

# **Government of India Ministry of Earth Sciences India Meteorological Department**



**Press Release** Date: 22<sup>nd</sup> November, 2024

Time of Issue: 1315 hours IST

Subject: A low pressure area is likely to form over the southeast Bay of Bengal around 23rd November. Under its influence, isolated heavy to very heavy spell over south Peninsular India during the 26th - 28th November, 2024.

- i. Rainfall Forecast and warning over the country: Realised weather during past 24 hours till 0830 hours IST of today (Annexure I)
  - **Dense fog conditions** observed over Rourkela (Odisha) at 0830 hrs IST of today, the 22<sup>nd</sup> November 2024.

## **Weather Systems:**

- The upper air cyclonic circulation now lies over east Equatorial Indian Ocean & adjoining south Andaman Sea extending upto mid tropospheric levels. Under its influence a **low pressure area** is likely to form over southeast Bay of Bengal around 23rd November. Thereafter, it is likely to move west-northwestwards and intensify into a **depression** over central parts of south Bay of Bengal during subsequent 2 days.
- ❖ A **trough** runs from the cyclonic circulation over east Equatorial Indian Ocean and adjoining south Andaman Sea to Gulf of Mannar in lower & middle tropospheric levels tilting southwards with height.
- ❖ A Western disturbance seen as a trough runs roughly along Long. 65°E to the north of Lat. 30°N in lower tropospheric levels.

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

- ✓ Light to moderate rainfall at isolated places accompanied with isolated thunderstorm & lightning very likely over Kerala & Mahe on 26th and Coastal Andhra Pradesh & Yanam on 25th & 26th November.
- ✓ Light to moderate rainfall at many places over Andaman & Nicobar Islands during the week; Light to moderate rainfall at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 22<sup>nd</sup> November.
- ✓ Isolated **very heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal during 26th- 28th, Kerala & Mahe on 28th November.
- ✓ Isolated **heavy rainfall** very likely over Nicobar Islands during 22<sup>nd</sup> 25<sup>th</sup>, Tamil Nadu, Puducherry & Karaikal on 25th, Kerala & Mahe on 26th & 27th and Coastal Andhra Pradesh & Yanam & Rayalaseema during 26th - 28th November.
- ✓ Isolated **Hailstorm** activity also very likely over Meghalaya on 22<sup>nd</sup> November.
- ✓ **Dense fog conditions** very likely to prevail during late night/morning hours in isolated pockets of Punjab, Haryana, Chandigarh between 22nd-24th, Uttarakhand on 23rd and 24th and Himachal Pradesh on 23rd to 26th November.

## ii. Temperature conditions and Forecast:

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

No significant change in minimum temperature observed over most parts of the country during past 24 hours. Minimum temperatures are **appreciably above normal** (3°C to 5°C) at isolated places over Bihar; **above normal** (1°C to 3°C) at isolated places over Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura. These are **appreciably below normal** (3°C to 5°C) at isolated places over East Rajasthan; **below normal** (1°C to 3°C) at isolated places over Madhya Pradesh, Gujarat state, Konkan & Goa, Madhya Maharashtra, Vidarbha, Telangana, North Interior Karnataka and Haryana-Chandigarh-Delhi and near normal over rest parts of the country. Today, **the lowest minimum temperature** of **8.0°C** is reported at Hissar (**Haryana**) and Sikar (**East Rajasthan**) over the plains of the country.

## **Forecast of temperature:**

- ❖ No large Change in minimum temperatures very likely over Western Himalayan region during next 2 days and gradual fall by 2-3°C thereafter.
- ❖ Rise in minimum temperatures by 1-2°C very likely over remaining parts of Northwest India during next 3 days and no large change thereafter.
- ❖ No large Change in minimum temperatures very likely over Central India during next 2 days and rise by 2-3°C thereafter.
- ❖ No large Change in minimum temperatures over East & West India during next 5 days.

## iii. Weather forecast over Delhi/NCR during 22nd November to 25th November 2024

## **Past Weather:**

There has been a slight rise in minimum and maximum temperatures over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 25 to 27°C and 09 to 12°C respectively. The maximum temperature was below normal by 01 to 03°C and the minimum temperature was near normal most places over the region. Mainly shallow fog/smog condition with predominant surface wind from northwest direction with wind speed reaching 06 to 10 kmph prevailed during daytime and calm wind during night time on 21.11.2024. Shallow fog reported at Safdarjung airport during early morning today. Safdarjung airport recorded lowest visibility 500 m during 0800 hours to 0830 hours IST which improved thereafter becoming 600m at 0900 hours IST. Palam airport recorded lowest visibility 800 m during 0730 hours to 0800 hours IST which improved thereafter becoming 1100 m at 0830 hours IST. Mainly smog condition with wind speed less than 08 kmph west direction prevailed over the region in the forenoon today.

## **Weather Forecast:**

**22.11.2024**: Mainly clear sky. The predominant surface wind is likely to be west direction with wind speed upto 04-08 kmph till evening. It would decrease thereafter becoming less than 06 kmph from variable direction during night. Smog/shallow fog is likely in the evening/night.

**23.11.2024**: Mainly clear sky. The predominant surface wind is likely to be from west direction with speed less than 04 kmph during morning hours. Smog/ moderate fog is likely in the morning. The wind speed will increase thereafter becoming less than 06 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 04 kmph from northwest direction during evening and night. Smog/ shallow fog is likely in the evening/night.

**24.11.2024**: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 04 kmph during morning hours. Smog/ moderate fog is likely in the morning. The wind speed will gradually increase becoming 08-10 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 06 kmph from northwest direction during evening and night. Smog/ shallow fog is likely in the evening/night.

**25.11.2024**: 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/shallow to moderate fog 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 06 kmph from northwest directions during evening and night. Smog/ shallow fog is likely in the evening/night.

## **Fisherman warning:**

**Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over Comorin area and Gulf of Mannar on 22<sup>nd</sup>, 25<sup>th</sup> & 26<sup>th</sup>, southeast Bay of Bengal during 22<sup>nd</sup> -25<sup>th</sup>, South Andaman Sea during 22<sup>nd</sup>-26<sup>th</sup>, North Andaman Sea & southwest Bay of Bengal during 24<sup>th</sup>-26<sup>th</sup>, along and off Sri Lanka coast on 25<sup>th</sup> and Tamil Nadu coast on 26<sup>th</sup> November. Fisherman are advised not to venture into these areas.

# For more details, kindly refer National Weather Bulletin:

https://mausam.imd.gov.in/responsive/all\_india\_forcast\_bulletin.php

For District wise warnings refer: <a href="https://mausam.imd.gov.in/responsive/districtWiseWarningGIS.php">https://mausam.imd.gov.in/responsive/districtWiseWarningGIS.php</a>
For Fishermen warnings, kindly refer:

https://rsmcnewdelhi.imd.gov.in/uploads/archive/51/51 bdf575 GRAPHIC.png

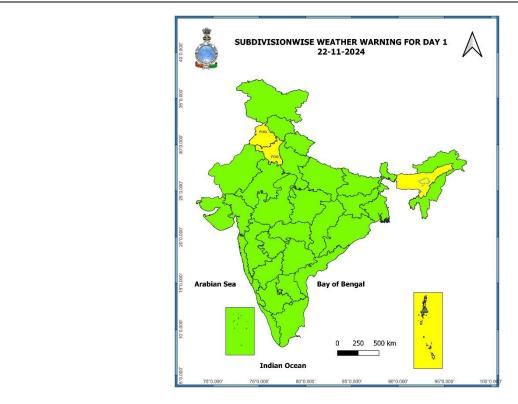
## **ANNEXURE I**

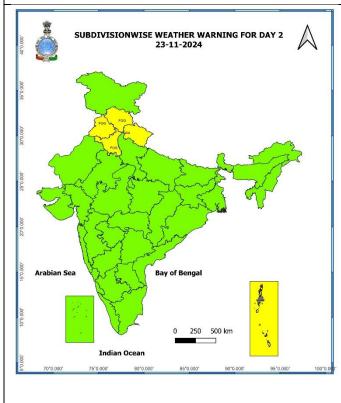
Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 22.11.2024 (in cm):

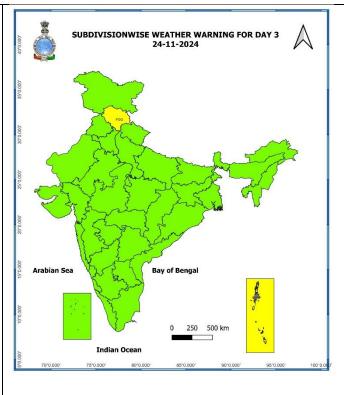
❖ Tamil Nadu, Puducherry & Karaikal: Ramanathapuram (dist Ramanathapuram), Tiruchendur (dist Thoothukudi) 6 each, Thangachimadam (dist Ramanathapuram), Mandapam (dist Ramanathapuram) 5 each.

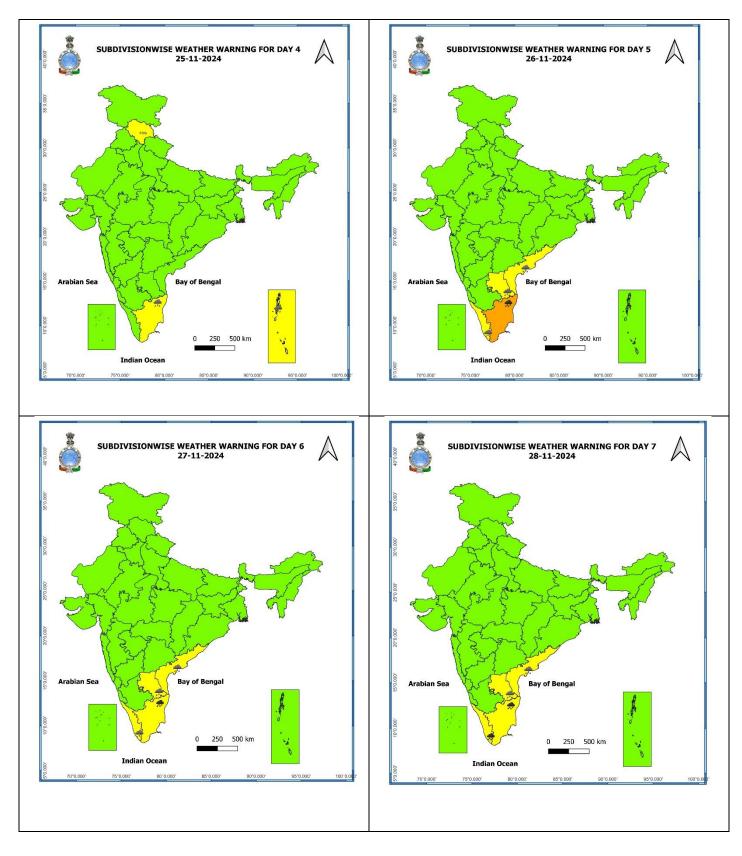
7 Days Rainfall Forecast									
		22-	23-	24-	25-	26-	27-	28-	
S.	Subdivision	Nov							
No.		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
1	ANDAMAN & NICOBAR ISLANDS	WS	WS	WS	WS	WS	WS	FWS	
2	ARUNACHAL PRADESH	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY	
3	ASSAM & MEGHALAYA	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY	
4	NAGALAND,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

• 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.

**Impact & Action Suggested due to very heavy rainfall over** Tamil Nadu, Puducherry & Karaikal during 26<sup>th</sup>-28<sup>th</sup>; Kerala & Mahe on 28<sup>th</sup> November, 2024.

## A. 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.

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

- ➤ In **Andaman & Nicobar Islands**, shift the harvested produce of rice, coconut and arecanut in safe place. In transplanted vegetable fields, keep the bunds open and provide drainage facilities.
- ➤ In **Meghalaya**, use hail nets or hail caps in fruit orchards to protect them from mechanical damage. Provide staking to vegetables and mechanical support to horticultural crops.

## **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.



35. केरल और माहे

36. लक्षद्वीप

#### राष्ट्रीय मौसम पूर्वानुमान केन्द्र भारत मौसम विज्ञान विभाग पृथ्वी विज्ञान मंत्रालय

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

35. Kerala & Mahe

36. Lakshadweep

# **LEGENDS**



# **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)





Sea State

Cyclone



#### **DEFINITION/CRITERIA** Heavy: 64.5 to 115.5 mm/cm \* Very Heavy: 115.6 to 204.4 mm/cm Rain/ Snow \* 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: 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** 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 Warm Night: When minimum temperature departure 4.5 °C to 6.4 °C Warm Night 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 $\leq$ -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 $\leq$ -6.5 °C Phenomenon of small droplets suspended in air and the horizontal visibility < 1km Moderate Fog: When the visibility between 500-200 metres Fog when the visibility between 50- 200 metres Dense Fog: v Very Dense Fog: when the visibility < 50 metres Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) Thunderstorm Dust/Sand An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind. Ice deposits on ground Frost Air temperature ≤4°C ( over Plains) A strong wind that rises suddenly, lasts for atleast 1 minute. Moderate: Wind speed 52-61 kmph Squall 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

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

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

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)
Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)

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