

Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 19th June, 2024

Time of Issue: 1330 hours IST

Subject:

- i. **Heavy to very heavy rainfall very likely to continue over Sub-Himalayan West Bengal & Assam-Meghalaya during next 3 days and isolated heavy rainfall thereafter.**
- ii. **Heat wave conditions likely to continue over many parts of North India (except Uttar Pradesh) during next 24 hours and gradually abate thereafter.**

Realised weather during past 24 hours till 0830 hours IST of today: (details in Annexure I)

- ❖ **Heatwave to severe heat wave conditions** prevailed in most parts of Uttar Pradesh; in many parts of Haryana-Chandigarh-Delhi, Punjab; in some parts of south Uttarakhand & Himachal Pradesh; in isolated pockets of Bihar. **Heatwave conditions** in isolated pockets over northeast Madhya Pradesh, Odisha, Jharkhand & Jammu division.
- ❖ **Maximum temperatures** were in the range of 44-46°C over many parts of Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh; in some parts over north Madhya Pradesh, south Bihar, north Rajasthan.
- ❖ **Warm night to severe warm night conditions** observed over many parts of Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh and **Warm night conditions** observed in isolated pockets of East Uttar Pradesh and north Rajasthan.
- ❖ **Today, Minimum temperatures** were in the range of 30-34°C over many parts of Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh and north Rajasthan and these were above normal by 4-7°C over these regions.
- ❖ **The highest Maximum Temperature** of 46.4°C was reported at **Orai (West Uttar Pradesh)** over the country.
- ❖ **Heavy to very heavy rainfall with extremely heavy falls** occurred at isolated places over Sub-Himalayan West Bengal & Sikkim; **Heavy to very heavy rainfall** at isolated places over Bihar, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu; **heavy rainfall** at isolated places over Madhya Pradesh, Chhattisgarh, Konkan & Goa, Telangana, Rayalaseema, Arunachal Pradesh, Jharkhand and Nicobar Island.
- ❖ **Gusty winds/squally winds** data reported over the country is attached in **Annexure II**.

Advance of Southwest Monsoon:

- ❖ The Northern Limit of Monsoon continues to pass through 20.5°N/60°E, 20.5°N/63°E, 20.5°N/70°E, Navsari, Jalgaon, Amravati, Chandrapur, Bijapur, Sukma, Malkangiri, Vizianagaram, 19.5°N/88°E, 21.5°N/89.5°E, 23°N/89.5°E and Islampur.
- ❖ Conditions are favourable for further advance of Southwest Monsoon into some more parts of Maharashtra, Chhattisgarh, Odisha, Coastal Andhra Pradesh & Northwest Bay of Bengal, some parts of Gangetic West Bengal, remaining parts of Sub Himalayan West Bengal and some parts of Bihar & Jharkhand during next 2-3 days.

Weather Systems and Forecast & Warnings:

- ❖ A cyclonic circulation lies over northeast Bangladesh and a trough in lower tropospheric westerlies runs roughly along Long. 88°E to the north of Lat. 22°N in lower tropospheric levels. Strong southwesterly/southerly winds are prevailing from Bay of Bengal to northeast India in lower tropospheric levels. Under their influence:
 - Widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Sub-Himalayan West Bengal during next 5 days.

- Isolated **heavy to very heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura during next 5 days with **isolated extremely heavy rainfall over Assam & Meghalaya and Sub-Himalayan West Bengal on 19th June, 2024.**
 - Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Gangetic West Bengal, Bihar, Jharkhand, Odisha during next 5 days.
 - Isolated **heavy rainfall** very likely over Bihar during 19th-23rd; Odisha on 19th and Jharkhand on 20th & 21st June.
- ❖ A cyclonic circulation lies over north Gujarat & neighbourhood and another over Coastal Andhra Pradesh & adjoining Telangana in lower tropospheric levels. Under their influence:
 - Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm, lightning** likely over Gujarat state, Konkan & Goa, Madhya Maharashtra & Marathwada during next 5 days.
 - Isolated **heavy rainfall** very likely over Konkan & Goa and ghat areas of Madhya Maharashtra during 19th-23rd and Gujarat state on 19th June, 2024.
 - Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over Karnataka, Kerala & Mahe, Lakshadweep; isolated to scattered light to moderate rainfall over Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana, Tamil Nadu, Puducherry & Karaikal during next 5 days.
 - Isolated **heavy rainfall** very likely over Kerala & Mahe, Coastal Karnataka during 19th-23rd; Tamil Nadu on 19th, 22nd & 23rd, South Interior Karnataka during 21st-23rd, North Interior Karnataka on 22nd & 23rd June with possibility of **very heavy rainfall** over Kerala & Mahe, Coastal Karnataka on 21st & 22nd and South Interior Karnataka on 22nd June.
 - Isolated **extremely heavy rainfall** also likely over Kerala & Mahe, Coastal Karnataka & South Interior Karnataka on 23rd June, 2024.
 - ❖ Isolated to scattered light to moderate rainfall with **thunderstorm, lightning & gusty winds (40-60 kmph)** very likely over West Madhya Pradesh and scattered to fairly widespread rainfall over East Madhya Pradesh, Vidarbha, Chhattisgarh during next 5 days. Isolated **hailstorm and thundersquall (60-70 kmph)** likely over Madhya Pradesh on 19th & 20th June.
 - ❖ A Western Disturbance seen as a cyclonic circulation over north Pakistan & neighbourhood in lower & middle tropospheric levels. Under its influence; isolated to scattered light rainfall with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand during 19th-23rd and over Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh and Rajasthan during 19th-21st June, 2024.
 - ❖ **Strong surface winds** (speed reaching 25-35 kmph) very likely over plains of Northwest India during next 2 days.

Maximum temperature forecast for next 5 days:

- ❖ Fall by 2-3°C in maximum temperatures very likely over many parts of Northwest India during next 2 days and no significant change thereafter.
- ❖ Fall by about 3-4°C in maximum temperatures very likely over East Uttar Pradesh during next 5 days.
- ❖ Fall by about 2-4°C in maximum temperatures very likely over East India during next 3 days and no significant change thereafter.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

Heat Wave, Hot & Humid Weather and Warm Night warning for next 5 days:

- ❖ **Heat wave to severe heat wave conditions** very likely in some/many parts of West Uttar Pradesh during 19th-23rd and over East Uttar Pradesh on 19th & 20th and **decrease in intensity thereafter.**
- ❖ **Heat wave conditions** very likely in isolated/some pockets of Jammu division, Himachal Pradesh, south Uttarakhand, Punjab, Bihar, Jharkhand, Odisha on 19th June and abate thereafter; over Haryana-Chandigarh-Delhi on 19th & 23rd June.
- ❖ **Warm night conditions** very likely in some parts of East Uttar Pradesh, north Rajasthan on 19th and Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh on 19th & 20th June, 2024.
- ❖ **Hot & Humid weather** very likely over Odisha and Bihar on 20th & 21st June, 2024.

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

Realised Rainfall during past 24 hours till 0830 hours IST of today:

- ❖ Light to moderate rainfall accompanied with thunderstorm & lightning observed **at most places** over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Sub-Himalayan West Bengal & Sikkim, Konkan & Goa, Kerala & Mahe, Lakshadweep, Coastal Karnataka; **at many places** over Andaman & Nicobar Islands, Vidarbha, Rayalaseema; **at a few places** over Jharkhand, Madhya Pradesh, Chhattisgarh, South Interior Karnataka, Coastal Andhra Pradesh & Yanam, Telangana, Tamil Nadu, Puducherry & Karaikal; **at isolated places** over Gangetic West Bengal, Bihar, Odisha, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Uttar Pradesh, East Rajasthan, Madhya Maharashtra, Marathwada, Gujarat State, North Interior Karnataka.
- ❖ Isolated **hailstorm** observed over Madhya Pradesh.

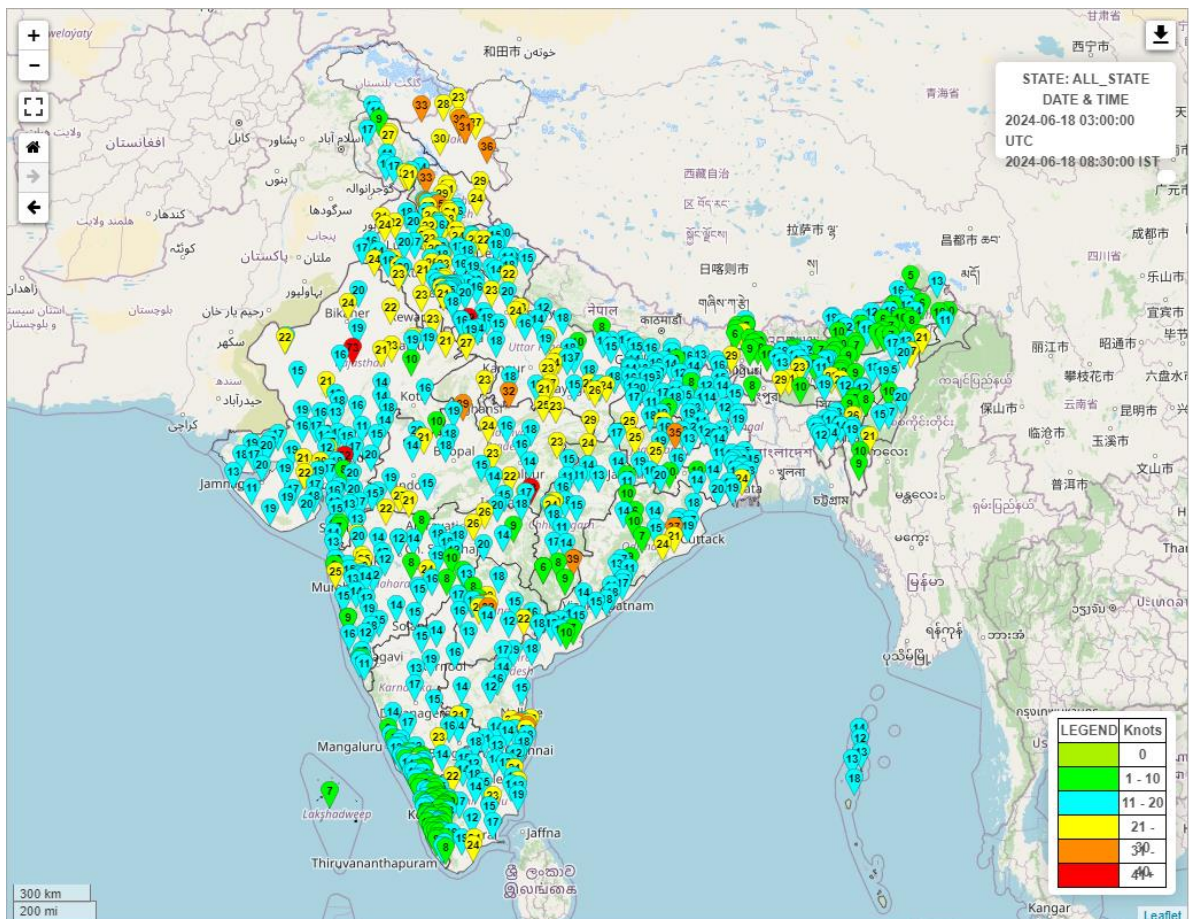
Significant amount of rainfall (in cm):

- ❖ **Sub-Himalayan West Bengal & Sikkim:** Sevoke (dist Darjeeling) 23, Falakata (dist Alipurduar) 17, Hasimara (dist Alipurduar) 15, Alipurduar (pto) (dist Alipurduar) 14, Nagarkata (dist Jalpaiguri) 13, Chepan (dist Alipurduar) 13, Chengmari/diana (dist Jalpaiguri) 12, Neora (dist Jalpaiguri) 11, Cooch Behar (dist Cooch Behar) 11, Barobhisha (dist Alipurduar) 11, Champasari (dist Darjeeling) 11, Dhupguri (dist Jalpaiguri) 10, Mathabhanga (dist Cooch Behar) 10, Amfu Pundibari (dist Cooch Behar) 10, Gajoldoba (dist Jalpaiguri) 10, Murti (dist Jalpaiguri) 9, Siliguri Pto (dist Darjeeling) 9, Buxaduar (dist Alipurduar) 9, Jalpaiguri (dist Jalpaiguri) 9, Domohani (dist Jalpaiguri) 8, Amfu Kalimpong (dist Kalimpong) 8, Dentam (dist Gyalshing) 7, Kalimpong (dist Kalimpong) 7, Nh31 Bridge (dist Jalpaiguri) 7, Bagdogra Iaf (dist Darjeeling) 7, Kumargram (dist Alipurduar) 7, Bagrakote (dist Jalpaiguri) 7,
- ❖ **Bihar:** Thakurganj (dist Kishanganj) 20, Pothia (dist Kishanganj) 19, Tedhagach (dist Kishanganj) 19, Bahadurganj (dist Kishanganj) 10, Kishanganj (dist Kishanganj) 10, Dighalbank (dist Kishanganj) 10, Chargharia (dist Kishanganj) 7,
- ❖ **Assam & Meghalaya:** Tihu Arg (dist Nalbari) 18, Hazuah (dist Barpeta) 17, Tamulpur Arg (dist Baksa) 17, Barpeta (dist Barpeta) 17, Nalbari/pagladia (dist Nalbari) 17, Tamulpur (dist Baksa) 17, Dhubri_ Cwc (dist Dhubri) 16, Baksa Kvk Aws (dist Baksa) 15, Panbari (dist Chirang) 15, Beky Rly.bridge (dist Barpeta) 15, Bahalpur (dist Dhubri) 13, Dhubri_imd (dist Dhubri) 12, Manash Nh Xing (dist Barpeta) 12, Williamnagar (dist East Garo Hills) 12, Nongstein (dist West Khasi Hills) 12, Cherrapunji(rkm) (dist East Khasi Hills) 11, Mawsynram (dist East Khasi Hills) 11, Cherrapunji (dist East Khasi Hills) 11, Goibargaon (dist Baksa) 11, Shella (dist East Khasi Hills) 10, Drf (dist Baksa) 10, Tikrikilla (dist West Garo Hills) 10, Gossaigaon (dist Kokrajhar) 10, Melabazar/matunga (dist Nalbari) 9, Puthimari (dist Kamrup (rural)) 9, Mawkyrwat (dist South West Khasi Hills) 9, Goalpara_aws (dist Goalpara) 8, Dhemaji (dist Dhemaji) 8,
- ❖ **Nagaland, Manipur, Mizoram & Tripura:** Kamalpur (dist Dhalai) 16, Khowai (dist Khowai) 15, Dm Office Arg (dist West Tripura) 11, Kailashahar Aero (dist Unakoti) 11, Teliamura_arg (dist Khowai) 10, Ashapara Aws (dist North Tripura) 9, Kanchanpur (dist North Tripura) 9, Budhjongnagar Arg (dist West Tripura) 9, Dharmanagar/ Panisagar (dist North Tripura) 9, Arundhutinagar (dist West Tripura) 8, Kolasib Agri (dist Kolasib) 8, Chhamonu (dist Dhalai) 7,
- ❖ **Tamil nadu:** Devala (dist The Nilgiris) 13, Arcot (dist Ranipet) 11, Taluk Office Pandalur (dist The Nilgiris), Ayinkudi (dist Pudukkottai) 10 each, Tindivanam (dist Villupuram), Zone 01 Thiruvottiyur (dist Chennai) 9 each, Neyveli AWS (dist Cuddalore), Wallajah (dist Ranipet), Zone 08 Anna Nagar (dist Chennai), Vadakuthu (dist Cuddalore), Panapakkam (dist Ranipet), Sriperumbudur (dist Kancheepuram), Chennai (N) (dist Chennai), Zone 05 GCC (dist Chennai), Zone 09 Teynampet (dist Chennai), Zone 06 T.V.K Nagar (dist Chennai), Zone 02 Manali (dist Chennai), Arimalam (dist Pudukkottai), Gudalur Bazar (dist The Nilgiris) 7
- ❖ **Telangana:** Bayyaram (dist Mahabubabad) 11, Mahabubabad (dist Mahabubabad) 8, Nagar Kurnool (dist Nagarkurnool) 6, Banswada(arg) (dist Kamareddy) 5, Chandurthi (dist Rajanna Sircilla) 5,
- ❖ **Chhattisgarh:** Suhela (dist Baloda Bazar) 7, Pendra Road (dist Gaurela Pendra Marwahi) 6, Kawardha (dist Kabirdham)5,
- ❖ **Rayalaseema:** Hindupur (dist Sri Sathyasai District) 7, Madakasira (dist Sri Sathyasai District) 7, Atmakur (dist Nandyal) 5,
- ❖ **Konkan & Goa:** Harnai Imd Obsy (dist Ratnagiri) 9, Mormugao - Pmo Imd (dist South Goa) 7, Dahanu - Imd Obsy (dist Palghar) 7, Colaba - Imd Obsy (dist Mumbai City) 5,
- ❖ **Arunachal Pradesh:** Roing (dist Lower Dibang Valley) 8, Pasighat_ Aero (dist East Siang) 5,
- ❖ **Andaman & Nicobar Islands:** Car Nicobar (dist Nicobar) 7, Iaf Carnicobar (dist Nicobar) 5;
- ❖ **Jharkhand:** Dhanbad-7;
- ❖ **East Madhya Pradesh:** Tikamgarh-aws (dist Tikamgarh) 7, Keolari (dist Seoni) 7, Amarwara (dist Chindwara) 5, Bargi (dist Jabalpur) 5,
- ❖ **West Madhya Pradesh:** Raghogarh (dist Guna) 7, Maksudangarh (dist Guna) 7, Narsingarh (dist Rajgarh) 7, Chachoda (dist Guna) 7, Badi (dist Raisen) 6, Ashoknagar-aws (dist Ashoknagar) 6,

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

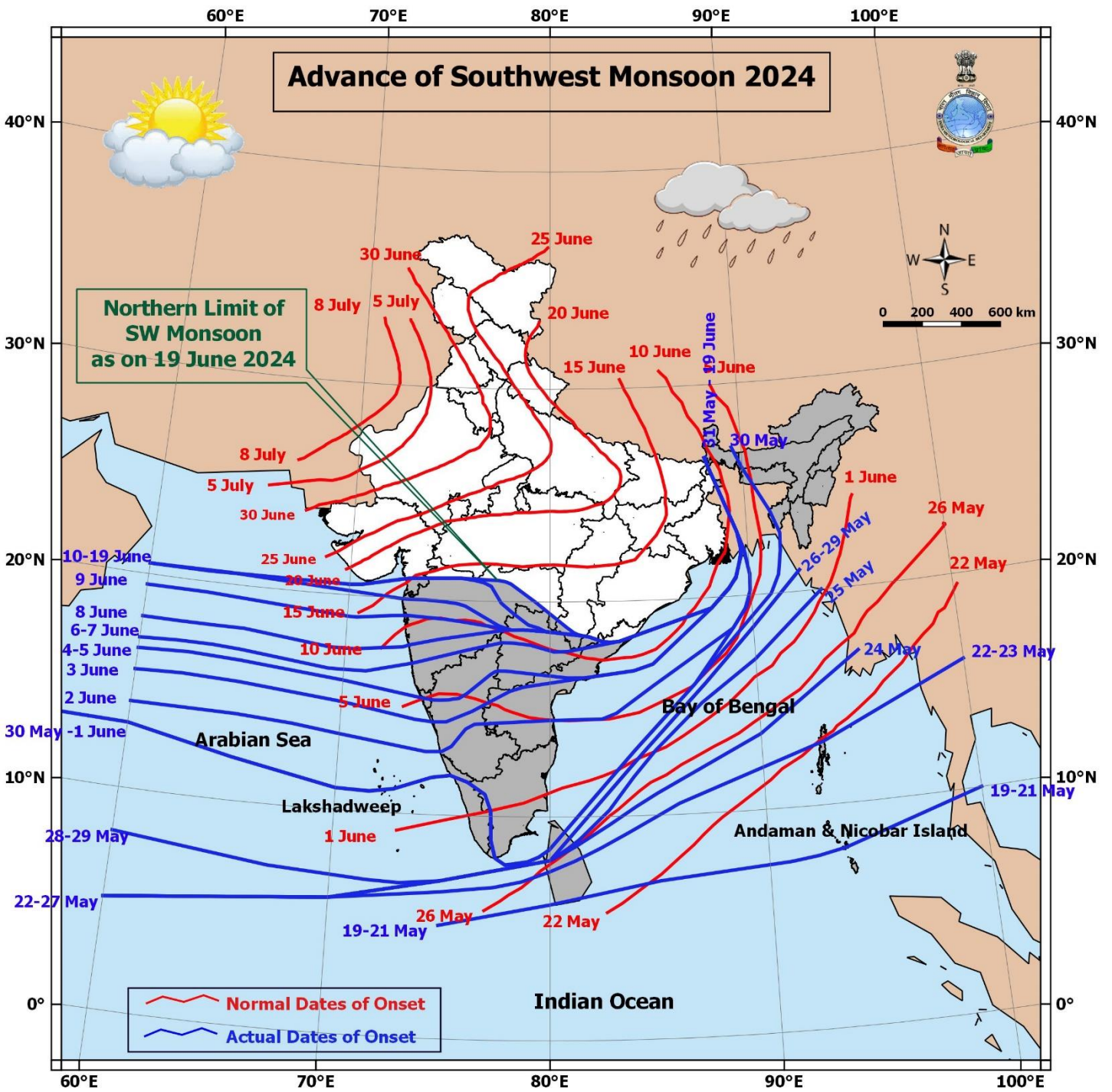
- ❖ **Maharashtra:** Raigad-91, Nashik-54
- ❖ **Madhya Pradesh:** Guna-87, Ashoknagar-61, Balaghat-59, Sehore-57, Mandla-57, Jabalpur-55
- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Leh-85, Kargil-68, Jammu-70
- ❖ **Gangetic West Bengal:** Asansol-74, Durgapur-57, Purba Mednipur-50
- ❖ **Odisha:** Khurdha-74, Bhadrak-59, Cuttack-55
- ❖ **Uttar Pradesh:** Chitrakoot-63, Raebareli-55, Bhadohi-52, Sambhal-50, Shahjahanpur-48, Gorakhpur-46
- ❖ **Himachal Pradesh:** Kinnaur-57, Kullu-53, Solan-45, Shimla-45
- ❖ **Jharkhand:** Jamtara-55, Bokaro-54, Hazaribagh-54
- ❖ **Rajasthan:** Baran-53, Bikaner-50, Jaisalmer-48, Alwar-48, Hanumangarh-46, Ajmer-44, Sikar-42, Karauli-42
- ❖ **Haryana:** Mahendragarh-52, Kaithal-48, Karnal-48, Panipat-48, Sonapat-46, Jind-46, Mewat-44
- ❖ **Uttarakhand:** Udham Singh Nagar-52, Dehradun-50, Chamoli-46, Tehri Garhwal-46
- ❖ **Punjab:** Fatehgarh Sahib-46, Faridkot-40, Ludhiana-40, Barnala-39

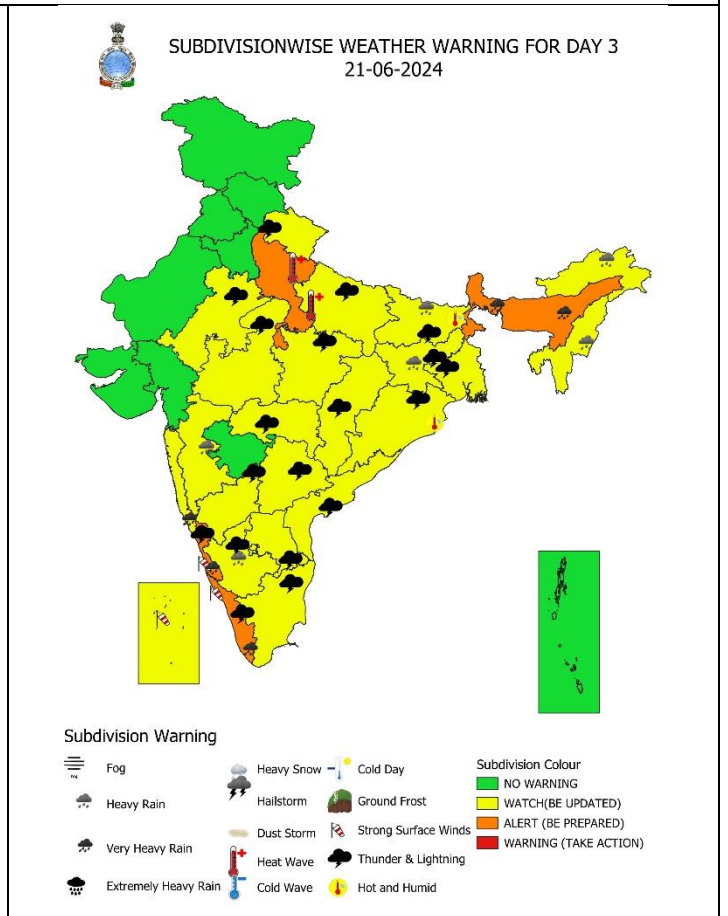
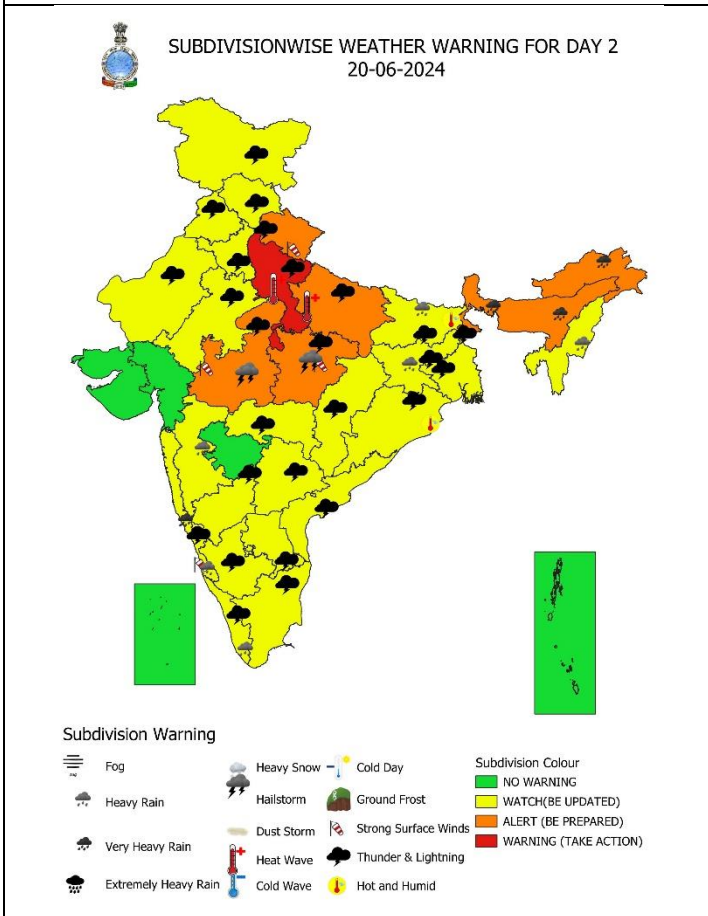
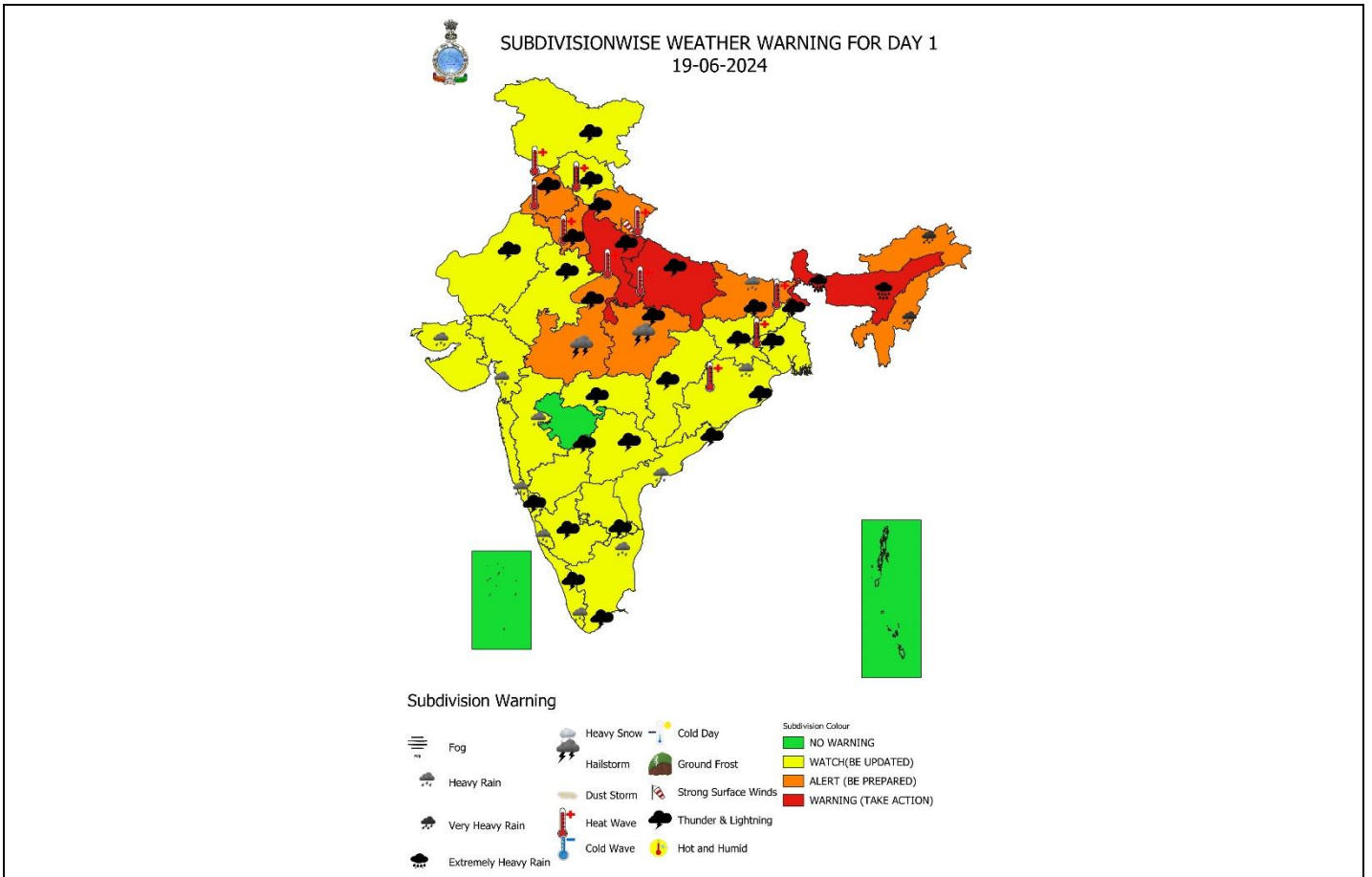
Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 18.06.2024 to 0830 hrs IST of 19.06.2024

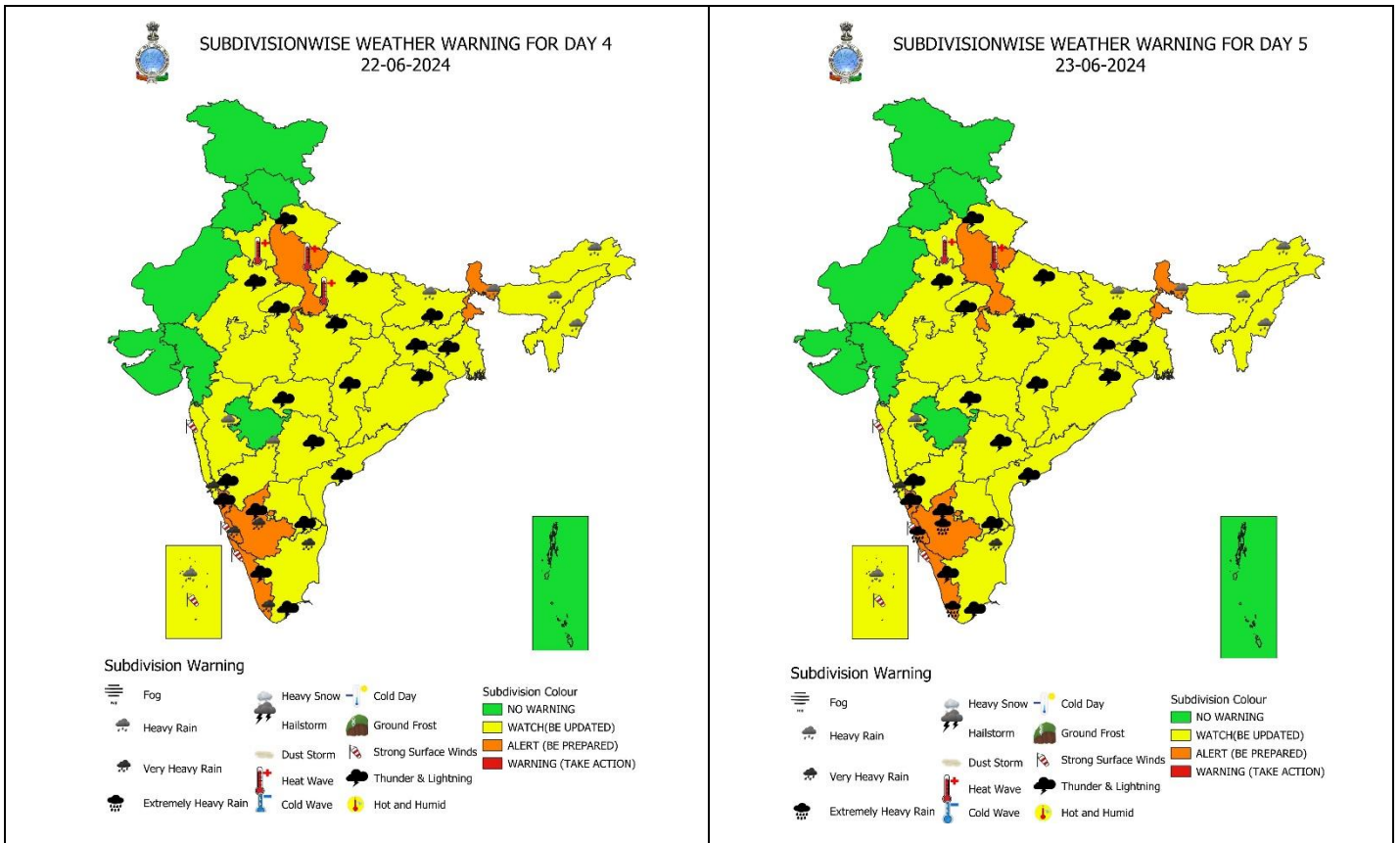


For more details, kindly refer: <http://aws.imd.gov.in:8091/>

Advance of Southwest Monsoon 2024







IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:

Red alert Areas: West Uttar Pradesh on 19th & 20th; East Uttar Pradesh on 19th June.

Orange alert Areas: Punjab, Haryana, Chandigarh & Delhi, Bihar on 19th; West Uttar Pradesh during 21st-23rd; East Uttar Pradesh on 20th;

Yellow alert Areas: Jammu division, Himachal Pradesh, Uttarakhand, Bihar, Odisha and Jharkhand on 19th June.

Red alert Areas

- Very high likelihood of developing heat illness and heat stroke in all ages.
- Extreme care needed for vulnerable people.

Orange alert Areas:

- High temperature & increased likelihood of heat illness symptoms in people who are either exposed to sun for a prolonged period or doing heavy work.
- High health concern for vulnerable people e.g. infants, elderly, people with chronic diseases.
- Avoid heat exposure– keep cool. Avoid dehydration.
- Drink sufficient water- even if not thirsty.
- Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated.

Yellow alert Areas:

- Moderate temperature & heat is tolerable for general public but moderate health concern likely for vulnerable people e.g. infants, elderly, people with chronic diseases.
- Avoid heat exposure.
- Wear lightweight, light colour, loose, cotton clothes.
- Cover your head, use a cloth, hat or umbrella.

IMPACT & ACTION SUGGESTED due to very heavy/extremely heavy rainfall over Sub-Himalayan West Bengal & Sikkim during next 5 days, Assam & Meghalaya during 19th-21st; Arunachal Pradesh on 19th & 20th; Kerala & Mahe, South Interior Karnataka and Coastal Karnataka during 21st-23rd June.

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/landslips/mudslips/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:

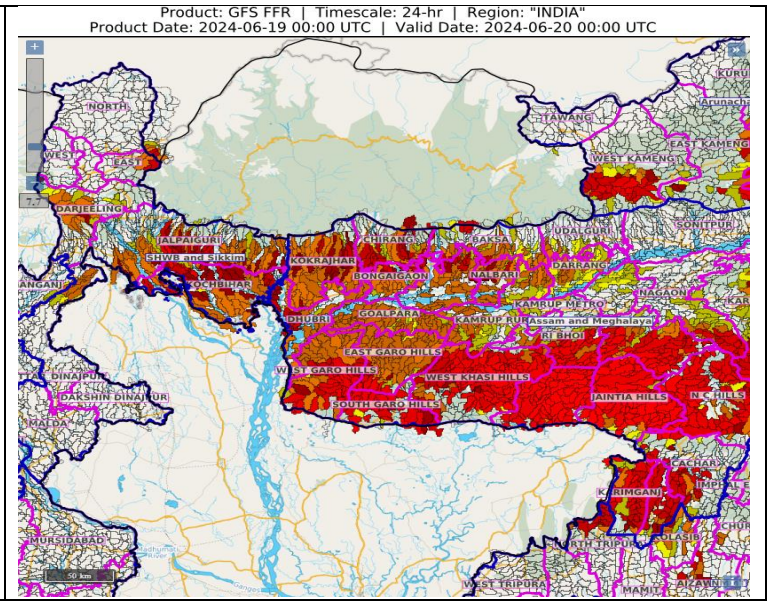
- Drain out excess water from crop fields to avoid water stagnation in North Eastern States, Sub Himalayan West Bengal & Sikkim, Konkan, Ghat regions of Madhya Maharashtra, Kerala, Coastal Karnataka and Coastal Andhra Pradesh.
- Postpone sowing of Soybean in Sub Himalayan West Bengal.
- Postpone land preparation, nursery preparation and transplanting of WRC rice in Arunachal Pradesh.
- Postpone nursery sowing of Sali rice and planting of papaya seedlings in Assam.
- Postpone fresh planting of ginger, turmeric and sowing of pumpkin, bottle gourd, cucumber and bitter gourd in Meghalaya.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand and Odisha.
- Use hail nets or hail caps in fruit orchards to prevent mechanical damage and provide mechanical support to horticultural crops & staking to vegetables in Madhya Pradesh.
- Provide mechanical support to horticultural crops & staking to vegetables.

FLASH FLOOD GUIDANCE:

24 hours Outlook for the Flash Flood Risk (FFR) till 0530 IST of 20-06-2024 :

Low to Moderate flash flood risk **likely over few watersheds & neighbourhoods of Assam & Meghalaya and SHWB & Sikkim 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.
- ❖ **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 < 1km

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)