PRESS RELEASE
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भारत सरकार
Government of India
पृथ्वी वज्ञान मंत्रालय **(एम. ओ. ई. एस.)**
Ministry of Earth Sciences (MoES)

भारत मौसम वज्ञान वभाग
INDIA METEOROLOGICAL DEPARTMENT

Monthly Outlook for Rainfall and Temperature during July 2024

Highlights

a) Rainfall over India – Monthly rainfall over the country as a whole during July 2024 is most likely to be above normal (>106 % of LPA). During July, normal to above normal rainfall is most likely over most parts of the country except many parts of northeast India and some parts of northwest, east and southeast peninsular India where below normal rainfall is likely.

b) Surface Air Temperature over India – During July 2024, monthly minimum temperatures are most likely to be above-normal over many parts of the country except some parts of northwest and adjoining areas of central India and some pockets of south-eastern peninsular India where normal to below normal minimum temperatures are likely. The maximum temperature is likely to be normal to below normal over many parts of the Nnorthwest India and south peninsular India except West coast. Above normal maximum temperatures are likely over many parts of central India, east and northeast India and along west coast.

c) Sea Surface Temperature(SST) - Currently El Nino-Southern Oscillation (ENSO) neutral conditions are observed over the equatorial Pacific. The sea surface temperatures (SSTs) are above average in the equatorial western and central Pacific Ocean, and below-average over the eastern equatorial Pacific Ocean. The latest Monsoon Mission Climate Forecast System (MMCFS) indicates that the La Nina conditions are likely to develop during second half of the monsoon season.

At present, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest climate model forecasts indicates neutral IOD conditions are likely to continue during the monsoon season.

IMD will issue the **forecast for the rainfall during the second half of the season (August + September 2024) and for the month of August towards the end of July 2024.**

1. Background

Since 2021, IMD has been issuing monthly and seasonal operational 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 2024 southwest monsoon seasonal (June to September) rainfall over the country on 15th April and update for the forecast on 27th May 2024. In addition, IMD also issued the forecast for rainfall during June on 27th May, 2024.

IMD has now prepared the Monthly Outlook for Rainfall and Temperature during July 2024.

2. Probabilistic Forecast of the Rainfall during July 2024

Monthly rainfall over the country as a whole during July 2024 is most likely to be above normal (>106 % of LPA). The LPA of rainfall over the country as a whole during July based on data from 1971-2020 is about 280.4 mm

The probabilistic forecast for the spatial distribution of tercile rainfall categories (above normal, normal and below normal) over the country for July 2024 is shown in Fig.1. The normal to above normal rainfall is most likely over most parts of the country except many parts of northeast India and some parts of northwest, east and southeast peninsular India where below normal rainfall is likely. 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 July 2024

Fig.2 and Fig.3 show forecast probabilities of the minimum and maximum temperatures respectively for July 2024. During July 2024, monthly minimum temperatures are most likely to be above-normal over many parts of the country except some parts of northwest and adjoining areas of central India and some pockets of southeastern peninsular India where normal to below normal minimum temperatures are likely. There is no signal by the model over the white shaded areas within the land region of the country.

The maximum temperature is likely to be normal to below normal over many parts of the Northwest India and south peninsular India except West coast. Above normal maximum temperatures are likely over many parts of central India, east and northeast

India and along west coast (Fig.3). Above normal maximum temperatures are likely over many parts of central India, east and northeast India and along west coast. 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 El Nino - Southern Oscillation (ENSO) neutral conditions are observed over the equatorial Pacific. The sea surface temperatures (SSTs) are above average in the equatorial western and central Pacific Ocean, and below-average over the eastern equatorial Pacific Ocean. The latest MMCFS forecast indicates that the La Nina conditions are likely to develop during second half of the monsoon season.

At present, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest climate model forecasts indicates that neutral IOD conditions are likely to continue during the monsoon season.

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 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.

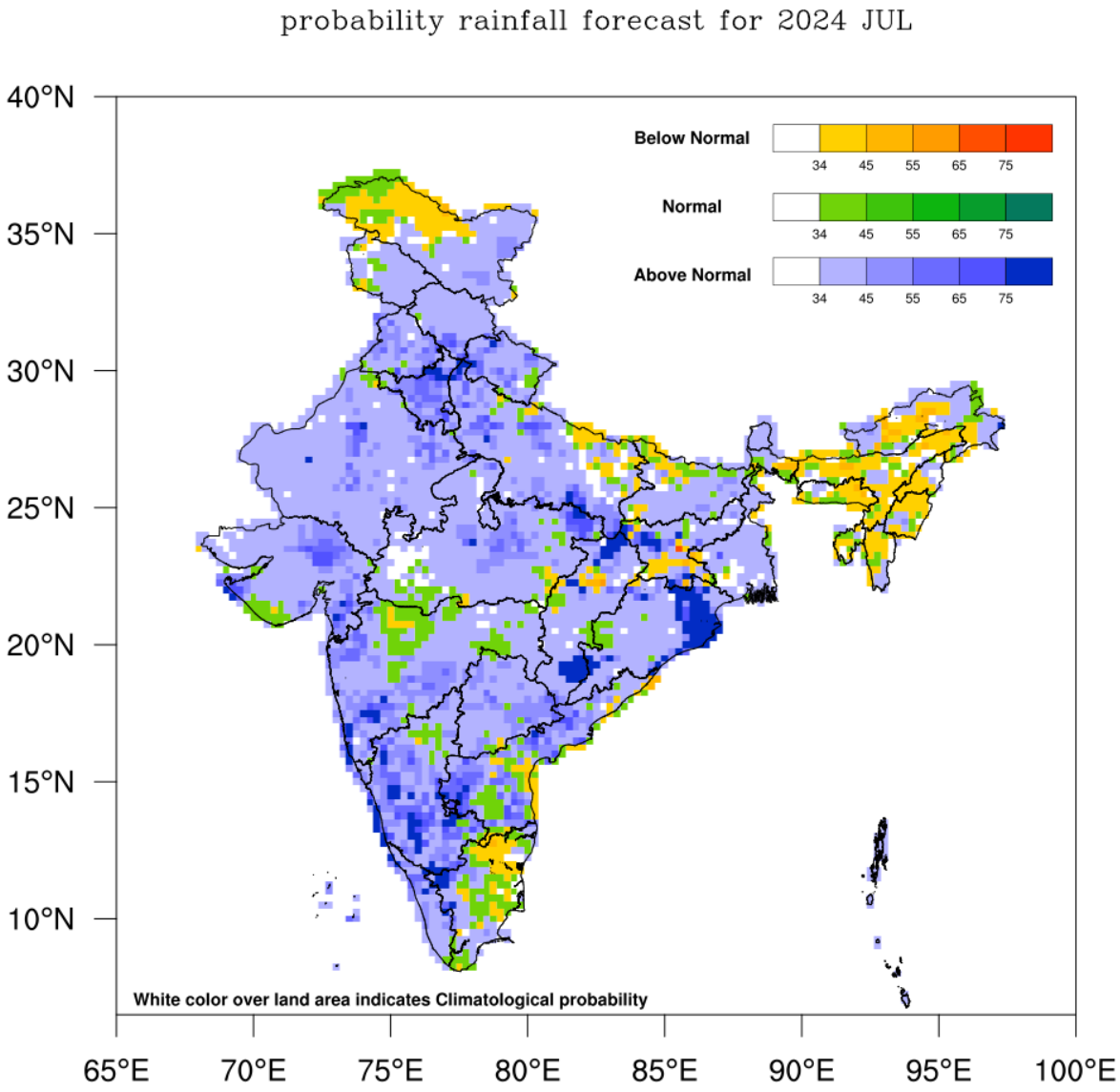

Fig.1. Probability forecast of tercile categories* (below normal, normal, and above normal) of rainfall over India during July 2024. There is no signal by the model over the white shaded areas within the land region of the country.

*Tercile categories have equal climatological probabilities, of 33.33% each.

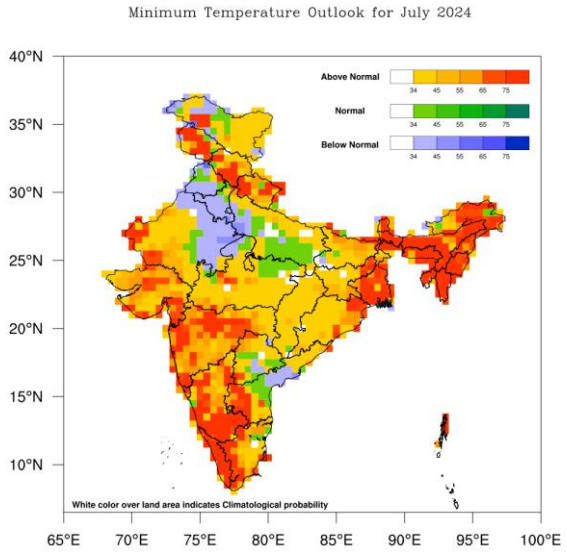

Fig.2. Probability forecast of Minimum Temperature for July 2024.

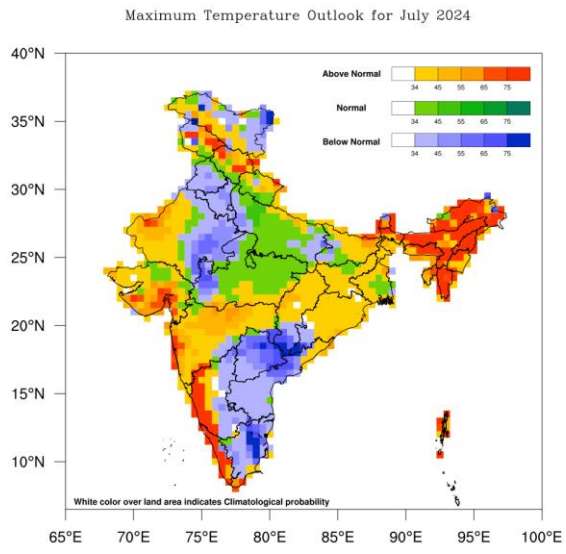

Fig.3. Probability forecast of Maximum Temperature for July 2024.