

Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release
Date: 18th July, 2024
Time of Issue: 1330 hours IST

- Subject: 1) Under the influence of Low-Pressure Area over central and adjoining north Bay of Bengal, isolated extremely heavy rainfall very likely over Coastal Andhra Pradesh & Yanam, Telangana on 18th & 19th; Vidarbha, south Chhattisgarh on 19th & 20th and south Odisha on 19th July.**
- 2) Isolated extremely heavy rainfall very likely over Konkan & Goa, Coastal Karnataka, South Interior Karnataka, Gujarat State on 18th & 19th July and isolated heavy to very heavy rainfall during subsequent 3 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 at isolated** places over Coastal Karnataka, South Interior Karnataka; **Heavy to very heavy rainfall** at many places over Kerala & Mahe, Konkan & Goa; at isolated places over Tamil Nadu, North Interior Karnataka, Madhya Maharashtra, Himachal Pradesh, Vidarbha; **Heavy rainfall** at isolated places over Jammu-Kashmir, Uttarakhand, East Rajasthan, Punjab, Haryana, Chhattisgarh, Madhya Pradesh, Gujarat Region, Odisha, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Tripura.

Weather Systems

- ✓ The Monsoon trough is active and south of its normal position. It is likely to be south of its normal position during next 3-4 days.
- ✓ A shear zone runs in lower & middle tropospheric levels roughly along 20°N tilting southwards with height.
- ✓ The off-shore trough runs along south Gujarat-north Kerala coasts at mean sea level.
- ✓ A low-pressure area has formed over Central and adjoining North Bay of Bengal with associated cyclonic circulation extending upto mid tropospheric levels tilting southwestwards with height. It is likely to become more marked and move northwestwards towards Odisha coast during next 2 days.
- ✓ A cyclonic circulation lies over Kutch & adjoining Northeast Arabian Sea in lower tropospheric levels.

Forecast & Warnings (Annexure II)

❖ West, Central, East and South Peninsular India

- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over the region during next 5 days.
- ✓ **Isolated extremely heavy rainfall very likely over Konkan & Goa, Madhya Maharashtra, Telangana during 18th-20th; South Interior Karnataka, Coastal Karnataka, Gujarat State, Coastal Andhra Pradesh & Yanam on 18th & 19th; Tamil Nadu on 18th; Vidarbha, south Chhattisgarh on 19th & 20th and south Odisha on 19th July.**
- ✓ **Heavy to very heavy rainfall very likely at isolated/some places over Konkan & Goa, Madhya Maharashtra, Gujarat State, Coastal & South Interior Karnataka during next 5 days; Coastal**

Andhra Pradesh & Yanam during 18th-20th; Tamil Nadu on 18th & 19th July and Telangana during 18th-21st July.

- ✓ **Isolated very heavy rainfall likely over Vidarbha, Chhattisgarh on 18th; Odisha on 18th & 20th; Marathwada on 20th; West Madhya Pradesh during 20th-22nd; East Madhya Pradesh on 21st & 22nd July.**
- ✓ Isolated **Heavy rainfall** very likely over Madhya Pradesh, Vidarbha, Chhattisgarh, Odisha and North Interior Karnataka during next 5 days; Rayalaseema on 19th, Gangetic West Bengal during 20th-22nd and Jharkhand on 21st & 22nd July.

❖ **Northwest India**

- ✓ Scattered to fairly widespread light to moderate rainfall **accompanied with thunderstorm & lightning** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, East Rajasthan, Haryana-Chandigarh-Delhi; isolated to scattered rainfall likely over Punjab, Uttar Pradesh and West Rajasthan during next 5 days.
- ✓ Isolated **heavy rainfall** very likely over Himachal Pradesh, Uttarakhand, East Rajasthan during next 5 days; Punjab on 18th; West Rajasthan on 20th & 21st; Haryana-Chandigarh on 18th, 19th and 21st & 22nd; Uttar Pradesh on 21st & 22nd July.
- ✓ **Isolated very heavy rainfall also likely over Himachal Pradesh on 21st and Uttarakhand on 21st & 22nd July.**

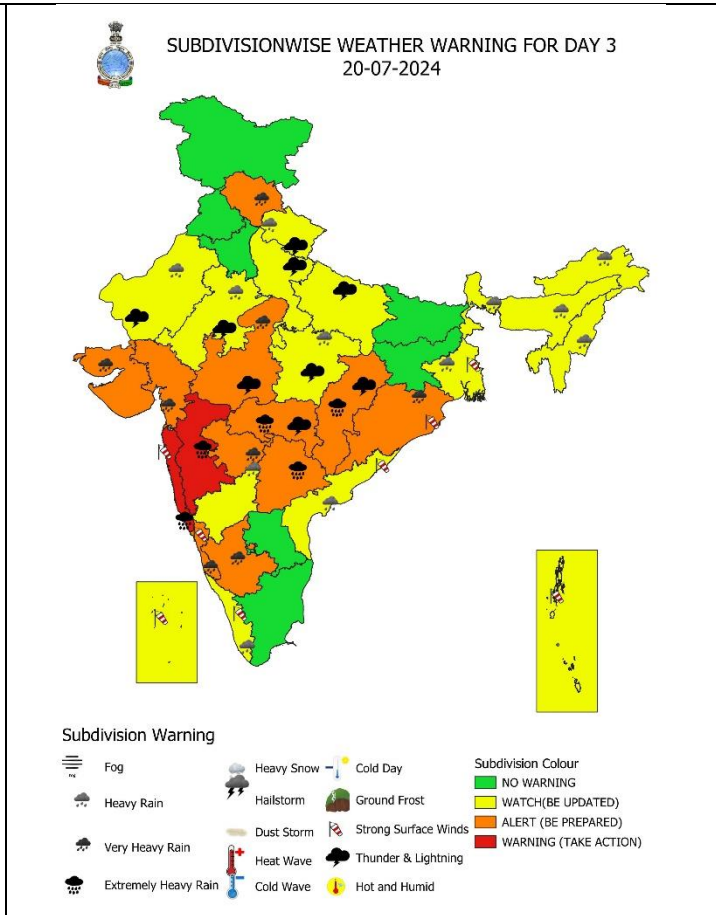
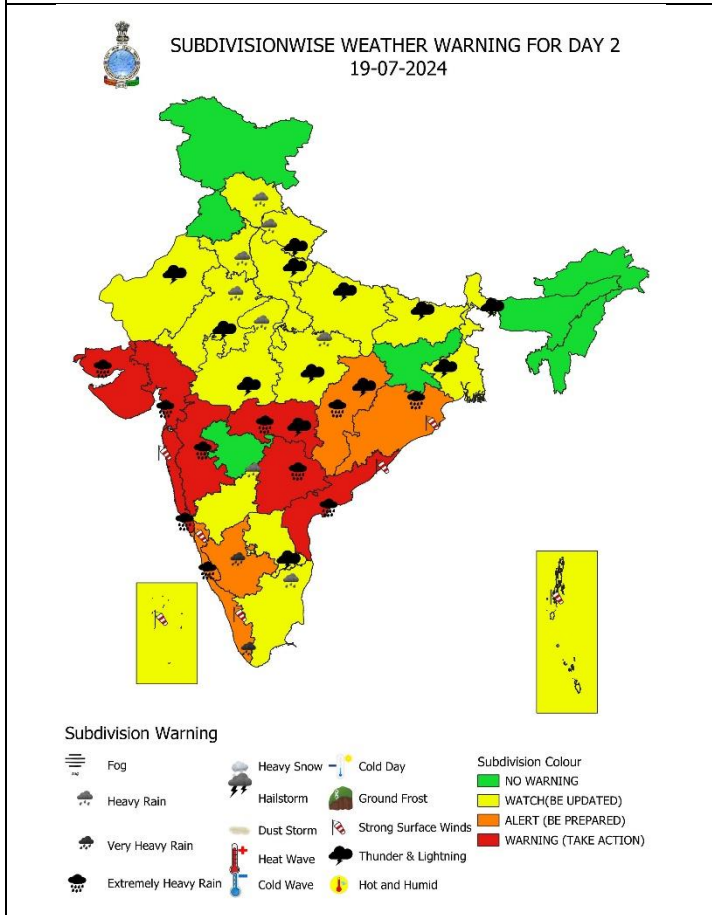
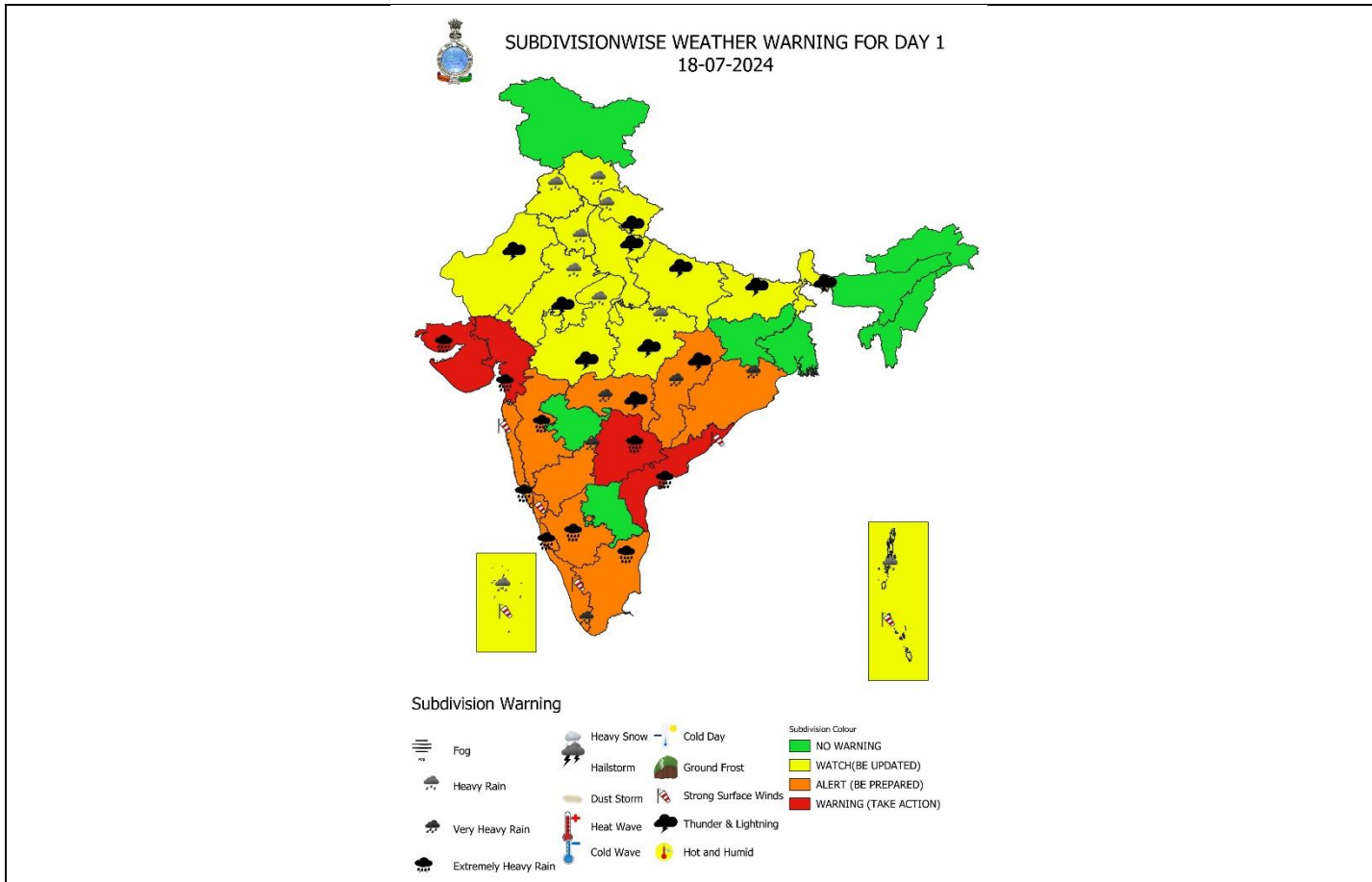
❖ **Northeast India**

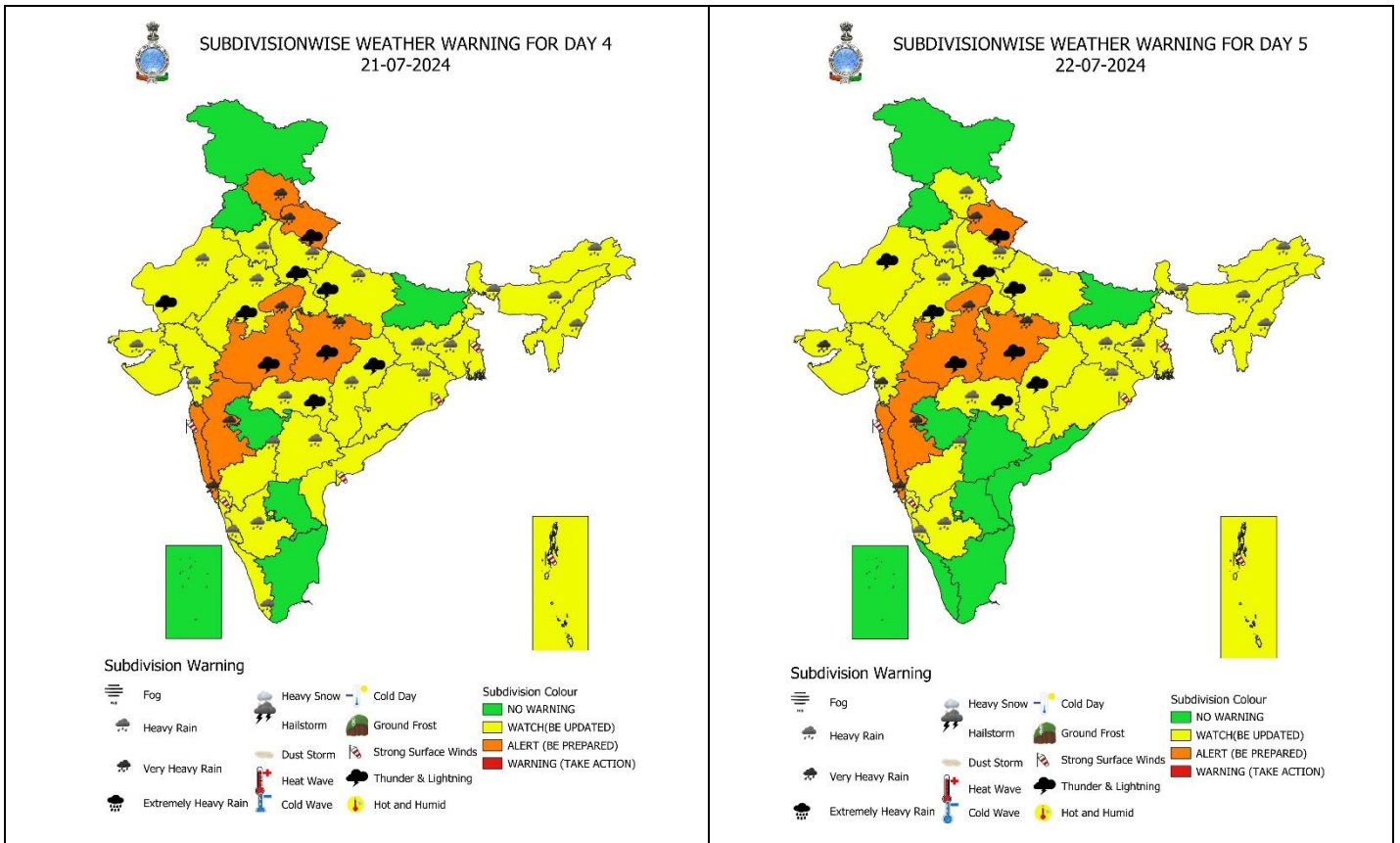
- ✓ Fairly widespread to widespread light to moderate rainfall **accompanied with thunderstorm, lightning** very likely over Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim and Northeast India during next 5 days.
- ✓ **Heavy rainfall** very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura, Arunachal Pradesh, Assam & Meghalaya during 20th-22nd July.

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

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

- ❖ **Coastal Karnataka:** Castle Rock (dist Uttara Kannada) 24, Kollur (dist Udupi) 19, Joida (dist Uttara Kannada) 15, Siddapur (dist Uttara Kannada) 15, Ankola (dist Uttara Kannada) 13, Kadra (dist Uttara Kannada) 13, Kumta (dist Uttara Kannada) 13, Belthangadi (dist Dakshina Kannada) 12, Gersoppa (dist Uttara Kannada) 12, Mani (dist Dakshina Kannada) 11, Shirali Pto (dist Uttara Kannada) 11, Dharmasthala (dist Dakshina Kannada) 11, Manki (dist Uttara Kannada) 11, Panambur Obsy (dist Dakshina Kannada) 10, Mangaluru (dist Dakshina Kannada) 10, Honavar Obsy (dist Uttara Kannada) 10, Gokarna (dist Uttara Kannada) 9, Mangaluru Ap Obsy (dist Dakshina Kannada) 9, Puttur Hms (dist Dakshina Kannada) 9, Uppinangadi (dist Dakshina Kannada) 9 ;
- ❖ **Tamil Nadu:** Avalanche (dist The Nilgiris) 20; Chinnakalar (dist Coimbatore) 15; Emeralad (dist The Nilgiris), Valparai PTO (dist Coimbatore) 12 each; Valparai PAP (dist Coimbatore), Upper Bhavani (dist The Nilgiris), Valparai Taluk Office (dist Coimbatore) 11 each; Sholayar (dist Coimbatore), Cincona (dist Coimbatore) 10; Taluk Office Pandalur (dist The Nilgiris), Vint Worth Estate (dist The Nilgiris) 8 each; Gudalur Bazar (dist The Nilgiris), Upper Gudalur (dist The Nilgiris), Devala (dist The Nilgiris) 7 each;
- ❖ **Konkan & Goa:** Valpoi (dist North Goa) 20, Ratnagiri - Imd Obsy (dist Ratnagiri) 17, Vaibhavwadi (dist Sindhudurg) 16, Sangameshwar Devrukh (dist Ratnagiri) 15, Lanja (dist Ratnagiri) 15, Sanguem (dist South Goa) 14, Kankavli (dist Sindhudurg) 14, Mhasla (dist Raigad) 14, Ponda (dist North Goa) 13, Margao (dist South Goa) 11, Canacona (dist South Goa) 11, Mapusa (dist North Goa) 10, Colaba - Imd Obsy (dist Mumbai City) 10, Dapoli_agri (dist Ratnagiri) 10, Mormugao - Pmo Imd (dist South Goa) 10, Pernem (dist North Goa) 10, Wakwali_agri (dist Ratnagiri) 10, Panjim - Imd Obsy (dist North Goa) 10, Quepem (dist South Goa) 9, Mulde_Agri (dist Sindhudurg) 9, Rajapur (dist Ratnagiri) 9, Devgad (dist Sindhudurg) 9, Tala (dist Raigad) 9;
- ❖ **Madhya Maharashtra:** Gaganbawada (dist Kolhapur) 20, Shahuwadi (dist Kolhapur) 10, Mahabaleshwar- Imd Obsy (dist Satara) 9, Ajra (dist Kolhapur) 7
- ❖ **South Interior Karnataka:** Kottigehara (dist Chikkamagaluru) 19, Hunchadakatte (dist Shivamogga) 14, Agumbe Emo (dist Shivamogga) 13, Bhagamandala (dist Kodagu) 13, Linganamakki Hms (dist Shivamogga) 12, Kalasa (dist Chikkamagaluru) 11, Mudigere (dist Chikkamagaluru) 9, Kammardi (dist Chikkamagaluru) 7, Koppa (dist Chikkamagaluru) 7, Balehonnur (dist Chikkamagaluru) 7,
- ❖ **Kerala & Mahe:** Kannur Icar AWS (Kannur district) 14, Irikkur, Taliparamba & Cheruvanchery AWS (all in Kannur district) 13 each, AMS KANNUR (Kannur district), Kannur, Kuppady (Wayanad district), Aralam AWS & Ayyankunnu AWS (both in Kannur district) 12 each, Munnar (Idukki district), Vadakara (Kozhikode district), Mananthavady & Padamala AWS (both in Wayanad district), Pinarayi AWS & Peringome AWS (both in Kannur district), Padannakkad AWS (Kasargod district) & Kannur Airport AWS 11 each, Vellanikkara (Thrissur district), Vythiri, Ambalavayal, Karapuzha AWS & Kuppadi AWS (all in Wayanad district) & Vellarikkundu AWS (Kasaragod district) 10 each
- ❖ **Himachal Pradesh:** Dharmasala (dist Kangra) 14, Dharmshala Aws (dist Kangra) 7,
- ❖ **Vidarbha:** Desaiganj (dist Gadchiroli) 13, Armori (dist Gadchiroli) 9, Bhandara (dist Bhandara) 9, Dhanora (dist Gadchiroli) 9, Bhamragad (dist Gadchiroli) 8, Gadchiroli (dist Gadchiroli) 8, Sakoli (arg) (dist Bhandara) 7, Kamptee (dist Nagpur) 7, Pauni (dist Bhandara) 7,
- ❖ **Uttarakhand:** HARORI(Dehradun):13,SAMA(Bageshwar):11,LOHARKHET(Bageshwar):10, DHARCHULA(Pithoragarh):9,MUNSIYARI(Pithoragarh):9,ROORKEE(Haridwar):8,NARENDRANAGAR(Tehri):8,LANDSDOWN(Pauri):8,CHALTHI(Champawat):8.0,ROORKEE(Haridwar):7;
- ❖ **North Interior Karnataka:** Londa (dist Belagavi) 12;
- ❖ **Chhattisgarh:** Aundhi (dist Mohala Manpur Chowki) 11, Lal Bahadur Nagar (dist Rajnandgaon) 9, Pakhanjur (dist Kanker) 7, Naya Baradwar (dist Sakti) 7,
- ❖ **Sub-Himalayan West Bengal & Sikkim:** Hasimara (dist Alipurduar) 11, Jhallong (dist Kalimpong) 9, Nagarkata (dist Jalpaiguri) 9, Rongo (dist Kalimpong) 9, Yuksom (dist Gyalshing) 9, Buxaduar (dist Alipurduar) 8, Champasari (dist Darjeeling) 8, Nh31 Bridge (dist Jalpaiguri) 8, Siliguri Pto (dist Darjeeling) 8, Gajoldoba (dist Jalpaiguri) 7,
- ❖ **Jammu-Kashmir:** Udhampur(iaf) (dist Udhampur) 10, Kathua Arg (dist Kathua) 9, Kathua_kv (dist Kathua) 7,
- ❖ **Assam & Meghalaya:** Drf (dist Baksa) 10, Khanapara (dist Kamrup Metropolitan) 8, Nongpuh (dist Ri Bhoi) 7,
- ❖ **Madhya Pradesh:** Pachmarhi (dist Narmadapuram) 9, Sultanpur (dist Raisen) 9, Ashta-aws (dist Sehore) 7,
- ❖ **Haryana:** Tajewala (dist Yamuna Nagar) 8,
- ❖ **Odisha:** Phulbani (Kandhamal) 8, Kantamal (Boudhgarh) 8, Bangamunda (Bolangir) 7, Barpalli (Bargarh) 7,
- ❖ **Punjab:** Madhopur (dist Pathankot) 7, Malikpur (dist Pathankot) 7,
- ❖ **Gujarat Region:** Surat_kv (dist Surat) 7,
- ❖ **Andaman & Nicobar Islands:** Maya Bandar (dist North & Middle Andaman) 7,
- ❖ **Tripura:** Kanchanpur (dist North Tripura) 9,





IMPACT & ACTION SUGGESTED due to

- ✓ **Isolated extremely heavy rainfall very likely over Konkan & Goa, Madhya Maharashtra, Telangana during 18th-20th; South Interior Karnataka, Coastal Karnataka, Gujarat State, Coastal Andhra Pradesh & Yanam on 18th & 19th; Tamil Nadu on 18th; over Vidarbha, Chhattisgarh on 19th & 20th and Odisha on 19th July.**
- ✓ **Isolated very heavy rainfall likely over Vidarbha, Chhattisgarh on 18th; Odisha on 18th & 20th; West Madhya Pradesh during 20th-22nd; East Madhya Pradesh on 21st & 22nd 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

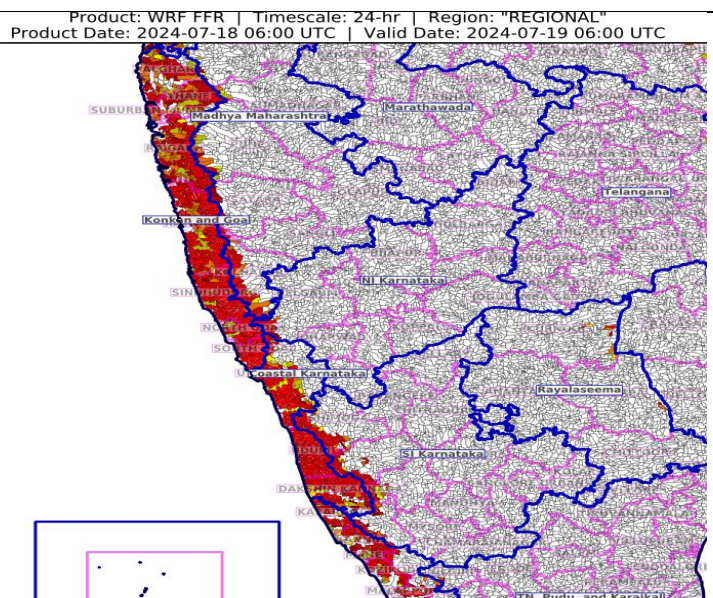
- Make provision for draining out excess water from crop fields to avoid water stagnation in Odisha, Himachal Pradesh, Uttarakhand, East Rajasthan, Madhya Pradesh, Chhattisgarh, Vidarbha, Konkan & Goa, Ghat areas of Madhya Maharashtra, Gujarat State, Tamil Nadu, Kerala, Karnataka, Coastal Andhra Pradesh and Telangana.
- Postpone transplanting of rice and finger millet in Konkan; rice in Coastal Karnataka.
- Postpone sowing of green gram, black gram and sesame in Saurashtra.
- 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 19-07-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Konkan & Goa, Coastal Karnataka and northern parts of Kerala & Mahe 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; **ARG:** Automatic Rain Gauge; **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)

 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

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 Storm: Wind speed > 220 kmph (> 119 knots)