

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

Monthly Outlook for the Temperature and Rainfall during May 2024

Highlights

- Above normal maximum temperatures are likely over most parts of the country except most parts of northeast India, some parts of northwest and central India and adjoining areas of northeast peninsular India where normal to below normal maximum temperatures are likely.
- Above-normal minimum temperatures are likely over most parts of the country except some areas of northwest India, the Indo-Gangetic plains, central India and most parts of northeast India where normal to below-normal minimum temperatures are likely.
- The number of heatwave days is likely to be above normal by about 5-8 days over south Rajasthan, west Madhya Pradesh, Vidarbha, Marathwada and Gujarat region and by about 2-4 days over remaining parts of Rajasthan, east Madhya Pradesh, Punjab, Haryana, Chandigarh, Delhi, Uttar Pradesh and some parts of Chhattishgarh, interior Odisha, Gangetic West Bengal, Jharkhand, Bihar, north interior Karnataka and Telangana and isolated pockets of north Tamil Nadu, Andhra Pradesh.
- Rainfall averaged over the country in May 2024 is most likely to be normal (91-109% of LPA). The normal to above-normal rainfall is likely over most parts of Northwest India, some parts of central, peninsular and northeast India. The below-normal rainfall is likely in remaining parts of the country

Monthly Outlook for the Temperature and Rainfall during May 2024

1. Background

Since 2016, the India Meteorological Department (IMD), Ministry of Earth Sciences (MoES) has been issuing seasonal outlooks for temperatures over the country for both hot and cold weather seasons and monthly outlook for for temperatures every month since June, 2021. IMD also continuously works to improve the skill of forecasting models. The current strategy is based on the newly developed Multi-Model Ensemble (MME) based forecasting system. The MME approach uses the coupled global climate models (CGCMs) from different global climate prediction and research centers including IMD/MoES Monsoon Mission Climate Forecast System (MMCFS) model.

IMD has now released the monthly temperature and rainfall outlook for May, 2024. The outlook for the temperature in May 2024 is presented in section 2, while section 3 provides the heatwave outlook for the same month. Additionally, the monthly rainfall outlook for May, 2024 is provided in section 4.

2. Monthly Temperature Forecast for May 2024

Fig. 1a and Fig. 1b present the predicted probabilities for the maximum and minimum temperatures in May 2024, respectively. Above normal maximum temperatures are likely over most parts of the country except most parts of northeast India, some parts of northwest and central India and adjoining areas of northeast peninsular India where normal to below normal maximum temperatures are likely (Fig. 1a).

During May 2024, above-normal minimum temperatures are likely over most parts of the country except some areas of northwest India, the Indo-Gangetic plains, central India, and most parts of northeast India where normal to below-normal minimum temperatures are likely (Fig. 1b).

3. Heatwave outlook for May 2024

Normally the heat wave prevails over northern plains, central India and adjoining areas of peninsular India for about 3 days in the month of May. The anomaly (deviation from normal) forecast for the number of heatwave days in the country for May 2024 is presented in Fig. 2. It indicates that the number of heatwave days is likely to be above normal by about 5-8 days over south Rajasthan, west Madhya Pradesh, Vidarbha, Marathwada and Gujarat region and by about 2-4 days over remaining parts of Rajasthan, east Madhya Pradesh, Punjab, Haryana, Chandigarh, Delhi, Uttar Pradesh and some parts of Chhattishgarh, interior Odisha, Gangetic West Bengal, Jharkhand, Bihar, north interior Karnataka and Telangana and isolated pockets of north Tamil Nadu, Andhra Pradesh.

During heatwaves, elevated temperatures pose significant risks, especially for vulnerable populations like the elderly, children, and those with pre-existing health conditions, who are more susceptible to heat-related illnesses such as heat exhaustion and heatstroke. Additionally, prolonged periods of extreme heat can lead to dehydration, and strain infrastructure such as power grids and transportation systems.

To address these challenges, it is imperative for authorities to take proactive measures. This includes providing access to cooling centers, and issuing heat advisories. Such efforts are essential for safeguarding public health and minimizing the adverse impacts of heatwaves.

4. Monthly Rainfall Forecast for May 2024

The rainfall during May, 2024 averaged over the country as a whole is most likely to be normal (91-109% of LPA). The LPA of rainfall over the country as a whole during May based on data of 1971-2020 is about 61.4 mm.

The forecast probability of tercile rainfall categories (above normal, normal, and below normal) over India for May, 2024 is shown in Fig. 3. The normal to above-normal rainfall is likely over most parts of Northwest India, some parts of central, peninsular and northeast India. The below-normal rainfall is likely in remaining parts of the country. The dotted areas on the map typically receive very little rainfall during May, while the white shaded areas within the land represent no forecast signal from the model.

5. SST conditions in the Pacific and the Indian Oceans

Currently, El Niño conditions are present over the equatorial Pacific region, sea surface temperature (SST) anomalies continued to weaken across most parts of the equatorial Pacific Ocean. The latest MMCFS (Monsoon Mission Coupled Forecasting System) forecast suggests that these El Niño conditions are likely to turn into neutral conditions in the beginning of monsoon season.

In addition to El Niño-Southern Oscillation (ENSO) conditions over the Pacific, other factors such as the Indian Ocean SSTs also influence the climate in India. Currently, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest climate models indicate that positive IOD conditions are likely to develop during the monsoon season.

6. Extended Range Forecast and short to medium range forecasting services

The IMD also provides extended range forecasts (7-day averaged forecasts for the next four weeks) of rainfall and maximum and minimum temperatures across the country. These forecasts are updated every Thursday and are based on the Multi-model ensemble dynamical Extended Range Forecasting System, which is currently operational at IMD. The forecasts are available on the IMD website https://mausam.imd.gov.in/imd_latest/contents/extendedrangeforecast.php.

The extended range forecast is followed by short to medium range forecast issued daily by IMD.

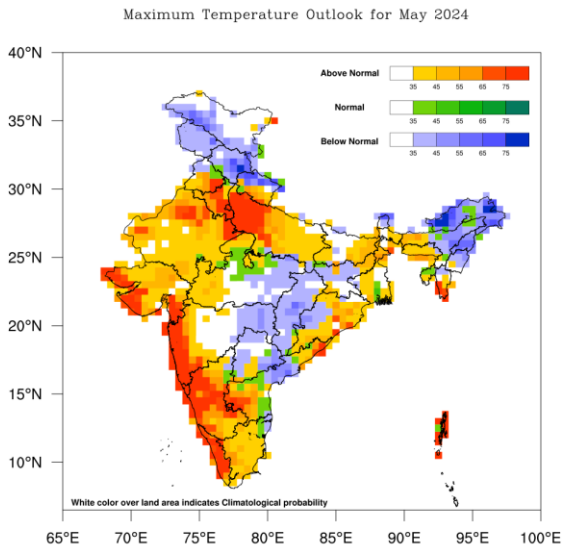


Fig.1a. Probability forecast of Maximum Temperature for May 2024.

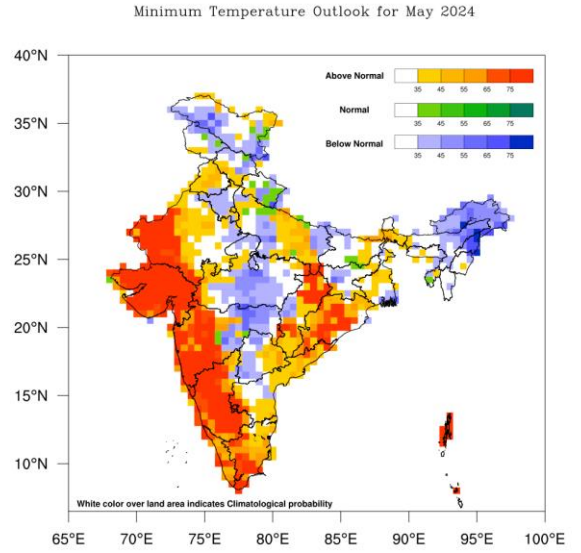


Fig.1b. Probability forecast of Minimum Temperature for May 2024.

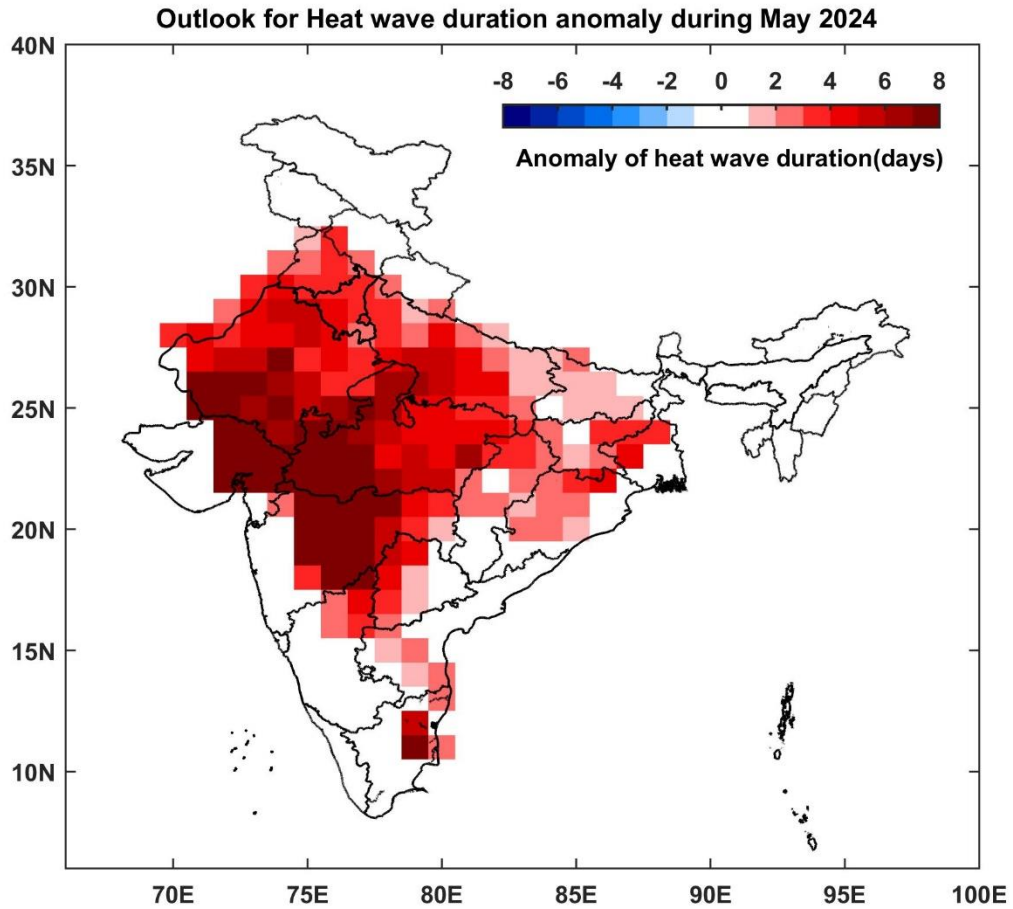


Fig 2. Anomaly (deviation from normal) of Heat Wave Duration (in days) for May 2024.

probability rainfall forecast for 2024 MAY

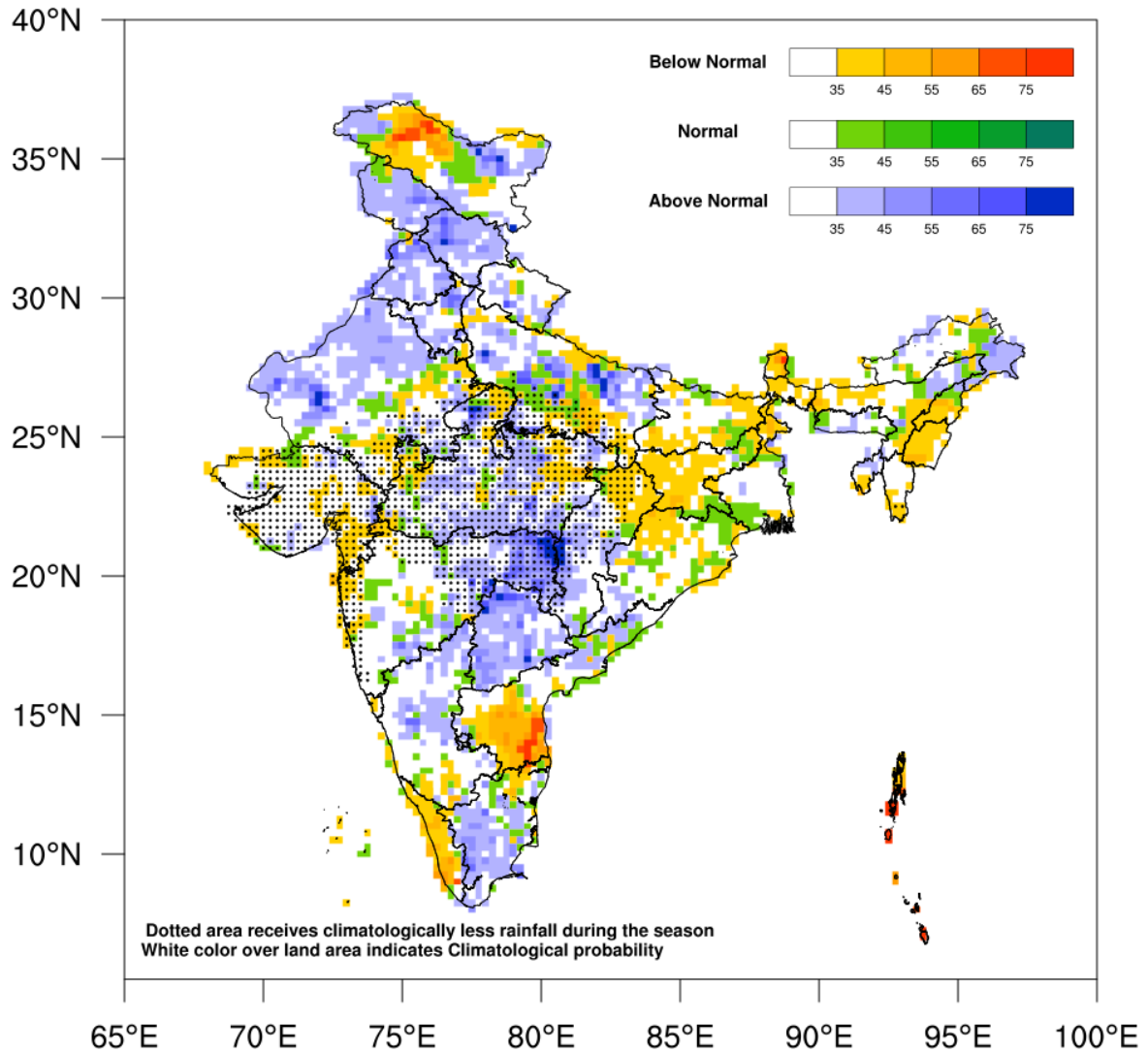


Fig.3. Probability forecast of tercile categories* (below normal, normal and above normal) for the rainfall over India during May 2024. The figure illustrates the most likely categories as well as their probabilities. (*Tercile categories have equal climatological probabilities, of 33.33% each).