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Ministry of Earth Sciences
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INDIA METEOROLOGICAL DEPARTMENT

**Outlook for the Seasonal Temperatures during the Hot Weather Season (March to May)
and Monthly Rainfall and Temperatures During March: 2025**

Highlights

- During the upcoming hot weather season (March to May (MAM)), above-normal maximum temperatures are most likely over most parts of the country, except over southern parts of Peninsular India, and isolated pockets of Northeast India where normal to below-normal maximum temperatures are likely.
- During the season (MAM), above-normal minimum temperatures are likely over most parts of the country except some isolated southernmost regions of Peninsular India where normal minimum temperatures are likely.
- Monthly maximum temperatures for March 2025 are likely to be above normal over most parts of India, except over some southernmost parts of Peninsular India, where below normal maximum temperatures are likely.
- During March 2025, above normal monthly minimum temperatures are likely over most parts of the country except some parts of Northwest India and South Peninsula, where normal minimum temperatures are most likely.
- During March to May season 2025, above-normal number of heatwave days are likely over most parts of the country except over Northeast India, extreme north India and southwestern and southern parts of Peninsular India
- During March, 2025, above-normal heatwave days are likely over most parts of central India and adjoining northern parts of South Peninsula and some areas of northwest and east India..
- The rainfall during March 2025 averaged over the country as whole is most likely to be normal (83-117% of LPA). Above-normal rainfall is likely over parts of Peninsular India and neighbouring regions of south of central India, while normal to below-normal rainfall is likely in the rest of the country.

Outlook for the Seasonal Temperatures during the Hot Weather Season (March to May) and Monthly Rainfall and Temperatures During March: 2025

1. Background

Since 2016, the India Meteorological Department (IMD), Ministry of Earth Sciences (MoES) has been issuing seasonal forecast outlooks for temperatures over the country for both the hot and cold weather seasons. 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 prepared seasonal and monthly temperature forecast outlooks over the country for the upcoming hot weather season (March to May 2025) and for March 2025. The same are presented below in the sections 2(a) and 2(b) respectively.

Heat Wave over a location refers to a prolonged period of excessively hot weather (above certain threshold temperature value) over the location. The heatwave outlook for the hot weather season (MAM) and for March 2025 over the country is presented in section 3.

The monthly outlook for rainfall and temperatures for March 2025 are presented in section 4.

2. (a) Seasonal Temperature Outlook for March to May (MAM) 2025

Fig.1a and Fig.1b show the probabilistic forecast of the maximum and minimum temperatures respectively for March to May (MAM) 2025 season. The probability forecast for maximum temperatures (Fig.1a) indicates that above-normal maximum temperatures are most likely over most parts of the country, except over southern parts of Peninsular India, and isolated pockets of Northeast India where normal to below-normal maximum temperatures are most likely. The probability forecast for minimum temperatures (Fig.1b) indicates that during the season (MAM), above-normal minimum temperatures are likely over most parts of the country except some isolated southernmost regions of Peninsular India where normal minimum temperatures are likely..

2. (b) Monthly Temperature Outlook for March 2025

Fig.2a and Fig.2b show forecast probabilities of the maximum and minimum temperatures respectively for March 2025. During March 2025, monthly maximum temperatures are likely to be above normal over most parts of India, except over some southernmost parts of Peninsular India, where below normal maximum temperatures are likely.(Fig. 2a).

During March 2025, above normal monthly minimum temperatures are likely over most parts of the country except some parts of Northwest India and South Peninsula, where normal minimum temperatures are most likely. (Fig.2b).

3. Heat Wave outlook for the Hot Weather Season (March to May) and for the Month of March 2025

The anomaly (deviation from normal) forecast for the number of heatwave days in the country for March to May 2025 is shown in Fig. 3a. During March to May season 2025, above-normal number of heatwave days are likely over most parts of the country except over Northeast India, extreme north India and southwestern and southern parts of Peninsular India

The anomaly forecast for the number of heatwave days in the country for March 2025 is shown in Fig. 3b. During March, 2025, above-normal heatwave days are likely over most parts of central India and adjoining northern parts of South Peninsula, many areas of south Peninsular India and, some areas of northwest and east India..

Heatwaves pose significant risks to vulnerable populations, including the elderly, children, and those with pre-existing health conditions, leading to heatstroke, dehydration, and strain on infrastructure. Authorities are crucial in providing cooling centers and issuing timely heat advisories. To facilitate the public, IMD provides comprehensive early warning systems, including detailed heatwave forecasts, risk assessments, and location-specific alerts. These warnings are readily accessible through the IMD website, dedicated mobile applications, and public broadcast channels. Citizens are strongly encouraged to utilize these resources to proactively take personal precautions, such as staying hydrated, avoiding peak sun hours, and seeking cool environments, thereby minimizing the adverse health impacts of heatwaves.

4. Monthly Rainfall outlook for March 2025

The rainfall during March 2025 averaged over the country is most likely to be normal (83-117% of LPA). The LPA of rainfall over the country during March based on data from 1971 to 2020 is about 29.9 mm.

The probabilistic forecast for the spatial distribution of tercile rainfall categories (above normal, normal, and below normal) over the country for March 2025 is shown in Fig.4. The forecast suggests that above-normal rainfall is likely over most parts of Peninsular India and neighbouring regions of south of central India, while normal to below-normal rainfall is likely in the rest of the country. . The dotted areas in the map climatologically receive very less rainfall during March and the white-shaded areas within the land areas represent climatological probabilities.

5. SST Conditions over the Pacific and the Indian Oceans

Currently, weak La Niña conditions are prevailing over the equatorial Pacific, and the sea surface temperatures (SSTs) are cooler than normal over most of the equatorial Pacific Ocean. The latest MMCFS forecast indicates that La Niña conditions are likely to weaken during the upcoming season and turn to neutral ENSO conditions thereafter.

At present, neutral Indian Ocean Dipole (IOD) conditions persist over the Indian Ocean, and the latest MMCFS forecast indicates a continuation of these neutral IOD conditions during the upcoming season.

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

IMD also provides extended range forecasts (7–day averaged forecasts for the next four weeks) of rainfall and 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. The extended range forecasts are available through the IMD website https://mausam.imd.gov.in/imd_latest/contents/extendedrangeforecast.php).

The extended range forecast is followed by a short to medium range forecast issued daily by IMD. The forecasts are available through the IMD website https://nwp.imd.gov.in/gfsproducts_cycle00_mausam.php

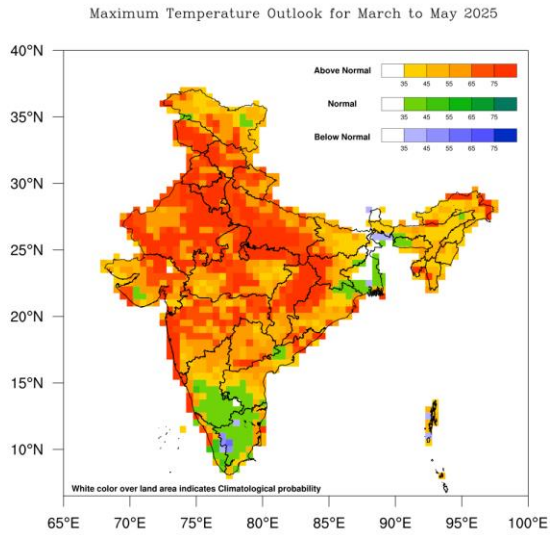


Fig.1a. Probability forecast of Maximum Temperature for March to May 2025.

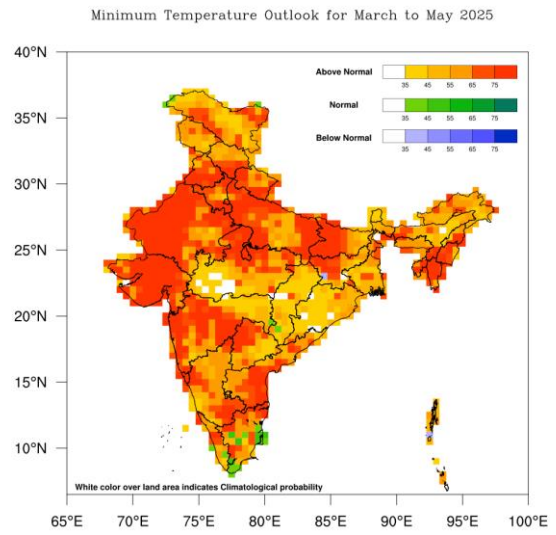


Fig.1b. Probability forecast of Minimum Temperature for March to May 2025.

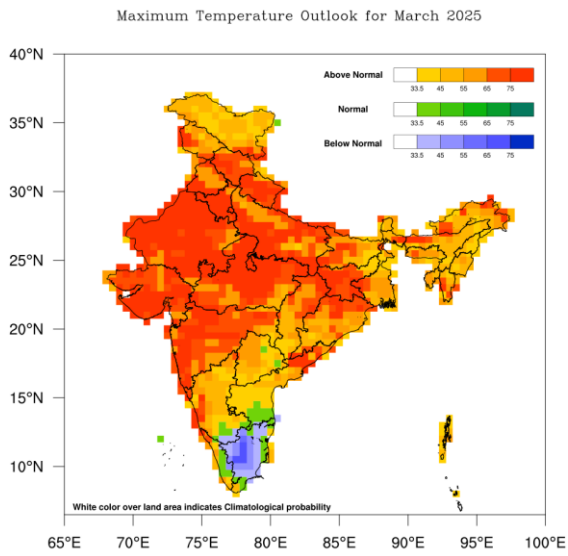


Fig.2a. Probability forecast of Maximum Temperature for March 2025.

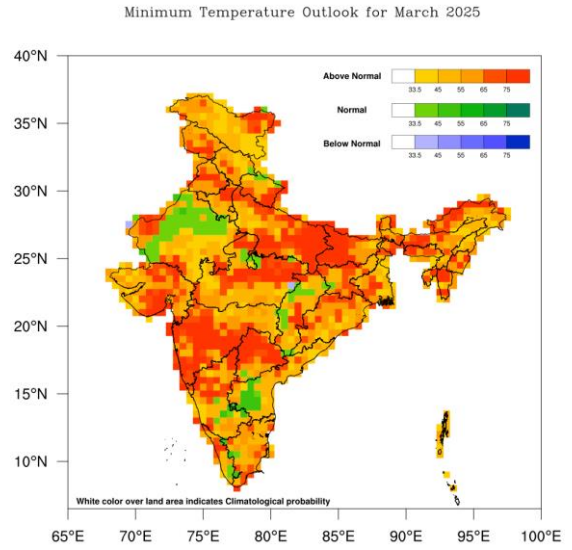


Fig2b. Probability forecast of Minimum Temperature for March 2025.

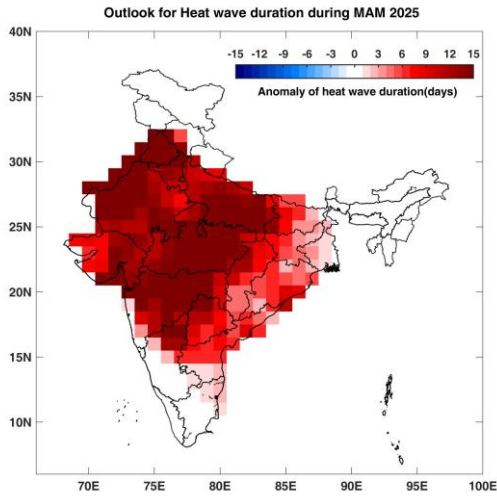


Fig3a. Probability forecast of heatwave events for the season March to May 2025.

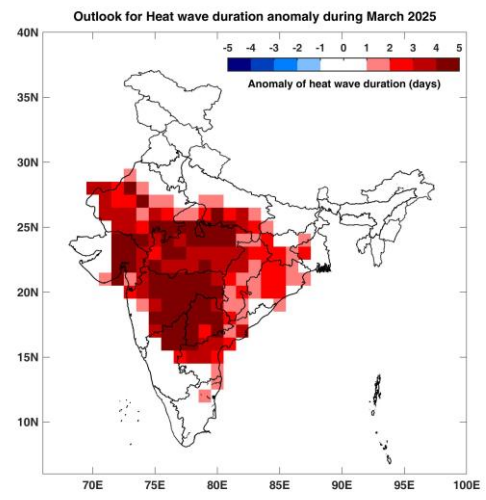


Fig3b. Probability forecast of heatwave events for March 2025.

probability rainfall forecast for 2025 March

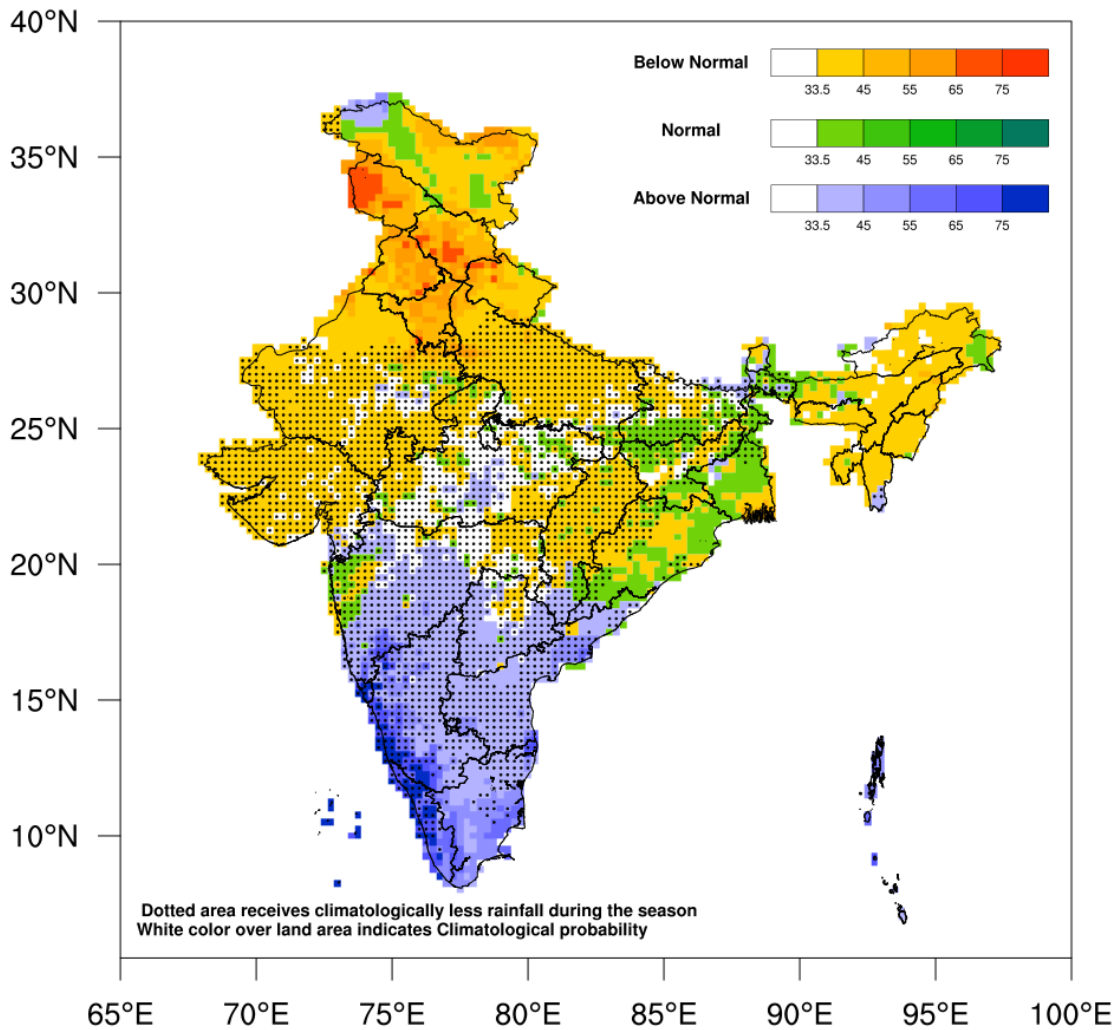


Fig.4. Probability forecast of tercile categories* (below normal, normal, and above normal) for the rainfall over India during March 2025. The figure illustrates the most likely categories as well as their probabilities. The dotted area shown in the map climatologically receives very less rainfall and the white-shaded areas within the land areas represent climatological probabilities. (*Tercile categories have equal climatological probabilities, of 33.33% each).