



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

Press Release: Dated: 28th Dec, 2023

Subject: Current Weather Status and Extended range Forecast for next two weeks (28 December, 2023 to 10 January, 2024)

1. Salient Observed Features for week ending 27 Dec 2023

- **Season's 1st Longer duration dense to very dense fog**(visibility <200 m) **spell observed across northwest and adjoining central India:** During morning hours, Dense to very dense fog (visibility: 25-200m) was observed in isolated pockets over Punjab on 21 and 22 Dec and then it further intensified and extended both spatially and temporally for longer duration during night-morning hours during the period of 22-23 Dec. On 23 Dec, it was observed across Punjab, Haryana and west Uttar Pradesh and then further extended on 25 Dec and it was observed over Punjab, Haryana, Delhi, north Rajasthan, north Madhya Pradesh and Uttar Pradesh and Jammu-Kashmir. **On 26-27 Dec, Dense to very dense fog** reported during night-morning hours, in most parts of Punjab, many parts of Haryana, Chandigarh & Delhi and some parts of Uttar Pradesh and in isolated pockets over Jammu & Kashmir, northwest Rajasthan and northwest Madhya Pradesh.
- **No significant rainfall reported over the country except light to moderate rainfall** at isolated places over Kerala and South Tamilnadu and Andaman & Nicobar Islands on 21 and 26 Dec.
- **No Significant cold wave reported over any parts of the country.**
- **Temperature Scenario:** The highest maximum temperature of 36.7 °C had been recorded at Honavar and Karwar (Coastal Karnataka) on 26th & 27th December 2023 respectively and the lowest minimum temperature of 2.8°C had been recorded at Ludhiana (Punjab) and Sikar (East Rajasthan) on 21st & 22nd December 2023 respectively over the plains of the country during the week.
- **Analysis of Weekly overall Rainfall distribution during the week ending on 27th Dec 2023 and monsoon Season's Rainfall Scenario (1 Oct-27 Dec 2023):** It shows for the country as a whole, the weekly cumulative All India Rainfall in % departure from its long period average (LPA) till week ending on 27 Dec 2023 was - 91%. All India Seasonal cumulative rainfall % departure during this year's **Post monsoon Season's Rainfall**

during **1 Oct to 27 Dec 2023** is -7% and over northwest India, it is +07%. 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 Annex I and II respectively.

Table 1: Rainfall status (Week and season)

Region	WEEK			SEASON		
	21.12.2023 TO 27.12.2023			01.10.2023 TO 27.12.2023		
	Actual	Normal	% Dep	Actual	Normal	% Dep
EAST & NORTH-EAST INDIA	0.3	3.7	-92%	175.3	157.7	11%
NORTH-WEST INDIA	0	5.1	-99%	52	48.6	7%
CENTRAL INDIA	0	0.8	-100%	59.3	75.6	-22%
SOUTH PENINSULA	1.2	4	-71%	237.6	271.7	-13%
Country as a whole	0.3	3.2	-91%	110.6	118.9	-7%

2. Large scale features

- Currently, the moderate to strong El Niño conditions are prevailing over equatorial Pacific Ocean and the sea surface temperatures (SSTs) are above average over most parts of the central and eastern equatorial Pacific Ocean. The latest MMCFS forecast indicates that moderate to strong El Niño conditions are likely to continue during the upcoming winter season. In addition to El Niño-Southern Oscillation (ENSO) conditions over the Pacific, other factors such as the Indian Ocean SSTs also influence on Indian climate. At present, strong positive IOD conditions are observed over the Indian Ocean and the latest MMCFS forecast indicates that positive IOD conditions are likely to weaken and turn to neutral by the end of this year.
- Madden Julian Oscillation (MJO) index is currently in phase 1 with amplitude greater than 1. It would move into phase 2 from 29th December and phase 3 from 3rd January, 2024 with amplitude remaining more than 1. Thus, MJO would support enhancement of convective activity over the Arabian Sea (AS) during week 1 and over the Bay of Bengal (BoB) during week 2. Madden Julian Oscillation (MJO) index is currently entered into phase 8 with amplitude less than 1. Both GEFSv12 and ECMWF forecasts suggest that it is likely to move across phases 8 with increasing amplitude and reach into phase 1 during first half of week 1 and remain in the same phase till

end of the week. Subsequently, the MJO index is likely to enter into phase 2 in the beginning of week 2 with amplitude greater than 1 and continue to be in the same phase during rest of the forecast period.

3. Forecast for next two week

Forecast for next two week

Weather systems & associated Precipitation during Week 1 (28 December, 2023 to 03 January, 2024) and Week 2 (04 to 10 January, 2024)

Weather systems & associated Precipitation during Week 1 (28 December, 2023 to 03 January, 2024)

Weather Systems and Forecast:

- Under the influence of a fresh Western Disturbance, light rainfall/snowfall is very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand on 30th & 31st December, 2023.
- Due to lower level easterly winds from Bay of Bengal, light isolated rainfall likely over Uttar Pradesh, Madhya Pradesh and Chhattisgarh during 31st December, 2023 to 02nd January, 2024.
- Under the influence of a fresh easterly wave, light to moderate isolated/scattered rainfall very likely over south Tamil Nadu and Kerala from 31st December to 03rd January, 2024.
- Isolated **heavy rainfall** also likely over south Tamil Nadu on 31st December, 2023 & 01st January, 2024.

Rainfall for week 2 (04 to 10 January, 2024):

- ✓ No active Western Disturbance likely to affect northwest India during the week.
- ✓ Light/moderate isolated to scattered rainfall is likely over south Peninsular India during the week. Isolated **heavy rainfall** is also likely over Tamilnadu and Kerala during some days of the week.
- ✓ Light isolated to scattered rainfall is likely over central India during some days of the week.
- ✓ Overall, rainfall activity is likely to be **above normal** over south Peninsular India & Central India and below normal over the rest regions(Annexure III) .

Minimum temperature, Cold Wave and Fog forecast & warning for Week 1 (28 December, 2023 to 03 January, 2024) and Week 2 (04 to 10 January, 2024)

- **Minimum Temperature** are in the range of 8-12°C over most parts of Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Madhya Pradesh, Rajasthan, Bihar and Jharkhand. These are 2-4°C above normal over many parts of Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Uttar Pradesh, Bihar & Jharkhand.
- No significant change in Minimum Temperatures likely over Northwest & East India during most days of the week.

- No significant change in Minimum Temperatures likely over central India during next 24 hours and rise by 2-3°C thereafter for subsequent 3-4 days.
- No significant cold wave likely over any parts of the country during the week (**Annexure IV and V**).

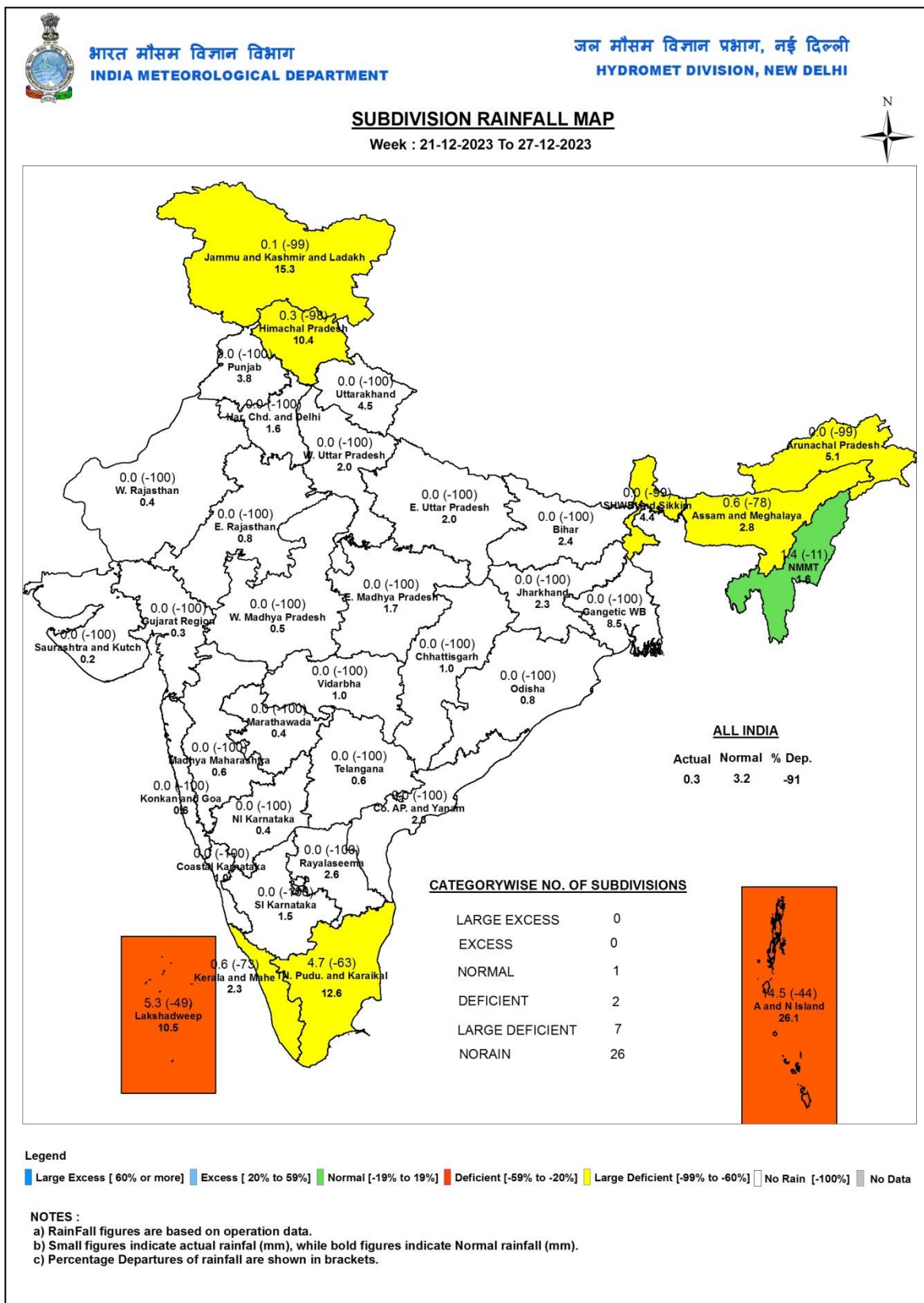
Dense fog and Cold day warning:

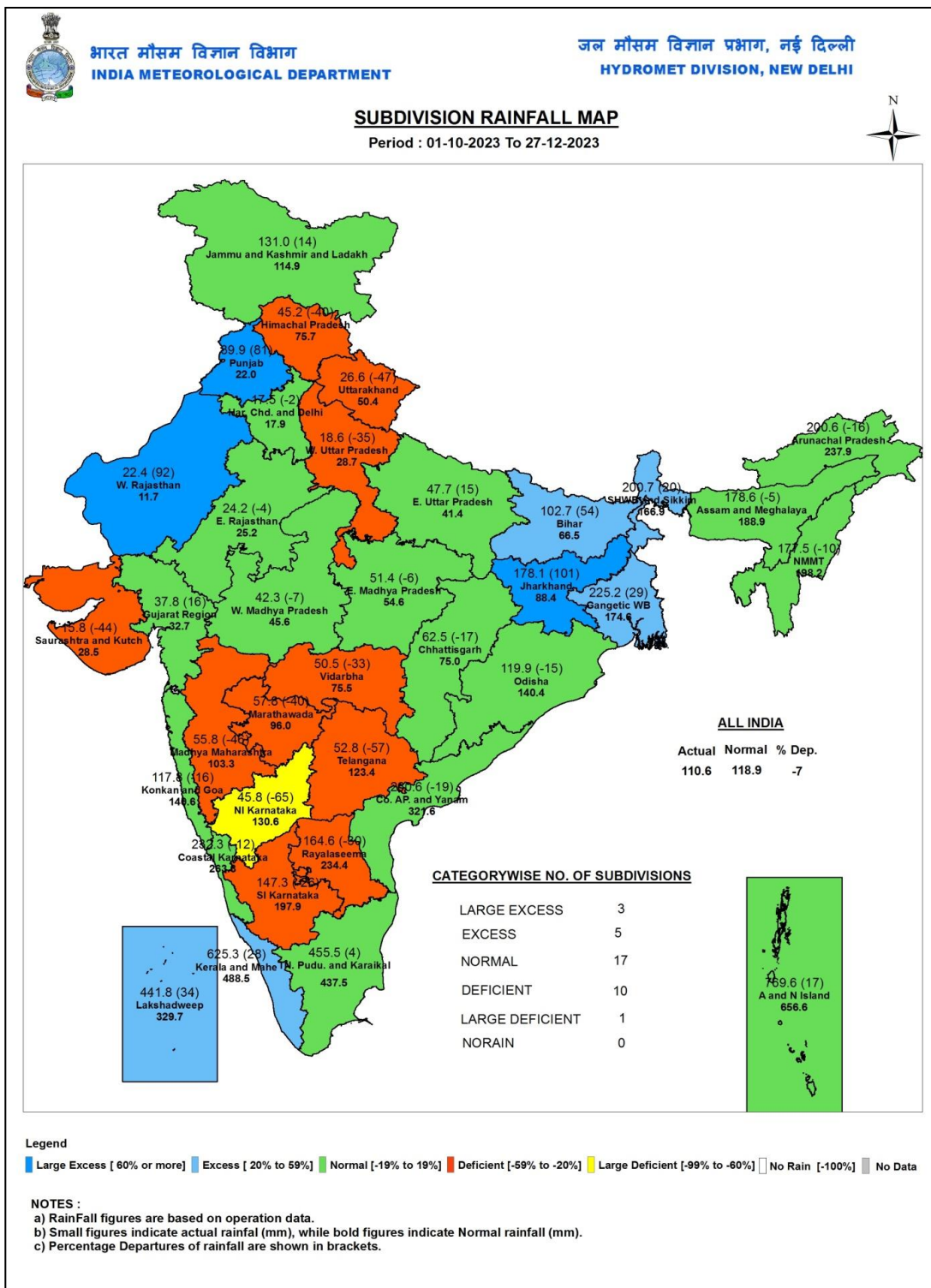
- **Dense to very dense fog** conditions very likely to continue during night/morning hours in many parts of Punjab, Haryana, Chandigarh, Delhi and some parts of Uttar Pradesh during 28th night to 30th morning and in some parts for subsequent 3-4 days. Dense fog conditions are likely to improve gradually from 31st December morning.
- **Dense Fog** conditions very likely to continue during morning hours in isolated pockets over north Rajasthan, north Madhya Pradesh on 29th & 30th; Odisha during 29th - 31st; Bihar on 30th & 31st; Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura of 29th December, 2023 to 01st January, 2024.
- **Cold Day conditions** very likely in some parts over Punjab, Haryana-Chandigarh-Delhi and West Uttar Pradesh and in isolated pockets over East Uttar Pradesh on 28th & 29th December.

Minimum temperature, Cold Wave and Fog forecast & warning for Week 2 (04 to 10 January, 2024):

- ✓ **Minimum Temperatures** are likely fall gradually by 2-4°C over most parts of the country as compared to week 1. It is likely to be below normal by 1-3°C over most parts of the country except Jammu & Kashmir, Gujarat and South Peninsular India, where these are likely to be above normal by 1-3°C.
- ✓ **Dense Fog in isolated pockets is also likely over Punjab, Haryana, Chandigarh & Delhi and Uttar Pradesh during some Days of the week.**
- ✓ **There is high possibility of cold wave in isolated pockets of Punjab, Haryana, Chandigarh & Delhi and extreme north Rajasthan and moderate probability over Uttar Pradesh and rest parts of north Rajasthan (Annexure V).**

Legends: Heavy Rain: 64.5 to 115.5 mm **Very Heavy Rain:** 115.6 to 204.4 mm, **Extremely Heavy Rain**> 204.4 mm



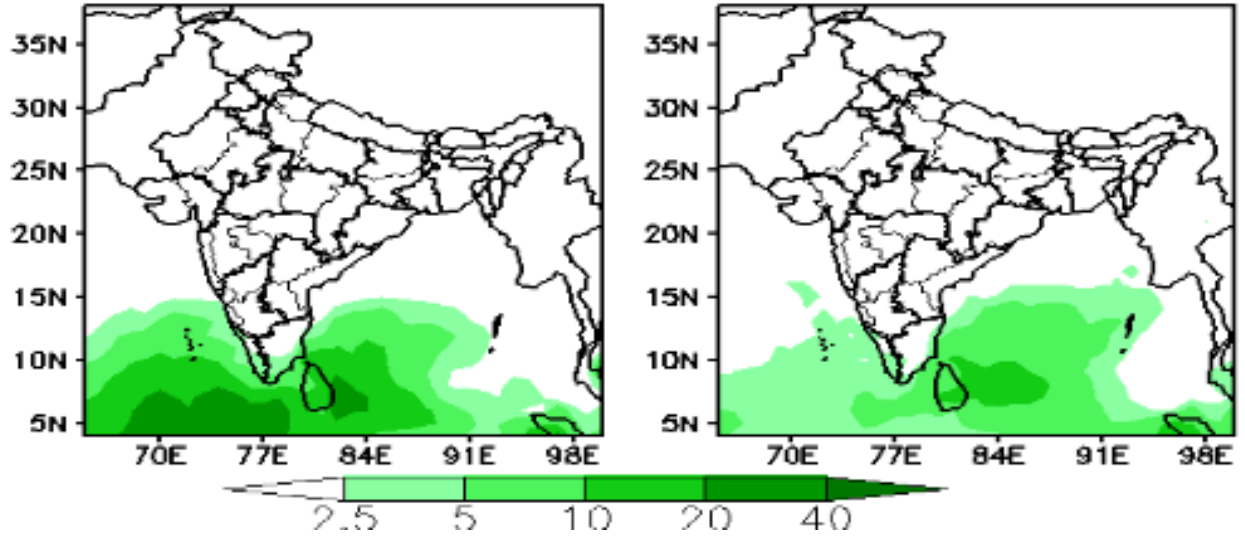


Forecast Rainfall (mm/day)

(00Z=0530 hrs IST)

(Week1:00Z28Dec-00Z04Jan)

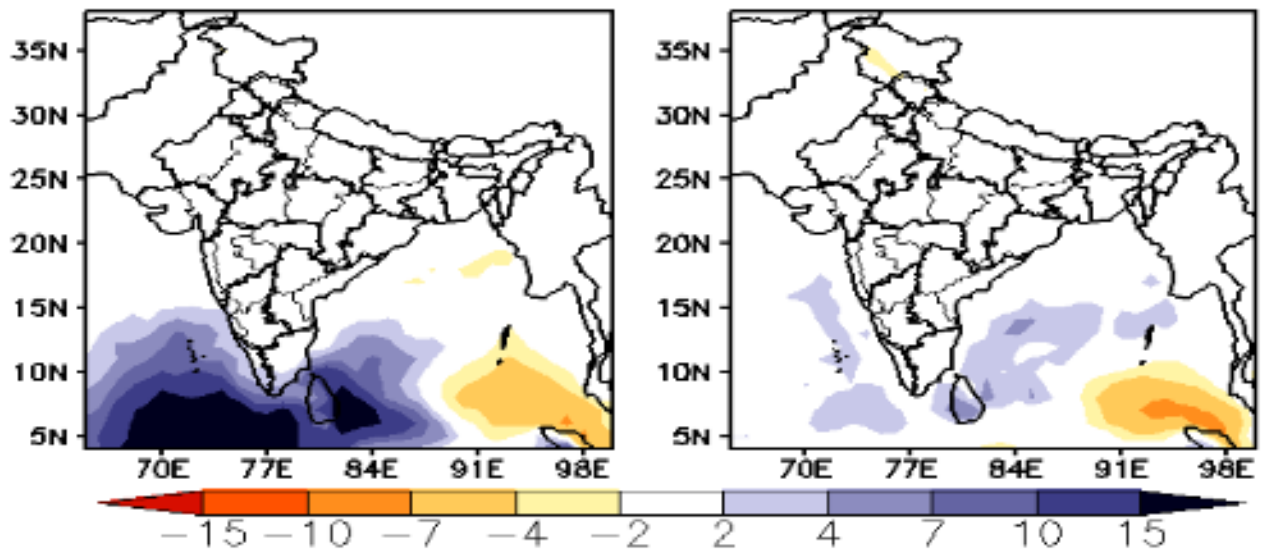
(Week2:00Z04Jan-00Z11Jan)



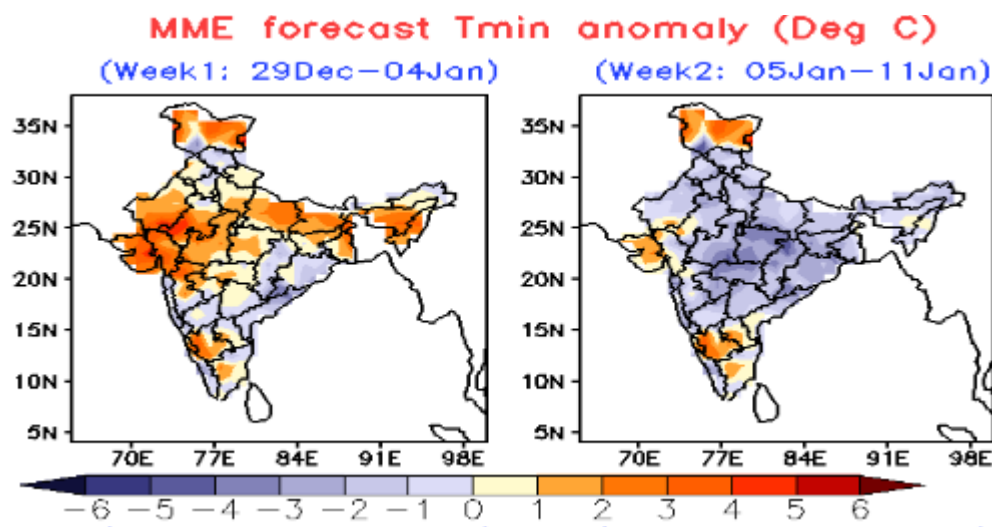
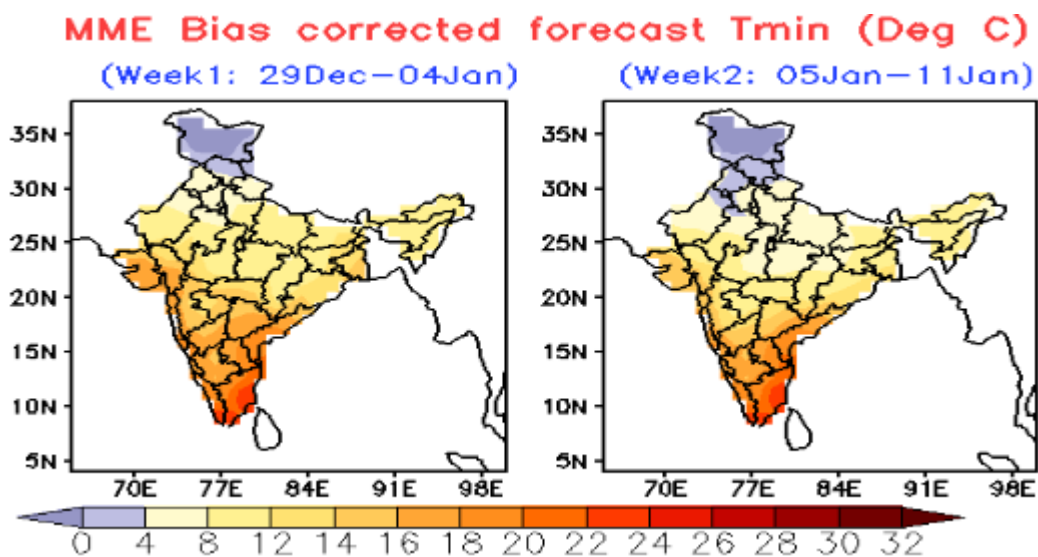
Forecast Rainfall Anomaly (mm/day) (00Z=0530 hrs IST)

(Week1:00Z28Dec-00Z04Jan)

(Week2:00Z04Jan-00Z11Jan)



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



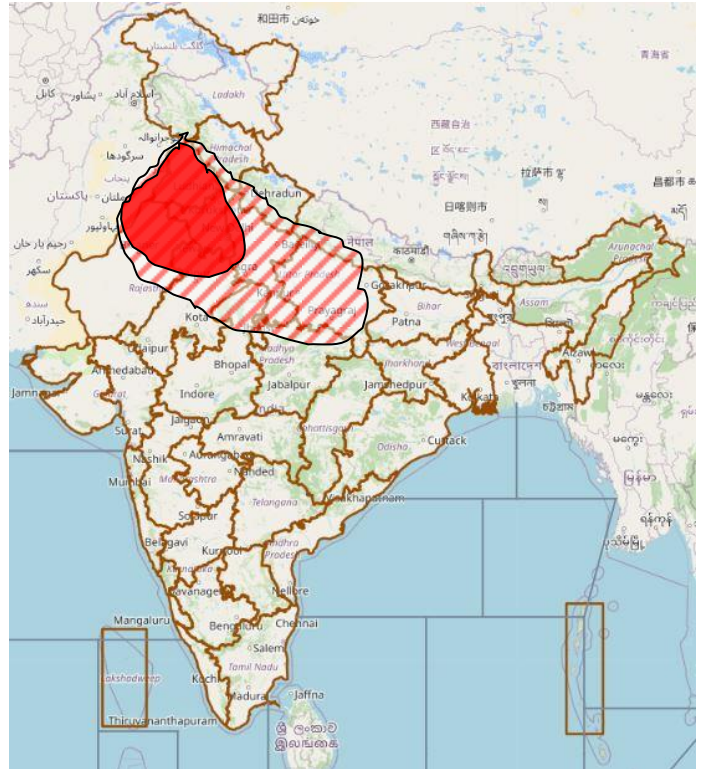
Extended range forecast of Minimum Temperature (top panel) and anomalies (lower panels) from IMD MME

EXTENDED RANGE OUTLOOK FOR COLDWAVE

Week 1: 29.12.2023-04.01.2024



Week 2: 05.01.2024-11.01.2024



PROBABILITY OF COLDWAVE

CONFIDENCE

LOW (1-33% PROBABILITY)



MODERATE (34-67% PROBABILITY)



HIGH (68-100% PROBABILITY)

