

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

**Dated: 15 April, 2021** 

## Subject: Current Weather Status and Outlook for next two weeks (15 to 28 April, 2021)

#### Significant weather features observed for week ending on 14 April 2021

- ➤ Heavy rainfall activity over southern parts of the Peninsular India: Troughs/wind discontinuities and cyclonic circulations in the lower tropospheric levels supported by moisture incursion over the areas has caused fairly widespread to widespread rainfall/thunderstorms along with isolated heavy rainfall activity over Kerala & Mahe and Coastal Karnataka during 12-15 Aril 2021. Isolated to scattered rainfall/thunderstorm activity over remaining parts of South Peninsula and adjoining areas of Central and West India also during the week; isolated hailstorm activity also had been reported from Telengana, Chhattisgarh and Vidarbha during the week.
- > No major heat wave spell was reported from any areas of the country during the week

#### Weekly Rainfall Scenario (8-14 April, 2021)

During the week, rainfall for the country as a whole was below Long Period Average (LPA) by 29%. Details are given below:

Regions	Actual Rainfall (mm)	Normal Rainfall (mm)	% Departure from LPA
Country as a whole	5.7	8.0	-29%
Northwest India	1.0	7.4	-87%
Central India	3.7	1.6	132%
South Peninsula	8.4	6.6	27%
East & northeast India	15.8	24.5	-36%

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

#### Pre-monsoon Rainfall Scenario (1 March to 14 April, 2021)

For the country as a whole, cumulative rainfall during this year's pre-monsoon season till 14 April, 2021 was below LPA by 40%. This was consecutively 6<sup>th</sup> week in the season when rainfall over the country as whole was deficient in both weekly and cumulative terms(refer Fig 1). 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	27.8	46.4	-40%
Northwest India	33.8	61.9	-45%
Central India	9.2	12.1	-24%
South Peninsula	16.8	27.1	-38%
East & northeast India	68.8	112.9	-39%

Cumulative seasonal rainfall is given in Annexure II.

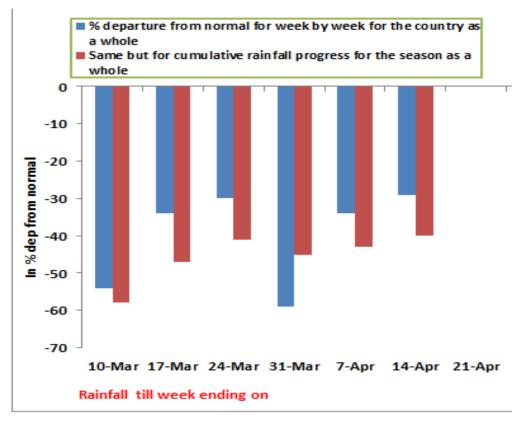


Fig 1: Rainfall progress during pre-monsoon season 2021

#### Weekly maximum temperature Scenario over the country (8 to 14 April, 2021)

The maximum temperatures were above normal by 1 to 4°C over most parts of northwest plains of India, Gujarat and some parts of eastern and northeast India while it was below normal by 1 to 3°C over most parts of Maharashtra and Peninsular India (Annexure III).

#### Chief synoptic conditions as on 15 April, 2021

- ♦ A fresh and active Western Disturbance as a trough in mid & upper tropospheric westerlies with its axis at 3.1 km above mean sea level runs roughly along longitude 65°E to the north of latitude 20°N.
- ♦ An induced cyclonic circulation cyclonic circulation lies over Central Pakistan & adjoining West Rajasthan at 1.5 km above mean sea level.
- ♦ A cyclonic circulation lies over Vidarbha & neighbourhood between 3.1 & 5.8 km above mean sea level.
- ◆ A cyclonic circulation lies over north Gangetic West Bengal & neighbourhood and extends upto 2.1 km above mean sea level.
- ♦ A trough/wind discontinuity runs from Southeast Arabian Sea off Kerala coast to North Interior Karnataka across South Interior Karnataka at 0.9 km above mean sea level.

#### Large scale features as on 15 April, 2021

- Currently, moderate La Niña conditions are prevailing over equatorial Pacific and Sea Surface Temperatures (SSTs) are below normal over central & eastern equatorial Pacific Ocean. The latest Monsoon Mission Climate Forecasting System (MMCFS) forecast indicates warming of SSTs over Nino 3.4 region during the coming season and there is a possibility of transition of La Niña conditions to ENSO neutral conditions during the forthcoming season. However, model skill during this period is supposed to be limited because of the spring barrier.
- At present, neutral Indian Ocean Dipole (IOD) conditions are observed over Indian Ocean and the latest MMCFS forecast indicates neutral IOD conditions are likely to continue up to May, June & July (MJJ) months and negative IOD conditions likely to develop thereafter.
- The Madden Julian Oscillation (MJO) index lies currently in phase 7 with amplitude more than 1. It will continue in same phase till the beginning of week 2 and then will move into phase 8 with amplitude more than 1 and remain there till the end of week 2 maintaining

the amplitude. Thus, the phase of MJO will not support enhancement of convective activity over North Indian Ocean.

#### Forecast for next two week

Weather systems & associated Precipitation during Week 1 (15 to 21 April, 2021) and Week 2 (22 to 28 April, 2021)

#### Rainfall for week 1: (15 to 21 April, 2021)

- •A fresh Western Disturbance as a trough in middle & upper tropospheric westerly winds with its axis at 3.1 km above mean sea level runs along longitude 65°E to the north of latitude 20°N. An induced cyclonic circulation lies over Central Pakistan & adjoining West Rajasthan in lower levels. Under the influence of these systems:
- Fairly widespread to widespread rainfall with thunderstorm, lightning & gusty winds (30-40 kmph) over Western Himalayan Region during 15<sup>th</sup>- 17<sup>th</sup> April. **Isolated hailstorm** likely over Jammu, Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad and Himachal Pradesh on 15th & 16th and over Uttarakhand on 16<sup>th</sup> & 17<sup>th</sup> April.
- ✓ Isolated heavy rainfall also very likely over Jammu, Kashmir, Gilgit-Baltistan & Muzaffarabad during 15<sup>th</sup> to 17<sup>th</sup> and over Himachal Pradesh on 16<sup>th</sup> & 17<sup>th</sup> April, 2021.
- ✓ Isolated light rainfall with thunderstorm, lightning & gusty winds (30-40 kmph) over adjoining plains of Northwest India during 15<sup>th</sup> to 17<sup>th</sup> April. Isolated hailstorm also likely over Punjab on 15<sup>th</sup> & 16<sup>th</sup> and over Haryana, Chandigarh & Delhi, East Rajasthan and West Uttar Pradesh on 16<sup>th</sup> April. Duststorm at isolated places likely over West Rajasthan on 15<sup>th</sup> & 16<sup>th</sup> April and over East Rajasthan on 16<sup>th</sup> & 17<sup>th</sup> April, 2021.
- •Thereafter, another intense Western Disturbance is very likely to influence northwest India during 20<sup>th</sup> to 22<sup>nd</sup> April, 2021. It is very likely to cause light/moderate scattered to widespread rainfall over Western Himalayan Region and light isolated rainfall over adjoining plains during the same period with its peak intensity on 21<sup>st</sup>, isolated heavy falls is also likely over Kashmir valley on 21<sup>st</sup> April, 2021.
- •Under the influence of a trough/wind discontinuity over south Peninsular India at lower levels; scattered to fairly widespread rainfall with thunderstorm, lightning & gusty winds (30-40 kmph) very likely over south Peninsular India during next 2-3 days. Isolated heavy

rainfall also likely over Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal during next 2 days; over South Interior Karnataka on today. The rainfall activity over south peninsular India is very likely to reduce on 17<sup>th</sup> & 18<sup>th</sup> April, 2021. Again rainfall activity likely to increase over the region from 19<sup>th</sup> to 21<sup>st</sup> with scattered to fairly widespread rain/thundershower over southwest Peninsular India and isolated rain/thundershower over rest parts of Peninsular India.

•Due to moisture feed from Bay of Bengal in lower tropospheric levels; rainfall activity over Northeast India is very likely to increase from 17<sup>th</sup> April. Thunderstorm, lightning & gusty winds (30-40 kmph) are very likely over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 15th-20th April with possibility of isolated heavy falls over Arunachal Pradesh and Assam & Meghalaya during 17<sup>th</sup> to 20<sup>th</sup> April, 2021 (**Annexure IV**).

#### Rainfall for week 2: (22 to 28 April, 2021)

- •No intense Western Disturbance likely to affect northwest India during week 2. Hence rainfall activity is likely to be below normal over Western Himalayan Region.
- •Due to trough over southwest Peninsular India, light thundershower is very likely over Kerala & Mahe, Coastal & South Interior Karnataka during many days of the week. Hence rainfall activity is likely to be normal to above normal over the above region.
- •It is likely to be below normal over northeast & adjoining east India and near normal over remaining parts of the country (**Annexure IV**).

#### Temperature for week 1: (15 to 21 April, 2021)

•Due to impact of the current WD and its induced cyclonic circulation, which likely to cause rain/thundershower activity over most parts of the country, maximum temperatures over Northwest India are very likely to fall by 2-4°C during 1<sup>st</sup> half of the week1 (Annexure V).. Rise in maximum temperatures by 2-4°C very likely over Madhya Maharashtra and Marathawada during 1<sup>st</sup> half of the week 1 and no significant change thereafter. Fall in maximum temperatures by 2-3°C likely over Gujarat during next 2 days and no significant change thereafter for subsequent 3-4 days. No significant change in maximum temperatures over rest parts of the country during next one week. Hence no major spell of heat wave is likely over any part of the country during next one week.

#### Temperature for week 2: (22 to 28 April, 2021)

•Due to likely dry weather over most parts of the country, maximum temperatures are likely to rise gradually over most parts of the country. It is likely to be above normal along the east coast, northeastern states, Gujarat, Bihar and parts of Western Himalayan Region. It is likely to be near normal or slightly below normal over remaining parts of the country (Annexure V). Hence, there is low to moderate probability of getting heat wave at isolated places over Saurashtra & Kutch, Odisha and Andhra Pradesh during week 2.

#### Impact of heat wave and action suggested

Heat wave could be moderate health concern for vulnerable people e.g. infants, elderly, people with chronic diseases over the heat wave areas specifically over coastal areas of Saurashtra & Kutch, Odisha and Andhra Pradesh due to availability of high humidity over these regions. Hence public of these regions should avoid heat exposure, wear lightweight, light-coloured, loose, cotton clothes and cover the head by use of cloth, hat or umbrella etc.

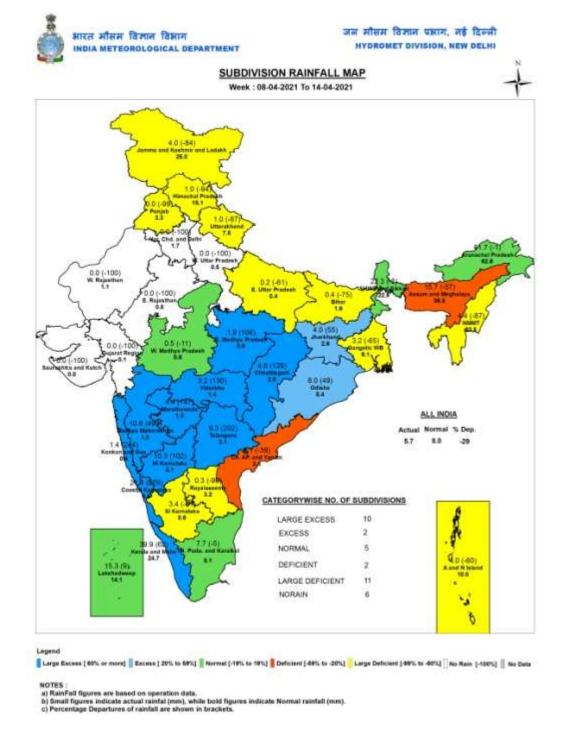
#### **Cyclogenesis:**

The phase of MJO will not support enhancement of convective activity over North Indian Ocean. Most of the numerical models including IMD GFS, GEFS, ECMWF, NCEP GFS, NEPS, NCUM & NEPS are not indicating any cyclogenesis during their respective forecast period. CGEPS (MME) indicates a probability of 40-50 % over south Andaman Sea and adjoining southeast Bay of Bengal during week 1 (specifically during 17 – 20 April). The Genesis Potential Parameter (GPP) based on IMD GFS is not indicating any potential zone for cyclogenesis over the north Indian Ocean during the forecast period. Considering all the above, it may be concluded that no cyclogenesis is predicted over the north Indian Ocean during next two weeks. For more pls refer:

http://www.rsmcnewdelhi.imd.gov.in/uploads/archive/24/24\_235a95\_EROC\_15042021.pdf

Next weekly update will be issued on next Thursday i.e. 22 April, 2021

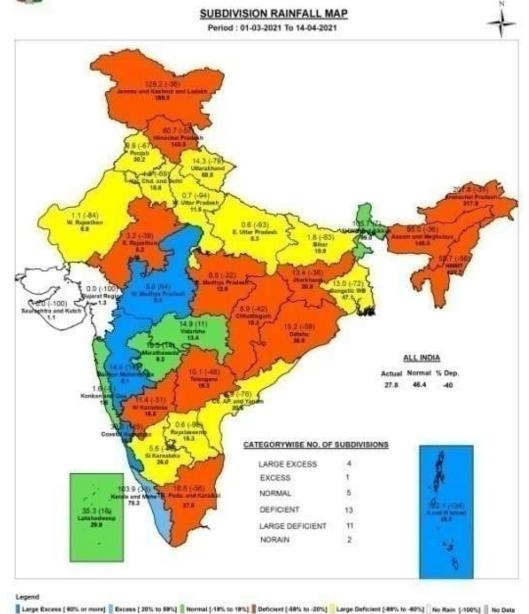
Annexure I



#### **Annexure II**



जल मौसम विज्ञान प्रभाग, नई दिल्ली HYDROMET DIVISION, NEW DELHI



NOTES ;
a) RainFall figures are based on operation data.
b) Small figures indicate actual rainfal (mm), while bold figures indicate Normal rainfall (mm).
c) Percentage Departures of rainfall are shown in brackets.

#### Annexure III

#### OBSERVED WEEKLY TMAX TMIN TEMPERATURE FOR WEEK ENDING 14 APR & ITS ANOMALY APR-14 APR 2021 08 APR-14 APR 2021 APR-14 APR 2021 35N 35N 35N-MIN. TEMP. MEAN TEMP. MAX, TEMP. 30N 30N 30N 25N 25N 25N 20N 20N 20N 15N 15N 15N-10N 1QN 10N 70E 75E 80E 85E 90E 95E 70E 75E 85E 90E 70E 75E 80E 85E 90E SDE 95E 95E -4 -2 04 8 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 (degree C) -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 D 35N 35N 35N-MAX. TEMP. MIN. TEMP. MEAN TEMP. ANOMALY ANOMALY ANOMALY 30N 3QN 30N 25N 25N 25N 20N 20N 20N 15N 15N 15N 10N 10N 10N

7ÓE

75E

BOE 85E

90E

95E

70E

75E 8DE

85E

90E 95E

7ÔE

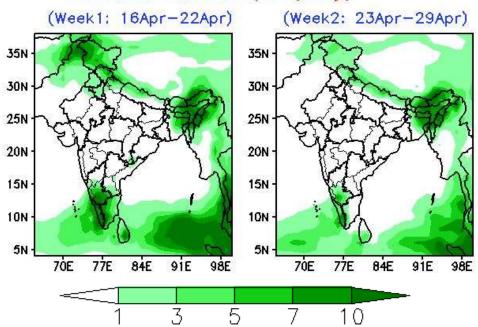
75E

80E

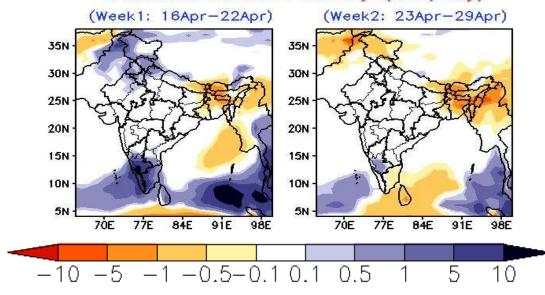
B5E

90E 95E

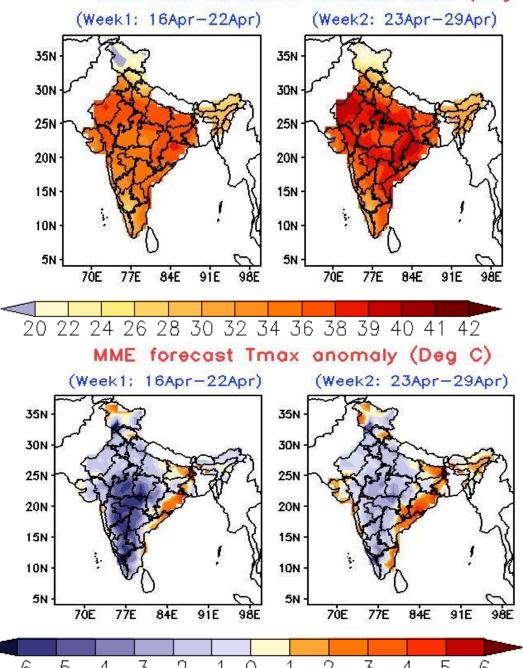
### Forecast Rainfall (mm/day)

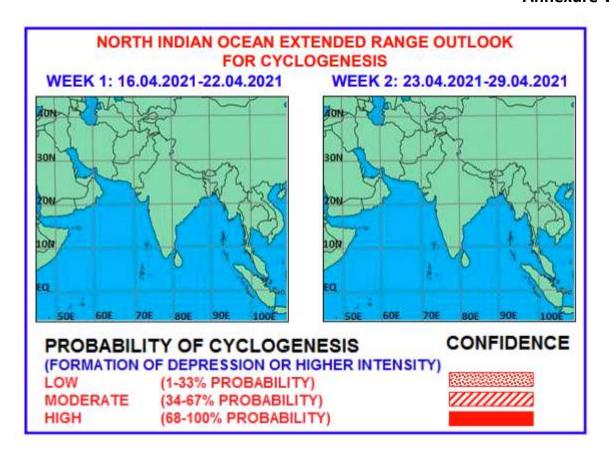


#### Forecast Rainfall Anomaly (mm/day)



#### MME Bias corrected forecast Tmax (Deg





NORTH INDIAN OCEAN EXTENDED RANGE OUTLOOK FOR CYCLOGENESIS FOR THE PERIOD 16 APRIL TILL 29 APRIL 2021