PRESS RELEASE
New Delhi, 30th September 2025

भारत सरकार
Government of India
पृथ्वी विज्ञान मंत्रालय (एम. ओ. ई. एस.)
Ministry of Earth Sciences (MoES)

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT

Long Range Forecast of Rainfall during Post-Monsoon Season 2025 and Rainfall and Temperature during October 2025

Highlights

a) **Seasonal rainfall during October to December (OND) over South Peninsular India** consisting of five meteorological subdivisions (Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Kerala & Mahe, and South Interior Karnataka) **is most likely to be above normal (>112% of Long Period Average (LPA)).** Most parts of the country are expected to receive normal to above-normal rainfall, except many parts of Northwest India and some parts of extreme south peninsular India and northeast India, where rainfall is likely to be below-normal..

b) **Monthly rainfall over the country as a whole during October 2025 is likely to be above normal >115% of LPA**. In October 2025, most parts of the country are expected to receive normal to above-normal rainfall. However, some areas in Northwest India and extreme south peninsular India and isolated pockets in the Northeast India, may experience below-normal rainfall.

c) In October, normal to below-normal maximum temperatures are likely over most parts of the country except northeast and adjoining east India, western Himalayan states and Saurashtra & Kutch where above normal maximum temperatures are expected. There is high probability of above normal maximum temperature over northeast India. Above-normal minimum temperatures are likely over most parts of the country with high probability over east, northeast and east central India.

d) Currently, sea surface temperatures over the equatorial Pacific are near average, indicating neutral El Niño–Southern Oscillation (ENSO) conditions. Forecasts from the Monsoon Mission Coupled Forecast System (MMCFS) and other climate models suggest an increased likelihood of La Niña conditions developing during the post-monsoon season.

e) At present, weak negative Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest forecast from MMCFS and the global climate models indicates that the negative IOD conditions are likely to continue during post-monsoon season.

IMD will issue the outlook for the rainfall and temperature during November 2025 towards the end of October 2025.

1. Background

South Peninsular India consisting of five meteorological subdivisions (Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Kerala & Mahe, and South Interior Karnataka) receives about 30% of its annual rainfall during the northeast monsoon season (October to December). Tamil Nadu, Puducherry, and Karaikal receive approximately 48% of their annual rainfall during the northeast monsoon season. Recognising the significance of this period, IMD has been issuing seasonal rainfall forecasts for the south peninsula using statistical models since 1998 and continues to enhance the skill of these forecasting systems.

In 2021, IMD adopted a new strategy for issuing monthly and seasonal operational forecasts for rainfall over the country. This approach combines the existing statistical forecasting system with a newly developed Multi-Model Ensemble (MME)–based system. The MME technique use coupled global climate models (CGCMs) from various international climate prediction and research centers, including IMD's own Monsoon Mission Climate Forecast System (MMCFS). Using this strategy, IMD issues a range of seasonal and monthly forecasts for rainfall and temperature (Maximum & minimum).

The rainfall forecast for the post-monsoon season (October to December 2025), along with the rainfall and temperature outlook for October 2025 is given below.

2. Probabilistic Forecast for the rainfall during October to December (OND) 2025

The rainfall averaged over south Peninsular India during post-monsoon season (October to December (OND)) **is most likely to be above normal (>112% of Long Period Average (LPA)).** The LPA of rainfall over the South Peninsular India during the post-monsoon season based on data of 1971 to 2020 is about 334.13mm.

The spatial distribution of probabilistic forecasts for the tercile categories (above normal, normal, and below normal) of rainfall over the country for the post-monsoon season is shown in Fig.1. The probability forecast indicates that most parts of the country are expected to receive normal to above-normal rainfall, except many parts of Northwest India and some parts of extreme south peninsular India and northeast India, where rainfall is likely to be below-normal. The dotted area shown in the map receives very less rainfall during October to December season as per climatology and the white shaded areas within the main land represent no signal from the model.

It may be noted that while above-normal rainfall can benefit agriculture and water resources, it also brings heightened risks, including flooding, transport disruptions, public health concerns, and ecological impacts. Given these potential hazards, anticipatory actions may be initiated for the season. it is crucial to utilize the early warning services provided by IMD, which include timely impact-based forecasts (IBF) and risk based warnings against heavy rainfall, flood and associated hazards. Authorities are encouraged to adopt a proactive approach by reinforcing infrastructure, developing contingency plans, and responding promptly to forecast/warnings and advisories. Such preparedness can support efficient resource mobilisation, safeguard vulnerable communities, and help protect lives and livelihoods during adverse weather events.

3. Probabilistic Forecast for the rainfall during October 2025

The rainfall averaged over the country as a whole during October 2025 **is likely to be above normal >115 % of LPA**. The LPA of rainfall over the country during the month of October based on data of 1971 to 2020 is about 75.4 mm.

The spatial distribution of probabilistic forecasts for tercile categories (above normal, normal, and below normal) of rainfall over the country during October 2025 is shown in Fig.2. The Forecast suggests that most parts of the country are expected to receive normal to above-normal rainfall. However, some areas in Northwest India and extreme south peninsular India and isolated pockets in the Northeast India, may experience below-normal rainfall. The white shaded areas within the land area represent no signal from the model. The dotted area shown in the map receives very less rainfall during October as per climatology

4. Probabilistic Forecast of Temperatures over the Country during October 2025

Fig.3a and Fig.3b show probabilistic forecast of the maximum and minimum temperatures respectively during October 2025.

In October, normal to below-normal maximum temperatures are likely over most parts of the country except northeast and adjoining east India, western Himalayan states and Saurashtra & Kutch where above normal maximum temperatures are expected (Fig. 3a). There is high probability of above normal maximum temperature over northeast India.

During October above normal minimum temperatures are likely over most parts of the country with high probability over east, northeast and eastcentral India (Fig. 3b).

5. Sea Surface Temperature (SST) conditions in the Pacific and the Indian Oceans

Currently, sea surface temperatures over the equatorial Pacific are near average, indicating neutral El Niño–Southern Oscillation (ENSO) conditions. Forecasts from the Monsoon Mission Coupled Forecast System (MMCFS) and other climate models suggest an increased likelihood of La Niña conditions developing during the post-monsoon season.

Weak negative Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest forecast from MMCFS and the global climate model indicates that the negative IOD conditions are likely to continue during post-monsoon season..

6. Extended Range Forecast and Short to Medium range forecast Services

In addition to seasonal forecasts, IMD prepares and 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

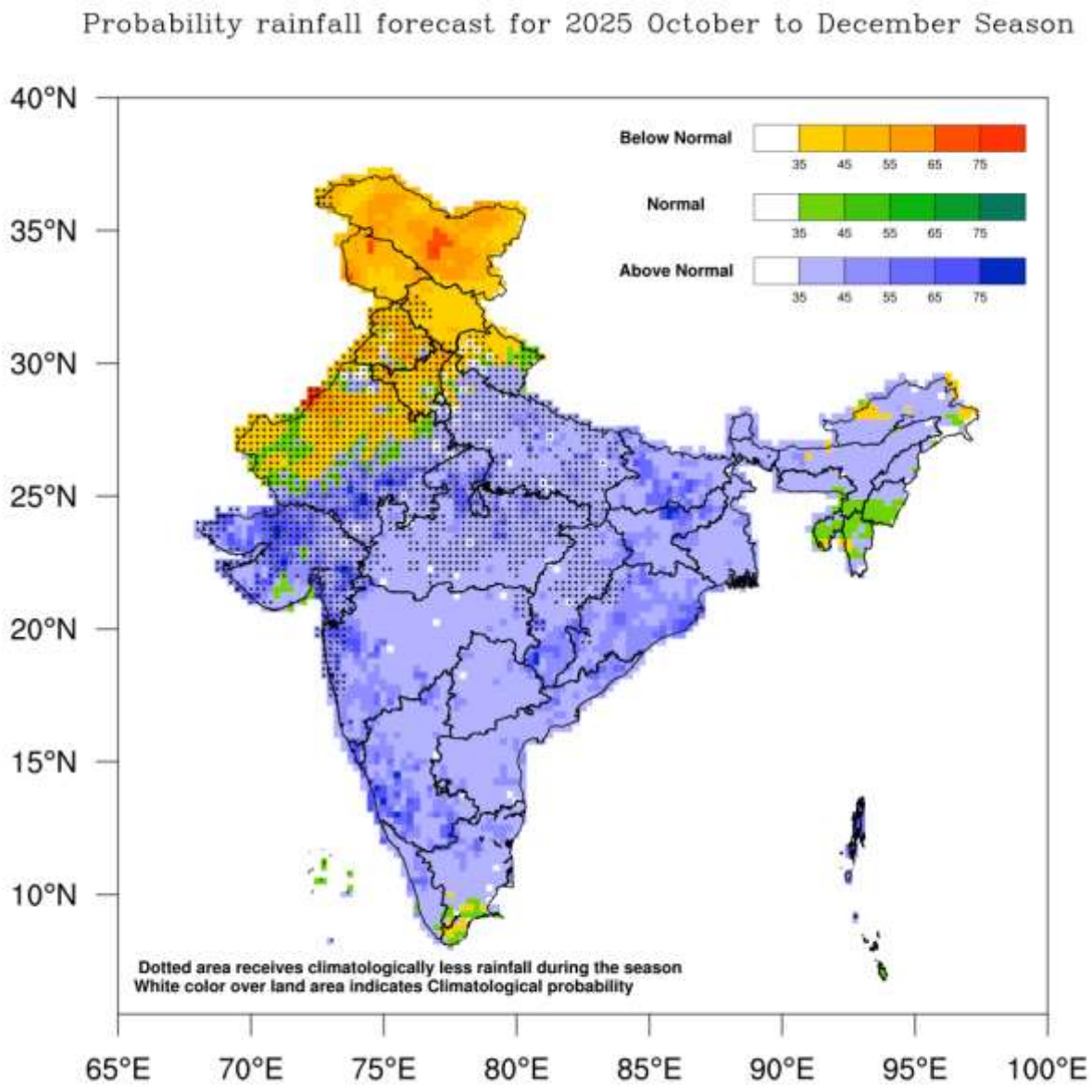

Fig.1. Probability forecast of tercile categories* (below normal, normal, and above normal) of rainfall over India during October to December, 2025 period. The figure illustrates the most likely categories as well as their probabilities. The white shaded areas within the land area represent no signal from the model. (*Tercile categories have equal climatological probabilities, of 33.33% each). The dotted areas receive low rainfall during the season as per climatology.

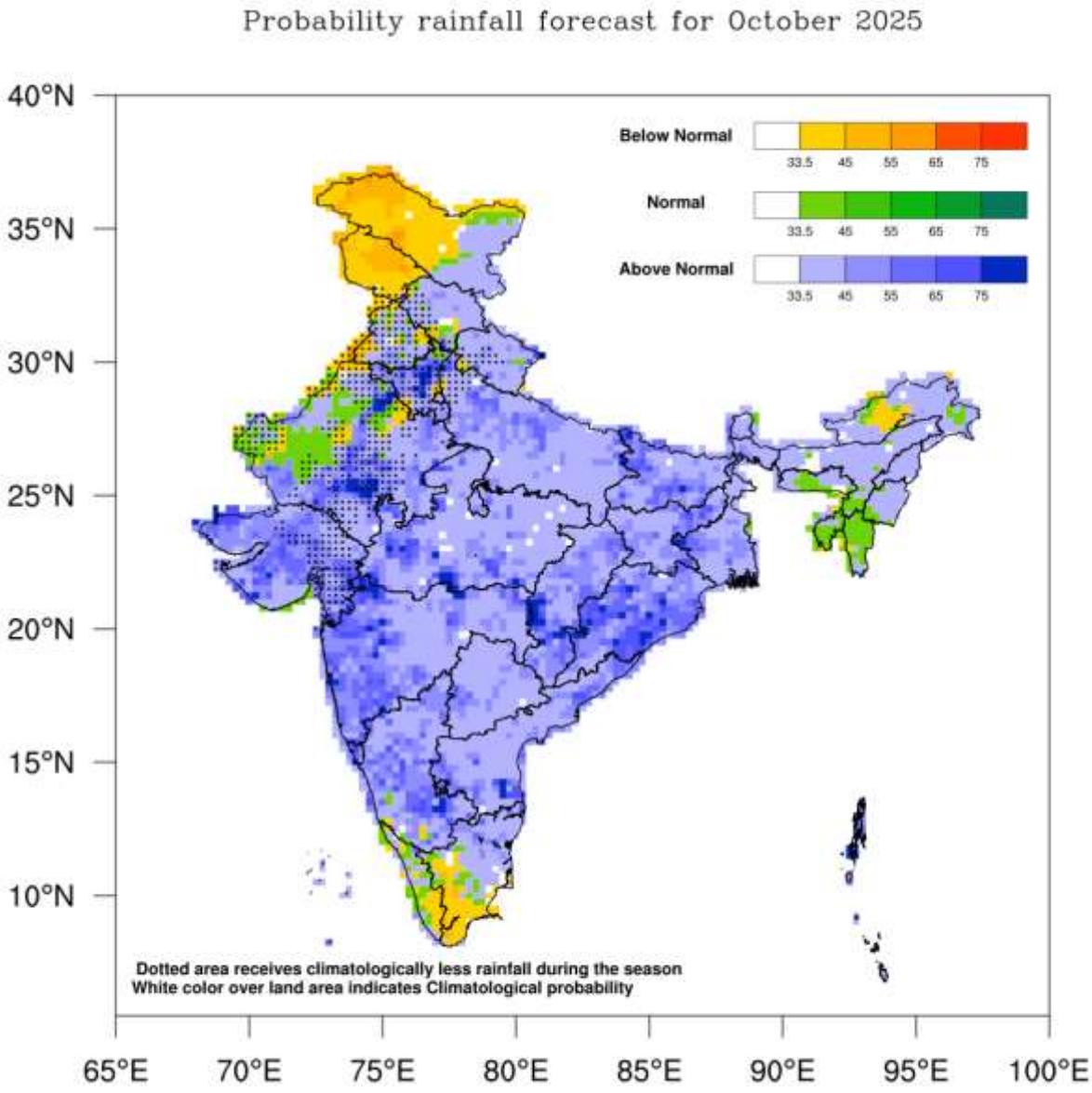

Fig.2. Probability forecast of tercile categories* (below normal, normal, and above normal) of rainfall over India during October, 2025. The figure illustrates the most likely categories as well as their probabilities. The white shaded areas within the main land represent no signal from the model. The dotted areas receive low rainfall during October as per climatology (*Tercile categories have equal climatological probabilities, of 33.33% each).

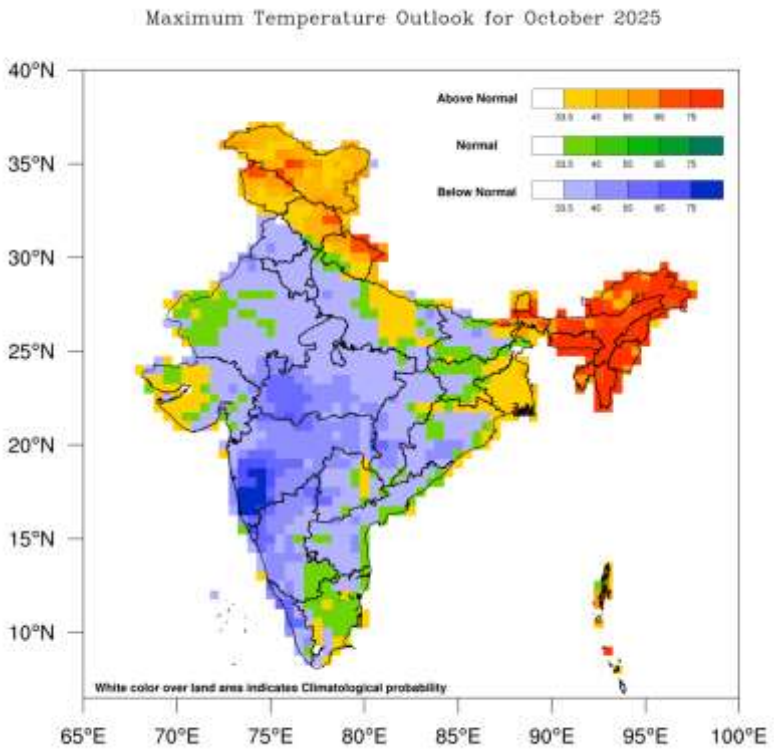

Fig.3a. Probability forecast of Maximum Temperature over India during October 2025.

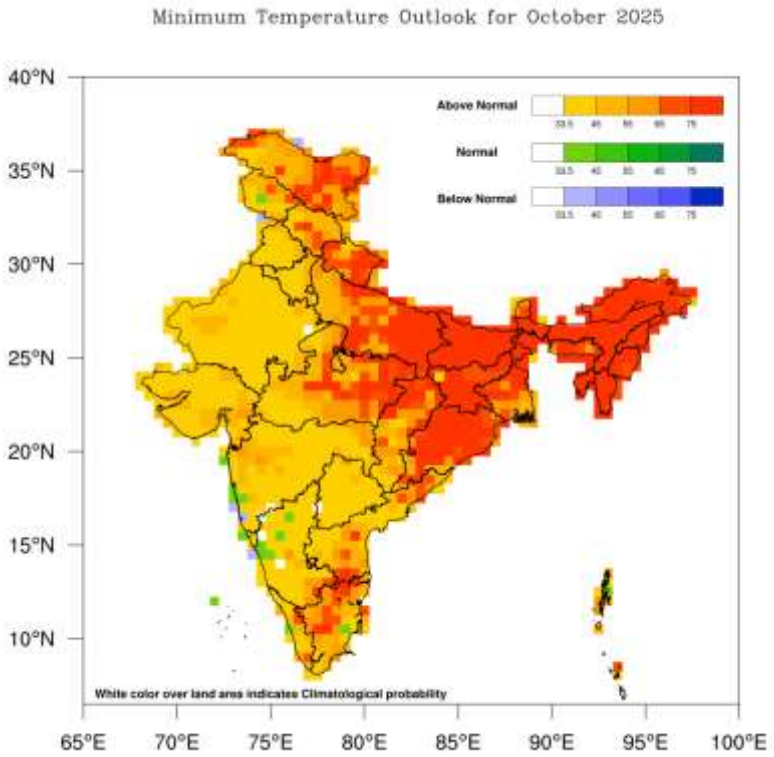

Fig.3b. Probability forecast of Minimum Temperature over India during October 2025.