

Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 10<sup>th</sup> December, 2024

Time of Issue: 1315 hours IST

**Subject: (i) A well marked low pressure area over the southwest & adjoining southeast Bay of Bengal. It is likely to cause heavy rainfall over South Peninsular India during 10<sup>th</sup>-13<sup>th</sup> December.**

**(ii) Cold wave conditions at isolated pockets likely over northwest & adjoining central India during next 4-5 days.**

**i. Realised weather during past 24 hours till 0830 hours IST of today**

**Rainfall realized over the country: (details in Annexure I)**

No significant rainfall realised during past 24 hours.

**Fog conditions realized over the country:**

- ❖ **Dense to very dense fog (visibility < 50 m)** reported in isolated pockets of West Bengal and Bihar and **Dense fog (50-200 m)** in isolated pockets of Himachal Pradesh and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Cold Wave** reported in isolated pockets of Jammu-Kashmir.
- ❖ **Visibility reported ( $\leq 200$  m)** (in meter): **Sub-Himalayan West Bengal:** Malda 00, Cooch Behar 00, Cooch Behar Airport 150, Bagdogra 200, Jalpaiguri 200; **Gangetic West Bengal:** Shanti Niketan 00, Panagarh 200; **Bihar:** Bhagalpur 00, Purnea & Supaul 200.

**Weather Systems:**

- ❖ The **low-pressure area** over southeast Bay of Bengal & adjoining east Equatorial Indian Ocean has become more marked and lay as a **well marked low pressure area** over the southwest and adjoining southeast Bay of Bengal at 0830 hrs IST of today, the 10<sup>th</sup> December. The associated upper air cyclonic circulation extends up to mid-tropospheric levels. The system is very likely to continue to move west-northwestwards towards Sri-Lanka-Tamil Nadu coasts during the next 24 hours.
- ❖ A **Western disturbance** as a trough in middle tropospheric westerlies lies roughly along Long. 70°E to the north of Lat. 33°N.

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

- ❖ **Tamil Nadu, Puducherry & Karaikal:** **Heavy rainfall** at isolated places very likely during 10<sup>th</sup> -13<sup>th</sup> December & 16<sup>th</sup> December. Isolated very heavy rainfall is also very likely on 11<sup>th</sup> & 12<sup>th</sup> December.
- ❖ **Coastal Andhra Pradesh & Yanam & Rayalaseema:** **Heavy rainfall** at isolated places very likely on 11<sup>th</sup> & 12<sup>th</sup> December.
- ❖ **Kerala & Mahe:** **Heavy rainfall** at isolated places very likely on 12<sup>th</sup>, 13<sup>th</sup> & 16<sup>th</sup> December.
- ❖ **South Interior Karnataka:** **Heavy rainfall** at isolated places very likely on 12<sup>th</sup> & 13<sup>th</sup> December.

- ❖ **Coastal Karnataka: Heavy rainfall** at isolated places very likely on 13<sup>th</sup> December.
- ❖ **Andaman & Nicobar Islands: Heavy rainfall** at isolated places very likely on 14<sup>th</sup> December.
- ❖ Light to moderate rainfall at a few places accompanied with isolated thunderstorm & lightning very likely over Tamil Nadu, Puducherry & Karaikal during 10<sup>th</sup>-14<sup>th</sup>, Kerala & Mahe during 11<sup>th</sup>-13<sup>th</sup>, Coastal Andhra Pradesh & Yanam & Rayalaseema on 11<sup>th</sup> & 12<sup>th</sup> and South Interior Karnataka on 13<sup>th</sup> December.

**Fisherman Warning:** Fishermen are advised not to venture into west Central Bay of Bengal on 10<sup>th</sup>; Southeast Bay of Bengal during 10<sup>th</sup> & 11<sup>th</sup>; Southwest Bay of Bengal during 10<sup>th</sup> -12<sup>th</sup>; along and off Sri Lanka coast on 11<sup>th</sup> & 12<sup>th</sup>; Tamil Nadu coasts during 11<sup>th</sup>-13<sup>th</sup>; along and off Kerala coasts, Gulf of Mannar, Comorin area on 12<sup>th</sup> & 13<sup>th</sup> December.

## ii. Temperature, Cold Wave and Fog Forecast:

### Temperature Conditions during past 24 hours till 0830 hours IST of today

Minimum temperatures are in the range of 5-10°C in the Northwest India, 10-15°C in the Indo Gangetic plains, Maharashtra, Central India, Gujarat State & eastern parts of India and 15-20°C over Odisha and Telangana. Minimum temperatures are **markedly above normal (5.1°C or more)** at few places over Telangana; at isolated places over North Interior Karnataka; **appreciably above normal (3.1°C to 5°C)** at a few places over Coastal Andhra Pradesh & Yanam, Rayalaseema; at isolated places over Marathwada, Vidarbha, Assam & Meghalaya, Madhya Maharashtra, Konkan & Goa, Coastal Karnataka, Tamil Nadu, Puducherry & Karaikal; **above normal (1°C to 3°C)** at most places over Kerala & Mahe; at many places over Jharkhand, Odisha, Nagaland, Manipur, Mizoram & Tripura; at a few places over Bihar, Chhattisgarh, Arunachal Pradesh; at isolated places over Gangetic West Bengal. These are **markedly below normal (-5.1°C or less)** at few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; at isolated places over Himachal Pradesh, Uttarakhand, East Madhya Pradesh; **appreciably below normal (-3.1°C to -5°C)** at isolated places over Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh, West Rajasthan; **below normal (-1°C to -3°C)** at many places over East Rajasthan; at isolated places over East Uttar Pradesh, and near normal over rest parts of the country. Today, **the lowest minimum temperature** of 4.5°C is reported at **Hissar (Haryana) & Churu (West Rajasthan)** over the plains of the country.

### Forecast of temperature:

- ❖ Gradual fall in minimum temperatures by 2°C likely over Northwest during next 2 days and no significant change thereafter.
- ❖ Gradual fall in minimum temperatures by 2-4°C likely over East India during next 2 days and no significant change thereafter.
- ❖ Gradual rise in minimum temperatures by 2-3°C likely over West India during next 5 days.

### Cold Wave Warnings:

**Cold wave** conditions very likely in isolated pockets over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad & West Uttar Pradesh on 10<sup>th</sup> & 11<sup>th</sup>, Uttarakhand on 10<sup>th</sup>; Rajasthan during 10<sup>th</sup> -13<sup>th</sup>; Himachal Pradesh on 10<sup>th</sup>; Punjab, Haryana, Chandigarh and Madhya Pradesh during 10<sup>th</sup>-14<sup>th</sup>; West Uttar Pradesh on 11<sup>th</sup>-13<sup>th</sup> December.

### Cold Day Warnings:

**Cold Day** conditions very likely in isolated pockets over Rajasthan and West Madhya Pradesh on 10<sup>th</sup> & 11<sup>th</sup> December.

### Ground Frost Warnings:

**Ground Frost** conditions very likely in isolated pockets over Himachal Pradesh and Uttarakhand during 10<sup>th</sup>-12<sup>th</sup> December.

### Dense Fog Warnings:

**Dense fog conditions** very likely to prevail during late night/early morning hours in isolated pockets of Gangetic West Bengal & Jharkhand on 10<sup>th</sup>; Sub-Himalayan West Bengal & Sikkim, Bihar, East Uttar Pradesh 10<sup>th</sup> & 11<sup>th</sup>; Himachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 10<sup>th</sup>-12<sup>th</sup> morning hours.

### iii. Weather conditions and forecast over Delhi/NCR during 10<sup>th</sup> to 13<sup>th</sup> Dec. 2024 (Annexure IV)

For more details, kindly refer National Weather Bulletin:

[https://mausam.imd.gov.in/responsive/all\\_india\\_forecast\\_bulletin.php](https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php)

For District wise warnings refer: <https://mausam.imd.gov.in/responsive/districtWiseWarningGIS.php>

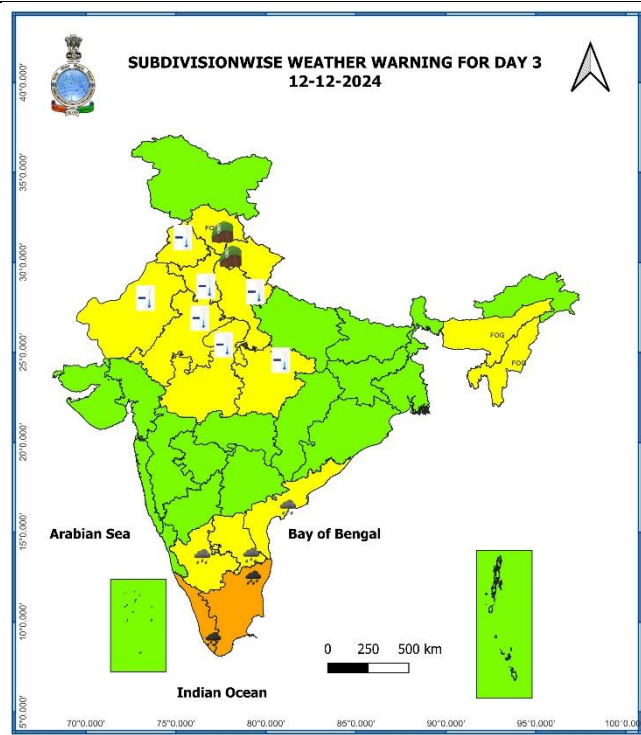
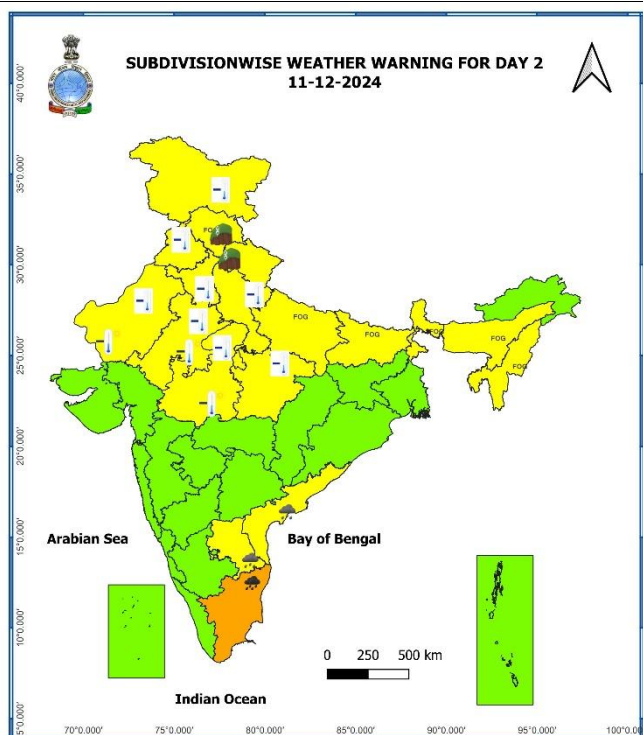
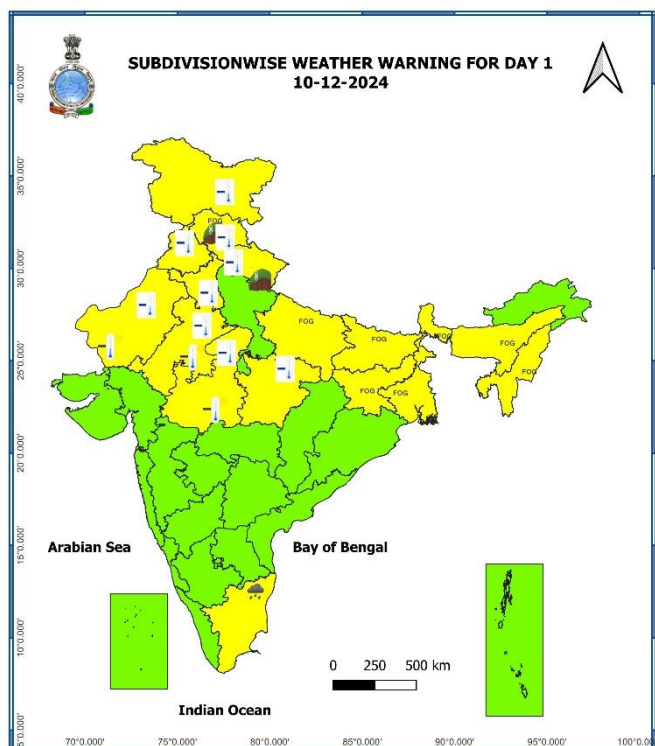
### ANNEXURE I

#### Rainfall recorded during past 24 hours till 0830 hours IST of today 10.12.2024 (in cm):

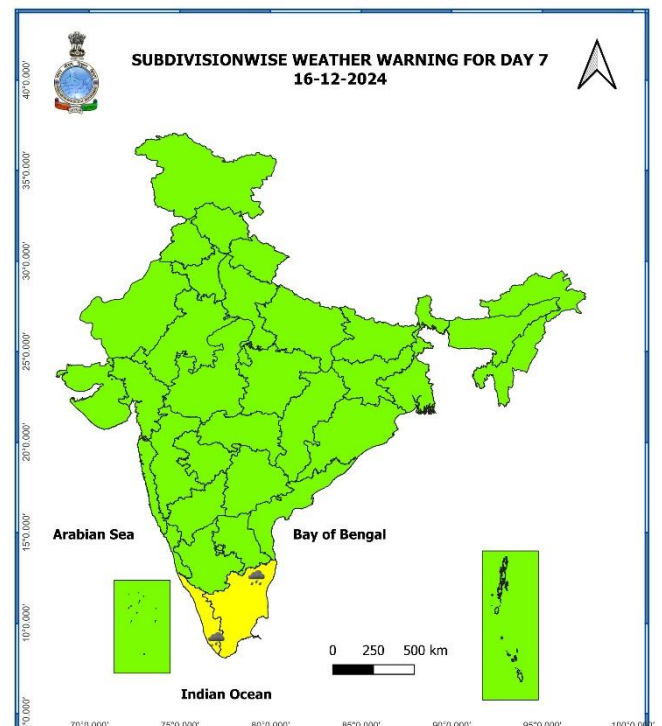
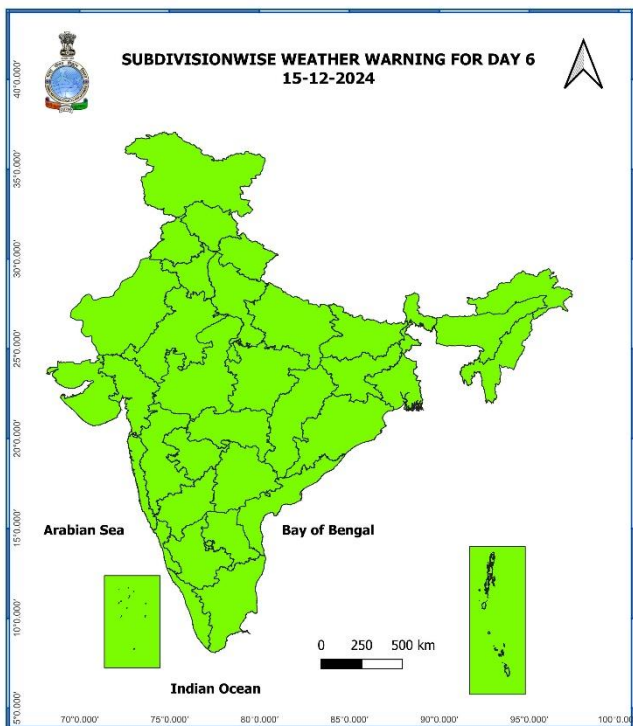
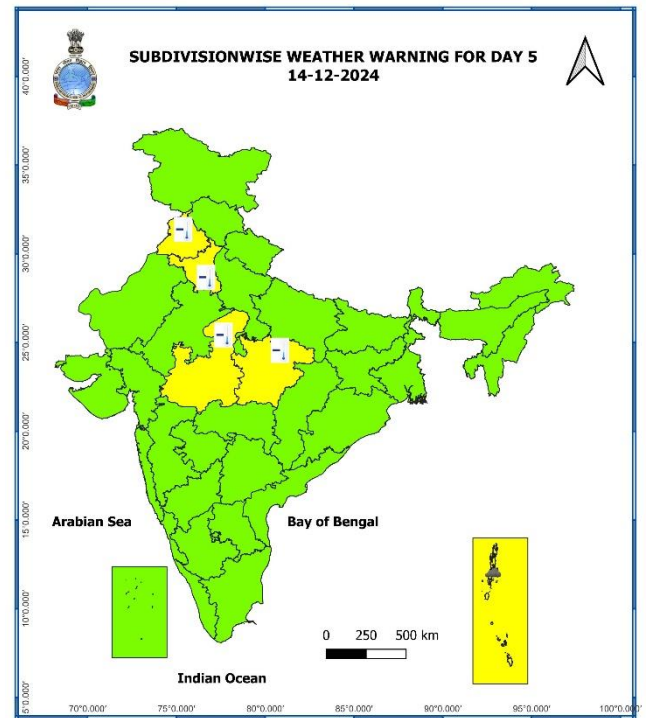
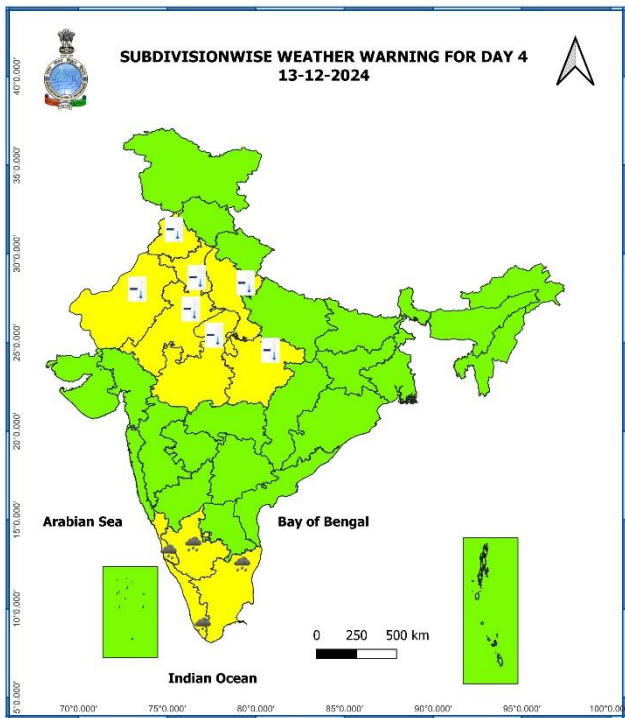
- ❖ **Kerala:** Konni (dist Pathanamthitta) 4, Konni (dist Pathanamthitta) 3;

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

- As the lead period increases forecast accuracy decreases.







- 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.

**Weather Realised (past 24 hours) & forecast (during 10<sup>th</sup> Dec. to 13<sup>th</sup> Dec. 2024) over Delhi/NCR****Past Weather:**

There has been a fall in maximum temperature upto 02°C over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 19 to 22°C and 08 to 10°C respectively. The maximum and minimum temperature was below normal upto 1 to 4° over most places. Mainly smog/ mist condition with predominant surface wind from northwest direction with wind speed reaching 08 to 10 kmph prevailed on 09.12.2024. Mainly clear sky condition with wind speed less than 12 kmph west direction prevailed over the region in the forenoon today.

**Weather Forecast:**

**10.12.2024:** Mainly clear sky. The predominant surface wind is likely to be northwest direction with wind speed less than 12 kmph till evening. It would decrease thereafter becoming less than 08 kmph from northwest direction during night. Smog/mist is likely in the evening/night.

**11.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/mist is likely in the morning. The wind speed will increase thereafter becoming less than 12 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 08 kmph from northwest direction during evening and night. Smog/mist is likely in the evening/night.

**12.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/mist is likely in the morning. The wind speed will gradually increase becoming 10-12 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 08 kmph from northwest direction during evening and night. Smog/mist is likely in the evening/night.

**13.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with wind speed less than 08 kmph during morning hours. Smog/mist is likely in the morning. The wind speed will increase thereafter becoming 10-12 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 08 kmph from northwest direction during evening and night. Smog/mist is likely in the evening/night.

**Impact & Action Suggested due to very heavy rainfall over** Tamil Nadu, Puducherry & Karaikal during 11<sup>th</sup>-12<sup>th</sup> December and Kerala & Mahe on 12<sup>th</sup> December.

**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 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
- ❖ Damage to horticulture and standing crops in some areas due to inundation.
- ❖ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC).

**B. Action Suggested**

- ❖ 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.

### **Impact expected due to dense fog in the night /morning hour:**

#### ❖ Transport and Aviation:

- May affect some airports, highways and railway routes in the areas of met- sub-division.
- Difficult driving conditions with slower journey times.
- Unless taken precautionary measures, it may lead to some road traffic collisions.

#### ❖ Power Sector:

- Chances of Tripping of Power lines in the very dense fog routes.

#### ❖ Human Health:

- Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath.
- Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
- Eye Irritation: Dense fog contains pollutions of various types and these Pollutants in the air if exposed may tend to irritate the membranes of the eye causing various infections leading to redness or swelling of the eye.

### **Action suggested:**

#### ❖ Transport and Aviation:

- Be careful while driving or outing through any transport.
- Use fog lights during driving.
- Be in touch with airlines, railways and state transport for schedule of your journey.

#### ❖ Power Sector:

- To keep ready Maintenance Team
- Human Health: To avoid outing until unless emergency and to cover the face.

### **Impact expected due to cold wave conditions over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh, West Uttar Pradesh, Rajasthan and Madhya Pradesh**

- An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- Frostbite can occur due to prolonged exposure to cold. The skin turns pale, hard and numb and eventually black blisters appear on exposed body parts such as fingers, toes, nose and or earlobes. Severe frostbite needs immediate medical attention and treatment.
- Impact on agriculture, crop, livestock, water supply, transport and power sector at some places.

### **Action suggested:**

- Wear several layers of loose fitting, light weight; warm woolen clothing.
- Cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts. Wear several layers of loose fitting, light weight; warm woolen clothing rather than one layer of heavy cloth.
- Eat vitamin-C rich fruits & vegetable and drink sufficient fluids preferably warm fluids to maintain adequate immunity.
- Avoid or limit outdoor activities.
- Keep dry, if wet, change cloths immediately to prevent loss of body heat. Wear insulated/waterproof shoes.
- Warm the affected area of the body slowly with lukewarm water; do not rub the skin vigorously.
- If the affected skin area turns black, immediately consult a doctor.
- Maintain ventilation while using Heaters to avoid inhaling toxic fumes.
- Take safety measures while using electrical and gas heating devices.
- Extreme care needed for vulnerable people.
- Seek medical attention as soon as possible for someone suffering from frostbite/ Hypothermia.
- Protect livestock from cold weather.



### Agromet advisories for Heavy Rainfall / Cold Wave likely over various parts of the country

- In Tamil Nadu, Kerala, South Interior Karnataka, Coastal Andhra Pradesh and Rayalaseema, provide adequate drainage facilities for removal of excess water from standing crop fields and fruit orchards. Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields. Provide mechanical support to horticultural crops and staking to vegetables.
- In North-West India and Madhya Pradesh, apply light and frequent irrigation to the standing crops in the evening to protect the crops from low temperature stress or cold injury. Use mulching and cover vegetable nurseries and young fruit plants with straw / polythene sheets to maintain optimum soil temperature.

#### **Livestock and Fishery**

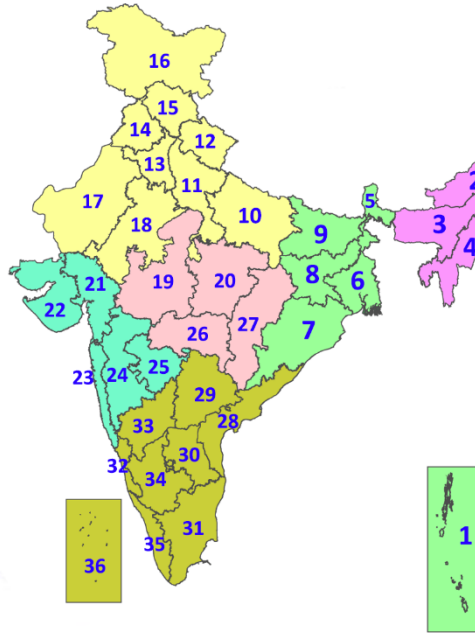
- Keep the animals inside the shed during heavy rainfall and provide balanced feed.
- Store the feed and fodder at safer place to avoid spoilage from rainfall.
- Construct an outlet with proper netting around the pond to drain out excess rain water, thereby preventing fishes/fingerlings from escaping in case of overflowing.
- Check and repair dykes around the ponds to avoid entry of runoff water from the catchment areas.
- Keep cattle inside the sheds during night and provide dry bedding to protect them from cold.
- Keep the chicks warm by providing artificial light in the poultry sheds.

#### **Legends & abbreviations:**

- ❖ **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome, **IAF:** Indian Air Force.
- ❖ **Region wise classification of meteorological Sub-Divisions:**
  - **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
  - **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
  - **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
  - **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
  - **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathawada.
  - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

## 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

\* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".  
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## DEFINITION/CRITERIA

### Rain/ Snow \*

Heavy: 64.5 to 115.5 mm/cm \*  
Very Heavy: 115.6 to 204.4 mm/cm\*  
Extremely Heavy: > 204.4 mm/cm \*

### Heat Wave

When maximum temperature of a station reaches  $\geq 40^\circ \text{C}$  for plains and  $\geq 30^\circ \text{C}$  for hilly regions  
(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal  $4.5^\circ \text{C}$  to  $6.4^\circ \text{C}$ .

Severe Heat Wave: Maximum Temperature Departure from normal  $\geq 6.5^\circ \text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature  $\geq 45^\circ \text{C}$ .

Severe Heat Wave: When actual maximum temperature  $\geq 47^\circ \text{C}$

(c) Criteria for heat wave for coastal stations

When maximum temperature departure is  $> 4.5^\circ \text{C}$  from normal. Heat Wave may be described provided maximum temperature  $\geq 37^\circ \text{C}$

### Warm Night

When maximum temperature remains  $40^\circ \text{C}$

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

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

### Cold Wave

When minimum temperature of a station  $\leq 10^\circ \text{C}$  for plains and  $\leq 0^\circ \text{C}$  for hilly regions.

(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal  $-4.5^\circ \text{C}$  to  $-6.4^\circ \text{C}$ .

Severe Cold Wave: Minimum Temperature Departure from normal  $\leq -6.5^\circ \text{C}$

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave: When Minimum Temperature is  $\leq 4.0^\circ \text{C}$

Severe Cold Wave: When Minimum Temperature is  $\leq 2.0^\circ \text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is  $\leq -4.5^\circ \text{C}$  & actual Minimum Temperature is  $\leq 15^\circ \text{C}$

### Cold Day

When minimum temperature of a station  $\leq 10^\circ \text{C}$  for plains and  $\leq 0^\circ \text{C}$  for hilly regions

Based on departure

Cold Day: Maximum Temperature Departure from normal  $-4.5^\circ \text{C}$  to  $-6.4^\circ \text{C}$ .

Severe Cold Day: Maximum Temperature Departure from normal  $\leq -6.5^\circ \text{C}$

### Fog

Phenomenon of small droplets suspended in air and the horizontal visibility  $< 1 \text{ km}$

Moderate Fog: When the visibility between 500-200 metres

Dense Fog: when the visibility between 50- 200 metres

Very Dense Fog: when the visibility  $< 50$  metres

### Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)

### Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.

### Frost

Ice deposits on ground

Air temperature  $\leq 4^\circ \text{C}$  ( over Plains)

### Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph

Severe: Wind speed 62-87 kmph

Very Severe: Wind speed  $> 87$  kmph

### Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre

High to very high: Wind speed 63-117 kmph ( 34-63 knots) & Wave height 6-14 metre

Phenomenal: Wind speed  $> 117$  kmph ( $> 63$  knots) & Wave height  $> 14$  metre

### Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)

Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)

Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)

Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)

Super Cyclone Strom: Wind speed  $> 220$  kmph ( $> 119$  knots)

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