

Tuesday, July 16, 2024  
Time of Issue: 0800 hours IST  
(MORNING)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### Weather Systems

- ✓ The low pressure area lies over south Odisha and neighbourhood with the associated cyclonic circulation extending upto 7.6 km above mean sea level tilting southwestwards with height.
- ✓ The Monsoon trough is south of its normal position and extends upto lower tropospheric levels. It is likely to be south of its normal position during next 4-5 days.
- ✓ The off-shore trough runs along south Gujarat-north Kerala coasts at mean sea level.
- ✓ The shear zone in lower & middle tropospheric levels roughly along 20°N tilting southwards with height.
- ✓ A fresh low-pressure area is likely to form over West central and adjoining Northwest Bay of Bengal around 19<sup>th</sup> July.

#### Forecast & Warnings:

##### ❖ West, Central and South Peninsular India

- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Konkan & Goa, Madhya Maharashtra, Marathwada, Kerala & Mahe, Lakshadweep, Karnataka, Gujarat state, Madhya Pradesh, Vidarbha, Chhattisgarh, Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema; isolated to scattered light to moderate rainfall over Tamil Nadu, Puducherry & Karaikal during next 5 days.
- ✓ **Heavy to very heavy rainfall very likely at isolated/some places over Konkan & Goa, Madhya Maharashtra, Gujarat State, Karnataka and Kerala & Mahe during next 5 days.**
- ✓ **Isolated extremely heavy rainfall very likely over Konkan & Goa, Madhya Maharashtra, Gujarat state and Coastal & South Interior Karnataka on 16<sup>th</sup> July.**
- ✓ Isolated **Heavy rainfall** over Telangana, Coastal Andhra Pradesh & Yanam, Chhattisgarh, North Interior Karnataka during 16<sup>th</sup>-20<sup>th</sup>; Madhya Pradesh, Vidarbha during 16<sup>th</sup>-18<sup>th</sup>; Marathwada, Tamil Nadu, Puducherry & Karaikal on 16<sup>th</sup> July.
- ✓ **Isolated very heavy rainfall likely over West Madhya Pradesh on 16<sup>th</sup>; Coastal Andhra Pradesh & Yanam, Telangana during 18<sup>th</sup>-20<sup>th</sup> July.**

##### ❖ East & Northeast India

- ✓ Fairly widespread to widespread light to moderate rainfall **accompanied with thunderstorm, lightning** very likely over Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Northeast India and Odisha; scattered to fairly widespread light to moderate rainfall over Gangetic West Bengal, Bihar, Jharkhand during next 5 days.
- ✓ **Heavy rainfall** very likely at isolated places over Odisha during 16<sup>th</sup>-20<sup>th</sup>; Arunachal Pradesh, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim on 16<sup>th</sup>; Andaman & Nicobar Islands on 16<sup>th</sup> & 17<sup>th</sup> July.
- ✓ **Isolated very heavy rainfall also likely over Odisha on 19<sup>th</sup> & 20<sup>th</sup> July.**

##### ❖ Northwest India

- ✓ Scattered to fairly widespread light to moderate rainfall **accompanied with thunderstorm & lightning** very likely over Himachal Pradesh, Uttarakhand, Uttar Pradesh and East Rajasthan; isolated to scattered rainfall likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Haryana-Chandigarh-Delhi and West Rajasthan during next 5 days.
- ✓ Isolated **heavy rainfall** very likely over Uttarakhand, East Rajasthan during 16<sup>th</sup>-20<sup>th</sup>; West Uttar Pradesh on 17<sup>th</sup> & 18<sup>th</sup>; East Uttar Pradesh on 17<sup>th</sup>; West Rajasthan on 16<sup>th</sup> & 18<sup>th</sup> and Himachal Pradesh on 17<sup>th</sup> & 18<sup>th</sup> July.
- ✓ **Isolated very heavy rainfall also likely over Uttarakhand on 17<sup>th</sup> & 18<sup>th</sup> and East Rajasthan on 18<sup>th</sup> July.**

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## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at most places** over Coastal Karnataka, Konkan & Goa, Kerala & Mahe and Lakshadweep; **at many places** over Gangetic West Bengal, Odisha, East Madhya Pradesh, Marathwada, Vidarbha, Interior Karnataka, Tamil Nadu, Puducherry & Karaikal; **at a few places** over Chhattisgarh, West Madhya Pradesh, Gujarat Region, Telangana, Coastal Andhra Pradesh & Yanam and Rayalaseema; **at isolated places** over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim, Jharkhand, West Uttar Pradesh, Haryana-Chandigarh-Delhi, Uttarakhand, East Rajasthan, Saurashtra & Kutch and Madhya Maharashtra.
- ❖ **Heavy rainfall** (from 0830 hours IST to 1730 hours IST of yesterday): **Heavy rainfall** at isolated places over Tamil Nadu, Konkan & Goa and Gujarat Region.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday)((in cm): **Konkan & Goa:** Ratnagiri- 9, Santacruz-5, Panjim-5, Colaba & Alibag-2 each; **Gujarat Region:** Vallabh Vidyanagar-7, Gandinagar-6, Ahmedabad-5; **Tamil Nadu, Puducherry & Karaikal:** Valparai-7 and Ootacumund-2; **Kerala & Mahe:** Thrissur-6, Palakkad-5, Kochi & Kozhikode -4, Punalur, Kannur & Kottayam -3 each, Alapuzha-2; **Lakshadweep:** Agatti-5; Amini Divi-3; **Coastal Karnataka:** Karwar-5, Honavar-6, Mangalore-3; **Nagaland, Manipur, Mizoram & Tripura:** Aizwal-4; **Haryana-Chandigarh-Delhi:** Ridge-4, Palam-3; **East Rajasthan:** Sikar-4; **East Madhya Pradesh:** Mandla-3; **Vidarbha:** Buldana & Wardha-3 each; **Marathwada:** Nanded-3; **Coastal Andhra Pradesh & Yanam:** Vishakhapatnam & Vijaywada-3 each; Nandigama-2 **West Madhya Pradesh:** Ratlam & Khandwa-2 each; **Chhattisgarh:** Durg-2.
- ❖ **Minimum Temperature Departures (as on 15-07-2024):** Minimum temperatures were **above normal (1.6°C to 3.0°C)** at many places over Saurashtra & Kutch and Nagaland, Manipur, Mizoram & Tripura; a few places over Gujarat Region, West Rajasthan and Bihar; at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, East Rajasthan, Punjab, Haryana-Chandigarh-Delhi, West Madhya Pradesh, Uttar Pradesh, Chhattisgarh, Odisha, Madhya Maharashtra, Marathwada and Odisha. These were **below normal (-1.6°C to -3.0°C)** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and at isolated places over Telangana and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature** of 19.5°C was reported at **Yeotmal (Vidarbha)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 15-07-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at a few places over East Madhya Pradesh; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Saurashtra & Kutch, Sub-Himalayan West Bengal & Sikkim, Bihar, Chhattisgarh, Rajasthan and West Madhya Pradesh; **above normal (1.6°C to 3.0°C)** at a few places over East Uttar Pradesh; at isolated places over Gujarat Region, Madhya Maharashtra, Vidarbha, Odisha, Gangetic West Bengal, West Uttar Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. These were **markedly below normal (-5.1°C or less)** at isolated places over Tamil Nadu, Puducherry & Karaikal and Coastal Andhra Pradesh & Yanam; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Telangana, Rayalaseema and Interior Karnataka; **below normal (-1.6°C to -3.0°C)** at a few places over Kerala & Mahe; at isolated places over South Interior Karnataka, Konkan & Goa, Coastal Karnataka and Marathwada and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature** of 42.0°C was reported at **Jaisalmer (West Rajasthan)** over the country.

### Meteorological Analysis (Based on 0530 hours IST)

- ❖ The low pressure area over south Odisha and neighbourhood with the associated cyclonic circulation extending upto 7.6 km above mean sea level tilting southwestwards with height persists.
- ❖ The Monsoon trough at mean sea level continues to pass through Jaisalmer, Kota, Guna, Mandla, Rajnandgaon, centre of low pressure area over south Odisha and thence southeastwards to the central Bay of Bengal extending upto 1.5 km above mean sea level.
- ❖ The **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 72°E to the north of Lat. 32°N persists.
- ❖ The off-shore trough at mean sea level along South Gujarat-north Kerala coasts persists.
- ❖ The cyclonic circulation over Southwest Pakistan & neighbourhood at 1.5 km above mean sea level persists.
- ❖ The shear zone roughly along 20°N between 3.1 & 7.6 km above mean sea level tilting southwards with height persists.
- ❖ A fresh low pressure area is likely to form over West central and adjoining Northwest Bay of Bengal around 19<sup>th</sup> July.

### Weather Forecast for next 7 days (Upto 0830 hours IST of 23<sup>rd</sup> July, 2024)

- ❖ Meteorological sub-division wise detailed 7 days rainfall forecast is given in Table-1.
- ❖ Thunderstorm accompanied with lightning very likely at isolated places over Northeast and South Peninsular India during next 3-4 days.
- ❖ No significant change in maximum temperatures very likely over most parts of the country.

### Weather Outlook for subsequent 3 days (During 23<sup>rd</sup> -25<sup>th</sup> July, 2024)

- ❖ Fairly widespread to widespread rainfall likely over most parts of the country except plains of northwest India and East peninsular India where isolated to scattered rainfall likely.

Table-1

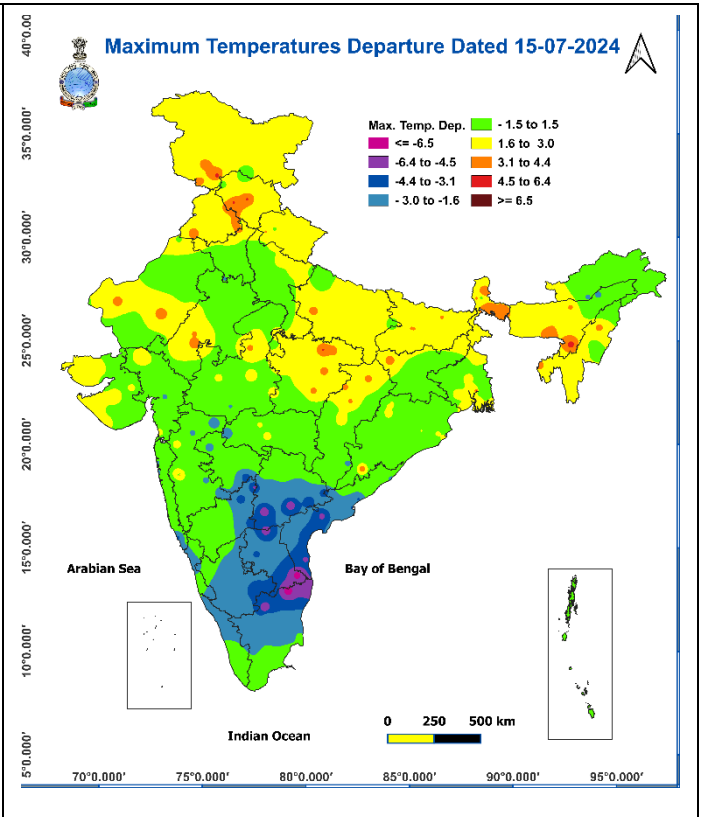
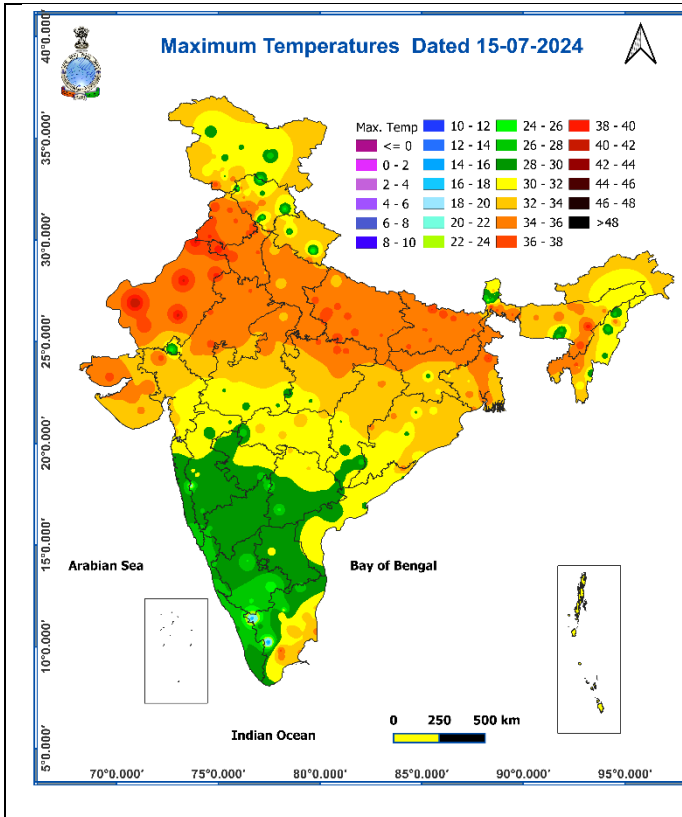
7 Days Rainfall Forecast								
S. No.	Subdivision	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	WS	WS	WS	WS	FWS	FWS	FWS
2	ARUNACHAL PRADESH	FWS	SCT	SCT	SCT	FWS	WS	WS
3	ASSAM & MEGHALAYA	FWS	FWS	FWS	FWS	WS	WS	WS
4	NAGALAND, MANIPUR,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

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

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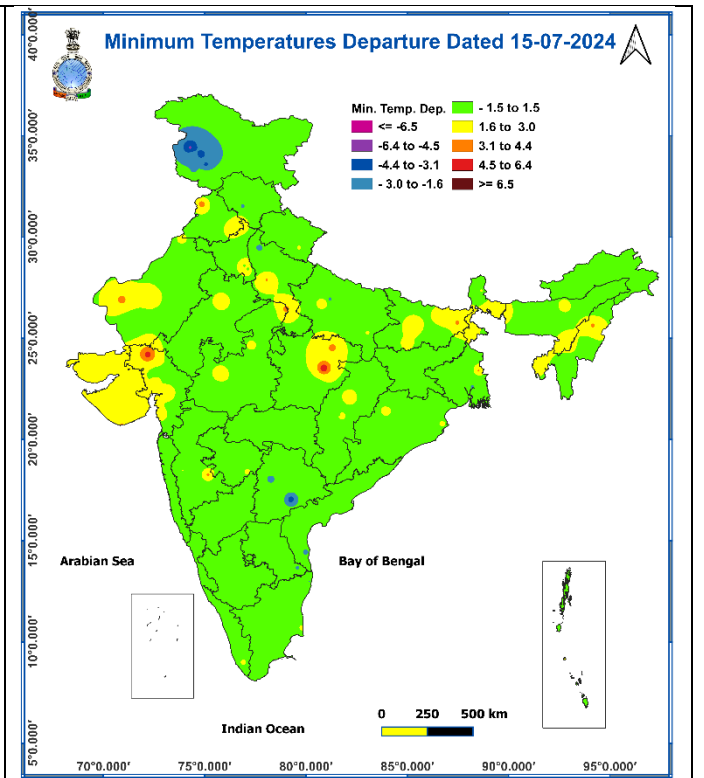
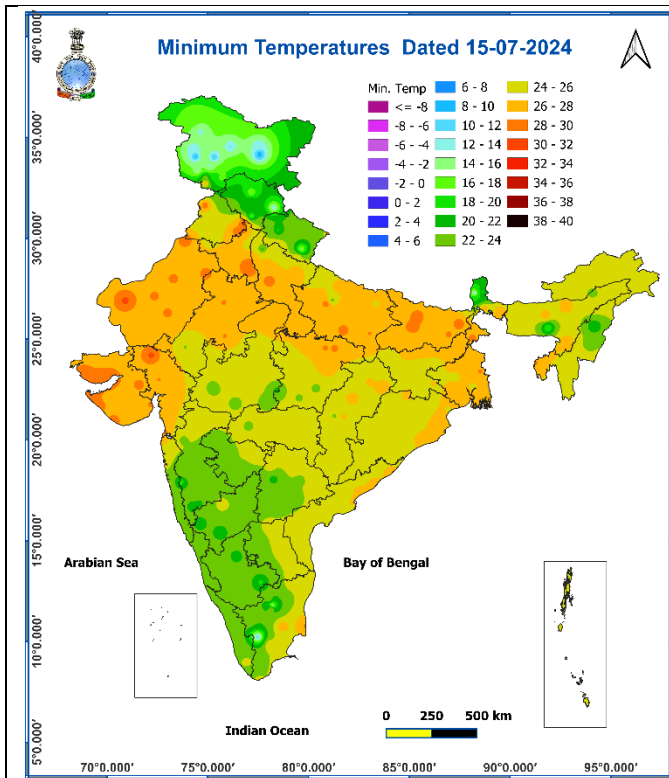
**Fig. 1: Maximum Temperatures**

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



**Fig. 3: Minimum Temperatures**

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

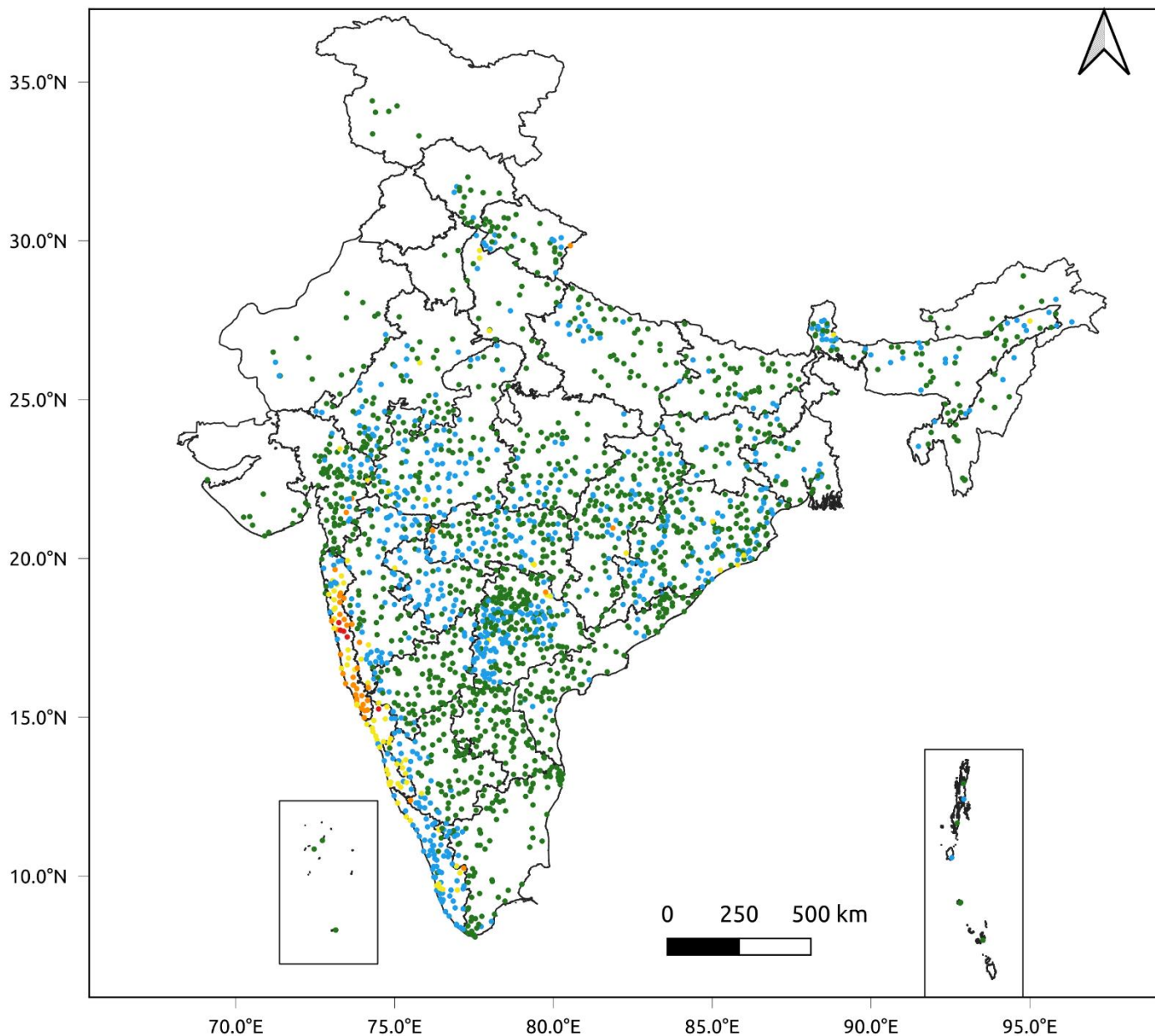


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Fig. 5: Accumulated Rainfall (mm) during past 24 hours

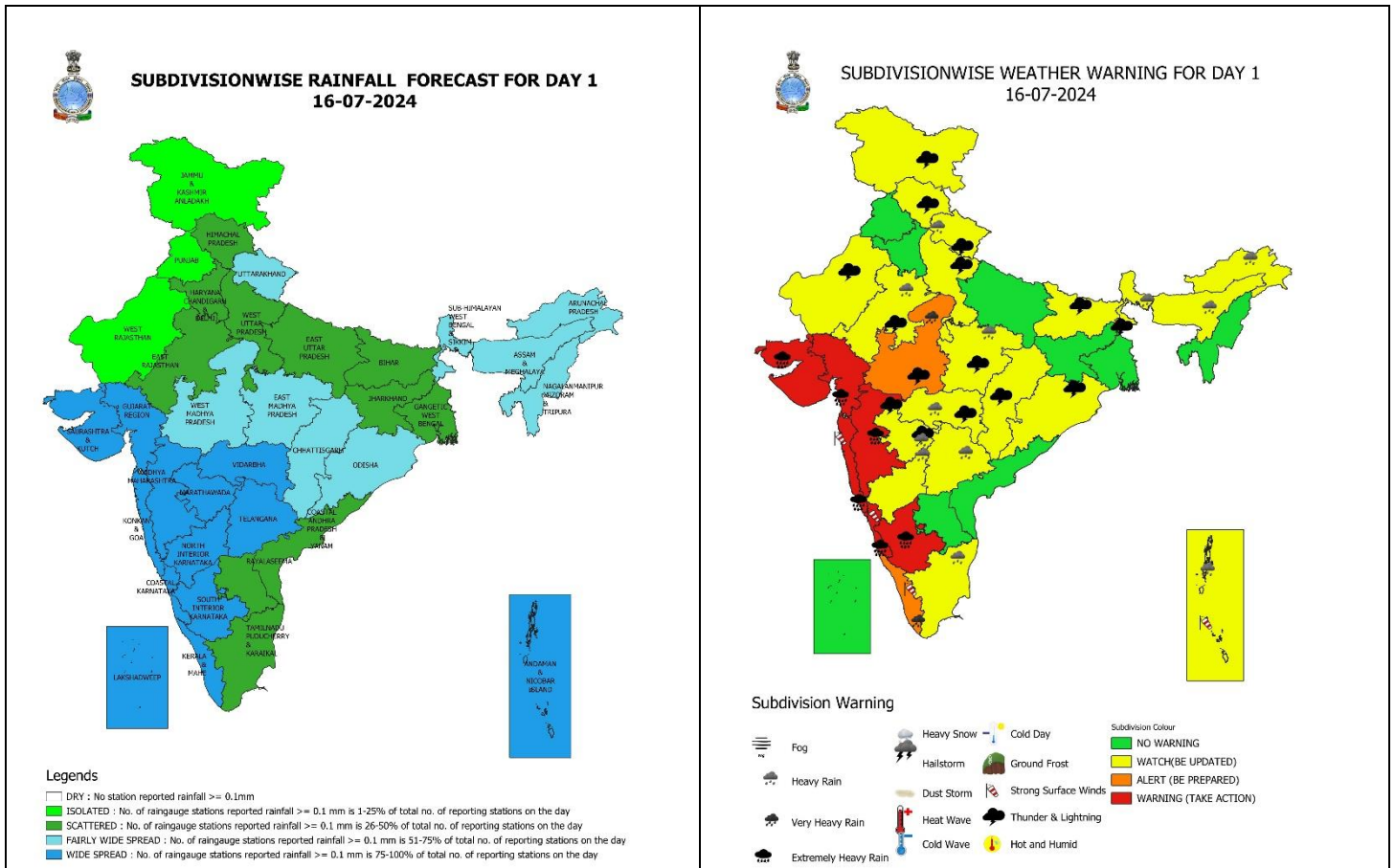


24 Hr cumulative rainfall recorded over different stations during 0830 IST of 14-7-2024 to 0830 IST of 15-7-2024



## Legends

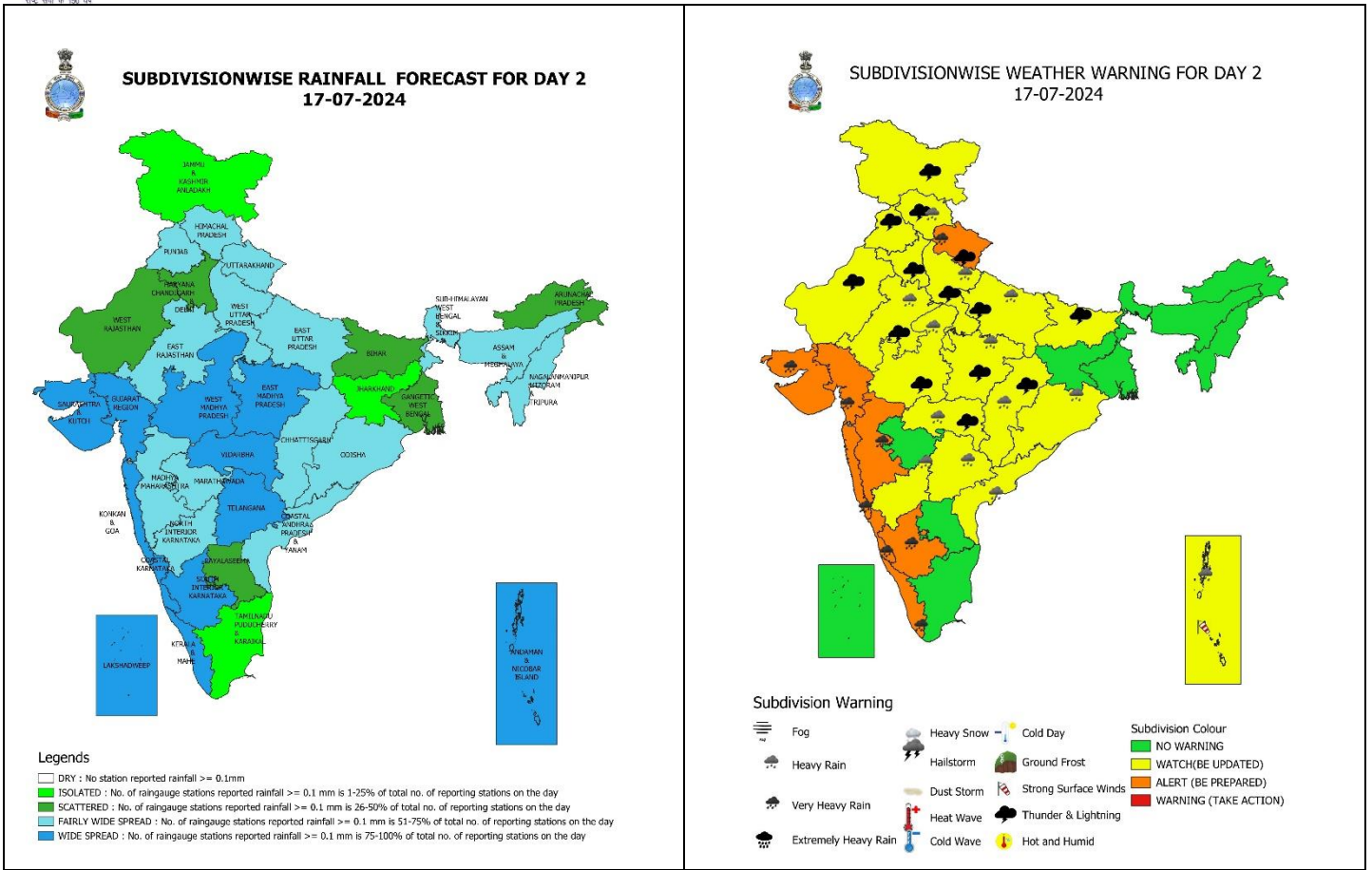
- Very Light to Light Rainfall (0.1 - 15.5 mm)
- Moderate Rainfall (15.6 - 64.4 mm)
- Heavy Rainfall (64.5 - 115.5 mm)
- Very Heavy Rainfall (115.6 - 204.4 mm)
- Extremely Heavy Rainfall ( $\geq 204.5$  mm)



**16 July (Day 1):**

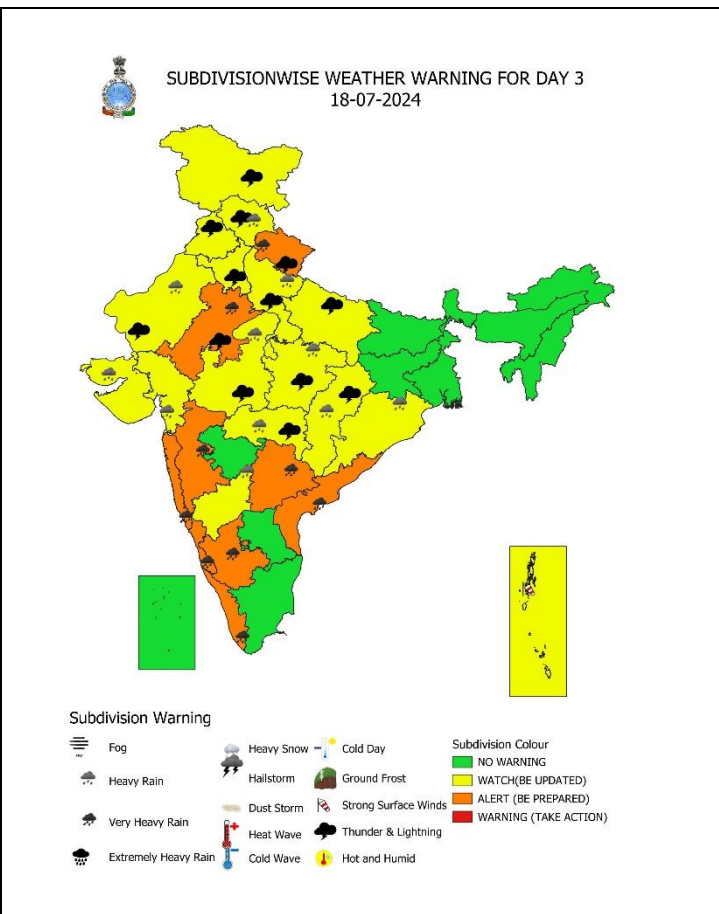
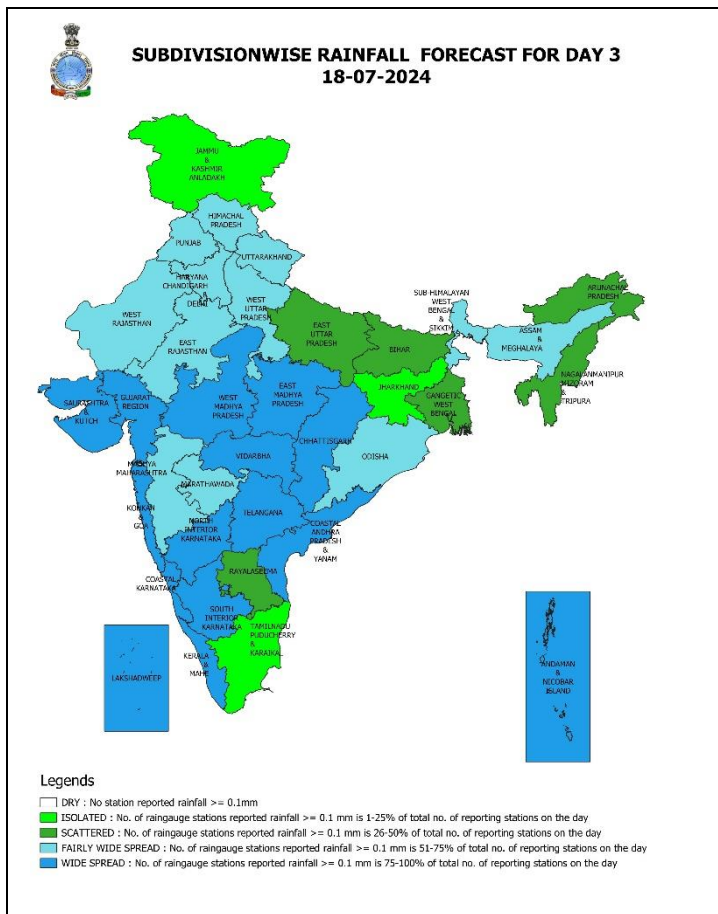
- ❖ **Heavy to very heavy rainfall with extremely heavy falls** very likely at a few places over Konkan & Goa, and at isolated places over Ghat area of Madhya Maharashtra, Gujarat state, Coastal Karnataka, South Interior Karnataka; **Heavy to very heavy rainfall** at isolated places over Kerala & Mahe; **Heavy rainfall** at isolated places over Uttarakhand, East Rajasthan, East Madhya Pradesh, Vidarbha, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Marathwada, Tamil Nadu, Puducherry & Karaikal, Telangana and North Interior Karnataka.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 30-40 kmph)** very likely at isolated places over West Rajasthan; **Thunderstorm accompanied with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, West Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Bihar, Odisha, Madhya Maharashtra and Marathwada.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over southern parts of north Arabian sea, central & adjoining south Arabian sea, along and off Gujarat, Kerala coasts and over Lakshadweep area, gulf of Mannar & along and off Sri Lanka coast, over south and central Bay of Bengal (bob) and over western parts of Andaman Sea. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail parts of eastcentral Arabian sea along & off Maharashtra, Konkan, goa & Karnataka coasts, westcentral bob and along & off Andhra Pradesh coast. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral and adjoining eastcentral & adjoining areas of southeast and southwest Arabian sea along & off Somalia & Oman coasts. Fishermen are advised not to venture into these areas.

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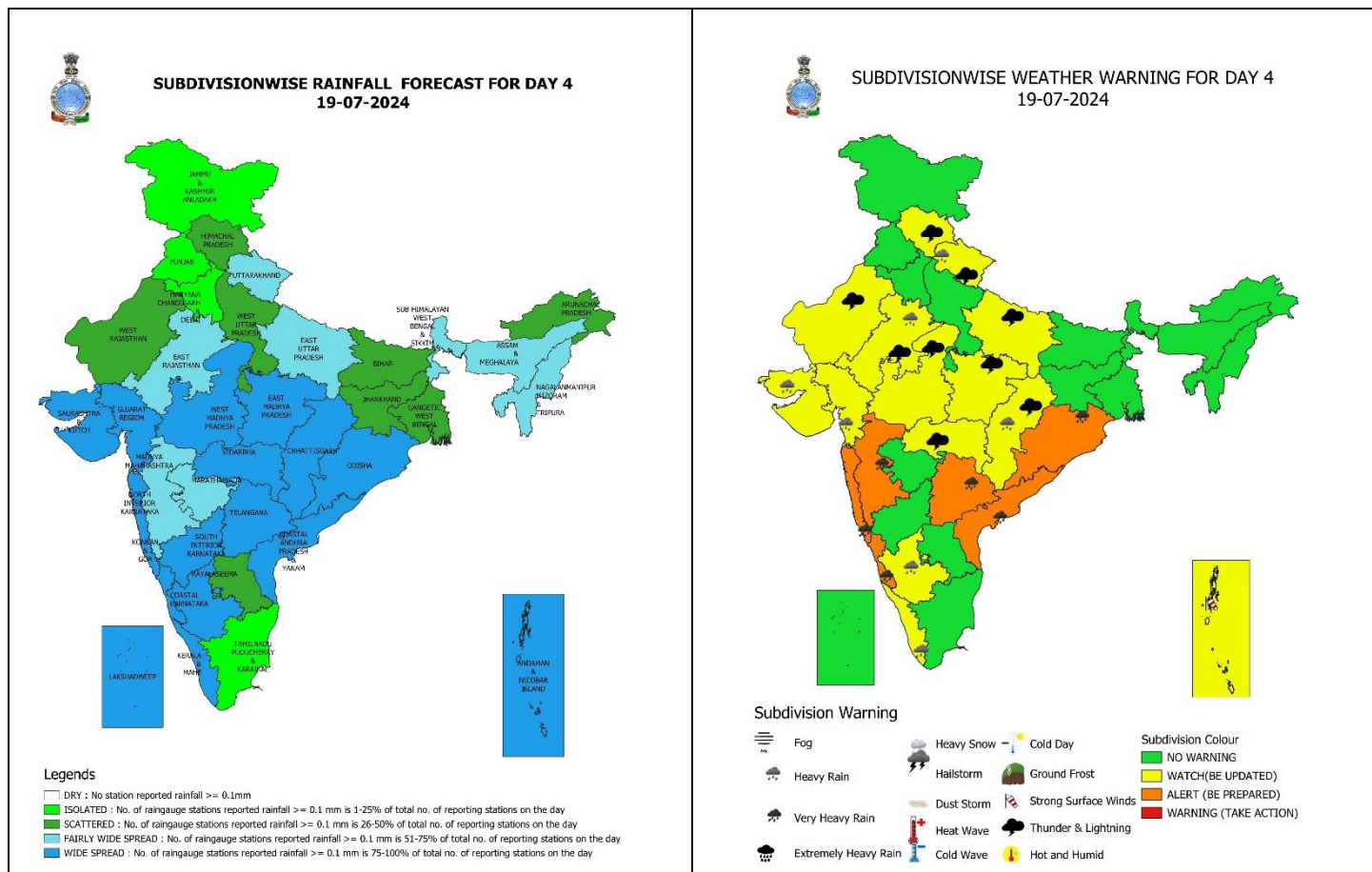
**17 July (Day 2):**

- ❖ **Heavy to very heavy rainfall** very likely at a few places over Konkan & Goa; at isolated places over Uttarakhand, Madhya Maharashtra, Gujarat state, Kerala & Mahe, Coastal Karnataka and South Interior Karnataka; **Heavy rainfall** at isolated places over Himachal Pradesh, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Andaman & Nicobar Islands, Odisha, Coastal Andhra Pradesh & Yanam, Telangana and North Interior Karnataka.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 30-40 kmph)** very likely at isolated places over West Rajasthan; **Thunderstorm accompanied with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh and Bihar.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over southern parts of northeast Arabian sea, central & adjoining south Arabian sea, along and off Gujarat, Maharashtra, Konkan & goa, Karnataka and Kerala coasts, Lakshadweep area, gulf of Mannar & along and off Sri Lanka coast, over south and central Bay of Bengal (bob) and over most parts of south Andaman and adjoining north Andaman Sea. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail parts of eastcentral & adjoining southeast Arabian sea and along & off Maharashtra, Konkan, goa & Karnataka coasts, westcentral bob and adjoining southwest and east entral along & off Andhra Pradesh coast. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral and adjoining eastcentral & adjoining areas of southeast and southwest Arabian sea along & off Somalia & Oman coasts. Fishermen are advised not to venture into these areas.



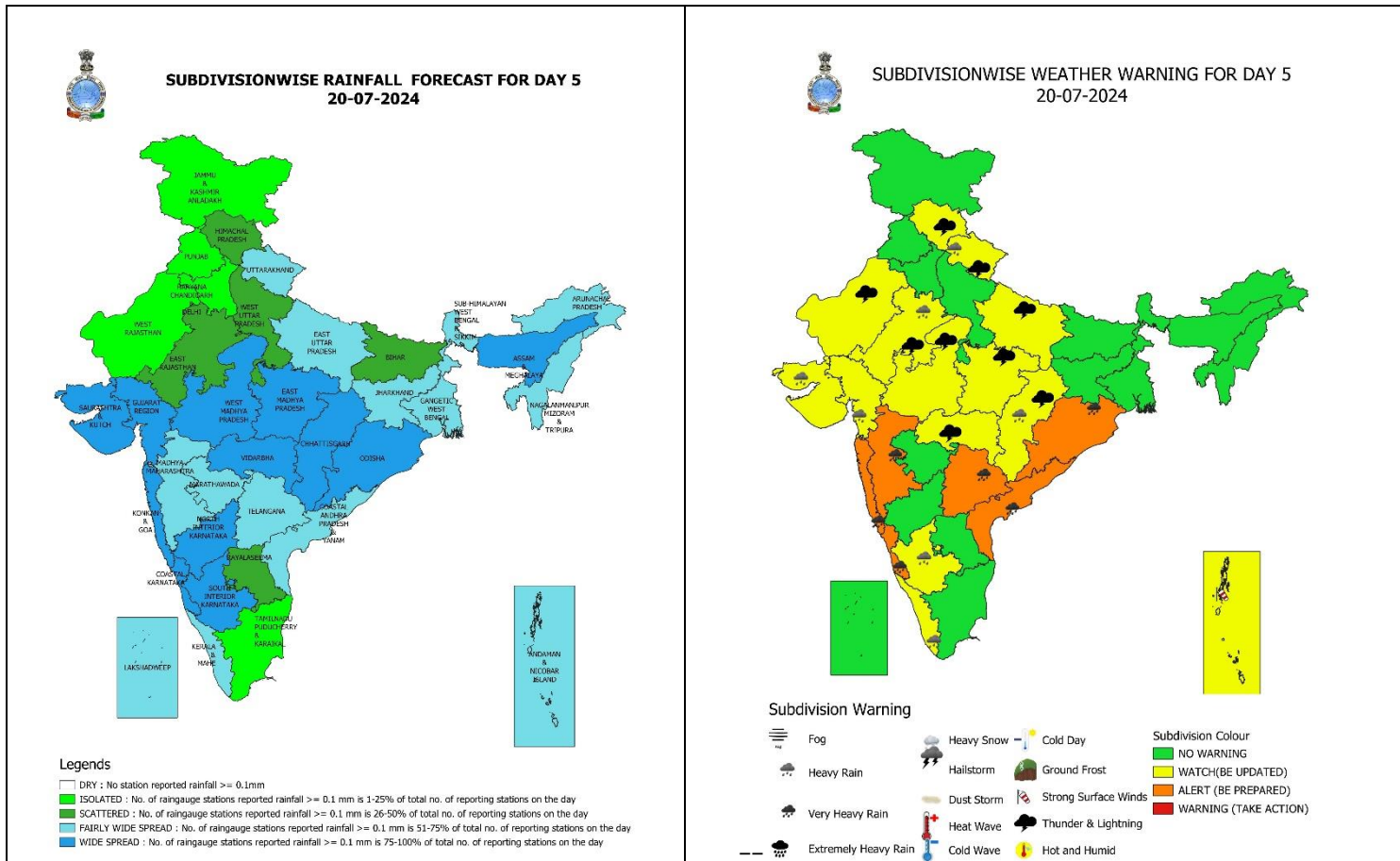
**18 July (Day 3):**

- ❖ **Heavy to very heavy rainfall** likely at a few places over Konkan & Goa; at isolated places over Uttarakhand, East Rajasthan, Madhya Maharashtra, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Telangana, Coastal Karnataka, South Interior Karnataka; **Heavy rainfall** at isolated places over Himachal Pradesh, West Uttar Pradesh, West Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Odisha, Gujarat state and North Interior Karnataka.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 30-40 kmph)** likely at isolated places over West Rajasthan; **Thunderstorm accompanied with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over eastcentral and southeast Arabian sea, along and off Konkan, goa, Karnataka & Kerala coasts and over Lakshadweep area, southwest Arabian sea off Somalia coast, gulf of Mannar & off Sri Lanka coast, over south, central & northwest Bay of Bengal and Andaman Sea. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail southern parts of northeast and eastcentral Arabian sea along and off south Gujarat, Maharashtra, Konkan & goa coasts, westcentral and adjoining northwest Bay of Bengal along & off Andhra Pradesh coast. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral and adjoining eastcentral & adjoining areas of southwest as, along & off Somalia & Oman coasts. Fishermen are advised not to venture into these areas.



**19 July (Day 4):**

- ❖ **Heavy to very heavy rainfall** likely at a few places over Konkan & Goa; at isolated places over Odisha, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Rayalaseema, Coastal Karnataka; **Heavy rainfall** at isolated places over Uttarakhand, East Rajasthan, Chhattisgarh, Gujarat state, Kerala & Mahe and South Interior Karnataka.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 30-40 kmph)** likely at isolated places over West Rajasthan; **Thunderstorm accompanied with lightning** at isolated places over Uttarakhand, Himachal Pradesh, East Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over northeast Arabian sea, eastcentral & southeast Arabian sea, along and off Gujarat, Maharashtra, Konkan & goa, Karnataka and Kerala coasts and over Lakshadweep area, gulf of Mannar & off Sri Lanka coast, over south and central & adjoining north Bay of Bengal and over most parts of Andaman Sea. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral & adjoining south, eastcentral and northwest bob and along & off Andhra Pradesh coast. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral and adjoining eastcentral & adjoining areas of southwest as, along & off Somalia & Oman coasts and central parts of west central Bay of Bengal. Fishermen are advised not to venture into these areas.

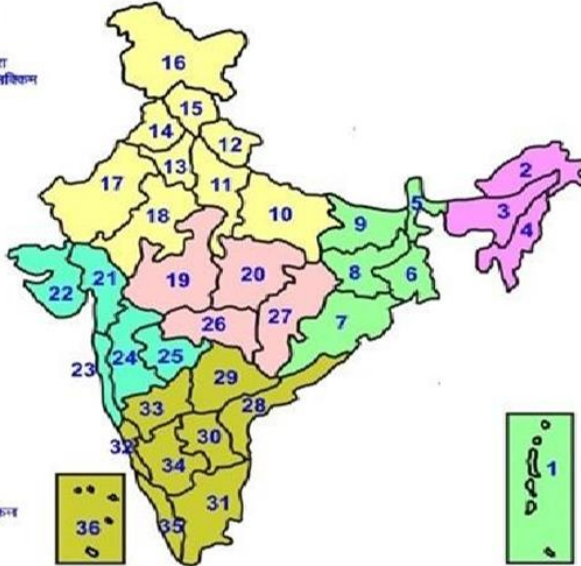


**20 July (Day 5):**

- ❖ **Heavy to very heavy rainfall** likely at a few places over Konkan & Goa; at isolated places over Odisha, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Rayalaseema, Coastal Karnataka; **Heavy rainfall** at isolated places over Uttarakhand, East Rajasthan, Chhattisgarh, Gujarat state, Kerala & Mahe and South Interior Karnataka.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 30-40 kmph)** likely at isolated places over West Rajasthan; **Thunderstorm accompanied with lightning** at isolated places over Uttarakhand, Himachal Pradesh, East Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over northeast Arabian sea, eastcentral & southeast Arabian sea, along and off Gujarat, Maharashtra, Konkan & goa, Karnataka and Kerala coasts and over Lakshadweep area, gulf of Mannar & off Sri Lanka coast, over south and central & adjoining north Bay of Bengal and over most parts of Andaman Sea. **Squally weather with wind speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral & adjoining south, eastcentral and northwest bob and along & off Andhra Pradesh coast. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over westcentral and adjoining eastcentral & adjoining areas of southwest as, along & off Somalia & Oman coasts and central parts of west central Bay of Bengal. Fishermen are advised not to venture into these areas.

## LEGENDS

- 1 अंडमान 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 उत्तराखंड
- 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 कच्छ
- 24 मध्य प्रदेश
- 25 मराठवाड़ा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 उत्पी आंध्र प्रदेश एवं यानम
- 29 तेलंगाना
- 30 रायलसेमा
- 31 तमिलनाडु, पुदुचेरी एवं कराईकल
- 32 उत्तरी कर्नाटक
- 33 आंतरिक उत्तरी कर्नाटक
- 34 आंतरिक दक्षिणी 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

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

## 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)