



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

Dated: 05th March, 2020

Current Weather Status and Outlook for next two weeks

Highlights of the past week

Significant weather systems & associated weather

- An active Western Disturbance (WD) and its induced cyclonic circulation caused fairly widespread to widespread rain/snow and isolated hailstorms over Western Himalayan Region. It also caused scattered to fairly widespread rainfall/thunderstorms and isolated hailstorms over the adjoining plains of northwest India during the first half of the week. Another active WD caused scattered to fairly widespread precipitation (rain / snow & isolated hailstorms) over the above mentioned regions towards the end of the week.
- From the remnants of systems in westerlies, scattered to fairly widespread rain / thundershowers also occurred over east & Northeast India.
- Development of a north-south trough and cyclonic circulations in the lower levels caused isolated to scattered rain / thundershowers over south Peninsula and central India during the week. Heavy rain occurred at isolated places on one day (during the 24 hour period ending at 0300 UTC of 29th Feb.) over coastal Andhra Pradesh.

Temperatures:

- The **highest maximum temperature of 38.5°C** was recorded at **Madurai (Tamil Nadu) on 04th March 2020** and **lowest minimum temperature of 7.7°C** was recorded at **Kota (East Rajasthan) on 2nd March 2020** over the plains of the country.

Fog:

- **Dense fog** occurred at isolated pockets over: Odisha on two days; Haryana, Chandigarh & Delhi, East Uttar Pradesh and Himachal Pradesh on one day each during the week.

Weekly Rainfall Scenario (27th February – 04th March 2020)

During the week, rainfall was below the Long Period Average (LPA) by 08% over the country as a whole. Details are given below:

Regions	Actual Rainfall (mm)	Normal Rainfall (mm)	% Departure from LPA
Country as a whole	4.7	5.1	-08
Northwest India	6.8	9.2	-26
Central India	2.1	1.8	+15
South Peninsula	1.8	1.7	+06
East & northeast India	9.5	8.4	+13

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

Seasonal Rainfall Scenario (01st January to 29th February 2020)

For the country as a whole, cumulative rainfall during the winter season has been below LPA by 01%. 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	40.2	40.8	-01
Northwest India	68.1	78.9	-14
Central India	28.5	15.2	+87
South Peninsula	10.2	16.2	-37
East & northeast India	48.1	52.1	-08

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

Chief synoptic conditions as on 05th March 2020

- A WD as a cyclonic circulation between 3.1 & 5.8 km above mean sea level lies over southwest Afghanistan & neighbourhood with a trough aloft running with its axis at 7.6 km above mean sea level roughly along Long. 63°E to the north of Lat. 25°N.
- An induced low pressure area lies over southwest Rajasthan & neighbourhood. Associated cyclonic circulation extends upto 1.5 km above mean sea level.
- A cyclonic circulation extending upto 1.5 km above mean sea level lies over north Bangladesh & neighbourhood.

- A trough at 0.9 km above mean sea level runs from southeast Madhya Pradesh to interior Tamil Nadu across Vidarbha and Telangana.

Large scale features as on 05th March 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 Sea Surface Temperatures (SSTs) in coming season and ENSO-neutral conditions are likely to continue upto April-May-June period.
- At present neutral IOD conditions are observed over Indian Ocean and the latest MMCFS forecast indicates that it is likely to continue during the forecast period.
- 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 into Phase 5 during first half of week 1 with amplitude more than 1. Thereafter it is likely to 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 (06th – 12th March 2020) and week 2 (13th – 19th March 2020)

Week 1 (06th – 12th March 2020)

- The present WD and the induced low pressure area could continue to cause fairly widespread to widespread rain / snow over western Himalayan region [(WHR) comprising Jammu & Kashmir and Ladakh, Himachal Pradesh and Uttarakhand] on 06th & 07th March and over northwestern parts of Jammu & Kashmir till 8th March. Fairly widespread rains are also likely over Punjab, Haryana, Chandigarh & Delhi, north Rajasthan and Uttar Pradesh on 06th & 07th March. This weather could be accompanied with Thunderstorms, Lightning, Gusty winds (of the order of 30-40 kmph) and isolated hailstorms. Since the intensity of the system would be at its peak on 6th, moisture & wind convergence could result in isolated events of heavy rainfall over WHR as well as over Punjab, Haryana, Chandigarh & Delhi and west Uttar Pradesh on 6th/ 7th March.
- Presence of a north-south trough in the lower levels and moisture convergence could result in scattered to fairly widespread / widespread rainfall over parts of north Chhattisgarh, Bihar, Jharkhand, north Odisha and west Bengal & Sikkim during 6th & 7th March, with chance of moderate to severe Thunderstorms / Lightning and isolated Hailstorms.

- Scattered to fairly widespread rain / Thundershowers could also occur over northeastern States (Arunachal Pradesh, Assam, Meghalaya and Nagaland, Manipur, Mizoram & Tripura) during 6th – 8th March.
- Isolated to scattered rain / Thundershowers could occur over Andhra Pradesh, Telangana, interior Karnataka, Kerala, interior Maharashtra and Madhya Pradesh mainly during 6th – 8th March.
- Subsequently, a fresh WD is likely to start affecting WHR and plains of northwest India from 10th March till 14th March. The peak activity due to this system could be on the last 2 days of the week.
- Thus towards the end of week-1, the entire WHR could once again experience widespread rain/snow with isolated heavy falls and isolated to scattered Thunderstorms, Lightning, Hailstorms & Gusty winds. Plains of northwest India comprising Punjab, Haryana, Chandigarh & Delhi, north Rajasthan and Uttar Pradesh could witness scattered rainfall with isolated Hailstorms, Thunderstorms, Lightning & gusty wind during 11th & 12th March.
- Scattered to fairly widespread rain / thundershowers including Lightning are likely over west Bengal, Sikkim, Bihar, Jharkhand and Odisha during 10th - 12th March and isolated activity of similar nature over Madhya Pradesh, Chhattisgarh and Vidarbha, during the same period.
- Fairly widespread to widespread rain/ Thundershowers, Lightning & Gusty winds are also likely over Arunachal Pradesh during 10th – 12th March. **(Annexure III & IV).**
- **Cumulative** precipitation is likely to be above normal over northwest India (Jammu & Kashmir, Ladakh, Punjab, Haryana, Chandigarh & Delhi, west Uttar Pradesh), west Bengal, Sikkim and Ghat sections of Kerala & Tamil Nadu and near normal over the rest of India **(Annexure IV).**

Week 2 (13th – 19th March 2020)

- The rainfall activity depicted towards the end of week-1 above is likely to continue in the initial couple of days of week-2 over WHR & plains of northwest India as well as over east & northeast India. The intensity however could reduce substantially over northwest India with probable increase over east & northeast India during 13th & 14th March.
- During the above period, the impact of rain / thundershowers over eastern India (Jharkhand, Bihar, north Odisha and west Bengal & Sikkim) could be significant when isolated heavy falls, Thunderstorm & hailstorm likelihood increases further over the region around 13th & 14th March. Arunachal Pradesh and some parts of Assam is also likely to undergo similar weather pattern during 13th – 15th March.
- A chance of a fresh WD affecting WHR is only towards the end of the week.

- Isolated to scattered rain / thundershowers could occur over southern parts of peninsular India and central India on most of the days.
- **Cumulatively**, below normal rainfall is likely over Jammu & Kashmir, south Kerala and Nicobar Islands and near normal rainfall over the rest of the country.

Maximum Temperatures for week 1: (06th – 12th March 2020)

- Below normal day maximum temperatures are likely to prevail over major parts of India outside Jammu & Kashmir, Ladakh and coastal Tamil Nadu, Puducherry & Karaikal where they are likely to remain above normal for a few days. (**Annexure V**).

Maximum Temperatures for week 2: (13th – 19th March 2020)

- Below normal day maximum temperatures are likely to continue over major part of the Indian mainland, with slight warming as compared to week 1. However, above normal day temperatures are likely to prevail over Jammu & Kashmir, Ladakh, Uttarkahan, Kutch, Arunachal Pradesh, east Assam, Nagaland and coastal areas of Odisha, Andhra Pradesh and Tamil Nadu, Karaikal & Puducherry. (**Annexure V**).

Minimum Temperatures for week 1: (06th – 12th March 2020)

- Below normal Night minimum temperatures are likely to prevail over Maharashtra, Gujarat, Rajasthan, Madhya Pradesh, Chhattisgarh, Odisha, Himachal Pradesh, Uttarakhand, Telangana and Arunachal Pradesh and above normal over the rest of the mainland. (**Annexure VI**).

Minimum Temperatures for week 2: (13th – 19th March 2020)

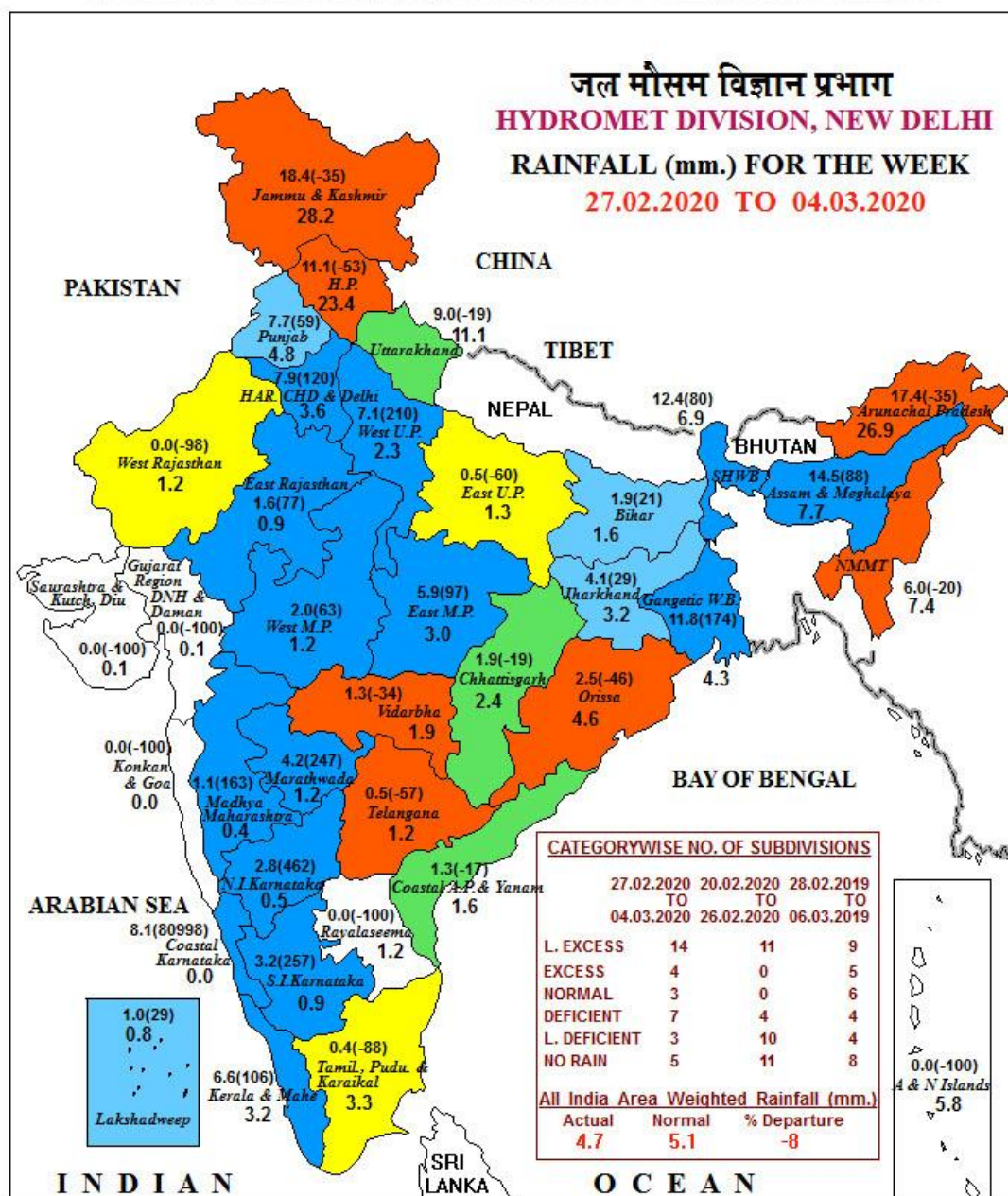
- Below normal Night minimum temperatures are likely to prevail over major parts of the Indian mainland, outside some parts of coastal & south interior Karnataka, interior Tamil Nadu and Nagaland and Manipur, where they are likely to be above normal on a few days. (**Annexure VI**).

Cyclogenesis probability:

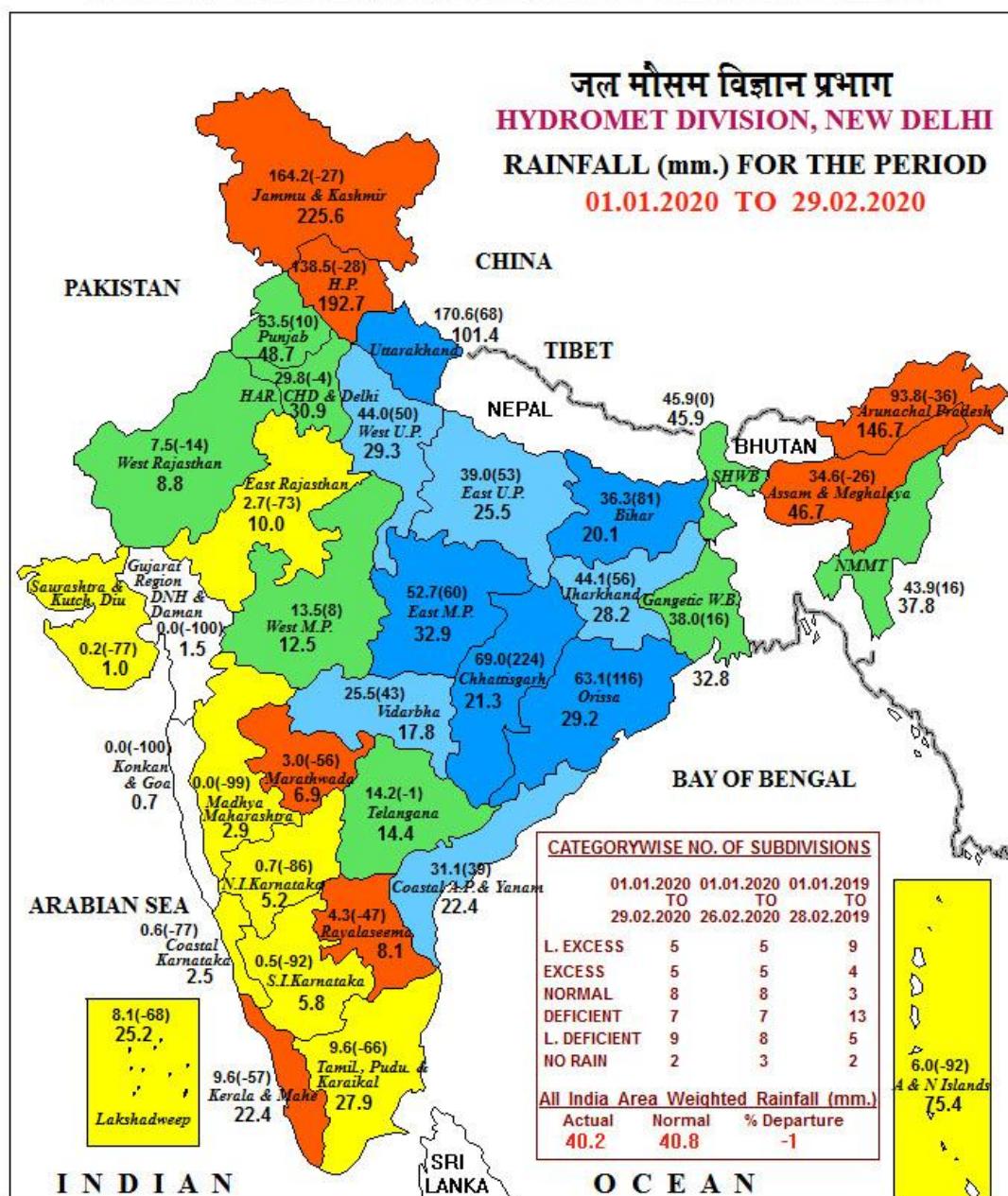
- No cyclogenesis likely as per the numerical model guidance during the forecast period.

Next weekly update will be issued on Thursday, the 12th March 2020.

भारत मौसम विज्ञान विभाग INDIA METEOROLOGICAL DEPARTMENT



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Annexure-III

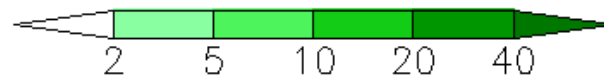
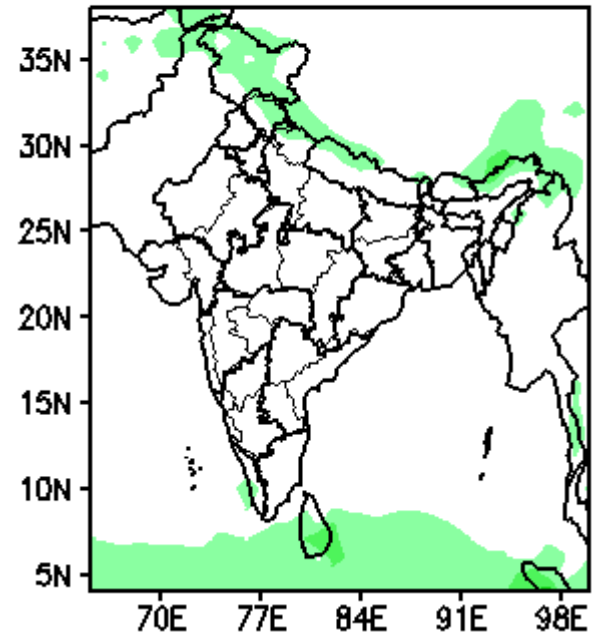
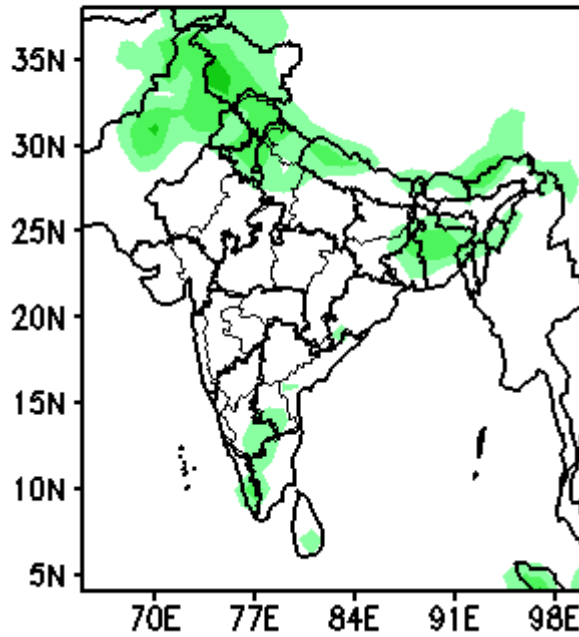
METEOROLOGICAL SUB-DIVISIONWISE WEEKLY RAINFALL FORECAST & Wx. WARNINGS-2020

Sr. No	MET.SUB-DIVISIONS	05 MAR	06 MAR	07 MAR	08 MAR	09 MAR	10 MAR	11 MAR
1	ANDAMAN & NICO.ISLANDS	ISOL	ISOL	D	D	D	D	D
2	ARUNACHAL PRADESH	SCT	SCT	FWS ^{TS}	SCT	SCT	SCT ^{TS}	FWS ^{TS}
3	ASSAM & MEGHALAYA	SCT ^{TS #}	SCT ^{TS #}	FWS ^{TS #}	SCT ^{TS}	ISOL	D	ISOL
4	NAGA.MANI.MIZO.& TRIPURA	SCT ^{TS}	SCT ^{TS}	SCT ^{TS}	SCT ^{TS}	ISOL	D	ISOL
5	SUB-HIM.W. BENG. & SIKKIM	FWS ^{TS #}	FWS ^{TS #}	FWS ^{TS}	ISOL	D	ISOL	SCT
6	GANGETIC WEST BENGAL	FWS ^{TS}	FWS ^{TS}	SCT ^{TS}	ISOL	D	ISOL	SCT ^{TS}
7	ODISHA	FWS ^{TS #}	FWS [*]	SCT ^{TS}	ISOL	D	ISOL ^{TS}	ISOL ^{TS}
8	JHARKHAND	FWS ^{TS #}	WS ^{TS #}	SCT ^{TS}	D	D	SCT ^{TS}	FWS ^{TS}
9	BIHAR	ISOL ^{TS #}	FWS ^{TS #}	ISOL	D	D	ISOL	SCT ^{TS}
10	EAST UTTAR PRADESH	FWS ^{TS #}	WS ^{TS #}	SCT	D	D	SCT	SCT ^{TS #}
11	WEST UTTAR PRADESH	FWS ^{*TS #}	WS ^{*TS #}	ISOL	D	D	SCT ^{TS}	FWS ^{TS}
12	UTTARAKHAND	FWS ^{TS #}	WS ^{*/[*]TS #}	FWS ^{TS #}	D	D	ISOL	FWS ^{TS #}
13	HARYANA CHD. & DELHI	WS ^{*TS #}	WS ^{*TS #}	ISOL	D	D	SCT ^{TS}	FWS ^{TS #}
14	PUNJAB	WS ^{*TS #}	WS ^{TS #}	ISOL	D	D	ISOL	WS ^{TS #}
15	HIMACHAL PRADESH	WS ^{*/[*]TS #}	WS ^{*/[*]TS #}	FWS	ISOL	D	ISOL	FWS ^{TS #}
16	JAMMU & KASHMIR	WS ^{*/[*]TS #}	WS ^{*/[*]TS #}	WS ^{*/[*]}	SCT	ISOL	ISOL	FWS ^{TS #}
17	WEST RAJASTSAN	FWS ^{TS #}	ISOL ^{TS #}	D	D	D	ISOL ^{TS}	ISOL ^{TS #}
18	EAST RAJASTSAN	SCT ^{TS #}	SCT ^{TS #}	ISOL	D	D	ISOL ^{TS}	ISOL ^{TS #}
19	WEST MADHYA PRADESH	ISOL ^{TS #}	ISOL ^{TS #}	D	D	D	ISOL	D
20	EAST MADHYA PRADESH	ISOL	SCT ^{TS #}	ISOL	D	D	SCT ^{TS #}	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	D	D
25	MARATHAWADA	D	D	D	D	D	D	D
26	VIDARBHA	ISOL ^{TS}	ISOL ^{TS #}	D	D	ISOL	ISOL	D
27	CHHATTISGARH	SCT ^{TS #}	FWS ^{TS}	ISOL	D	ISOL	SCT ^{TS #}	ISOL ^{TS #}
28	COASTAL A. PR. & YANAM	ISOL	SCT ^{TS}	ISOL ^{TS}	D	D	D	D
29	TELANGANA	ISOL	ISOL ^{TS}	ISOL	D	D	D	D
30	RAYALASEEMA	ISOL	ISOL	ISOL	D	D	D	D
31	TAMIL. PUDU. & KARAICAL	ISOL [*]	ISOL	ISOL	ISOL	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	ISOL	ISOL	D	D	D	D	D
35	KERALA & MAHE	SCT [*]	ISOL	ISOL	ISOL	D	ISOL	D
36	LAKSHADWEEP	SCT	SCT	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		* DUST/TSUNDERSTORM		* HEAT WAVE (+4.5 °C to +6.4 °C)			* SEVERE HEAT WAVE (> +6.4)	

Forecast Rainfall (mm/day)

(Week1: 06Mar–12Mar)

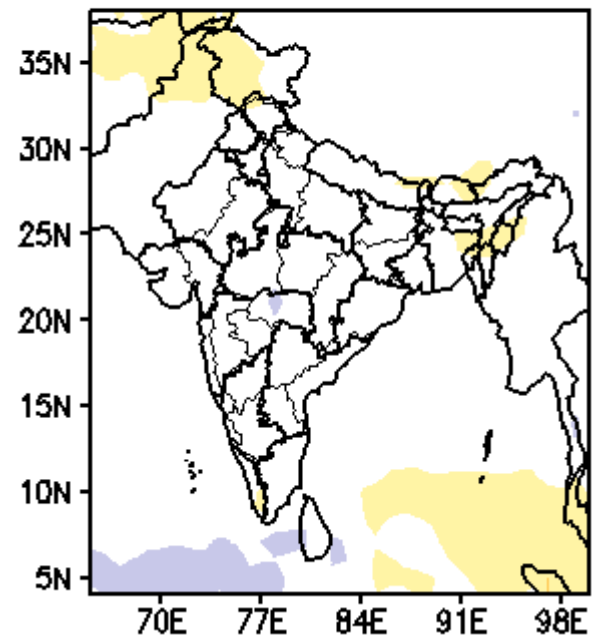
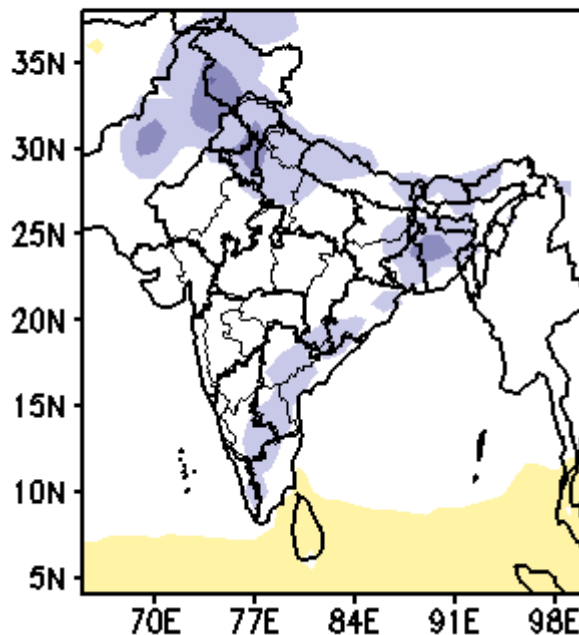
(Week2: 13Mar–19Mar)



Forecast Rainfall Anomaly (mm/day)

(Week1: 06Mar–12Mar)

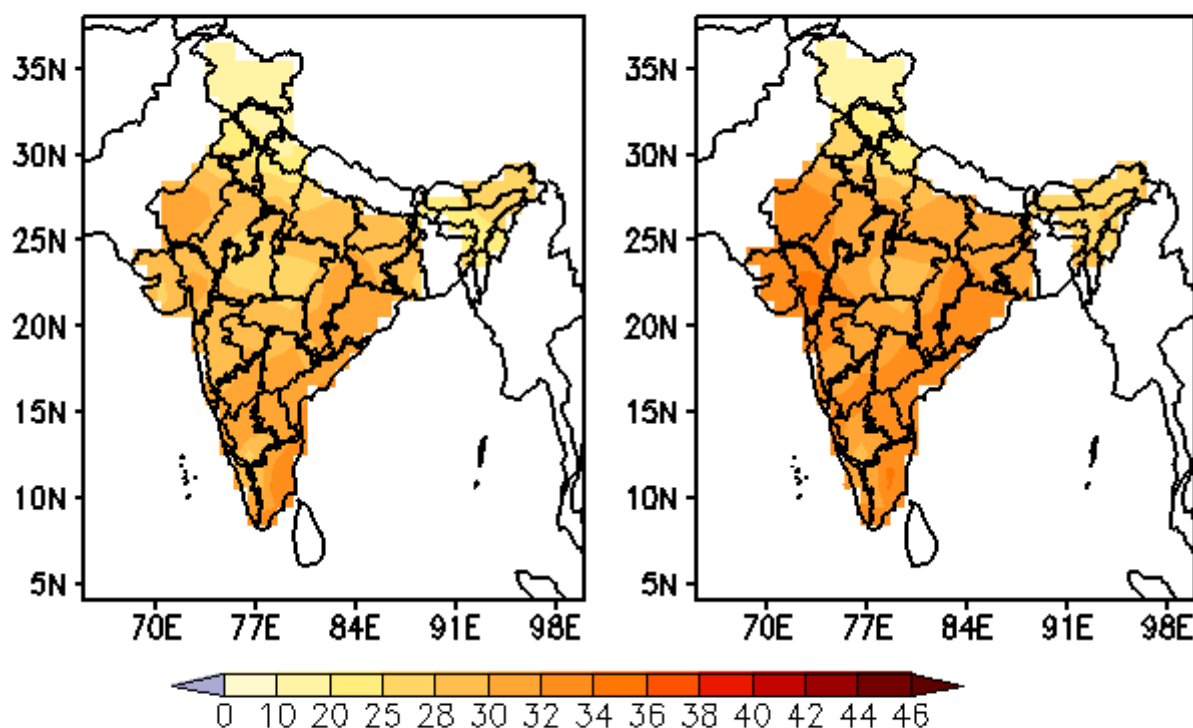
(Week2: 13Mar–19Mar)



MME Bias corrected forecast Tmax (Deg)

(Week1: 06Mar–12Mar)

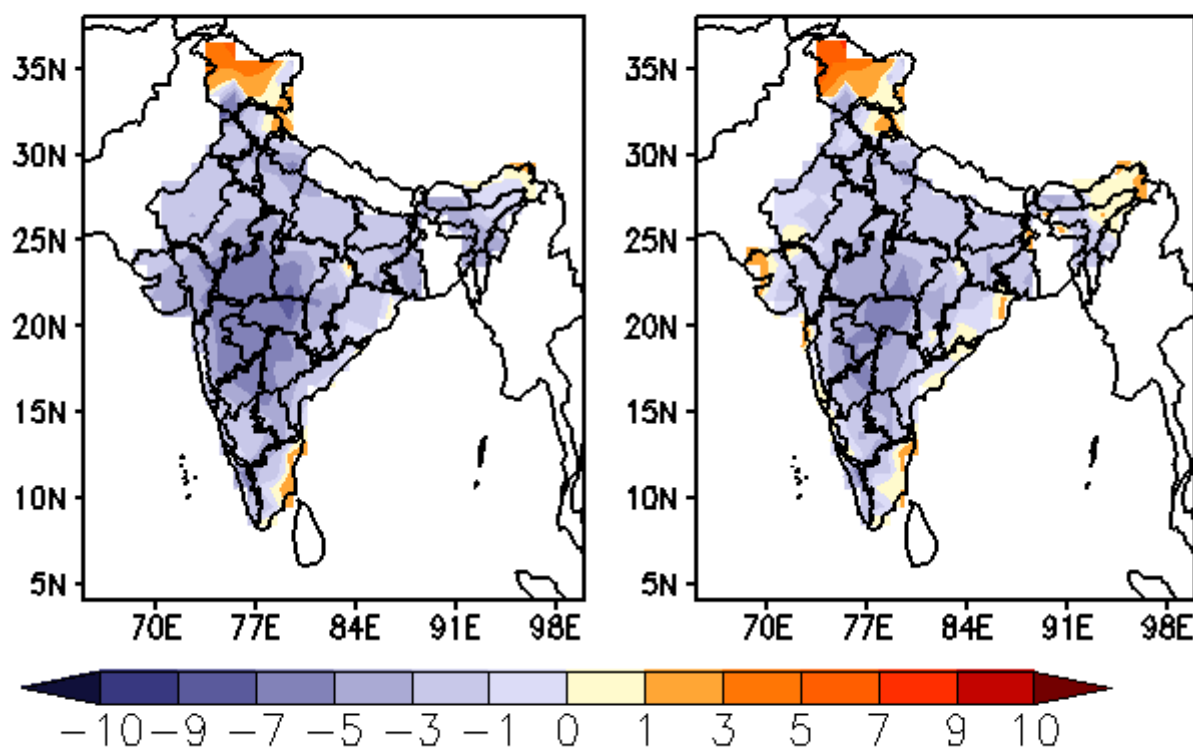
(Week2: 13Mar–19Mar)

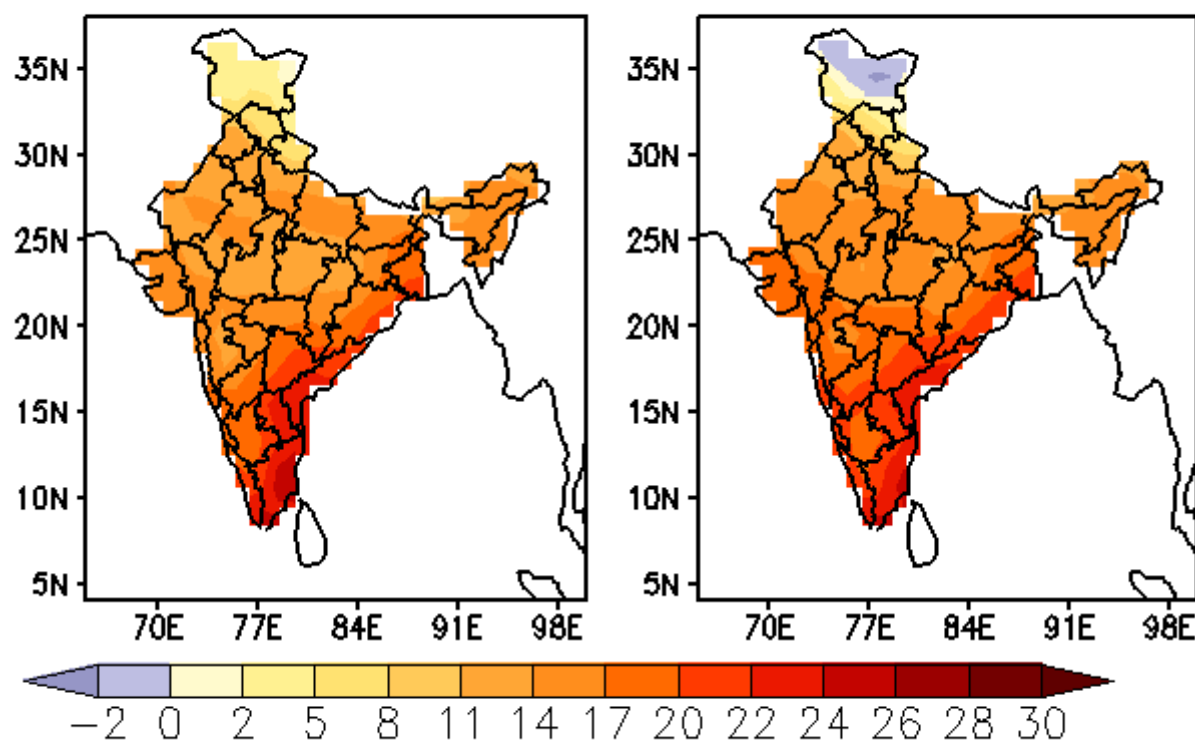


MME forecast Tmax anomaly (Deg C)

(Week1: 06Mar–12Mar)

(Week2: 13Mar–19Mar)



MME Bias corrected forecast Tmin (Deg**(Week1: 06Mar–12Mar)****(Week2: 13Mar–19Mar)****MME forecast Tmin anomaly (Deg C)****(Week1: 06Mar–12Mar)****(Week2: 13Mar–19Mar)**