

**PRESS RELEASE**  
**New Delhi, 29 November, 2020**



भारत सरकार  
**Government of India**  
पृथ्वीविज्ञानमंत्रालय (एम. ओ. ई. एस.)  
**Ministry of Earth Sciences**  
भारत मौसम विज्ञानविभाग  
**INDIA METEOROLOGICAL DEPARTMENT**

**Seasonal Outlook for the Temperatures during  
December 2020 to February, 2021**

**Highlights**

During the upcoming winter season (December to February), below normal minimum temperatures are likely over most subdivisions of north, northwest, central and few subdivisions over east India.

**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. These predictions are based on 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 for the upcoming winter season (December 2020 to February 2021) 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 16 years (2003-2018). The seasonal temperature forecast outlook was prepared using MMCFS simulations based on the 2020 November initial conditions. The forecast was prepared using 34 ensemble member forecasts. The model hindcasts and forecasts were bias corrected using the probability distribution function (pdf) method. The model hindcasts show moderate skill over many subdivisions over northwest and central India during the period 2003-2018.

## 2. Forecast for the DJF Season (December 2020 to February 2021)

Fig.1 and Fig.2 show predicted sub-divisional probability and subdivision averaged minimum and maximum temperature anomalies (departures from the long term normal) respectively for December 2020 to February 2021 (DJF) season. The probability forecast for minimum temperature (Fig.1) indicates that below normal minimum temperatures are likely over most subdivisions of north, northwest, central and a few subdivisions of east India. Most of the subdivisions of northeast India, few subdivisions of west coast and south peninsular India are likely to experience above normal minimum temperatures.

The probability forecast for maximum temperature (Fig.2) indicates that above normal maximum temperatures are likely over most subdivisions of northwest, north, east and northeast India and a few subdivisions of central and peninsular India. Most of the subdivisions of south peninsular India are likely to experience below normal maximum temperatures.

## 3. ENSO conditions in the Pacific Ocean

Currently, Sea Surface Temperatures are below normal over central and eastern equatorial Pacific Ocean and moderate La Niña conditions are prevailing over the equatorial Pacific Ocean. The latest MMCFS forecast indicates that the moderate La Niña conditions are likely to continue at least till the end of winter season.

## 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. This is based on the Multi-model ensemble dynamical Extended Range Forecasting System currently operational at IMD. The forecasts are available through IMD website ([https://mausam.imd.gov.in/imd\\_latest/contents/extendedrangeforecast.php](https://mausam.imd.gov.in/imd_latest/contents/extendedrangeforecast.php)).

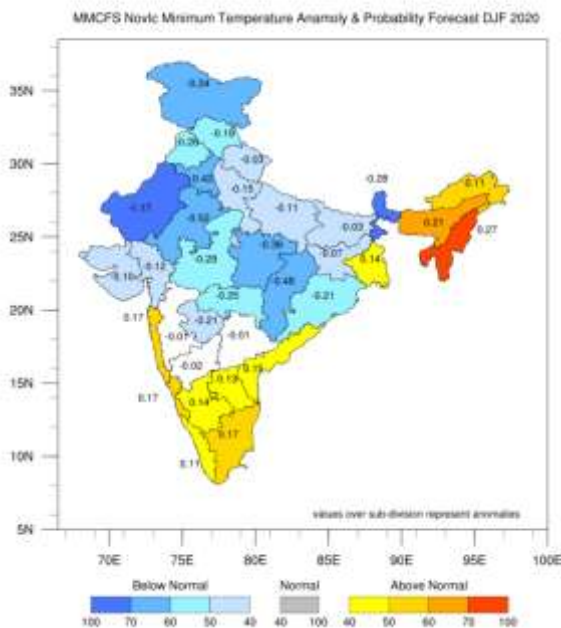


Fig1. Probability forecast & Subdivision averaged Minimum Temperature Anomaly forecast for December 2020 to February 2021

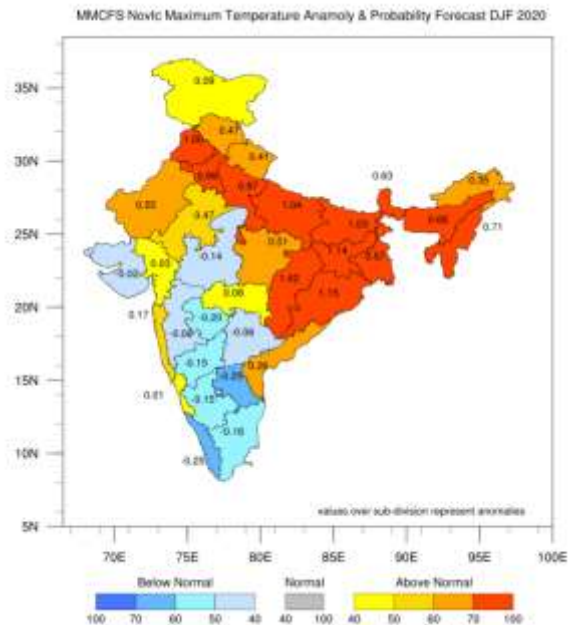


Fig2. Probability forecast & Subdivision averaged Maximum Temperature Anomaly forecast for December 2020 to February 2021