

Friday, October 4, 2024  
Time of Issue: 1340 hours IST  
(MID-DAY)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### On further Withdrawal of Southwest Monsoon

- ✓ The **line of withdrawal of Southwest Monsoon** continues to pass through 30.8°N/81.2°E, Lakhimpur Kheri, Shivpuri, Kota, Udaipur, Deesa, Surendranagar, Junagarh and 21°N/70°E.
- ✓ Conditions are favourable for further **withdrawal of Southwest Monsoon** from remaining parts of West Uttar Pradesh, some more parts Madhya Pradesh, remaining parts of East Rajasthan, some more parts of Gujarat and some parts of Maharashtra during next 2-3 days.

#### Weather Systems:

- ✓ A **low pressure area** lies over north Bay of Bengal & adjoining coastal areas of Bangladesh & West Bengal.
- ✓ A **cyclonic circulation** lies over north Bangladesh & adjoining Sub-Himalayan West Bengal extending upto middle tropospheric levels.
- ✓ Yesterday's **cyclonic circulation** over Lakshadweep area now lies over southeast Arabian Sea in lower tropospheric levels.

#### Forecast & Warnings (upto 7 days) :

##### East & Northeast India

- ✓ Fairly widespread to widespread light to moderate rainfall very likely over Northeast region during the week; Fairly widespread to widespread light to moderate rainfall very likely over Andaman & Nicobar Islands, West Bengal & Sikkim during next 2 days & Scattered to Fairly widespread light to moderate rainfall during the subsequent 5 days; Isolated to Scattered light to moderate rainfall over the remaining East India region during the week.
- ✓ **Isolated heavy to very Heavy rainfall with extremely heavy falls** over Meghalaya on 04<sup>th</sup> October.
- ✓ **Isolated heavy to very Heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Assam and Arunachal Pradesh on 04<sup>th</sup> October.
- ✓ **Isolated heavy rainfall** very likely over Nagaland, Manipur, Mizoram & Tripura on 04<sup>th</sup> & 05<sup>th</sup> and over the remaining Northeast India during next 7 days and over Gangetic West Bengal & Bihar on 04<sup>th</sup> October.

##### South Peninsular India

- ✓ Fairly widespread to widespread light to moderate rainfall very likely over Kerala & Mahe, Lakshadweep, South Interior Karnataka; Scattered to Fairly widespread light to moderate rainfall very likely over Tamil Nadu, Puducherry & Karaikal, Coastal Karnataka, North Interior Karnataka, Coastal Andhra Pradesh & Yanam, Rayalaseema; Isolated to Scattered light to moderate rainfall very likely over Telangana during the week.
- ✓ **Isolated heavy rainfall** very likely over Rayalaseema on 04<sup>th</sup> & 05<sup>th</sup>; South Interior Karnataka during 04<sup>th</sup>-08<sup>th</sup>; Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe during 04<sup>th</sup>-09<sup>th</sup> October.

##### Northwest, West & Central India:

- ✓ No significant rainfall likely over these regions during next one week.

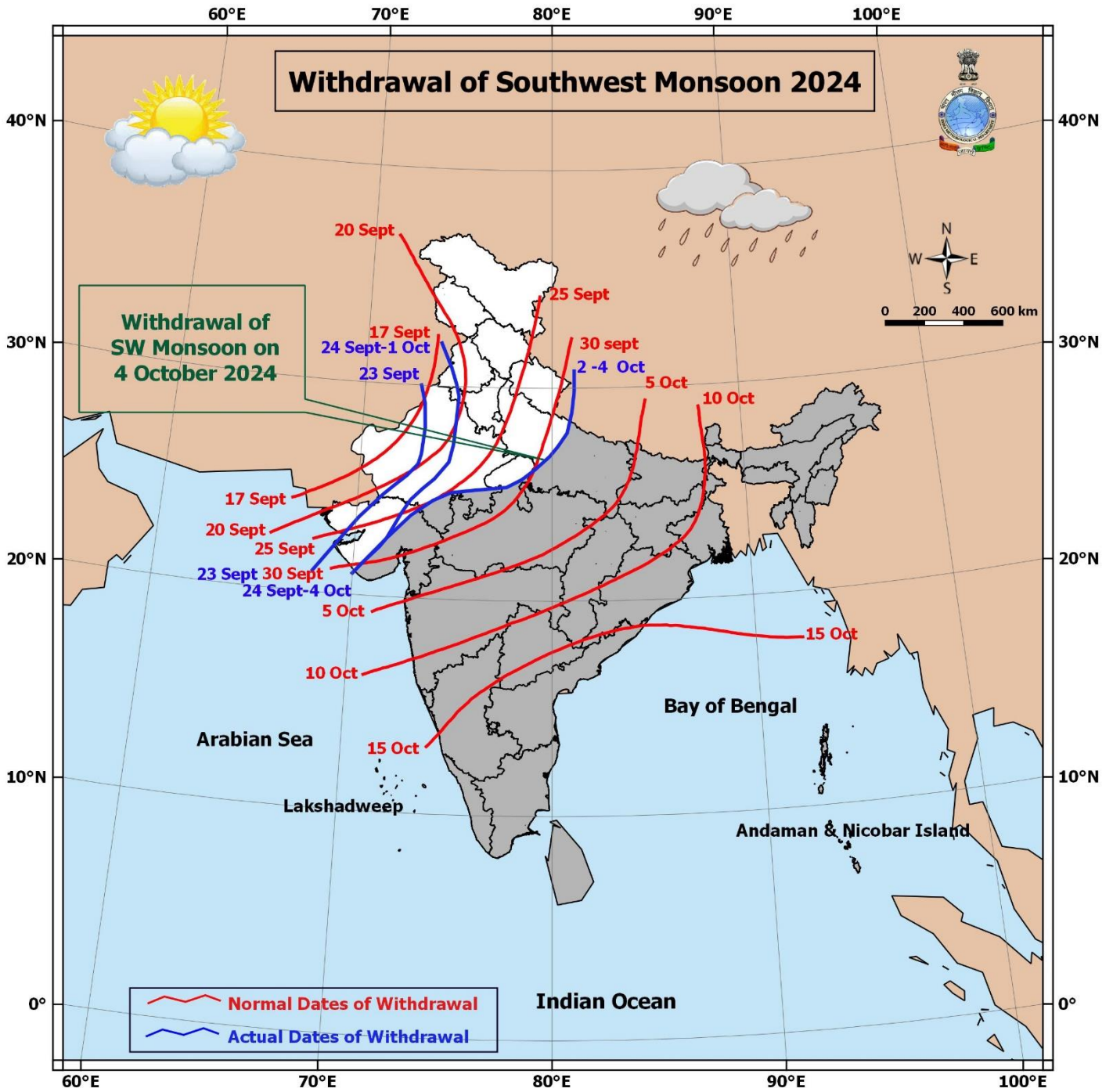
## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most places** over Andaman & Nicobar Islands, Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Rayalaseema, Sub-Himalayan West Bengal & Sikkim; **at many places** over Gangetic West Bengal; **at a few places** over Bihar, Konkan & Goa, Telangana, South Interior Karnataka; **at isolated places** over East Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Odisha, Madhya Maharashtra, Marathwada, Gujarat Region, Coastal Andhra Pradesh & Yanam, coastal & Interior Karnataka, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe.
- ❖ **Heavy rainfall** recorded (from 0830 hours IST of yesterday to 0830 hours IST of today): **Heavy to very Heavy rainfall with extremely heavy fall** at isolated places over Meghalaya; **Heavy rainfall** at a few places over Arunachal Pradesh; at isolated places over Assam, Sub-Himalayan West Bengal & Sikkim, Bihar, Tamil Nadu, Rayalaseema and Marathwada.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Assam & Meghalaya:** Tura Kvk (dist West Garo Hills) 24, Bhaghmara (dist South Garo Hills) 14, Williamnagar (dist East Garo Hills) 13, Mawsynram (dist East Khasi Hills) 12, Cherrapunji(rkm) (dist East Khasi Hills) 11, Lakhipur (dist Cachar) 10, Nongstein (dist West Khasi Hills) 10, Cherrapunji (dist East Khasi Hills) 9, Jia Bharali N T Xing (dist Shonitpur) 9, Mawkyrwat (dist South West Khasi Hills) 7, Tezpur (dist Shonitpur) 7, Dhupdhara Arg (dist Goalpara) 7; **Arunachal Pradesh:** Huri (aws) (dist Kurung Kumey) 11, Sejosa (dist Pakke Kessang) 11, Yachuli (arg) (dist Lower Subansiri) 9, Nampongcircle (arg) (dist Changlang) 9, Ziro (dist Lower Subansiri) 8, Tuting\_ Aws (dist Upper Siang) 8, Anini\_aws (dist Dibang Valley) 7, Basar\_ Aws (dist West Siang) 7, Itanagar (dist Papumpara) 7, Yazali (dist Lower Subansiri) 7, Basar (dist West Siang) 7, Tuting (dist Upper Siang) 7, Naharlagun\_ Aws (dist Papumpara) 7; **Sub-Himalayan West Bengal & Sikkim:** Rongo (dist Kalimpong) 9, Yuksom (dist Gyalshing) 8, Jhallong (dist Kalimpong) 8; **Bihar:** Barahar Kothi (dist Purnea) 8, Pirpaiti (dist Bhagalpur) 8, Puraini (dist Madhepura) 7; **Tamilnadu:** Vanur (dist Villupuram) 8; **Rayalaseema:** Rajampet (dist Annamayya District) 8; **Marathwada:** Umarga (dist Dharashiv) 7; **KERALA:** Kundala Dam (Idukki) 6.
- ❖ **Minimum Temperature Departures (as on 04-10-2024):** Minimum temperatures are **appreciably above normal (3.0°C to 5.0°C)** at isolated places over Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Madhya Pradesh; **above normal (1.6°C to 3.0°C)** at most place over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, Uttar Pradesh, Bihar, Gujarat state, Jharkhand, Coastal Karnataka; at many places over Himachal Pradesh, Madhya Maharashtra, Marathwada, Vidarbha, South Interior Karnataka, Kerala & Mahe; at a few places over Sub-Himalayan West Bengal & Sikkim, Odisha, Tamil Nadu, Puducherry & Karaikal; at isolated places over Chhattisgarh, Telangana, Kerala & Mahe, North Interior Karnataka. Today, the lowest minimum temperature of **19.3°C** is reported at **Nahan (Haryana)** over the plains of the country. **(Fig.4)**
- ❖ **Maximum Temperature Departures (as on 03-10-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh; at isolated places over Tamil Nadu, Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at most places over Odisha, Uttar Pradesh, Uttarakhand, Punjab, Chhattisgarh; at many places over Haryana-Chandigarh-Delhi, East Madhya Pradesh, South Interior Karnataka, Kerala & Mahe ; at a few places over Rajasthan, Vidarbha, Rayalaseema, Coastal Karnataka, Coastal Andhra Pradesh & Yanam; at isolated places over Jharkhand, Telangana, Konkan & Goa. These were **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura; **below normal (-1.6°C to -3.0°C)** at isolated places over Bihar, Arunachal Pradesh, Andaman & Nicobar Islands and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature** of **41.0°C** was reported at **Ganganagar (West Rajasthan)** over the country. **(Fig. 2)**

### Meteorological Analysis (Based on 0830 hours IST)

- ❖ The **line of withdrawal of Southwest Monsoon** continues to pass through 30.8°N/81.2°E, Lakhimpur Kheri, Shivpuri, Kota, Udaipur, Deesa, Surendranagar, Junagarh and 21°N/70°E.
- ❖ Conditions are favourable for further **withdrawal of Southwest Monsoon** from remaining parts of West Uttar Pradesh, some more parts Madhya Pradesh, remaining parts of East Rajasthan, some more parts of Gujarat and some parts of Maharashtra during next 2-3 days.
- ❖ An **upper air cyclonic circulation** lies over north Bangladesh & adjoining Sub-Himalayan West Bengal extends upto 5.8 km above mean sea level.
- ❖ A **trough** runs from northeast Uttar Pradesh to the above cyclonic circulation over north Bangladesh & adjoining Sub-Himalayan West Bengal across Bihar at 0.9 km above mean sea level.
- ❖ Under the influence of upper air circulation over southwest Bangladesh & neighbourhood, a **low pressure area** has formed over north Bay of Bengal & adjoining coastal areas of Bangladesh & West Bengal with the associated cyclonic circulation extends upto 5.8 km above mean sea level tilting south-westwards with height.
- ❖ An upper air **cyclonic circulation** lies over westcentral and adjoining south Bay of Bengal and extends upto 1.5 km above mean sea level.
- ❖ The **cyclonic circulation** over Lakshadweep & neighbourhood now lies over southeast Arabian Sea and extends upto 1.5 km above mean sea level.
- ❖ A **trough** runs from the above **cyclonic circulation** over southeast Arabian Sea to south Kerala at 0.9 km above mean sea level.
- ❖ The trough from northeast Bihar to North Andaman Sea at 0.9 km above mean sea level has become less marked.

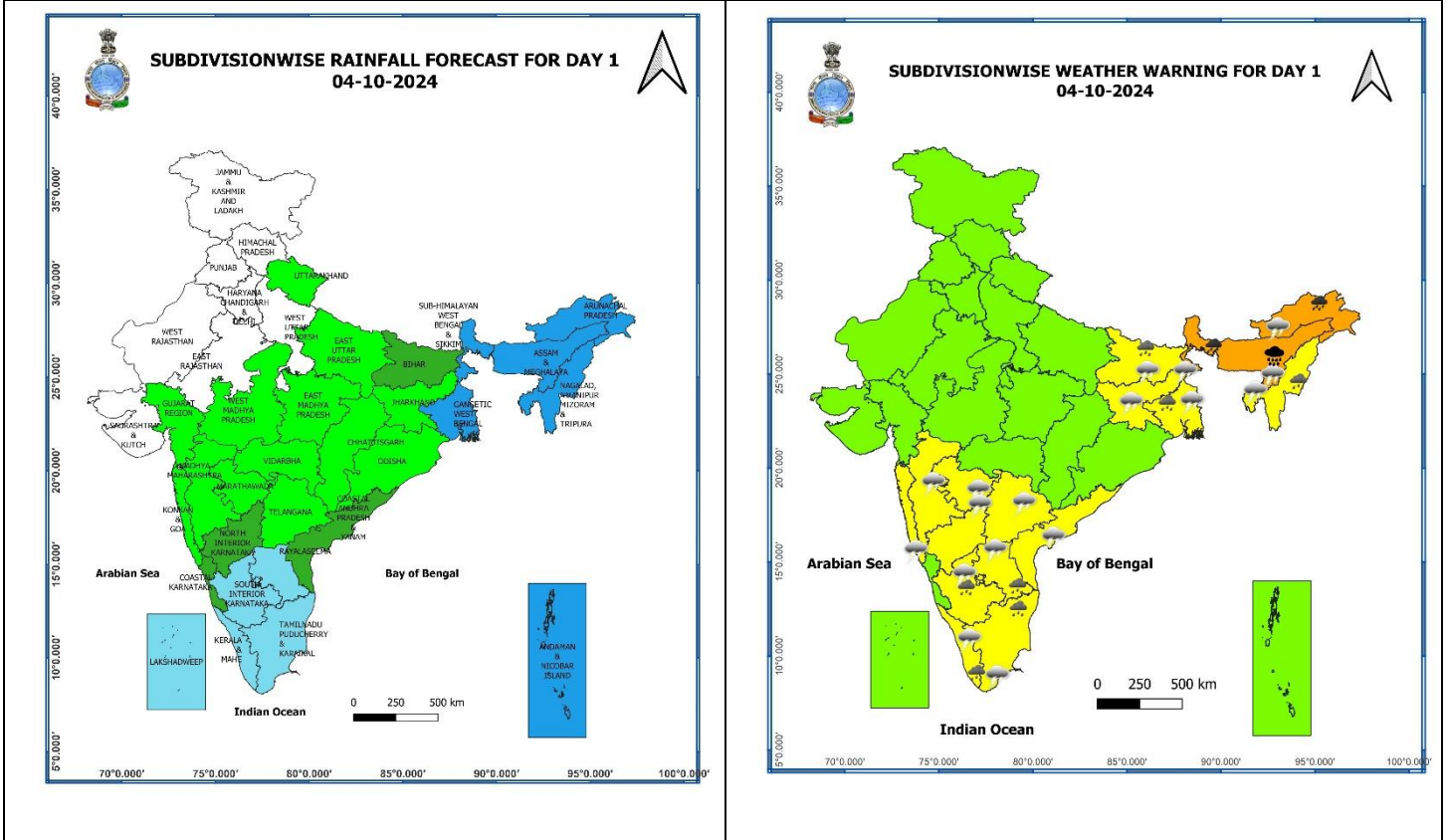
### Withdrawal of Southwest Monsoon 2024



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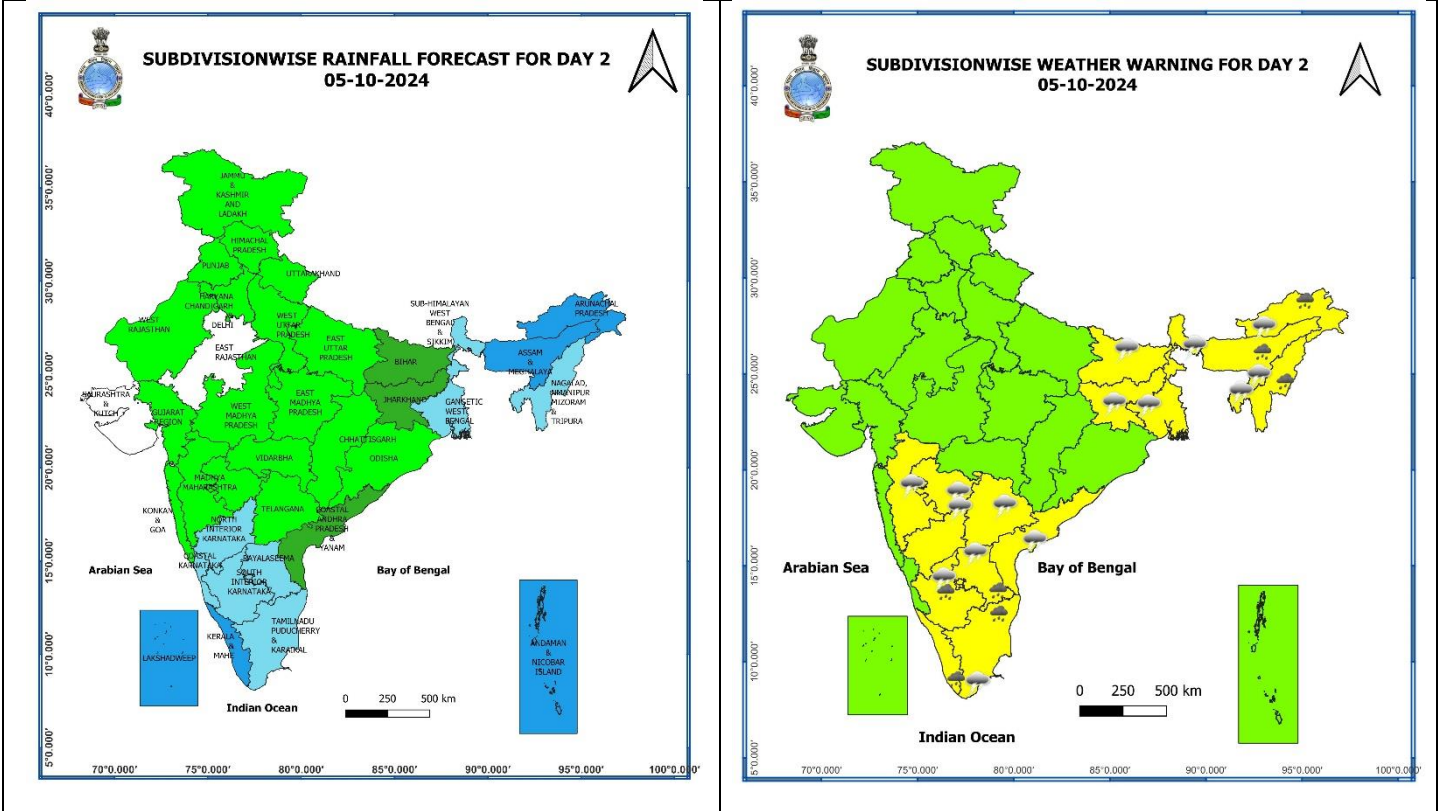


Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 11<sup>th</sup> October, 2024)



**04 October (Day 1):**

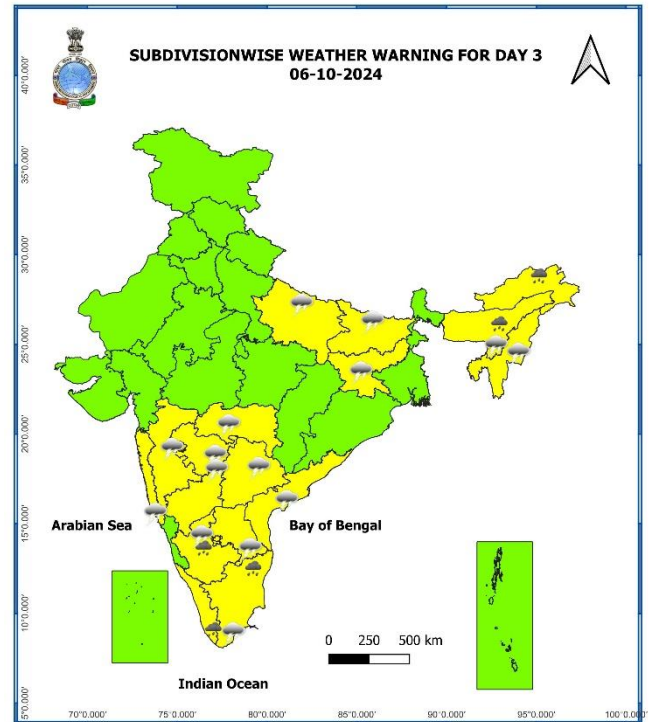
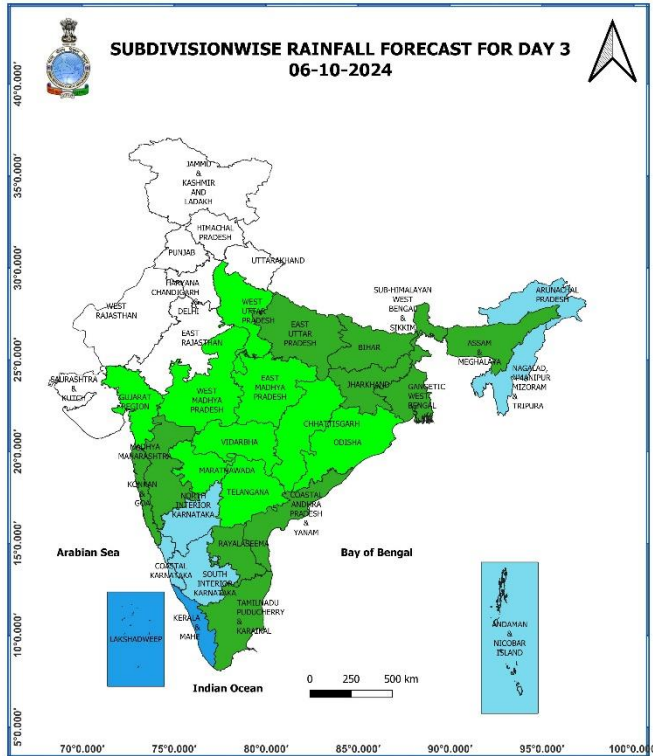
- ❖ **Heavy to very heavy rainfall ( $\geq 12$  cm) with extremely heavy falls ( $> 20$  cm)** very likely at isolated places over Meghalaya; **Heavy to very Heavy rainfall ( $\geq 12$  cm)** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam, and Arunachal Pradesh; **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Gangetic West Bengal, Bihar, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Rayalaseema and South Interior Karnataka.
- ❖ **Thunderstorm with lightning** very likely at isolated places over West Bengal & Sikkim, Bihar, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and Interior Karnataka.
- ❖ **Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over Gulf of Mannar, many parts of northeast Bay of Bengal & adjoining parts north Bay of Bengal. Fishermen are advised not to venture into these areas.



**05 October (Day 2):**

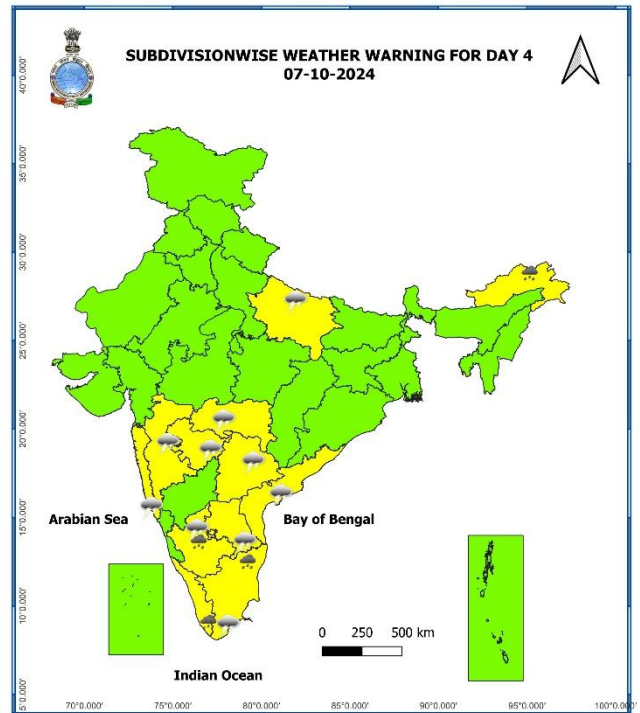
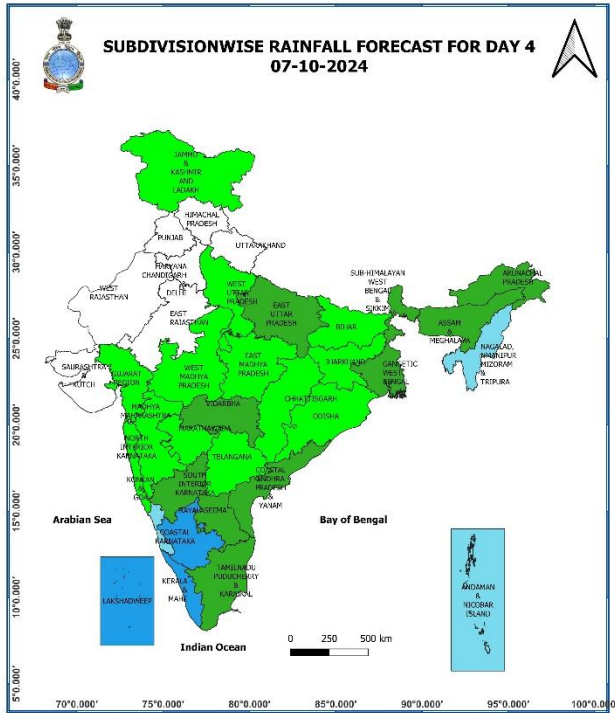
- ❖ **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Rayalaseema and Interior Karnataka.
- ❖ **Thunderstorm with lightning** very likely at isolated places over West Bengal & Sikkim, Bihar, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and Interior Karnataka.

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### 06 October (Day 3):

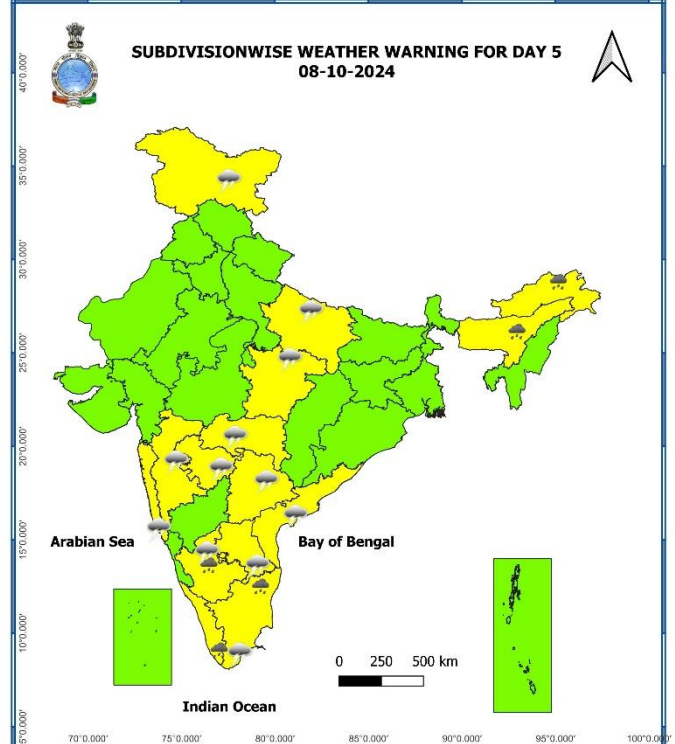
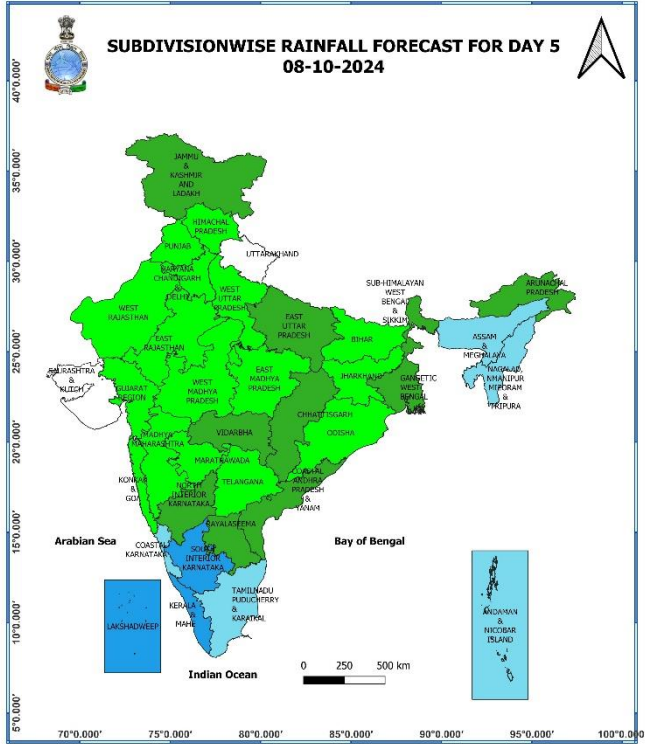
- ❖ **Heavy rainfall ( $\geq 7\text{cm}$ )** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and South Interior Karnataka.
- ❖ **Thunderstorm with lightning** very likely at isolated places over East Uttar Pradesh, Vidarbha, Bihar, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and Interior Karnataka.



### 07 October (Day 4):

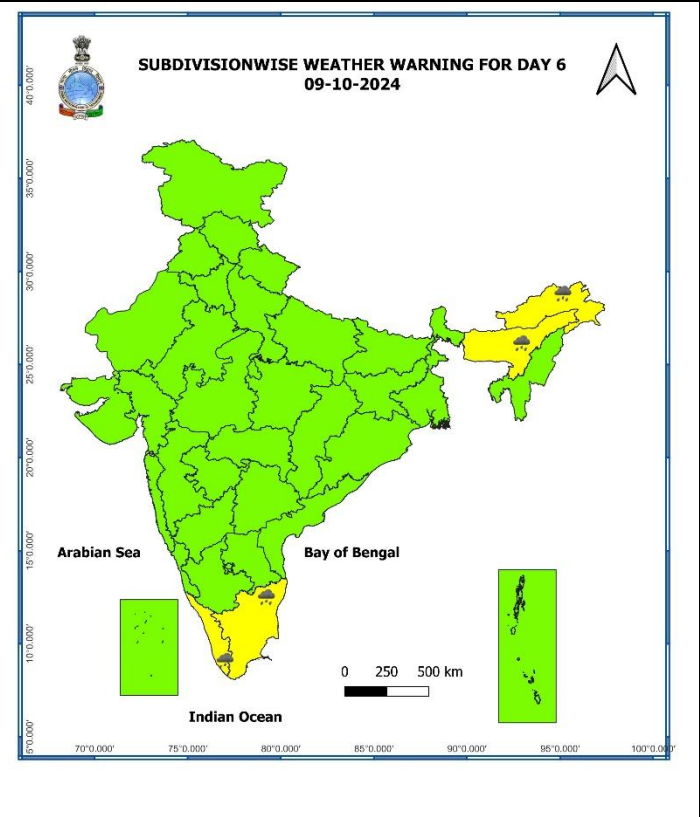
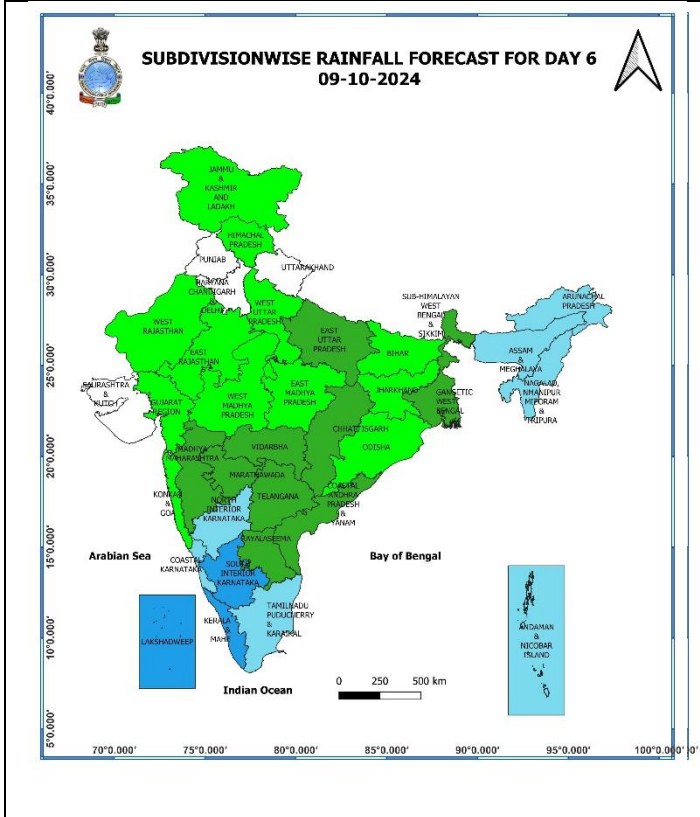
- ❖ **Heavy rainfall ( $\geq 7\text{cm}$ )** likely at isolated places over Arunachal Pradesh, , Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and South Interior Karnataka.
- ❖ **Thunderstorm with lightning** likely at isolated places over East Uttar Pradesh, Vidarbha, Konkan & Goa, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and South Interior Karnataka.





**08 October (Day 5):**

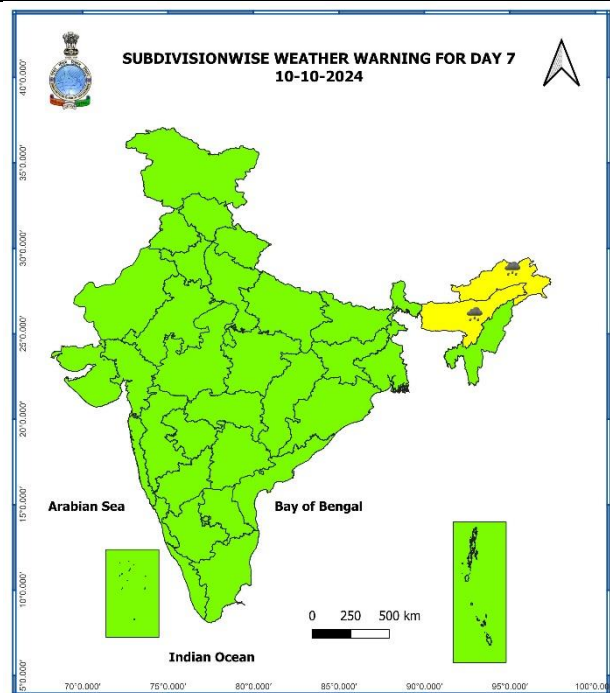
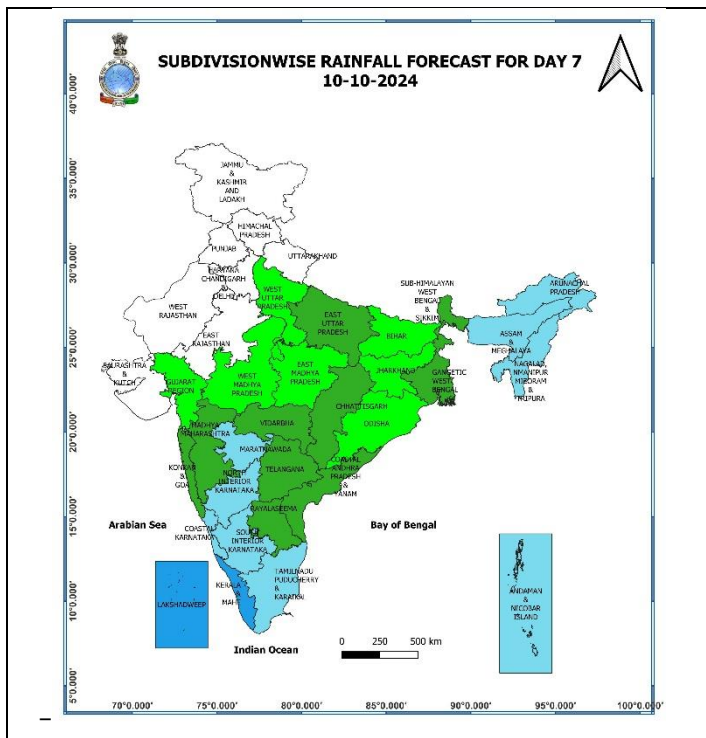
- ❖ **Heavy rainfall ( $\geq 7\text{cm}$ )** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and South Interior Karnataka.
- ❖ **Thunderstorm with lightning** likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, East Uttar Pradesh, East Madhya Pradesh, Vidarbha, Konkan & Goa, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and South Interior Karnataka.



**09 October (Day 6):**

- ❖ **Heavy rainfall ( $\geq 7\text{cm}$ ) likely** at isolated places over Arunachal Pradesh, Assam & Meghalaya, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

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**10 October (Day 7):**

- ❖ Heavy rainfall ( $\geq 7\text{cm}$ ) likely at isolated places over Arunachal Pradesh and Assam & Meghalaya.

**Weather Outlook for subsequent 3 days (During 11<sup>th</sup> October- 13<sup>th</sup> October, 2024)**

- ❖ Fairly widespread to widespread rainfall likely over Peninsular and adjoining Central India, North East India and Islands.
- ❖ Scattered to fairly widespread rainfall over East India.
- ❖ Mainly dry weather will prevail over rest parts of country.

- Action may be taken based on **ORANGE AND RED COLOUR** warnings.
- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases.

## Impact due to

- ✓ **Isolated heavy to very Heavy rainfall with extremely heavy falls** over Meghalaya; **Isolated heavy to very heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Assam on 04<sup>th</sup> October.
- ✓ **Low to moderate flash flood risk** likely over few watersheds & neighbourhoods of Arunachal Pradesh, Assam & Meghalaya, Gangetic West Bengal, Sub-Himalayan West Bengal & Sikkim on 04<sup>th</sup> & 05<sup>th</sup> October. (**Annexure I**)

## 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 and roadways 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/mud slips/land sinks/mud sinks.
- ✓ Damage to horticulture and standing crops in some areas due to inundation and wind.
- ✓ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

## Action Suggested

- ✓ Judicious regulation of surface transports including railways and roadways.
- ✓ 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 likely over various parts of the country

- ✓ Drain out excess water from rice, millets, cowpea, French bean, vegetable crops and orchards in Meghalaya.
- ✓ Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in West Bengal & Sikkim, Tamil Nadu, Kerala, South Interior Karnataka, Rayalaseema and North Eastern States.
- ✓ Keep the harvested produce at safer places.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.



(Annexure I)

## Flash Flood Guidance

### 24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 05-10-2024:

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 24 hours.

**Arunachal Pradesh-** Changlang, Dibang Valley, East Kameng, East Siang, Lohit, Lower Dibang Valley, Papum-Pare, Tirap, West Siang, Anjaw, Upper Subansiri and Upper Siang districts.

**Assam & Meghalaya-** Cachar, Karbi Analog, Kokrajhar, N.C Hills, Nagaon, Sonitpur, East Khasi Hills, South Garo Hills, West Khasi Hills and Jaintia Hills districts.

**Gangetic West Bengal-** East Medinipur, Mursidabad, Nadia, North 24 Pargana and South 24 Parganas districts.

**Sub-Himalayan West Bengal & Sikkim-** Jalpaiguri and Koch Bihar districts.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over area of concern as shown in map due to expected rainfall occurrence in next 24 hours.

Product: WRF FFR | Timescale: 24-hr | Region: "INDIA"  
Product Date: 2024-10-04 06:00 UTC | Valid Date: 2024-10-05 06:00 UTC

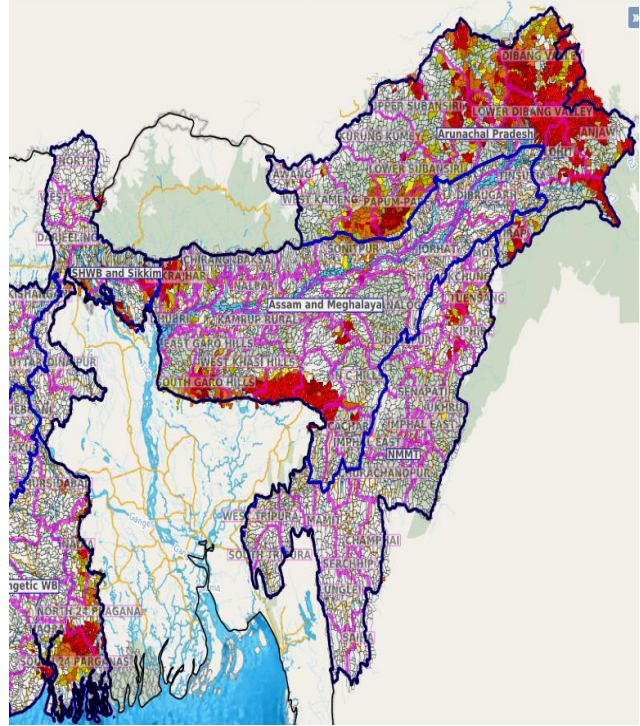


Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

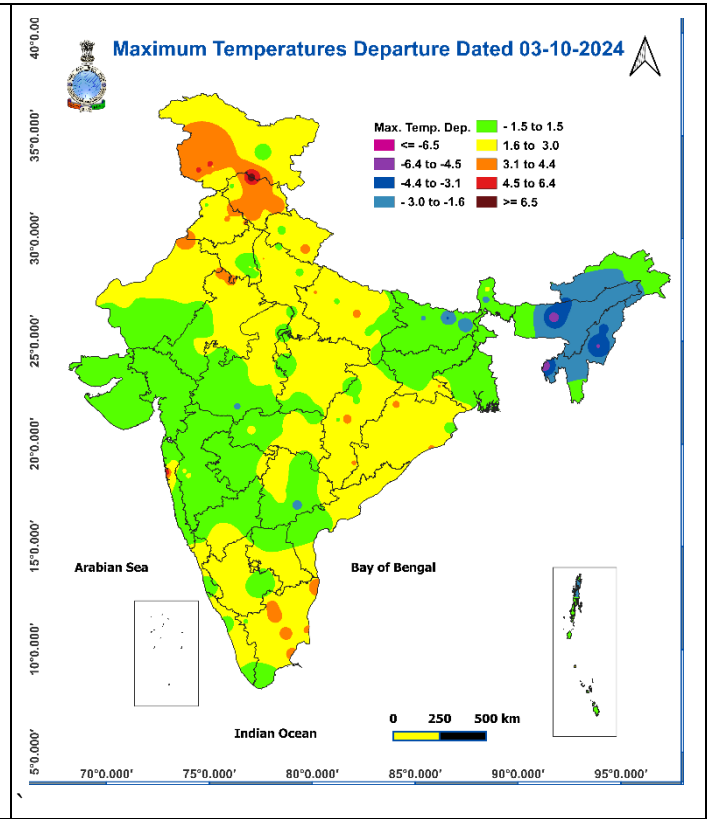
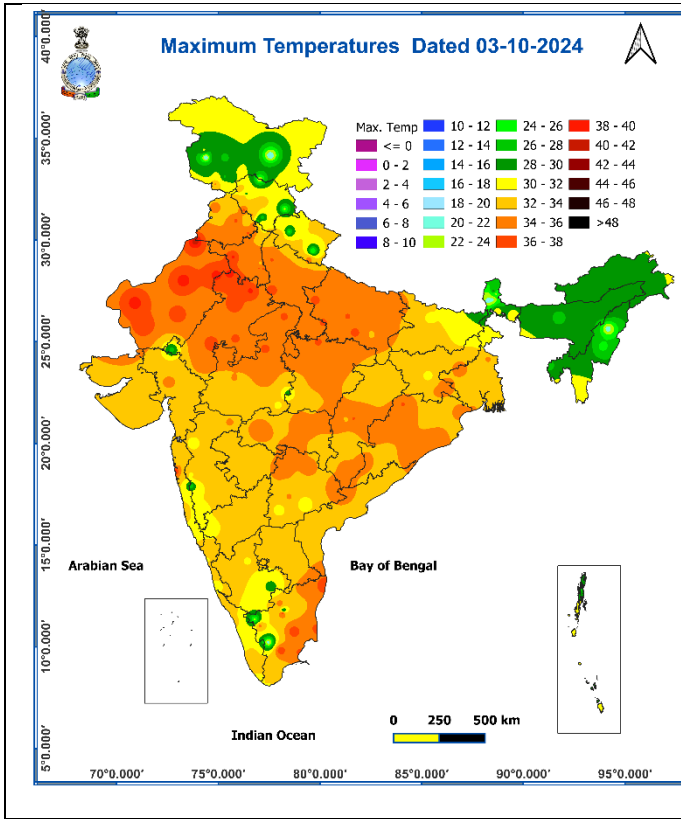


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

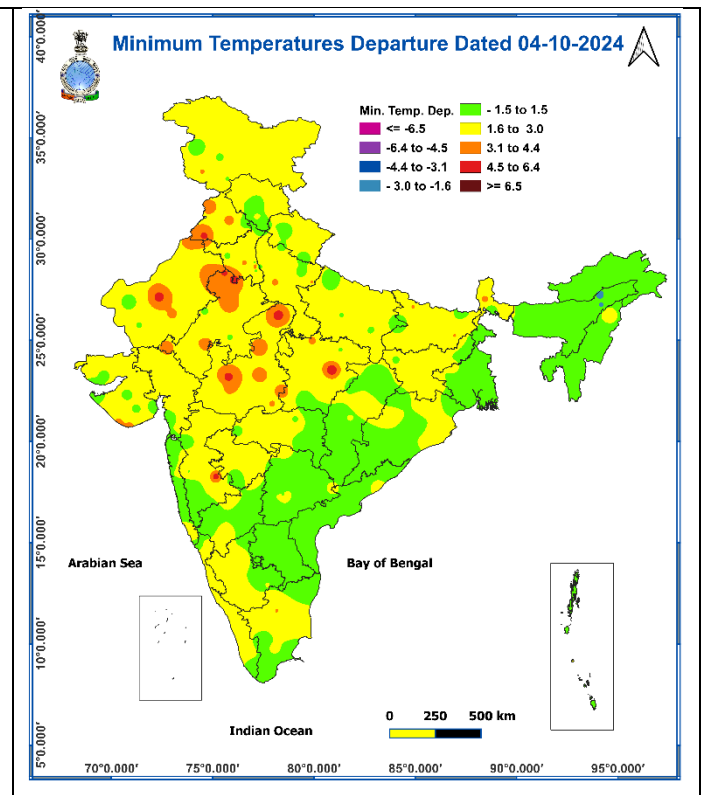
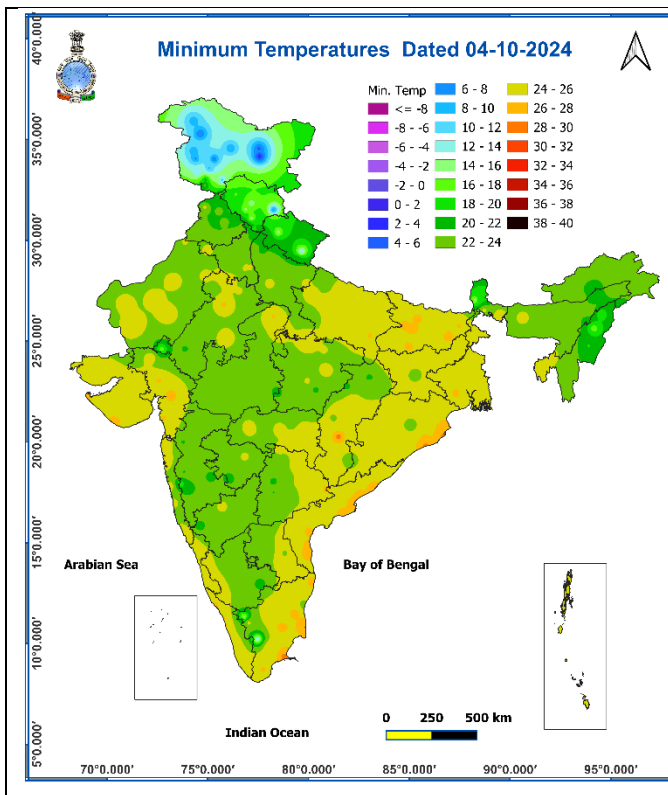
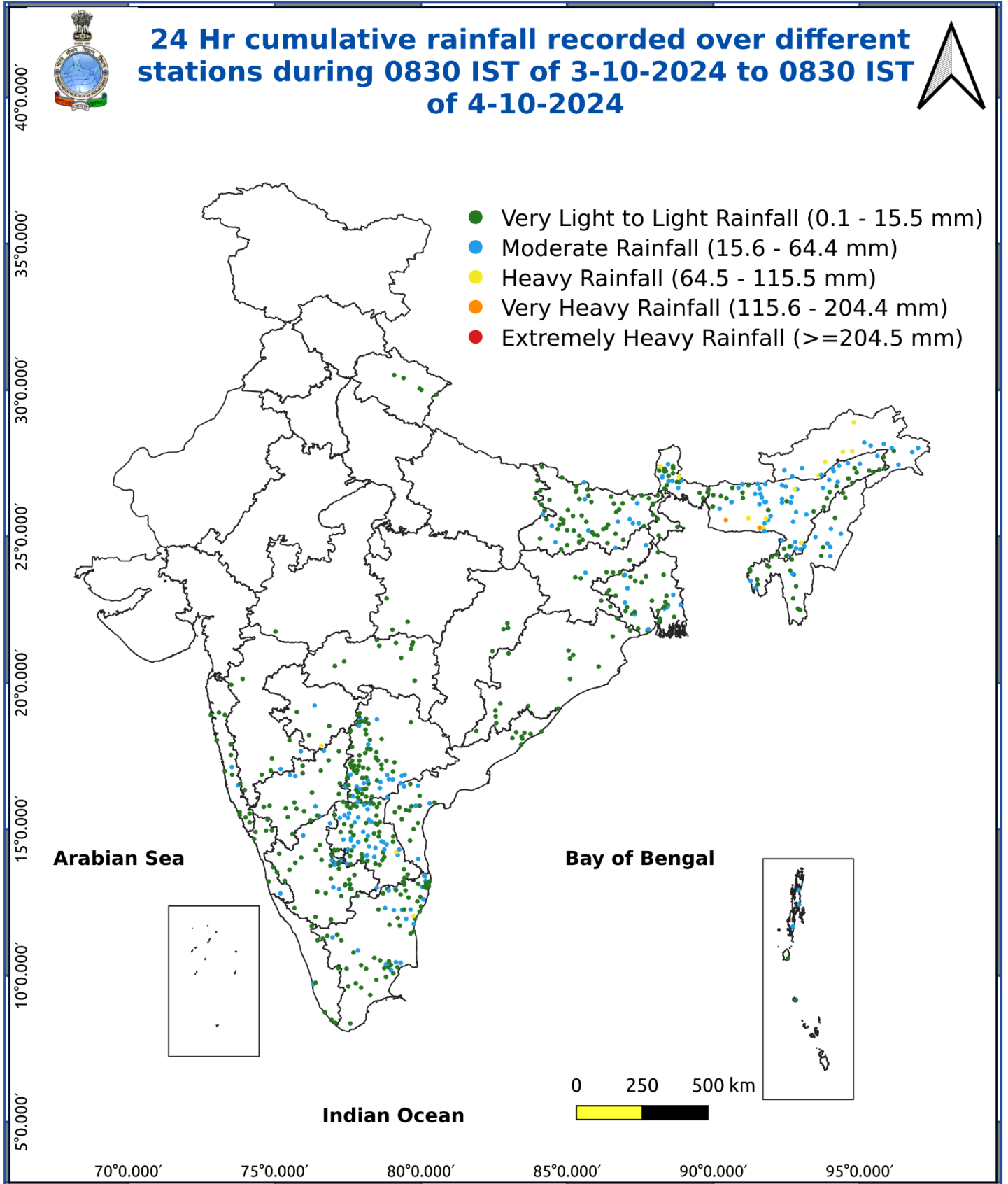


Fig. 5: Accumulated Rainfall (mm) during past 24 hours

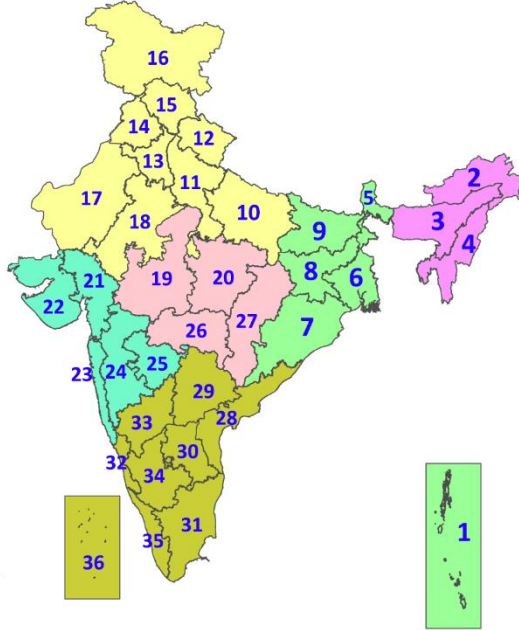


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## LEGENDS

1. अंडमान और निकोबार द्वीपसमूह
2. अरुणाचल प्रदेश
3. असम और मेघालय
4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
5. उप-हिमालयी पश्चिम बंगाल और सिक्किम
6. गंगीय पश्चिम बंगाल
7. ओडिशा
8. झारखंड
9. बिहार
10. पूर्वी उत्तर प्रदेश
11. पश्चिम उत्तर प्रदेश
12. उत्तराखंड
13. हरियाणा, चंडीगढ़ और दिल्ली
14. पंजाब
15. हिमाचल प्रदेश
16. जम्मू और कश्मीर और लद्दाख
17. पश्चिम राजस्थान
18. पूर्वी राजस्थान
19. पश्चिम मध्य प्रदेश
20. पूर्वी मध्य प्रदेश
21. गुजरात
22. सौराष्ट्र
23. कोंकण और गोवा
24. मध्य महाराष्ट्र
25. मराठवाड़ा
26. विदर्भ
27. छत्तीसगढ़
28. तटीय आंध्र प्रदेश और यनम
29. तेलंगाना
30. रायलसीमा
31. तमिलनाडु, पुडुचेरी और कराईकल
32. तटीय कर्नाटक
33. आंतरिक उत्तरी कर्नाटक
34. आंतरिक दक्षिणी कर्नाटक
35. केरल और 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, Chandigarh & 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. Vidarbha
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)

- |                      |                      |              |
|----------------------|----------------------|--------------|
| Fog                  | Heavy Snow           | Cold Wave    |
| Heavy Rain           | Dust Storm           | Cold Day     |
| Very Heavy Rain      | Heat Wave            | Ground Frost |
| Extremely Heavy Rain | Warm Night           |              |
| Thunder & Lightning  | Hot Day              |              |
| Hailstorm            | Hot & Humid          |              |
| Dust Raising Winds   | Strong Surface Winds |              |

### COLOUR CODED WARNING

No Warning (No Action)
Watch (Be Aware)
Alert (Be Prepared To Take Action)
Warning (Take Action)

### Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



## DEFINITION/CRITERIA

<b>Rain/ Snow *</b>	<p><b>Heavy:</b> 64.5 to 115.5 mm/cm *</p> <p><b>Very Heavy:</b> 115.6 to 204.4 mm/cm*</p> <p><b>Extremely Heavy:</b> &gt; 204.4 mm/cm *</p>
<b>Heat Wave</b>	<p>When maximum temperature of a station reaches <math>\geq 40^\circ\text{C}</math> for plains and <math>\geq 30^\circ\text{C}</math> for hilly regions</p> <p><b>(a) Based on Departure from normal</b></p> <p><b>Heat Wave:</b> Maximum Temperature Departure from normal <math>4.5^\circ\text{C}</math> to <math>6.4^\circ\text{C}</math>.</p> <p><b>Severe Heat Wave:</b> Maximum Temperature Departure from normal <math>\geq 6.5^\circ\text{C}</math></p> <p><b>(b). Based on Actual maximum temperature</b></p> <p><b>Heat Wave:</b> When actual maximum temperature <math>\geq 45^\circ\text{C}</math>.</p> <p><b>Severe Heat Wave:</b> When actual maximum temperature <math>\geq 47^\circ\text{C}</math></p> <p><b>( c). Criteria for heat wave for coastal stations</b></p> <p>When maximum temperature departure is <math>&gt;4.5^\circ\text{C}</math> from normal. Heat Wave may be described provided maximum temperature <math>\geq 37^\circ\text{C}</math></p>
<b>Warm Night</b>	<p>When maximum temperature remains <math>40^\circ\text{C}</math></p> <p><b>Warm Night:</b> When minimum temperature departure <math>4.5^\circ\text{C}</math> to <math>6.4^\circ\text{C}</math>.</p> <p><b>Severe Warm Night:</b> When minimum temperature departure <math>&gt;6.4^\circ\text{C}</math>.</p>
<b>Cold Wave</b>	<p>When minimum temperature of a station <math>\leq 10^\circ\text{C}</math> for plains and <math>\leq 0^\circ\text{C}</math> for hilly regions.</p> <p><b>(a). Based on departure</b></p> <p><b>Cold Wave:</b> Minimum Temperature Departure from normal <math>-4.5^\circ\text{C}</math> to <math>-6.4^\circ\text{C}</math>.</p> <p><b>Severe Cold Wave:</b> Minimum Temperature Departure from normal <math>\leq -6.5^\circ\text{C}</math></p> <p><b>(b) Based on actual Minimum Temperature (for Plains only)</b></p> <p><b>Cold Wave :</b> When Minimum Temperature is <math>\leq 4.0^\circ\text{C}</math></p> <p><b>Severe Cold Wave:</b> When Minimum Temperature is <math>\leq 2.0^\circ\text{C}</math></p> <p><b>( c) For Coastal Stations</b></p> <p>When Minimum Temperature departure is <math>\leq -4.5^\circ\text{C}</math> &amp; actual Minimum Temperature is <math>\leq 15^\circ\text{C}</math></p>
<b>Cold Day</b>	<p>When minimum temperature of a station <math>\leq 10^\circ\text{C}</math> for plains and <math>\leq 0^\circ\text{C}</math> for hilly regions</p> <p><b>Based on departure</b></p> <p><b>Cold Day:</b> Maximum Temperature Departure from normal <math>-4.5^\circ\text{C}</math> to <math>-6.4^\circ\text{C}</math>.</p> <p><b>Severe Cold Day:</b> Maximum Temperature Departure from normal <math>\leq -6.5^\circ\text{C}</math></p>
<b>Fog</b>	<p><b>Phenomenon of small droplets suspended in air and the horizontal visibility <math>&lt; 1\text{km}</math></b></p> <p><b>Moderate Fog:</b> When the visibility between 500-200 metres</p> <p><b>Dense Fog:</b> when the visibility between 50- 200 metres</p> <p><b>Very Dense Fog:</b> when the visibility <math>&lt; 50</math> metres</p>
<b>Thunderstorm</b>	<p>Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)</p>
<b>Dust/Sand Storm</b>	<p>An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.</p>
<b>Frost</b>	<p>Ice deposits on ground</p> <p>Air temperature <math>\leq 4^\circ\text{C}</math> ( over Plains)</p>
<b>Squall</b>	<p><b>A strong wind that rises suddenly, lasts for atleast 1 minute.</b></p> <p><b>Moderate:</b> Wind speed 52-61 kmph</p> <p><b>Severe:</b> Wind speed 62-87 kmph</p> <p><b>Very Severe:</b> Wind speed <math>&gt;87</math> kmph</p>
<b>Sea State</b>	<p><b>Effect of various waves in the sea over specific area</b></p> <p><b>Rough to very rough:</b> Wind speed 41-62 kmph (22-33 knots) &amp; Wave height 2.5-6 metre</p> <p><b>High to very high:</b> Wind speed 63-117 kmph ( 34-63 knots) &amp; Wave height 6-14 metre</p> <p><b>Phenomenal:</b> Wind speed <math>&gt;117</math> kmph (<math>&gt;63</math> knots) &amp; Wave height <math>&gt;14</math> metre</p>
<b>Cyclone</b>	<p><b>Cyclonic Storm:</b> Wind speed 62-87 kmph (34-47 knots)</p> <p><b>Severe Cyclonic Storm:</b> Wind speed 88-117 kmph (48-63 knots)</p> <p><b>Very Severe Cyclonic Storm:</b> Wind speed 118-165 kmph (64 - 89 knots)</p> <p><b>Extremely Severe Cyclonic Storm:</b> Wind speed 166-220 kmph (90 -119 knots)</p> <p><b>Super Cyclone Strom:</b> Wind speed <math>&gt;220</math> kmph (<math>&gt;119</math> knots)</p>