

Government of India
Earth System Science Organization
Ministry of Earth Sciences
India Meteorological Department

Press Release: Dated: 19th December, 2024

Subject: Current Weather Status and Extended range Forecast for the next two weeks (19th December 2024 to 01st January 2025)

1. Salient Observed Features for the week ending 18th December 2024:

- ❖ **Heavy rainfall spells over Tamil Nadu and neighbourhood during 12th – 15th December:** Under the influence of a Low Pressure Area over Gulf of Mannar & adjoining Comorin area during 13th December and over Lakshadweep & neighborhood for 14th -15th December with an associated upper air cyclonic circulation extended upto mid-tropospheric levels, **Heavy to very heavy rainfall with exceptionally heavy falls** observed at isolated places over Tamil Nadu on 13th December; **Heavy to very heavy rainfall with extremely heavy falls** at isolated places over Tamil Nadu on 14th December; **Heavy to very heavy rainfall** was observed at isolated places over Tamil Nadu, Puducherry & Karaikal on 12th and 15th December; Rayalaseema and Kerala on 13th December; Andaman & Nicobar Islands on 16th December. **Heavy rainfall** was recorded at isolated places over Rayalaseema on 12th December; Coastal Andhra Pradesh on 13th December; Andaman & Nicobar Islands on 15th December; Tamil Nadu, Andaman & Nicobar Islands on 18th December.
- ❖ **Dense to very Dense Fog** was observed in isolated pockets of Meghalaya and Odisha on 12th December. **Dense Fog** was observed in isolated pockets of Tripura, Assam and Sub-Himalayan West Bengal & Sikkim on 12th December; Tripura, Meghalaya and Odisha on 13th December; Manipur, Meghalaya on 14th December; Odisha, Meghalaya and Tripura on 15th December; Odisha, Assam and Meghalaya & Tripura on 16th December; Haryana on 17th December; Himachal Pradesh, Haryana, Delhi, Uttar Pradesh & Odisha on 18th December.
- ❖ **Cold wave to severe cold wave** conditions observed in isolated pockets over Haryana on 12th and 13th December; Punjab for 13th – 18th December; East Rajasthan and West Madhya Pradesh on 13th December; Madhya Pradesh on

14th December; Haryana-Chandigarh, Rajasthan, Madhya Pradesh, and Gangetic West Bengal on 15th December; Himachal Pradesh, Rajasthan, Haryana, West Madhya Pradesh, Chhattisgarh on 16th December; Himachal Pradesh, Haryana, East Rajasthan and East Madhya Pradesh on 17th December; Himachal Pradesh, Rajasthan on 18th December.

- ❖ **Weekly Average Minimum temperature** was below normal by 2-4°C over northern and central parts of India and near normal over northeast and south peninsular India during this week. **Weekly Average Maximum temperature** was near normal over most parts of the country during this week and above normal by 1-2°C along the Himalayan foothills during second half of this week.
- ❖ **Temperature Scenario:** The lowest minimum temperature of **-0.4°C** had been recorded at **Adampur IAF (Punjab)** on **13th December 2024** and the highest maximum temperature of **35.0°C** had been recorded at **Karwar (Coastal Karnataka)** on **12th December 2024** over the plains of the country during the week.
- ❖ **Analysis of weekly overall rainfall distribution during the week ending on 18th December and Post-monsoon Season's Rainfall Scenario (1st October – 18th December, 2024):** The country as a whole, the weekly cumulative All India Rainfall (for 12th to 18th December 2024) in % departure from its long period average (LPA) is 39%. All India Seasonal cumulative rainfall % departure during this year's postmonsoon Season Rainfall (01st October – 18th December 2024) is -8%. Details of the rainfall distribution over the four broad geographical regions of India are given in Table 1 and Meteorological sub-division-wise rainfall both for week and season are given in Annexure I & II respectively.

Table 1: Rainfall status (Week and season)

Region	Week			Season		
	12.12.2024 TO 18.12.2024			01.10.2024 TO 18.12.2024		
	Actual (mm)	Normal (mm)	Departure (%)	Actual (mm)	Normal (mm)	Departure (%)
EAST & NORTHEAST INDIA	0.0	3.3	-99%	150.7	153.3	-2%
NORTH WEST INDIA	0.2	5.6	-97%	8.1	42.6	-81%
CENTRAL INDIA	0.0	1.3	-100%	57.3	74.6	-23%
SOUTH PENINSULA	30.1	7.7	290%	304.4	266.1	14%
COUNTRY AS A WHOLE	6.0	4.3	39%	105.6	115.0	-8%

2. Large scale features:

- ❖ Currently, neutral El Niño-Southern Oscillation (ENSO) conditions are observed over the equatorial Pacific. The probability forecast indicates highest probability of La Niña conditions during the NDJ and DJF seasons.
- ❖ Above-average sea surface temperatures (SSTs) are currently seen across most of the Indian Ocean. Currently, neutral Indian Ocean Dipole (IOD) conditions are observed over the Indian Ocean. The latest MMCFS forecast indicates that the neutral IOD conditions are likely to continue for the next several months.
- ❖ The Madden Julian Oscillation (MJO) index is currently in Phase 6 with an amplitude > 1 . It is likely to continue to move in phase 6 during the week 1 with amplitude becoming < 1 . Thereafter, by the end of Week 1 it is likely to propagate across phase 7 with amplitude becoming > 1 , and will remain in Phase 7 for major part of week 2. During the latter part of week 2, it is likely to move across Phase 8 with amplitude > 1 .

3. Forecast for next two week

Weather systems & associated Precipitation during Week 1 (19th to 25th December,2024):

Weather Systems:

- ❖ Yesterday's well marked low pressure area over southwest Bay of Bengal lay over southwest adjoining westcentral Bay of Bengal at 0830 hours IST of today, the 19th December 2024. The system is likely to move nearly northwestwards towards north Tamil Nadu and south Andhra Pradesh coast during next 12 hours. Thereafter, it is likely to move nearly northwards along Andhra Pradesh coast in subsequent 24 hours.
- ❖ A Western disturbance seen as a trough in lower & middle tropospheric westerlies runs roughly along Long. 70°E to the north of Lat. 28°N with an induced cyclonic circulation in the lower levels over northwest Rajasthan and neighbourhood.

Precipitation for week 1 (19th to 25th December 2024) (Annexure-III):

- ❖ **Light to moderate rainfall** very likely at many places with **heavy rainfall** at isolated places over Coastal Andhra Pradesh on 19th & 20th December.
- ❖ **Light to moderate rainfall** very likely at a few places over North Tamil Nadu, Puducherry and Rayalaseema on 19th & 20th December.
- ❖ **Light to moderate rainfall** very likely at a few places over coastal Odisha and coastal Gangetic west Bengal on 20th & 21st, Nagaland, Manipur,

Mizoram & Tripura during 20th - 24th, Assam & Meghalaya during 21st - 23rd December.

Fishermen Warnings:

- ❖ Fishermen are advised not to venture into southcentral parts of south Arabian sea and adjoining equatorial Indian ocean & Gulf of Mannar on 19th; Westcentral Bay of Bengal during 19th-23rd; along and off Tamil Nadu coast on 19th & 20th; Andhra Pradesh coast during 19th-22nd; south Odisha coast on 21st & 22nd December.

Precipitation for week 2 (26th December 2024 to 01st January, 2025):

- ❖ A fresh and active Western disturbance is likely to affect Western Himalayan region & adjoining plains from 27th December 2024.
- ❖ Under its influence, scattered to fairly widespread with isolated heavy falls likely over northwest, central India during the first half of week 2.
- ❖ Overall, rainfall is likely to be above normal over northern parts of peninsular India and near normal over the rest of the country during the week (Annexure III).

Minimum temperature forecast and dense fog warning for Week 1 (19th to 25th December, 2024):

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

Minimum temperatures were **below 0°C** over most parts of Jammu, Kashmir & Ladakh; 1-5°C over Himachal Pradesh; **3-6°C** over major parts of Uttarakhand, Punjab, Haryana, Chandigarh, Delhi, Rajasthan; **6-12°C** over most parts of Uttar Pradesh, Bihar, Jharkhand & Central India. Today, **the lowest minimum temperature of 2.6°C** is reported at **Adampur IAF (Punjab)** over the plains of the country.

Minimum temperatures have fallen by 1-2°C over some parts of Jammu-Kashmir & risen by 2-3°C over many parts of East Madhya Pradesh, Chhattisgarh, Marathwada. Minimum temperatures are **appreciably below normal (-3°C to -5°C)** at isolated places over West Rajasthan, Madhya Pradesh and Assam & Meghalaya; **below normal (-1°C to -3°C)** at a few places over Maharashtra and Saurashtra & Kutch; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Haryana-Chandigarh-Delhi, Uttar Pradesh, Chhattisgarh and near normal over rest parts of the country.

Forecast of temperature:

- ❖ No significant change in minimum temperatures likely over Northwest India during next 3 days and gradual rise by about 2°C thereafter.
- ❖ No significant change in minimum temperatures likely over East India during next 4 days and gradual fall by 2-3°C thereafter.

- ❖ Rise in minimum temperatures by 2-3°C likely over Maharashtra & Central India during next 5 days.
- ❖ No significant change in minimum temperatures likely over Gujarat State during next 5 days.

Cold Wave Warnings:

- ❖ Cold wave to severe cold wave conditions very likely to prevail in some parts of Himachal Pradesh during 19th -23rd; in isolated pockets over West Rajasthan on 20th & 21st December.
- ❖ Cold wave conditions very likely in some parts of Punjab on 19th & 20th; in isolated pockets over Punjab on 21st & 22nd, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during 19th-25th, Haryana-Chandigarh during 19th-21st, West Rajasthan on 19th, 22nd & 23rd, Saurashtra & Kutch on 19th, Himachal Pradesh on 24th & 25th December.

Dense Fog Warnings:

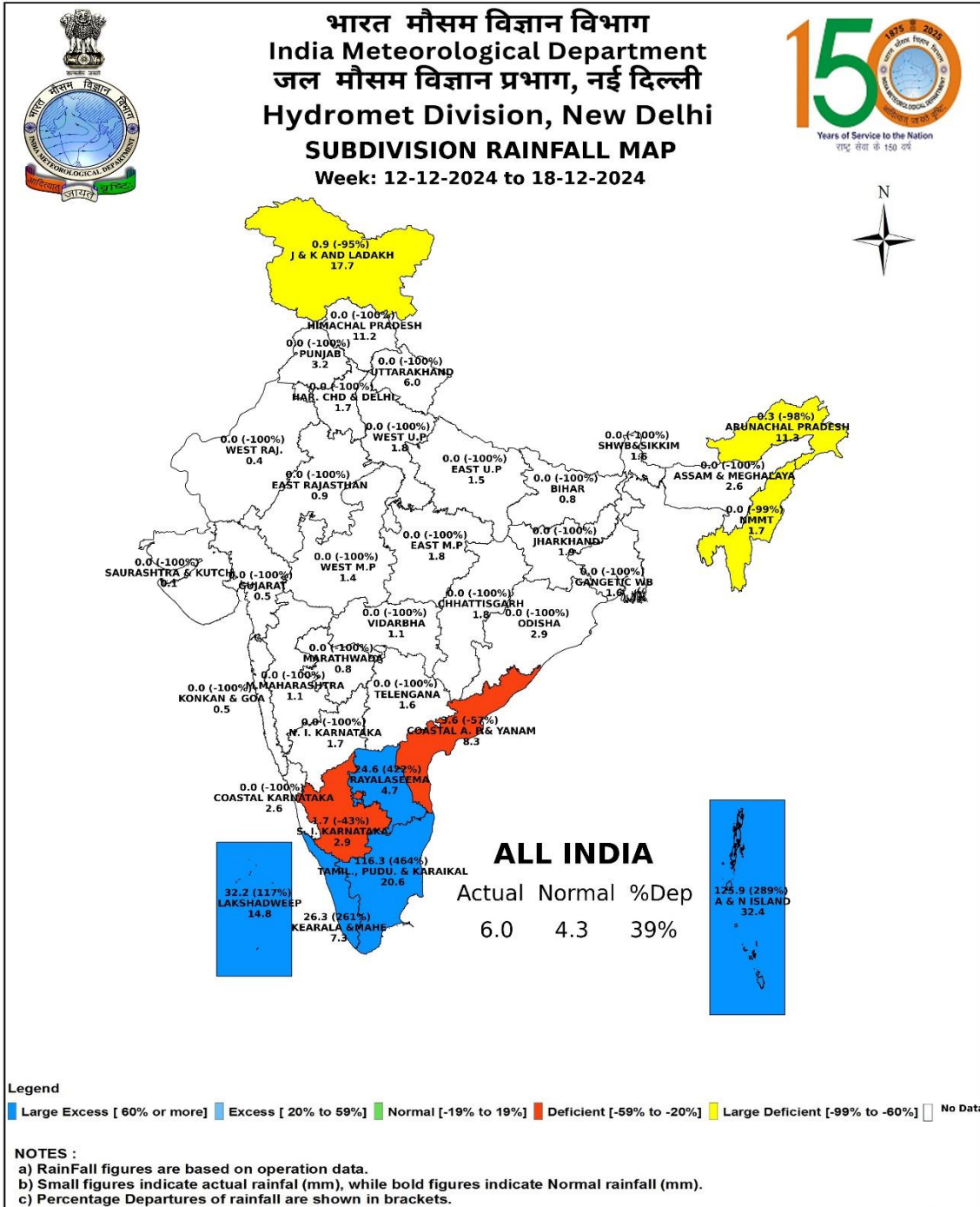
- ❖ Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Punjab, Haryana on 19th, 20th & during 22nd-24th, Uttar Pradesh till 20th, East Rajasthan & Jharkhand during 20th-22nd, West Bengal & Sikkim & Bihar on 21st & 22nd December.

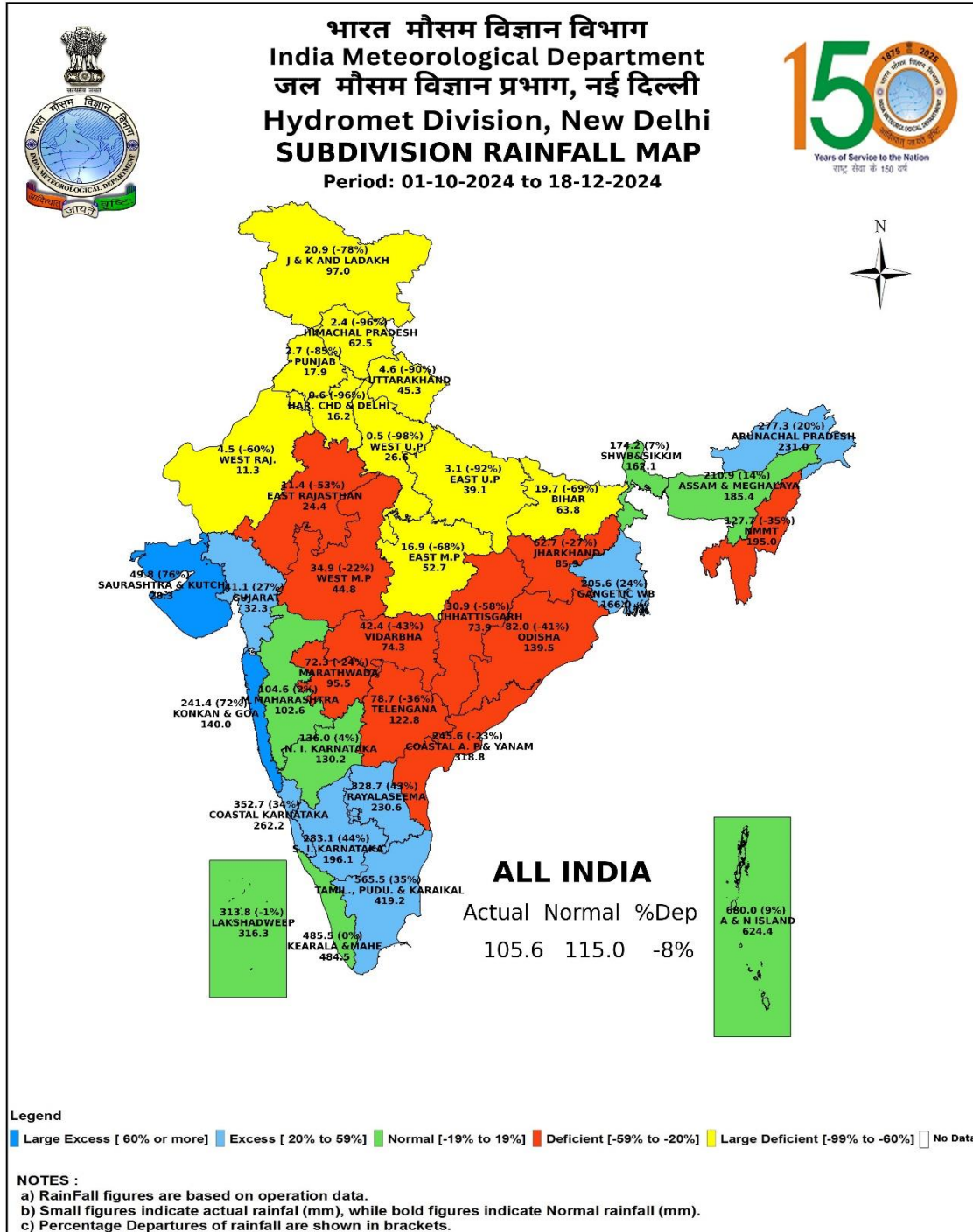
Ground Frost Warnings:

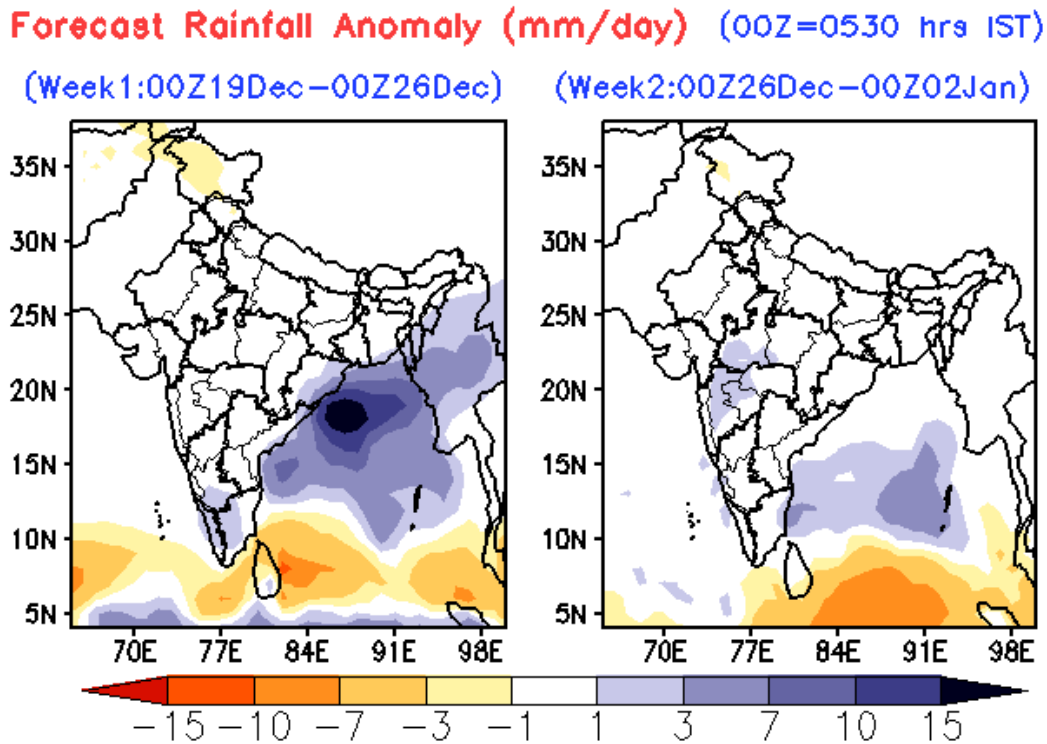
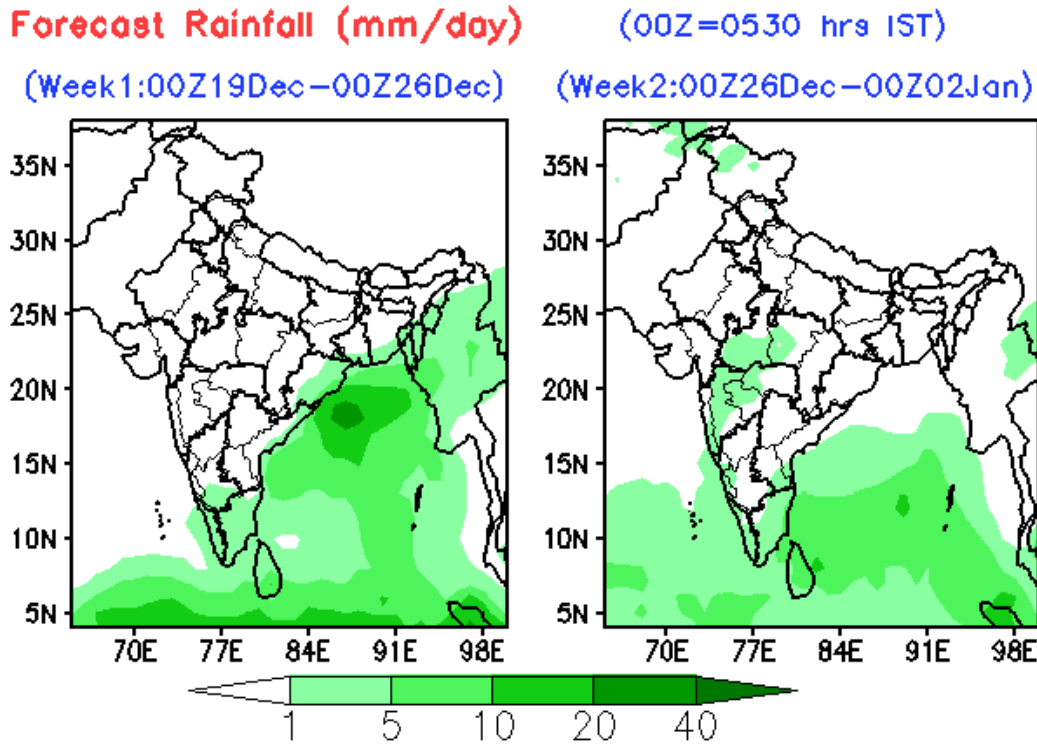
- ❖ **Ground Frost** conditions very likely in isolated pockets of Himachal Pradesh during 19th-23rd December.

Minimum temperature forecast and dense fog warning for Week 2 (26th December, 2024 to 01st January, 2025):

- ❖ Minimum temperatures are likely to rise by 1-3°C over most parts of northwest, central, and western parts of the country during the first half of week 2 and gradual fall thereafter. No significant change in the minimum temperatures is likely over the remaining parts of the country as compared to week 1.
- ❖ Minimum temperatures are likely to be below normal by 2-4°C over most parts of the Western Himalayan Region. They are likely to be below normal by 1-3 °C over parts of northwest, central & north-peninsular India during a few days of the week and near normal over parts of east and northeast India, and above normal by 1-2°C over parts of south Peninsular India during the week (Annexure IV).
- ❖ There is low probability of cold wave conditions at isolated pockets of north Rajasthan and adjoining Punjab, Haryana, Madhya Pradesh and Uttar Pradesh.





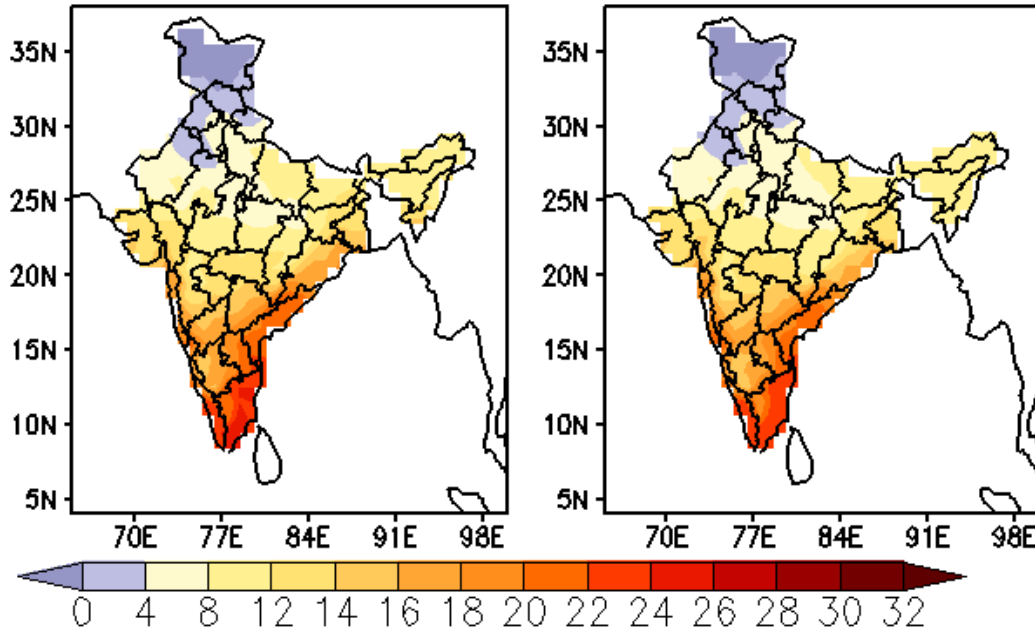


Extended range forecast of weekly distribution of rainfall in mm per day (top panel) and anomalies (lower panel) from IMD MME

MME Bias corrected forecast Tmin (Deg C)

(Week1: 20Dec-26Dec)

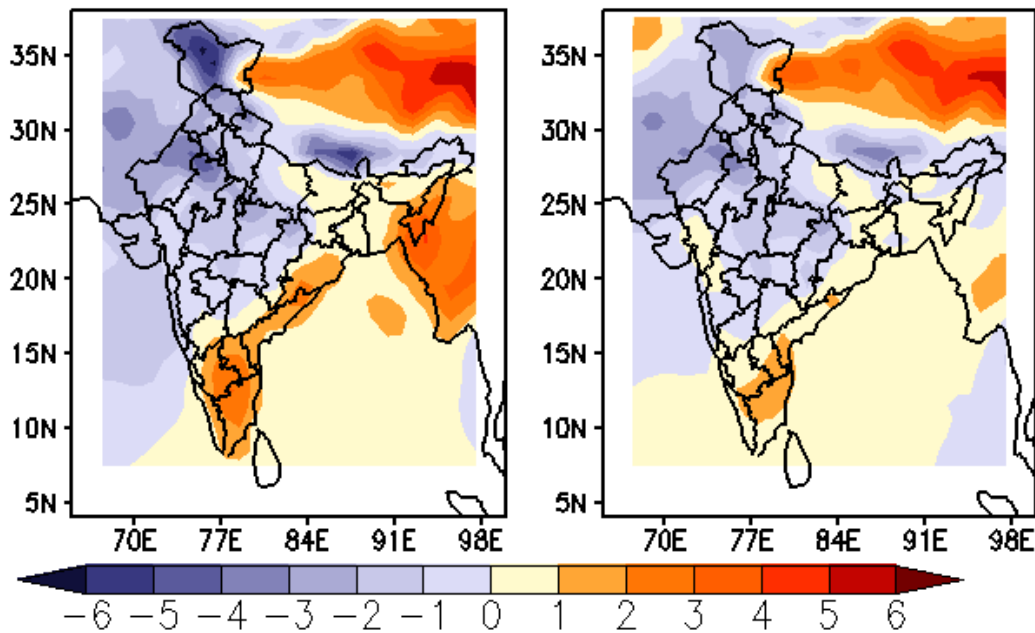
(Week2: 27Dec-02Jan)



MME forecast Tmin anomaly (Deg C)

(Week1: 20Dec-26Dec)

(Week2: 27Dec-02Jan)

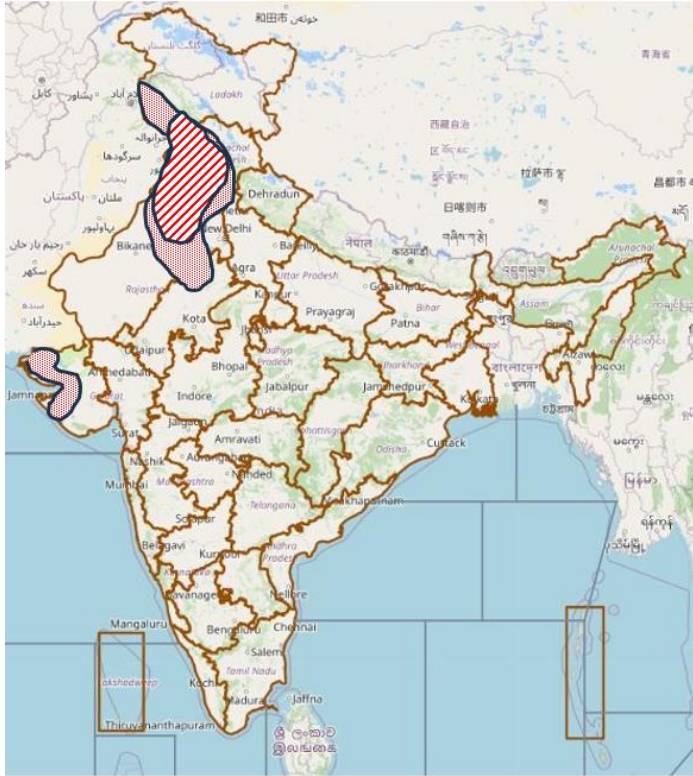


Extended range forecast of weekly distribution of Minimum Temperature in °C (top panel) and anomalies (lower panel) from IMD Bias Corrected Forecast

Cold Wave forecast during next 2 weeks

EXTENDED RANGE OUTLOOK FOR COLDWAVE

Week 1: 20.12.2024- 26.12.2024



Week2: 27.12.2024- 02.01.2025



PROBABILITY OF COLD WAVE

- LOW (1-33% PROBABILITY)**
- MODERATE (34-67% PROBABILITY)**
- HIGH (68-100% PROBABILITY)**

CONFIDENCE

