Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release.
Date: 02nd June, 2024
Time of Issue: 1330 hours IST

Subject:

i. **Heat wave conditions over Northwest, Central & East India are likely to continue with reduced intensity during next 3 days.**
ii. **Conditions are favourable for further advance of Southwest Monsoon into some more parts of central Arabian Sea, Karnataka, Rayalaseema, Coastal Andhra Pradesh, Westcentral and Northwest Bay of Bengal during next 2-3 days.**

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

- ***Heat wave conditions*** *prevailed in some parts over Punjab, Northwest Rajasthan, north Madhya Pradesh and in isolated pockets over south Haryana-Delhi, West Uttar Pradesh, west Jharkhand, central Chhattisgarh, Odisha, Vidarbha.* ***Heat wave conditions*** *have been prevailing over Haryana, Chandigarh & Delhi, Rajasthan since 17th and over Madhya Pradesh & Uttar Pradesh since 18th May, 2024.*
- Yesterday, In Maximum temperatures, upto 2-3°C fall has been observed over Rajasthan, Haryana-Delhi and West Uttar Pradesh and upto 3-4°C fall observed over East Uttar Pradesh. However, 45-46°C temperatures observed in isolated pockets over Punjab, Northwest Rajasthan, north Madhya Pradesh, Vidarbha and Chhattisgarh and West Jharkhand.
- *Yesterday,* ***the highest maximum temperature*** *of* ***46.9°C*** *was reported at* ***Jhansi (West Uttar Pradesh)*** *over the country.*
- ***Heavy to very heavy rainfall*** *observed at isolated places over Kerala;* ***heavy rainfall*** *at isolated places over Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, Rayalaseema, Tamil Nadu, Puducherry & Karaikal.*
- ***Gusty winds/squally winds*** *data reported over the country is attached in* **Annexure II.**

Advance of Southwest Monsoon:

- The Southwest Monsoon has advanced into some more parts of central Arabian Sea; remaining parts of Lakshadweep area, Kerala and Tamil Nadu; some parts of Karnataka, Rayalaseema and Andhra Pradesh; remaining parts of Southwest Bay of Bengal; some more parts of Central Bay of Bengal and some parts of Northwest Bay of Bengal
- The Northern Limit of Monsoon passes through 14°N/60°E, 14°N/65°E, 13.5°N/70°E, Mangalore, Chitradurga, Nellore, 14.5°N/82.5°E, 16°N/85°E, 21°N/90°E, 23°N/89.5°E and Islampur. **(Annexure III)**
- Conditions are favourable for further advance of Southwest Monsoon into some more parts of central Arabian Sea, Karnataka, Rayalaseema, Coastal Andhra Pradesh, Westcentral and Northwest Bay of Bengal during next 2-3 days.

Weather Systems and Forecast & Warnings: (Annexure IV)

- 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 Assam & Meghalaya during 02nd-04th with heavy rainfall on 05th & 06th; Sub-Himalayan West Bengal & Sikkim on 02nd with heavy rainfall during 03rd-06th and isolated **heavy rainfall** over Arunachal Pradesh, Tripura during 02nd-04th June.

❖ A cyclonic circulation lies over Southern parts of East Uttar Pradesh in lower tropospheric levels. Under its influence:

- ✓ Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Bihar, Gangetic West Bengal during 02nd-05th; Isolated to scattered light/moderate rainfall Chhattisgarh, Vidarbha, Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Marathwada during next 5 days.
- ✓ Isolated **heavy rainfall** also very likely over Bihar on 02nd June.

❖ A cyclonic circulation lies over southeast Arabian sea adjoining south Kerala coast in middle tropospheric levels and another cyclonic circulation lies over westcentral Bay of Bengal adjoining southwest Bay of Bengal off south Coastal Andhra Pradesh adjoining north Tamil Nadu in lower tropospheric levels. Strong westerly winds are prevailing along Kerala Coast. Under its influence:

- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over Kerala & Mahe, Lakshadweep, Andaman & Nicobar Islands, Karnataka; isolated to scattered light to moderate rainfall over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh, Telangana, Rayalaseema during next 7 days.
- ✓ *Isolated heavy rainfall very likely over Tamil Nadu on 02nd & 05th; South Interior Karnataka on 01st & 02nd; Interior Karnataka during 02nd-06th; Coastal Karnataka, Coastal Andhra Pradesh, Telangana, Rayalaseema on 02nd June, 2024.*
- ✓ ***Isolated very heavy rainfall very likely over Kerala & Mahe on 02nd June.***

❖ A Western Disturbance as a trough aloft in middle tropospheric westerlies roughly along Long. 76°E to the north of Lat. 28°N. Three cyclonic circulations lie over southwest Uttar Pradesh, north Haryana & neighbourhood and southeast Rajasthan respectively in lower tropospheric levels. Prevailing southwesterly Arabian Sea winds over the plains of Northwest India are likely to continue during next 7 days. Under their influence;

- ✓ Isolated to scattered light rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand during next 5 days.
- ✓ Isolated very light to light rainfall with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Punjab and Haryana during 03nd-06th; Uttar Pradesh during 02nd-05th and Rajasthan on 02nd & 03rd June.
- ✓ **Duststorm** very likely over Uttar Pradesh and Rajasthan on 02nd June.

Maximum temperature observation and forecast for next 5 days:

❖ No significant change in maximum temperatures very likely over **Northwest India** during next 3 days and fall by 2-3°C thereafter.

❖ No significant change in maximum temperatures very likely over **West India** during next 48 hours and fall by 2-3°C thereafter.

❖ No significant change in maximum temperatures very likely over rest parts of the country.

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

❖ **Heat wave conditions** very likely in some parts of Punjab, Haryana-Chandigarh-Delhi during 02nd-04th and in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during 02nd-04th; Himachal

Pradesh on 02nd & 03rd; Uttar Pradesh during 02nd-05th; Rajasthan, Madhya Pradesh, Chhattisgarh on 02nd & 03rd; Vidarbha on 02nd; Odisha during 02nd-04th; Jharkhand during 04th-06th; Haryana-Chandigarh-Delhi on 05th June, 2024.

- **Hot and humid weather** very likely to prevail over isolated pockets of Bihar during 02nd-04th Konkan & Goa on 02nd & 03rd; Odisha on 05th & 06th June, 2024.

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

ANNEXURE I

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, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim; **at many places** over Kerala & Mahe, Lakshadweep, Rayalaseema, Gangetic West Bengal; a**t a few places** over Odisha, Tamil Nadu, Puducherry & Karaikal, Uttarakhand; a**t isolated places** over Haryana-Chandigarh-Delhi, Punjab, Himachal Pradesh, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttar Pradesh, Chhattisgarh, Rajasthan, Marathwada, Gujarat Region, Coastal Andhra Pradesh & Yanam, Karnataka.

Significant amount of rainfall (in cm):

- **Kerala:** Kunnamkulam & Vadakkancherry (both in Thrissur district) 14 each, Kodungallur (Thrissur district) 12, Enamakkal (Thrissur district) & Perinthalamanna (Malappuram district) 11 each, Vellanikkara (Thrissur district), Ottappalam (Palakkad district) & Vakkad AWS (Malappuram district) 9 each, Chalakkudy (Thrissur district), Angadipuram (Malappuram district) & Peechi AWS (Thrissur district) 8 each, Pattambi & Thrithala (both in Palakkad district), Manjeri (Malappuram district) & Vilangankunnu ARG (Thrissur district) 7 each;
- **Tamil Nadu, Puducherry & Karaikal:** Chinnakalar (dist Coimbatore) 10,Tozhudur (dist Cuddalore) 8;
- **Andaman & Nicobar Islands:** Nancowry (dist Nicobar) 8, Maya Bandar (dist North & Middle Andaman) 4;
- **Sub-Himalayan West Bengal & Sikkim:** Sevoke (dist Darjeeling) 7, Majitar (dist East Sikkim) 7, Cooch Behar (dist Cooch Behar) 6, Jalpaiguri (dist Jalpaiguri) 6, Bhutanghat (dist Alipurduar) 5, Khanitar (dist East Sikkim) 5, Alipurduar (pto) (dist Alipurduar) 5;
- **Rayalaseema:** Chinnamandem (dist Annamayya District) 7, Kuppam (dist Chittoor) 5, Uravakonda(dist Anantapuramu) 5, Kalakada (dist Annamayya District) 5, Chilamathur (dist Sri SathyasaiDistrict) 5, Sambepalle (dist Annamayya District) 5;
- **Coastal Andhra Pradesh & Yanam:** Udayagiri (dist Spsr Nellore) 6;
- **North Interior Karnataka:** Gangavathi Arg (dist Koppal) 6;
- **South Interior Karnataka:** Bengaluru Hal Ap Obsy (dist Bengaluru Urban) 5, Devanahalli (dist Bengaluru Rural) 5, Midigeshi (dist Tumakuru) 5;
- **Odisha:** Jujumura (Sambalpur) 5, Nawarangpur (Nawarangpur) 5, Burla (Sambalpur) 5, Phiringia (Kandhamal) 5,

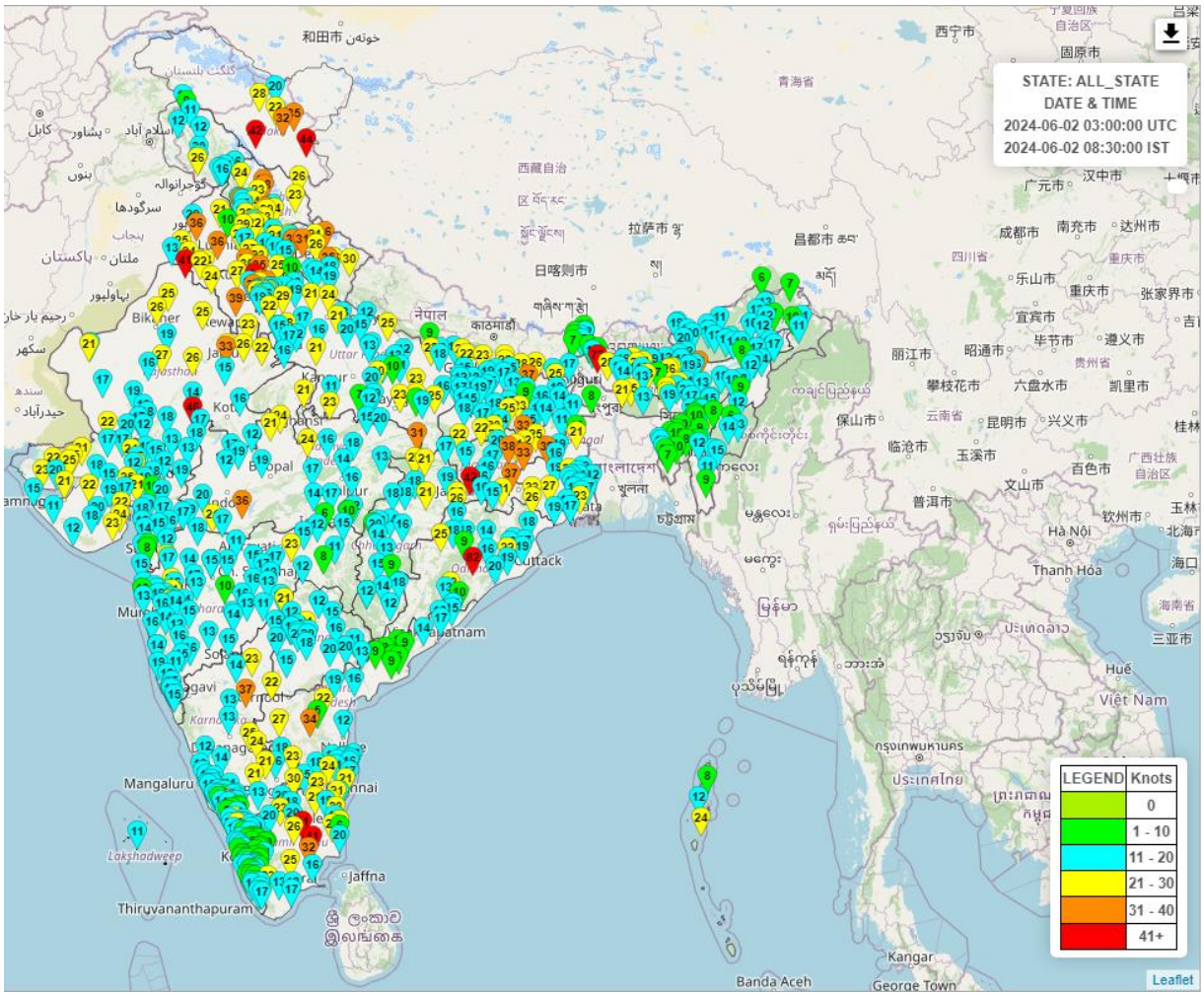
ANNEXURE II

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

- **Rajasthan:** Chittaurgarh-85, Jaipur-61, Pali-50, Bikaner-48, Dausa-48
- **Jharkhand:** Simdega-78, Bokaro-70, Saraikela-68, Giridih-61, Jamtara-46
- **Haryana:** Sonipat-76, Mahendragarh-72, Rohtak-68, Panipat-65, Kurukshetra-63, Karnal-55, Jind-50, Kaithal-50
- **Tamil Nadu:** Tiruchirappalli-76, Pudukkottai-76, Sivaganga-59, Krishnagiri-55, Karur-48, Karaikal-46
- **West Bengal:** Durgapur-72, Purulia-61, West Medinipur-50
- **Himachal Pradesh:** Kullu-70, Shimla-67, Hamirpur-61, Lahaul & Spiti-48, Kangra-44, Bilaspur-44
- **Kerala:** Wayanad-68, Palakkad-54, Malappuram-40

- **Uttarakhand:** Dehradun-68, Chamoli-67, Almora-65, Tehri_ Garhwal-57, Pithoragarh-55
- **Bihar:** Saharsa-68, Madhubani-52, Supaul-48
- **Karnataka:** Koppal-68, Chitradurga-46, Tumkur-44
- **Punjab:** Faridkot-67, Barnala-67, Fatehgarh_Sahib-54, Patiala-48
- **Madhya Pradesh:** Khandwa-67, Singrauli-57, Sagar-44
- **Uttar Pradesh:** Baghpat-65, Jalaun-55, Bulandshahar-54, Hathras-52
- **Rayalaseema:** YSR Kadapa-63, Anantapur-50
- **Assam:** Nagaon-57, Kokrajhar-52, Kamrup Metropolitan-48
- **Gujarat State:** Ahmedabad-48, Kachchh-46
- **Odisha:** Mayurbhanj-48, Jharsuguda-48, Balangir-46

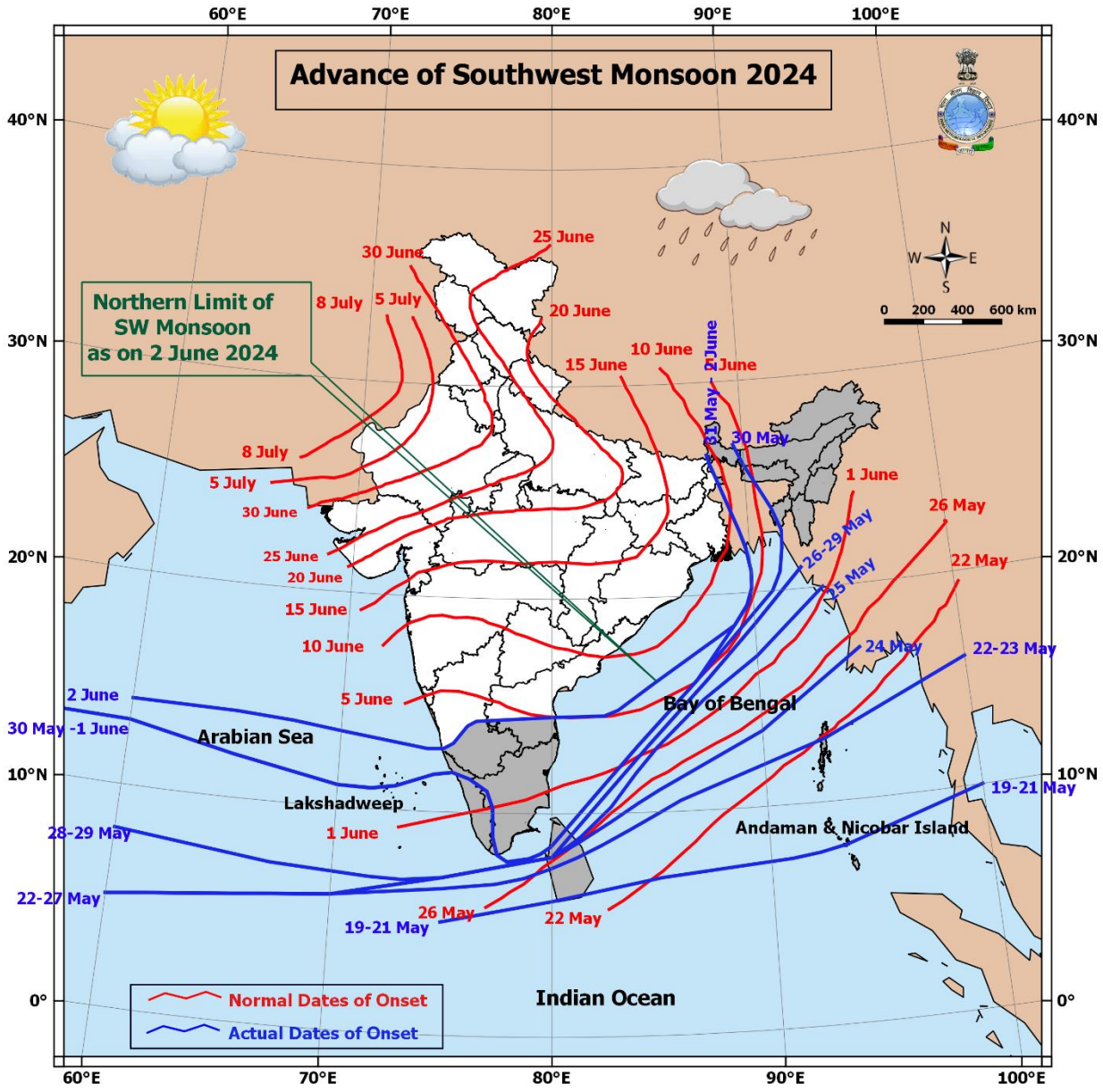
Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 01.06.2024 to 0830 hrs IST of 02.06.2024

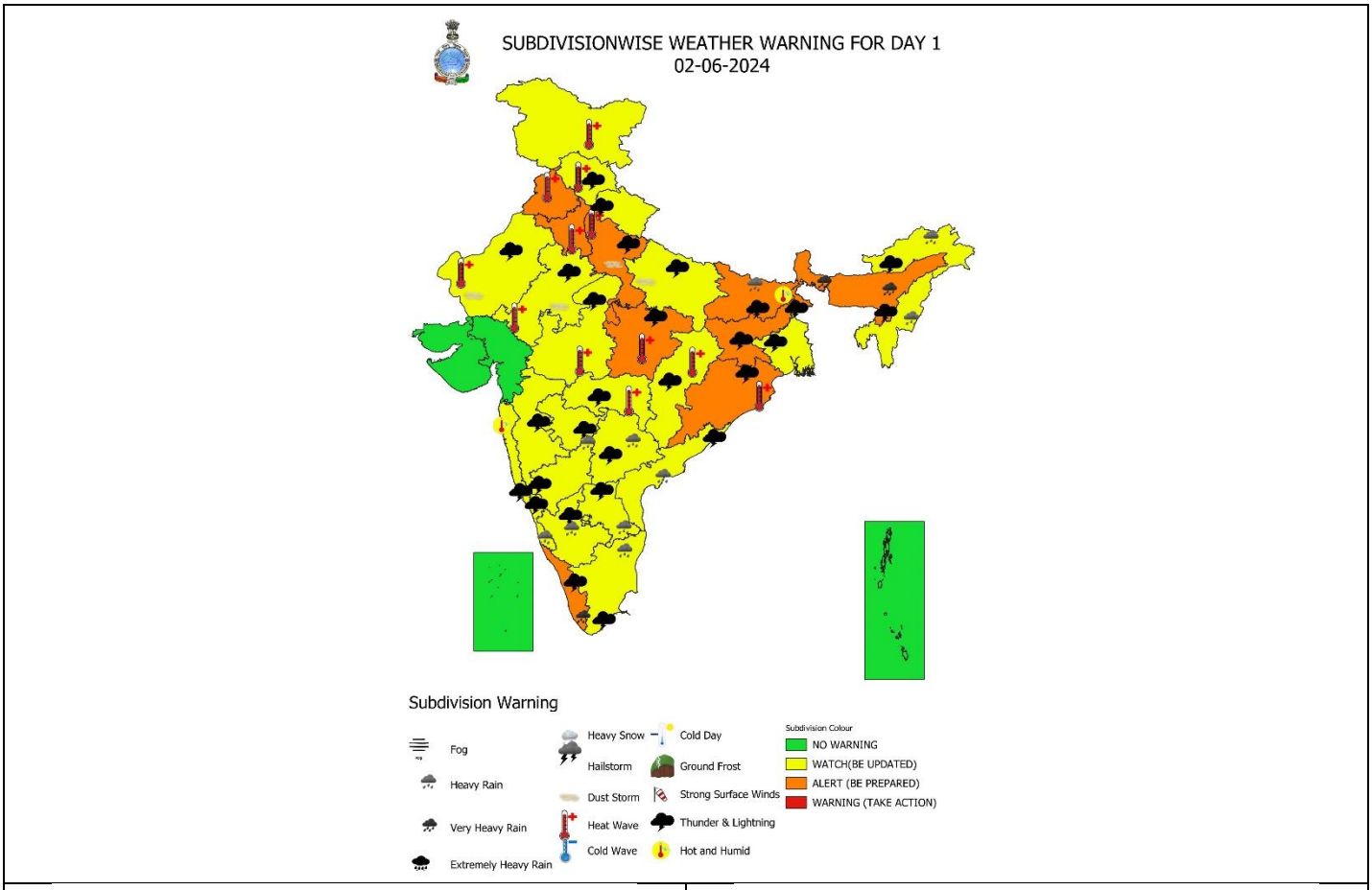


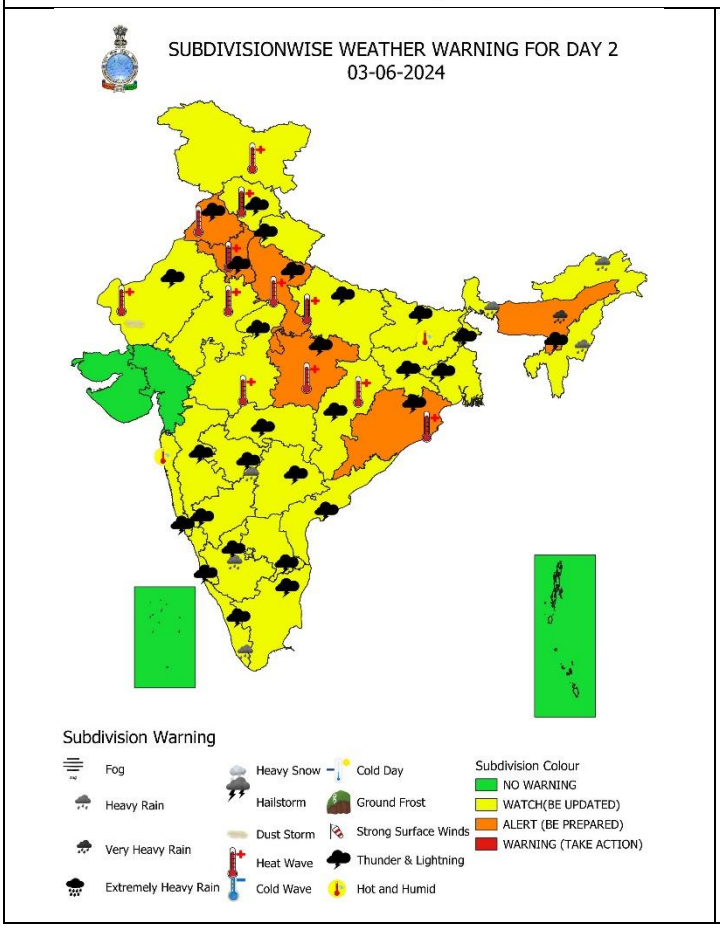
For more details, kindly refer: http://aws.imd.gov.in:8091/

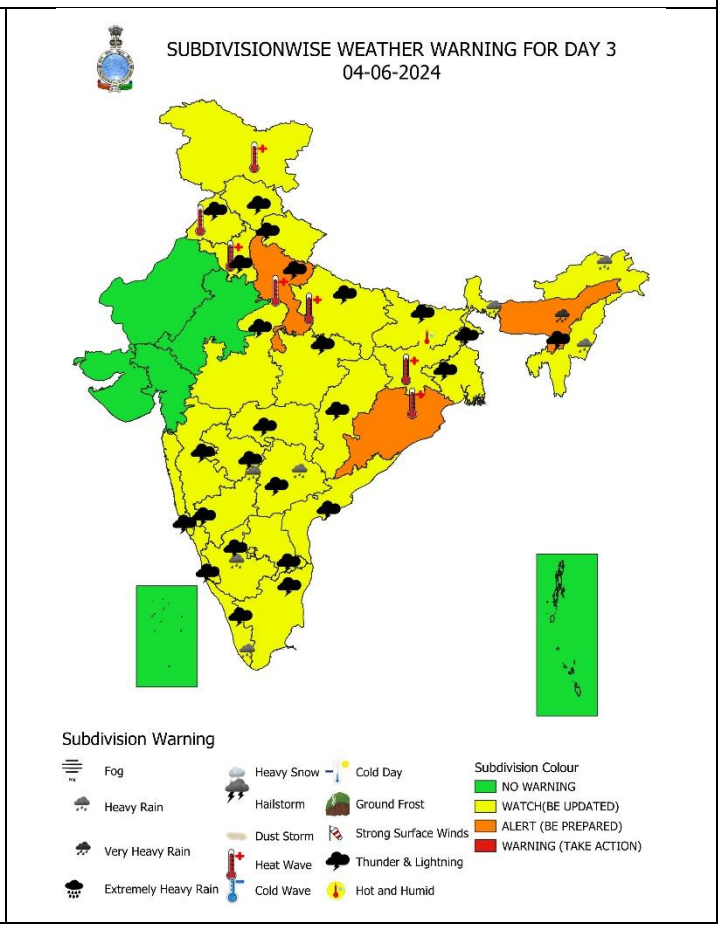
ANNEXURE III

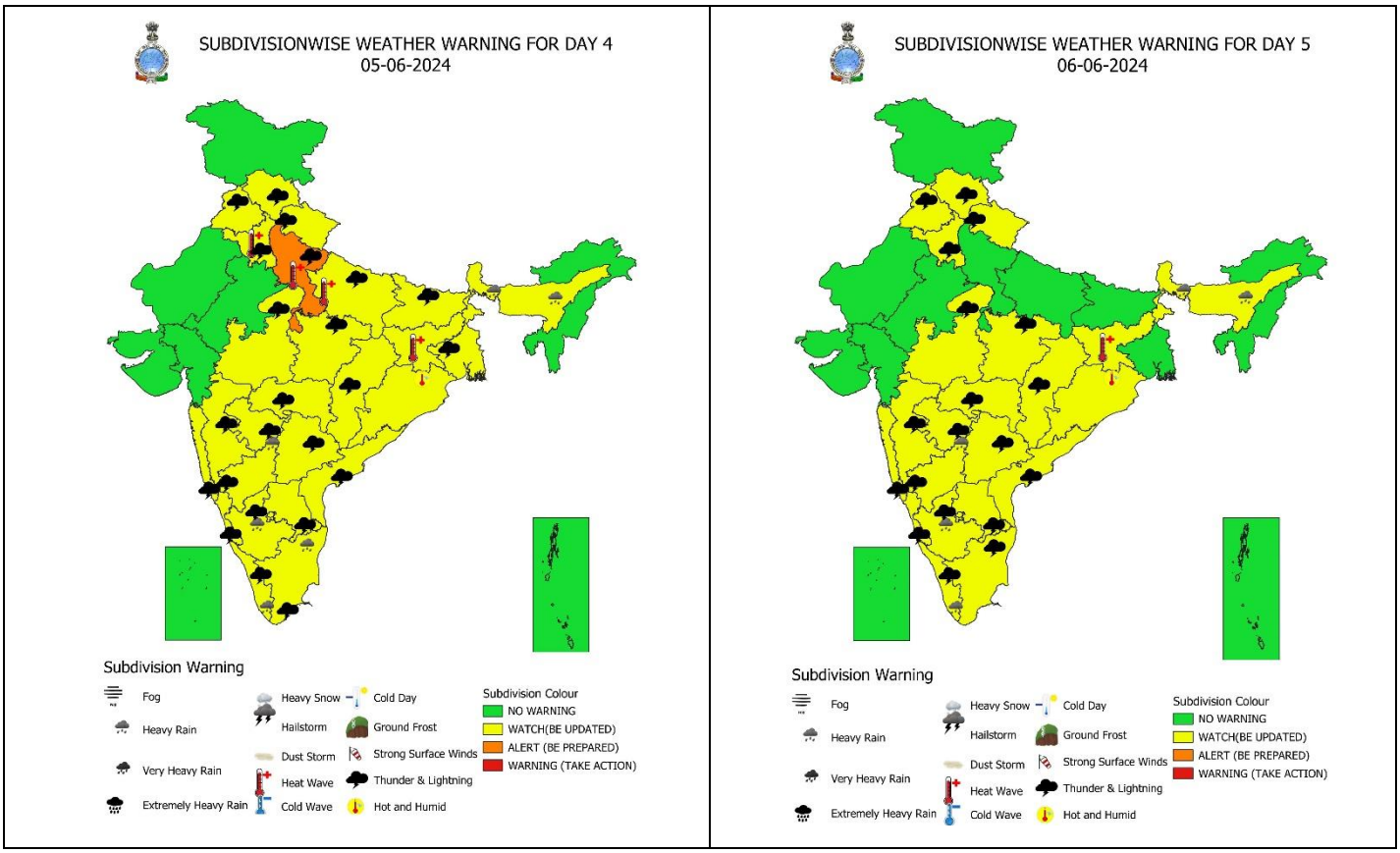
Advance of Southwest Monsoon 2024




SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
02-06-2024
Subdivision Warning
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)


SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
03-06-2024
Subdivision Warning
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)


SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
04-06-2024
Subdivision Warning
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)



IMPACT & ACTION SUGGESTED due to very heavy rainfall over Assam & Meghalaya during 02nd-04th with heavy rainfall on 05th & 06th; Sub-Himalayan West Bengal & Sikkim on 02nd**,** Kerala & Mahe on 02nd 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 kutcha 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)

A. 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.

IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:

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.

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 Tamil Nadu, Kerala, Interior Karnataka, Andhra Pradesh, Sub Himalayan West Bengal, and North Eastern States.
- 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, Punjab, Haryana, Uttar Pradesh, Rajasthan, Jharkhand, Odisha, Madhya Pradesh, Vidarbha and Chhattisgarh.
- 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 Widespred (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 ≥40° C for plains and ≥30° 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 ≥6.5° C

(b). Based on Actual maximum temperature

- **Heat Wave:** When actual maximum temperature ≥45°C.
- **Severe Heat Wave:** When actual maximum temperature ≥47°C

(c). Criteria for heat wave for coastal stations

When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum temperature ≥37°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 °C.

Cold Wave

When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °C

(b) Based on actual Minimum Temperature (for Plains only)

- **Cold Wave :** When Minimum Temperature is ≤ 4.0 °C
- **Severe Cold Wave:** When Minimum Temperature is ≤ 2.0 °C

(c) For Coastal Stations

When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C

Cold Day

When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °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 ≤4°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)