

Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 12<sup>th</sup> December, 2024

Time of Issue: 1315 hours IST

**Subject: (i) In association with the well-marked low pressure area over Gulf of Mannar, extremely heavy rainfall likely over Tamil Nadu & Karaikal and Kerala on 12<sup>th</sup> December, 2024.**

**(ii) Cold wave conditions at isolated pockets likely over northwest & central India during next 3-4 days.**

**i. Realised weather during past 24 hours till 0830 hours IST of today (Annexure I)**

- ❖ **Heavy to very heavy rainfall** has been recorded at isolated places over Tamil Nadu, Puducherry & Karaikal; **heavy rainfall** at isolated places over Rayalaseema.
- ❖ **Cold wave to severe cold wave conditions** observed in isolated pockets over Haryana; **Cold wave conditions** in isolated pockets over Punjab, Uttar Pradesh and Rajasthan.
- ❖ **Cold day conditions** observed in isolated pockets of Haryana.
- ❖ **Dense to very dense fog (visibility < 50 m)** reported in isolated pockets of Meghalaya, Odisha and **Dense fog (50-200 m)** in isolated pockets of Tripura, Assam and Sub-Himalayan West Bengal & Sikkim.
- ❖ **Visibility reported ( $\leq 200$  m) (in meter): Meghalaya: Barapani 30; Odisha: Rourkela 40; Tripura: Agartala 50; Sub-Himalayan West Bengal & Sikkim: Pakyong 50; Assam: Guwahati 150.**

**Weather Systems:**

- ❖ The **well marked low pressure area** over southwest Bay of Bengal off Sri Lanka coast now lies over Gulf of Mannar & neighbourhood. The system is very likely to continue to move west-northwestwards towards South Tamil Nadu and weaken gradually during the next 12 hours.
- ❖ The **Western disturbance** is now seen as a cyclonic circulation over north Pakistan & neighbourhood with the trough aloft in middle tropospheric westerlies with its axis at 5.8 km above mean sea level runs roughly along Long. 73°E to the north of Lat. 30°N.

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

- ❖ **Tamil Nadu & Karaikal: Heavy to very heavy rainfall with extremely heavy falls** at isolated places very likely on 12<sup>th</sup>, **heavy to very heavy rainfall** at isolated places on 17<sup>th</sup> December. Isolated **heavy rainfall** is also very likely on 13<sup>th</sup>, 16<sup>th</sup> & 18<sup>th</sup> December.
- ❖ **Kerala: Heavy to very heavy rainfall with extremely heavy falls** at isolated places very likely on 12<sup>th</sup>, **heavy to very heavy rainfall** at isolated places on 13<sup>th</sup> December. Isolated **heavy rainfall** is also very likely on 17<sup>th</sup> & 18<sup>th</sup> December.
- ❖ **Coastal Andhra Pradesh & Rayalaseema: Heavy rainfall** at isolated places very likely on 12<sup>th</sup>, 17<sup>th</sup> & 18<sup>th</sup> December.
- ❖ **South Interior Karnataka: Heavy rainfall** at isolated places very likely on 12<sup>th</sup> & 17<sup>th</sup> December.
- ❖ **Lakshadweep: Heavy rainfall** at isolated places very likely on 13<sup>th</sup> December.
- ❖ **Andaman & Nicobar Islands: Heavy rainfall** at isolated places very likely during 13<sup>th</sup> -15<sup>th</sup> December.
- ❖ Light to moderate rainfall at isolated places accompanied with isolated thunderstorm & lightning very likely over Coastal Andhra Pradesh & Yanam & Rayalaseema on 12<sup>th</sup> December.

**Fisherman Warning:** Fishermen are advised not to venture into along and off Sri Lanka coast on 12<sup>th</sup>; Comorin area on 12<sup>th</sup> & 13<sup>th</sup>; Southwest Bay of Bengal on 12<sup>th</sup> & 16<sup>th</sup>; Tamil Nadu coasts on 12<sup>th</sup> & 13<sup>th</sup>; along and off Kerala coasts during 12<sup>th</sup>-14<sup>th</sup>; Gulf of Mannar on 13<sup>th</sup> & 14<sup>th</sup>; Southeast Bay of Bengal on 15<sup>th</sup> & 16<sup>th</sup>; south Andaman Sea during 14<sup>th</sup>-16<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 markedly below normal (-5°C or less) at isolated places over Rajasthan; appreciably below normal (-3°C to -5°C) at a few places over East Uttar Pradesh, Madhya Pradesh; at isolated places over Punjab, Haryana, Chandigarh, Delhi, Gangetic West Bengal, Assam & Meghalaya; below normal (-1°C to -3°C) at a few places over Chhattisgarh, Vidarbha, Marathwada, Telangana, Jharkhand; at isolated places over Saurashtra & Kutch, Bihar. These are appreciably above normal (3°C to 5°C) at a few places over Coastal Andhra Pradesh & Yanam and Rayalaseema; at isolated places over Tamil Nadu, Puducherry & Karaikal.

Minimum temperatures are in the range of 4-8°C in the plains of Northwest India, in many parts of Central India; and in the range of 9-15°C in many parts of Odisha, Gangetic West Bengal and Western India. Today, **the lowest minimum temperature of 1.0°C** is reported at **Sikar (East Rajasthan)** over the plains of the country.

### Forecast of temperature:

- ❖ No significant change in minimum temperatures likely over Northwest & Central India during next 5 days.
- ❖ Gradual fall in minimum temperatures by 2-3°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 (except Gujarat State) during next 5 days.

### Cold Wave Warnings:

**Cold wave** conditions very likely in;

some parts of Punjab during 12<sup>th</sup>-15<sup>th</sup> and Uttar Pradesh during 12<sup>th</sup> - 15<sup>th</sup> December;

in isolated pockets over Haryana, Chandigarh during 12<sup>th</sup>-15<sup>th</sup>, Rajasthan, Chhattisgarh on 12<sup>th</sup> & 13<sup>th</sup>, Madhya Pradesh during 12<sup>th</sup>-16<sup>th</sup>, Gangetic West Bengal, Bihar and Jharkhand during 12<sup>th</sup>-14<sup>th</sup>, Delhi on 13<sup>th</sup> & 14<sup>th</sup>, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during 13<sup>th</sup>-16<sup>th</sup> December.

### Cold Day Warnings:

**Cold Day** conditions very likely in isolated pockets over Madhya Pradesh during 12<sup>th</sup> -14<sup>th</sup> December.

### Dense Fog Warnings:

**Dense fog conditions** very likely to prevail during late night/early morning hours in isolated pockets of Sub-Himalayan West Bengal & Sikkim, Bihar till 13<sup>th</sup>, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura till 17<sup>th</sup> December.

### Ground Frost Warnings:

**Ground Frost** conditions very likely in isolated pockets over on Uttar Pradesh on 12<sup>th</sup> & 13<sup>th</sup> December.

## iii. Weather conditions and forecast over Delhi/NCR during 12<sup>th</sup> to 15<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)

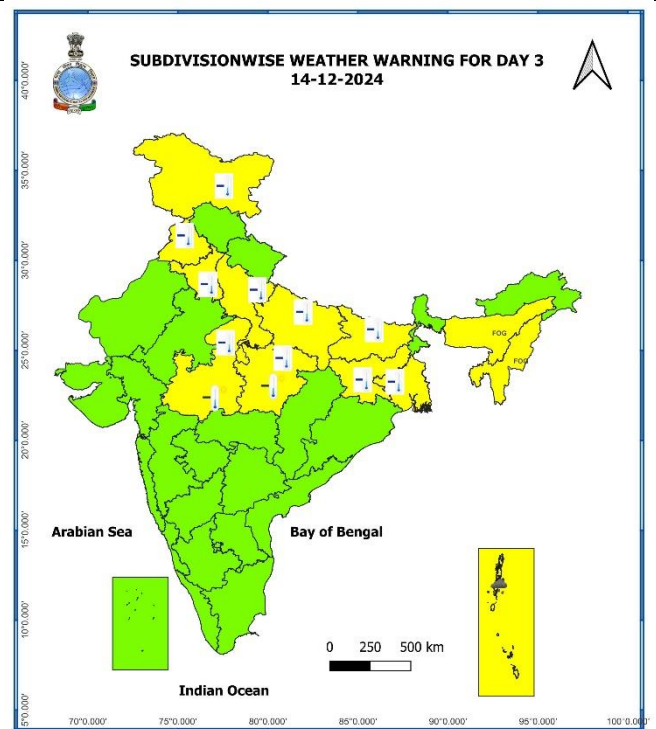
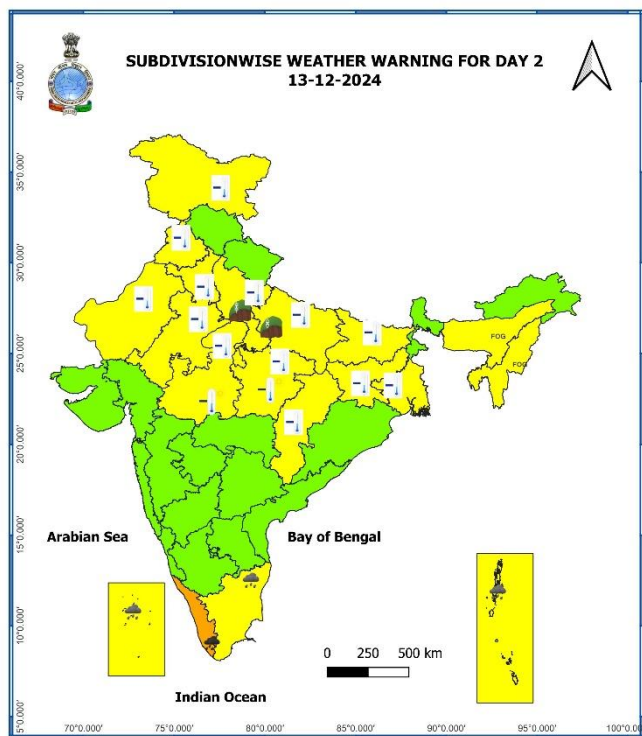
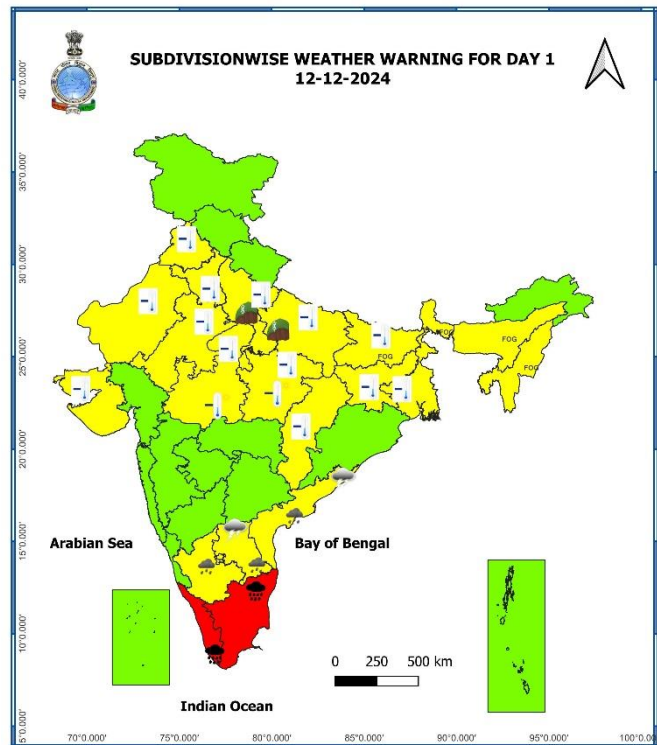
**For District wise warnings refer:** <https://mausam.imd.gov.in/responsive/districtWiseWarningGIS.php>

**Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 12.12.2024 (in cm):**

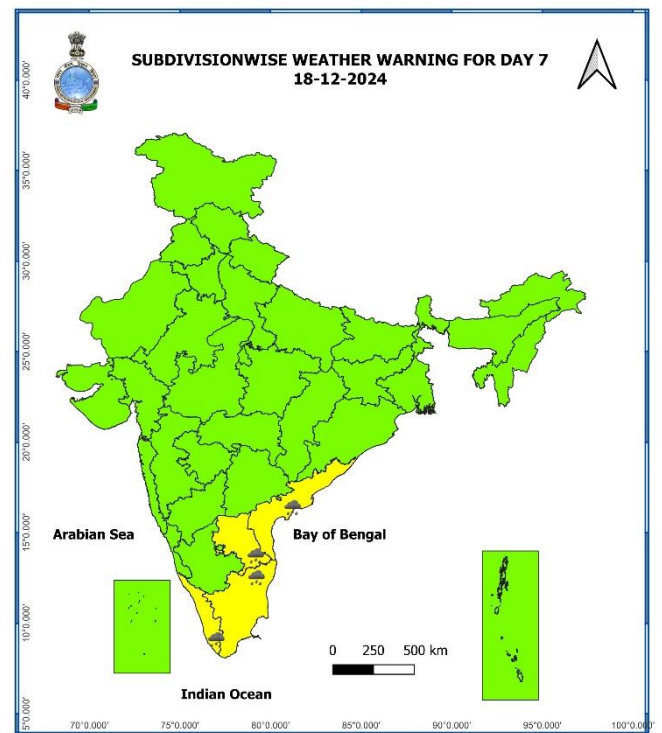
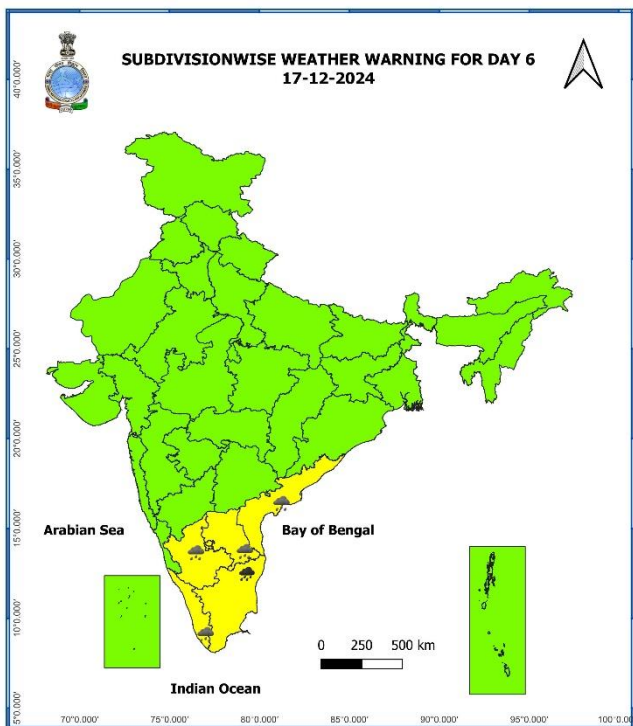
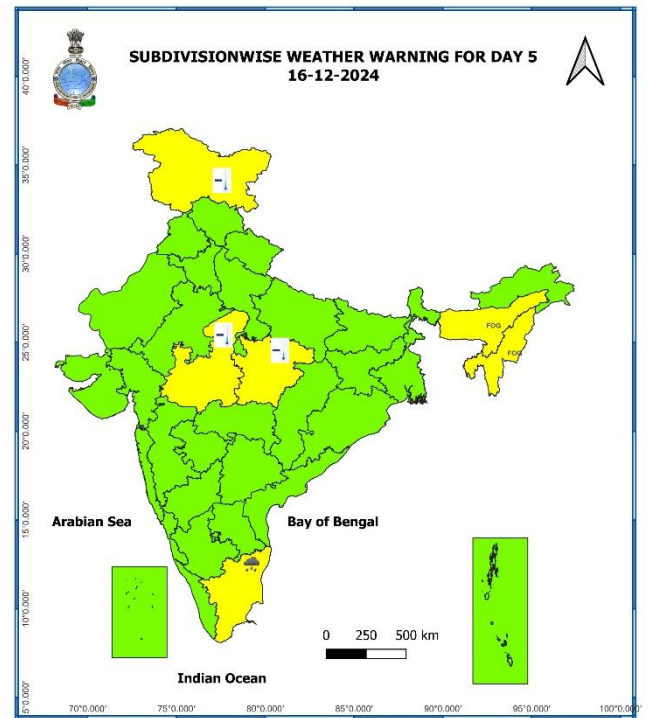
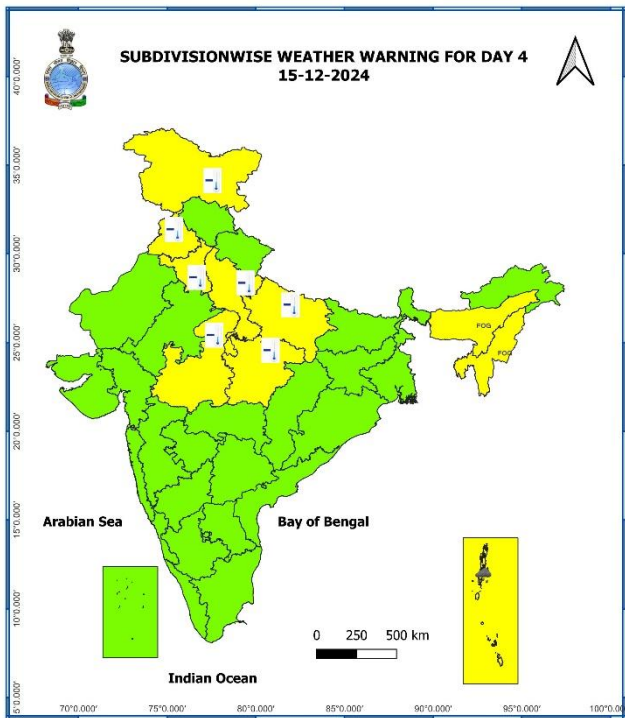
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Kodiayakarai (dist Nagapattinam) 18, Thalaigayyer (dist Nagapattinam) 15, Velankanni (dist Nagapattinam) 13, Maduranthagam (dist Chengalpattu) 12, Zone 06 Kolathur (dist Chennai), Zone 03 Madhavaram (dist Chennai), Zone 06 Perambur (dist Chennai), Ambathur Rev (dist Chennai) 11 each, Mayiladuthurai (dist Mayiladuthurai), Thirukuvalai (dist Nagapattinam), Red Hills (dist Tiruvallur), Zone 07 Ayapakkam (dist Chennai), Vedaranyam (dist Nagapattinam), Tirupoondi (dist Nagapattinam), Mayiladuthurai AWS (dist Mayiladuthurai), Zone 04 Tondiarpet (dist Chennai), Zone 07 Ambattur (dist Chennai), Zone 01 Thiruvottiyur (dist Chennai), Poonamalle ARG (dist Tiruvallur) 10 each, Zone 03 Puzhal (dist Chennai), Zone 02 Manali New Town (dist Chennai), Manalmedu (dist Mayiladuthurai), Jaya Engg College AWS (dist Tiruvallur), Parangipettai (dist Cuddalore), Thiruthuraipoondi (dist Thiruvarur), CD Hospital Tondiarpet (dist Chennai), Karaikal (dist Karaikal), Zone 18 Aminjikarai (dist Chennai), Zone 05 Basin bridge (dist Chennai), Poonamallee (dist Tiruvallur), Nagapattinam (dist Nagapattinam), Zone 08 Anna Nagar West (dist Chennai), Ayanavaram Taluk Office (dist Chennai) 9 each, Tindivanam (dist Villupuram), Zone 05 Chennai central (dist Chennai), Chembarambakkam ARG (dist Tiruvallur), Karaikal AWS (dist Karaikal), Sembanarkoil PWD (dist Mayiladuthurai), Perambur (dist Chennai), Kurinjipadi (dist Cuddalore), Zone 01 Kathivakkam (dist Chennai), Puzhal ARG (dist Tiruvallur), Zone 02 D15 Manali (dist Chennai), Tiruvarur (dist Thiruvarur), Adiramapattinam (dist Thanjavur), Srimushnam (dist Cuddalore), Chennai(N) AWS (dist Chennai), Tiruvarur AWS (dist Thiruvarur) 8 each, Anna University (dist Chennai), Avudayarkoil (dist Pudukkottai), Kuppanatham (dist Cuddalore), Sirkali (dist Mayiladuthurai), Virudachalam (dist Cuddalore), Chennai (N) (dist Chennai), Chennai Collector Office (dist Chennai), ACS Medical College ARG (dist Kancheepuram), Anna University ARG (dist Chennai), Mahabalipuram AWS (dist Chengalpattu), Chidambaram (dist Cuddalore), Gummidipoondi (dist Tiruvallur), LMOIS Kolapakkam ARG (dist Chengalpattu), Virdhachalam KVK AWS (dist Cuddalore), Budalur (dist Thanjavur), Lower Anaicut (dist Thanjavur), Zone 11 Maduravoyal (dist Chennai), Orthanad (dist Thanjavur), Tiruttani (dist Tiruvallur), Kothavacherry (dist Cuddalore), Tarangambadi (dist Mayiladuthurai), Sethiathope (dist Cuddalore), Vanamadevi (dist Cuddalore), Bahour (dist Puducherry), Mannargudi (dist Thiruvarur), Zone 11 Valasaravakkam (dist Chennai), Muthupet (dist Thiruvarur), Cuddalore Collector Office (dist Cuddalore) 7 each;
- ❖ **Royalaseema:** Satyavedu (dist Tirupati) 8, Tirupati Aero (dist Tirupati) 7.

7 Days Rainfall Forecast								
S. No.	Subdivision	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec	18-Dec
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	SCT	WS	WS	WS	FWS	FWS	FWS
2	ARUNACHAL PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
3	ASSAM & MEGHALAYA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	DRY	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	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
16	JAMMU & KASHMIR AND LADAKH	ISOL	DRY	DRY	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	SCT	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
31	TAMILNADU PUDUCHERRY & KARAIKAL	WS	FWS	ISOL	ISOL	ISOL	SCT	SCT
32	COASTAL KARNATAKA	ISOL	SCT	DRY	DRY	DRY	SCT	FWS
33	NORTH INTERIOR KARNATAKA	DRY	DRY	ISOL	DRY	DRY	ISOL	SCT
34	SOUTH INTERIOR KARNATAKA	FWS	ISOL	DRY	DRY	DRY	FWS	SCT
35	KERALA & MAHE	WS	FWS	SCT	ISOL	SCT	WS	FWS
36	LAKSHADWEEP	WS	WS	FWS	SCT	SCT	FWS	WS

- 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 12<sup>th</sup> Dec. to 15<sup>th</sup> Dec. 2024) over Delhi/NCR****Past Weather:**

There has been a slight fall in minimum temperature over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 20 to 24°C and 04 to 06°C respectively. The minimum temperature was below normal upto 3 to 5°C and maximum temperature was below normal upto 1 to 5°C over most places. Mainly smog/ mist condition with predominant surface wind from northwest direction with wind speed reaching 10 to 14 kmph prevailed on 11.12.2024. Mainly clear sky condition with wind speed less than 08 kmph northwest direction prevailed over the region in the forenoon today.

**Weather Forecast:**

**12.12.2024:** Mainly clear sky. The predominant surface wind is likely to be northwest direction with wind speed less than 14 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.

**13.12.2024:** Mainly clear sky with cold wave conditions at isolated places. 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 14 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.

**14.12.2024:** Mainly clear sky with cold wave conditions at isolated places. 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.

**15.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with wind speed less than 06 kmph during morning hours. Smog/mist is likely in the morning. The wind speed will increase thereafter becoming 08-10 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 04 kmph from northwest direction during evening and night. Smog/mist is likely in the evening/night.

**Impact & Action Suggested due to**

- ❖ **Isolated extremely heavy rainfall** very likely over Tamil Nadu & Kerala on 12<sup>th</sup> December.
- ❖ **Isolated heavy to very heavy rainfall** over Kerala on 13<sup>th</sup> and Tamil Nadu on 17<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/severe cold wave conditions over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Haryana, Chandigarh, Delhi, Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Gangetic West Bengal, Bihar and Jharkhand**

- 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

- Drain out excess water from rice, sugarcane, cotton, turmeric, vegetables, and other standing crop fields, as well as coconut and banana orchards in **Tamil Nadu** and from rice, coffee, banana, coconut, arecanut, ginger, pepper, cardamom and other standing crops in **Kerala**.
- Provide adequate drainage facilities for removal of excess water from standing crop fields and fruit orchards in **South Interior Karnataka** and **Andaman & Nicobar Islands**.
- 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 **Punjab, Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Gangetic West Bengal, Bihar** and **Jharkhand**, apply light and frequent irrigation to the standing crops in the evening to protect the crops from low temperature stress or cold injuries. 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.
- Check and disinfect poultry houses to prevent disease outbreaks due to dampness.
- Check the huts and other weaker structures before relocation of the animals.
- Remove excess water from fish ponds to avoid losses of fish (if feasible).
- To protect from cold, keep cattle inside the sheds during night and provide dry bedding. Also keep the chicks warm by providing artificial light in the poultry sheds.

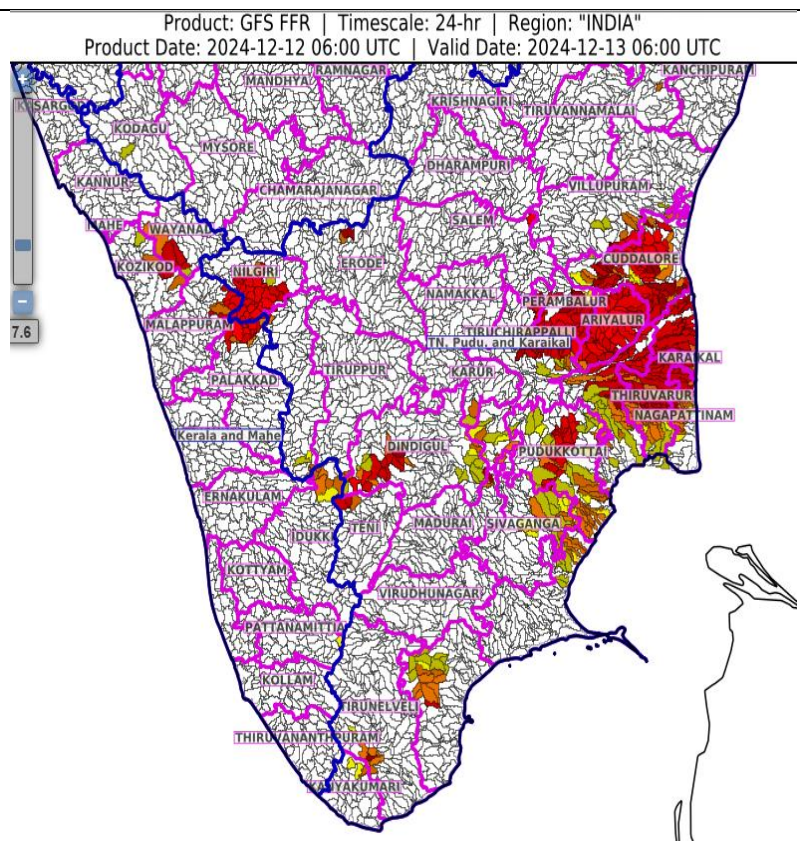
### FLASH FLOOD GUIDANCE:

24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 13-12-2024:

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

Tamil Nadu - Puducherry & Karaikal - Karaikal, Puducherry, Ariyalur, Cuddalore, Dindigul, Kanyakumari, Nagapattinam, Nilgiri, Pudukkottai, Thanjavur, Tiruvarur and Tirunelveli districts.

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

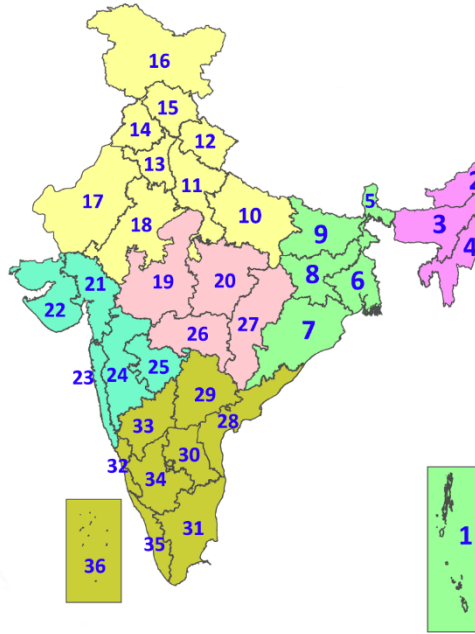


## Legends & abbreviations:

- ❖ **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".  
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  
(Service to the Nation since 1875)



## 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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