

Rise in extreme rainfall events

Southern peninsula receives 29% more rain than normal; big deficit in northeast

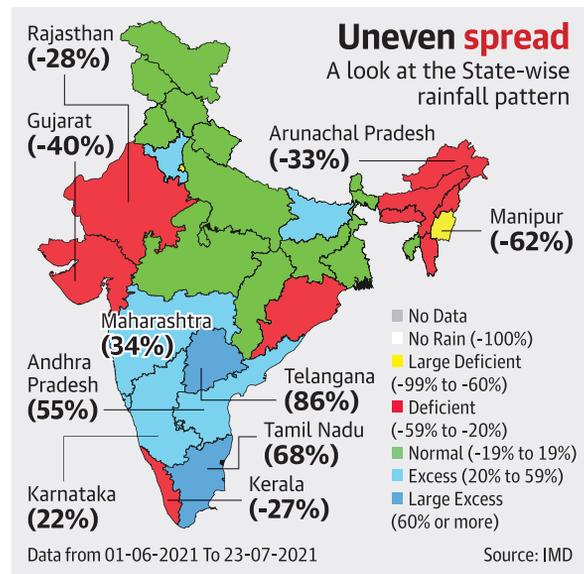
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Amid the revival of monsoon since the second week of July, there has been a significant variation in rainfall across the country.

Several parts of the western Konkan coast and the southern peninsula were witnessing instances of extreme rainfall. According to the India Meteorological Department data on the regional distribution, the 'South Peninsula' received 29% more rain than normal during the period June 1-July 23.

In the same period, north-west and central India witnessed a 10% and 2% deficit respectively and northeast India a 14% deficit, though this region has a higher base rainfall than other regions.

Mahabaleshwar in western Maharashtra reported more than 60cm of rainfall in the past 24 hours (Thursday morning to Friday morning) which "exceeded its all-time record", the IMD said. From Friday morning to



5.30 p.m., it recorded 18 cm. Torrential rain over the Konkan coast was likely to continue for the rest of the week, the agency added.

According to the district-wise rainfall data for Maharashtra, except five districts, all the other 31 got "large excess rains". July and August are the most important mon-

soon months, contributing over two-thirds of the seasonal rainfall. **Central India and the south peninsula are expected to see most of the rainfall. However, climate scientists have warned that monsoon patterns overall have been changing.**

The frequency and strength of cyclones over the

Arabian Sea has increased in the past two decades. **There is a 52% increase in the frequency of cyclones over the Arabian Sea from 2001 to 2019 and an 8% decrease over the Bay of Bengal compared with the period 1982-2002, when historically most cyclones have been in the Bay of Bengal,** according to a study published in *Climate Dynamics*. Even the duration of cyclones has increased by 80%. More cyclones were bringing in more moisture from the Arabian Sea and contributing to extreme rainfall events.

Roxy Koll, climate scientist at the Indian Institute of Tropical Meteorology in Pune and among the authors of the study, tweeted that it was important to monitor and better forecast these events. "The ongoing monsoon floods across India is unprecedented, but not unexpected. We already see a threshold rise in widespread extreme rains that cause floods across India," he said.