



#### National Weather Forecasting Centre India Meteorological Department Ministry of Earth Sciences

Thursday, September 26, 2024 Time of Issue: 1345 hours IST (MID-DAY)

#### ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### **Significant Weather Features:**

#### Weather Systems:

- Yesterday's cyclonic circulation over south Chhattisgarh now lies over north Madhya Maharashtra & neighbourhood extending upto middle tropospheric level.
- ✓ A **trough** runs from the cyclonic circulation over north Madhya Maharashtra to north Bangladesh extending upto middle tropospheric level.

## Forecast & Warnings (upto 7 days) (Annexure II & III):

#### West India

- Fairly widespread to widespread light to moderate rainfall very likely over Konkan & Goa during the week; Fairly widespread to widespread light to moderate rainfall over Madhya Maharashtra, Gujarat State during next 3 days & Isolated to Scattered light to moderate rainfall over the same region during subsequent 4 days; Isolated to Scattered light to moderate rainfall over Marathwada during the week.
- ✓ Heavy to very Heavy rainfall with extremely heavy rainfall at isolated places very likely over Konkan & Goa, Madhya Maharashtra and Gujarat Region on 26<sup>th</sup> September and heavy to very heavy rainfall at isolated places on 27<sup>th</sup> September.
- ✓ **Isolated heavy to very heavy rainfall** also very likely over Saurashtra & Kutch on 26<sup>th</sup> & 27<sup>th</sup> September **and Isolated heavy rainfall** very likely over Marathwada on 26<sup>th</sup>; Madhya Maharashtra, Gujarat Region, Saurashtra & Kutch on 28<sup>th</sup> September.

#### East & Northeast India

- ✓ Fairly widespread to widespread light/moderate rainfall very likely over Northeast India during the next 7 days; Fairly widespread to widespread light/moderate rainfall very likely over East India during next 2 days & Isolated to Scattered light to moderate rainfall during the next subsequent 5 days.
- Heavy to very Heavy rainfall with extremely heavy rainfall very likely over Sub-Himalayan West Bengal & Sikkim on 26<sup>th</sup> September and heavy to very heavy rainfall on 27<sup>th</sup> September and heavy rainfall on 28<sup>th</sup> September & 02<sup>nd</sup> October.
- ✓ **Isolated heavy to very heavy rainfall** also very likely over Arunachal Pradesh, Assam & Meghalaya, Jharkhand on 26<sup>th</sup>; Bihar on 26<sup>th</sup> & 27<sup>th</sup> September.
- ✓ **Isolated heavy rainfall** very likely over Gangetic West Bengal, Odisha on 26<sup>th</sup> September; Jharkhand on 27<sup>th</sup> September; Bihar on 28<sup>th</sup> September; Nagaland, Manipur, Mizoram & Tripura on 26<sup>th</sup> & 27<sup>th</sup> September and during 30<sup>th</sup> September 02<sup>nd</sup> October; Arunachal Pradesh on 27<sup>th</sup> & 28<sup>th</sup> September and 01<sup>st</sup> & 02<sup>nd</sup> October; Assam & Meghalaya on 27<sup>th</sup> & 28<sup>th</sup> September and during 30<sup>th</sup> September-02<sup>nd</sup> October.

#### Central India:

- Scattered to Fairly widespread light to moderate rainfall over central India during the next 3 days and Isolated to Scattered light to moderate rainfall over the same region during subsequent 4 days.
- **Isolated heavy rainfall** very likely over East Madhya Pradesh, Vidarbha, Chhattisgarh on 26<sup>th</sup>; West Madhya Pradesh during 26<sup>th</sup> -28<sup>th</sup> September.

#### Northwest India

- Fairly widespread to widespread light to moderate rainfall very likely over Uttarakhand, East Uttar Pradesh during next 3 days & Isolated to Scattered light to moderate rainfall over the remaining region during subsequent 4 days; Scattered to Fairly widespread light to moderate rainfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh during next 2 days & Isolated to Scattered light to moderate rainfall during subsequent 5 days; Isolated to Scattered light to moderate rainfall over the remaining region during the week.
- ✓ **Isolated heavy to very heavy rainfall** very likely Uttarakhand on 26<sup>th</sup> & 27<sup>th</sup>; East Uttar Pradesh during 26<sup>th</sup>-28<sup>th</sup>; Himachal Pradesh on 27<sup>th</sup> September.
- ✓ **Isolated heavy rainfall** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 26<sup>th</sup>; Haryana-Chandigarh on 26<sup>th</sup>; West Uttar Pradesh on 26<sup>th</sup> & 27<sup>th</sup>; Uttarakhand on 28<sup>th</sup> September.

#### South Peninsular India

- Scattered to Fairly widespread light to moderate rainfall over the region during the week.
- ✓ **Isolated heavy rainfall** very likely over Telangana on 26<sup>th</sup>; Tamil Nadu, Puducherry & Karaikal on 26<sup>th</sup>, 28<sup>th</sup> & 29<sup>th</sup>; Kerala & Mahe during 28<sup>th</sup>-30<sup>th</sup>; South Interior Karnataka on 29<sup>th</sup>; Coastal Karnataka on 30<sup>th</sup> September.







## **Main Weather Observations:**

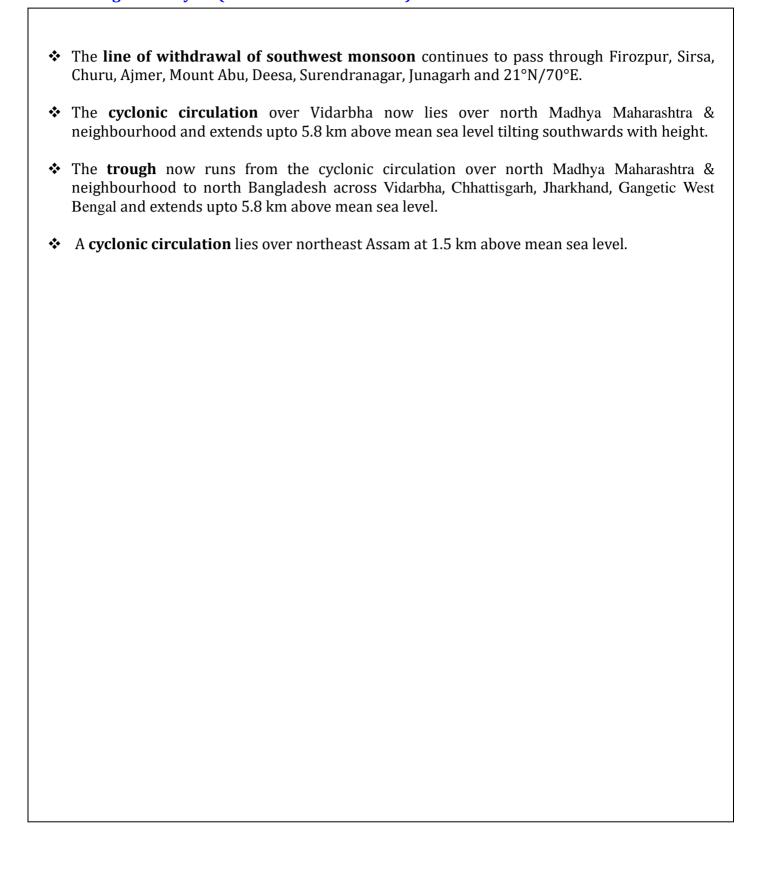
- ❖ Rainfall distribution (from 0830 hours IST of yesterday to 0830 hours IST of today): at most places over Uttarakhand, East Madhya Pradesh, Vidarbha, Chhattisgarh, West Bengal & Sikkim, Jharkhand, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Arunachal Pradesh, Konkan & Goa, Madhya Maharashtra and Gujarat Region; at many places over Marathwada, Saurashtra & Kutch, Telangana, South Interior Karnataka, Himachal Pradesh, West Madhya Pradesh, Tamil Nadu, Puducherry & Karaikal and Andaman & Nicobar Islands; at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Uttar Pradesh, Coastal Andhra Pradesh & Yanam, Rayalaseema and North Interior Karnataka; at isolated places over Punjab, Haryana-Chandigarh-Delhi, East Uttar Pradesh, Rajasthan, Coastal Karnataka and Lakshadweep
- ❖ Heavy rainfall recorded (from 0830 hours IST of yesterday to 0830 hours IST of today): Heavy to very Heavy rainfall at a few places with extremely heavy rainfall at isolated places over Konkan & Goa; Heavy to very Heavy rainfall with extremely heavy rainfall at isolated places over Uttarakhand; Heavy to very Heavy rainfall at isolated places over Gujarat Region, Himachal Pradesh, Odisha, Assam & Meghalaya, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, Sub-Himalayan West Bengal & Sikkim; Heavy rainfall at isolated places over Gangetic West Bengal, Jharkhand, Haryana, Chhattisgarh, Marathwada, North Interior Karnataka, Madhya Pradesh, Saurashtra & Kutch, Nagaland, Manipur, Mizoram & Tripura, Bihar, West Uttar Pradesh and Arunachal Pradesh.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today): (in cm): **Refer annexure II**.
- \* Minimum Temperature Departures (as on 26-09-2024): Minimum temperatures are markedly above normal (5.1°C or more) at many places over Himachal Pradesh; at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; at isolated places over West Rajasthan and Punjab; appreciably above normal (3.1°C to 5.0°C) at isolated places over East Rajasthan, Haryana-Chandigarh and Uttarakhand; above normal (1.6°C to 3.0°C) at most places over West Uttar Pradesh; at many places over East Uttar Pradesh and West Madhya Pradesh; at isolated places over Gujarat state, East Madhya Pradesh, Madhya Maharashtra, Marathwada, Vidarbha, Tamil Nadu, Puducherry & Karaikal, North Interior Karnataka and Chhattisgarh and near normal over rest parts of the country. Today, the lowest minimum temperature of 20.4°C is reported at Osmanabad (Maharashtra) over the plains of the country. (Fig.4)
- \* Maximum Temperature Departures (as on 25-09-2024): Maximum temperatures were markedly above normal (5.1°C or more) at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Tamil Nadu, Puducherry & Karaikal; appreciably above normal (3.1°C to 5.0°C) at isolated places over Punjab, Haryana-Chandigarh-Delhi, West Rajasthan, Gujarat Region, Assam & Meghalaya; above normal (1.6°C to 3.0°C) at isolated places over East Rajasthan, Saurashtra & Kutch, West Madhya Pradesh. These were markedly below normal (-5.1°C or less) at isolated places over Gangetic West Bengal; appreciably below normal (-3.1°C to -5.0°C) at a few places over Coastal Andhra Pradesh & Yanam; at isolated places over Bihar, Odisha, Telangana, Vidarbha; below normal (-1.6°C to 3.0°C) at isolated places over Konkan & Goa, Madhya Maharashtra, Marathwada, Coastal Karnataka, Rayalaseema and near normal over rest parts of the country. Yesterday, the highest Maximum Temperature of 41.6°C was reported at Madurai (Tamil Nadu) over the country. (Fig. 2)





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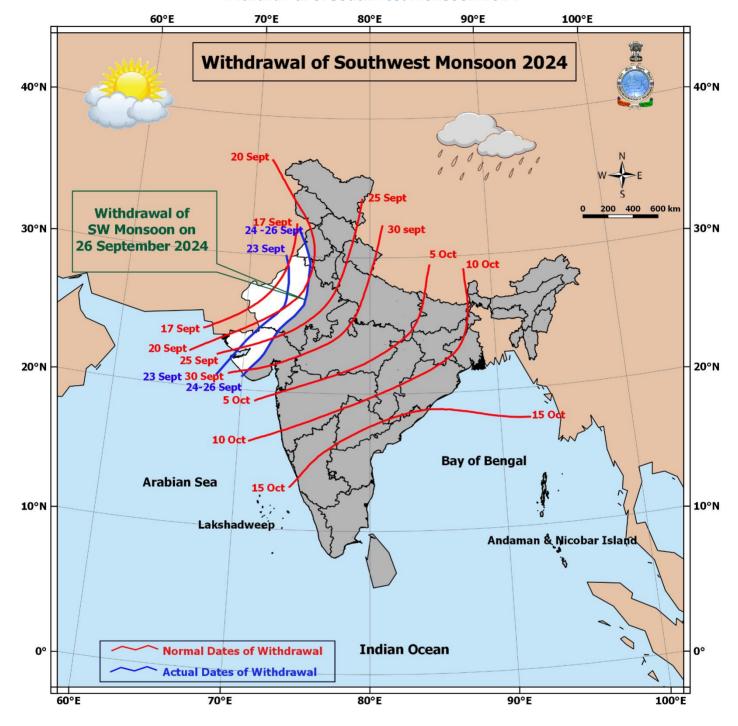
## Meteorological Analysis (Based on 0830 hours IST)







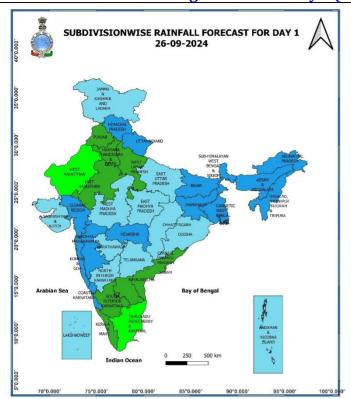
## Withdrawal of Southwest Monsoon 2024

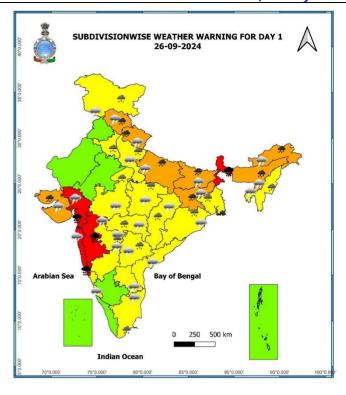






# Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 02nd October, 2024)



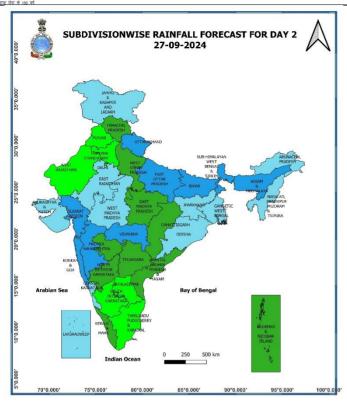


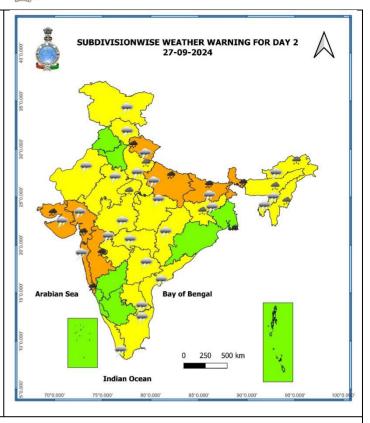
# 26 September (Day 1):

- ❖ Heavy to very heavy rainfall with extremely heavy falls (> 20 cm) very likely at isolated places over Konkan & Goa, Madhya Maharashtra, Sub-Himalayan West Bengal & Sikkim and Gujarat Region; Heavy to very Heavy rainfall (≥12 cm) very likely at isolated places over Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Bihar, Jharkhand, Arunachal Pradesh, Assam & Meghalaya and Saurashtra & Kutch; Heavy rainfall (≥7 cm) very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha and Tamil Nadu, Puducherry & Karaikal.
- Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Telangana; with lightning very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Odisha, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada, Gujarat state, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema and Coastal & North Interior Karnataka.
- Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph is likely to prevail over south Gujarat coast, Maharashtra coast, gulf of Mannar, off Sri Lanka coast, most parts of southwest Bay of Bengal and few parts of southeast Bay of Bengal, many parts of westcentral Bay of Bengal along and off Tamilnadu coast, Andhra Pradesh coasts. 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.



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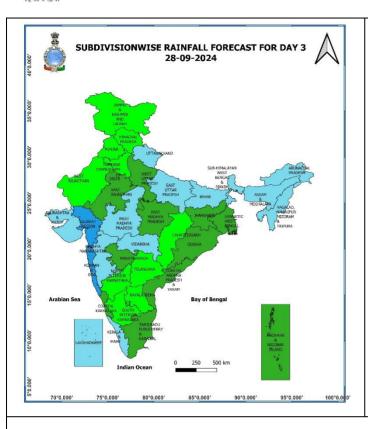


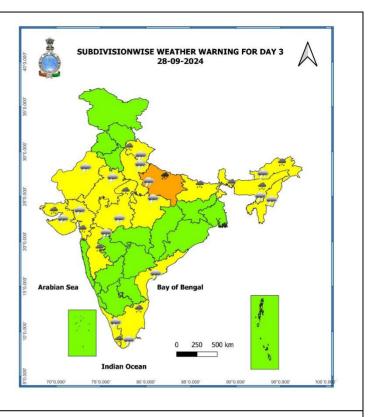
# 27 September (Day 2):

- ❖ Heavy to very Heavy rainfall (≥12 cm) very likely at isolated places over Uttarakhand, East Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Bihar, Konkan & Goa, Madhya Maharashtra and Gujarat state; Heavy rainfall (≥7 cm) very likely at isolated places over West Uttar Pradesh, West Madhya Pradesh, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura,
- Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Telangana; with lightning very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Bihar, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada, Gujarat state, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Rayalaseema.
- ❖ Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph is likely to prevail over south Gujarat and north Maharashtra coast, gulf of Mannar, off Sri Lanka coast, few parts of southwest Bay of Bengal and many parts of west central Bay of Bengal. 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.



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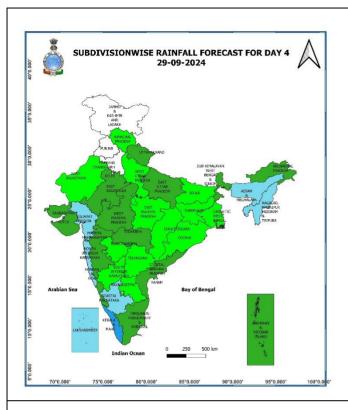


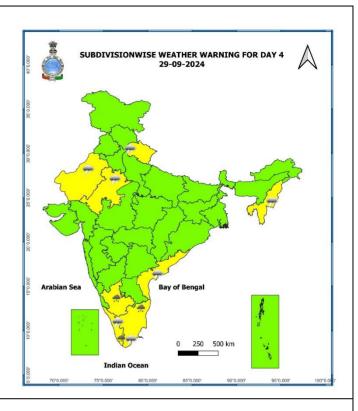
## 28 September (Day 3):

- ❖ Heavy to very Heavy rainfall (≥12 cm) very likely at isolated places over East Uttar Pradesh; Heavy rainfall (≥7 cm) very likely at isolated places over Uttarakhand, West Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Bihar, Arunachal Pradesh, Assam & Meghalaya, Madhya Maharashtra, Gujarat state, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Kerala & Mahe; with lightning very likely at isolated places over Uttarakhand, Uttar Pradesh, Rajasthan, Madhya Pradesh, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Gujarat state, Tamil Nadu, Puducherry & Karaikal and Coastal Andhra Pradesh & Yanam.
- ❖ Squally weather with wind speed reaching 35 kmph to 45 kmph gusting to 55 kmph is likely to prevail over south Gujarat coast and gulf of Mannar. 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.







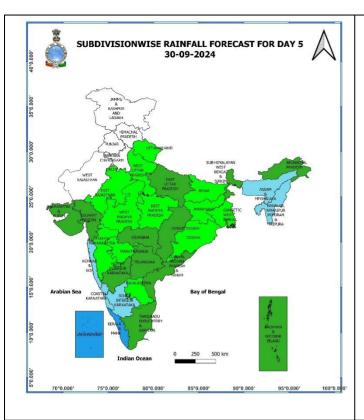


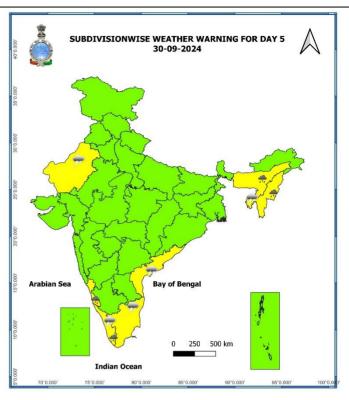
## 29 September (Day 4):

- ❖ Heavy rainfall (≥7 cm) very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and South Interior Karnataka.
- ❖ Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Kerala & Mahe; with lightning very likely at isolated places over Uttarakhand, Rajasthan, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal and Coastal Andhra Pradesh & Yanam.
- ❖ 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.



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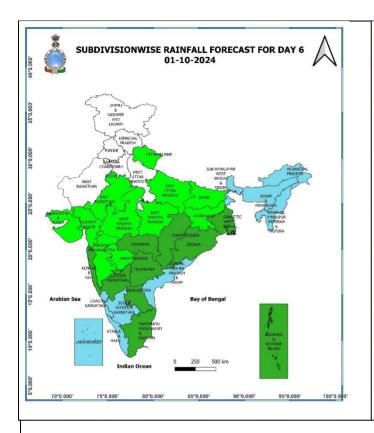


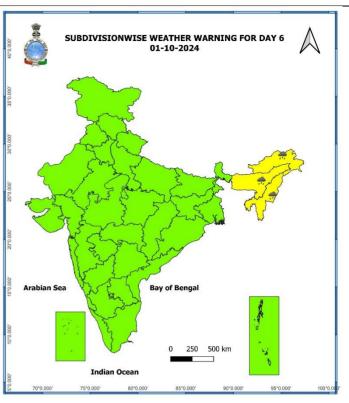
# 30 September (Day 5):

- ❖ Heavy rainfall (≥7 cm) likely at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal Karnataka and Kerala & Mahe.
- ❖ Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph) very likely at isolated places over Kerala & Mahe; with lightning very likely at isolated places over West Rajasthan, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal and Coastal Andhra Pradesh & Yanam.
- ❖ 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.



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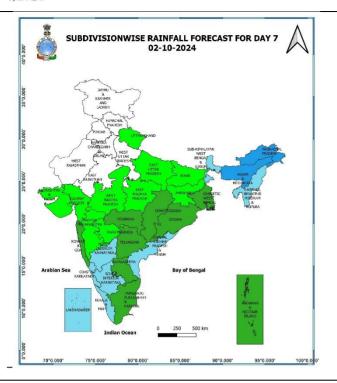


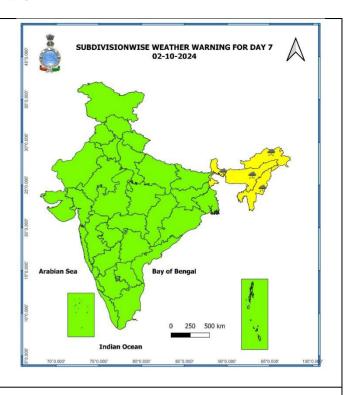
# 01 October (Day 6):

❖ Heavy rainfall (≥7 cm) likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.



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## 02 October (Day 7):

**❖ Heavy rainfall (≥7 cm)** likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

# Weather Outlook for subsequent 3 days (During 03rd October - 05th 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.



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# Impact due to

- ✓ **Isolated extremely heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Konkan & Goa, Madhya Maharashtra, Gujarat Region on 26<sup>th</sup> September.
- ✓ **Isolated heavy to very heavy rainfall** very likely over Arunachal Pradesh, Assam & Meghalaya, Jharkhand, Uttarakhand on 26<sup>th</sup>; Bihar on 26<sup>th</sup> & 27<sup>th</sup> September; East Uttar Pradesh during 26<sup>th</sup>-28<sup>th</sup> September; Sub-Himalayan West Bengal & Sikkim, Himachal Pradesh on 27<sup>th</sup> September.
- ✓ Moderate flash flood risk likely over few watersheds & neighbourhoods of Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim, Bihar, Gujarat Region, Madhya Maharashtra; Low to Moderate flash flood risk over few watersheds & neighbourhoods of Uttarakhand and Himachal Pradesh; Moderate to high flash flood risk likely over few watersheds & neighbourhoods of Konkan & Goa on 26<sup>th</sup> & 27<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

- ✓ In Madhya Maharashtra and Marathwada regions of Maharashtra, postpone harvesting of matured soybean, groundnut, maize and pearl millet. Immediately move the harvested produce to safer places and cover them with plastic sheets or tarpaulin.
- ✓ In Konkan region of Maharashtra, make arrangements to drain out excess water from rice, finger millet, turmeric, groundnut, vegetables and orchards.
- ✓ Make provision for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Tamilnadu, Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Gujarat, Maharashtra, Goa, West Bengal, Odisha, Bihar and North Eastern States.
- ✓ Keep the harvested produce at safer places.
- ✓ Provide mechanical support to horticultural crops & Damp; staking to vegetables.



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# Flash Flood Guidance: ANNEXURE I

# 24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 27-09-2024:

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

**Assam & Meghalaya** - Bongaigaon, Goalpara, Kokrajhar, Nalbari, Goalpara, West/East Khasi Hills and Dhubri districts.

**SHWB & Sikkim** - East Sikkim, North Sikkim, South Sikkim, West Sikkim, Darjeeling, Jalpaiguri, Kochbihar and Uttar Dinajpur districts.

Bihar - Kishanganj, Arariya, Purnia and Aupaul 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.

# 24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 27-09-2024:

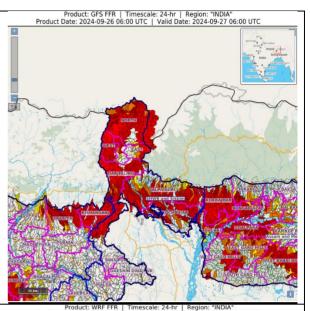
**Low to Moderate flash flood risk** likely over few watersheds & neighbourhoods of following Met Subdivisions in next 24 hours.

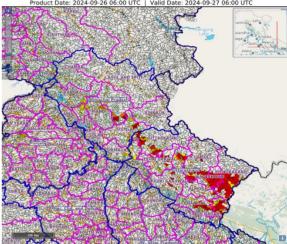
districts.

<u>Uttarakhand: -</u> Dehradun, Uttarkashi, Tehri Gharwal, Pauri Gharwal, Nainital, Almora, Bageshwar, Rudraprayag, Pithoragarh and Chamoli districts

**Himachal Pradesh**: - Sirmour, Kangra, Chamba, Solan, Kullu, Shimla and Mandi 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.









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# 24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 27-09-2024:

**Moderate to high flash flood risk** likely over few watersheds & neighbourhoods of following Met Subdivisions in next 24 hours.

**Konkan & Goa** - Mumbai City, Palghar, Raigarh, Ratnagiri, Sindhudurg, Suburban Mumbai and Thane districts.

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

**Gujarat Region** - Daman, Bharuch, Chhota Udepur, Dangs, Narmada, Navsari, Surat, Tapi, Vadodara and Valsad districts.

**Madhya Maharashtra** - Ahmadnagar, Dhule, Nandurbar, Jalgaon, Kolhapur, Nasik, Pune and Satara 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.

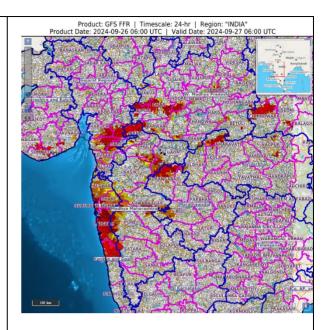
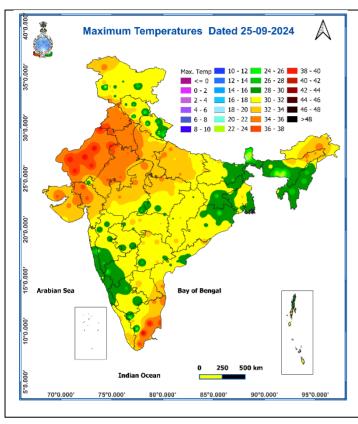




Fig. 1: Maximum Temperatures

## Fig. 2: Departure of Maximum Temperatures



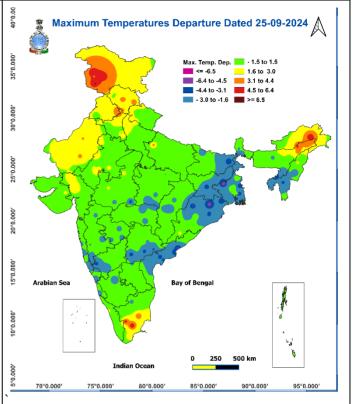
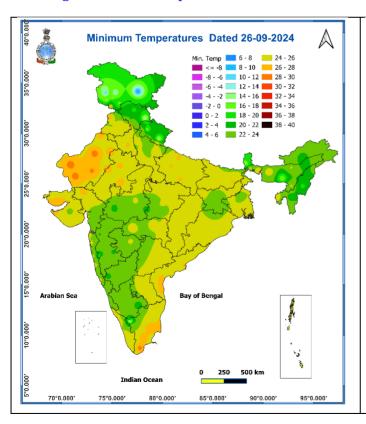


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures



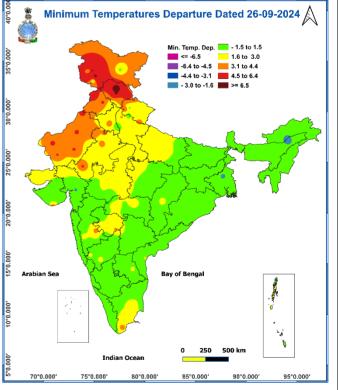
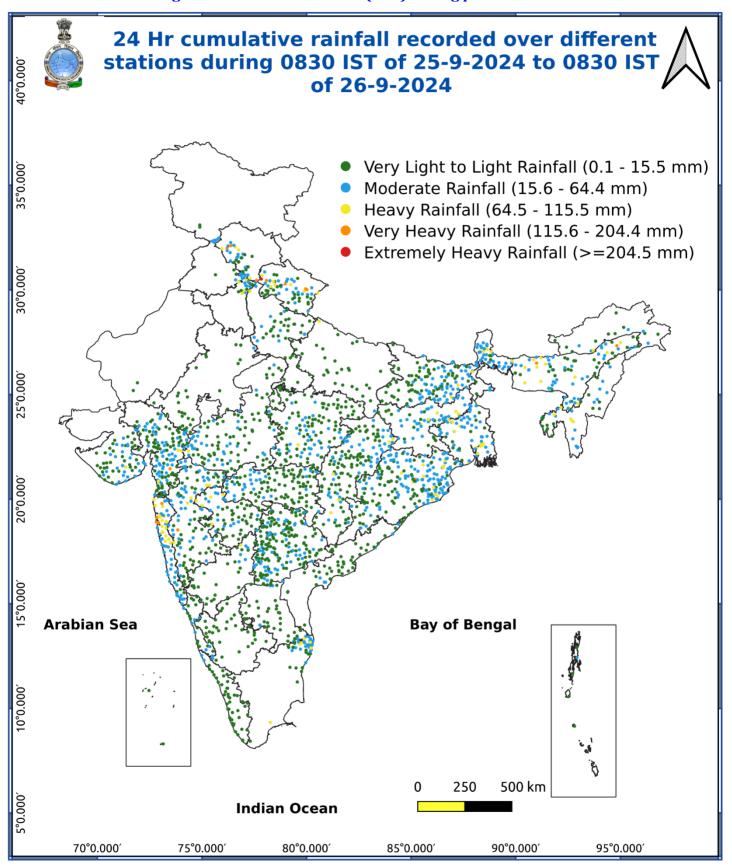






Fig. 5: Accumulated Rainfall (mm) during past 24 hours







**ANNEXURE II** 

# Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 26.09.2024 (in cm):

- ❖ Uttarakhand: Haripur (Dehradun): 24, Sama (Bageshwar): 20, Loharkhet (Bageshwar): 16, Mussoorie (Dehradun): 16, Rudraprayag (Rudraprayag): 13, Kapkot (Bageshwar): 12, Tehri (Cwc) (Tehri Garhwal): 8, Chakrata (Dehradun): 8, Narendra Nagar (Tehri Garhwal): 8, Jakholi (Rudraprayag): 8, Karnprayag (Chamoli): 7, Dharchula (Pithoragarh): 7, Dhanaulti (Tehri Garhwal): 7;
- \* Konkan & Goa: Vasai (Dist Palghar) 21, Santacruz Imd Obsy (Dist Mumbai Suburban) 17, Colaba Imd Obsy (Dist Mumbai City) 17, Uran (Dist Raigad) 16, Vikramgad (Dist Palghar) 13, Thane (Dist Thane) 11, Palghar\_Agri (Dist Palghar) 11, Wada (Dist Palghar) 11, Roha (Dist Raigad) 11, Tala (Dist Raigad) 10, Pen (Dist Raigad) 10, Tbia Imd Part Time (Dist Thane) 10, Sudhagad Pali (Dist Raigad) 10, Karjat\_Agri (Dist Raigad) 9, Panvel\_Agri (Dist Raigad) 9, Matheran (Dist Raigad) 8, Poladpur (Dist Raigad) 8, Ambernath (Dist Thane) 8, Dahanu Imd Obsy (Dist Palghar) 7, Mangaon (Dist Raigad) 7, Mahad (Dist Raigad) 7, Mandangad (Dist Ratnagiri) 7;
- Gujarat Region: Umerpada (Dist Surat) 17, Navsari (Dist Navsari) 7, Jetpur Pavi (Dist Chhota Udepur) 7, Chhota Udepur (Dist Chhota Udepur) 7;
- ❖ Himachal Pradesh: Paonta (Dist Sirmaur) 17, Guler (Dist Kangra) 13, Nagrota Surian (Dist Kangra) 13, Nahan (Dist Sirmaur) 9, Jogindarnagar (Dist Mandi) 9, Ghamroor (Dist Kangra) 8, Baijnath (Dist Kangra) 7, Bharwain (Dist Una) 7;
- ❖ Odisha: Talcher (Angul) 15, Balikuda (Jagatsinghpur) 11, Alipingal (Jagatsinghpur) 10, Jagatsinghpur (Jagatsinghpur) 10, Udala (Mayurbhanj) 9, Kaptipada (Mayurbhanj) 9, Gop (Puri) 9, Keonjhargarh (Keonjhargarh) 9, Kankadahad (Dhenkanal) 8, Mohakalapada (Kendrapara) 8, Angul (Angul) 7, Betanati (Mayurbhanj) 7, Naktideul (Sambalpur) 7, Jenapur (Jajpur) 7;
- ❖ Assam & Meghalaya: (dist Dibrugarh) 14, Beky Rly.bridge (dist Barpeta) 12, Majuli (dist Jorhat) 11, Amraghat (dist Cachar) 10, Hazuah (dist Barpeta) 9, Gharmura (dist Hailakandi) 9, Barpeta/sarbhog\_aws (dist Barpeta) 9, Kheronighat (dist Karbi Anglong) 9, Panbari (dist Chirang) 8, Bahalpur (dist Dhubri) 8, D/mohanbari Aero (dist Dibrugarh) 8, Goalpara \_aws (dist Goalpara) 8, Srijangram Arg (dist Bongaigaon) 8, Manash Nh Xing (dist Barpeta) 8, Williamnagar (dist East Garo Hills) 8, Mohanbari\_aws (dist Dibrugarh) 8, Nongstein (dist West Khasi Hills) 8, Barpeta (dist Barpeta) 7, Nalbari/pagladia (dist Nalbari) 7;
- ❖ Madhya Maharashtra: Pune City Imd Obsy (Dist Pune) 13, Chinchwad Arg (Dist Pune) 13, Pachora (Dist Jalgaon) 9, Mahabaleshwar- Imd Obsy (Dist Satara) 9, Yeola (Dist Nashik) 9, Savlivihir\_Agri (Dist Ahmednagar) 8, Bhadgaon (Dist Jalgaon) 7;
- ❖ Tamilnadu, Puducherry & Karaikal: Zone 07 Ambattur (Dist Chennai), Avadi (Dist Tiruvallur), Zone 07 U18 D81 Vanagaram (Dist Chennai) 13 Each, Zone 08 Malar Colony (Dist Chennai) 12, Thiruvalangadu (Dist Tiruvallur) 11, Zone 02 Manali (Dist Chennai), Ambathur (Dist Chennai) 10 Each, Zone 06 T.V.K Nagar (Dist Chennai), Jaya Engg College AWS (Dist Tiruvallur), Zone 01 Kathivakkam (Dist Chennai), Ayanavaram Taluk Office (Dist Chennai), Zone 08 Anna Nagar (Dist Chennai), Good Will School Villivakkam ARG (Dist Tiruvallur) 9 Each, Zone 06 D65 Kolathur (Dist Chennai), Zone 10 Kodambakkam (Dist Chennai), Zone 03 Puzhal (Dist Chennai), Chennai(N) AWS (Dist Chennai) 8 Each, Red Hills (Dist Tiruvallur), Zone 05 GCC (Dist Chennai), Zone 05 Royapuram (Dist Chennai), Chennai (N) (Dist Chennai), Zone 01 Thiruvottiyur (Dist Chennai), CD Hospital Tondaiarpet (Dist Chennai), Puzhal ARG (Dist Tiruvallur), Satyabama Uty ARG (Dist Kancheepuram), Chennai Collector Office (Dist Chennai), Panapakkam (Dist Ranipet), Chennai (AP) (Dist Chennai), Alandur (Dist Chennai), Zone 09 Ice House (Dist Chennai), Perambur (Dist Chennai), Ranipet AWS (Dist Ranipet), Uthukottai (Dist Chennai), Zone 03 Madhavaram (Dist Chennai), Arakonam (Dist Ranipet), Uthukottai (Dist





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Tiruvallur), Zone 11 U32 Maduravoyal (Dist Chennai), Sholinganallur (Dist Chennai), Zone 15 Sholinganallur (Dist Chennai), Hindustan\_University (Dist Kancheepuram) 7 Each;

- ❖ Sub-Himalayan West Bengal & Sikkim: Lava (dist Kalimpong) 13, Algarah (dist Kalimpong) 12, Amfu Kalimpong (dist Kalimpong) 12, Kalimpong (dist Kalimpong) 11, Darjeeling (dist Darjeeling) 10, Pedong (dist Kalimpong) 9, Khanitar (dist Pakyong) 9, Jhallong (dist Kalimpong) 8, Kumargram (dist Alipurduar) 8, Bijonbari (dist Darjeeling) 8, Soreng Arg (dist Soreng) 8, Rongo (dist Kalimpong) 7, Pakyong (dist Pakyong) 7;
- ❖ Gangetic West Bengal: Tantloi (dist Birbhum) 11, Mo Saltlake (dist North 24 Parganas) 11, Dum Dum (dist North 24 Parganas) 9, Bankura(cwc) (dist Bankura) 9, Uluberia (dist Howrah) 8, Burnpur (dist Paschim Bardhaman) 8, Contai (dist East Midnapore) 7, Diamond Harbour (dist South 24 Parganas) 7, Durgapur (dist Paschim Bardhaman) 7, Amfu Kakdwip (dist South 24 Parganas) 7, Alipore (dist Kolkata) 7;
- ❖ Jharkhand: Messenjor (dist Dumka) 10, Maharo (dist Dumka) 8, Zrs Dumka (dist Dumka) 7, Kharsema (dist Seraikela-kharsawan) 7, Sikatia (dist Deoghar) 7, Maithon Dvc (dist Dhanbad) 7, Maithon (dist Dhanbad) 7, Koner Dvc (dist Hazaribag) 7, Koner (dist Hazaribag) 7;
- ❖ Haryana: Babain Rev (Dist Kurukshetra) 9, Nilokheri (Dist Karnal) 8, Ambala Rev (Distambala) 7, Narayangarh Arg (Dist Ambala) 7, Ladwa (Dist Kurukshetra) 7, Naraingarh (Distambala) 7;
- Chhattisgarh: Sanna (Dist Jashpur) 9, Kunkuri (Dist Jashpur) 8, Durg (Dist Durg) 7, Jashpurnagar (Dist Jashpur) 7, Barpali (Dist Korba) 7, Bagbhar (Dist Jashpur) 7, Bastanar (Dist Bastar) 7, Orcha (Dist Narayanpur) 7;
- ❖ Marathwada: Gangapur (Dist Chh. Sambhajinagar) 9, Patoda (Dist Beed) 8, Jafrabad (Dist Jalna) 7, Vaijapur (Dist Chh. Sambhajinagar) 7, Phulambri (Dist Chh. Sambhajinagar) 7;
- ❖ North Interior Karnataka: Manthala (dist Bidar) 9;
- **East Madhya Pradesh:** Lakhnadon (Dist Seoni) 9;
- **❖ West Uttar Pradesh:** Nakur (dist Saharanpur) 9;
- ❖ Saurashtra & Kutch: Lilia (Dist Amreli) 8;
- ❖ Nagaland, Manipur, Mizoram & Tripura: Aizwal (dist Aizawl) 8, Lengpui (dist Aizawl) 8, Mamit Agri (dist Mamit) 8, Kvk Dhalai (dist Dhalai) 7, Dharmanagar/ Panisagar (dist North Tripura) 7;
- ❖ Bihar: Udai Kishanganj (dist Madhepura) 8, Kursela (dist Katihar) 8, Banka (dist Banka) 8, Raniganj (dist Araria) 7;
- ❖ West Madhya Pradesh: Alirajpur (Dist Alirajpur) 7;
- ❖ Arunachal Pradesh: Naharlagun (dist Papumpara) 7.

31. तमिलनाडु, पुडुचेरी और कराईकल

32. तटीय कर्नाटक

35. केरल और माहे

S Dust Raising Winds

36. लक्षद्वीप

33. आतंरिक उत्तरी कर्नाटक

34. आतंरिक दक्षिणी कर्नाटक



#### **National Weather Forecasting Centre India Meteorological Department Ministry of Earth Sciences**

# **LEGENDS**



- 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. Rihar
- 10. East Uttar Pradesh
- 11. West Uttar Pradesh
- 12. Uttarakhand
- 13. Haryana, Chandigarh & Delhi
- 14. Puniab
- 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

> 75

- 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)



Strong Surface Winds





	DEFINITION/CRITERIA		
	<b>Heavy:</b> 64.5 to 115.5 mm/cm *		
Rain/ Snow *	Very Heavy: 115.6 to 204.4 mm/cm*		
	Extremely Heavy: > 204.4 mm/cm *		
	When maximum temperature of a station reaches ≥40° C for plains and ≥30° C for hilly regions (a) Based on Departure from normal		
Heat Wave	Heat Wave: Maximum Temperature Departure from normal 4.5° C to 6.4° C.		
	Severe Heat Wave: Maximum Temperature Departure from normal ≥6.5° C		
	(b). Based on Actual maximum temperature		
	Heat Wave: When actual maximum temperature ≥45°C.		
	Severe Heat Wave: When actual maximum temperature ≥47°C		
	(c). Criteria for heat wave for coastal stations When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum		
	temperature ≥37°C		
	When maximum temperature remains 40°C		
Varm Night	Warm Night: When minimum temperature departure 4.5 °C to 6.4 °C.		
	Severe Warm Night: When minimum temperature departure >6.4 °C.		
	When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions.  (a). Based on departure		
	Cold Wave: Minimum Temperature Departure from normal -4.5 °C to -6.4 °C.		
	Severe Cold Wave: Minimum Temperature Departure from normal ≤ -6.5 °C		
Cold Wave	(b) Based on actual Minimum Temperature (for Plains only)		
	Cold Wave : When Minimum Temperature is ≤ 4.0 °C		
	Severe Cold Wave: When Minimum Temperature is ≤ 2.0 °C		
	( c) For Coastal Stations  When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C		
	When minimum temperature of a station ≤10°C for plains and ≤0°C for hilly regions  Based on departure		
Cold Day	Cold Day: Maximum Temperature Departure from normal -4.5 °C to -6.4 °C.		
	Severe Cold Day: Maximum Temperature Departure from normal ≤ -6.5 °C		
	Dhannan of and the plate are and disciplined the basic and the basic and the basic and the second of		
	Phenomenon of small droplets suspended in air and the horizontal visibility < 1km  Moderate Fog: When the visibility between 500-200 metres		
Fog	Dense Fog: when the visibility between 50- 200 metres		
	Very Dense Fog: when the visibility < 50 metres		
hunderstorm	Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)		
Dust/Sand Storm	An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.		
Frost	Ice deposits on ground		
	Air temperature ≤4°C ( over Plains)		
	A strong wind that rises suddenly, lasts for atleast 1 minute		
	A strong wind that rises suddenly, lasts for atleast 1 minute.  Moderate: Wind speed 52-61 kmph		
Squall	Moderate: Wind speed 52-61 kmph Severe: Wind speed 62-87 kmph		
Squall	Moderate: Wind speed 52-61 kmph		
Squall	Moderate: Wind speed 52-61 kmph Severe: Wind speed 62-87 kmph		
	Moderate: Wind speed 52-61 kmph Severe: Wind speed 62-87 kmph Very Severe: Wind speed >87 kmph  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		
Squall Sea State	Moderate: Wind speed 52-61 kmph Severe: Wind speed 62-87 kmph Very Severe: Wind speed >87 kmph  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		
	Moderate: Wind speed 52-61 kmph Severe: Wind speed 62-87 kmph Very Severe: Wind speed >87 kmph  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		
	Moderate: Wind speed 52-61 kmph Severe: Wind speed 62-87 kmph  Very Severe: Wind speed >87 kmph  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  Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)		
Sea State	Moderate: Wind speed 52-61 kmph Severe: Wind speed 62-87 kmph Very Severe: Wind speed >87 kmph  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  Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots) Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)		
	Moderate: Wind speed 52-61 kmph Severe: Wind speed 62-87 kmph  Very Severe: Wind speed >87 kmph  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  Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)		