



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release.

Date: 11th June, 2024.

Time of Issue: 1300 hours IST

Subject:

- i. Isolated extremely heavy rainfall very likely over Sub-Himalayan West Bengal & Sikkim and very heavy rainfall over Assam & Meghalaya during next 3-4 days.
- ii. Heavy to very heavy rainfall likely to continue over Maharashtra & Goa on 11th and over Karnataka, Kerala & Telangana on 11th & 12th June and decrease thereafter.
- iii. Heat wave to severe heat wave conditions likely to continue over parts of Northwest & East India during next 5 days.

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

- ❖ Yesterday, **Heat wave to severe conditions** prevailed over some parts of Gangetic West Bengal, Bihar; isolated pockets of Jharkhand; **heat wave conditions** over some parts of Uttar Pradesh, Delhi and in isolated parts of Punjab, Haryana and Odisha.
- ❖ Yesterday, Maximum temperatures were in the range of 42-45°C over many parts of Rajasthan, Punjab & Delhi; in some parts of Haryana, Uttar Pradesh and in isolated places over Bihar, Jharkhand, Gangetic West Bengal & East Madhya Pradesh. These were above normal by 3-5°C over some parts of these regions.
- ❖ Yesterday, **the highest maximum temperature of 46.3°C** was reported at Prayagraj (East Uttar Pradesh) over the country.
- ❖ **Heavy to very heavy rainfall** at isolated places over Konkan & Goa, Madhya Maharashtra, Marathwada, Sub-Himalayan West Bengal & Sikkim; **heavy rainfall** at isolated places over East Madhya Pradesh, Karnataka, Kerala, Tamil Nadu and Assam & Meghalaya.
- ❖ **Gusty winds/squally winds** data reported over the country is attached in **Annexure II**.

Advance of Southwest Monsoon:

- ❖ Southwest Monsoon has further advanced into some more parts of North Arabian Sea, Maharashtra and Telangana today, the 11th June, 2024.
- ❖ The Northern Limit of Monsoon now passes through 20.5°N/60°E, 20.5°N/63°E, 20.5°N/70°E, Navsari, Jalgaon, Akola, Pusad, Ramagundam, 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 Telangana and Chhattisgarh during next 48 hours. (**Annexure III**)

Weather Systems and Forecast & Warnings: (Annexure IV)

- ❖ A cyclonic circulation lies over northeast Assam & neighbourhood in lower tropospheric levels. A trough runs from East Uttar Pradesh to Nagaland and another north-south trough runs roughly along Long. 86°E to the north of Lat. 22°N in lower tropospheric levels. Strong southwesterly/southerly winds are prevailing from Bay of Bengal to northeastern States in lower tropospheric levels. Under their influence:
 - ✓ Fairly widespread to 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 & Sikkim during next 7 days.

- ✓ Isolated **heavy to very heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and isolated **heavy rainfall** over Arunachal Pradesh during next 5 days; Nagaland, Manipur, Mizoram & Tripura during 13th-15th June, 2024.
- ✓ Isolated **extremely heavy rainfall** also likely over Sub-Himalayan West Bengal & Sikkim during 11th-13th June, 2024.
- ✓ Isolated to scattered 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 and increase thereafter. Isolated to scattered light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (40-60 kmph)** very likely over Madhya Pradesh, Vidarbha, Chhattisgarh during next 5 days.
- ❖ A shear zone runs roughly along 17°N in lower & middle tropospheric levels. Under its influence:
 - ✓ Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (40-50 kmph)** likely over Konkan & Goa, Madhya Maharashtra, Marathwada, Karnataka, Telangana, Kerala & Mahe, Lakshadweep during next 3 days; isolated light to moderate rainfall over Coastal Andhra Pradesh & Yanam, Rayalaseema, Tamil Nadu, Puducherry & Karaikal during next 5 days.
 - ✓ Isolated **heavy rainfall** very likely over Madhya Maharashtra on 11th; over Kerala & Mahe, Marathwada, Interior Karnataka, Telangana on 11th & 12th; Coastal Karnataka during 11th-13th June, 2024.
 - ✓ Isolated **very heavy rainfall** also very likely Konkan & Goa on 11th; North Interior Karnataka on 12th June, 2024.

Maximum temperature observation and forecast for next 5 days:

- ❖ Fall in maximum temperatures by 2-3°C very likely over Maharashtra India during next 24 hours and gradual rise by 2-3°C thereafter.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

Heat Wave and Warm Night warning for next 5 days:

- ❖ **Heat wave conditions** very likely in isolated to some pockets of Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Odisha during next 5 days; Himachal Pradesh, Jammu Division, East Madhya Pradesh during 11th-13th; Rajasthan on 12th & 13th June, 2024.
- ❖ **Heat wave to severe heat wave conditions** very likely in some parts of Gangetic West Bengal, Bihar, Jharkhand during 11th-14th and isolated heat wave on 15th; **Heat wave conditions** at isolated to some parts of Uttar Pradesh on 11th and **heat wave to severe heat wave conditions** in some parts during 12th-15th June, 2024.
- ❖ **Warm Night** very likely to prevail over isolated pockets of Odisha during 11th-14th 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 Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Marathwada, Kerala & Mahe, Lakshadweep, Coastal Karnataka; **at many places** over Konkan & Goa, South Interior Karnataka; **at a few places** over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Telangana, Rayalaseema, North Interior Karnataka, Vidarbha and **at isolated places** over Gangetic West Bengal, Odisha, Jharkhand, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Rajasthan, Gujarat State, Madhya Pradesh, Chhattisgarh, Tamil Nadu, Puducherry & Karaikal and Coastal Andhra Pradesh & Yanam.

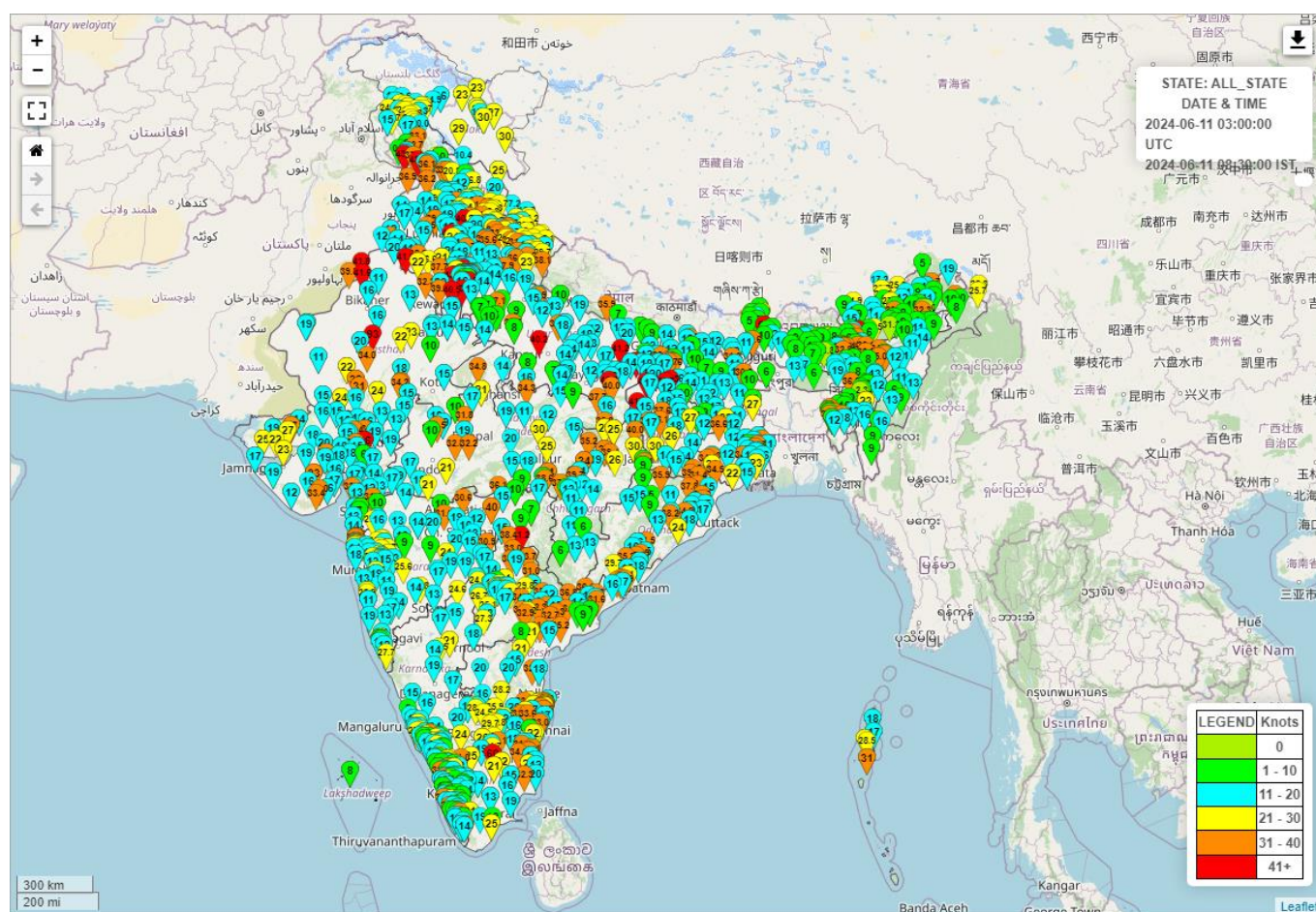
Significant amount of rainfall (in cm):

- ❖ **Sub-Himalayan West Bengal & Sikkim:** Neora (dist Jalpaiguri) 20, Bhutanghat (dist Alipurduar) 20, Hasimara (dist Alipurduar) 16, Buxaduar (dist Alipurduar) 14, Kumargram (dist Alipurduar) 11, Siliguri Pto (dist Darjeeling) 11, Gajoldoba (dist Jalpaiguri) 10, Tadong (dist Gangtok) 10, Gangtok (dist Gangtok) 10, Chepan (dist Alipurduar) 9, Damthang (dist Namchi) 8, Chengmari/diana (dist Jalpaiguri) 8, Murti (dist Jalpaiguri) 7, Samsing (dist Darjeeling) 7, Nagarkata (dist Jalpaiguri) 7, Ranipool (dist Gangtok) 7,
- ❖ **Konkan & Goa:** Murud (dist Raigad) 15, Alibag - Imd Part Time (dist Raigad) 5, Colaba - Imd Obsy (dist Mumbai City) 5, Mhasla (dist Raigad) 5, Margao (dist South Goa) 4,
- ❖ **Madhya Maharashtra:** Dahigaon - Fmo (dist Jalgaon) 14, Jalgaon - Imd Pt (dist Jalgaon) 9, Jamner (dist Jalgaon) 7, Bhadgaon (dist Jalgaon) 5,
- ❖ **Marathwada:** Nilanga (dist Latur) 13, Lohara (dist Dharashiv) 11, Umarga (dist Dharashiv) 11, Ausa (dist Latur) 10, Shirur Anantpal (dist Latur) 10, Renapur (dist Latur) 9, Chakur (dist Latur) 9, Bhum (dist Dharashiv) 8, Ambejogai / Mominabad (dist Beed) 8,
- ❖ **Assam & Meghalaya:** Goibargaon (dist Baksa) 7, Beky Rly.bridge (dist Barpeta) 6, Barpeta (dist Barpeta) 6, Barpeta/sarbhog_aws (dist Barpeta) 5, Melabazar/matunga (dist Nalbari) 5, Manash Nh Xing (dist Barpeta) 4, Barpathar (dist Golaghat) 4,
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Taluk Office Pandalur (dist The Nilgiris) 7, Devala (dist The Nilgiris) 5, Kundrathur (dist Kancheepuram), Gudalur Bazar (dist The Nilgiris) 4 each,
- ❖ **Kerala & Mahe:** Vellarikkundu Aws (dist Kasargod) 7, Mahe (dist Mahe) 7, Padannakkad Aws (dist Kasargod) 7, Kudulu (dist Kasargod) 7, Vadakara (dist Kozhikode) 6, Hosdurg (dist Kasargod) 6, Padinjarathara Dam Aws (dist Wynad) 6, Quilandi (dist Kozhikode) 6, Kollamkode (dist Palakkad) 5, Kollengode Aws (dist Palakkad) 5,
- ❖ **East Madhya Pradesh:** Parasia (dist Chindwara) 7, Umreth (dist Chindwara) 6, Dindori-aws (dist Dindori) 2,
- ❖ **Andaman & Nicobar Islands:** Port Blair (dist South Andaman) 6, Maya Bandar (dist North & Middle Andaman) 5,

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

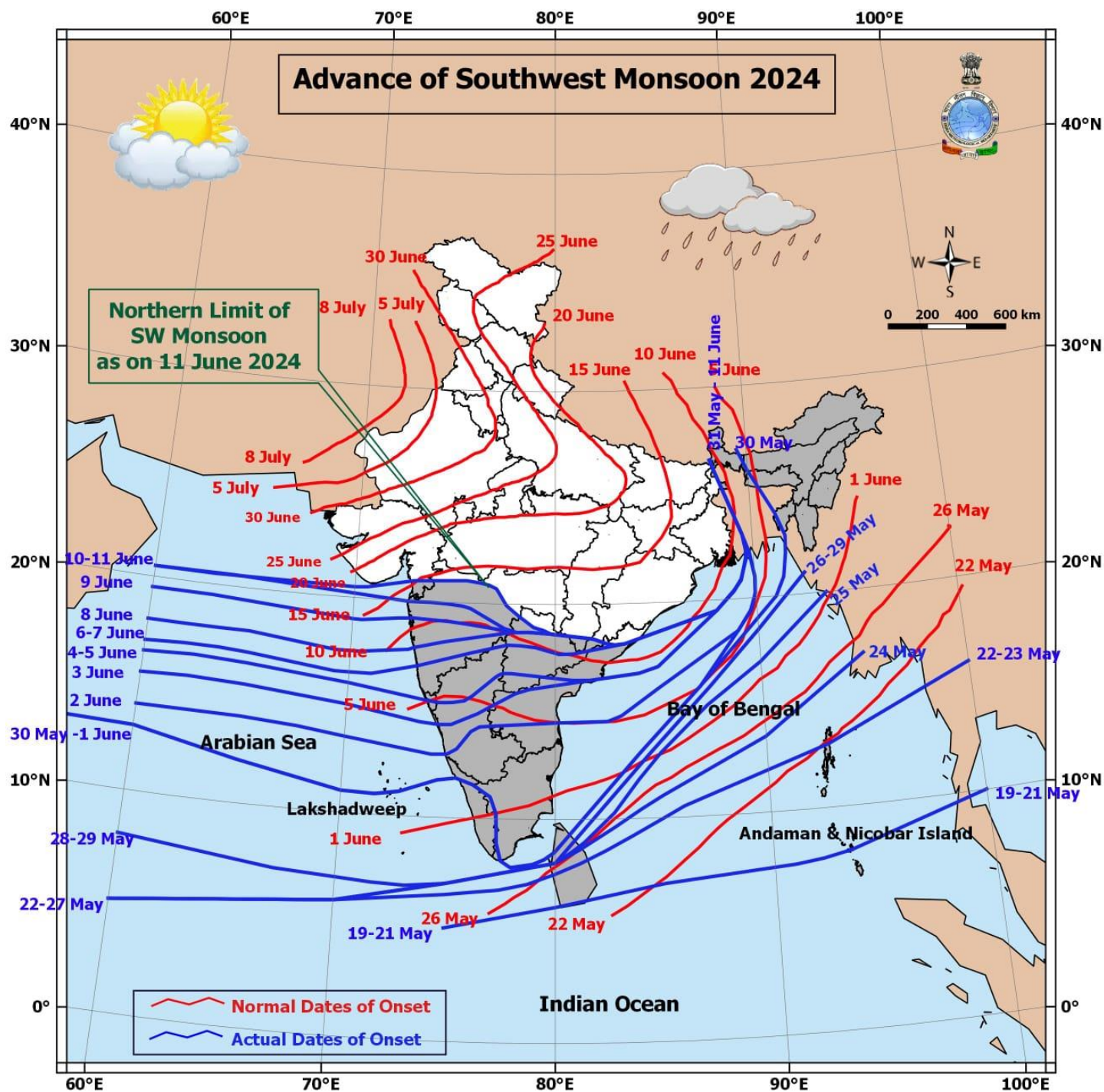
- ❖ **West Bengal:** Jalpaiguri-107, Murshidabad-50, South Twenty Four Parganas-42, Durgapur-41, Purba Mednipur-41
- ❖ **Gujarat State:** Panchmahal-85, Kachchh-68, Amreli-61, Jamnagar-42
- ❖ **Maharashtra:** Yavatmal-74, Pune-50, Beed-39
- ❖ **Haryana:** Gurgaon-65, Rohtak-44, Hisar-41, Jind-39, Kaithal-39
- ❖ **Chhattisgarh:** Mungeli-63, Korba-57, Jashpur-55, Koriya-50, Janjgir Champa-48, Surajpur-46
- ❖ **Madhya Pradesh:** Balaghat-63, Jabalpur-55, Mandla-46, Ashoknagar-39, Khandwa-39, Jalgaon-39
- ❖ **Rajasthan:** Chittaurgarh-59, Sirohi-59, Udaipur-44, Ajmer-42, Jalore-41
- ❖ **Kerala & Mahe:** Kannur-59, Pathanamthitta-48, Kottayam-48, Wayanad-46
- ❖ **Ladakh:** Leh-55, Kargil-54
- ❖ **Jharkhand:** Simdega-55, Bokaro-50, Khunti-48
- ❖ **Uttarakhand:** Dehradun-54, Udham Singh Nagar-42
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Ranipet-52, Chennai-50, Tiruvallur-48, Salem-48, Tiruppur-46, Thoothukudi-46, Tiruvarur-46
- ❖ **Himachal Pradesh:** Lahaul & Spiti-46, Solan-44, Sirmaur-39

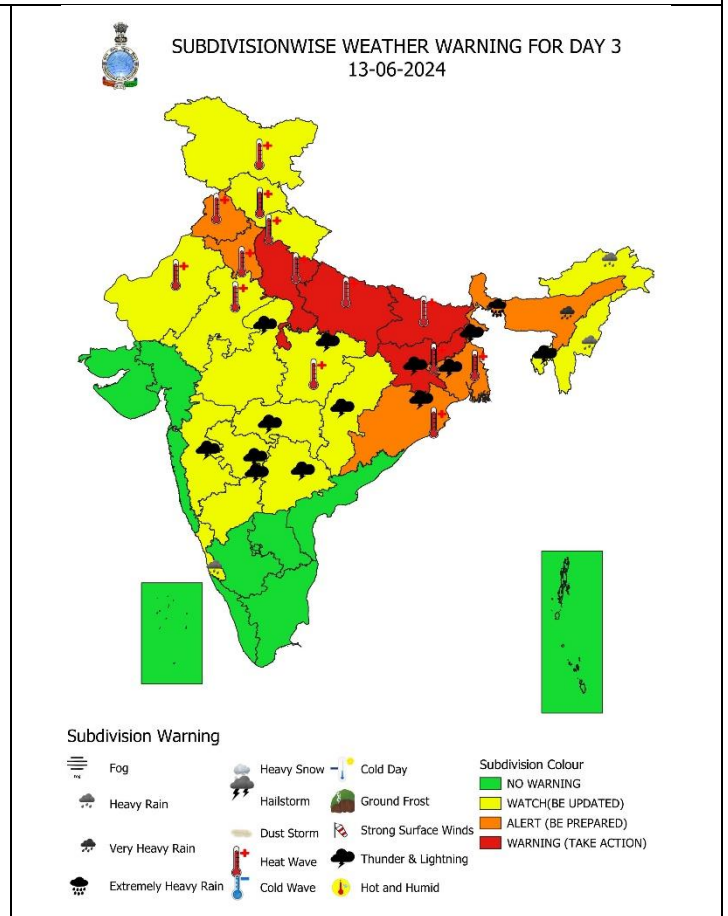
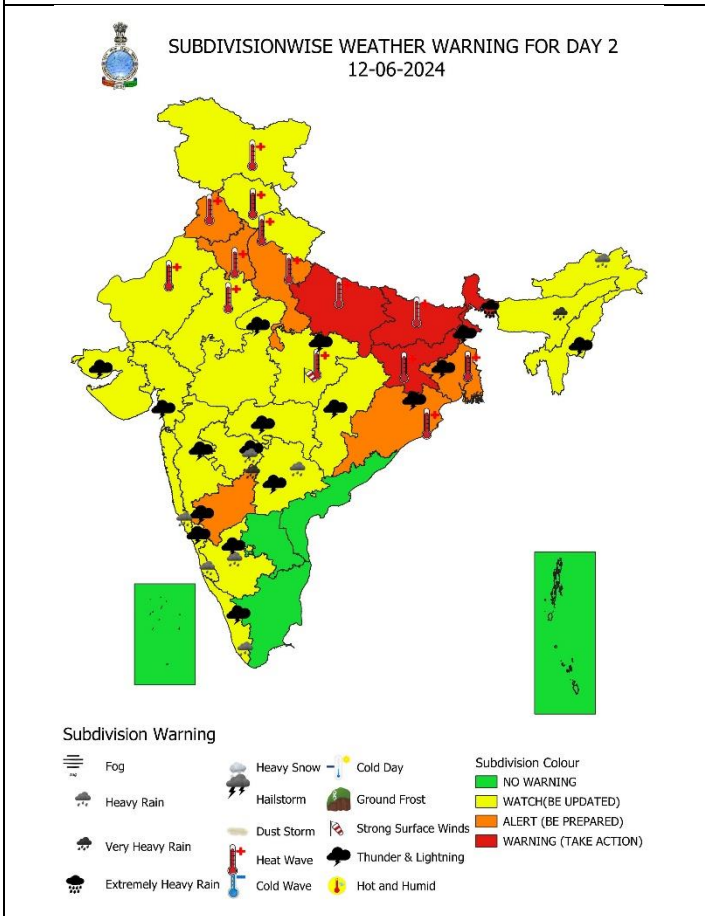
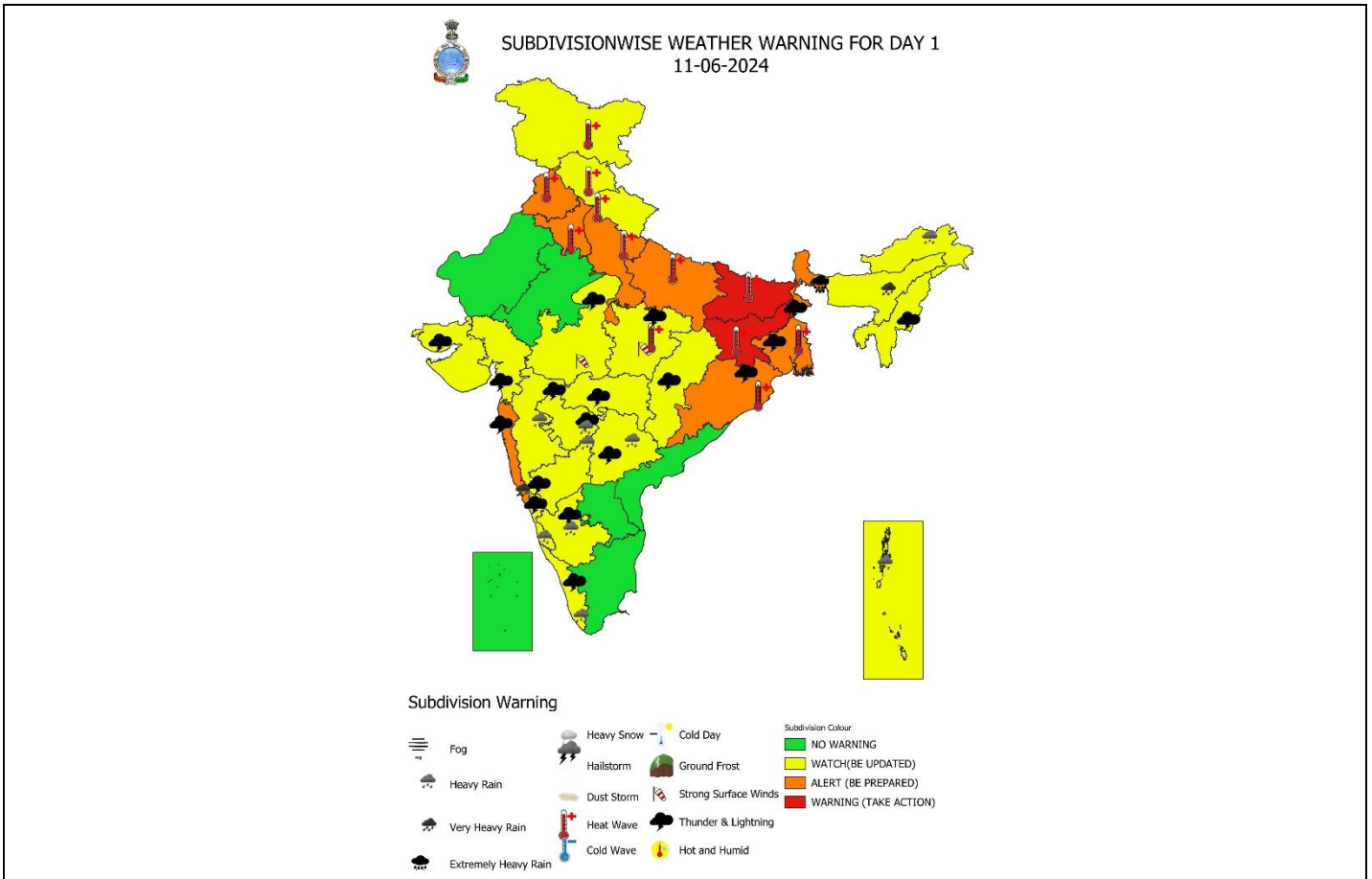
Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 10.06.2024 to 0830 hrs IST of 11.06.2024

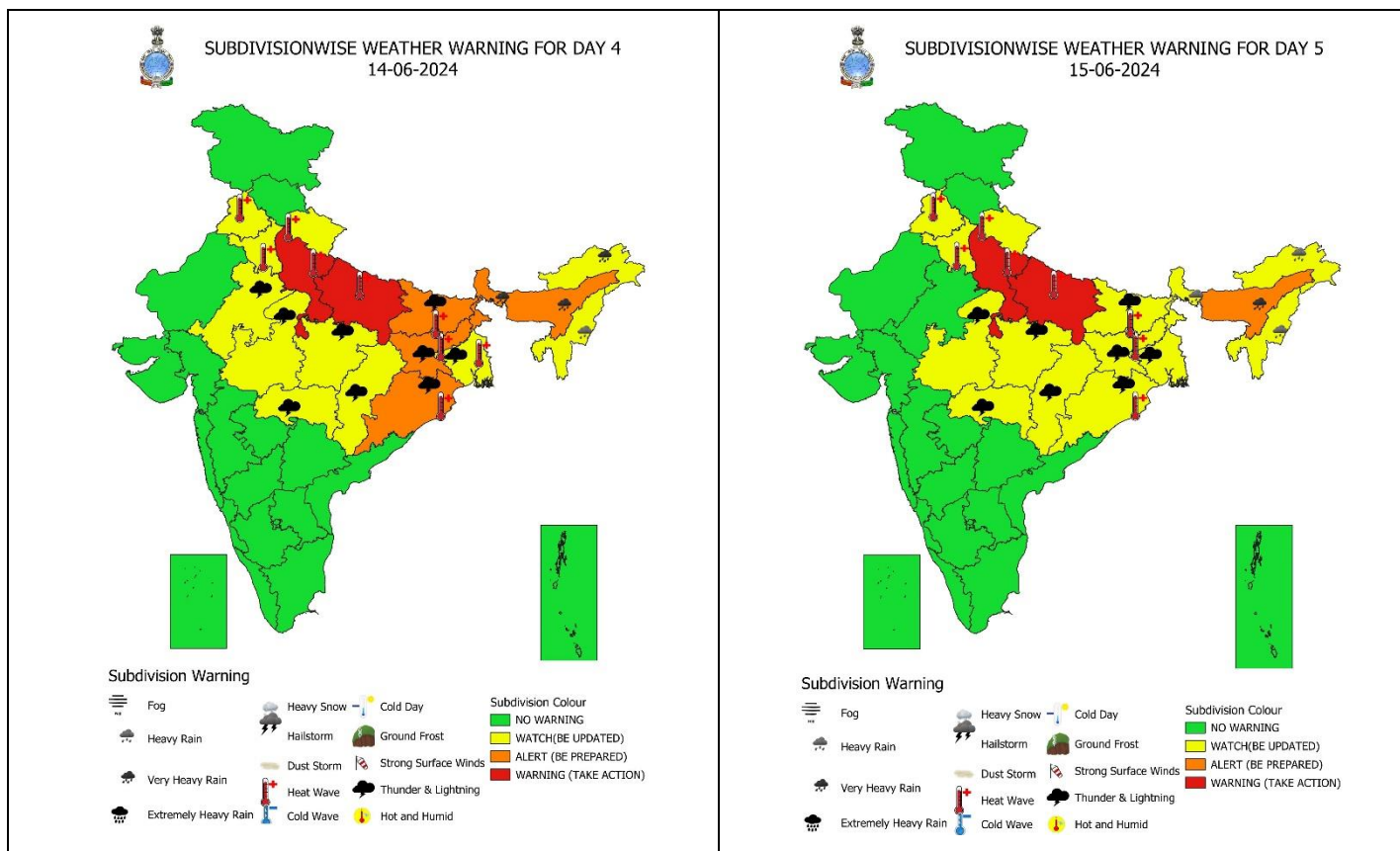


For more details, kindly refer: <http://aws.imd.gov.in:8091/>

Advance of Southwest Monsoon 2024







IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:

Red Alert Areas: Bihar, Jharkhand during 11th-13th; East Uttar Pradesh during 12th-15th; West Uttar Pradesh during 13th-15th;

Orange Alert Areas: Bihar, Jharkhand on 14th; East Uttar Pradesh 11th; West Uttar Pradesh on 11th & 12th; Haryana-Chandigarh-Delhi, Punjab during 11th-13th; Gangetic West Bengal, Odisha during 11th-14th June

Yellow Alert Areas: Uttarakhand 11th-15th; Himachal Pradesh, Jammu-Division, northeast Madhya Pradesh during 11th-13th; Punjab on 14th & 15th; north Rajasthan on 12th & 13th June, 2024.

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 Konkan on 11th; North Interior Karnataka on 12th; Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim during 11th-14th June, 2024.

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, Hail Storms and Heat Wave likely over various parts of the country;

- Make provision for draining out excess water from crop fields to avoid water stagnation in Kerala, Karnataka, Telangana, Konkan, Madhya Maharashtra, Marathwada, Sub Himalayan West Bengal, Arunachal Pradesh and Assam & Meghalaya.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Rajasthan, Bihar, Jharkhand, Odisha and Gangetic West Bengal.
- Provide mechanical support to horticultural crops & staking to vegetables to prevent damage from gusty winds.

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 $< 1\text{km}$

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)