



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

Press: Dated: 23rd March, 2023

**Subject: Current Weather Status and Extended range forecast for next two weeks
(23 March-5 April 2023)**

1. Salient Observed Features during 16-22 March 2023

- **Most parts of India experienced unusual long spell of thunderstorm(TS) activity covering a very large areas of the country, accompanied with isolated hailstorm, lightning, gusty winds, with wet spell and cloudy sky conditions, lasted almost a week, during 14-22 March 2023.**
- **We find Five main reasons using operational data: They are as follow:**
- ✓ Movement of two consecutive active WDs (during 16-20 and 19-22 March), as deep trough at middle and upper tropospheric westerlies from Iran towards eastern/northeastern parts of India, across north and central India.
- ✓ Formation with very slow movement of their Induced Cyclonic circulations, at lower levels, from southwest Rajasthan towards northeast Rajasthan and on some dates, upto Haryana, during 12-18 and 16-21 March.
- ✓ Persistence of trough/wind discontinuity seen from southern parts of the Peninsular India to east central India (upto Jharkhand on some dates), across central parts of Peninsular India, at the 0.9 km above mean sea level, in all dates, during 15-22 March with 2 days having an embedded cyclonic circulation over north Chhattisgarh & neighbourhood (18-19 March).
- ✓ Associated strong westerly jet stream (with wind speed exceeding 120 kmph to 200 kmph sometimes at the height of about 12 km) which provided upper level divergence and hence

lower level convergence of air mass and uplifting of air leading to formation of deep clouds.

- ✓ Feeding of moisture from Bay of Bengal and Arabian Sea in association with the anti-cyclonic circulation over the North Bay of Bengal and central Arabian Sea.
 - ✓ Lowering of freezing level in atmosphere helping in formation of hail.
- Absence of the heat wave conditions was seen during this week over most parts of India due to such longer spell of rainfall occurrences over most parts of the country.
- **Analysis of Weekly overall Rainfall distribution during the week ending on 22 March 2023 and Pre-monsoon Season's Rainfall Scenario (1 March-22 March 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 22 March (15-22 March) 2023 was 246%, over south Peninsula as +723%, central India as +1232% and northwest India had +68% while all India Seasonal cumulative rainfall %departure during this year's **Pre-monsoon Season's Rainfall** during **1 March-22 March 2023** is -31% and over northwest India, it is 25%. 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 I and II respectively.

Table 1: Rainfall status (Week and season)

Region	WEEK			SEASON		
	16.03.2023 TO 22.03.2023			01.03.2023 TO 22.03.2023		
	Actual	Normal	% Dep	Actual	Normal	% Dep
EAST & NORTH-EAST INDIA	39.3	12.9	+204%	44.3	35.7	+24%
NORTH-WEST INDIA	19.3	11.5	+68%	24.7	36	-31%
CENTRAL INDIA	17.3	1.3	+1232%	19.1	6.1	+213%
SOUTH PENINSULA	24.7	3	+723%	25.2	10.5	+140%
Country as a whole	22.9	6.6	+246%	26	20.9	+25%

2. Large scale features

- Currently, La Niña conditions are prevailing over the equatorial Pacific region. The La Niña is likely to weaken and turn to El Niño Southern Oscillation (ENSO) neutral conditions during the pre-monsoon season. In addition to ENSO conditions over the Pacific, other factors such as the Indian Ocean SST also influence the Indian week to week weather. At present, neutral IOD conditions are present over the Indian Ocean and the latest MMCFS forecast indicates that the neutral IOD conditions are likely to continue during the pre-monsoon season.
- The Madden Julian Oscillation (MJO) The Madden Julian Oscillation (MJO) Index is currently in Phase 3 with amplitude more than 1. It will continue in same phase during first half of week 1 with decreasing amplitude. Thereafter, it will move across phases 4 & 5 during later part of week 1 and would mainly continue in phase 6 & 7 with negligibly small amplitude during week 2. Hence, MJO would support enhancement of convective activity over the Bay of Bengal (BoB) during week 1, specially during 1st half of week 1.

3. Forecast for next two week

Forecast for next two week

Weather systems & associated Precipitation during Week 1 (23-29 March, 2023) and Week 2 (30 March-5 April, 2023)

Forecast for week 1 (23-29 March, 2023):

- A **Western Disturbance** seen as a cyclonic circulation over Iran & neighbourhood in lower & middle tropospheric levels. It is likely to move eastwards towards north India during next 2-3 days.
 - A **cyclonic circulation** lies over southwest Rajasthan & neighbourhood in lower tropospheric levels.
 - A **trough** runs from Rayalaseema to south Jharkhand in lower tropospheric levels.
 - Under the influence of above synoptic features, following weather is expected;
- ✓ **Northwest India:** A fresh spell of **rainfall & thunderstorm activity** is likely to commence over the region from evening of 23rd -25th March with **isolated hailstorm likely over** Punjab & West Rajasthan on 23rd and over Jammu division, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh, West Uttar Pradesh, north Rajasthan on 24th March and over Uttarakhand on 25th March.
 - ✓ **Central India:** Mainly dry weather likely over the region during next 2 days. Thereafter, a fresh spell of **rainfall & thunderstorm/hailstorm activity** is likely to commence over the region (Madhya Pradesh, Vidarbha & Chhattisgarh) on 25th & 26th March and mainly dry weather thereafter.

- ✓ **South India:** Isolated to scattered light/moderate rainfall with **thunderstorm & lightning** likely over Tamilnadu, Puducherry & Karaikal, Kerala & Mahe and Andhra Pradesh during next 7 days. A fresh spell of **rainfall & thunderstorm** activity is likely to commence over Telangana, Kerala & Mahe and interior Karnataka from 24th March to 26 March.
- ✓ **Northeast India:** Scattered to fairly widespread light/moderate rainfall activity **with thunderstorm & lightning** likely to continue over Northeast India during next 5 days. Isolated **heavy rainfall** likely over Arunachal Pradesh and Assam & Meghalaya on 23rd March, 2023 **with fresh spell of isolated heavy rainfall over northeastern states from 26 March to 28 March.**
- ✓ **East India:** Mainly dry weather likely over the region during next 3 days. A fresh spell of **rainfall & thunderstorm and hailstorm activity** is likely to commence over the region during 26th to 28 March.

Rainfall for week 2 (30 March-5 April, 2023):

- Under the influence of two fresh active Western Disturbance (i.e. 1st one from 30 March till 2 April and another WD from 2 to 4 April) and their associated induced cyclonic circulations, scattered to fairly widespread rainfall accompanied with thunderstorm/hailstorm/lightning likely over Western Himalayan Region & adjoining plains of north India, and isolated to scattered rainfall accompanied with thunderstorm/hailstorm/lightning over parts of Central India and eastern India, during many days of the week.
- Due to trough/cyclonic circulation over south Peninsular India, isolated to scattered rainfall with thunderstorm and lightning likely over these areas during many days of the week.
- Scattered to fairly widespread light/moderate rainfall activity with thunderstorm & lightning likely to continue over Northeast India during the week.
- Overall, rainfall activity is likely to be above normal over south Peninsular India and Western Himalayan Region and adjoining plains of northwest India and over northeast India. It is likely to be near normal over rest parts of the country.

Maximum Temperatures and its forecast during Week 1 (23-29 March, 2023): and Week 2 (30 March-5 April, 2023):

Maximum Temperature Forecast for week 1 (23-29 March, 2023):

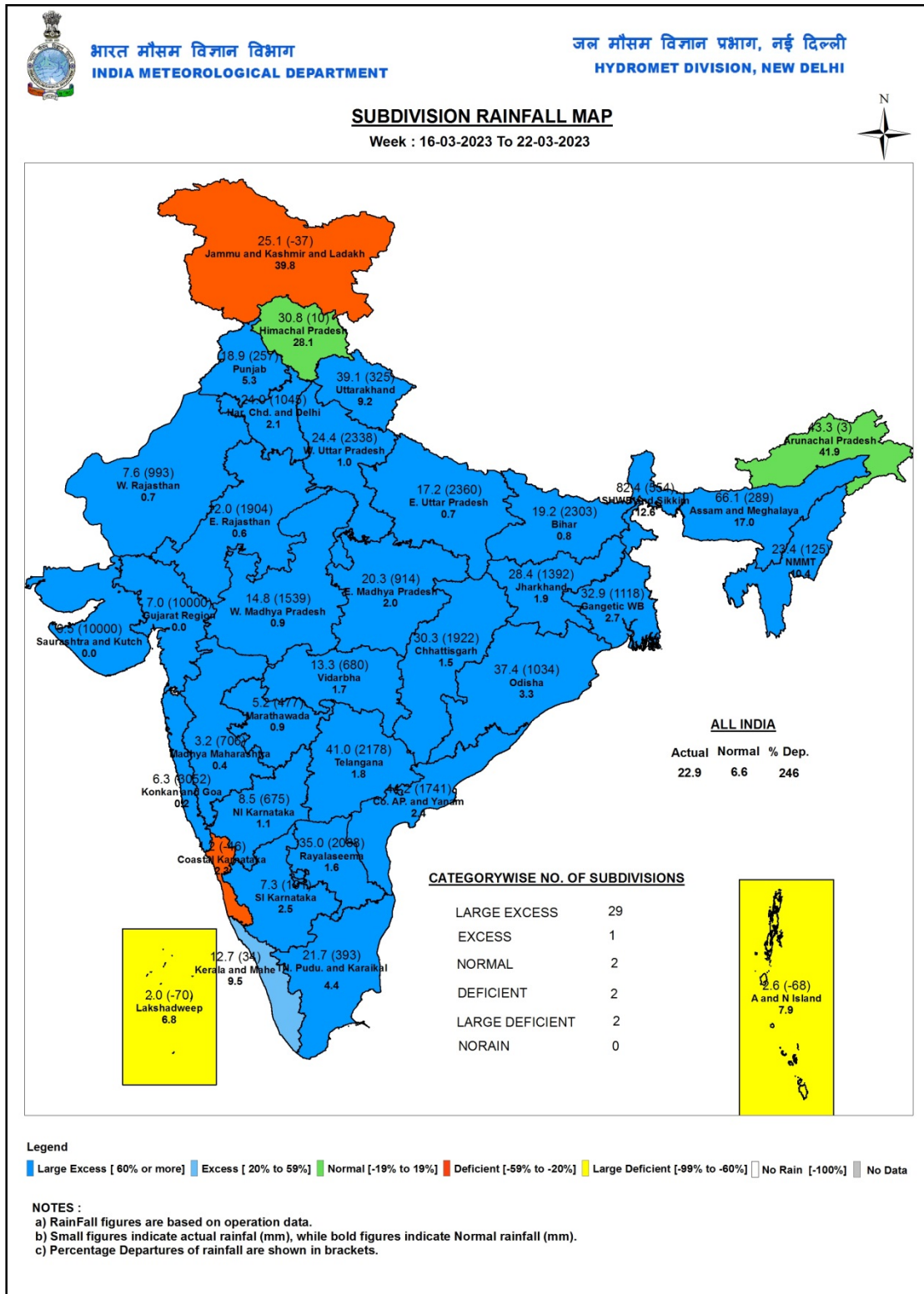
- Due to likely thunderstorm with rainfall activity over north and parts of central and Peninsular India during many days in the week, maximum temperatures are very likely to be below normal over most parts of the country during most days of the week.
- **No significant heat wave conditions very likely over any part of the country during the week.**

Maximum Temperature for week 2 (30 March-5 April, 2023):

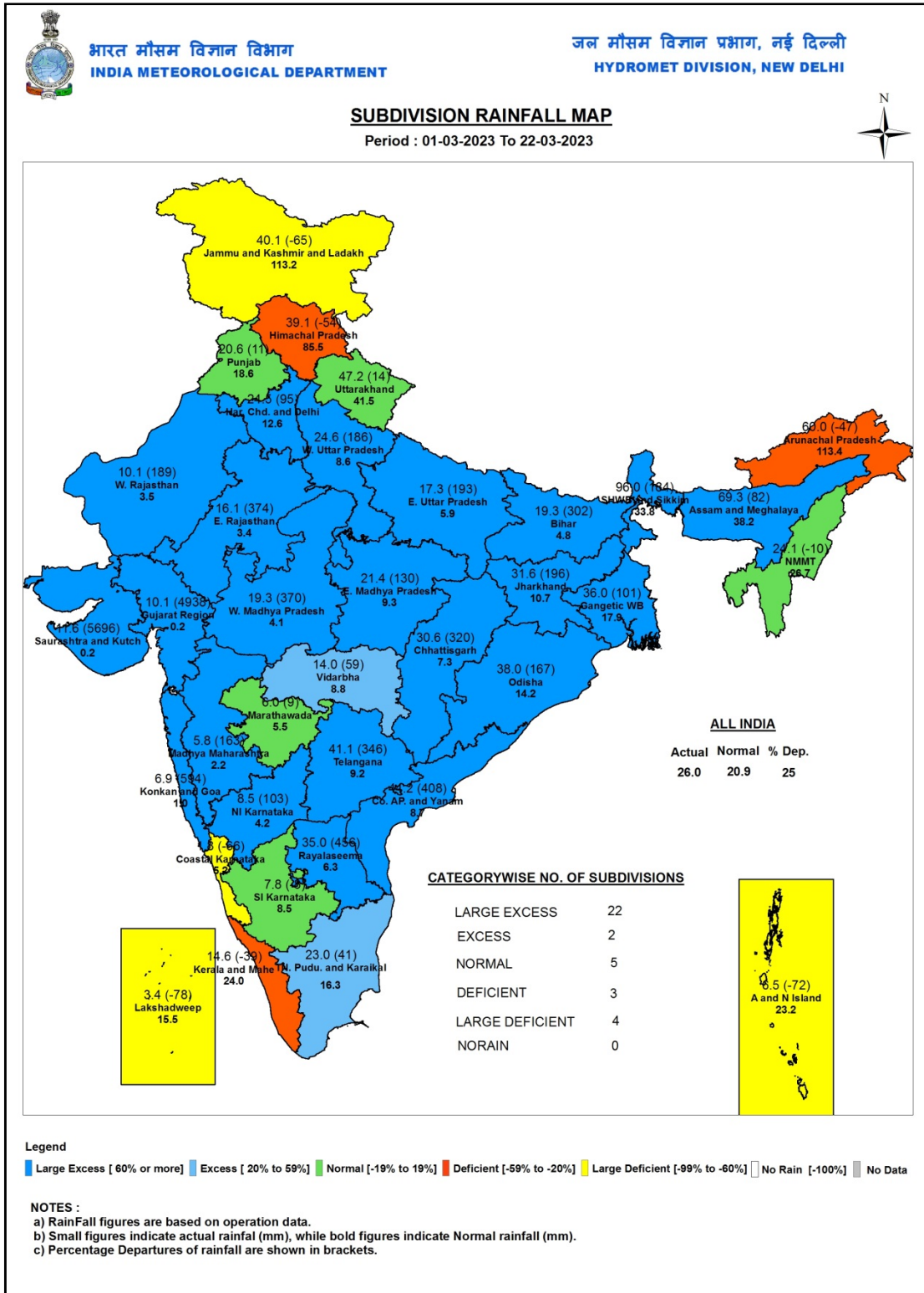
- **No significantly heat wave conditions likely over any part of the country during the week.**

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 1



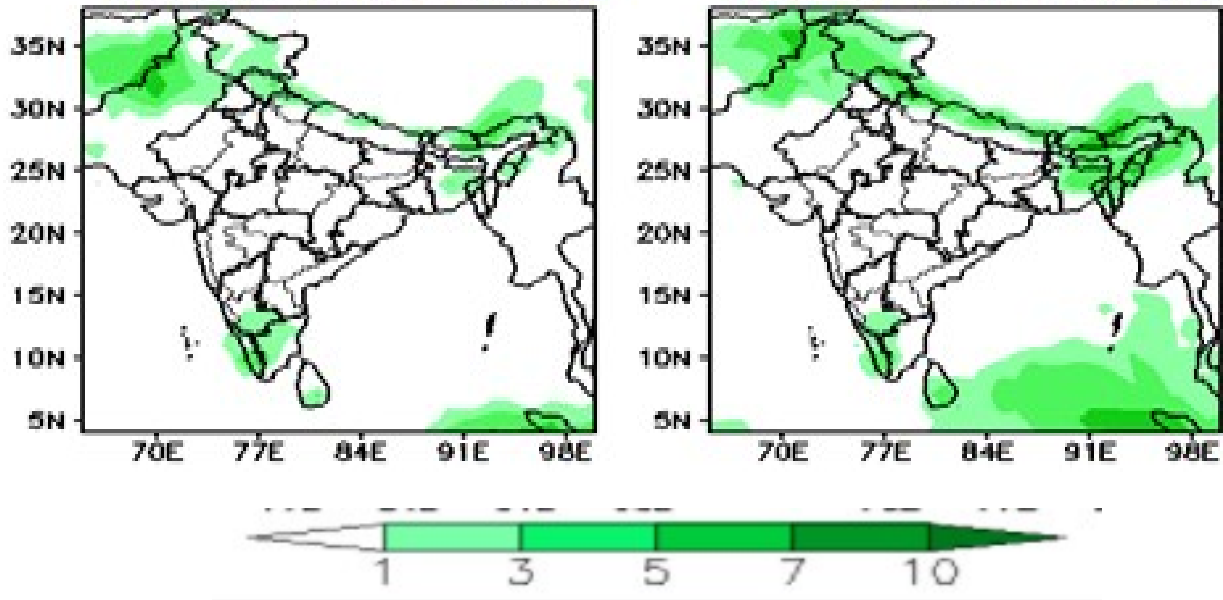
Annex: II



Forecast Rainfall (mm/day)

(Week1: 24Mar-30Mar)

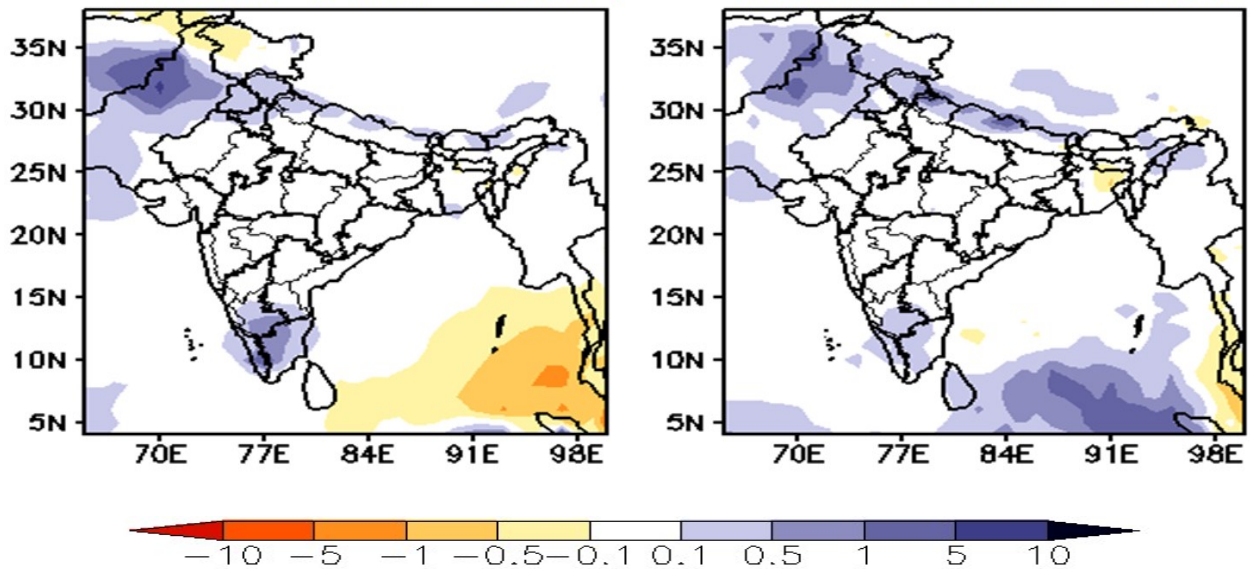
(Week2: 31Mar-06Apr)



Forecast Rainfall Anomaly (mm/day)

(Week1: 24Mar-30Mar)

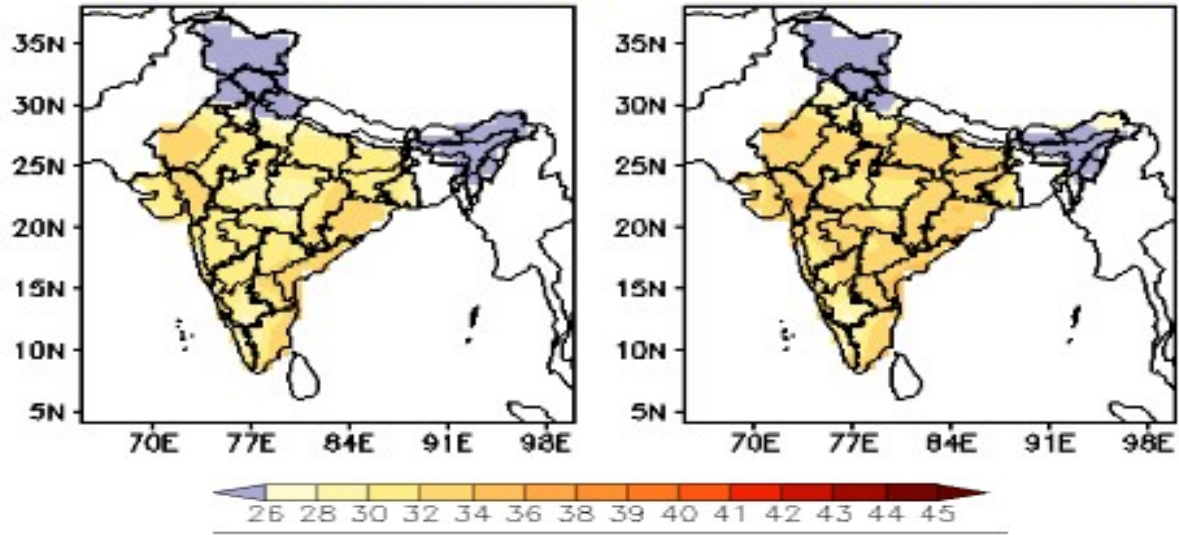
(Week2: 31Mar-06Apr)



MME Bias corrected forecast Tmax (Deg)

(Week1: 24Mar-30Mar)

(Week2: 31Mar-06Apr)



MME forecast Tmax anomaly (Deg C)

(Week1: 24Mar-30Mar)

(Week2: 31Mar-06Apr)

