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

Press Release Dated: 21st Dec, 2023

Subject: Current Weather Status and Extended range Forecast for next two weeks (21 December, 2023 to 03 January, 2024)

1. Salient Observed Features for week ending 20 Dec 2023

- **Significant weather event and associated synoptic features during the week:** South coastal Tamil Nadu experienced extremely Heavy rainfall spell during 16-19 Dec, 2023 with **exceptionally heavy rainfall observed over Thoothukudi (**Kayalpattinam-**95 cm) and Tirunelveli (**Moolaikaraipatti - **62 cm) districts of south Tamil Nadu on 18th Dec.** It was mainly due to a)the very slowly west-northwestward movement of the Cyclonic Circulation from southwest Bay of Bengal off southeast Sri-Lanka Coast to Lakshadweep & neighbourhood, across Comorin area & neighbourhood, during 16-19 Dec 2023 & b)straightening of north-easterly monsoonal winds at lower levels along the coasts.
- Cold wave observed at isolated pockets over Punjab on one day during the week.
- Dense to Very Dense Fog observed at isolated pockets of Punjab on one day; Dense fog in isolated pockets of Punjab on six days; over Assam, Tripura, Odisha, and West Rajasthan on one day and Shallow to moderate fog at isolated pockets of East Uttar Pradesh on six days; over Delhi on four days; Bihar; and Meghalaya, Tripura on three days; West Uttar Pradesh and West Rajasthan on one day one day each during the week.
- Heavy rain: Extremely heavy rainfall at isolated places over Tamilnadu, Puducherry & Karaikal two days each during the week. Heavy to very heavy rain occurred at isolated places over Tamilnadu, Puducherry & Karaikal and Lakshadweep on one day each during the week. Heavy rain occurred at isolated places over Kerala & Mahe on one day during the week.
- Temperature Scenario: The highest maximum temperature of 36.8°C had been recorded at Karwar (Coastal Karnataka) on 17th December 2023 and the lowest minimum temperature of 3.0°C had been recorded at Sikar (East Rajasthan) on 20th December 2023 over the plains of

the country during the week.

- **Analysis of Weekly overall Rainfall distribution during the week ending on 20th Dec 2023 and monsoon Season's Rainfall Scenario (1 Oct-20 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 20 Dec 2023 was -10%. All India Seasonal cumulative rainfall % departure during this year's **Post monsoon Season's Rainfall** during **1 Oct to 20 Dec 2023** is -5% and over northwest India, it is +19%. 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 II and III respectively.

Table 1: Rainfall status (Week and season)

Region	WEEK			SEASON		
	14.12.2023 TO 20.12.2023			01.10.2023 TO 20.12.2023		
	Actual	Normal	% Dep	Actual	Normal	% Dep
EAST & NORTH-EAST INDIA	1.6	2.8	-42%	175	154	+14%
NORTH-WEST INDIA	0.2	4.2	-95%	51.9	43.5	+19%
CENTRAL INDIA	0	1.1	-100%	59.3	74.8	-21%
SOUTH PENINSULA	14.4	7	+105%	236.4	267.7	-12%
Country as a whole	3.2	3.5	-10%	110.3	115.7	-5%

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 Nino-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.

- Eastward moving 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 (21 to 27 December, 2023) and Week 2 (28 December to 03 January, 2024)

Weather systems & associated Precipitation during Week 1 (21 to 27 December, 2023)

Weather Systems:

- A Western Disturbance as a trough in middle tropospheric westerlies runs roughly along Long. 52°E to the north of Lat. 25°N. It is likely to affect Northwest Indian region during 22nd -23rd December.

Rainfall Forecast & Warnings:

- Isolated light **rainfall/snowfall** likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand and Isolated **light rainfall** likely over Punjab, Haryana, Chandigarh, Delhi and northwest Rajasthan on 22nd & 23rd and northwest Uttar Pradesh and northeast Rajasthan on 23rd December.
- Light to moderate **rainfall** at isolated places very likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and Lakshadweep area during next 5 days.
- No significant rainfall likely over remaining parts of the country during next one week.
- **Overall, below normal rainfall activity is likely over Tamil Nadu during week 1, with mainly dry over rest of the areas of the country except northeastern states and** Andaman & Nicobar Islands, where it is likely to be normal to be below normal rainfall.

Dense fog Forecast & warning:

- **Dense to very dense fog** conditions very likely in morning hours at isolated pockets of Punjab during next 5 days. **Dense Fog** conditions very likely in morning hours at isolated pockets of Haryana during next 4 days; north Uttar Pradesh, Assam &

Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 3 days and Odisha on 23rd & 24th December.

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Weather systems & associated Precipitation and Temperature outlook for Week 2 (28 December to 03 January, 2024)

Rainfall for week 2 (28 December to 03 January, 2023):

- ✓ No active Western Disturbance likely to affect northwest India during the week. However, **Passage of mid latitude Westerly trough is favourable for light rainfall activity over the Western Himalayas.**
- ✓ Light/moderate scattered to fairly widespread rainfall is likely over extreme south Peninsular India and Islands during the week. Isolated **heavy rainfall** one or two days is also likely over Andaman & Nicobar Islands during in the first half of the week and over Tamil Nadu in second half of the week.
- Overall, normal to **above normal rainfall activity is likely over extreme south Peninsular India during the week and mainly dry weather over rest of the areas of the country except northeastern states and** Andaman & Nicobar Islands, Sub-Himalayan west Bengal and Sikkim and western Himalayan region, where it is likely to be normal to be below normal rainfall.

Minimum temperature forecast for Week 1 (21 to 27 December, 2023) and Week 2 (28 December to 03 January, 2024)

Minimum temperature forecast for Week 1 (21 to 27 December, 2023):

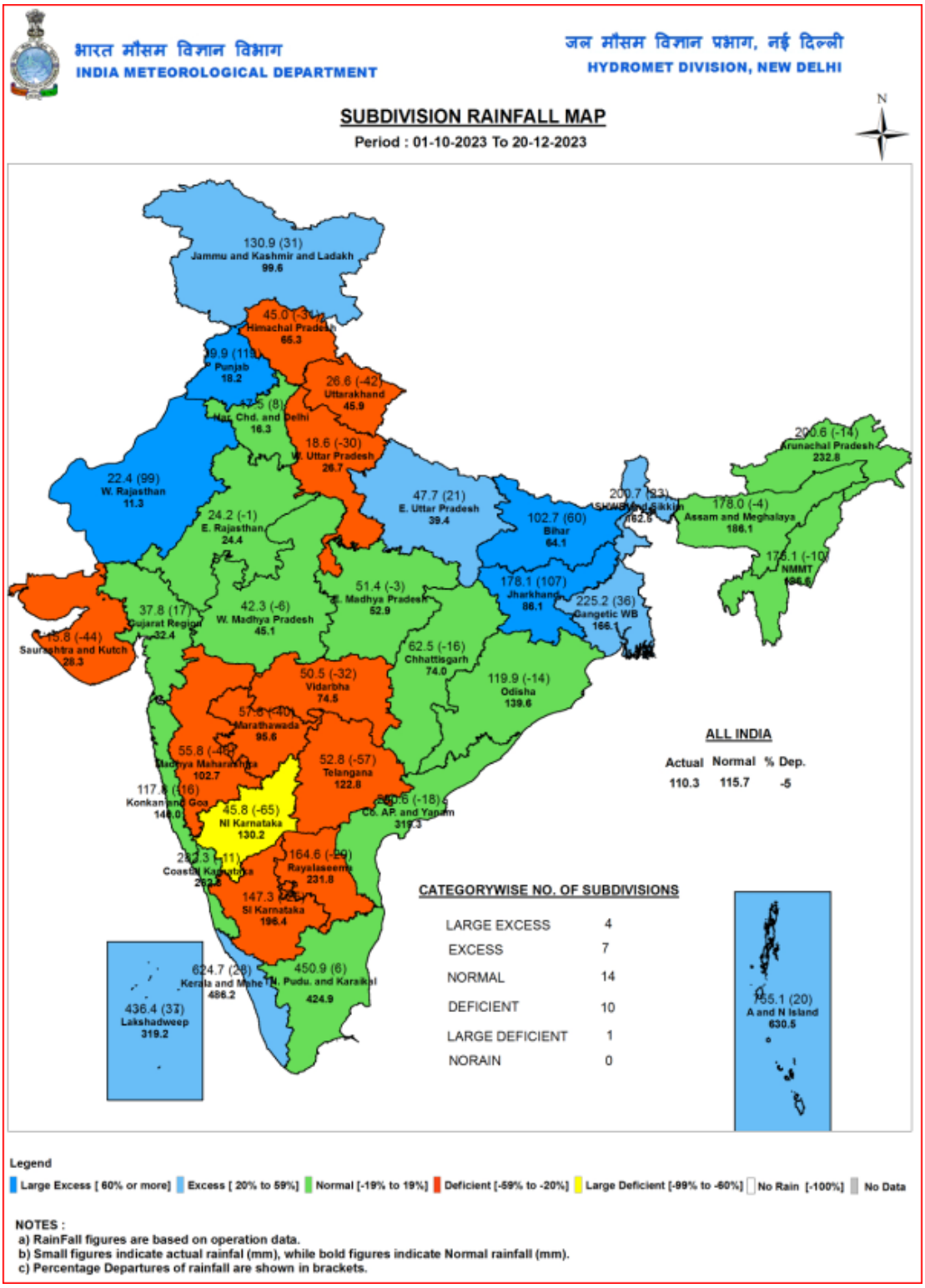
- ✓ **Minimum Temperatures** are in the range of 4-8°C over most parts of Punjab, Haryana-Chandigarh-Delhi, north Rajasthan and 8-12°C over most parts of Uttar Pradesh, south Rajasthan, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand and interior Odisha.
- ✓ Rise in Minimum Temperatures by 2-3°C over Northwest and East India during next 3 days and no significant change thereafter.
- ✓ No significant change in Minimum Temperatures likely over central India during next 24 hours and rise by 2-3°C thereafter.
- ✓ No significant change in Minimum Temperatures likely over rest parts of the country during the week.

Minimum temperature forecast for Week 2 (28 December to 03 January, 2024):

- ✓ **Minimum Temperature** are likely to above normal by 2-3°C over most parts of the northwest & adjoining central India and over some parts of northeast India, Gujarat & Bihar. These are likely to be near normal over rest parts of the country in the week 2.

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

Annex: I



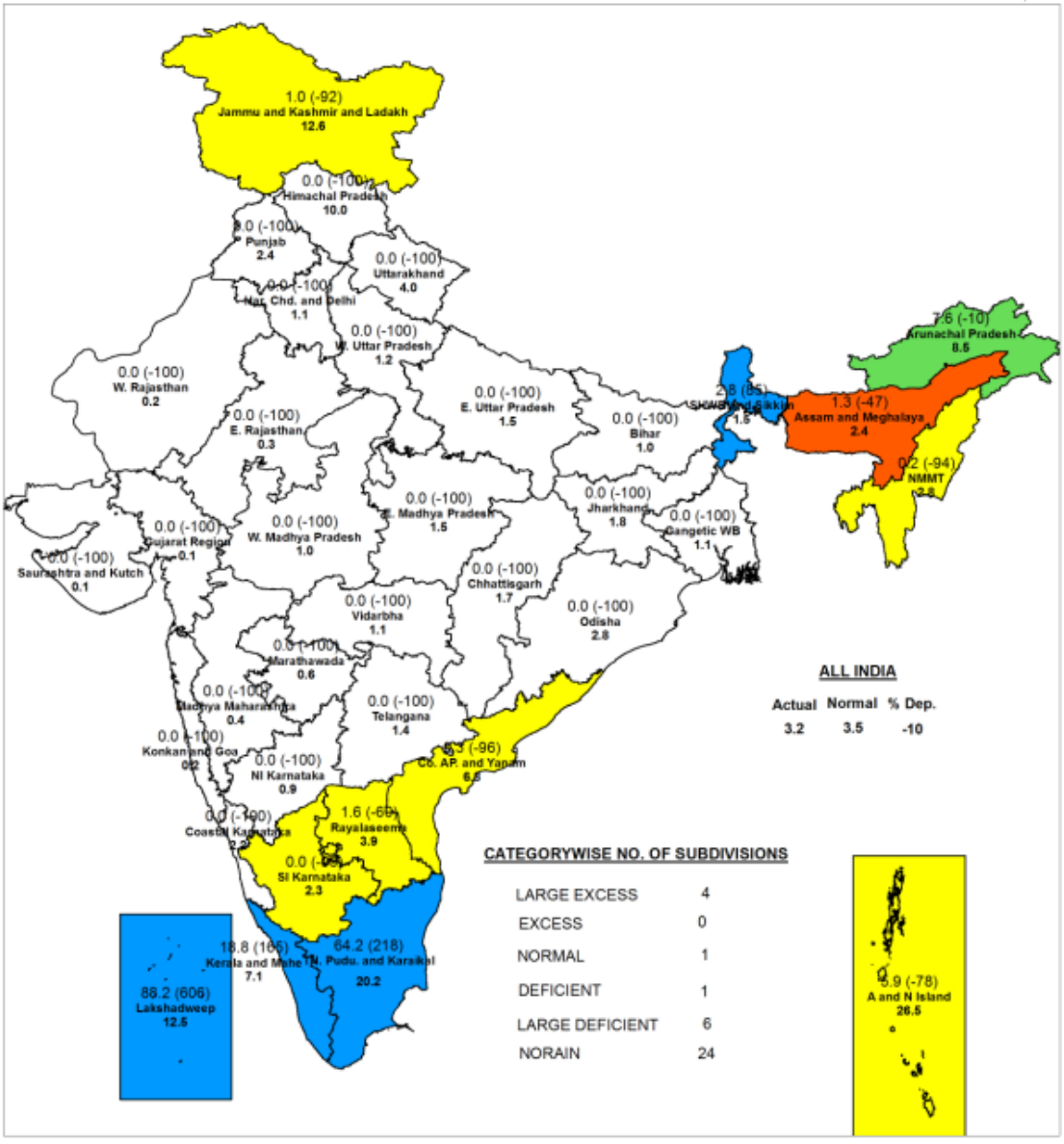
Annex II

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

जल मौसम विज्ञान प्रभाग, नई दिल्ली
HYDROMET DIVISION, NEW DELHI

SUBDIVISION RAINFALL MAP

Week : 14-12-2023 To 20-12-2023

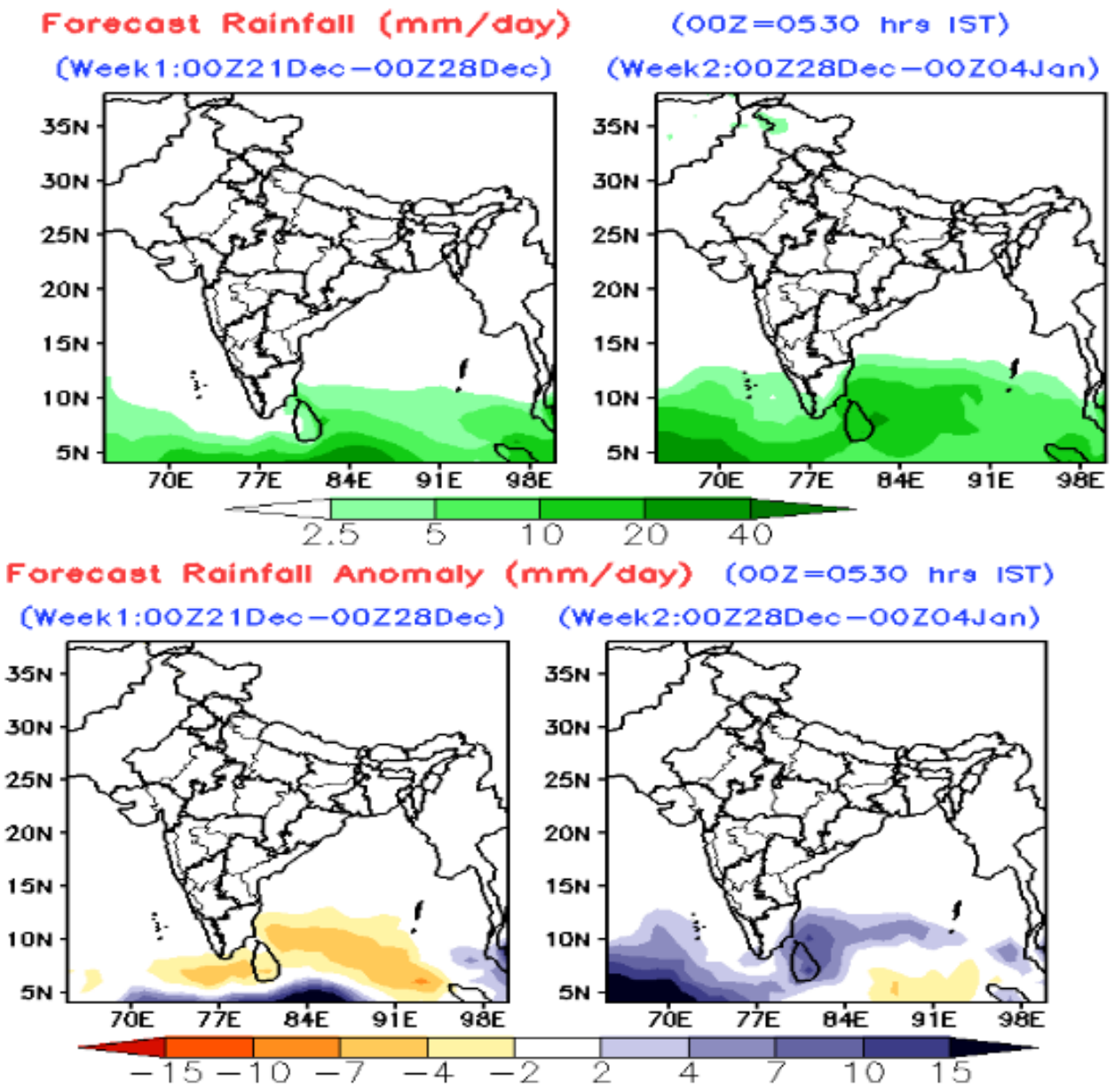


Legend

Large Excess [60% or more] | Excess [20% to 59%] | Normal [-19% to 19%] | Deficient [-59% to -20%] | Large Deficient [-99% to -60%] | No Rain [-100%] | No Data

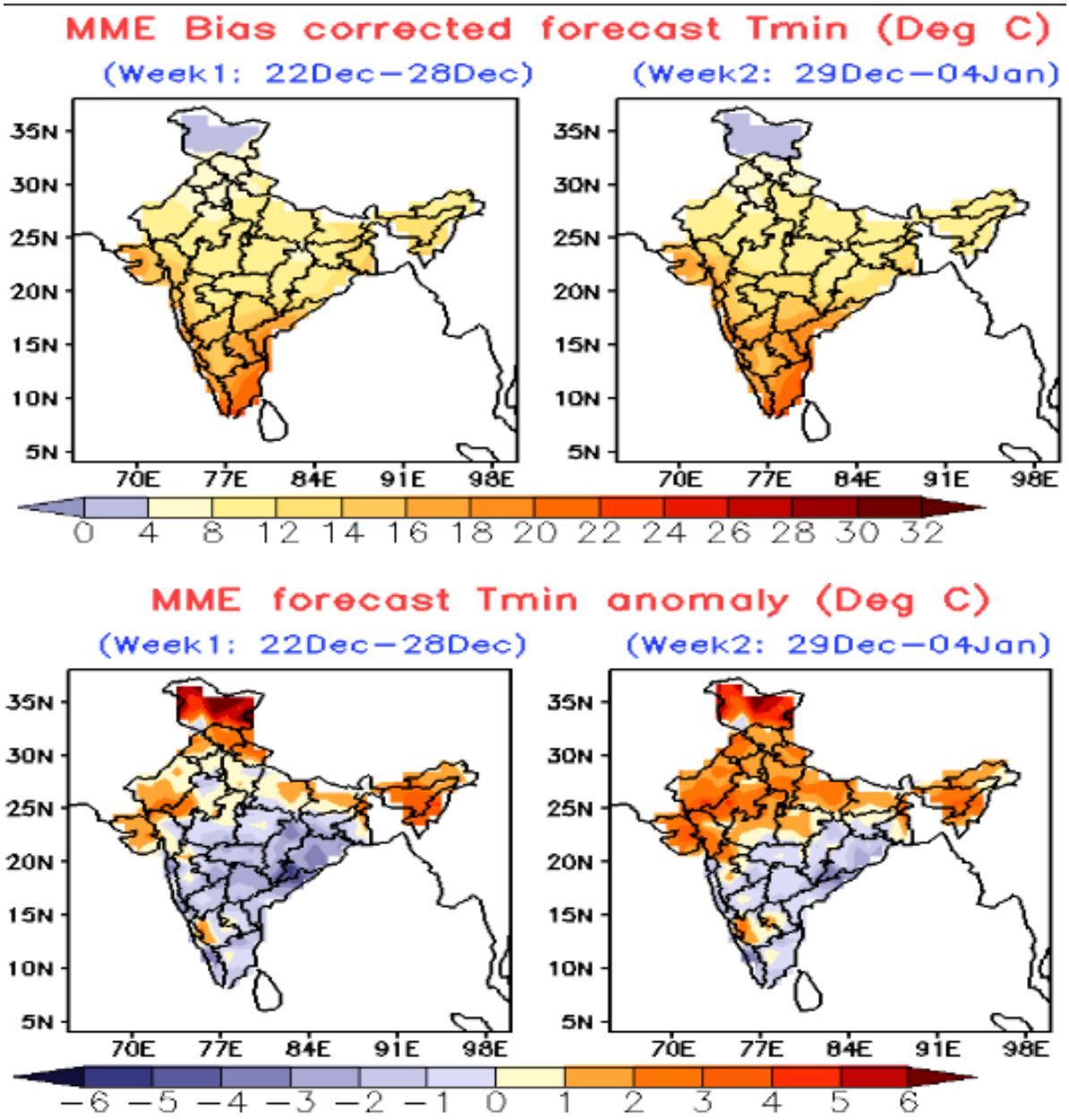
NOTES :
a) RainFall figures are based on operation data.
b) Small figures indicate actual rainfal (mm), while bold figures indicate Normal rainfall (mm).
c) Percentage Departures of rainfall are shown in brackets.

Annexure III



Extended range froecast of weekly dsitirubtion of rainfall in mm per day (top panel) and anomalies(lower panesl) from IMD MME

Annexure IV



Extended range froecast of Minimum Tmperature (top panel) and anomalies(lower panesl) from IMD MME