PRESS RELEASE

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पृथ्वी विज्ञान मंत्रालय (एम. ओ. ई. एस.)

Ministry of Earth Sciences (MoES)

भारत मौसम विज्ञान विभाग

INDIA METEOROLOGICAL DEPARTMENT

Seasonal outlook for Hot weather Season (March to May) 2023 and Monthly Outlook for March 2023 for the Rainfall and Temperature

Highlights

- During the upcoming hot weather season (March to May (MAM)), above normal maximum temperatures are likely over most parts of northeast India, east and central India and some parts of northwest India. Normal to below normal maximum temperatures are most likely over remaining parts of the country.
- During the season (MAM), above normal minimum temperatures are very likely over most parts of the country except south penisnuslar India where normal to below normal minimum temperatures are likely.
- Monthly maximum temperatures for March 2023 are likely to be above normal over most parts of the country except penisnuslar India where normal to below normal maximum temperatures are likely.
- Above normal monthly minimum temperatures are most likely during March, 2023 over most parts of India except south peninsular India where normal to below normal minimum temperatures are likely.
- Enhanced probability of occurrence of Heatwave during March to May season is likely over many regions of Central and adjoining Northwest India. A low probability for occurrence of heatwave over Central India is likely during March 2023.
- The rainfall in March 2023 averaged over the country is most likely to be normal (83-117% of LPA). Below normal rainfall is most likely over most areas of northwest India, west central India and some parts of east & northeast India. Normal to above normal rainfall is likely over most parts of peninsular India, east central India and some isolated pockets of northeast India.

Seasonal outlook for Hot weather Season (March to May) 2023 and Monthly Outlook for March 2023 for the Rainfall and Temperature

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. 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 over the country for the upcoming hot weather season (March to May 2023) and for March 2023 as presented in sections 2(a) and 2(b) respectively.

A Heat Wave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the hot weather season. The heatwave outlook for the hot weather season is presented in Section 3.

IMD has also prepared monthly outlook for rainfall for March 2023 as presented in section 4.

2. (a) Seasonal Temperature outlook for March to May (MAM) 2023

Fig.1a and Fig.1b show forecasted probabilities of the maximum and minimum temperatures respectively for the Pre monsoon season ie. March to May, 2023.

During the upcoming hot weather season (March to May (MAM)), above normal maximum temperatures are likely over most parts of northeast India, east and central India and someparts of north west India. Normal to below normal maximum temperatures are most likely over remaining parts of the country.

The probability forecast for the minimum temperatures (Fig.1b) indicates that during the upcoming hot weather season (MAM), normal to above normal minimum temperatures are very likely over most parts of the country except south penisnuslar India where normal to below normal minimum temperatures are likely.

2. (b) Monthly Temperature Forecast for March 2023

Fig.2a and Fig.2b show forecast probabilities of the maximum and minimum temperatures, respectively for March 2023. During March 2023, above normal maximum temperatures are likely over most parts of the country except peninsular India where below normal to normal maximum temperatures are likely(Fig.2a).

Above normal monthly minimum temperatures are most likely over most parts of India except south peninsular India where normal to below normal minimum temperatures are likely (Fig.2b).

3. Heatwave outlook for the Season March to May and for March 2023

The probabilistic forecast for the spatial distribution of heatwave over the country for the season March to May 2023 is shown in Fig 3a. Forecasts suggest an enhanced probability for the occurrence of heatwave over many regions of northwest and central India.

The probabilistic forecast for the heatwave over the country for March 2023 is shown in Fig 3b. Forecasts suggest a weak probability for the occurrence of a heatwave over Central India.

4. Monthly Rainfall outlook for March 2023

The rainfall during March 2023 averaged over the country as a whole 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 2023 is shown in Fig.4. The forecast suggests that below normal rainfall is most likely over many areas of northwest and west central India and some parts of northeast & east India. Normal to above normal rainfall is likely over most parts of peninsular India, parts of east central India and some isolated pockets of northeast India. 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. Sea surface Temperature (SST) conditions in the Pacific and the Indian Oceans

Currently, La Niña conditions are prevailing over the equatorial Pacific region. The La Niña is likely to weaken and turn to El Nino Southern Oscillation (ENSO) neutral conditions during the pre-monsoon season.

In addition to ENSO conditions over the Pacific, other factors such as the Indian Ocean SST also influence the Indian climate. At present, neutral IOD conditions are present over the Indian Ocean and the latest MMCFS forecast indicates that the neutral IOD conditions are likely to continue during the pre-monsoon 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 & 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 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 a medium-range forecast issued daily by IMD.

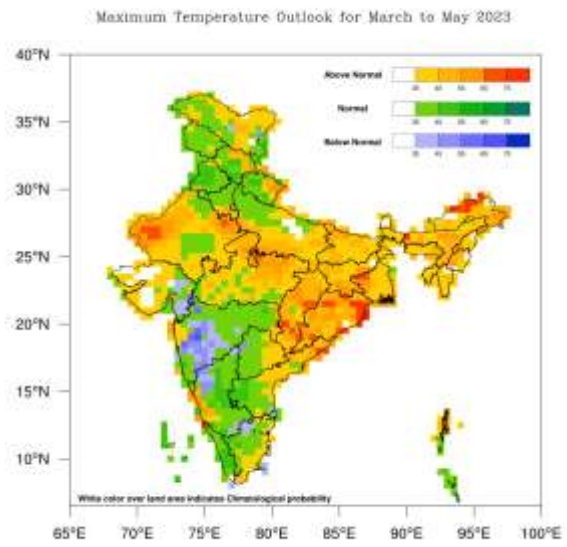

Fig.1a. Probability forecast of Maximum Temperature for March to May 2023.

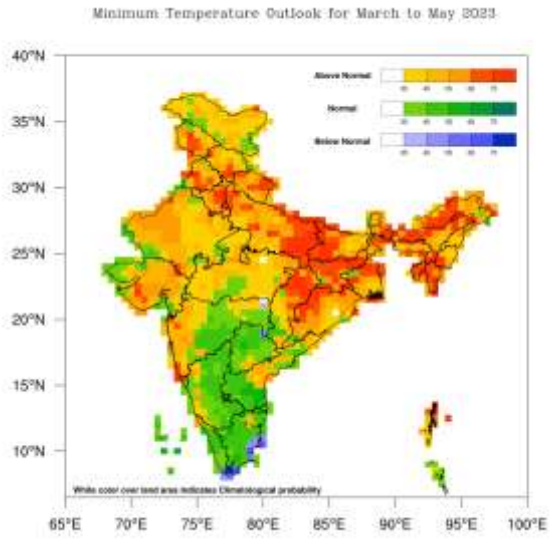

Fig.1b. Probability forecast of Minimum Temperature for March to May 2023.

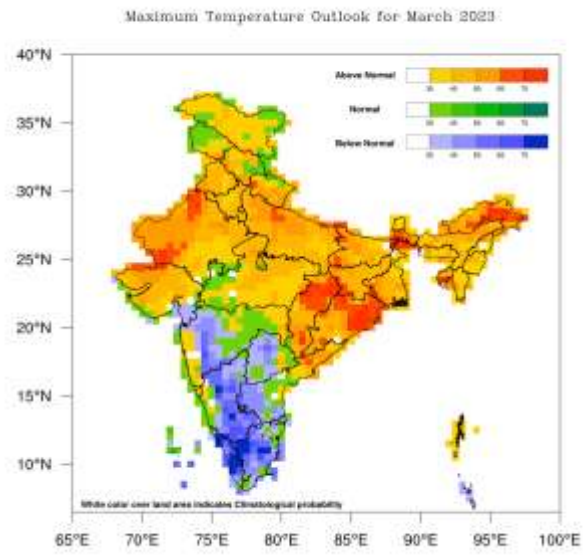

Fig.2a. Probability forecast of Maximum Temperature for March 2023.

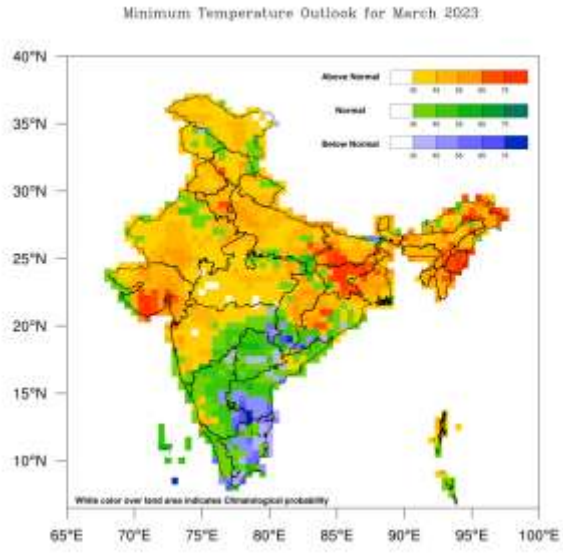

Fig2b. Probability forecast of Minimum Temperature for March 2023.

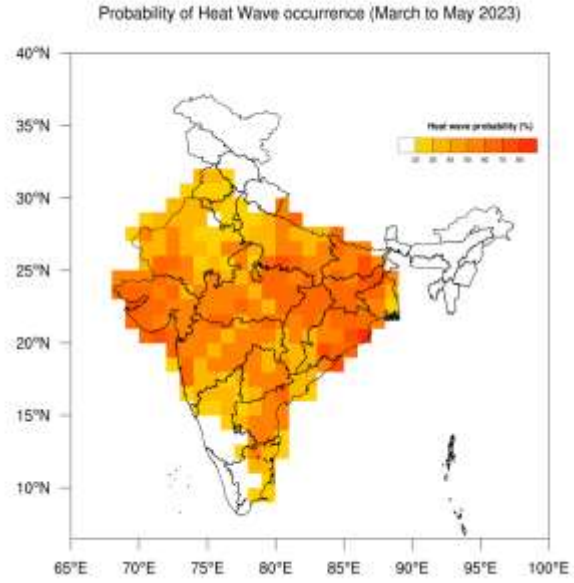

Fig3a. Probability forecast of heatwave for the season March to May 2023.

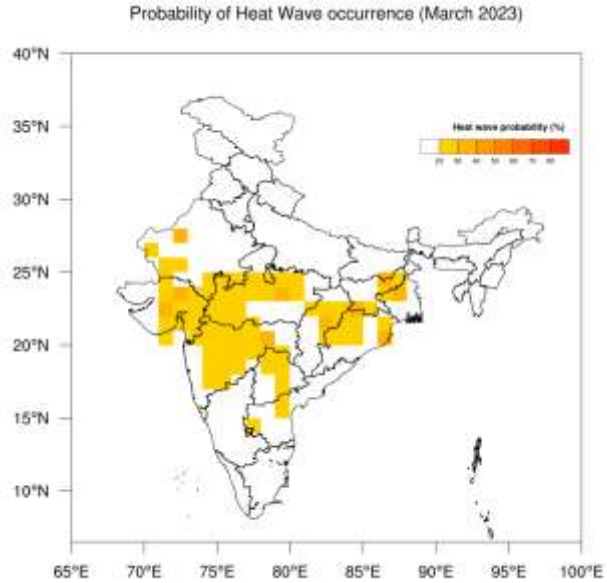

Fig3b. Probability forecast of heatwavefor March 2023.

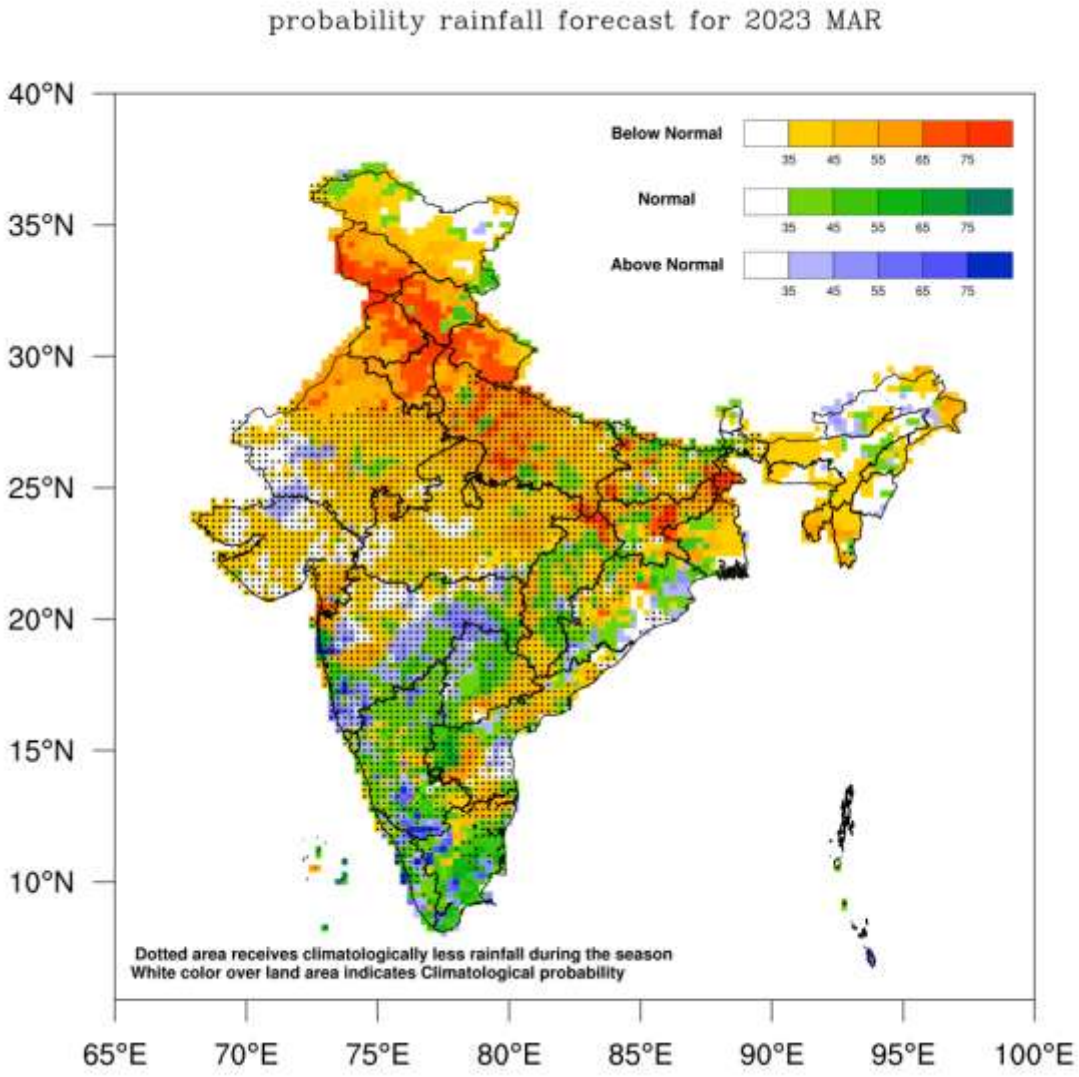

Fig.4. Probability forecast of tercile categories* (below normal, normal, and above normal) for the rainfall over India during March 2023. The figure illustrates the most likely categories as well as their probabilities. The dotted area shown in the map climatologically receives very less rainfall and the white-shaded areas within the land areas represent climatological probabilities. (*Tercile categories have equal climatological probabilities, of 33.33% each).