

**PRESS RELEASE**  
**New Delhi, 3<sup>rd</sup> December, 2018**



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

**Seasonal Outlook for the Temperatures during  
 December 2018 to February, 2019**

**Highlights**

- Above normal subdivision averaged seasonal minimum temperatures are likely during the upcoming cold weather season (December 2018 to February 2019) over all the meteorological subdivisions of the country.
- Below normal Cold Wave (CW) conditions are likely over core CW zone of the country.

**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 (MMFCS). MMFCS has now been used to prepare seasonal outlook for the subdivision scale averaged minimum temperatures during the cold weather season of December 2018– February 2019 season. The forecast was prepared using 40-ensemble member forecasts

**Forecast for the December 2018 to February 2019 Season Minimum Temperatures**

**Fig.1** depicts the forecasted distribution of the sub-division averaged seasonal minimum temperature anomalies (departures from the long term (1981-2010) normal) over India for December 2018 to February, 2019. The forecast suggests that above normal seasonal minimum temperatures (>0.5° C) are most likely over most of the subdivisions of the country except Jammu & Kashmir, Himachal Pradesh and Uttarakhand in the north, Sub-Himalayan West Bengal & Sikkim and Arunachal Pradesh in the northeast, Odisha in the east and Chhattisgarh in Central India, where normal (between 0.5°C & -0.5°C) seasonal minimum temperatures are most likely to prevail.

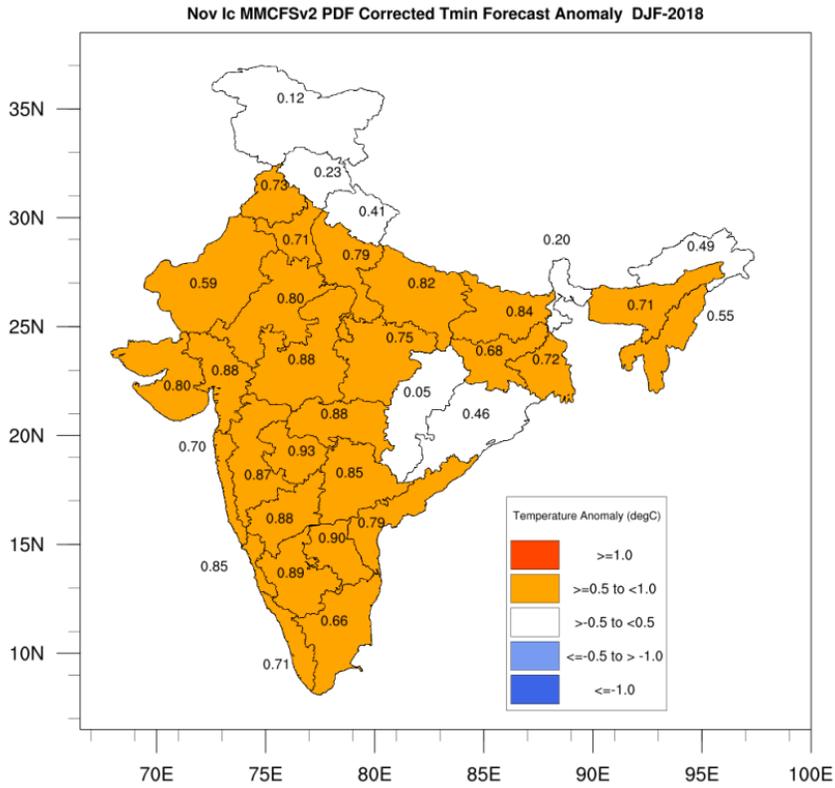
Assessment suggests that only about 39% probability of above normal minimum temperatures in the core cold wave (CW) zone during the November 2018 – January 2019 season. (**Fig.2**). Core CW zone covers states of Punjab, Himachal Pradesh, Uttarakhand, Delhi, Haryana, Jammu & Kashmir, Rajasthan, Uttar Pradesh, Gujarat, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, West Bengal, Odisha and Telangana and met subdivisions of Marathwada, Vidharbha, Saurashtra and Madhya Maharashtra.

## **2. ENSO conditions in the Pacific Ocean**

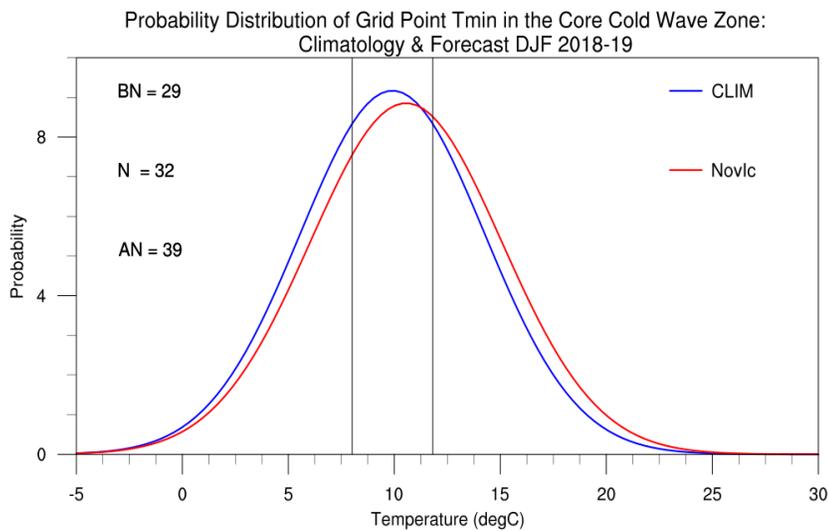
Currently, Equatorial sea surface temperatures (SSTs) are above average across most of the Pacific Ocean. The latest forecasts from global climate models indicate strong probability of weak El Niño conditions to develop during the winter season.

## **3. 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, New Delhi. The forecasts are available through IMD, Delhi website ([www.imd.gov.in](http://www.imd.gov.in)).



**Fig.1.** Minimum Temperature Anomaly forecast for December 2018 to February 2019.



**Fig.2.** Climatological probability distribution of grid point maximum temperatures during December 2018 to February 2019 over Core Cold wave Zone (CCZ) is shown along with forecast probability distribution of the same for December 2018 to February 2019.