Government of India
Ministry of Earth Sciences
India Meteorological Department

Dated: 09th January, 2020

Current Weather Status and Outlook for next two weeks

Highlights of the past week

Significant weather systems & associated weather

- Passage of an active Western Disturbance caused fairly widespread to widespread rainfall/snowfall over Western Himalayan Region along with isolated heavy snowfall over Jammu & Kashmir and Himachal Pradesh during the second half of the week. It also caused scattered to fairly widespread rainfall/ thunderstorm activity with isolated Hailstorms over adjoining plains of northwest India and over parts of Central India.
- Troughs in low level westerlies caused scattered to fairly widespread rainfall/thunderstorm activity over parts of east and northeast India with isolated heavy rains over northeast India.
- Troughs in easterlies caused isolated to scattered rainfall with isolated heavy rains over parts of south peninsular India.

Temperatures:

- **Cold Day** conditions occurred at isolated pockets over West Rajasthan on one day during the week.
- **Severe Cold Wave** conditions occurred at isolated places over Haryana, Chandigarh & Delhi on one day.
- **Cold Wave** conditions occurred at isolated pockets over Punjab on one day during the week.
- The **lowest minimum temperature of 1.3ºC** had been recorded at Narnaul (Haryana) on 2nd January 2020 over the plains of the country during the week.

Fog:

- **Dense to very dense fog** occurred at some parts of West Rajasthan on one day; at isolated pockets of West Uttar Pradesh and Madhya Pradesh on three days each; over Punjab and West Rajasthan on two days each; over Sub-Himalayan West Bengal & Sikkim, , Bihar and East Uttar Pradesh on one day each during the week.

Mausam Bhawan, Lodi Road, New Delhi – 110 003
Phones: 24611068, 24618241-47; Fax No. 24699216, 2423220, 24643128

- **Dense fog** occurred at some parts of West Madhya Pradesh on one day; at isolated pockets over Uttarakhand and East Uttar Pradesh on four days each; over Bihar on three days; over Punjab, Haryana, Chandigarh & Delhi, East Rajasthan, Gangetic West Bengal, Nagaland, Manipur, Mizoram & Tripura on two days each; over Himachal Pradesh, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim, Odisha, Madhya Pradesh and Marathwada on one day each during the week.

Weekly Rainfall Scenario (02nd to 08th January 2020)

During the week, rainfall was above the Long Period Average (LPA) by 230% over the country as a whole. Details are given below:

Regions	Actual Rainfall (mm)	Normal Rainfall (mm)	% Departure from LPA
Country as a whole	9.9	3.0	+230
Northwest India	12.7	5.4	+134
Central India	7.5	1.3	+475
South Peninsula	5.2	2.1	+146
East & northeast India	15.6	3.0	+420

The Meteorological sub-division-wise rainfall for the week is given in **Annexure I**.

Seasonal Rainfall Scenario (01st to 08th January 2020)

For the country as a whole, cumulative rainfall during the winter season, so far, has been above LPA by 194%. Details of the rainfall distribution over the four broad geographical regions of India are given below:

Regions	Actual Rainfall (mm)	Normal Rainfall (mm)	% Departure from LPA
Country as a whole	10.3	3.5	+194
Northwest India	12.7	6.2	+104
Central India	8.4	1.6	+423
South Peninsula	5.5	2.6	+112
East & northeast India	15.7	3.3	+374

Cumulative seasonal rainfall is given in **Annexure II**.

Chief synoptic conditions as on 09th January 2020

- A Western Disturbance (WD) as a trough in mid & upper tropospheric westerlies runs with its axis at 5.8 km above mean sea level roughly along Long.78ºE to the north of Lat. 28ºN.
- A cyclonic circulation extending upto 1.5 km above mean sea level lies over central parts of south Uttar Pradesh and neighborhood.
- A trough at 0.9 km above mean sea level runs from the above circulation to Vidarbha, across east Madhya Pradesh.
- A cyclonic circulation extending upto 1.5 km above mean sea level lies over eastern parts of Bangladesh and neighborhood.

Large scale features as on 09th January 2020

- Currently, warm ENSO-neutral conditions are prevailing over equatorial Pacific Ocean and the latest Monsoon Mission Coupled Forecast System (MMCFS) output indicates cooling of SSTs in coming season and ENSO-neutral conditions are likely to continue for the entire forecast period.
- The positive IOD conditions observed over Indian Ocean are on the decline and the latest MMCFS forecast indicates that the strength of positive IOD conditions is likely to weaken and turn into neutral IOD conditions during JFM season.
- The convectively active phase of the Madden–Julian Oscillation (MJO) is currently in Phase-4 with amplitude more than 1. It is likely to propagate eastwards across Phase -5 during week -1 and enter into Phase – 6 with gradual reduction in amplitude during week -2.

Forecast for next two weeks

Weather systems and associated Precipitation & temperature pattern during week 1 (10th – 16th January 2020) and week 2 (17th – 23rd January 2020)

Northeast monsoon rains

- In view of the southward shift of the Inter Tropical Convergence Zone, northeast Monsoon rains are likely to cease over Tamilnadu,Puducherry Karaikal, Kerala and Mahe and adjoining areas of Andhra Pradesh and Karnataka by 10th January 2020.

Western Disturbances & Easterly waves

- A fresh WD is very likely to affect Western Himalayan region from the night of 11th January, and adjoining northern plains on 13th. The peak weather associated with these could be on 13th January, with reduction on 14th. However, another WD in quick succession could cause rain / snow over western Himalayan region and rain /

thunderstorms / Hailstorms over adjoining plains of northwest India during 16th – 17th January. Another active WD is likely to provide Rainfall over northwest India and northern plains towards the end of week -2.

- A constructive interaction with the WD expected during 16th – 17th January could also result in widespread rain / thundershowers with isolated heavy falls over eastern parts of Punjab, adjoining Haryana & Chandigarh, lower reaches of Himachal Pradesh, Uttarakhand & northwest Uttar Pradesh on these two days. The rainfall belt is likely to shift eastwards along the Indo-Gangetic plains for the subsequent 3 days.

Rainfall for week 1: (10th – 16th January 2020)

- In association with the WDs stated above, weekly accumulated rain / snow is likely to be above normal over Jammu & Kashmir and Ladakh, Himachal Pradesh, Uttarakhand and higher reaches of Arunachal Pradesh and rainfall is likely to be above normal over Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh and north Rajasthan.It is likely to be below normal over rest of India outside Andaman & Nicobar Islands and southern most parts of Kerala & Tamil Nadu where the rainfall is likely to be below normal. **(Annexure III & IV).**

Rainfall for week 2: (17th – 23rd January 2020)

- Cumulative precipitation is likely to be above normal over only over Himachal Pradesh, Uttarakhand and south coastal Tamil Nadu. It is likely to be near normal (normally this is Dry period of the year) over the rest of the states and Union Territories. (**Annexure IV**)**.**

Minimum Temperatures for week 1: (10th – 16th January 2020)

- Night minimum temperatures are likely to remain below normal during a few days over major parts of India outside some parts of Manipur, Mizoram, Tripura, east Assam, Madhya Maharashtra and coastal & south interior Karnataka, where normal to above normal night temperatures on some of the days during the week are expected. (**Annexure V**)**.**

Minimum Temperatures for week 2: (17th – 23rd January 2020)

- Week 2 in general is likely to be warmer than week 1. Night minimum temperatures are likely to be above normal over east Uttar Pradesh, Bihar, Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura, northeast Madhya Pradesh, north Madhya Maharashtra and coastal & adjoining south interior Karnataka. It will be near normal to below normal elsewhere. (**Annexure V**)**.**

Cyclogenesis probability:

- No cyclogenesis likely as per the numerical model guidance during the forecast period.

Next weekly update will be issued on Thursday, the 16th January 2020.

Annexure I

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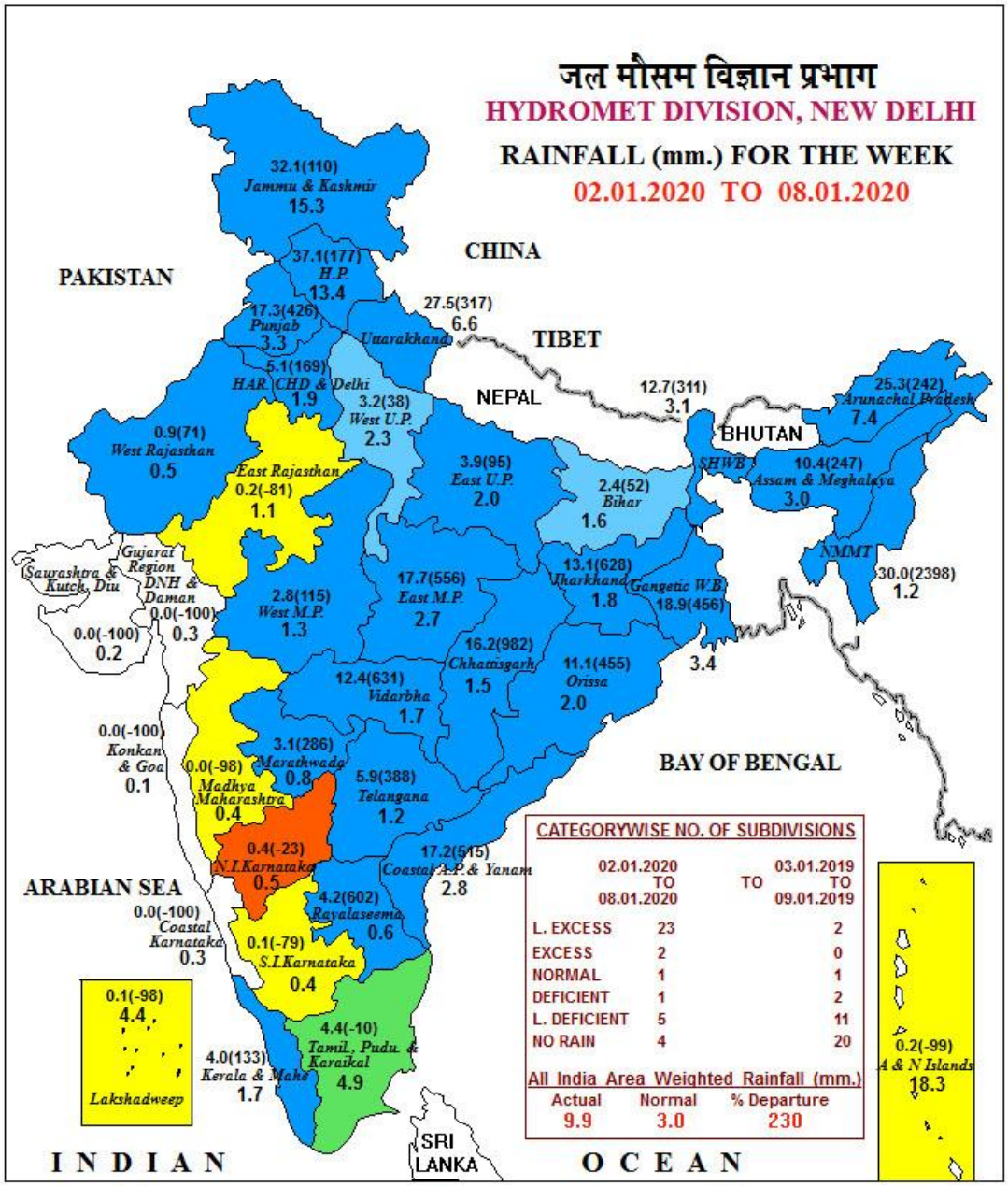
INDIA METEOROLOGICAL DEPARTMENT



LEGEND: L. EXCESS (+60% OR MORE) EXCESS (+20% TO +59%) NORMAL (+19% TO -19%)
DEFICIENT (-20% TO -59%) L. DEFICIENT (-60% TO -99%) NO RAIN (-100%) NO DATA

NOTES:
(a) Rainfall figures are based on operational data.
(b) Small figures indicate actual rainfall (mm.), while bold figures indicate Normal rainfall (mm.)
Percentage Departures of Rainfall are shown in Brackets.

Annexure II

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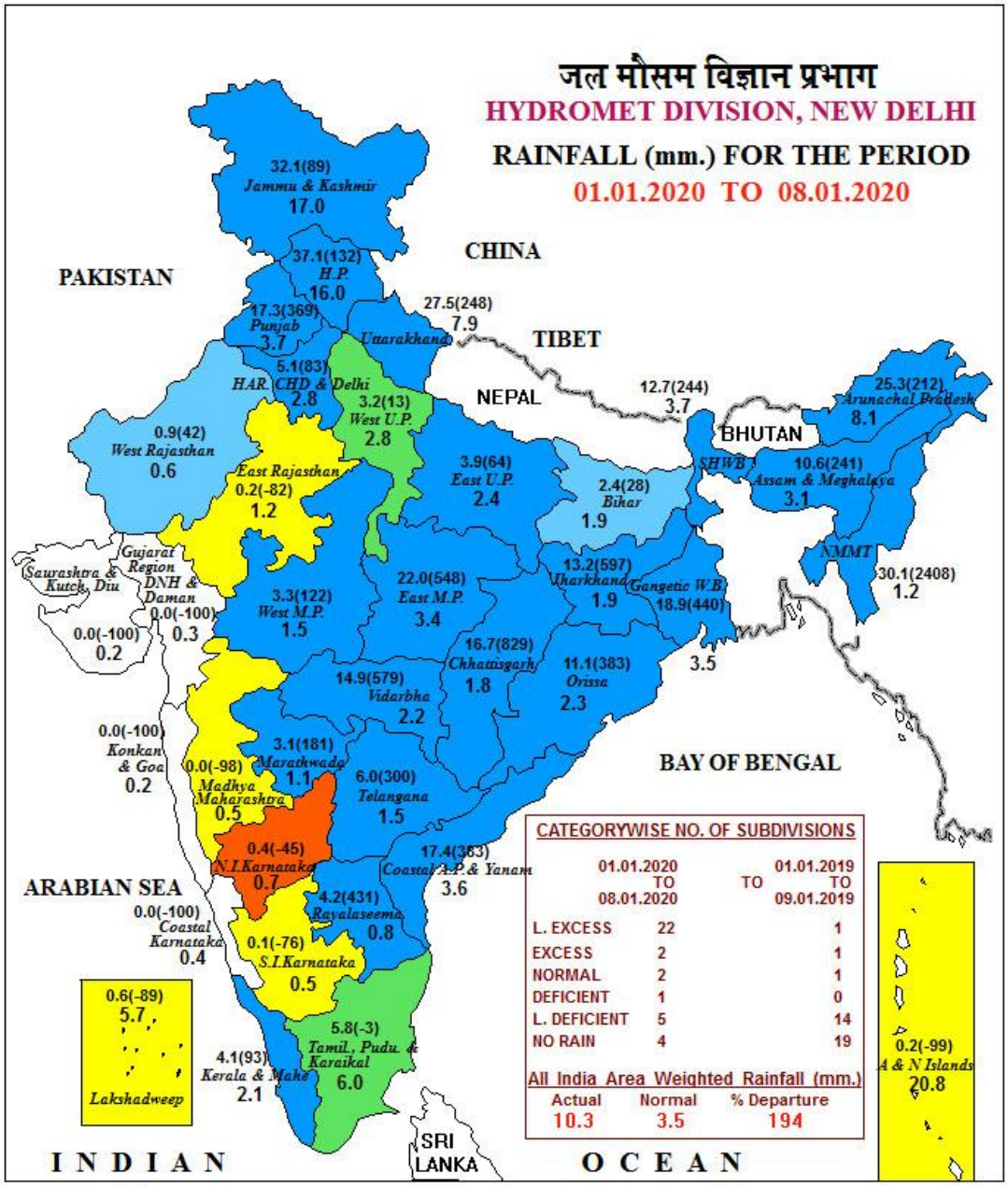
INDIA METEOROLOGICAL DEPARTMENT



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DEFICIENT (-20% TO -59%) L. DEFICIENT (-60% TO -99%) NO RAIN (-100%) NO DATA

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(b) Small figures indicate actual rainfall (mm.), while bold figures indicate Normal rainfall (mm.)
Percentage Departures of Rainfall are shown in Brackets.

Annexure-III

METEOROLOGICAL SUB-DIVISIONWISE WEEKLY RAINFALL FORECAST & Wx. WARNINGS-2020

Sr. No	MET.SUB-DIVISIONS	09 JAN	10 JAN	11 JAN	12 JAN	13 JAN	14 JAN	15 JAN
1	ANDAMAN & NICO.ISLANDS	ISOL	ISOL	D	D	D	D	ISOL
2	ARUNACHAL PRADESH	FWS TS #	SCT	D	D	D	D	D
3	ASSAM & MEGHALAYA	ISOL TS #	ISOL FOG	D FOG	D FOG	D FOG	D	D
4	NAGA.MANI.MIZO.& TRIPURA	ISOL	ISOL FOG	D FOG	D FOG	D FOG	D	D
5	SUB-HIM.W. BENG. & SIKKIM	SCT	ISOL FOG	D FOG	D	D	D	D
6	GANGETIC WEST BENGAL	SCT TS # FOG	D FOG	D FOG	D	D	D	D
7	ODISHA	SCT TS # FOG	ISOL FOG	D FOG	D	D	D	D
8	JHARKHAND	SCT	D	D	D	D	D	D
9	BIHAR	SCT FOG	ISOL FOG	D FOG	D	D	D	D
10	EAST UTTAR PRADESH	ISOL	D	D	D	ISOL	ISOL TS	ISOL
11	WEST UTTAR PRADESH	D FOG	D FOG	D FOG	D	SCT TS #	SCT TS	FWS TS #
12	UTTARAKHAND	ISOL FOG	D FOG	D FOG	ISOL	WS TS #	FWS TS	FWS TS
13	HARYANA CHD. & DELHI	D FOG COLD	D FOG COLD	D FOG	ISOL	FWS TS #	ISOL	FWS TS #
14	PUNJAB	D FOG COLD	D FOG COLD	D FOG	ISOL	FWS TS #	ISOL	FWS
15	HIMACHAL PRADESH	D	D	ISOL	FWS TS #	WS •/* TS #	FWS	FWS
16	JAMMU & KASHMIR	D	D	SCT	WS •/* TS #	WS •/* TS #	SCT	SCT
17	WEST RAJASTSAN	D	D	D	ISOL	ISOL	D	ISOL
18	EAST RAJASTSAN	D	D	D	D	ISOL	ISOL	SCT TS
19	WEST MADHYA PRADESH	D FOG	D FOG COLD	D	D	ISOL	D	ISOL
20	EAST MADHYA PRADESH	ISOL FOG	D FOG	D	D	D	D	D
21	GUJARAT REGION D.D. & N.H.	D	D	D	D	D	D	D
22	SAURASTRA KUTCH & DIU	D	D	D	D	D	D	D
23	KONKAN & GOA	D	D	D	D	D	D	D
24	MADHYA MAHARASHTRA	D	D	D	D	D	D	D
25	MARATHAWADA	D	D	D	D	D	D	D
26	VIDARBHA	ISOL	D	D	D	D	D	D
27	CHHATTISGARH	SCT TS #	D	D	D	D	D	D
28	COASTAL A. PR. & YANAM	D	D	ISOL	ISOL	D	D	D
29	TELANGANA	ISOL	D	D	D	D	D	D
30	RAYALASEEMA	D	D	D	ISOL	D	D	D
31	TAMIL. PUDU. & KARAIKAL	D	D	D	D	D	D	D
32	COASTAL KARNATAKA	D	D	D	D	D	D	D
33	NORTS INT.KARNATAKA	D	D	D	D	D	D	D
34	SOUTS INT.KARNATAKA	D	D	D	D	D	D	D
35	KERALA & MAHE •/*	D	D	D	D	D	ISOL	ISOL
36	LAKSHADWEEP	D	D	D	D	D	D	SCT

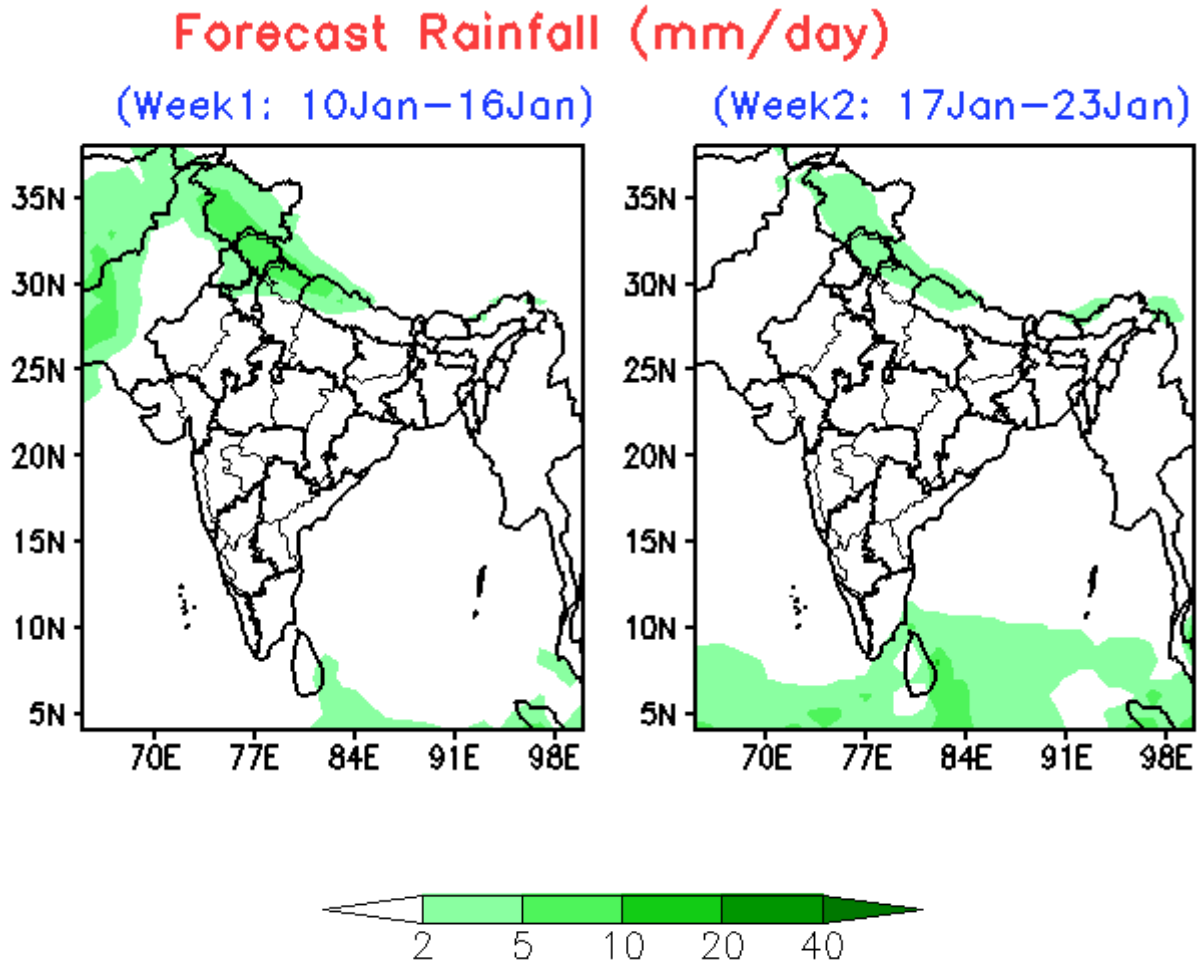
LEGENDS:

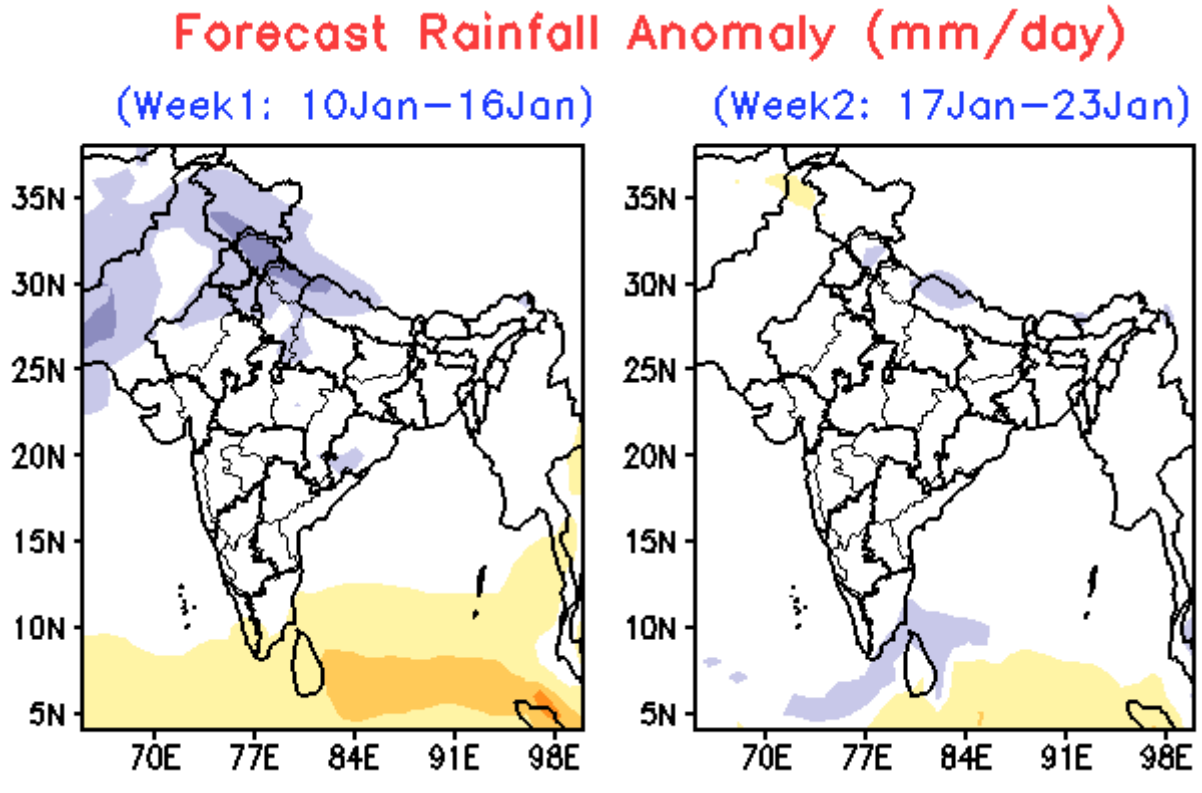
WS	WIDE SPREAD / MOST PLACES (76-100%)	FWS	FAIRLY WIDE SPREAD / MANY PLACES (51% to 75%)		
SCT	SCATTERED / FEW PLACES (26% to 50%)	ISOL	ISOLATED (up to 25%)	D/DRY	NIL RAINFALL

• Heavy Rainfall (64.5-115.5 mm)	•• Heavy to Very Heavy Rainfall (115.6-204.4 mm)	••• Extremely Heavy Rainfall (204.5 mm or more)

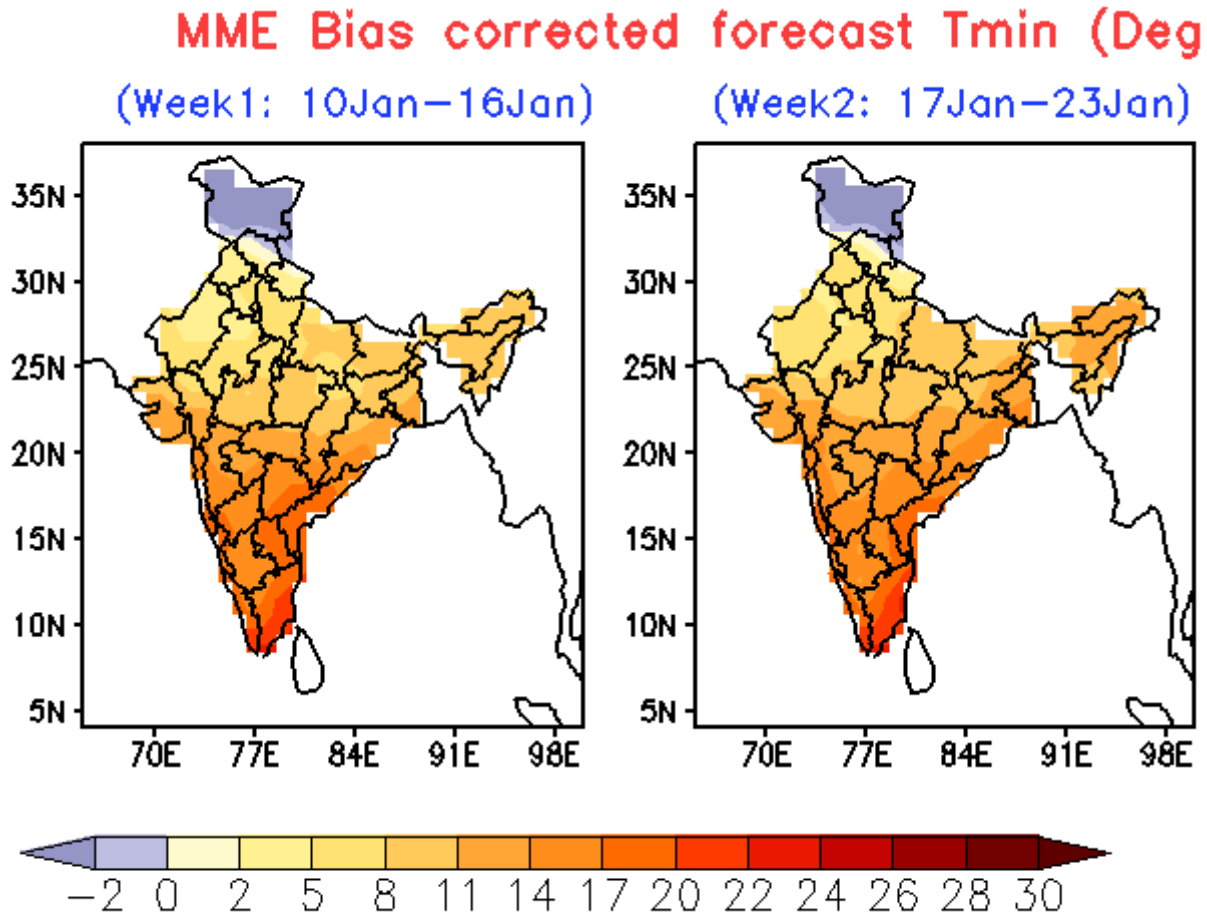
FOG	* SNOWFALL	# HAILSTORM	COLD WAVE (-4.5 °C to -6.4 °C)	SEVERE COLD WAVE (< -6.4)
$ TSUNDERSTORM WITS SQUALL/GUSTY WIND	DS/TS DUST/TSUNDERSTORM		HEAT WAVE (+4.5 °C to +6.4 °C)	SEVERE HEAT WAVE (> +6.4)

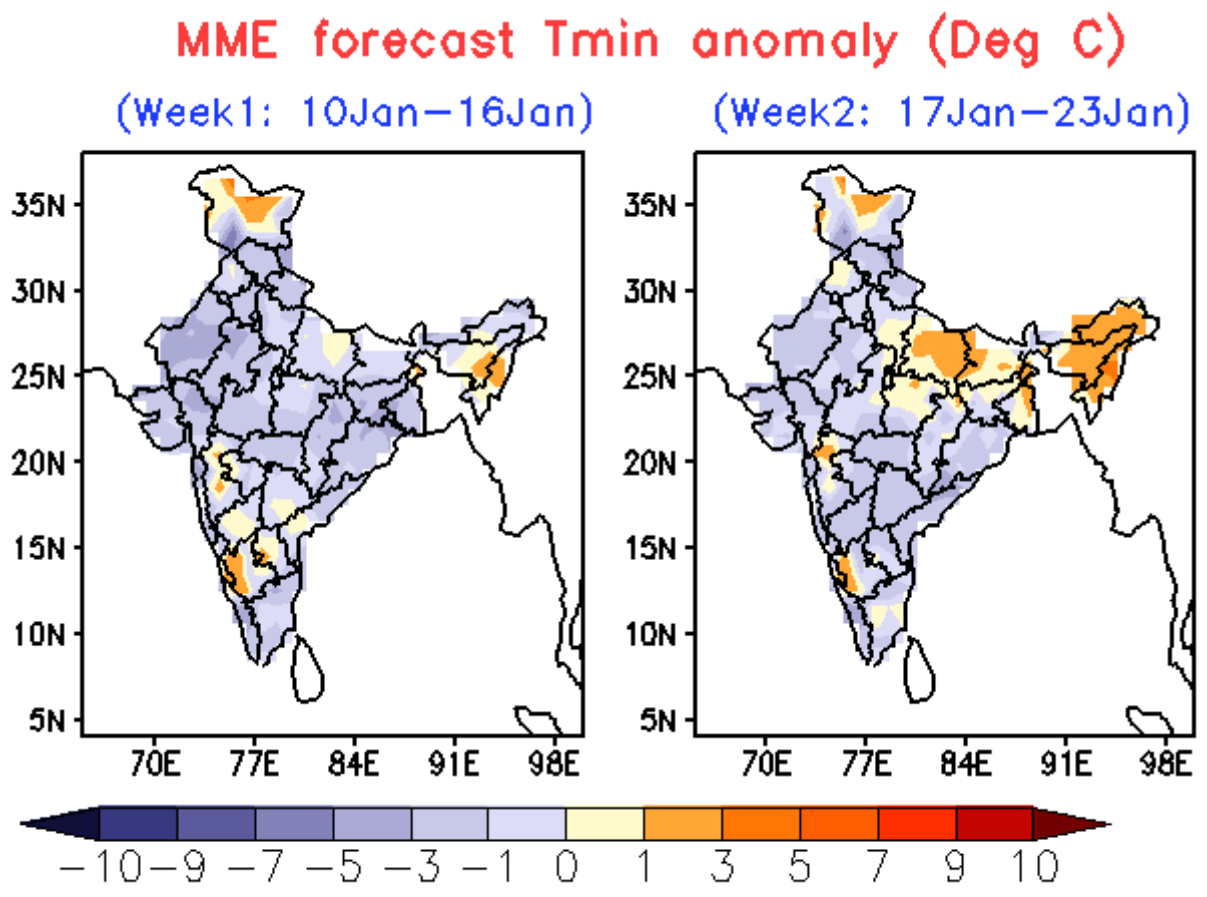
Annexure IV


Forecast Rainfall (mm/day)
(Week1: 10Jan-16Jan)
(Week2: 17Jan-23Jan)
35N
30N
25N
20N
15N
10N
5N
70E
77E
84E
91E
98E
2
5
10
20
40


Forecast Rainfall Anomaly (mm/day)
(Week1: 10Jan-16Jan)
(Week2: 17Jan-23Jan)
35N
30N
25N
20N
15N
10N
5N
70E
77E
84E
91E
98E
-20
-15
-10
-5
-1
1
5
10
15
20

Annexure V


MME Bias corrected forecast Tmin (Deg
(Week1: 10Jan−16Jan)
(Week2: 17Jan−23Jan)
35N
30N
25N
20N
15N
10N
5N
70E
77E
84E
91E
98E
−2 0 2 5 8 11 14 17 20 22 24 26 28 30


MME forecast Tmin anomaly (Deg C)
(Week1: 10Jan−16Jan)
(Week2: 17Jan−23Jan)
35N
30N
25N
20N
15N
10N
5N
70E
77E
84E
91E
98E
−10 −9 −7 −5 −3 −1 0 1 3 5 7 9 10