



**Government of India
Ministry of Earth Sciences
India Meteorological Department**

Dated: 16th January, 2020

Current Weather Status and Outlook for next two weeks

Highlights of the past week

Significant weather systems & associated weather

- Apart from the remnant of last week's Western Disturbance (WD), two more WDs caused significant weather in terms of rain, snow, thunderstorms & isolated hailstorms over north & adjoining central India.
- Both of these had been active WDs, the first one in the beginning of the week caused widespread rain/snow along with isolated heavy falls over Western Himalayan region. Passage of this system along with induced cyclonic circulation also caused scattered to fairly widespread rain/thunderstorms over adjoining plains of northwest and central India. The second one, towards the later part of the week, also caused scattered to fairly widespread rain / snow over western Himalayan region and adjoining northern plains including Uttar Pradesh.
- In view of the southward shift of the Inter Tropical Convergence Zone, the **Northeast monsoon rains** ceased over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and adjoining areas of Karnataka and Andhra Pradesh & Yanam from **10th January 2020**.
- Feeble troughs in easterlies caused isolated light rainfall over Kerala, coastal Andhra Pradesh, Telangana and Tamil Nadu on one or two days during the week.

Temperatures:

- **Severe Cold Day** conditions occurred at many parts over Bihar on one day; in some parts of West Rajasthan and Madhya Pradesh on one day each; at isolated pockets over Uttar Pradesh on two days each and over Haryana, Chandigarh & Delhi on one day.
- **Cold Day** conditions occurred at most parts over East Rajasthan on one day; over some parts of West Rajasthan, Uttar Pradesh and East Madhya Pradesh on one day each; at isolated pockets over Himachal Pradesh, West Rajasthan and Bihar on

two days each and over Uttar Pradesh, East Rajasthan and West Madhya Pradesh on one day each.

- **Severe Cold Wave** conditions occurred in some parts of Haryana, Chandigarh & Delhi and Rajasthan on one day each; at isolated places over Jammu & Kashmir, Himachal Pradesh, Odisha, Madhya Pradesh and Vidarbha on one day each.
- **Cold Wave** conditions occurred at isolated places over Punjab, East Rajasthan, Odisha, Jharkhand, Bihar, and Chhattisgarh on one day each.
- The **lowest minimum temperature of 1.1°C** had been recorded at **Hissar (Haryana) on 10th January 2020** over the plains of the country during the week.

Fog:

- **Dense to very dense fog** occurred at some parts of East Uttar Pradesh on three days and over Punjab and northwest Rajasthan on one day each; at isolated pockets over West Uttar Pradesh on five days, over Punjab and East Uttar Pradesh on three days each, over Uttarakhand, West Madhya Pradesh and Bihar on two days each, over Haryana, Chandigarh & Delhi, Sub-Himalayan West Bengal & Sikkim, northwest Rajasthan, East Madhya Pradesh and Odisha on one day each during the week.
- **Dense fog** occurred at some parts of Haryana, Chandigarh & Delhi and Bihar on one day each; at isolated pockets over Nagaland, Manipur, Mizoram & Tripura on 4 days, over Sub-Himalayan West Bengal & Sikkim, Uttarakhand, Haryana, Chandigarh & Delhi, Himachal Pradesh and Madhya Maharashtra on two days each and over Assam & Meghalaya, Bihar, West Uttar Pradesh, West Rajasthan and Chhattisgarh on one day each during the week.

○ **Weekly Rainfall Scenario (09th to 15th January 2020)**

During the week, rainfall was above the Long Period Average (LPA) by 134% over the country as a whole. Details are given below:

Regions	Actual Rainfall (mm)	Normal Rainfall (mm)	% Departure from LPA
Country as a whole	9.1	3.9	+134
Northwest India	24.6	6.7	+267
Central India	3.1	2.2	+41
South Peninsula	0.1	3.1	-96
East & northeast India	3.1	3.2	-04

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

Seasonal Rainfall Scenario (01st to 15th January 2020)

For the country as a whole, cumulative rainfall during the winter season, so far, has been above LPA by 157%. 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	19.0	7.4	+157
Northwest India	36.0	12.9	+179
Central India	11.5	3.8	+203
South Peninsula	5.6	5.7	-01
East & northeast India	18.7	6.5	+187

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

Chief synoptic conditions as on 16th January 2020

- A WD as a cyclonic circulation extending upto 5.8 km above mean sea level lies over central Pakistan & neighbourhood with a trough aloft running with its axis at 5.8 km above mean sea level roughly along Long.71°E to the north of Lat. 23°N.
- A cyclonic circulation extending upto 1.5 km above mean sea level lies over southeast Rajasthan and adjoining west Madhya Pradesh.
- Another cyclonic circulation extending upto 0.9 km above mean sea level lies over Comorin area and neighborhood.
- A fresh Western Disturbance is likely to affect Western Himalayan Region and plains of northwest India from 17th night and another one from the night of 20th January.

Large scale features as on 16th 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 have further weakened 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-6 with amplitude more than 1. It is likely to propagate eastwards and enter

into Phase -7 (central Pacific) during the later part of week -1. Thereafter it is likely to remain in Phase – 7 with gradual reduction in amplitude during week -2.

Forecast for next two weeks

Weather systems and associated Precipitation & temperature pattern during week 1 (17th – 23rd January 2020) and week 2 (24th – 30th January 2020)

Week 1 (17th – 23rd January 2020)

- Under the present WD and a fresh WD which is likely from tomorrow (17th January) night and their interaction with low level moist easterlies, scattered to fairly widespread rain/ thunderstorms and isolated hailstorms are likely to continue over Western Himalayan region, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Bihar, northeast Madhya Pradesh, north Chhattisgarh, Jharkhand, sub-Himalayan west Bengal & Sikkim and Arunachal Pradesh upto 18th January. The entire wind confluence region and thus the rainfall regime is likely to shift eastwards, resulting in isolated to scattered rain / thundershowers over eastern parts comprising north Chhattisgarh, Bihar, Jharkhand, west Bengal & Sikkim and scattered to fairly widespread rains over Assam & Meghalaya and Arunachal Pradesh on 19th.
- Another WD is likely to cause scattered to fairly widespread rain / snow over western Himalayan region from the night of 20th January till 23rd January. While no significant rainfall is likely over plains of northwest India due to this system, eastern part of Madhya Pradesh, north Chhattisgarh, Jharkhand and adjoining districts of Gangetic west Bengal and Odisha are likely to receive rainfall in the form of isolated thunderstorms / hailstorms during 21st & 22nd January. **(Annexure III & IV).**
- Cumulative precipitation is likely to be above normal over Uttar Pradesh, Himachal Pradesh, Uttarakhand, central parts of Madhya Pradesh, Sikkim and Arunachal Pradesh and normal over the rest of the States and union territories outside Jammu & Kashmir and Andaman & Nicobar Islands where it is likely to be below normal. **(Annexure IV).**

Week 2 (24th – 30th January 2020)

- Yet another WD is likely to affect western Himalayan region during 25th – 27th January. This system is also likely to cause weather in the form of rain / thundershowers over parts of central & eastern India during 25th – 29th January, due to confluence of low level moist easterlies.
- Higher reaches of Arunachal Pradesh is likely to receive snowfall due to the movement of systems in easterlies during the initial half of the week.
- Cumulatively, above normal precipitation is likely over Himachal Pradesh, Uttarakhand, Vidarbha, south Madhya Pradesh, north Chhattisgarh, Jharkhand and

south Bihar and near normal rainfall over the rest of the States & Union Territories outside Andaman & Nicobar Islands where it is likely to be below normal.

Minimum Temperatures for week 1: (17th – 23rd January 2020)

- Night minimum temperatures are likely to remain below normal during a few days over major parts of India outside some parts of east Uttar Pradesh, Bihar, Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura, south interior Karnataka, south Andhra Pradesh and central Tamil Nadu, where normal to above normal night temperatures are likely to prevail on some of the days during the week. (**Annexure V**).

Minimum Temperatures for week 2: (24th – 30th January 2020)

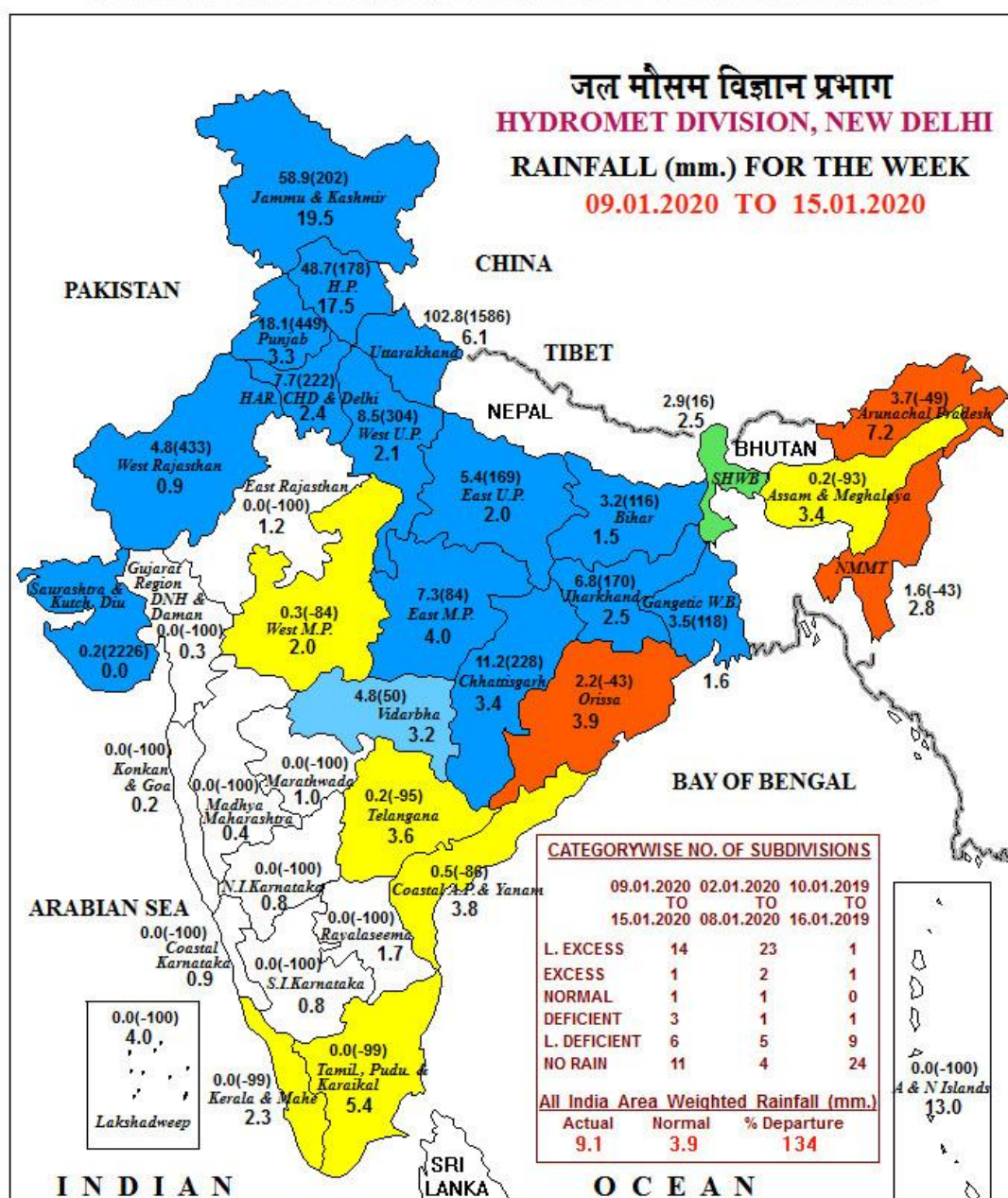
- Week 2 in general is likely to be warmer than week 1. Still, Night minimum temperatures are likely to be below normal over major parts of India, outside Nagaland, Manipur, Mizoram, south interior Karnataka, south Andhra Pradesh and central Tamil Nadu, where above normal minimum temperatures are likely to occur during some of the days. (**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 23rd January 2020.

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT



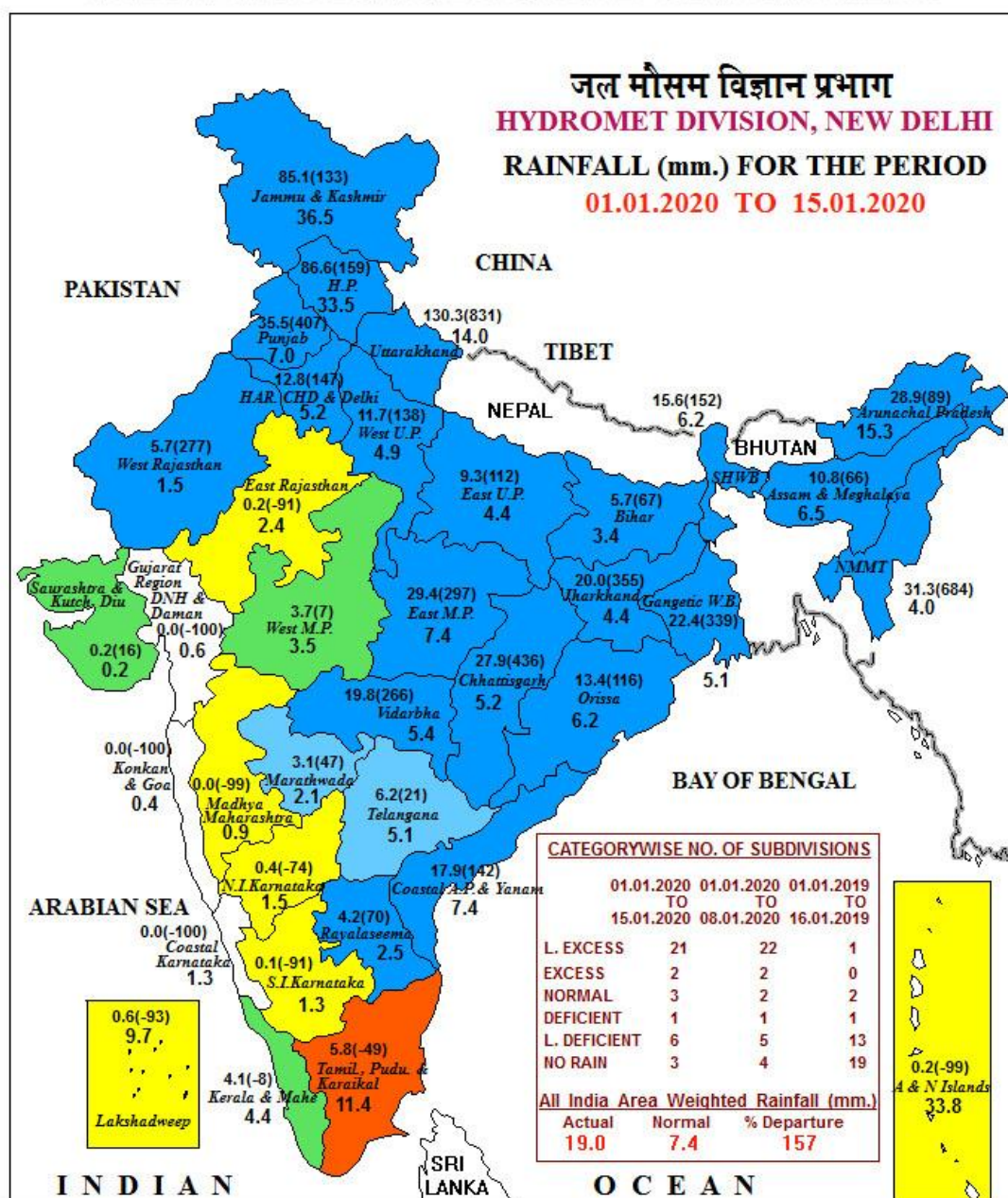
LEGEND: ■ L. EXCESS (+60% OR MORE) ■ EXCESS (+20% TO +59%) ■ NORMAL (+19% TO -19%)
 ■ DEFICIENT (-20% TO -59%) ■ L. DEFICIENT (-60% TO -99%) ■ NO RAIN (-100%) ■ NO DATA

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.

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Annexure-III

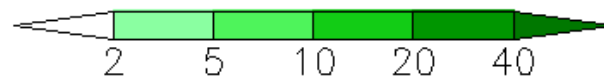
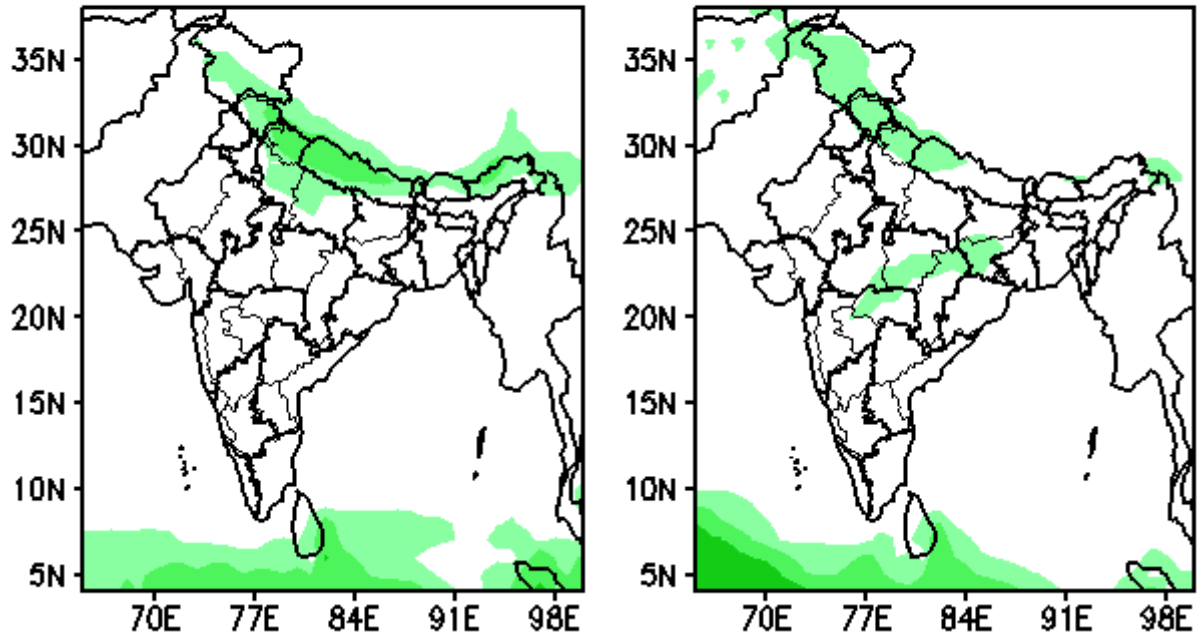
METEOROLOGICAL SUB-DIVISIONWISE WEEKLY RAINFALL FORECAST & Wx. WARNINGS-2020

Sr. No	MET.SUB-DIVISIONS	16 JAN	17 JAN	18 JAN	19 JAN	20 JAN	21 JAN	22 JAN
1	ANDAMAN & NICO.ISLANDS	D	D	D	D	ISOL	ISOL	D
2	ARUNACHAL PRADESH	ISOL	SCT	FWS	FWS ^{TS #} / _*	FWS	SCT	SCT
3	ASSAM & MEGHALAYA	D [*]	D [*]	ISOL	ISOL ^{TS}	ISOL	ISOL	D
4	NAGA.MANI.MIZO.& TRIPURA	D [*]	D [*]	D	ISOL	ISOL	ISOL	D
5	SUB-HIM.W. BENG. & SIKKIM	ISOL	SCT	SCT	ISOL	D	D	D
6	GANGETIC WEST BENGAL	D	D [*]	ISOL	ISOL	D	ISOL	ISOL
7	ODISHA	D [*]	D [*]	D	D	D	ISOL	ISOL
8	JHARKHAND	D	D	ISOL	SCT	ISOL	SCT	ISOL
9	BIHAR	ISOL	SCT	SCT	ISOL [*]	D [*]	D [*]	D
10	EAST UTTAR PRADESH	FWS ^{TS #}	SCT [*] / _{TS #}	ISOL [*]	ISOL [*]	D [*]	D [*]	D
11	WEST UTTAR PRADESH	FWS ^{TS #}	SCT [*] / _{TS #}	ISOL [*]	D [*]	D [*]	D [*]	D
12	UTTARAKHAND	WS [*] / _{TS #}	FWS ^{TS #}	SCT	D	D	ISOL	D
13	HARYANA CHD. & DELHI	FWS ^{TS #}	ISOL [*]	ISOL [*]	D [*]	D	D	D
14	PUNJAB	SCT [*]	ISOL [*]	ISOL [*]	D [*]	D	ISOL	D [*]
15	HIMACHAL PRADESH	FWS	SCT	SCT	D	ISOL	FWS	ISOL
16	JAMMU & KASHMIR	SCT	SCT	ISOL	D	SCT	FWS [*] / _*	SCT
17	WEST RAJASTSAN	ISOL [*]	D [*]	D [*]	D [*]	D	D	D
18	EAST RAJASTSAN	SCT [*] / _{TS #}	D [*]	D [*]	D [*]	D	D	D
19	WEST MADHYA PRADESH	SCT [*] / _{TS}	ISOL [*]	D [*]	D [*]	D [*]	ISOL	D
20	EAST MADHYA PRADESH	SCT [*] / _{TS}	ISOL [*] / _{TS #}	ISOL [*]	ISOL [*]	D [*]	SCT ^{TS #}	ISOL ^{TS}
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	D	D	D	D	D	ISOL ^{TS}	D
27	CHHATTISGARH	D	ISOL ^{TS #}	ISOL	ISOL	D	ISOL ^{TS #}	ISOL ^{TS}
28	COASTAL A. PR. & YANAM	D	D	D	D	D	D	D
29	TELANGANA	D	D	D	D	D	D	D
30	RAYALASEEMA	D	D	D	D	D	D	D
31	TAMIL. PUDU. & KARAIKAL	D	ISOL	ISOL	D	D	ISOL	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	D	D
36	LAKSHADWEEP	SCT	D	D	D	D	D	D
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)	

Forecast Rainfall (mm/day)

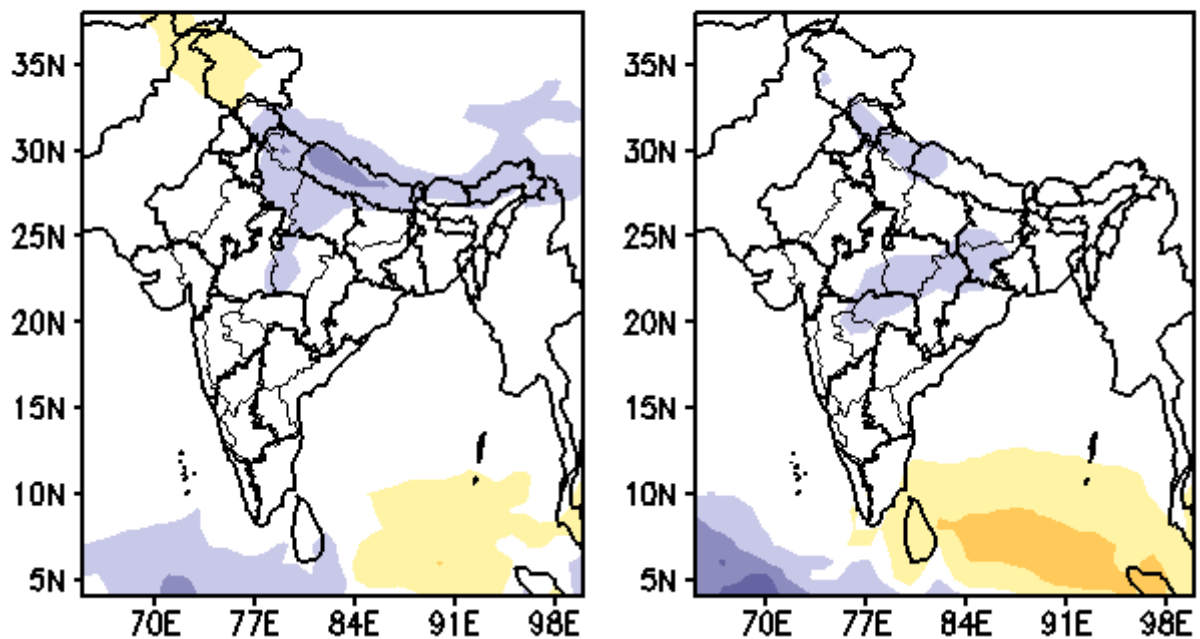
(Week1: 17Jan–23Jan)

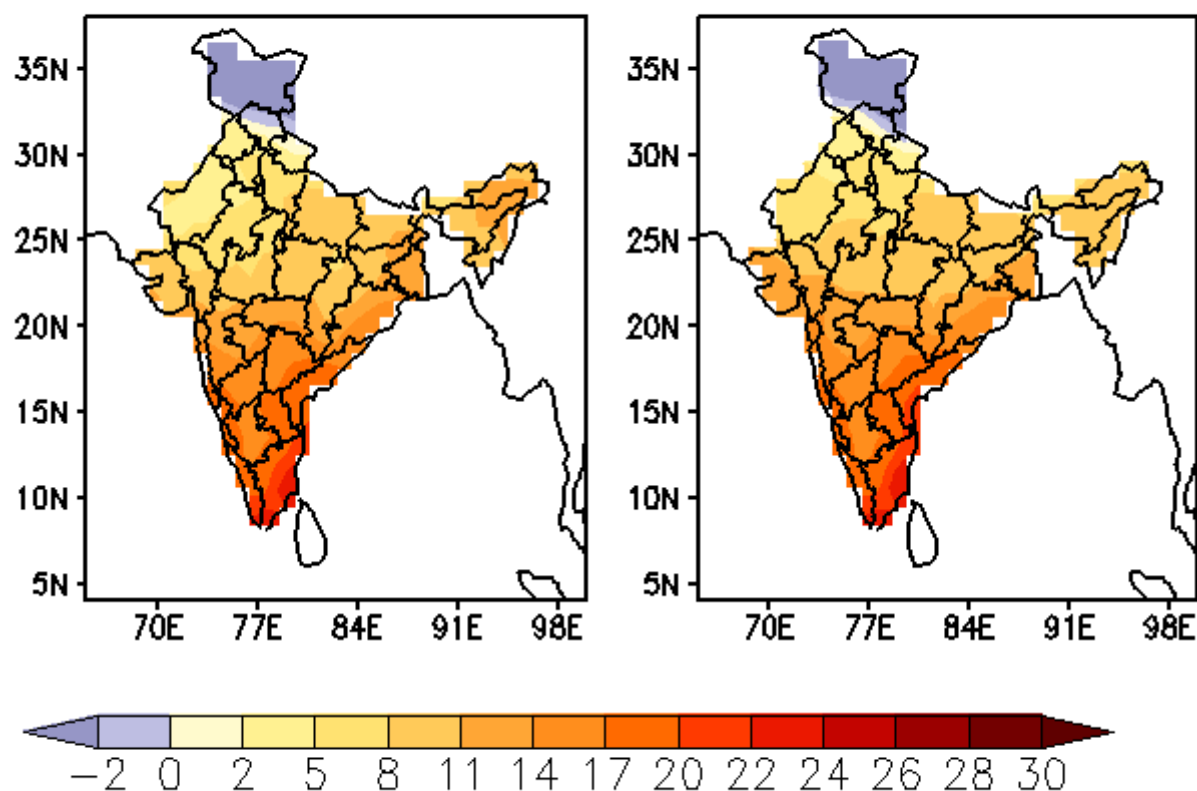
(Week2: 24Jan–30Jan)

**Forecast Rainfall Anomaly (mm/day)**

(Week1: 17Jan–23Jan)

(Week2: 24Jan–30Jan)



MME Bias corrected forecast Tmin (Deg**(Week1: 17Jan–23Jan)****(Week2: 24Jan–30Jan)****MME forecast Tmin anomaly (Deg C)****(Week1: 17Jan–23Jan)****(Week2: 24Jan–30Jan)**