

Saturday, June 15, 2024  
Time of Issue: 0745 hours IST  
(MORNING)

### ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

#### Significant Weather Features:

##### 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 during next 4-5 days.

##### Weather Systems and Forecast & Warnings:

- ❖ A cyclonic circulation lies over northeast Assam & neighbourhood and an east-west trough runs from central parts of Uttar Pradesh to east Meghalaya in lower tropospheric levels. Strong southwesterly/southerly winds are prevailing from Bay of Bengal to northeastern States 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 & Sikkim during next 7 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.
  - ✓ **Isolated extremely heavy rainfall also likely over Meghalaya during 15<sup>th</sup>-19<sup>th</sup>; Assam during 17<sup>th</sup>-19<sup>th</sup> 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 Odisha during 17<sup>th</sup>-19<sup>th</sup> and east Bihar on 18<sup>th</sup> & 19<sup>th</sup> June, 2024.
- ❖ Strong westerly winds are prevailing along the west coast of India. A trough runs from Rayalaseema to central parts of Bay of Bengal in lower & middle tropospheric levels. Under their influence:
  - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (40-50 kmph)** likely over Konkan & Goa and scattered rainfall over Madhya Maharashtra & Marathwada during next 5 days.
  - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over Karnataka, Kerala & Mahe, Lakshadweep, Andaman & Nicobar Islands; 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 Marathwada on 16<sup>th</sup> & 17<sup>th</sup>; Konkan & Goa and Kerala & Mahe during 17<sup>th</sup>-19<sup>th</sup>; North Coastal Andhra Pradesh & North Interior Karnataka on 17<sup>th</sup>; Madhya Maharashtra on 18<sup>th</sup> & 19<sup>th</sup> June, 2024.
- ❖ A cyclonic circulation lies over southwest Rajasthan & neighbourhood in lowest & middle tropospheric levels. Under its influence; light to moderate isolated to scattered rainfall with **thunderstorm, lightning & gusty winds (40-60 kmph)** very likely over Madhya Pradesh, Vidarbha, Chhattisgarh during next 5 days.

**Maximum Temperatures:** Yesterday, **Maximum temperatures** were in the range of 44-46°C over in many parts of East Uttar Pradesh; in some parts of Haryana-Chandigarh-Delhi, East Madhya Pradesh; in isolated pockets over West Uttar Pradesh, south Bihar.

##### Heat Wave and Warm Night warning for next 5 days:

- ❖ **Heat wave to severe heat wave conditions** very likely in many/ most parts of Uttar Pradesh, in some/many parts of Punjab, Haryana-Chandigarh-Delhi during 15<sup>th</sup>-19<sup>th</sup>; Jharkhand and Uttarakhand on 15<sup>th</sup> and isolated **heat wave conditions** over western parts of Gangetic West Bengal and Bihar on 15<sup>th</sup>; Jharkhand & Uttarakhand on 16<sup>th</sup> June, 2024.
- ❖ **Heat wave conditions** very likely in isolated to some pockets of Himachal Pradesh, Jammu Division during 15<sup>th</sup>-17<sup>th</sup>; northeast Madhya Pradesh on 15<sup>th</sup> & 16<sup>th</sup>; north Chhattisgarh on 15<sup>th</sup> June, 2024.
- ❖ **Warm night conditions** very likely in isolated pockets of northeast Madhya Pradesh, Punjab, Haryana-Chandigarh-Delhi on 15<sup>th</sup> and Uttar Pradesh on 15<sup>th</sup> & 16<sup>th</sup> June, 2024.

## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): at many places over Sub-Himalayan West Bengal & Sikkim, Konkan & Goa; at a few places over Assam & Meghalaya, Arunachal Pradesh, Kerala & Mahe; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Nagaland, Manipur, Mizoram & Tripura, Chhattisgarh, Madhya Maharashtra, Marathwada, Telangana, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam.
- ❖ **Heavy Rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday): **Heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Sub-Himalayan West Bengal & Sikkim:** Jalpaiguri, Kalimpong 9 each; **Assam & Meghalaya:** East Khasi Hill 4, West khasi Hilla, Jantia Hill, Bongaigaon, Lakhimpur, Nalbari, Kalakshetra 2 each; Nagaland, Manipur, Mizoram & Tripura: Kowhai, Serchhip 3 each, Dimapur, North Tripura 2 each; Arunachal Pradesh: Lohit, Kurung Kamey 3 each. **Coastal Andhra Pradesh & Yanam:** Srikakulam 3, **Marathwada:** Latur 4, Parbhani 3; **Telangana:** Nirmal 3, Jagtial 2.
- ❖ Yesterday, **Heatwave to severe heat wave conditions** observed in many parts of East Uttar Pradesh; in some parts of Bihar; at isolated pockets over Gangetic West Bengal, south Uttarakhand, north Odisha. **Heatwave conditions** in many parts of West Uttar Pradesh; in some parts of Punjab, Jharkhand; at isolated pockets over Himachal Pradesh, Haryana-Chandigarh-Delhi, northeast Madhya Pradesh.
- ❖ **Minimum Temperature Departures (as on 14-06-2024):** Minimum temperatures were **markedly above normal (5.1°C or more)** at isolated places over Chhattisgarh, Haryana-Chandigarh-Delhi, West Uttar Pradesh and East Madhya Pradesh; **appreciably above normal (3.1°C to 5.0°C)** at a few places over Bihar and Jharkhand; at isolated places over Rajasthan, Uttarakhand and East Uttar Pradesh; **above normal (1.6°C to 3.0°C)** at many places over Punjab; at a few places over Gangetic West Bengal, Vidarbha and Kerala & Mahe; at isolated places over Odisha, West Madhya Pradesh, Saurashtra & Kutch and Tamil Nadu, Puducherry & Karaikal. These were **below normal (-1.6°C to -3.0°C)** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; at isolated places over Konkan & Goa and Madhya Maharashtra and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature** of 20.9°C was reported at **Osmanabad (Marathwada)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 14-06-2024):** Maximum temperatures were **markedly above normal (5.1°C or more)** at a few places over Uttar Pradesh, Punjab; at isolated places over Bihar, Jharkhand, Gangetic West Bengal; **appreciably above normal (3.1°C to 5.0°C)** at a few places over Odisha, East Madhya Pradesh, Haryana-Chandigarh-Delhi, Kerala & Mahe; at isolated places over Chhattisgarh; **above normal (1.6°C to 3.0°C)** at a few places over Gujarat state, Vidarbha; at isolated places over West Madhya Pradesh, Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal. These were **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over North Interior Karnataka; **below normal (-1.6°C to -3.0°C)** at isolated places over Marathwada, Madhya Maharashtra, Konkan & Goa, Rayalaseema, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim and **near normal** over rest parts of the country. Yesterday, **the highest maximum temperature** of 46.9°C was reported at **Prayagraj (East Uttar Pradesh)** over the country.

## Meteorological Analysis (Based on 0530 hours IST)

- ❖ 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 during next 4-5 days.
- ❖ The cyclonic circulation over southwest Rajasthan & neighbourhood between 3.1 km & 5.8 km above mean sea level persists.
- ❖ The east-west trough from central Uttar Pradesh to east Meghalaya across north Bihar and Sub-Himalayan West Bengal at 0.9 km above mean sea level persists.
- ❖ The trough in westerlies between 3.1 km & 5.8 km above mean sea level roughly along Long. 93°E to the north of Lat. 26°N persists.
- ❖ The cyclonic circulation over northeast Assam & neighbourhood at 1.5 km above mean sea level persists.
- ❖ The trough from Rayalaseema to central Bay of Bengal across Westcentral Bay of Bengal between 3.1 km & 5.8 km above mean sea level persists.
- ❖ The cyclonic circulation over east Bihar & adjoining Sub-Himalayan West Bengal & Sikkim at 1.5 km above mean sea level persists.
- ❖ The cyclonic circulation over northwest Madhya Pradesh & neighbourhood at 3.1 km above mean sea level persists.

## Weather Forecast for next 7 days (Upto 0830 hours IST of 22<sup>nd</sup> June, 2024)

- ❖ Meteorological sub-division wise detailed 7 days rainfall forecast is given in Table-1.
- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed reaching 30-40 kmph)** very likely at isolated places over Northeast India, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe during 15<sup>th</sup>-19<sup>th</sup> June, 2024.
- ❖ **Strong surface winds (speed reaching 25-35 kmph)** very likely over plains of Northwest India during next 5 days.
- ❖ No significant change in maximum temperatures very likely over most parts of the country.

## Weather Outlook for subsequent 3 days (During 22<sup>nd</sup>-24<sup>th</sup> June, 2024)

- ❖ Scattered to fairly widespread rainfall likely over Islands, Northeast India, East India, west coast and Peninsular India. Isolated to Scattered rainfall likely over Northwest, Central India.
- ❖ Mainly dry weather likely to prevail over rest parts of the country.

Table-1

7 Days Rainfall Forecast

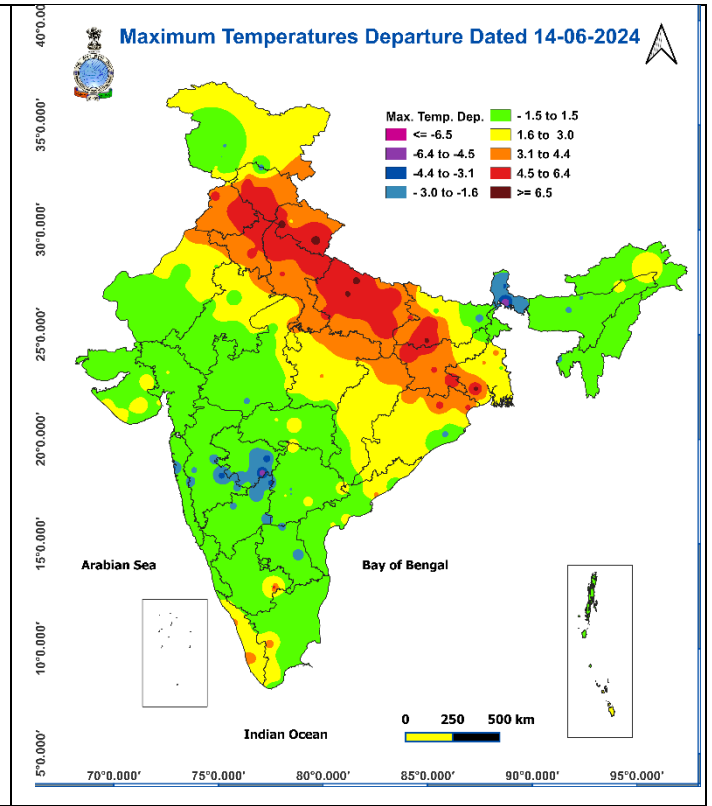
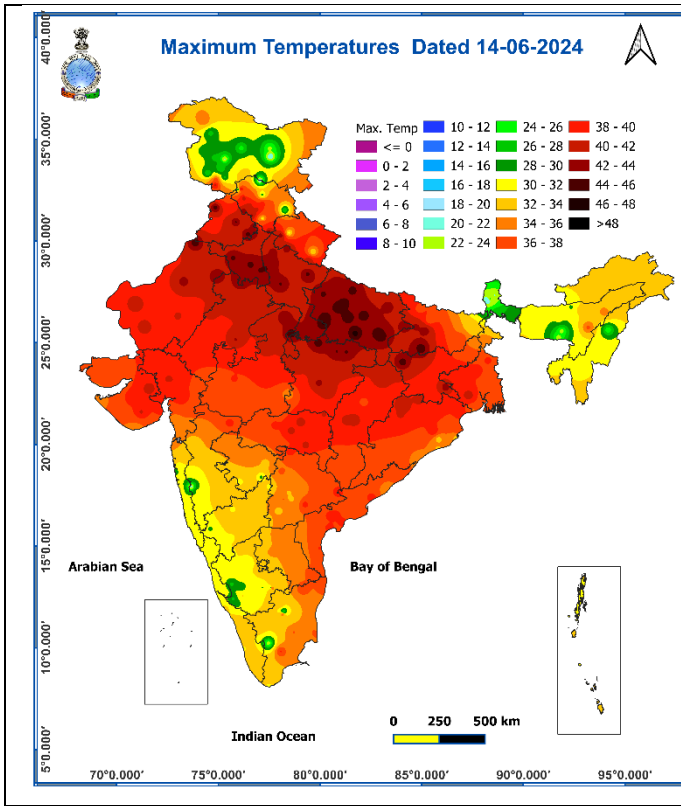
S. No.	Subdivision	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	FWS	FWS	WS	WS	FWS	FWS	FWS
2	ARUNACHAL PRADESH	WS	WS	WS	WS	WS	WS	WS
3	ASSAM & MEGHALAYA	WS	WS	WS	WS	WS	WS	WS
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	WS	WS	WS	WS	WS	WS	WS
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	WS	WS	WS	WS	WS	WS	WS
6	GANGETIC WEST BENGAL	SCT	SCT	FWS	FWS	FWS	FWS	FWS
7	ODISHA	SCT	SCT	FWS	FWS	FWS	FWS	FWS
8	JHARKHAND	ISOL	SCT	FWS	FWS	FWS	FWS	FWS
9	BIHAR	SCT	SCT	FWS	FWS	FWS	FWS	FWS
10	EAST UTTAR PRADESH	DRY	DRY	ISOL	ISOL	SCT	SCT	SCT
11	WEST UTTAR PRADESH	DRY	DRY	DRY	DRY	ISOL	ISOL	ISOL
12	UTTARAKHAND	DRY	DRY	ISOL	SCT	FWS	FWS	FWS
13	HARYANA CHANDIGARH & DELHI	DRY	DRY	DRY	DRY	ISOL	SCT	SCT
14	PUNJAB	DRY	DRY	DRY	ISOL	SCT	SCT	SCT
15	HIMACHAL PRADESH	ISOL	DRY	DRY	ISOL	SCT	SCT	SCT
16	JAMMU & KASHMIR AND LADAKH	DRY	DRY	DRY	ISOL	SCT	SCT	SCT
17	WEST RAJASTHAN	ISOL	ISOL	DRY	DRY	DRY	ISOL	ISOL
18	EAST RAJASTHAN	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
19	WEST MADHYA PRADESH	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
20	EAST MADHYA PRADESH	ISOL	ISOL	SCT	SCT	ISOL	ISOL	ISOL
21	GUJARAT REGION	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
22	SAURASHTRA & KUTCH	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
23	KONKAN & GOA	FWS	FWS	FWS	WS	WS	WS	WS
24	MADHYA MAHARASHTRA	SCT	SCT	SCT	SCT	SCT	SCT	SCT
25	MARATHAWADA	ISOL	SCT	SCT	SCT	ISOL	ISOL	ISOL
26	VIDARBHA	ISOL	ISOL	SCT	SCT	SCT	SCT	SCT
27	CHHATTISGARH	ISOL	SCT	SCT	FWS	FWS	FWS	FWS
28	COASTAL ANDHRA PRADESH & YANAM	ISOL	SCT	FWS	FWS	SCT	SCT	SCT
29	TELANGANA	SCT	SCT	SCT	SCT	SCT	SCT	SCT
30	RAYALASEEMA	ISOL	SCT	FWS	SCT	SCT	ISOL	ISOL
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	SCT	SCT	ISOL	ISOL	ISOL	ISOL
32	COASTAL KARNATAKA	FWS	FWS	WS	WS	WS	WS	WS
33	NORTH INTERIOR KARNATAKA	ISOL	SCT	FWS	FWS	SCT	SCT	SCT
34	SOUTH INTERIOR KARNATAKA	ISOL	SCT	FWS	FWS	SCT	SCT	SCT
35	KERALA & MAHE	FWS	FWS	WS	WS	WS	WS	WS
36	LAKSHADWEEP	SCT	FWS	FWS	WS	WS	WS	WS

Legend	Category	% Stations
WS	Widespread/Most Places	76-100
FWS	Fairly Widespread/Many Places	51-75
SCT	Scattered/ A Few Places	26-50
ISOL	Isolated Places	1-25
DRY	No Rain	0

\* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".  
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.  
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**Fig. 1: Maximum Temperatures**

**Fig. 2: Departure of Maximum Temperatures**



**Fig. 3: Minimum Temperatures**

**Fig. 4: Departure of Minimum Temperatures**

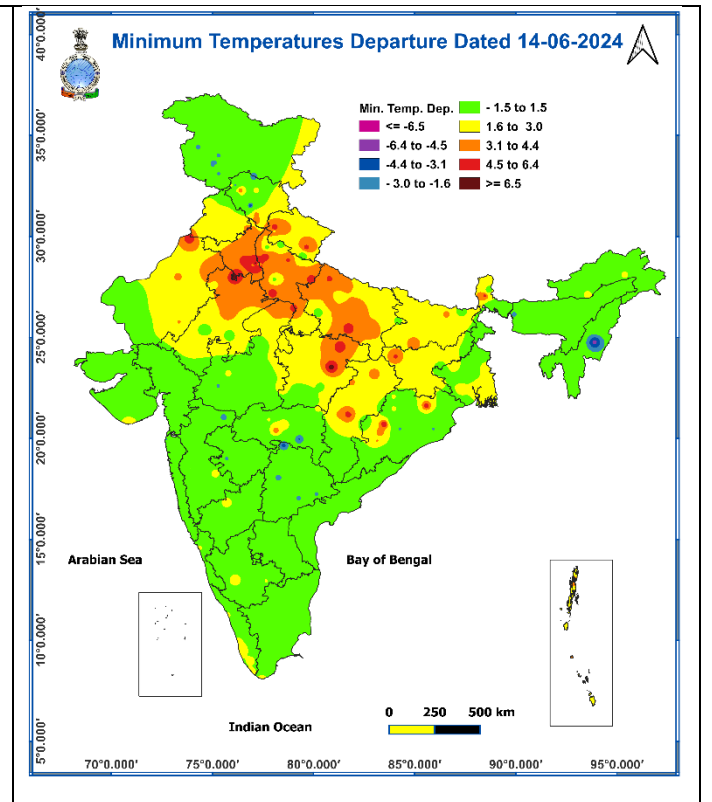
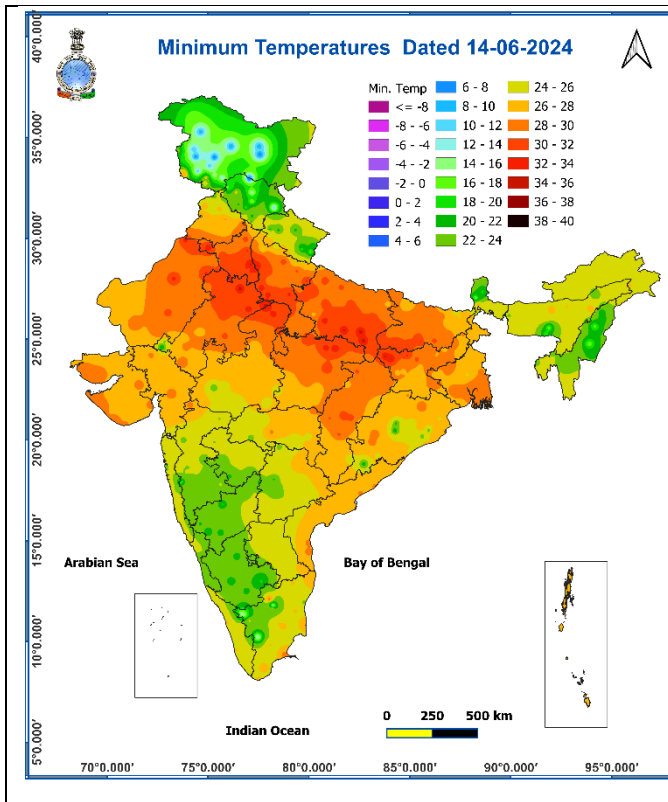
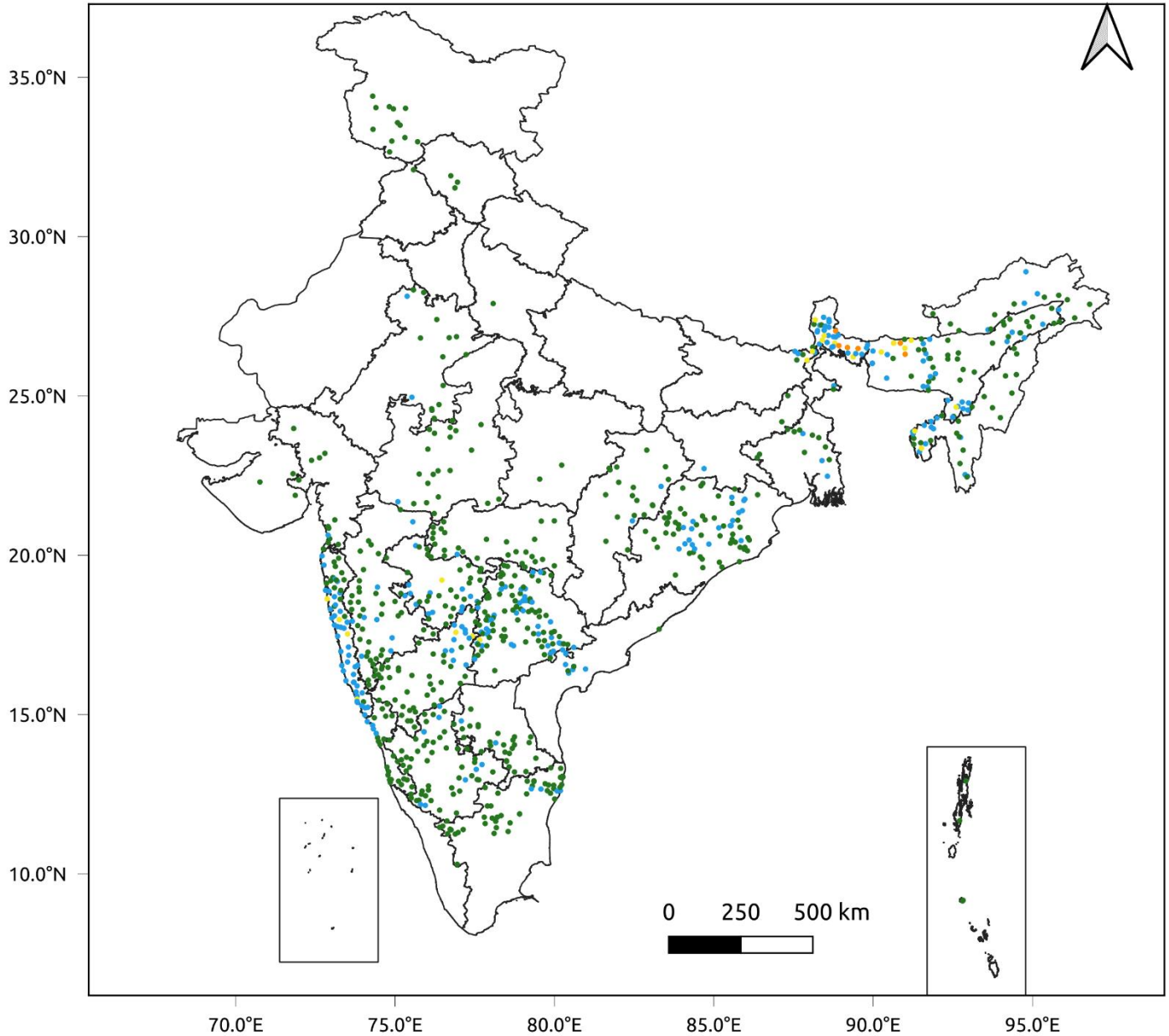


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



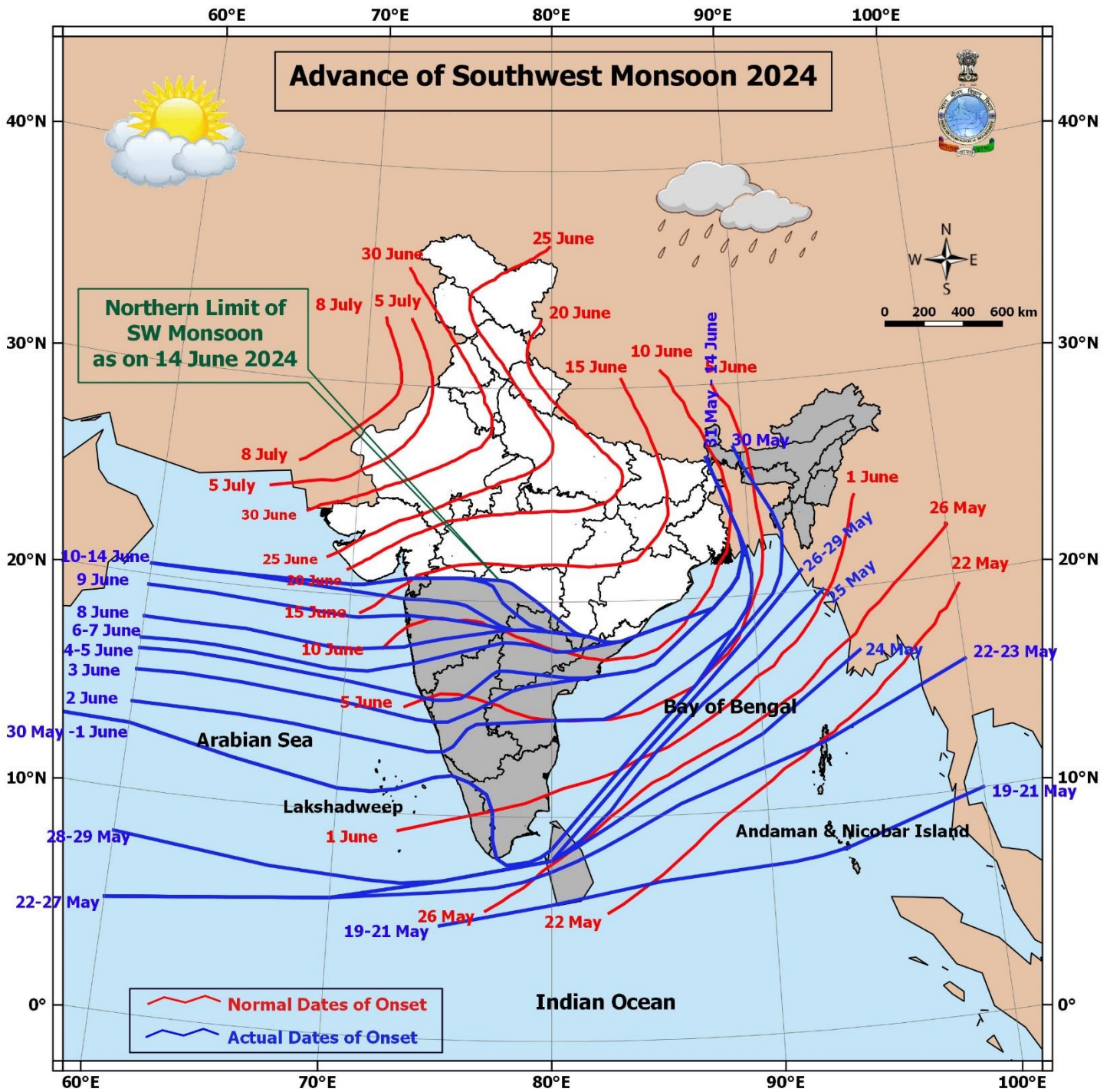
24 Hr cumulative rainfall recorded over different stations during 0830 IST of 13-6-2024 to 0830 IST of 14-6-2024



## Legends

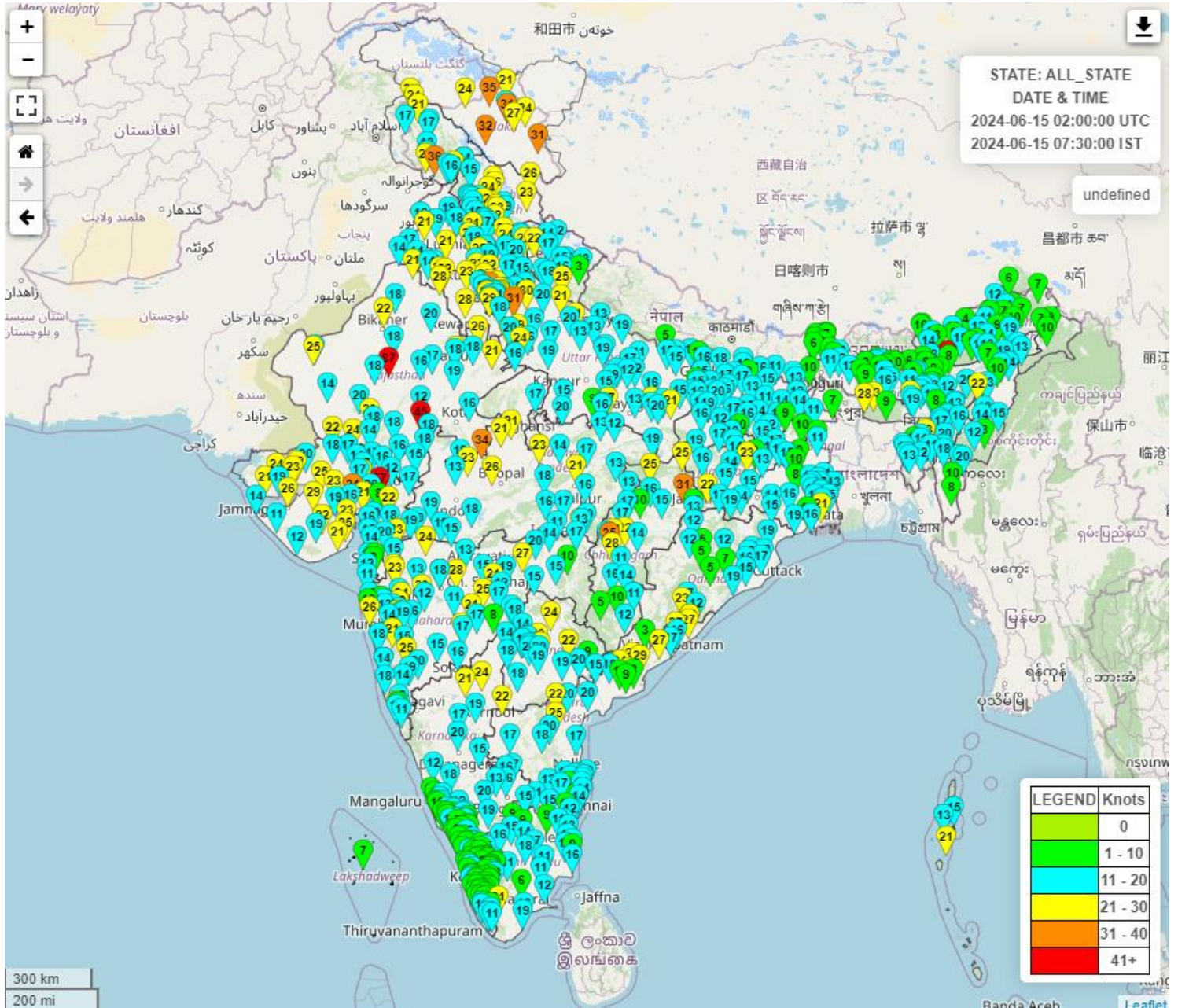
- Very Light to Light Rainfall (0.1 - 15.5 mm)
- Moderate Rainfall (15.6 - 64.4 mm)
- Heavy Rainfall (64.5 - 115.5 mm)
- Very Heavy Rainfall (115.6 - 204.4 mm)
- Extremely Heavy Rainfall ( $\geq 204.5$  mm)

Fig. 6: Advance of Southwest Monsoon 2024



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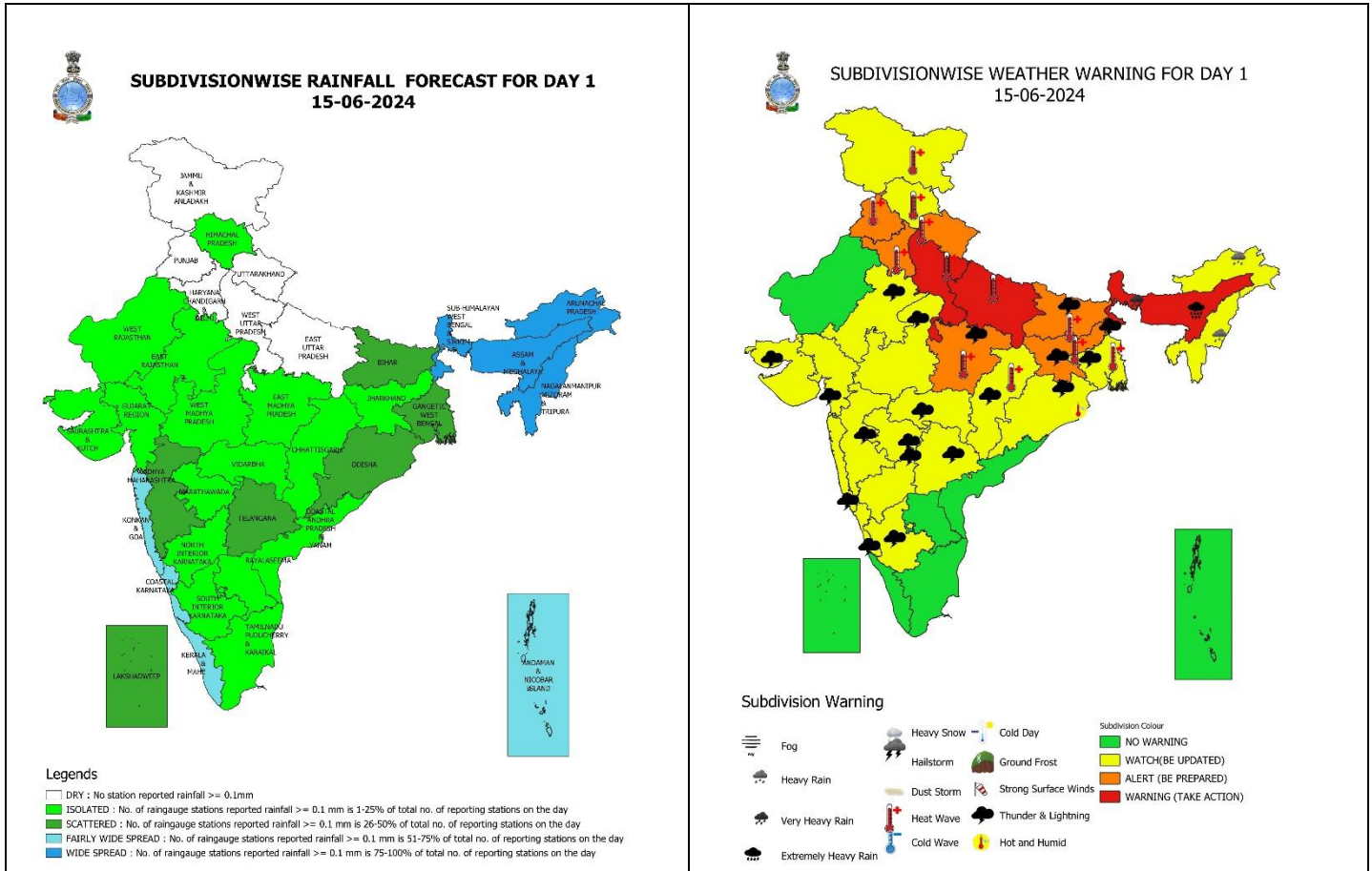
Fig. 7: Gusty winds reported over the country (in knots) from 0830 hours IST of 14.06.2024 to 0730 hours IST of 15.06.2024



1 Knot = 1.852 kmph

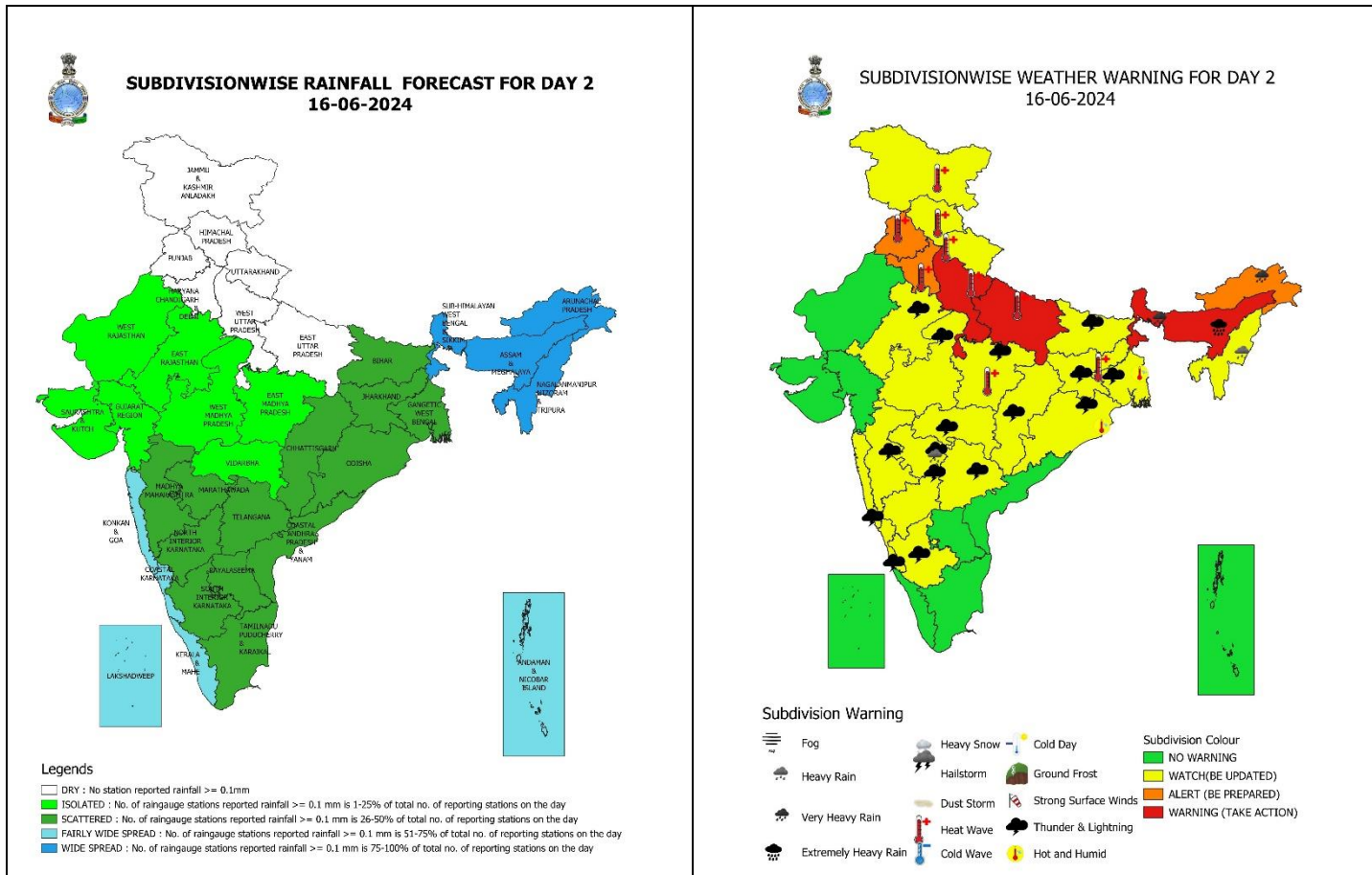
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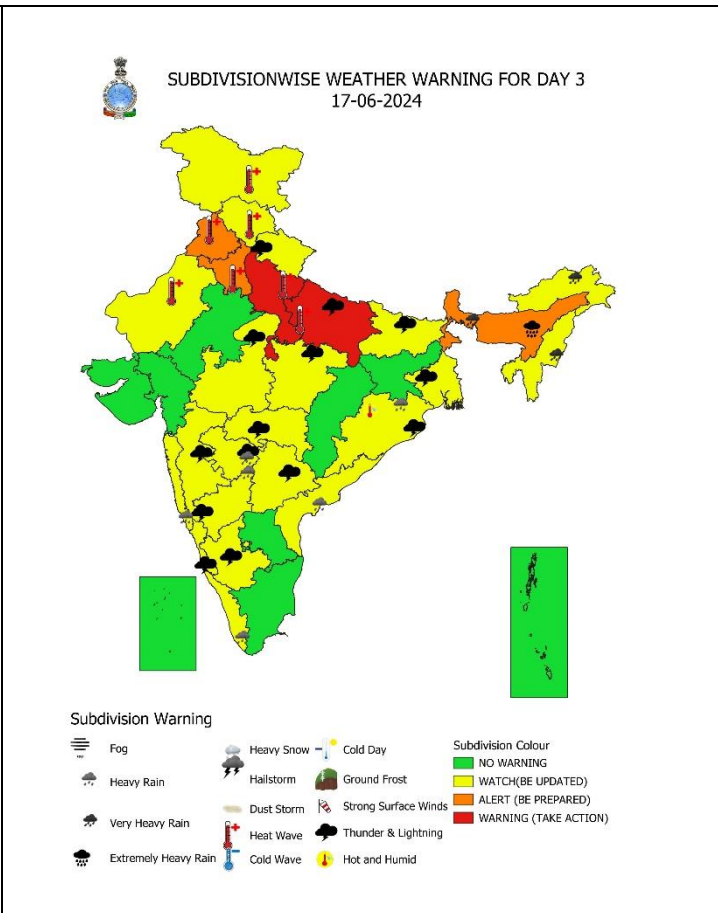
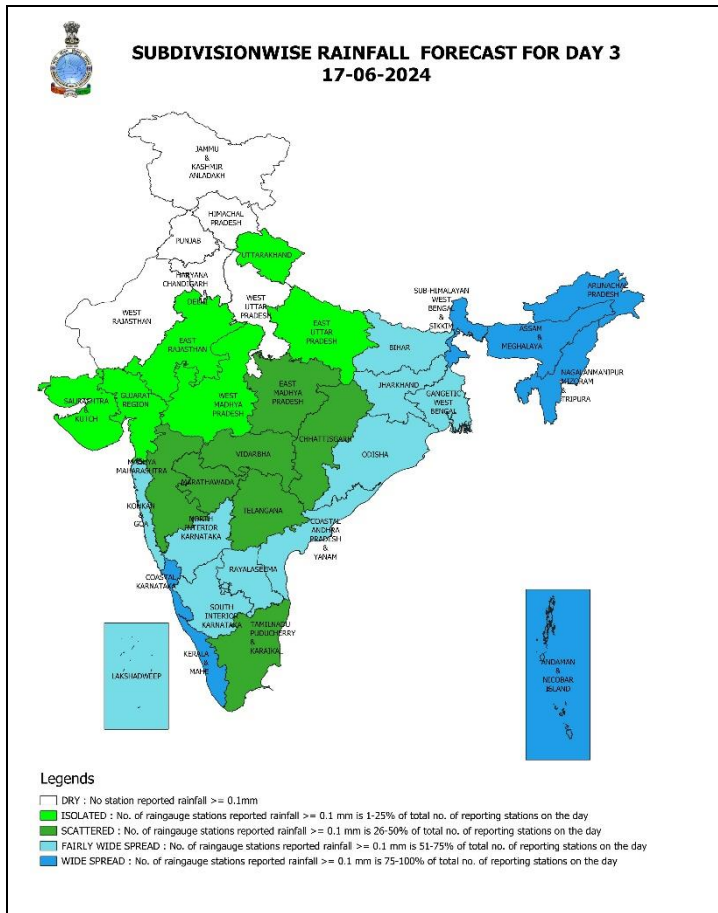
## 15 June (Day 1):

- ❖ **Heavy to very heavy rainfall with extremely heavy falls** very likely at isolated places over Meghalaya; **Heavy to very heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam; **heavy rainfall** at isolated places over Arunachal Pradesh and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 40-50 kmph)** very likely at isolated places over Madhya Pradesh, West Bengal & Sikkim, Bihar, Jharkhand, Odisha, Marathwada, Konkan & Goa, Madhya Maharashtra, North Interior Karnataka; **with lightning, gusty winds (speed reaching 30-40 kmph)** at isolated places over Vidarbha, Chhattisgarh, Gujarat state, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana; with **lightning** at isolated places over East Rajasthan, Coastal Karnataka and South Interior Karnataka.
- ❖ **Heat wave conditions to severe heat wave conditions** very likely in most parts of Uttar Pradesh; in some parts over Haryana-Chandigarh-Delhi, Punjab; in isolated pockets over Jharkhand, Uttarakhand. **Heat wave conditions** in isolated pockets over Jammu division, Himachal Pradesh, northeast Madhya Pradesh, north Chhattisgarh, Gangetic West Bengal and Bihar.
- ❖ **Warm night conditions** very likely to prevail in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh and East Madhya Pradesh.
- ❖ **Hot & Humid weather** very likely over Odisha.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over central parts of Arabian sea, along off Sri Lanka coast, gulf of Mannar, south & central Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** very likely to prevail over westcentral Bay of Bengal, along and off Somalia coast, southwest and adjoining west central Arabian sea, along & off Oman Coast. Fishermen are advised not to venture into these areas.



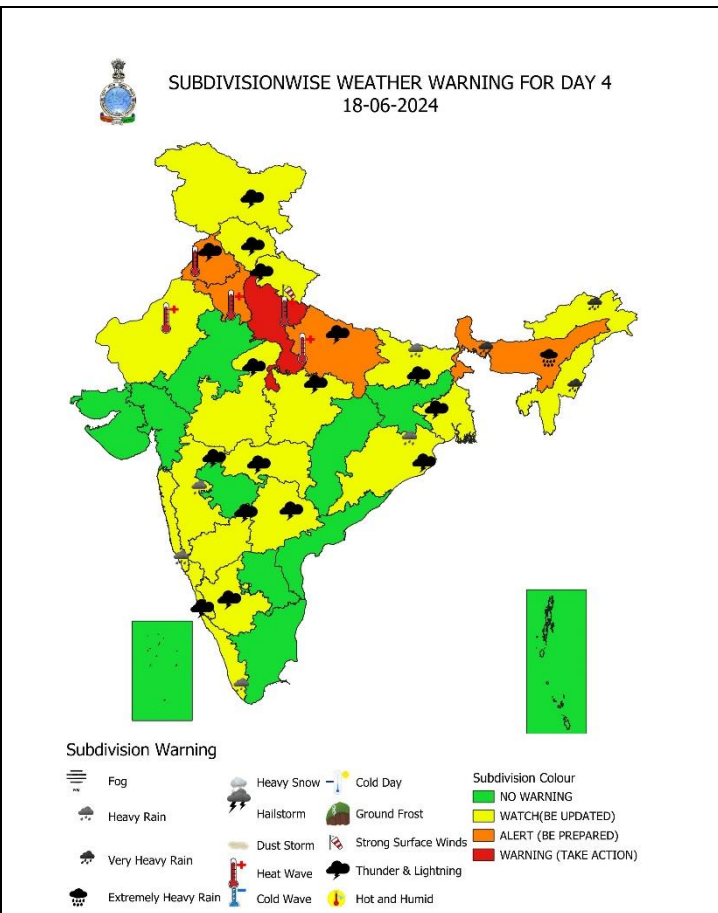
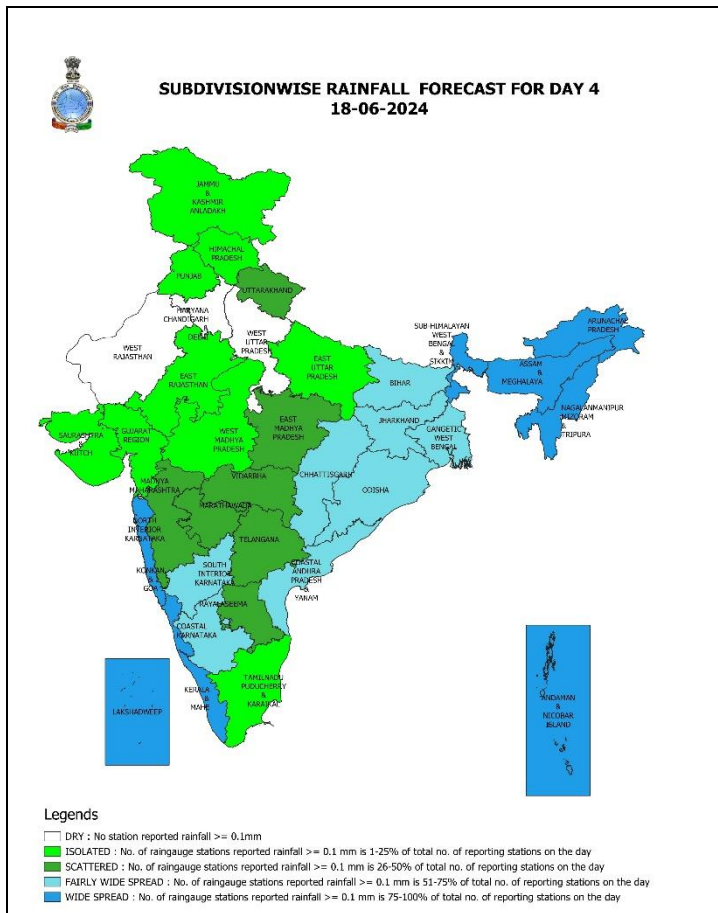
## 16 June (Day 2):

- ❖ **Heavy to very heavy rainfall with extremely heavy falls** very likely at isolated places over Meghalaya; **Heavy to very heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam and Arunachal Pradesh; **heavy rainfall** at isolated places over Nagaland, Manipur, Mizoram & Tripura and Marathwada.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 40-50 kmph)** very likely at isolated places over Madhya Pradesh, Gangetic West Bengal, Bihar, Jharkhand, Odisha, Konkan & Goa, Madhya Maharashtra, Marathwada, Interior Karnataka; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places over Vidarbha, Chhattisgarh, Coastal Andhra Pradesh & Yanam, Rayalaseema and Telangana; with **lightning** at isolated places over East Rajasthan, Coastal Karnataka.
- ❖ **Heat wave conditions to severe heat wave conditions** very likely in most parts of Uttar Pradesh; in some parts over Haryana-Chandigarh-Delhi, Punjab. **Heat wave conditions** in some parts of Uttarakhand; in isolated pockets over Jammu division, Himachal Pradesh, northeast Madhya Pradesh and Jharkhand.
- ❖ **Warm night conditions** very likely to prevail in isolated pockets over Uttar Pradesh.
- ❖ **Hot & Humid weather** very likely over Gangetic West Bengal, Bihar and Odisha.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over central parts of Arabian sea, along off Sri Lanka coast, gulf of Mannar, south & central Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** very likely to prevail along and off Somalia coast, southwest and adjoining west central Arabian sea, along & off Oman Coast. Fishermen are advised not to venture into these areas.



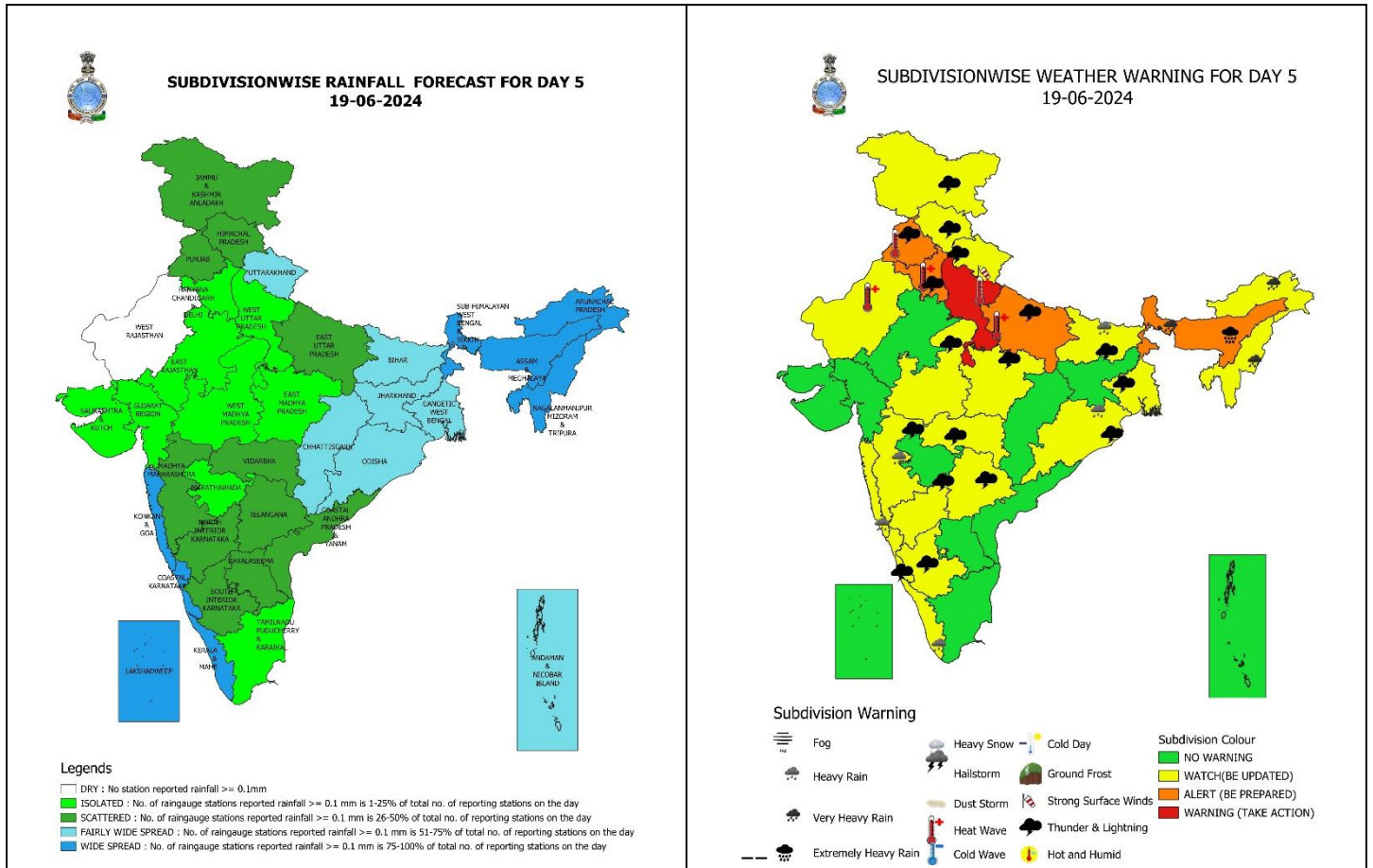
**17 June (Day 3):**

- ❖ **Heavy to very heavy rainfall with extremely heavy falls** very likely at isolated places over Assam & Meghalaya; **Heavy to very heavy rainfall** likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura; **heavy rainfall** at isolated places over Odisha, Coastal Andhra Pradesh, North Interior Karnataka, Konkan & Goa, Marathwada and Kerala & Mahe.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 40-50 kmph)** very likely at isolated places over East Madhya Pradesh, Vidarbha, Gangetic West Bengal, Bihar, Odisha, Madhya Maharashtra, Marathwada, Interior Karnataka; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places over West Madhya Pradesh, Coastal Andhra Pradesh & Yanam, Rayalaseema and Telangana; with **lightning** at isolated places over Uttarakhand, East Uttar Pradesh, Chhattisgarh and Coastal Karnataka.
- ❖ **Heat wave conditions to severe heat wave conditions** very likely in many parts of West Uttar Pradesh; in some parts over East Uttar Pradesh, Punjab, Haryana-Chandigarh-Delhi. **Heat wave conditions** in isolated pockets over Jammu division, Himachal Pradesh and northwest Rajasthan.
- ❖ **Hot & Humid weather conditions** likely over Odisha.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over central parts of Arabian sea, along off Sri Lanka coast, gulf of Mannar, south & central and adjoining north Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** very likely to prevail along and off Somalia coast, southwest and adjoining west central Arabian sea. Fishermen are advised not to venture into these areas.



**18 June (Day 4):**

- ❖ **Heavy to very heavy rainfall with extremely heavy falls** likely at isolated places over Assam & Meghalaya; **Heavy to very heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura; **heavy rainfall** at isolated places over western parts of Gangetic West Bengal, Bihar, Odisha, Konkan & Goa, Madhya Maharashtra and Kerala & Mahe.
- ❖ **Thunderstorm accompanied with lightning & squally winds (speed reaching 50-60 kmph gusting to 70 kmph)** likely at isolated places over Uttarakhand; **with lightning, gusty winds (speed reaching 40-50 kmph)** at isolated places over East Madhya Pradesh, Vidarbha, Bihar, Odisha, Gangetic West Bengal, Interior Karnataka, Telangana; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places over East Uttar Pradesh, West Madhya Pradesh, Rayalaseema, Coastal Andhra Pradesh & Yanam; ; with **lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Punjab, East Uttar Pradesh, Chhattisgarh and Coastal Karnataka.
- ❖ **Heat wave conditions to severe heat wave conditions** likely in many parts of West Uttar Pradesh; in some parts over Haryana-Chandigarh-Delhi. **Heat wave conditions** in some parts of East Uttar Pradesh; in isolated pockets over Jammu division, Himachal Pradesh and northwest Rajasthan.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over central parts of Arabian sea, along off Sri Lanka coast, gulf of Mannar, south & central and adjoining north Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail along and off Somalia coast, southwest and adjoining west central Arabian sea. Fishermen are advised not to venture into these areas.

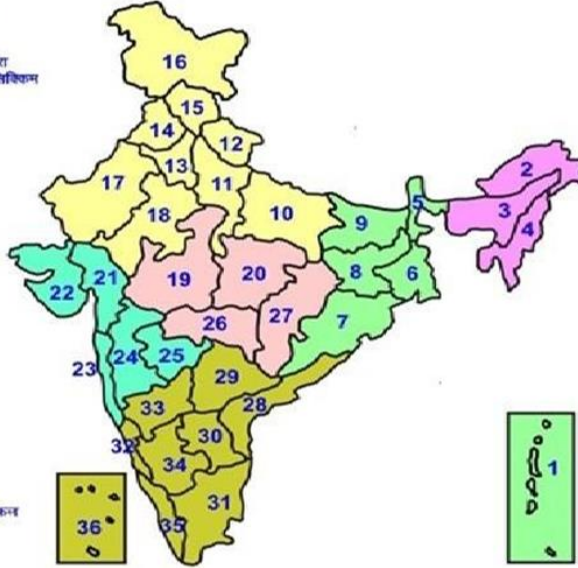


## 19 June (Day 5):

- ❖ **Heavy to very heavy rainfall with extremely heavy falls** likely at isolated places over Assam & Meghalaya; **Heavy to very heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura; **heavy rainfall** at isolated places over western parts of Gangetic West Bengal, Bihar, Odisha, Konkan & Goa, Madhya Maharashtra and Kerala & Mahe.
- ❖ **Thunderstorm accompanied with lightning & squally winds (speed reaching 50-60 kmph gusting to 70 kmph)** likely at isolated places over Uttarakhand; **with lightning, gusty winds (speed reaching 40-50 kmph)** at isolated places over East Madhya Pradesh, Vidarbha, Bihar, Odisha, Gangetic West Bengal, Interior Karnataka, Telangana; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places over East Uttar Pradesh, West Madhya Pradesh, Rayalaseema, Coastal Andhra Pradesh & Yanam; with **lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Punjab, Haryana-Chandigarh, East Uttar Pradesh, Chhattisgarh and Coastal Karnataka.
- ❖ **Heat wave conditions to severe heat wave conditions** likely in many parts of West Uttar Pradesh; in some parts over Haryana-Chandigarh-Delhi. **Heat wave conditions** in some parts of East Uttar Pradesh; in isolated pockets over Jammu division, Himachal Pradesh and northwest Rajasthan.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over central parts of Arabian sea, along off Sri Lanka coast, gulf of Mannar, south & central and adjoining north Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail along and off Somalia coast, southwest and adjoining west central Arabian sea. Fishermen are advised not to venture into these areas.

## LEGENDS

- 1 अंडमन और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
- 5 उप-हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम बंगाल
- 7 ओडिशा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखण्ड
- 13 हरियाणा, चंडीगढ़ एवं दिल्ली
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू एवं कश्मीर एवं लद्दाख
- 17 पश्चिम राजस्थान
- 18 पूर्वी राजस्थान
- 19 पश्चिम मध्य प्रदेश
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात
- 22 सौराष्ट्र
- 23 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठवाड़ा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 आंध्र प्रदेश एवं यानम
- 29 तेलंगाना
- 30 तमिलनाडु, पुदुचेरी एवं कराईकल
- 31 उत्तर कर्नाटक
- 32 दक्षिण कर्नाटक
- 33 उत्तर कर्नाटक
- 34 दक्षिण कर्नाटक
- 35 केरल एवं माहे
- 36 लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Odisha
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chd & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathwada
26. Vidharbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. 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)

### WARNING

<b>WARNING (TAKE ACTION)</b>
<b>ALERT ( BE PREPARED)</b>
<b>WATCH (BE UPDATED)</b>
<b>NO WARNING ( NO ACTION)</b>

### 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  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .

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  $40^\circ\text{C}$

Warm Night: When minimum temperature departure  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .

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  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .

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  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .

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)

\* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".

Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.

For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599

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