

PRESS RELEASE
New Delhi, 27th February , 2020



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Government of India
पृथ्वी विज्ञान मंत्रालय (एम. ओ. ई. एस.)
Ministry of Earth Sciences (MoES)
भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

**Seasonal Outlook for the Temperatures during
March to May, 2020**

Highlights

- The March-April-May (MAM) season average temperatures are likely to warmer than normal over most of the meteorological subdivisions of northwest, west and central India and some subdivisions from south India. Near normal temperatures are likely in the remaining subdivisions.
- Above normal heat wave conditions are likely in the core heat wave (HW) zone during the season (March-May).

1. Background

Since 2016, India Meteorological Department (IMD), Ministry of Earth Sciences (MoES) has been issuing seasonal forecast outlooks for subdivision scale temperatures over the country for both hot and cold weather seasons based on predictions from the Monsoon Mission Coupled Forecasting System (MMCFS) Model developed under MoES's monsoon mission project. IMD has now prepared Seasonal outlook for the subdivision averaged temperatures during the upcoming pre-monsoon season of March to May 2020 and the same is presented here.

The MMCFS has a spatial resolution of about 38 km and improved modules of model physics. The model climatology was prepared based on retrospective forecasts for 27 years (1982-2008). The seasonal temperature forecast outlook for the period March to May 2020 presented here is prepared using MMCFS simulations based on the 2020 February initial conditions. The forecast was prepared using 32 ensemble member forecasts. The model hindcasts and forecasts were bias corrected using the probability distribution function (pdf) method. The model shows moderate skill over many subdivisions over northwest and central India during the period 1982-2008.

2. Forecast for the MAM Season (March to May 2020)

Fig.1, Fig.2 & Fig.3 show the sub-divisional forecasts for averaged maximum, minimum and mean temperature anomalies (departures from the long term normal) respectively for March to May 2020 (MAM) season. The forecast indicates MAM season averaged temperatures are likely to be warmer than normal by ≥ 0.5 °C over northwest, west and central India and some subdivisions from south India. Near normal temperatures are likely in the remaining subdivisions.

The season averaged maximum temperature (**Fig.1**) is likely to be warmer than normal by >1 °C over Himachal Pradesh, Uttarakhand, West Rajasthan and Arunachal Pradesh. It is likely to be warmer than normal by ≥ 0.5 °C to <1 °C over Jammu and Kashmir, Haryana, Chandigarh and Delhi(HCD), West Uttar Pradesh, East Rajasthan, East and West Madhya Pradesh, Chhattisgarh, Orissa, Sub Himalayan West Bengal, Gujarat, Saurashtra and Kutch, Konkan and Goa, Madhya Maharashtra, Marathawada, Vidharbha North interior Karnataka, Coastal Karnataka, Rayalaseema and Kerala. Rest of the country is likely to experience near normal maximum temperatures (between -0.5 °C and 0.5 °C).

The season averaged minimum temperatures (**Fig.2**) are likely to be warmer than normal by >1 °C over Uttarakhand. It is likely to be warmer than normal by ≥ 0.5 °C to <1 °C over Himachal Pradesh, Punjab, Haryana, Chandigarh and Delhi(HCD), Arunachal Pradesh, East and West Rajasthan, East and West Uttar Pradesh, East and West Madhya Pradesh, Gujarat, Saurashtra and Kutch, Konkan and Goa, Madhya Maharashtra, Marathawada, Coastal Karnataka and Kerala. Rest of the country is likely to experience normal minimum temperatures (between -0.5 °C and 0.5 °C).

The season averaged mean temperatures (**Fig.3**) are likely to be warmer than normal by ≥ 1 °C over Himachal Pradesh, Uttarakhand and West Rajasthan. It is likely to be warmer than normal by ≥ 0.5 °C to <1 °C over Jammu and Kashmir, Punjab, Haryana, Chandigarh and Delhi(HCD), East and West Uttar Pradesh, East Rajasthan, East and West Madhya Pradesh, Chhattisgarh, Orissa, Arunachal Pradesh, Gujarat, Saurashtra and Kutch, Konkan and Goa, Madhya Maharashtra, Marathawada, Vidharbha, North Interior Karnataka, Coastal Karnataka and Kerala. Rest of the country is likely to experience near normal maximum temperatures (between -0.5 °C and 0.5 °C).

There is about 43% probability of maximum temperatures in the core HW zone during March to May 2020 to be above normal. (Fig.4). Core HW zone covers states of Punjab, Himachal Pradesh, Uttarakhand, Delhi, Haryana, Rajasthan, Uttar Pradesh, Gujarat, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, West Bengal, Orissa and Telangana and met subdivisions of Marathawada, Madhya Maharashtra and Coastal Andhra Pradesh. This in turn suggests that normal to slightly above normal heat wave conditions are likely in the core HW zone during the season.

3. ENSO conditions in the Pacific Ocean

Currently, warm ENSO-neutral conditions are prevailing over equatorial Pacific Ocean and the latest MMCFS forecast indicates cooling of SSTs in coming season and ENSO-neutral conditions are likely to continue for the entire forecast period.

4. Extended Range Forecast Services

IMD also provides extended range forecasts (7 –day averaged forecasts for the next four weeks) of maximum and minimum temperatures over the country updated every week on Thursday. This is based on

the Multi-model ensemble dynamical Extended Range Forecasting System currently operational at IMD, New Delhi. The forecasts are available through IMD, Delhi website (www.imd.gov.in).

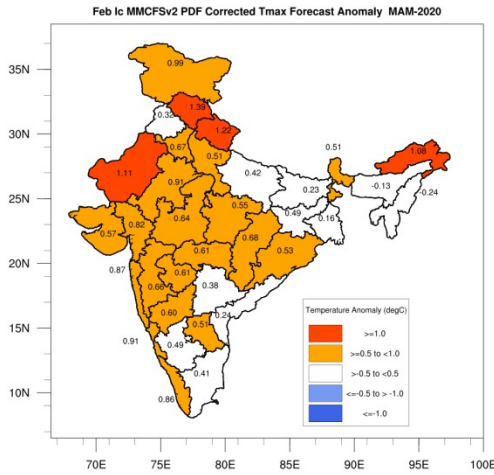


Fig.1. Subdivision averaged Maximum Temperature Anomaly forecast for March to May 2020

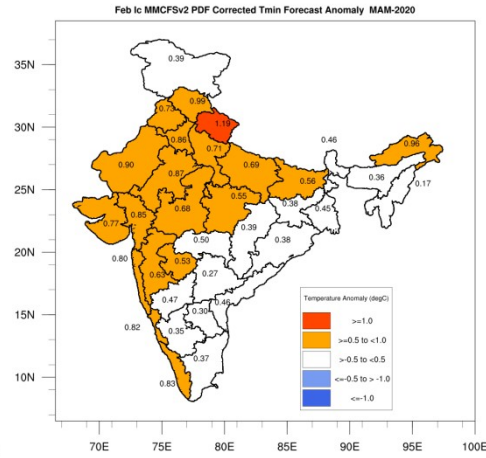


Fig.2. Subdivision averaged Minimum Temperature Anomaly forecast for March to May 2020

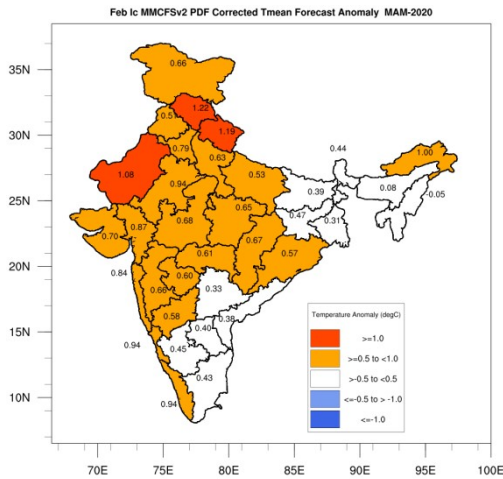


Fig.3. Subdivision averaged Mean Temperature Anomaly forecast for March to May 2020

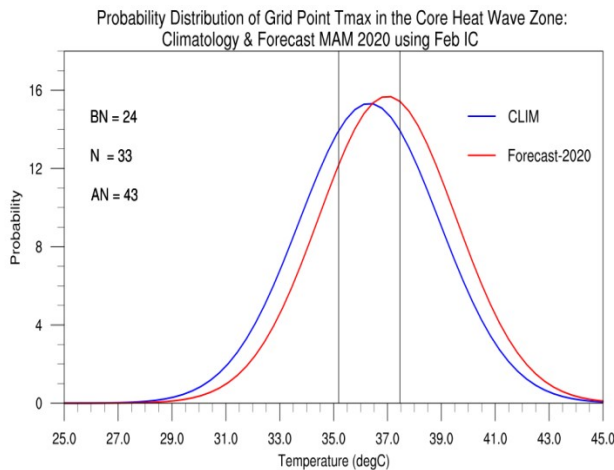


Fig.4. Climatological (CLIM) probability distribution of grid point maximum temperatures during March to May 2020 over Core Heat wave Zone (CHZ) is shown along with forecast probability distribution of the same for March to May 2020.