

Sunday, September 29, 2024  
Time of Issue: 1315 hours IST  
(MID-DAY)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### Weather Systems:

- ✓ Yesterday's upper air cyclonic circulation over southwest Uttar Pradesh, now lies over northwest Madhya Pradesh & neighbourhood in lower tropospheric levels.
- ✓ A trough runs from Comorin area to Rayalaseema in lower tropospheric levels.

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

##### East & Northeast India

- ✓ Fairly widespread to widespread light to moderate rainfall very likely over Assam & Meghalaya during the week; Scattered to Fairly widespread light to moderate rainfall very likely over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura during next 3 days & Fairly widespread to widespread light to moderate rainfall during the next subsequent 4 days over the same region; Scattered to Fairly widespread light to moderate rainfall very likely over Andaman & Nicobar Islands, Bihar, Sub-Himalayan West Bengal & Sikkim; Isolated to Scattered light to moderate rainfall over Gangetic West Bengal, Jharkhand & Odisha during the week.
- ✓ **Isolated heavy to very Heavy rainfall** very likely over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 02<sup>nd</sup> - 04<sup>th</sup> October.
- ✓ **Isolated heavy rainfall** very likely over Odisha on 29<sup>th</sup> September; Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during the week; Arunachal Pradesh during 01<sup>st</sup> -05<sup>th</sup> October.

##### South Peninsular India

- ✓ Fairly widespread to widespread light to moderate rainfall very likely over Kerala & Mahe, Coastal Karnataka, Lakshadweep; Scattered to Fairly widespread light to moderate rainfall very likely over Interior Karnataka, Coastal Andhra Pradesh & Yanam; Isolated to Scattered light to moderate rainfall very likely over Tamil Nadu, Puducherry & Karaikal, Rayalaseema, Telangana during the week.
- ✓ **Isolated heavy to very Heavy rainfall** very likely over South Interior Karnataka on 29<sup>th</sup> September.
- ✓ **Isolated heavy rainfall** very likely over Rayalaseema, Coastal Karnataka & North Interior Karnataka on 29<sup>th</sup> September; South Interior Karnataka, Tamil Nadu, Puducherry & Karaikal on 29<sup>th</sup> & 30<sup>th</sup> September; Kerala & Mahe during 29<sup>th</sup> September - 01<sup>st</sup> October.

##### West & Central India:

- ✓ Isolated to Scattered light to moderate rainfall over central India during the week; Scattered to Fairly widespread light to moderate rainfall very likely over Konkan & Goa during the week; Scattered to Fairly widespread light to moderate rainfall very likely over the remaining region during next 2 days & Isolated to Scattered light to moderate rainfall over the next subsequent 5 days, except Saurashtra & Kutch where dry weather is likely to prevail from 2<sup>nd</sup> October;
- ✓ **Isolated heavy rainfall** very likely over Konkan & Goa, Gujarat State & West Madhya Pradesh on 29<sup>th</sup> September.

##### Northwest India

- ✓ Isolated to Scattered light to moderate rainfall very likely over Uttarakhand, East Uttar Pradesh, East Rajasthan during the week; Isolated to Scattered light to moderate rainfall over remaining region during next 2 days & Dry weather likely to prevail during next subsequent 5 days over the same region.
- ✓ **Isolated heavy rainfall** very likely over East Uttar Pradesh on 29<sup>th</sup> September

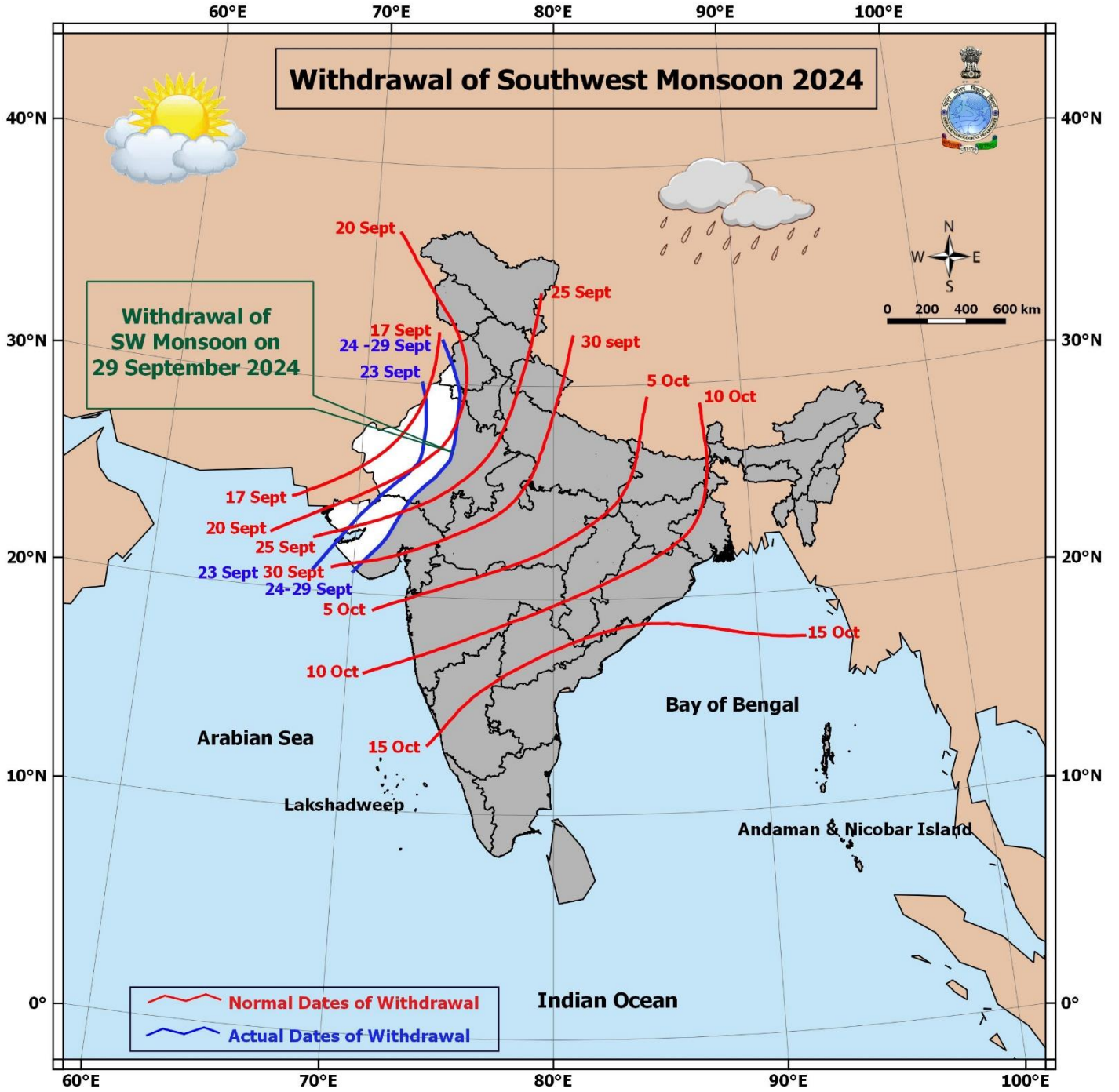
## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most places** over East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Konkan & Goa, Gujarat state; **at many places** over West Madhya Pradesh, Arunachal Pradesh, Kerala & Mahe; **at a few places** over West Uttar Pradesh, East Madhya Pradesh, Vidarbha, Andaman & Nicobar; **at isolated places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Chhattisgarh, Gangetic West Bengal, Jharkhand, Odisha, Nagaland, Manipur, Mizoram & Tripura, Marathwada, Coastal Andhra Pradesh & Yanam, Telangana, Coastal & North Interior Karnataka.
- ❖ **Heavy rainfall recorded** (from 0830 hours IST of yesterday to 0830 hours IST of Today): **Heavy to very Heavy rainfall with extremely heavy rainfall** at isolated places over East Uttar Pradesh; **Heavy to very Heavy rainfall** at isolated places over Bihar, Saurashtra & Kutch; **Heavy rainfall** at isolated places over East Rajasthan, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Rayalaseema, Madhya Pradesh, Kerala & Mahe.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today): (in cm): **East Uttar Pradesh:** Attarra (dist Banda) 27, Banda (dist Banda) 21, Basti Obsy (dist Basti) 11; **Saurashtra & Kutch:** Mahuva(b) (dist Bhavnagar) 17, Umralla (dist Bhavnagar) 10, Vallabhipur (dist Bhavnagar) 9, Jesar (dist Bhavnagar) 9, Gadhdha (dist Botad) 8, Palitana (dist Bhavnagar) 8; **Bihar:** Dhengbridge (dist Sitamarhi) 13, Sonbarsa (dist Sitamarhi) 12, Piprakothi (dist East Champaran) 12, Dhaka (dist East Champaran) 12, Bairgania (dist Sitamarhi) 11, Purnahia (dist Sheohar) 10, Bathnaha (dist Sitamarhi) 10, Harsidhi (dist East Champaran) 10; **East Madhya Pradesh:** Ajaigarh (dist Panna) 12; **Sub-Himalayan West Bengal & Sikkim:** Yuksom (dist Gyalshing) 11, Sukiapokhri (dist Darjeeling) 9; **East Rajasthan:** Kanva Sr (dist Dungarpur) 10; **Rayalaseema:** Pakala (dist Tirupati) 10; **Kerala & Mahe:** Neyyattinkara (dist Thiruvananthapuram) 8; **Assam & Meghalaya:** Rattachera (dist East Jaintia Hills) 8; **West Madhya Pradesh:** Kalapipal (dist Shajapur) 7.
- ❖ **Minimum Temperature Departures (as on 29-09-2024):** Minimum temperatures are **markedly above normal (5.1°C or above)** at isolated places over Rajasthan; **appreciably above normal (3.0°C to 5.0°C)** at isolated places over Himachal Pradesh, Punjab; **above normal (1.6°C to 3.0°C)** at many places over Madhya Pradesh; at a few places over Haryana-Chandigarh, Vidarbha, Andaman & Nicobar Islands; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, Uttar Pradesh, Jharkhand, West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Odisha, Chhattisgarh, Gujarat Region, Marathwada, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Telangana, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal. Today, **the lowest minimum temperature of 19.4°C** is reported at **Delhi Ridge (New Delhi)** over the plains of the country. (Fig.4)
- ❖ **Maximum Temperature Departures (as on 28-09-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at many places over Kerala & Mahe; at isolated places over West Rajasthan, Rayalaseema, Odisha, Gangetic West Bengal, Bihar Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura. These were **markedly below normal (-5.1°C or less)** at most places over Sub-Himalayan West Bengal & Sikkim; at many places over East Uttar Pradesh; at a few places over West Madhya Pradesh; isolated places over East Uttar Pradesh, Gujarat Region, Arunachal Pradesh; **appreciably below normal (-3.0°C to -5.0°C)** at isolated places over East Rajasthan; **below normal (-1.6°C to -3.0°C)** at most places over Saurashtra & Kutch, Uttarakhand; at many places over Madhya Maharashtra, Konkan & Goa; at isolated places over Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Marathwada, Vidarbha, Telangana and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature of 40.4°C** was reported at **Jaisalmer (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 Firozpur, Sirsa, Churu, Ajmer, Mount Abu, Deesa, Surendranagar, Junagarh and  $21^{\circ}\text{N}/70^{\circ}\text{E}$ .
- ❖ The **cyclonic circulation** over southwest Uttar Pradesh & neighbourhood now lies over northwest Madhya Pradesh & neighbourhood and extends upto 4.5 km above mean sea level tilting southwestwards with height.
- ❖ A **cyclonic circulation** lies over south Gujarat & neighbourhood and extends upto 5.8 km above mean sea level.
- ❖ The **trough** from South Interior Karnataka to Gulf of Mannar now runs from Comorin area to Rayalaseema across Interior Tamil Nadu and extends upto 0.9 km above mean sea level.
- ❖ The **trough** from northeast Arabian Sea to northwest Bihar across, the cyclonic circulation over southwest Uttar Pradesh & neighbourhood extending upto 5.8 km above mean sea level has become less marked.
- ❖ The **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long.  $70^{\circ}\text{E}$  to the north of Lat.  $30^{\circ}\text{N}$  has moved away.

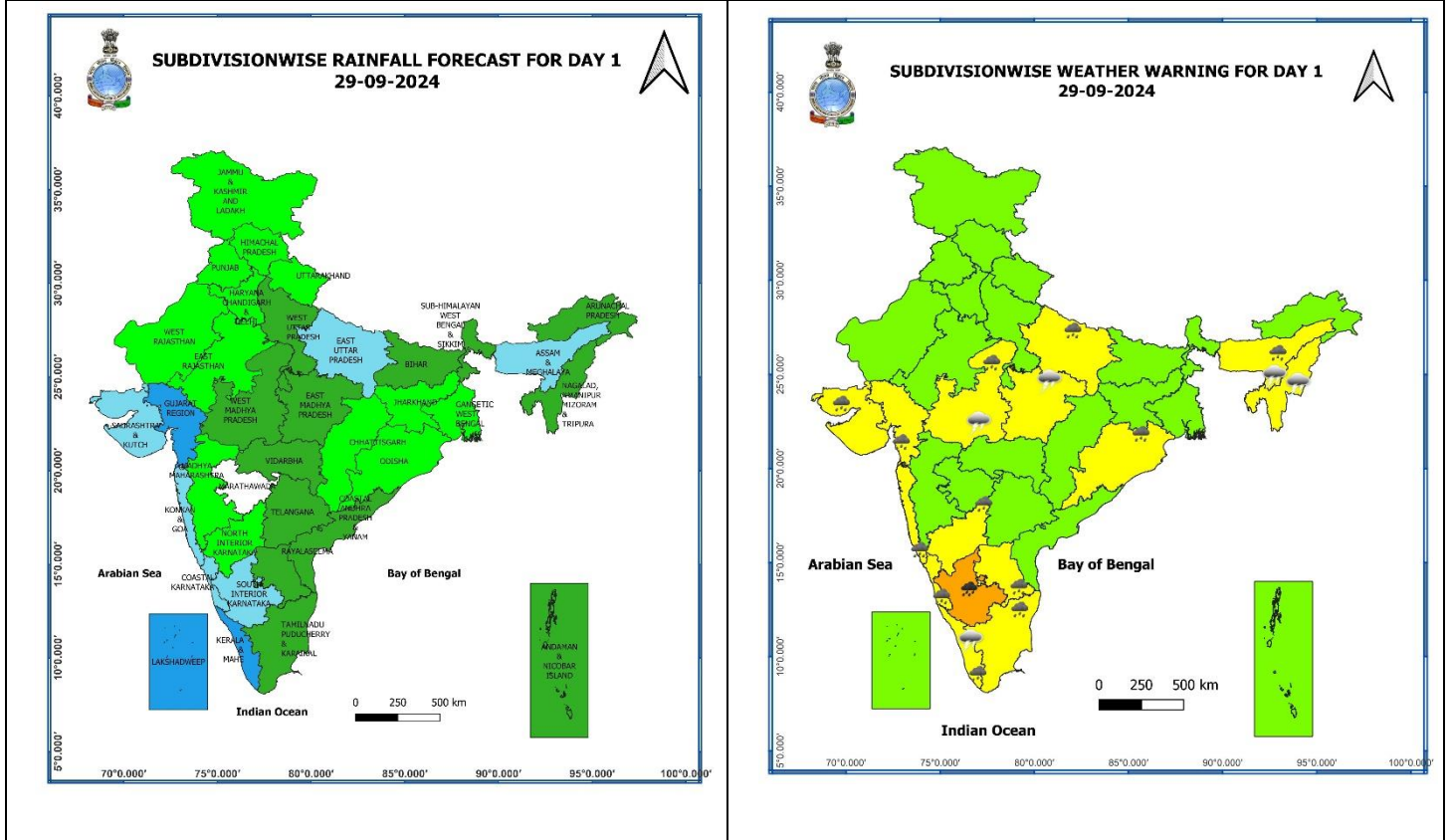
### Withdrawal of Southwest Monsoon 2024



\* 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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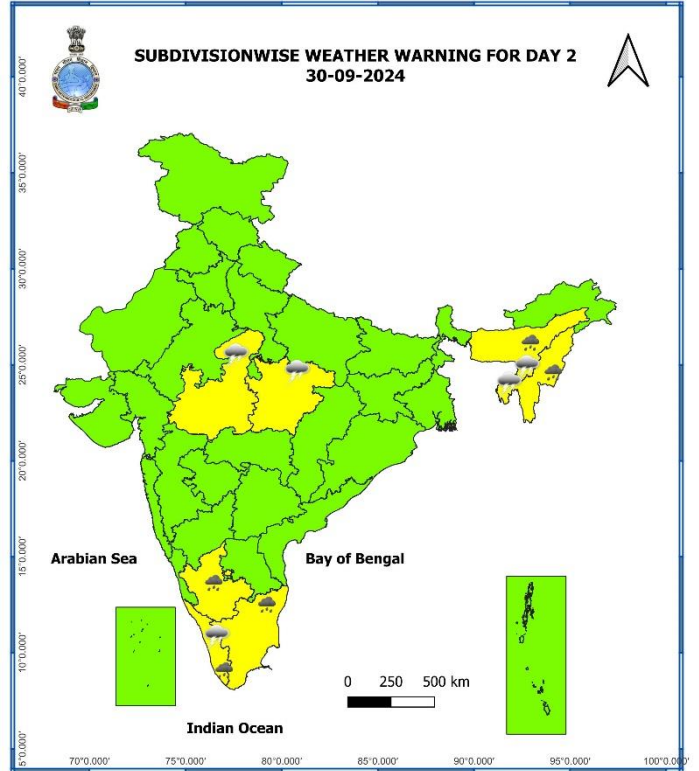
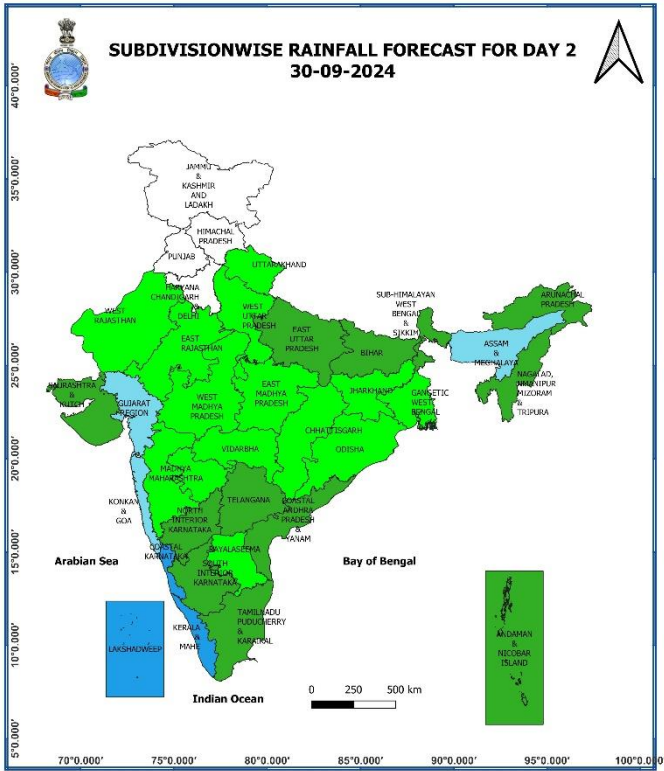


Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 06<sup>th</sup> October, 2024)



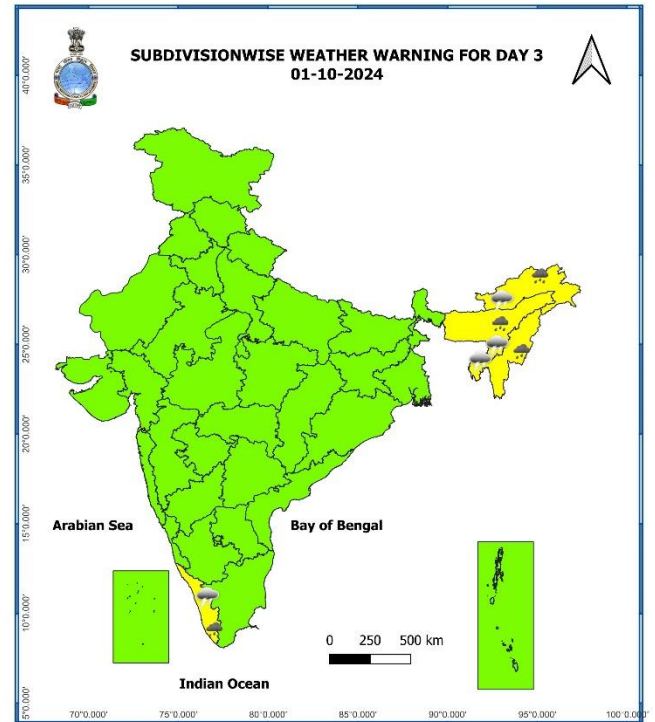
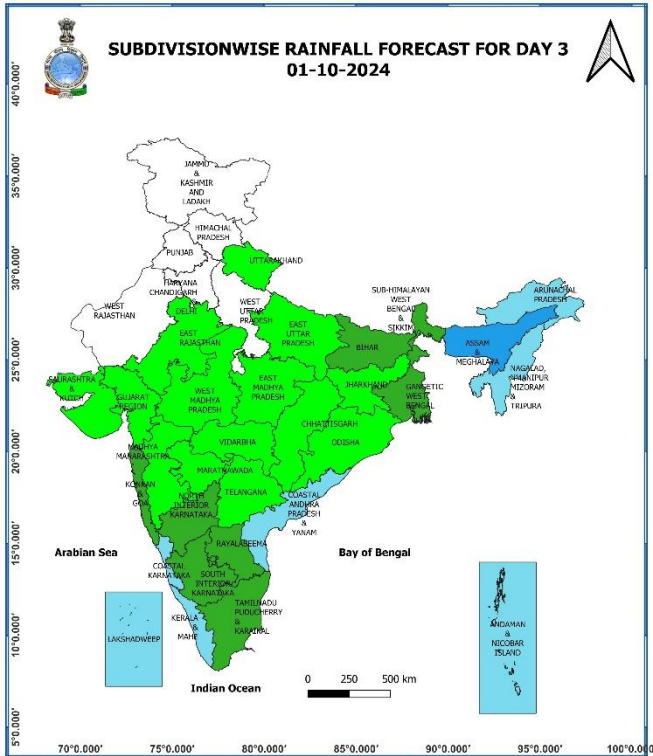
29 September (Day 1):

- ❖ **Heavy to very Heavy rainfall ( $\geq 12$  cm)** very likely at isolated places over South Interior Karnataka; **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over East Uttar Pradesh, West Madhya Pradesh, Odisha, Assam & Meghalaya, Konkan & Goa, Gujarat state, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Rayalaseema, Coastal & North Interior Karnataka.
- ❖ **Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph)** very likely at isolated places over Kerala & Mahe, Telangana; **with lightning** very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, East Uttar Pradesh, Rajasthan, Madhya Pradesh, Bihar, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Gujarat state, Tamil Nadu, Puducherry & Karaikal, Lakshadweep, Coastal Andhra Pradesh & Yanam, Rayalaseema, 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, along and off Kerala coast and Lakshadweep area. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over western parts of southwest Arabian sea adjoining few parts of westcentral Arabian sea along and off Somalia coast. Fishermen are advised not to venture into these areas.



### 30 September (Day 2):

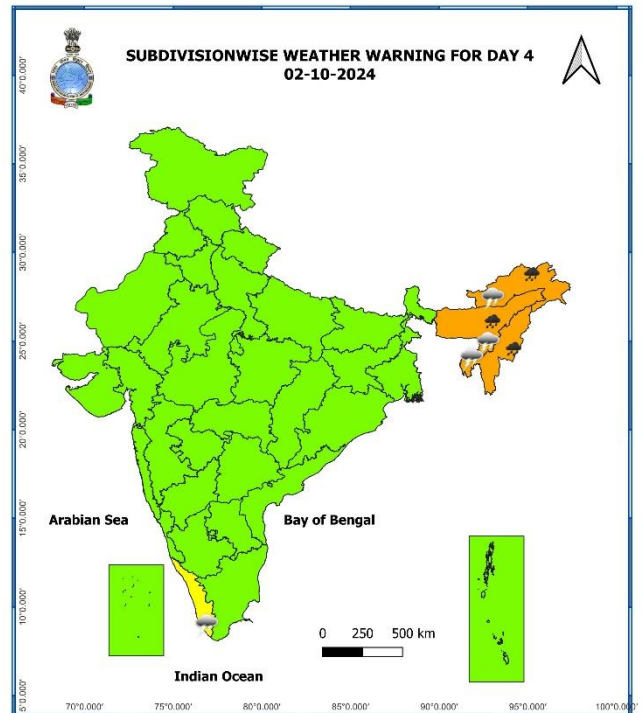
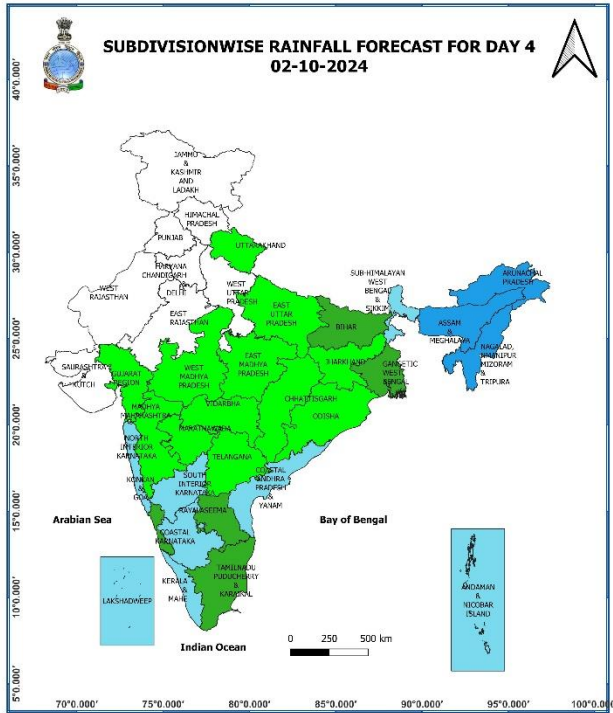
- ❖ **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, South Interior Karnataka.
- ❖ **Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph)** very likely at isolated places over Kerala & Mahe, Telangana; **with lightning** very likely at isolated places over Madhya Pradesh, Bihar, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Lakshadweep, Coastal Andhra Pradesh & Yanam, Rayalaseema, 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, along and off Kerala coast and Lakshadweep area. **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over western parts of southwest Arabian sea adjoining few parts of westcentral Arabian sea along and off Somalia coast. Fishermen are advised not to venture into these areas.



### 01 October (Day 3):

- ❖ **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe.
- ❖ **Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph)** very likely at isolated places over Kerala & Mahe; **with lightning** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, Interior Karnataka.
- ❖ **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** very likely to prevail over western parts of southwest Arabian sea adjoining few parts of westcentral Arabian sea along and off Somalia coast. Fishermen are advised not to venture into these areas.

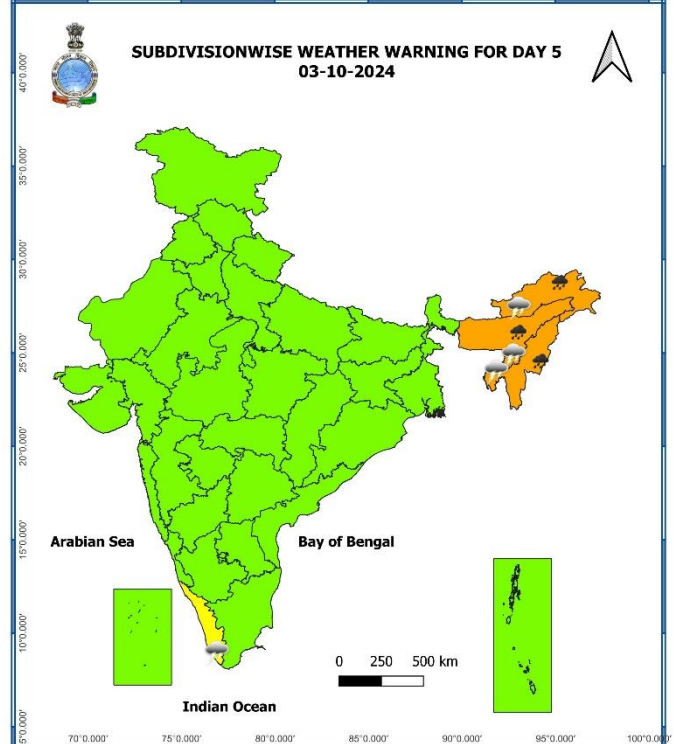
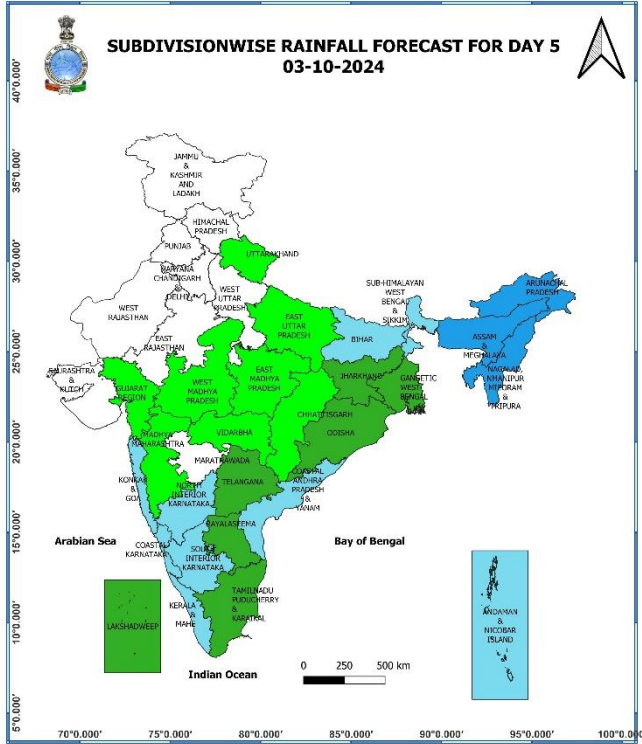




### 02 October (Day 4):

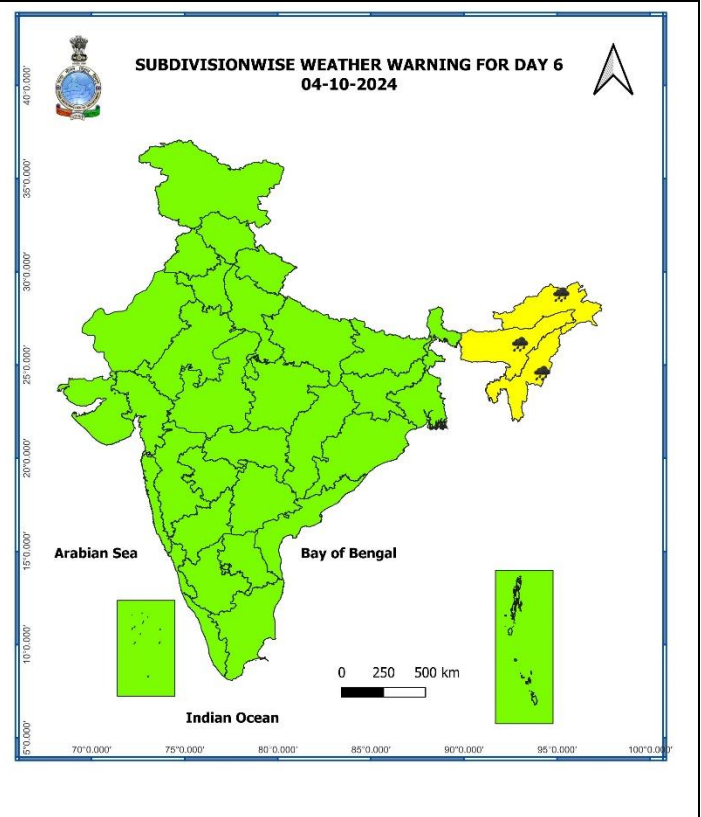
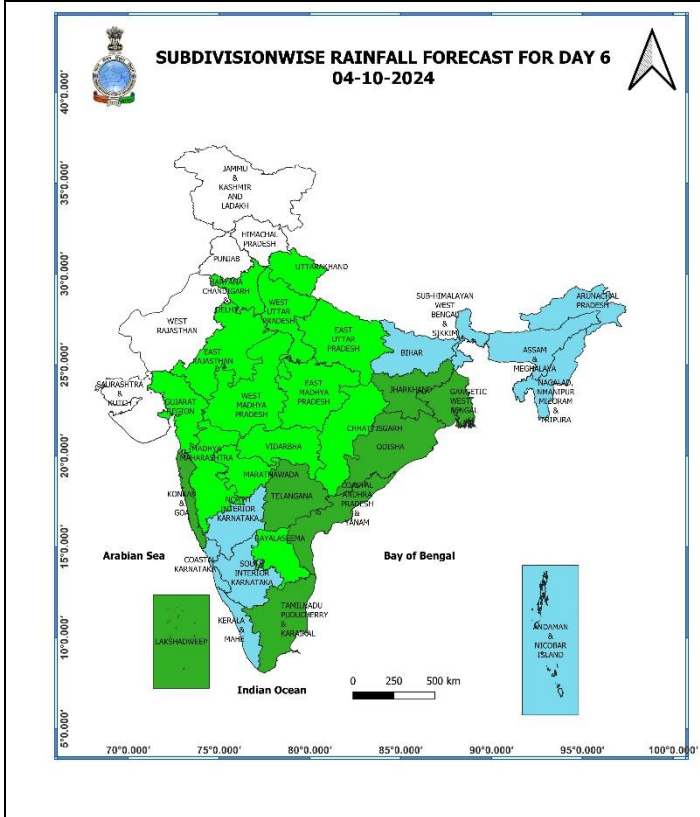
- ❖ **Heavy to very Heavy rainfall ( $\geq 12$  cm)** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Interior Karnataka.





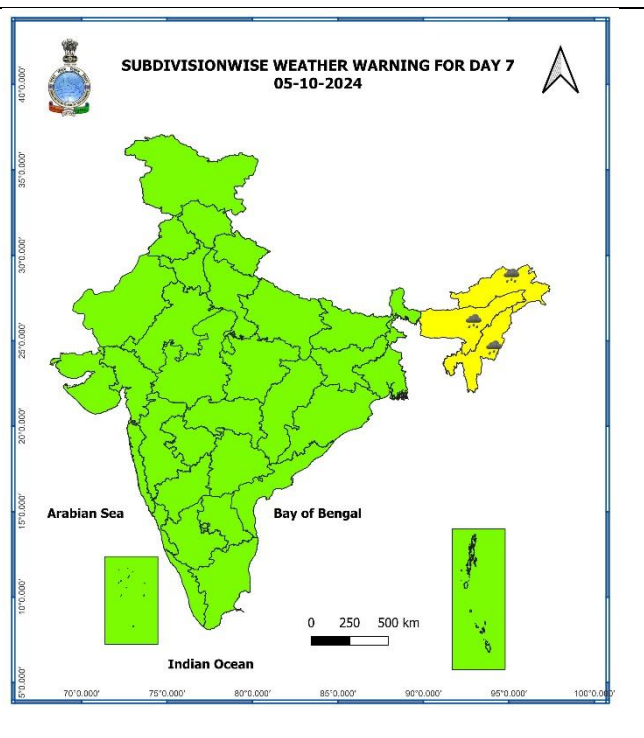
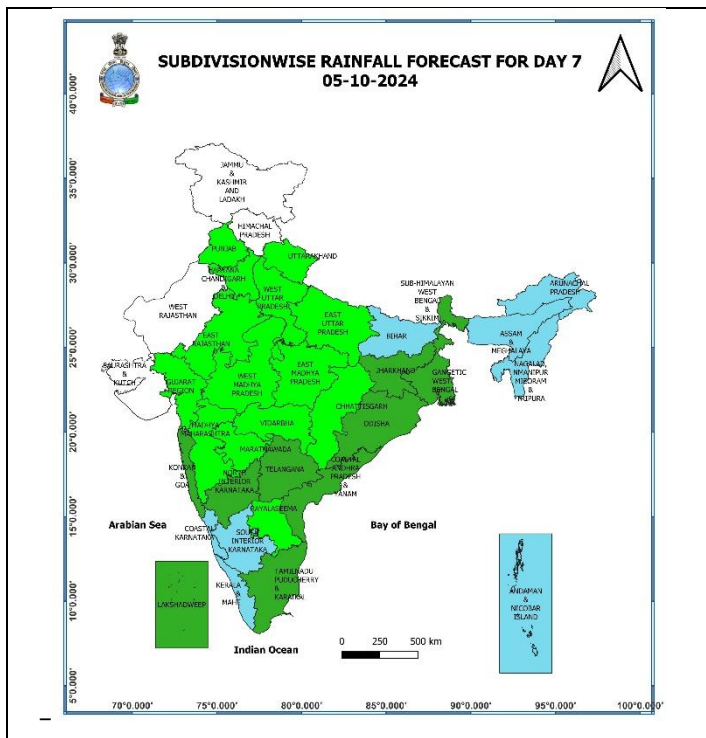
**03 October (Day 5):**

- ❖ **Heavy to very Heavy rainfall ( $\geq 12$  cm)** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe.
- ❖ **Squally winds with speed reaching 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over parts of westcentral Bay of Bengal.



**04 October (Day 6):**

- ❖ **Heavy to very Heavy rainfall ( $\geq 12$  cm)** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.



**05 October (Day 7):**

- ❖ **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over Arunachal Pradesh, Nagaland, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.

**Weather Outlook for subsequent 3 days (During 06<sup>th</sup> October- 08<sup>th</sup> October, 2024)**

- ❖ Dry weather likely to prevail over West Rajasthan, north Gujarat, Punjab, Haryana-Chandigarh-Delhi, and Isolated rainfall activity likely over Himachal Pradesh, Uttarakhand, East Rajasthan and Uttar Pradesh.
- ❖ Isolated to Scattered rainfall likely over Central, Eastern, North Eastern and Peninsular India.

- 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** very likely over South Interior Karnataka on 29<sup>th</sup> September; Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 02<sup>nd</sup> - 04<sup>th</sup> October.
- ✓ **Low to moderate flash flood risk** likely over few watersheds & neighbourhoods of Assam & Meghalaya on 29<sup>th</sup> & 30<sup>th</sup> September. (**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 standing crop fields and fruit orchards to avoid water stagnation in Sub Himalayan West Bengal, Bihar, East Uttar Pradesh, East Rajasthan, Madhya Pradesh, Saurashtra & Kutch, Tamil Nadu and Rayalaseema.
- ✓ Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Assam & Meghalaya, Kerala and South Interior Karnataka.
- ✓ Keep the harvested produce at safer places.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.



## Flash Flood Guidance:

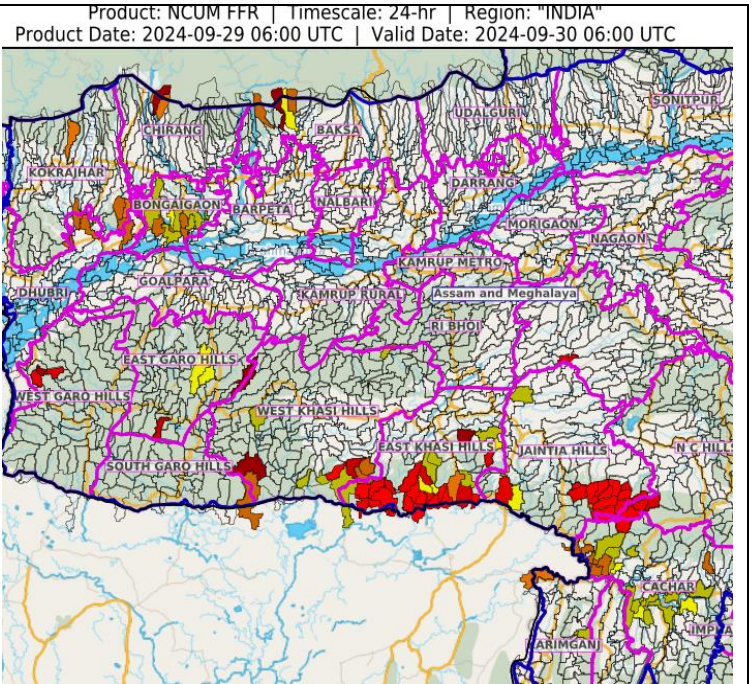
## ANNEXURE I

### **24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 30-09-2024 :**

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

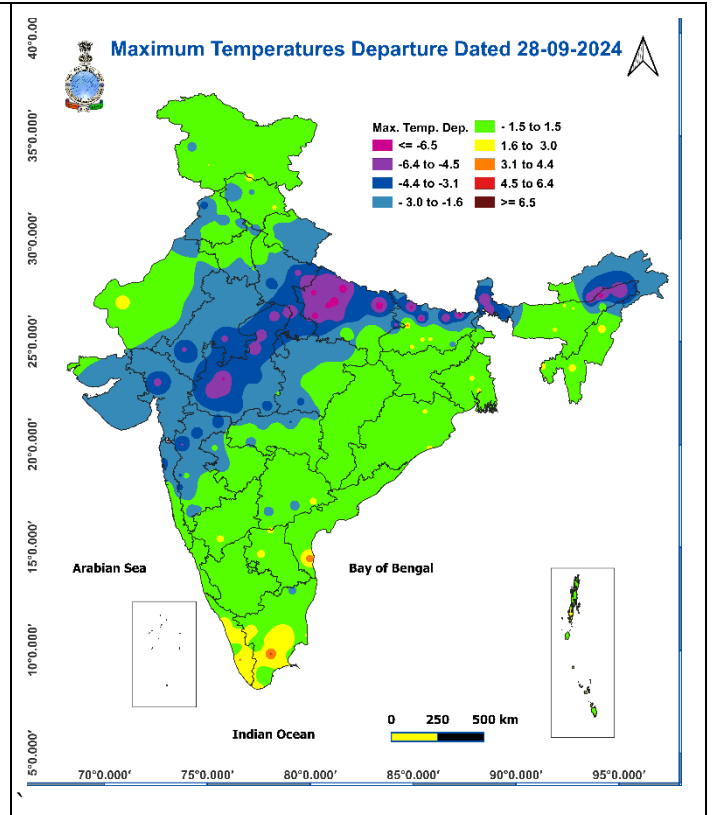
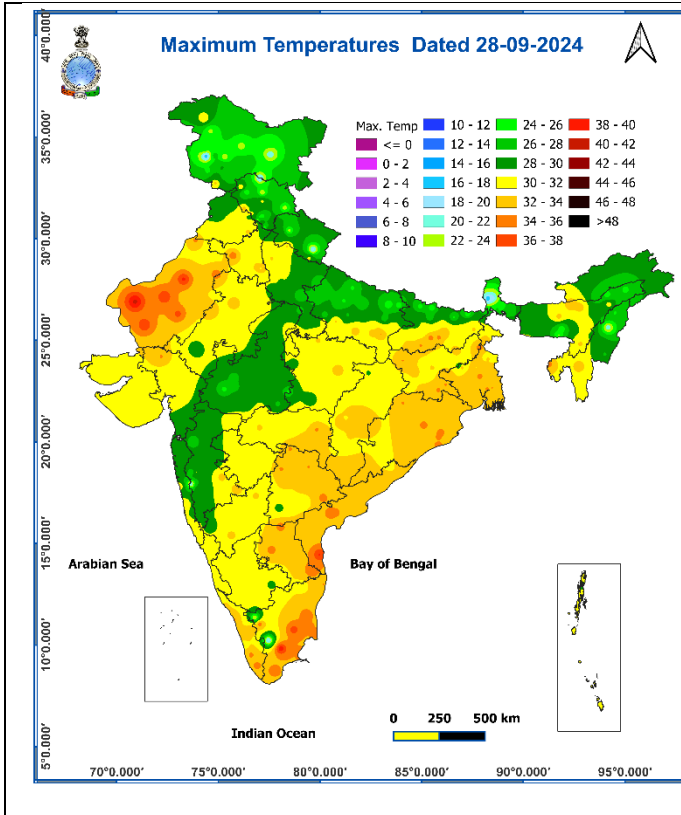
**Assam & Meghalaya** - Baksa, Bongaigaon, Cachar, Chirang, Kokrajhar, Karimganj, East Garo Hills, East Khasi Hills, West Garo Hills, West Khasi Hills and Jaintia Hills districts.

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



**Fig. 1: Maximum Temperatures**

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



**Fig. 3: Minimum Temperatures**

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

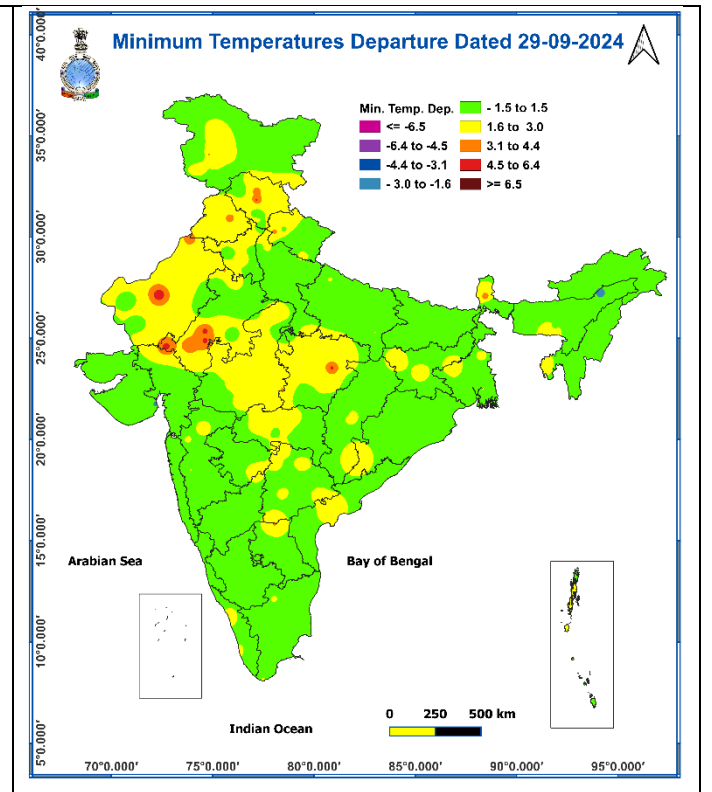
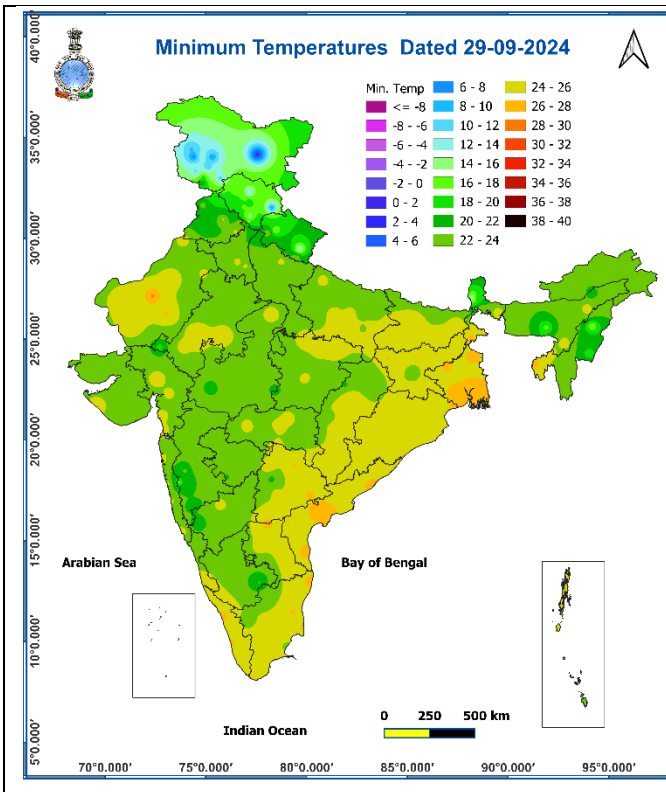
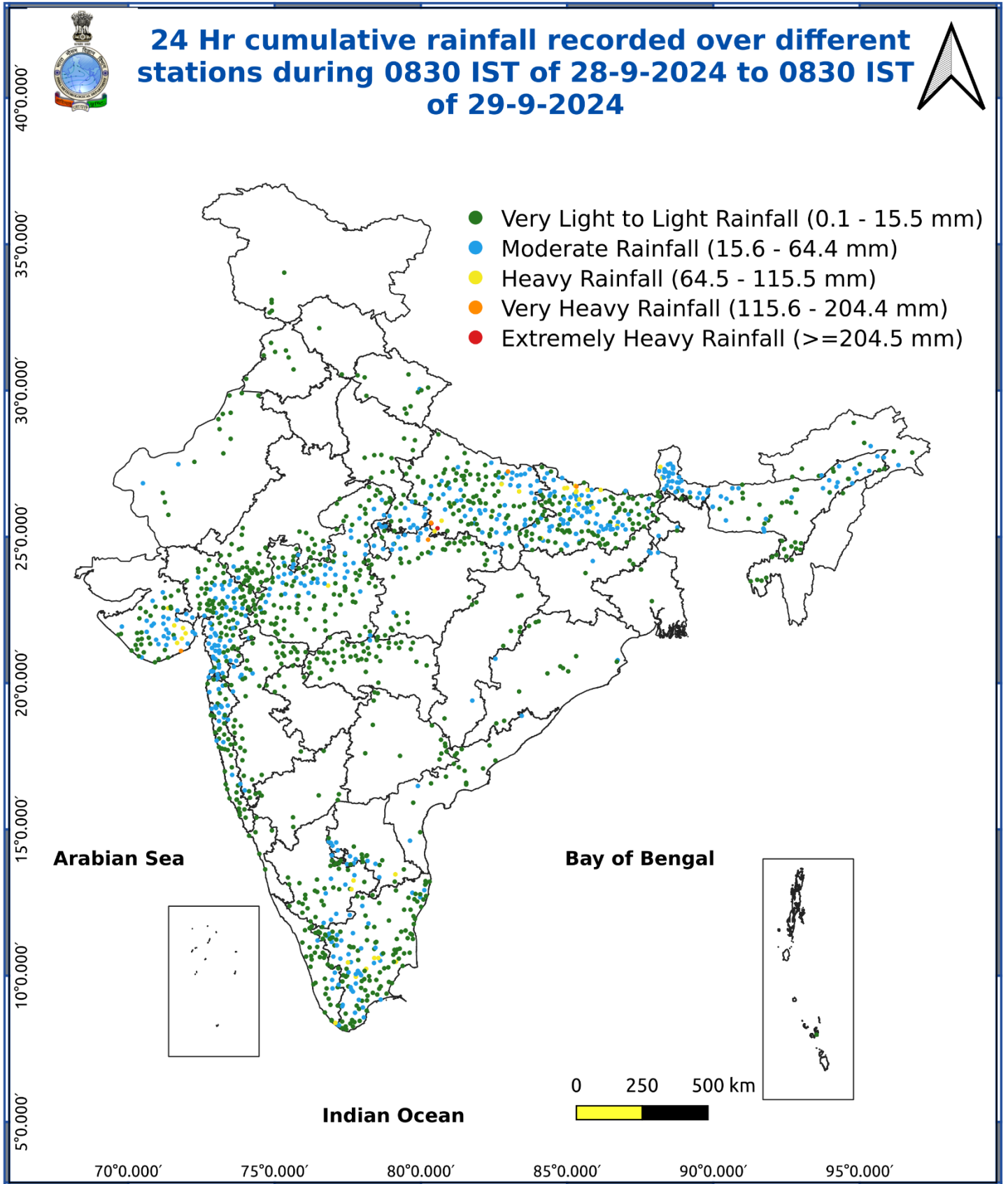


Fig. 5: Accumulated Rainfall (mm) during past 24 hours

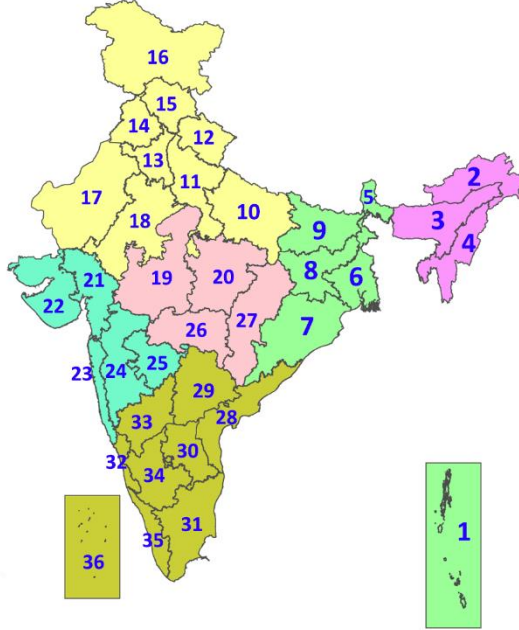


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## LEGENDS

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><b>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</b></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><b>When maximum temperature remains <math>40^\circ\text{C}</math></b></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><b>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.</b></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><b>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</b></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><b>Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)</b></p>
<b>Dust/Sand Storm</b>	<p><b>An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.</b></p>
<b>Frost</b>	<p><b>Ice deposits on ground</b></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>