

21st November, **2024**.

Government of India Ministry of Earth Sciences India Meteorological Department



Press Release Date: 21st November, 2024 Time of Issue: 1245 hours IST

Subject: i) Heavy rainfall likely at isolated places over south Tamil Nadu and south Kerala today, the

ii) A low pressure area is likely to form over the southeast Bay of Bengal around $23^{\rm rd}$ November and cause isolated heavy to very heavy spell over south Peninsular India on the $26^{\rm th}$ & $27^{\rm th}$ November, 2024.

- Rainfall Forecast and warning over the country:
 Realised weather during past 24 hours till 0830 hours IST of today (Annexure I)
 - **Heavy to very heavy rainfall with extremely heavy falls** observed at isolated places over south Tamil Nadu, Puducherry & Karaikal.
 - **Dense fog** conditions observed over East Uttar Pradesh (Visibility at 0630 hrs IST: Kanpur-0 meter).

Weather Systems:

- ❖ An upper air cyclonic circulation has formed over Equatorial Indian Ocean off Sumatra coast and adjoining South Andaman Sea in lower tropospheric level at 0830 hours IST of today, the 21st November, 2024. 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 **cyclonic circulation** lies over Comorin area & neighbourhood in lower tropospheric levels.

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

- ✓ Light to moderate rainfall at a few places accompanied with isolated thunderstorm & lightning very likely over Lakshadweep on 21st, Tamil Nadu, Puducherry & Karaikal on 21st & 25th, and Kerala & Mahe on 25th 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 21st & 22nd November.
- ✓ Isolated **heavy to very heavy rainfall** very likely over south Tamil Nadu on 21st, 25th-27th, Coastal Andhra Pradesh & Yanam on 26th & 27th November.
- ✓ Isolated **heavy rainfall** very likely over Nicobar Islands during 21st 24th, Kerala & Mahe on 21st, 26th & 27th and Rayalaseema on 26th & 27th November.
- ✓ Isolated **Hailstorm** activity also very likely over Manipur on 21st and Meghalaya on 21st & 22nd November.
- ✓ **Dense fog conditions** very likely to prevail in isolated pockets of East Uttar Pradesh in late night of 21st /early morning of 22nd & Punjab, Haryana, Chandigarh during late night of 22nd to early morning of 24th and Himachal Pradesh during late night of 23rd to early morning of 26th November.
- ✓ **Shallow to moderate fog conditions** very likely to prevail in isolated pockets of North India during next 2 days.

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 and Nagaland, Manipur, Mizoram & Tripura; **above normal (2°C to 3°C)** at isolated places over East Uttar Pradesh, Gujarat state, Gangetic West Bengal and Kerala & Mahe. These are **appreciably below normal (3°C to 5°C)** at isolated places over East Rajasthan, Madhya Pradesh, Madhya Maharashtra, Chhattisgarh, Odisha, Telangana, Coastal Andhra Pradesh & Yanam and North Interior Karnataka; it is near normal over rest parts of the country. Today, **the lowest minimum temperature** of **8.1°C** is reported at **Ridge (Delhi)** over the plains of the country.

Forecast of temperature:

❖ No significant change in minimum temperatures over most parts of the country during next 5 days.

iii. Weather forecast over Delhi/NCR during 21st November to 24th November 2024

Past Weather:

There has been a slight fall in minimum temperatures over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 24 to 27°C and 08 to 12°C respectively. The maximum temperature was near normal and the minimum temperature was below normal by 1 to 2°C 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 20.11.2024. Shallow fog reported at Safdarjung airport during early morning today. Safdarjung airport recorded lowest visibility 600 m during 0700 hours to 0900 hours IST which improved thereafter becoming 700m at 0930 hours IST. Mainly smog condition with wind speed less than 08 kmph southwest direction prevailed over the region in the forenoon today.

Weather Forecast:

- **21.11.2024**: Mainly clear sky. The predominant surface wind is likely to be west direction with wind speed upto 06-08 kmph till evening. It would decrease thereafter becoming less than 06 kmph from northwest direction during night. Smog/shallow fog is likely in the evening/night.
- **22.11.2024**: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 06 kmph during morning hours. Smog/ shallow to moderate fog is likely in the morning. The wind speed will increase thereafter becoming less than 10 kmph from west 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.
- **23.11.2024**: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 06 kmph during morning hours. Smog/ shallow to moderate fog is likely in the morning. The wind speed will gradually increase becoming 08-10 kmph from west 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.
- **24.11.2024**: 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 along and off south Kerala coast and Lakshadweep area on 21st November, South Andaman Sea during 21st-24th November, Comorin area and Gulf of Mannar on 21st & 25th November, southeast Bay of Bengal during 21st-25th November and southwest Bay of Bengal during 24th & 25th 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: https://mausam.imd.gov.in/responsive/districtWiseWarningGIS.php
For Fishermen warnings, kindly refer:

https://rsmcnewdelhi.imd.gov.in/uploads/archive/51/51_bdf575_GRAPHIC.png

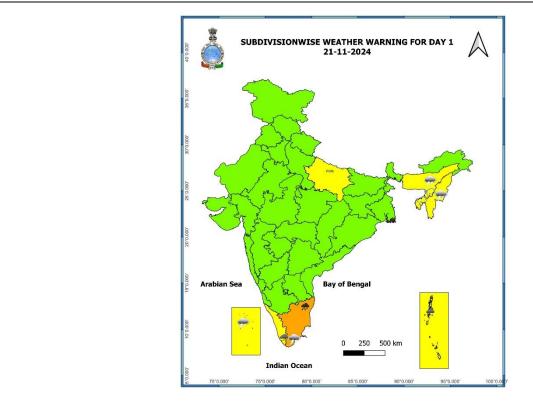
ANNEXURE I

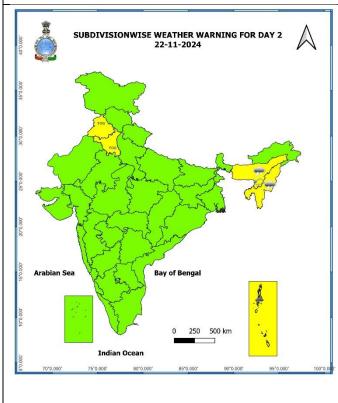
Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 21.11.2024 (in cm):

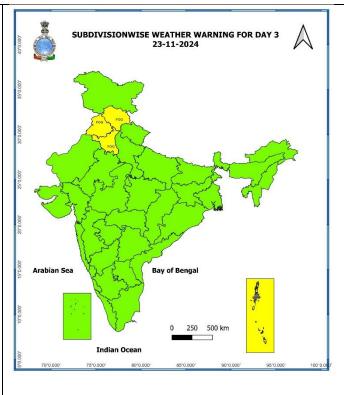
❖ South Tamil Nadu, Puducherry & Karaikal: Rameswaram (dist Ramanathapuram) 44, Thangachimadam (dist Ramanathapuram) 34, Pamban (dist Ramanathapuram) 28, Mandapam (dist Ramanathapuram) 27, Kodiayakarai (dist Nagapattinam) 17, Ramanathapuram (dist Ramanathapuram) 13, Vedaranyam (dist Nagapattinam) 12, Velankanni (dist Nagapattinam) 11, Tirupoondi (dist Nagapattinam) 10, Nagapattinam (dist Nagapattinam), Karaikal (dist Karaikal), Thiruthuraipoondi (dist Thiruvarur) 9 each, Thirukuvalai (dist Nagapattinam) 8, Tiruvarur (dist Thiruvarur), Kadaladi (dist Ramanathapuram), Karaikal AWS (dist Karaikal), Valinokam (dist Ramanathapuram) 7 each.

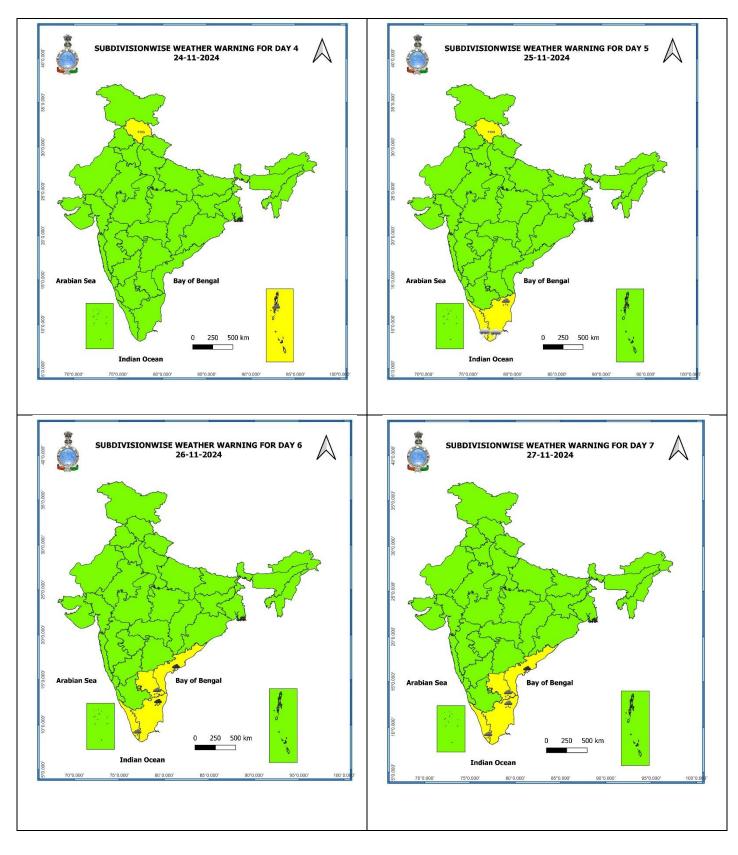
7 Days Rainfall Forecast									
S. No.	Subdivision	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
1	ANDAMAN & NICOBAR ISLANDS	FWS	WS	WS	WS	WS	FWS	FWS	
2	ARUNACHAL PRADESH	ISOL	ISOL	ISOL	ISOL	ISOL	DRY	DRY	
3	ASSAM & MEGHALAYA	ISOL	ISOL	ISOL	DRY	DRY	DRY	DRY	
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	SCT	SCT	ISOL	ISOL	DRY	DRY	DRY	
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY	
6	GANGETIC WEST BENGAL	DRY							
7	ODISHA	DRY							
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	DRY	ISOL	DRY	DRY	DRY	DRY	
16	JAMMU & KASHMIR AND LADAKH	DRY	ISOL	FWS	ISOL	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	ISOL	ISOL	SCT	SCT	
29	TELANGANA	DRY							
30	RAYALASEEMA	DRY	DRY	DRY	ISOL	ISOL	SCT	SCT	
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	ISOL	ISOL	ISOL	ISOL	FWS	FWS	
32	COASTAL KARNATAKA	DRY							
33	NORTH INTERIOR KARNATAKA	DRY							
34	SOUTH INTERIOR KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	ISOL	
35	KERALA & MAHE	FWS	SCT	ISOL	ISOL	SCT	FWS	WS	
36	LAKSHADWEEP	FWS	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, Coastal Andhra Pradesh & Yanam on 21st & 26th; Coastal Andhra Pradesh & Yanam on 26th & 27th 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 to very 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 **Tamil Nadu**, drain out excess water from rice, cotton, sugarcane, turmeric and vegetable fields, coconut and banana orchards. Undertake propping in sugarcane. Provide mechanical support to banana plants to prevent lodging.
- ➤ In **Kerala**, provide proper drainage in rice, ginger and vegetable fields. Provide mechanical support to banana plants and strengthen the vegetable pandals.
- ➤ In **Andaman & Nicobar Islands**, shift the harvested produce of rice, coconut and areca nut in safe place. In transplanted vegetable fields, keep the bunds open and provide drainage facilities.
- ➤ In **Meghalaya** and **Manipur**, 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)