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

Dated: 12th December, 2019

Current Weather Status and Outlook for next two weeks

Highlights of the past week

Weather systems & Precipitation:

- There were 3 intense low pressure systems over the Arabian Sea viz., (i) Cyclonic Storm PAWAN, which intensified from last week's Depression over southwest Arabian Sea. It moved west-northwestwards initially, then re-curved west-southwestwards and crossed Somalia coast as a Cyclonic Storm on 7th morning. Subsequently it weakened gradually into a well marked low pressure area over Somalia and adjoining Ethiopia by the evening of 9th December. (ii) last week's Deep Depression over eastcentral Arabian Sea moved nearly west-northwestwards and dissipated over eastcentral Arabian Sea by 6th December morning and (iii) a fresh Deep Depression formed over southwest Arabian Sea on 8th December, from a low pressure area. Moving nearly westwards, this also weakened over the Sea (southwest Arabian Sea) during the forenoon of 10th December.
- **Heavy rainfall** occurred at isolated places over Tamil Nadu, Puducherry & Karaikal on one day during the week.

Fog:

- Dense to very dense fog occurred at isolated pockets over Jammu & Kashmir on five days; over Punjab on four days; over Haryana, Chandigarh & Delhi on three days and over Uttar Pradesh and East Rajasthan on one day during morning hours.

Temperatures:

- Night minimum temperatures in general remained below normal over major parts of northwest India and normal to above normal over the rest of the country.
- The **lowest minimum** temperature reported over the plains was **3.3ºC** at **Bhatinda** (Punjab) on **06th December 2019.**

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Weekly Rainfall Scenario (05th to 11th December 2019)

During the week, rainfall was below the Long Period Average (LPA) by 88% over the country as a whole. Details are given below:

Regions	Actual Rainfall (mm)	Normal Rainfall (mm)	% Departure from LPA
Country as a whole	0.5	4.3	-88
Northwest India	0.2	2.7	-92
Central India	0.0	2.2	-99
South Peninsula	2.2	11.7	-81
East & northeast India	0.1	2.5	-98

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

Seasonal Rainfall Scenario (1st October to 11th December 2019)

For the country as a whole, cumulative rainfall during this year's post monsoon season upto 11th December is above LPA by 30%. 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	146.4	112.8	+30
Northwest India	69.8	38.7	+80
Central India	119.1	72.7	+64
South Peninsula	313.9	261.1	+20
East & northeast India	145.4	157.6	-08

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

Chief synoptic conditions as on 12th December 2019

- A Western Disturbance as a cyclonic circulation lies between 3.1 & 4.5 km above mean sea level over central Afghanistan & adjoining Pakistan with a trough aloft at 5.8 km above mean sea level with its axis roughly along Long. 62°E to the north of 24°N.
- An induced cyclonic circulation extending upto 2.1 km above mean sea level lies over southwest Rajasthan & neighbourhood.
- A cyclonic circulation extending upto 0.9 km above mean sea level lies over southeast Rajasthan & neighbourhood.

- A trough in easterlies extending upto 0.9 km above mean sea level lies over southwest Bay of Bengal off Sri Lanka coast.

Large scale features as on 12th December 2019

- Currently, ENSO neutral conditions are prevailing over equatorial Pacific Ocean and the latest Monsoon Mission Coupled Forecast System (MMCFS) output indicates that neutral conditions are likely to continue during the forecast period.
- At present, positive Indian Ocean Dipole (IOD) conditions are observed over Indian Ocean and the latest MMCFS forecast indicates that positive IOD conditions are likely to continue with gradual reduction in strength during the forecast period.
- The convectively active phase of the Madden–Julian Oscillation (MJO) is currently in Phase-2 (western Indian Ocean) with amplitude slightly greater than 1. It is likely to remain in the same Phase, maintaining the amplitude during week-1. The amplitude is likely to reduce gradually, thereby becoming less discernible as it propagates eastwards into Phases 3 & 4 during week -2.

Forecast for next two weeks

Weather systems and associated Precipitation & temperature pattern during week 1 (13th – 19th December 2019) and week 2 (20th – 26th December 2019)

Rainfall for week 1: (13th – 19th December 2019)

- The present active western disturbance along with its induced cyclonic circulation, mentioned above is likely to cause fairly widespread to widespread precipitation (rain / hailstorms over the plains and snow / hailstorms over the Higher reaches) over Jammu & Kashmir and Ladakh, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, north Rajasthan, west Uttar Pradesh and north Madhya Pradesh at the beginning of week-1.Isolated to scattered rainfall likely over east Uttar Pradesh, Bihar, Jharkhand, sub- Himalayan west Bengal & Sikkim and Arunachal Pradesh and isolated rainfall over north Maharashtra & north Gujarat during the same period. However, during the subsequent period, the precipitation activity is very likely to remain confined to the higher reaches of western Himalayan region.
- An active near equatorial convergence zone, with embedded lower tropospheric troughs in easterlies are likely to cause isolated to scattered rainfall over southern parts of Tamil Nadu, Kerala and Lakshadweep during week -1.
- Cumulatively, Normal precipitation is likely over Jammu & Kashmir and Ladakh, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Bihar, Jharkhand, Sikkim and Arunachal Pradesh, below normal over Andaman & Nicobar Islands, Andhra Pradesh, Tamil Nadu, Kerala and coastal & south Interior Karnataka and near normal over the rest of the states. **(Annexure III & IV).**

Rainfall for week 2: (20th – 26th December 2019)

- From 19th December onwards, upto the middle of week-2, a fresh western disturbance is likely to cause precipitation over western Himalayan region. The equatorial easterly waves are likely to remain subdued during week -2.
- Cumulatively, above normal precipitation likely over Jammu & Kashmir and Ladakh Himachal Pradesh, below normal over Andaman & Nicobar islands, Tamil Nadu & Kerala and near normal over the rest of India. **(Annexure IV)**.

Minimum Temperatures for week 1: (13th – 19th December 2019)

- Night minimum temperatures are likely to remain above normal over Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, west Bengal, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Gujarat, interior Maharashtra and interior Karnataka and normal to slightly below normal over the rest of India during the initial 4-5 days. They are likely to fall to their below normal range over Jammu & Kashmir and Ladakh, Himachal Pradesh and Uttarakhand from around 15th December and over Punjab, Haryana, Chandigarh & Delhi, west Uttar Pradesh, Rajasthan, west Madhya Pradesh, Gujarat and Arunachal Pradesh from 18th December. (**Annexure V**)**.**

Minimum Temperatures for week 2: (20th – 26th December 2019)

- Major parts of India are likely to experience below normal night minimum temperatures during week-2. However, isolated pockets of south interior Karnataka, Madhya Maharashtra and east Uttar Pradesh could remain warmer than normal for a few days during this period. (**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 19th December 2019.

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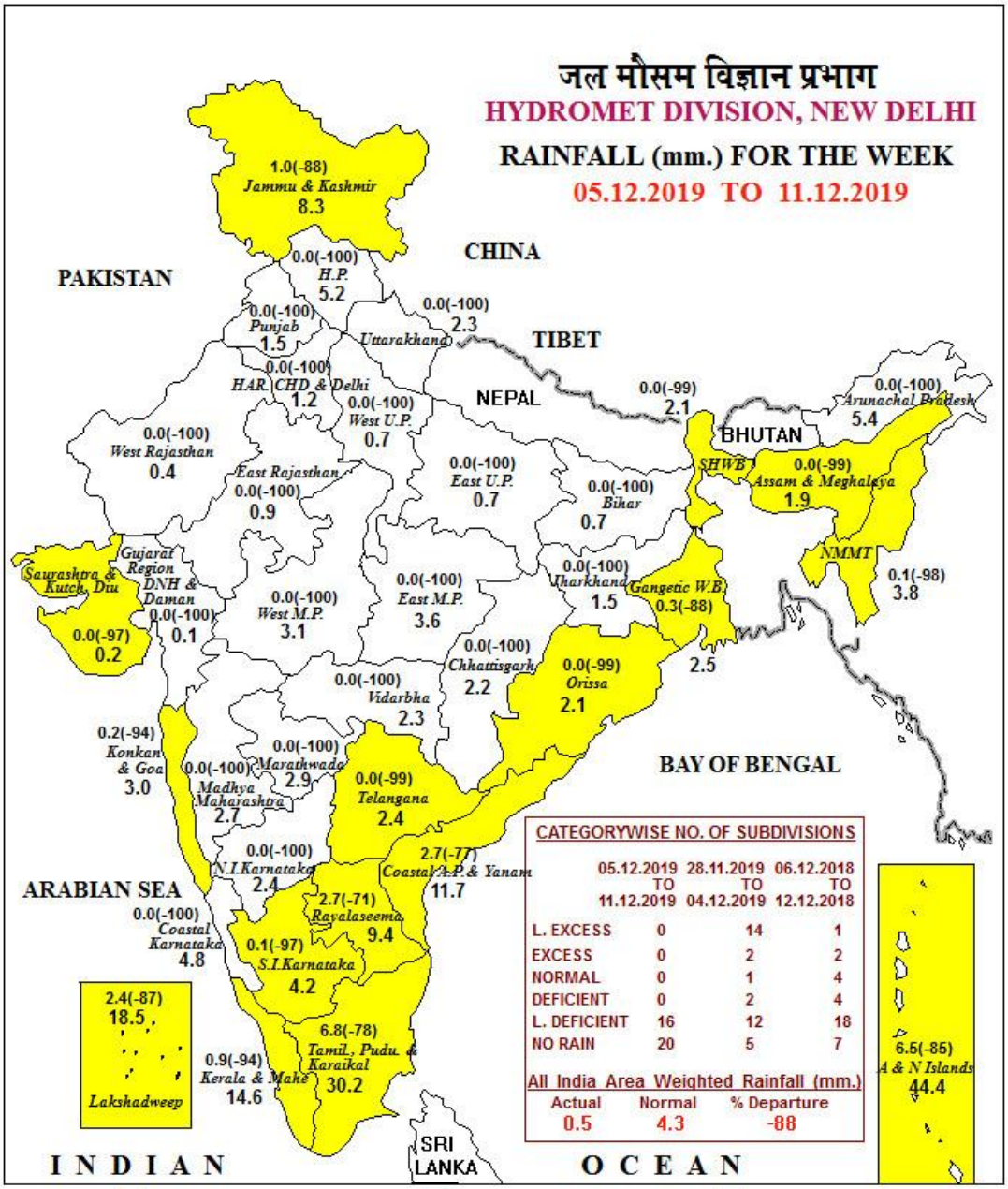
INDIA METEOROLOGICAL DEPARTMENT



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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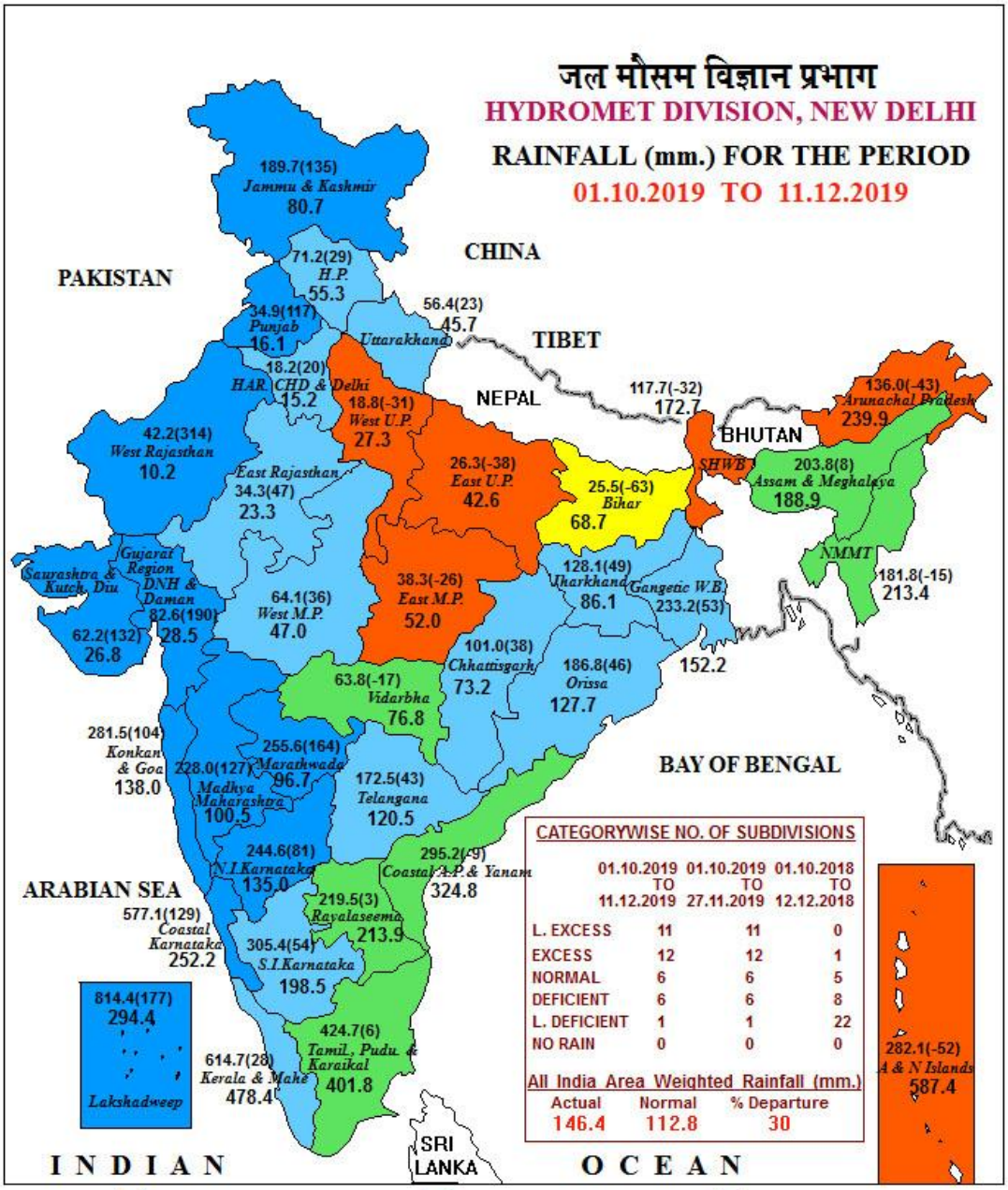
INDIA METEOROLOGICAL DEPARTMENT



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Annexure- III

METEOROLOGICAL SUB-DIVISIONWISE WEEKLY RAINFALL FORECAST & Wx. WARNINGS-2019

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

LEGENDS:

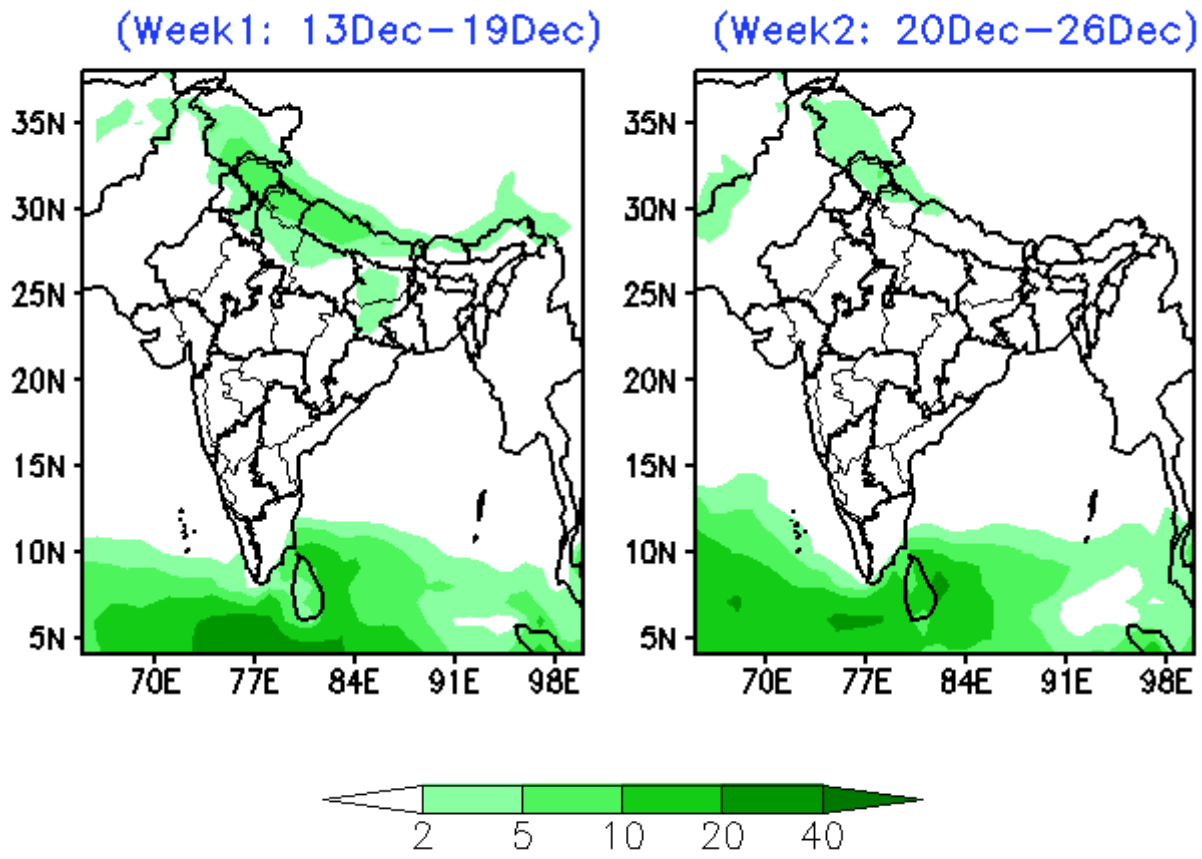
WS	WIDE SPREAD / MOST PLACES (76-100%)	FWS	FAIRLY WIDE SPREAD / MANY PLACES (51% to 75%)		
SCT	SCATTERED / FEW PLACES (26% to 50%)	ISOL	ISOLATED (up to 25%)	D/DRY	NIL RAINFALL

• 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)

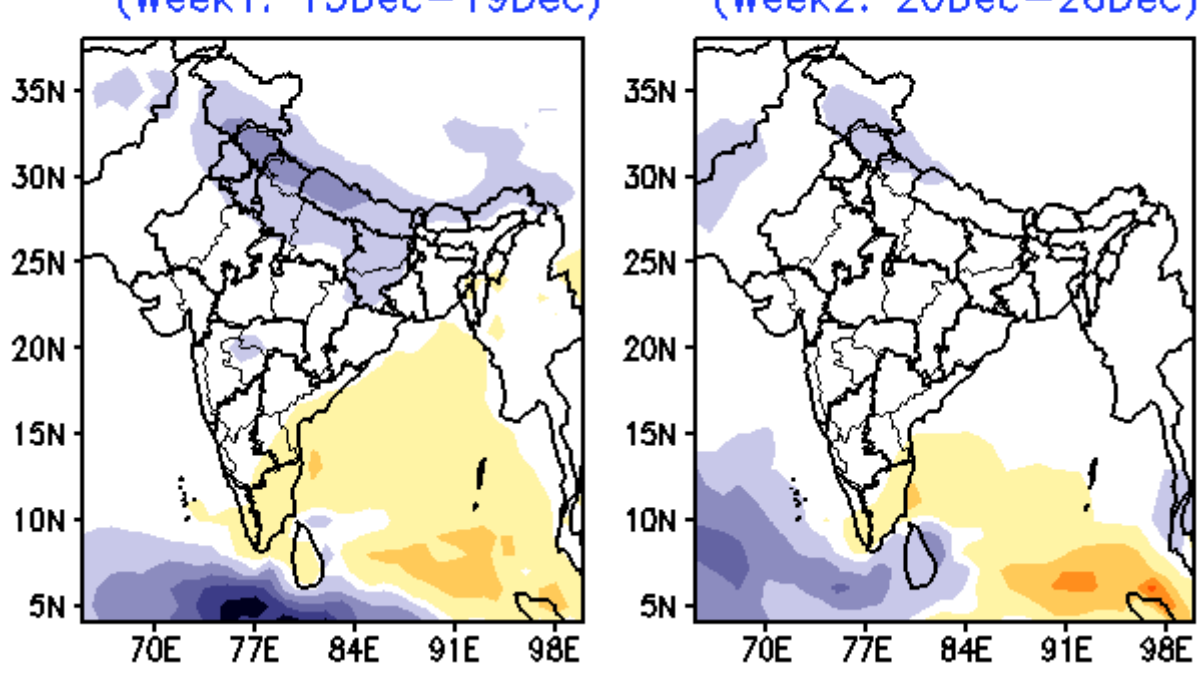
FOG	* SNOWFALL	# HAILSTORM	COLD WAVE (-4.5 °C to -6.4 °C)	SEVERE COLD WAVE (< -6.4)
$ TSUNDERSTORM WITS SQUALL/GUSTY WIND	DS/TS DUST/TSUNDERSTORM		HEAT WAVE (+4.5 °C to +6.4 °C)	SEVERE HEAT WAVE (> +6.4)

Annexure IV

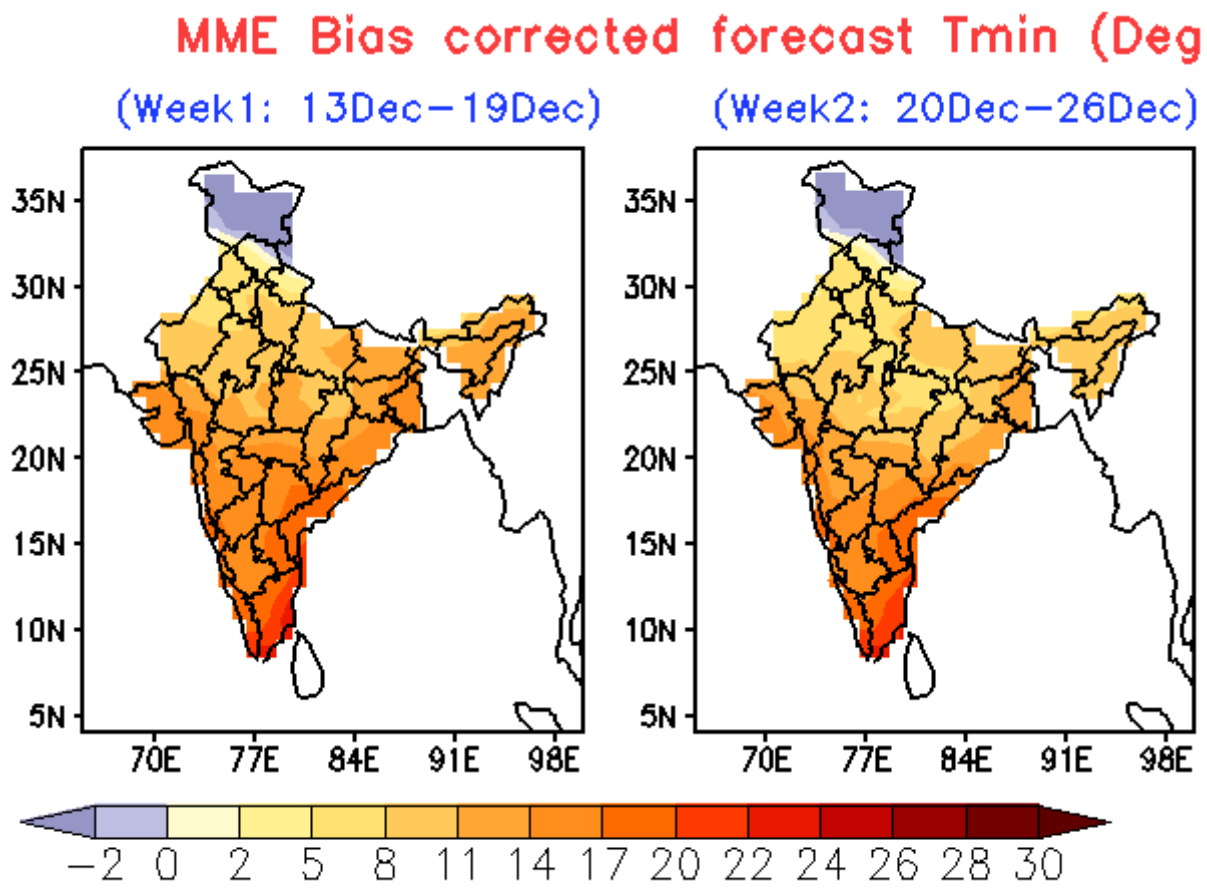
Forecast Rainfall (mm/day)

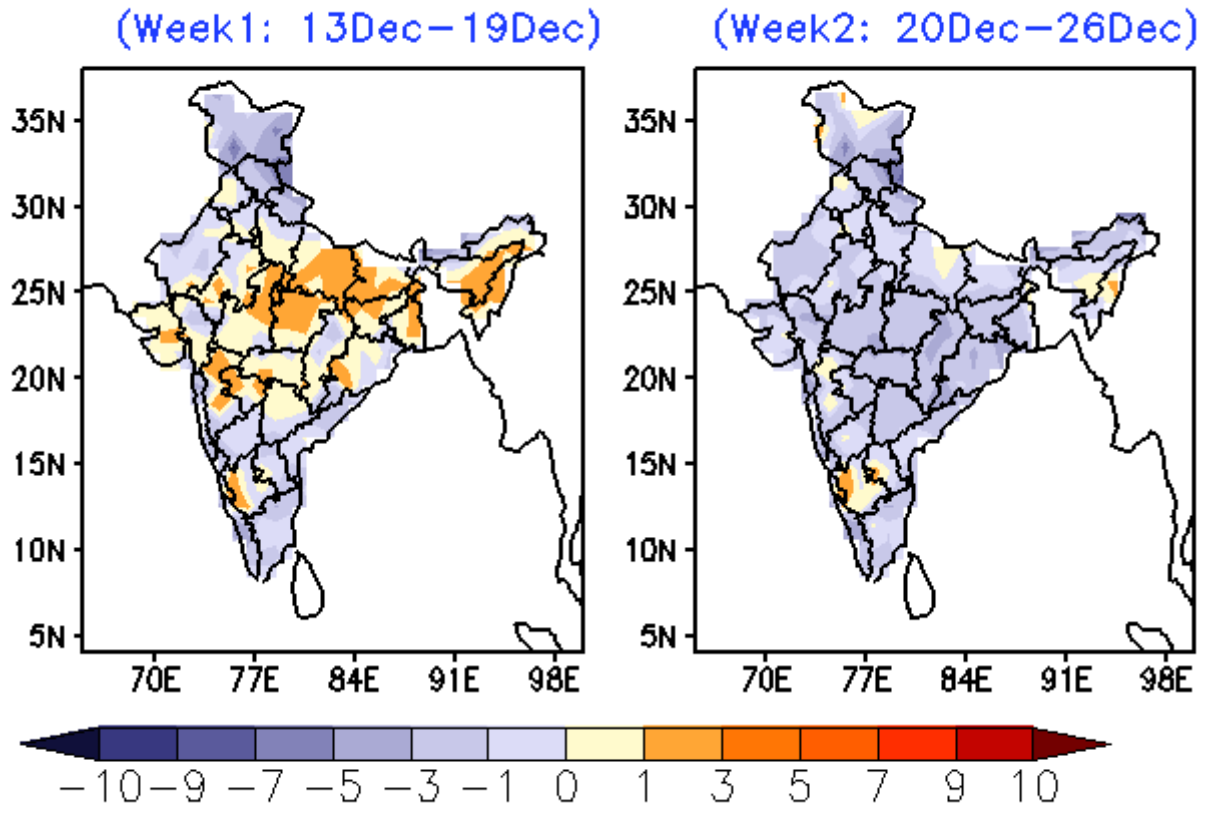


Forecast Rainfall Anomaly (mm/day)



Annexure V


MME Bias corrected forecast Tmin (Deg
(Week1: 13Dec-19Dec)
(Week2: 20Dec-26Dec)
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: 13Dec-19Dec)
(Week2: 20Dec-26Dec)
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