashtra in lower tropospheric levels.
- ✓ A cyclonic circulation over northeast Assam & neighbourhood in lower tropospheric levels.

Forecast & Warnings (Annexure II)

❖ **West and South Peninsular India**

- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Konkan & Goa, Madhya Maharashtra, Kerala & Mahe, Lakshadweep, Karnataka, Gujarat Region; scattered to fairly widespread light to moderate rainfall over Saurashtra & Kutch, Coastal Andhra Pradesh & Yanam, Telangana, Marathwada; isolated to scattered light to moderate rainfall over Tamil Nadu, Puducherry & Karaikal and Rayalaseema during next 5 days.
- ✓ Isolated **heavy rainfall** over Konkan & Goa, Madhya Maharashtra and Coastal Karnataka, Gujarat Region, South Interior Karnataka during 11th-15th; Saurashtra & Kutch on 11th & 12th; Telangana, Kerala & Mahe and North Interior Karnataka during 12th-15th; Coastal Andhra Pradesh & Yanam on 14th & 15th and Rayalaseema on 15th July.
- ✓ **Isolated very heavy rainfall also likely over Konkan & Goa during 11th-15th; ghat areas of Madhya Maharashtra, Coastal Karnataka during 12th-15th; Kerala during 13th-15th; South Interior Karnataka on 14th & 15th July and Gujarat State today.**

❖ **East & Northeast India**

- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning very likely over Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Bihar and

Northeast India; scattered to fairly widespread light to moderate rainfall over Gangetic West Bengal, Jharkhand, Odisha during next 5 days.

- ✓ **Heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Bihar, Arunachal Pradesh during 11th-14th; Assam & Meghalaya during 11th-15th; isolated **heavy rainfall** over Odisha during 13th-15th; Andaman & Nicobar Islands on 13th & 14th; Nagaland and Manipur on 11th, 14th & 15th July.
- ✓ **Isolated very heavy rainfall also likely over Sub-Himalayan West Bengal & Sikkim, Bihar on 11th & 12th; Arunachal Pradesh on 12th July.**
- ✓ **Isolated extremely heavy rainfall very likely over Arunachal Pradesh on 11th and Meghalaya on 11th & 12th July.**

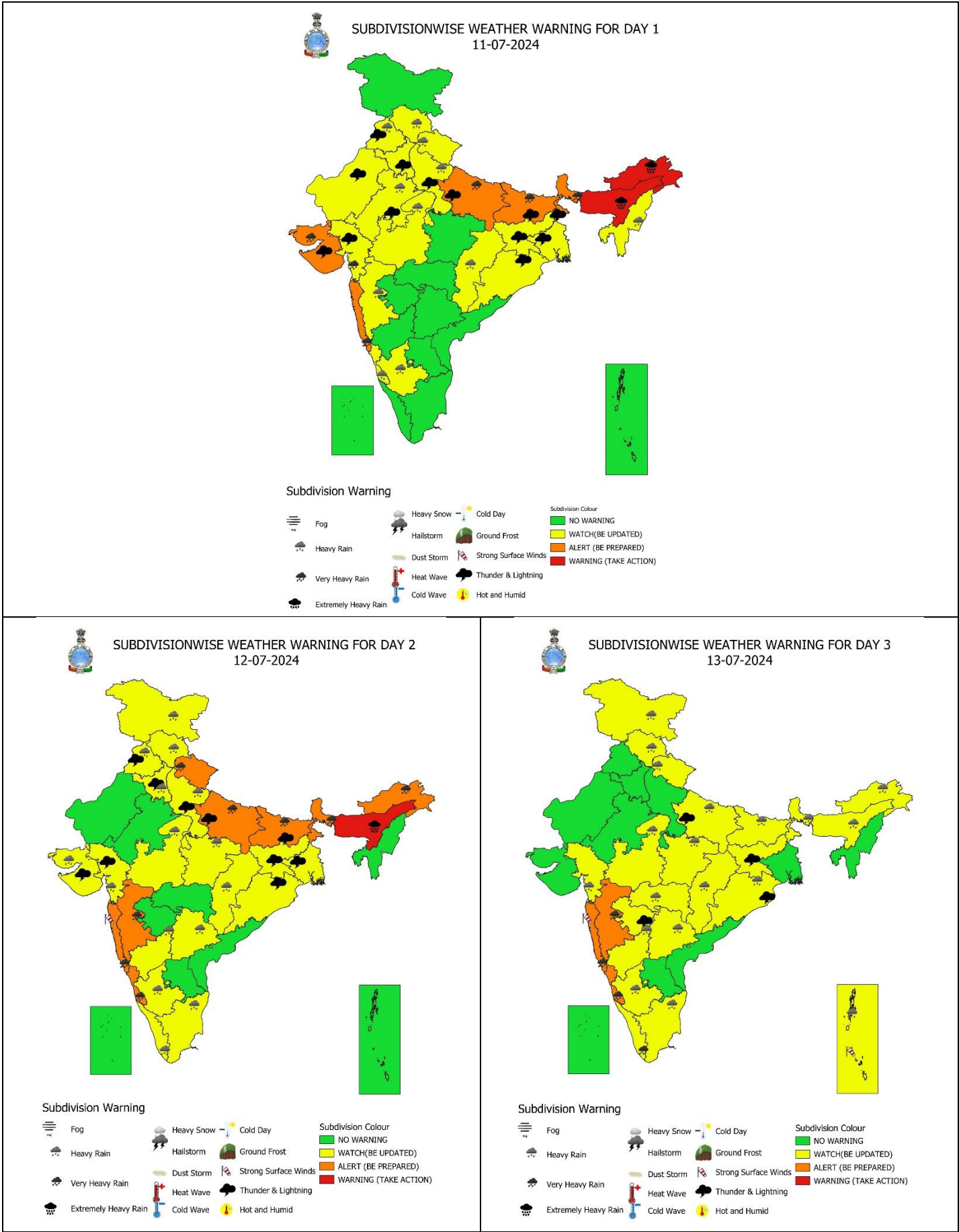
❖ **Northwest & Central India**

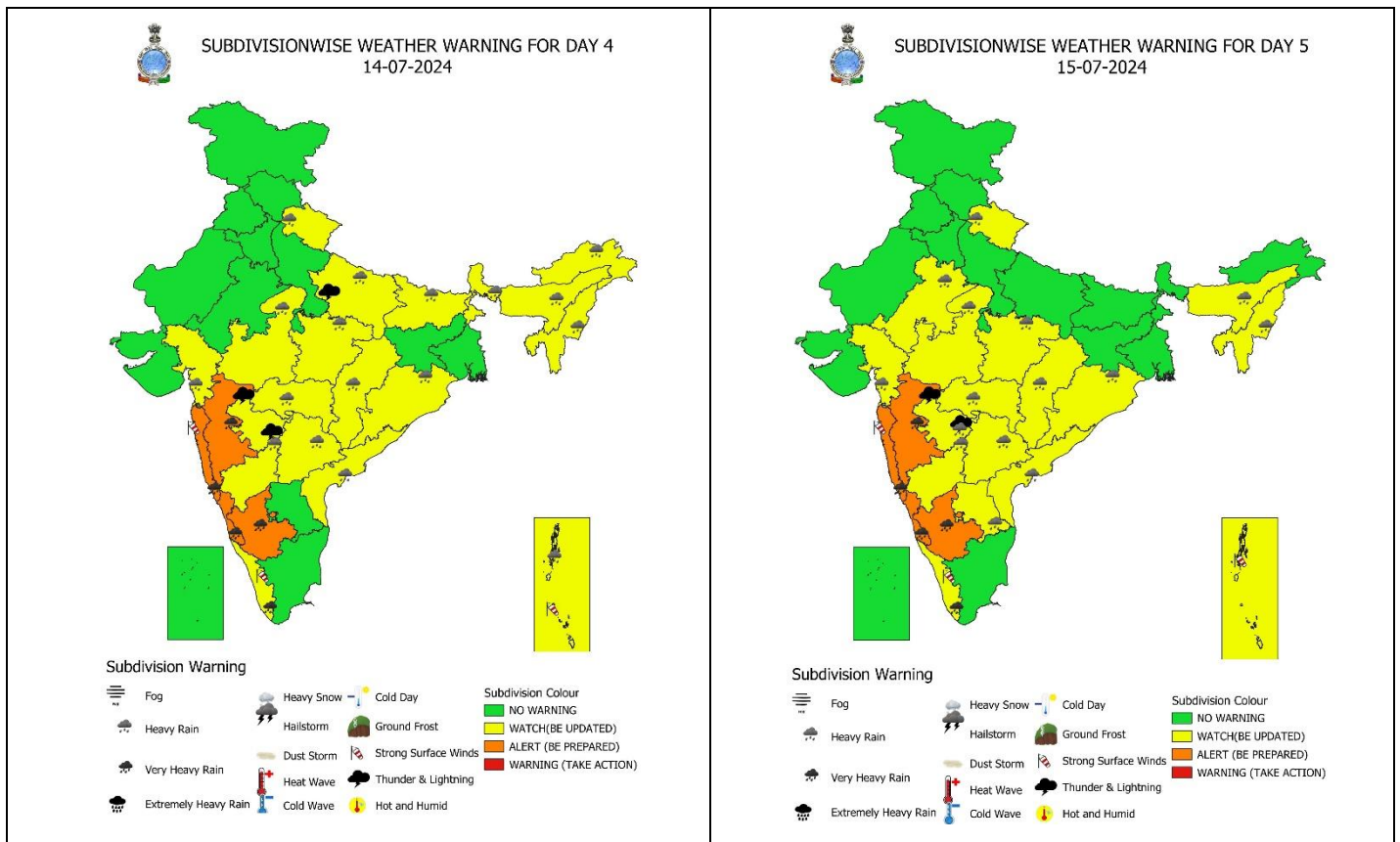
- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Uttarakhand and Central India; scattered to fairly widespread light to moderate rainfall over Himachal Pradesh, Uttar Pradesh, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; isolated to scattered over Rajasthan during next 5 days; Punjab, Haryana-Chandigarh-Delhi during 11th-14th July.
- ✓ Isolated **heavy rainfall** very likely over Uttarakhand, West Madhya Pradesh, Chhattisgarh during 11th-15th; East Uttar Pradesh during 11th-14th; East Madhya Pradesh during 12th-15th; West Uttar Pradesh, Punjab on 11th & 12th; Himachal Pradesh during 11th-13th; Jammu on 12th & 13th; north Haryana on 12th; East Rajasthan on 11th & 15th; Vidarbha during 13th-15th July.
- ✓ **Isolated very heavy rainfall also likely over East Uttar Pradesh on 11th & 12th and Uttarakhand on 12th July.**

For more details, kindly refer: 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):

- ❖ **Assam & Meghalaya:** Cherrapunji (dist East Khasi Hills) 31, Cherrapunji(rkm) (dist East Khasi Hills) 29, Mawsynram (dist East Khasi Hills) 28, Bilasipara Arg (dist Dhubri) 15, Dhubri_ Cwc (dist Dhubri) 12, Tihu Arg (dist Nalbari) 12, Dhubri_imd (dist Dhubri) 11, Goalpara_cwc (dist Goalpara) 11, Bahalpur (dist Dhubri) 10, Nalbari/pagladia (dist Nalbari) 10, Mawkyrwat_arg (dist South West Khasi Hills) 9, Tikrikilla (dist West Garo Hills) 9, Srijangram Arg (dist Bongaigaon) 9, Nongstein (dist West Khasi Hills) 8, Goalpara_aws (dist Goalpara) 7, Tamulpur (dist Baksa) 7, Kokrajhar (dist Kokrajhar) 7, Tamulpur Arg (dist Baksa) 7, Jowai (dist West Jaintia Hills) 7, Khliehriat (dist East Jaintia Hills) 7,
- ❖ **Konkan & Goa:** Dodamarg (dist Sindhudurg) 15, Malvan (dist Sindhudurg) 11, Devgad (dist Sindhudurg) 9, Palghar_agri (dist Palghar) 9, Rameshwar_agri (dist Sindhudurg) 9, Mulde_Agri (dist Sindhudurg) 8, Sawantwadi (dist Sindhudurg) 7, Canacona (dist South Goa) 7, Awalegaon - Arg (dist Sindhudurg) 7, Vasai (dist Palghar) 7, Kudal (dist Sindhudurg) 7,
- ❖ **Uttarakhand:** Dharchula (Pithoragarh): 12, Kashipur (Udham Singh Nagar) : 7, Munsiyari (Pithoragarh) : 6,
- ❖ **West Madhya Pradesh:** Zirapur (dist Rajgarh) 11, Godadongri (dist Betul) 7,
- ❖ **Bihar:** Bahadurganj (dist Kishanganj) 11, Tribeni/balmikinagar (dist West Champaran) 10, Sahebpur Kanal (dist Begusarai) 8,
- ❖ **Tamil Nadu:** Tirumayam (dist Pudukkottai) 9, Ponneri (dist Tiruvallur) 8, Red Hills (dist Tiruvallur), Avadi (dist Tiruvallur), Minnal (dist Ranipet), Zone 03 Puzhal (dist Chennai), Puzhal ARG (dist Tiruvallur), Thirukalukundram (dist Chengalpattu), AWS Ranipet (Ranipet), Zone 01 Kathivakkam (dist Chennai) 7 each,
- ❖ **Chhattisgarh:** Kusmi (dist Balrampur) 9, Ambikapur (dist Surguja) 7,
- ❖ **Coastal Karnataka:** Karwar Obsy (dist Uttara Kannada) 9, Kota (dist Udupi) 7,
- ❖ **South Interior Karnataka:** Agumbe Emo (dist Shivamogga) 9, Sringeri Hms (dist Chikkamagaluru) 7,
- ❖ **West Uttar Pradesh:** Bilari (dist Moradabad) 8,
- ❖ **East Uttar Pradesh:** Jalalpur Fmo (dist Ambedkar Nagar) 8, Chhatnag (dist Prayagraj) 8, Jaunpur Cwc (dist Jaunpur) 7,
- ❖ **West Uttar Pradesh:** Bilari (dist Moradabad) 8,
- ❖ **East Rajasthan:** Nagrarfort Sr (dist Tonk) 7,
- ❖ **Yanam:** Yanam (dist Yanam) 7
- ❖ **Madhya Maharashtra:** Shevgaon (dist Ahmednagar) 7,
- ❖ **Coastal Andhra Pradesh & Yanam:** Yanam (dist Yanam) 7,
- ❖ **Arunachal Pradesh:** Basar (dist West Siang) 9, Basar_Aws (dist West Siang) 9, Roing (dist Lower Dibang Valley) 9, Pasighat_ Aero (dist East Siang) 7,
- ❖ **Sub-Himalayan West Bengal & Sikkim:** Kumargram (dist Alipurduar) 7, Buxaduar (dist Alipurduar) 7, Chepan (dist Alipurduar) 7,





IMPACT & ACTION SUGGESTED due to

- ✓ **Isolated extremely heavy rainfall very likely over Meghalaya on 11th & 12th and Arunachal Pradesh on 11th July.**
 - ✓ **Isolated very heavy rainfall very likely over Konkan & Goa during 11th-15th; Bihar, Sub-Himalayan West Bengal & Sikkim, East Uttar Pradesh on 11th & 12th; Arunachal Pradesh, Uttarakhand on 12th; Gujarat State on 11th; ghat areas of Madhya Maharashtra, Coastal Karnataka during 12th-15th and Kerala during 13th-15th 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/land sinks/mud sinks.
 - 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 likely over various parts of the country

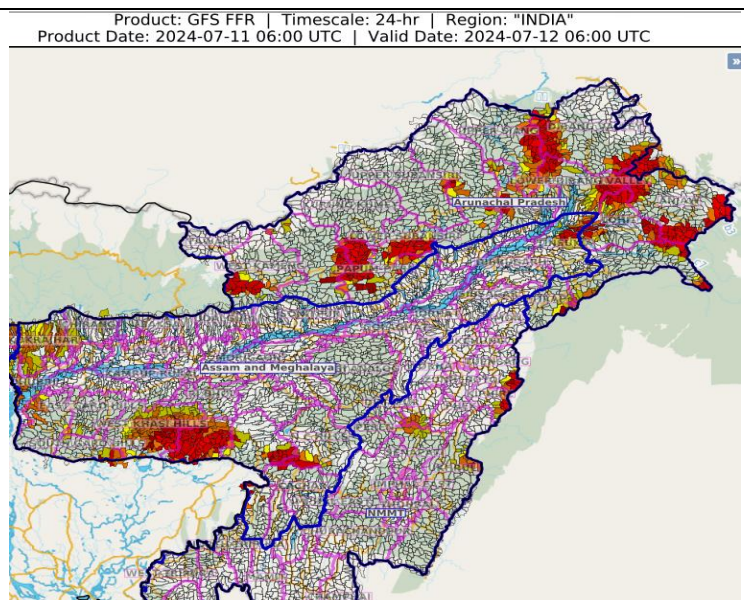
- Make provision for draining out excess water from crop fields to avoid water stagnation in Arunachal Pradesh, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim, Bihar, Himachal Pradesh, Uttarakhand, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Chhattisgarh, Konkan & Goa, Ghat areas of Madhya Maharashtra, Gujarat State and Coastal and South Interior Karnataka.
- Provide mechanical support to horticultural crops & staking to vegetables.

FLASH FLOOD GUIDANCE:

24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 12-07-2024 :

Moderate flash flood risk likely over few watersheds & neighbourhoods of Arunachal Pradesh and Assam & Meghalaya Met Sub-divisions during next 24 hours.

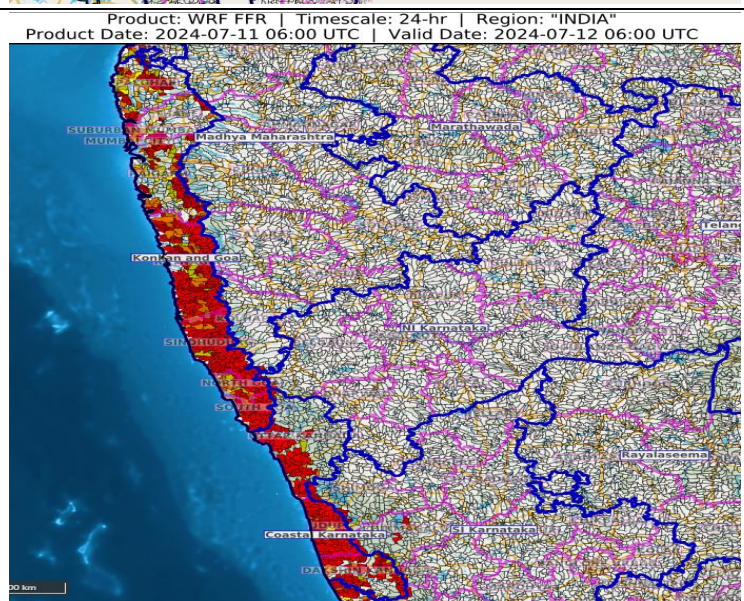
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 12-07-2024 :

Moderate flash flood risk likely over few watersheds & neighbourhoods of Coastal Karnataka and Konkan & Goa 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 & 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, **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.

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



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°C to 6.4°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°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°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°C to -6.4°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°C to -6.4°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 Strom: Wind speed > 220 kmph (> 119 knots)