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INDIA METEOROLOGICAL DEPARTMENT

Monthly Outlook for Rainfall and Temperature during September 2025

Highlights

- a) Rainfall over India** – Monthly average rainfall over the country as a whole in September 2025 is most likely to be above normal (>109% of the Long Period Average (LPA). Geographically, most parts of the country are likely to receive normal to above-normal rainfall. However, some parts of Northeast and East India, many areas of extreme South Peninsular India and some parts of northernmost India, are likely to receive below-normal rainfall.
- b) Surface Air Temperature over India** – During September 2025, monthly average maximum temperatures are expected to remain normal to below normal in many regions of west-central, northwest and south India. It is likely to be above normal over many parts of east-central, east and northeast India and some parts of northwest India and western coastal region. In September 2025, the monthly average minimum temperatures are expected to be normal to above normal over most parts of the country. However, below-normal minimum temperatures are likely over some parts of northwest India and southern peninsular India.
- c) Sea Surface Temperature (SST)** - Currently, neutral El Niño–Southern Oscillation (ENSO) conditions are prevailing over the equatorial Pacific region. Forecasts from the Monsoon Mission Climate Forecast System (MMCFS), along with other climate models, suggest that these neutral conditions are likely to persist till the end of the monsoon season. At present, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. Forecasts from the MMCFS and other climate models indicate that weak negative IOD conditions are likely to develop towards the end of the monsoon season, persisting for a brief period.

IMD will issue the **forecast for the rainfall for the Northeast Monsoon Season (October to December (OND) 2025)** and **rainfall and temperature outlook for the month of October 2025 towards the end of September 2025.**

1. Background

Since 2021, IMD has been issuing monthly and seasonal forecasts for the southwest monsoon rainfall over the country based on the Multi-Model Ensemble (MME) forecasting system. The MME approach uses the coupled global climate models (CGCMs) from different global climate prediction and research centers including IMD's Monsoon Mission Climate Forecasting System (MMCFS) model.

IMD had issued the first stage forecast for the 2025 southwest monsoon seasonal (June to September) rainfall over the country on 15th April and update for the forecast on 27th May 2025. In addition, IMD also issued the forecast for rainfall during June on 27th May, 2025 and during July on 30th June, 2025. Southwest Monsoon Rainfall Forecast for the Seasonal Rainfall during August-September, 2025 and Monthly Rainfall and Temperature Outlook for August 2025 was issued on 31st July 2025. Monthly Outlook for Rainfall and Temperature during September 2025 is presented here.

2. Probabilistic Forecast of the Rainfall during September 2025

Monthly rainfall over the country as a whole during September 2025 is most likely to be above normal (>109% of long period average (LPA)). The LPA of rainfall over the country as a whole during September based on data from 1971-2020 is about 167.9 mm

The probabilistic forecast for the spatial distribution of tercile rainfall categories (above normal, normal and below normal) over the country for September 2025 is shown in Fig.1. It indicates that the most parts of the country are likely to receive normal to above-normal rainfall. However, some parts of Northeast and East India, many areas of extreme South Peninsular India and some parts of northernmost India, are likely to receive below-normal rainfall. There is no signal by the model over the white shaded areas within the land region of the country.

Above-normal rainfall can significantly benefit agriculture and water resources but also brings potential risks such as flooding, landslides, surface transport disruptions, public health challenges, and ecosystem damage. To manage these risks effectively, it is essential to reinforce infrastructure, utilize IMD's early warnings, enhance surveillance and conservation efforts, and establish robust response systems in vulnerable sectors.

3. Probabilistic Forecast of Temperature for September 2025

Fig.2 and Fig.3 shows probabilistic forecast for the maximum and minimum temperatures respectively for September 2025. During September 2025, monthly average maximum temperatures are expected to remain normal to below normal in many regions of west-central, northwest and south India. It is likely to be above normal over many parts of east-central, east and northeast India and some parts of northwest India and western

coastal region (Fig. 2). There is no signal by the model over the white shaded areas within the land region of the country.

In September 2025, the monthly average minimum temperatures are expected to be normal to above normal over most parts of the country. However, below-normal minimum temperatures are likely over some parts of northwest India and southern peninsular India (Fig.3). There is no signal by the model over the white shaded areas within the land region of the country.

4. SST conditions in the Pacific and the Indian Oceans

Currently, neutral El Niño–Southern Oscillation (ENSO) conditions are prevailing over the equatorial Pacific region. Forecasts from the Monsoon Mission Climate Forecast System (MMCFS), along with other climate models, suggest that these neutral conditions are likely to persist till the end of the monsoon season.

At present, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. Forecasts from the MMCFS and other climate models indicate that weak negative IOD conditions are likely to develop towards the end of the monsoon season, persisting for a brief period.

5. 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 & 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.

probability rainfall forecast for 2025 September

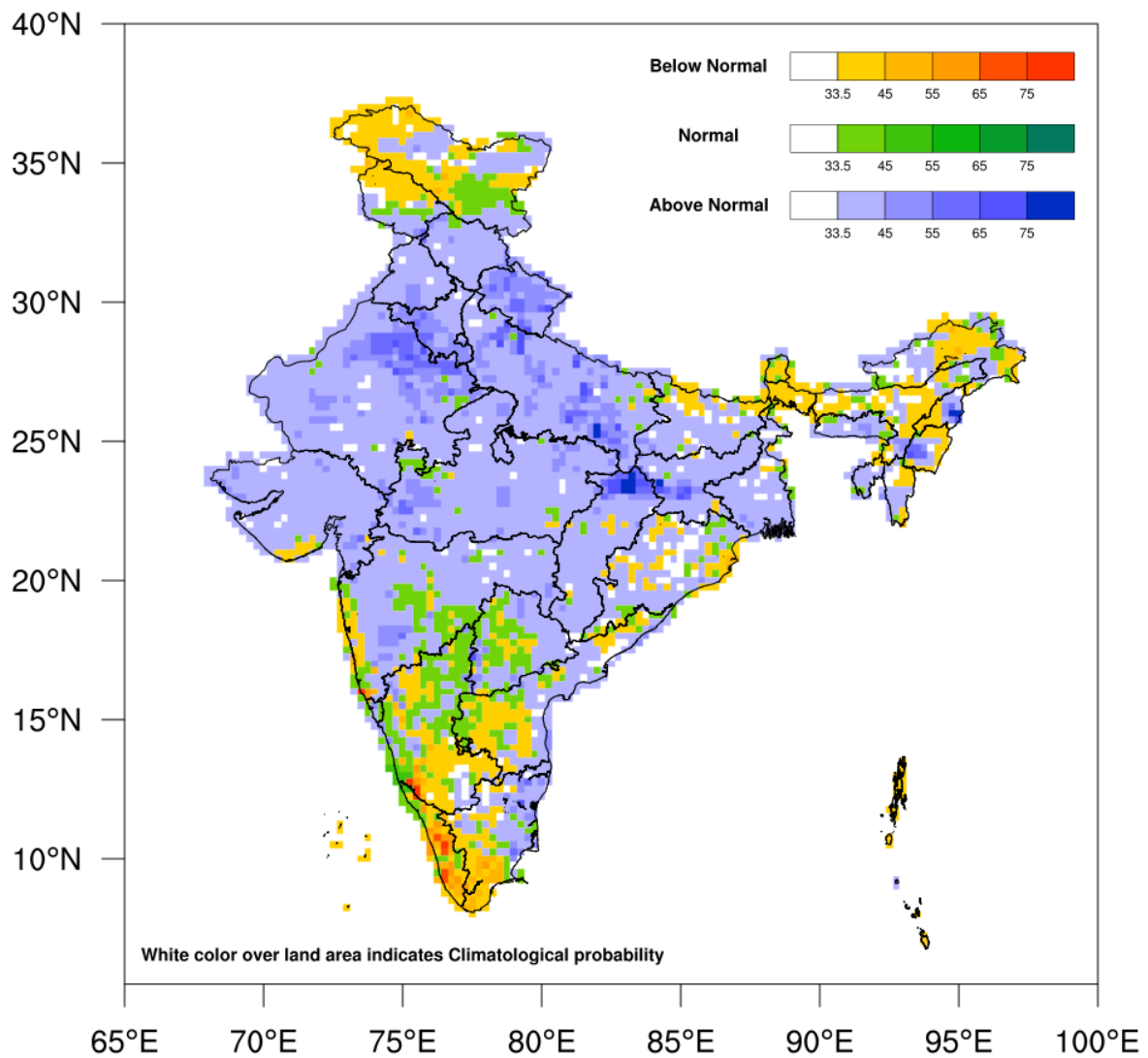


Fig.1. Probability forecast of tercile categories* (below normal, normal, and above normal) of rainfall over India during September 2025. There is no signal by the model over the white shaded areas within the land region of the country. *Tercile categories have equal climatological probabilities, of 33.33% each.

Maximum Temperature Outlook for September 2025

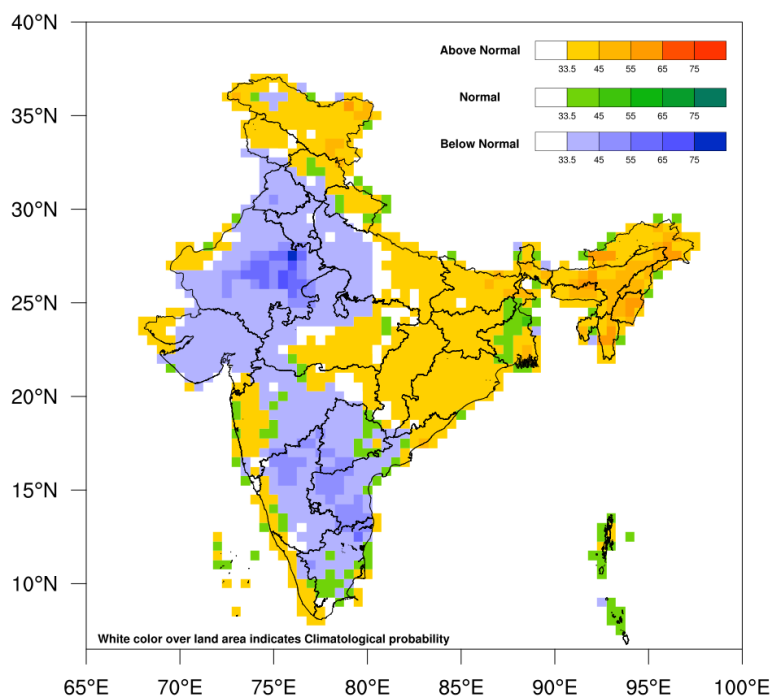


Fig.2. Probability forecast of Maximum Temperature for September 2025.

Minimum Temperature Outlook for September 2025

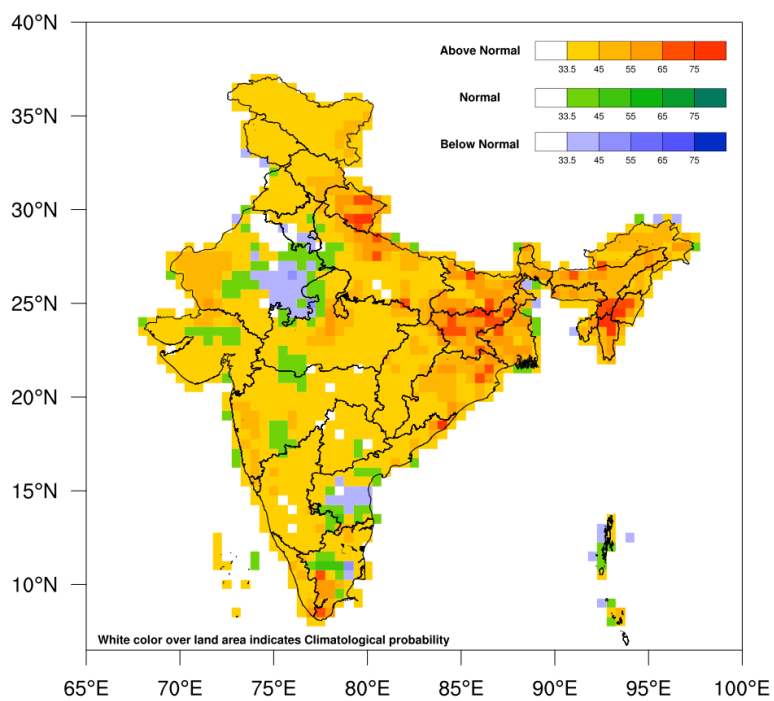


Fig.3. Probability forecast of Minimum Temperature for September 2025.