



PRESS RELEASE
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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
The Hot Weather Season (April to June), 2018**

Highlights

- Upcoming Hot Weather Season (April to June-AMJ) is expected to have the above normal sub-divisional average seasonal temperatures (maximum, minimum and mean) over most of the meteorological sub-divisions of the country except the subdivisions of eastern, east central and southern parts for the country that are likely to experience slightly below normal seasonal temperatures.
- The AMJ seasonal average temperatures in most of the subdivisions are likely to be cooler than that of last year.
- Normal Heat wave (HW) conditions are likely over core heat wave zone of the country.

1. Background

India Meteorological Department (IMD) issues operational seasonal forecast outlooks for subdivision scale temperatures over the country for both hot and cold weather seasons. These outlooks are generated based on predictions from the Monsoon Mission Coupled Forecasting System (MMCFS) Model and implemented by the office of Climate Research and Services (CRS), IMD, Pune. This year IMD had issued temperature outlook for the pre-monsoon season of March to May (MAM) on 28th February, 2018 in which it was forecasted that warmer than normal temperatures are likely during the MAM season in all meteorological sub-divisions (except Sub Himalayan West Bengal and Sikkim) of the country. Now the seasonal temperature outlook for the 2018 hot weather season of April-June (AMJ) is presented now.

2. Forecast for the 2018 Season (April-June) Temperatures

Fig.1, Fig.2 & Fig.3 depict the forecasted distribution of the sub-divisional average maximum, minimum and mean temperature anomalies respectively over India for AMJ 2018. It suggests that warmer than normal temperatures are expected to prevail in most of the subdivisions with maximum anomalies in subdivisions from northwest India and north India. However, normal to slightly below normal maximum temperatures are likely to prevail over subdivisions of eastern, east central and southern parts of the country. Overall, the seasonal (AMJ) temperature anomalies are likely to be colder than those observed during the corresponding season of 2017.

The seasonal average maximum temperatures (**Fig.1**) are likely to be warmer than normal by $\geq 1^\circ\text{C}$ in Jammu & Kashmir, Punjab, Haryana, Chandigarh & Delhi (HCD) and Himachal Pradesh. They are likely to be between 0.5°C & 1°C in Uttarakhand, west Uttar Pradesh and east and west Rajasthan. Remaining subdivisions are likely to experience near normal (between 0.5°C & -0.5°C) maximum temperature anomalies.

The season averaged minimum temperatures (**Fig. 2**) are likely to be warmer than normal by $\geq 1^\circ\text{C}$ in Punjab, HCD, west Uttar Pradesh and east and west Rajasthan. They are likely to be between 0.5°C & 1°C in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, east Uttar Pradesh, Bihar, Jharkhand, east and west Madhya Pradesh, Chhattisgarh, Vidarbha, Madhya Maharashtra, Saurashtra and Gujarat. Rest of the subdivisions are likely to experience minimum temperature anomalies of $<0.5^\circ\text{C}$.

The season averaged mean temperatures (**Fig.3**) are likely to be warmer than normal by $\geq 1^\circ\text{C}$ in Jammu & Kashmir, Punjab, HCD, west Uttar Pradesh and east and west Rajasthan. They are likely to be between 0.5°C & 1°C in Gujarat, Himachal Pradesh, Uttarakhand, east Uttar Pradesh, west and east Madhya Pradesh. Rest of the subdivisions are likely to experience mean temperature anomalies of $<0.5^\circ\text{C}$.

The grid point maximum temperatures in the core HW zone during April to June 2018 show nearly equal probabilities for all the three categories; below normal, normal and above normal (**Fig.4**). This in turn suggests that the normal heat wave conditions are likely to prevail in the core HW zone during the season. The 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 meteorological subdivisions of Marathwada, Vidarbha, Madhya Maharashtra and coastal Andhra Pradesh.

3. The Monsoon Mission Climate Forecast System (MMCFS)

The research version of the MMCFS was developed by Indian Institute of Tropical Meteorology (IITM), Pune in 2012 and has been used to prepare seasonal forecasts since then. The latest version of the MMCFS has a spatial resolution of about 38 km and improved modules of model physics. The seasonal temperature forecast outlook for the April to June 2018 is prepared based on the March 2018 initial conditions using 41 ensemble member forecasts.

4. ENSO conditions in the Pacific Ocean

The current sea surface temperature conditions prevailing over equatorial Pacific suggest prevalence of La Niña conditions. However, the atmospheric conditions are not suggestive of La Niña conditions. The latest forecast from MMCFS indicates that La Niña conditions are likely to continue at least during the forecast period. However, forecasts from some of the global climate centres indicate weakening of La Niña conditions from the spring season onwards.

5. 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).

6. Short to Medium Range Forecast Outlooks/Updates

In addition to the above, IMD maintains round the clock watch of the temperature scenario and issues heat wave warnings as and when required at meteorological sub-divisions level valid for next 5-days through National Weather Forecasting Centre (NWFC), Delhi and at district level through Regional Meteorological Centers and Meteorological Centers at states along with daily updates.

Temperature Mar IC Forecast: 2018 Apr – Jun

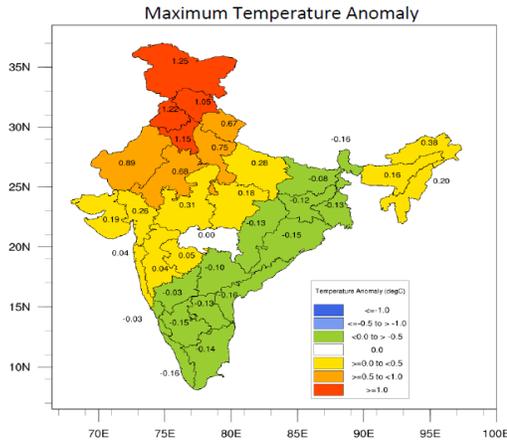


Fig.1. Maximum Temperature Anomaly forecast for April to June 2018.

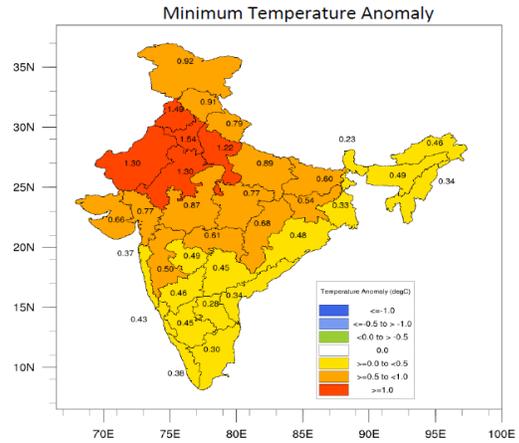


Fig.2. Minimum Temperature Anomaly forecast for April to June 2018.

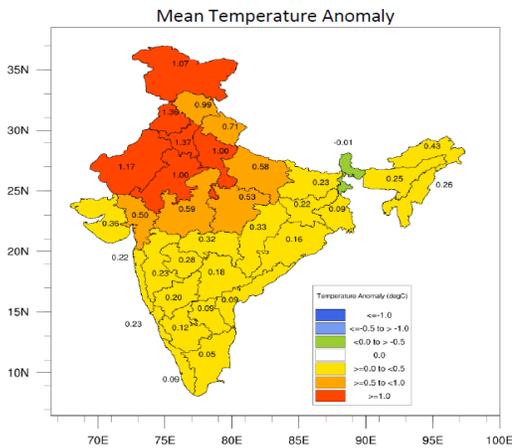


Fig.3. Mean Temperature Anomaly forecast for April to June 2018.

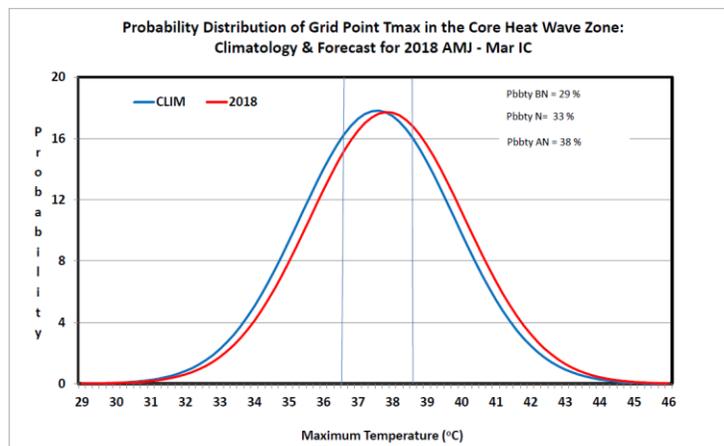


Fig.4. Climatological probability distribution of grid point maximum temperatures during April to June 2018 over Core Heat wave Zone (CHZ) is shown along with forecast probability distribution of the same for April to June 2018.

