

## Monsoon: Negative IOD may neutralise gains from La Nina

Vinson Kurian | Updated On: Apr 21, 2022



India Meteorological Department has forecast normal monsoon during June-September (file image) | Photo Credit: VIVEK PRAKASH

### India's South Peninsula may receive below-normal rain, says South Korean agency

The APEC Climate Centre at Busan, South Korea, has extended its La Niña watch for the next 3-5 months (until August), but good tidings from this monsoon-friendly mode in the tropical Pacific could be partly undone by its near-door cousin, the negative phase of the Indian Ocean Dipole (IOD).

The outcome is below-normal rainfall for Kerala, Tamil Nadu and Karnataka before footprint of the deficiency spreads to Rayalaseema, Telangana, Coastal Andhra Pradesh, Madhya Maharashtra, Marathwada, Goa and Konkan (practically most of the West Coast) variously in June, July and August.

### Excess pre-monsoon rain

The rest of the country is forecast to receive normal to above-normal rainfall before September to bring some respite for parts of the South Peninsula (but not Kerala and South Tamil Nadu), according to this outlook. The South Korean agency is, however, predicting normal rain for the country as a whole till August.

It is also a fact that, except Andhra Pradesh and Telangana, the rest of South Peninsula has received excess or large excess rainfall so far in the ongoing pre-monsoon season. The quantum of excess ranges from 192 per cent in Andaman & Nicobar Islands (large excess) to 184 per cent in Lakshadweep (large excess); 110 per cent in Kerala (large excess); 102 per cent in Karnataka (large excess); and 48 per cent in Tamil Nadu and 27 per cent in Puducherry (both excess).

Telangana (-87 per cent, large deficit) and Andhra Pradesh (-68 per cent, large deficit) are significant exceptions. But the South Korean agency expects that May and, to some extent, June would make amends and turn in normal to above-normal rain, though Kerala and parts of adjoining South Tamil Nadu may likely miss out on the gains others may make.

### IMD, Skymet Weather outlook

Back home, India Meteorological Department (IMD) has already forecast that the June-September monsoon season is likely to be normal (96-104 per cent of the long-term average, LPA) and assessed the quantum of rainfall at 99 per cent of LPA. It hinted at below-normal for many areas of North-East India, some areas of North-West India, and southern parts of the South Peninsula.

Private forecaster Skymet Weather has projected the monsoon to be at 98 per cent but suspects that the rainfall pattern will be skewed across space and time. The second half of the monsoon appears to run the risk of inadequate precipitation.

Dr Murari Lal, climate change expert at consultancy RMSI, says periods of weaker or stronger-than-average easterly trade winds initiate El Nino/La Nina events or 'neutral' phase in the tropical Pacific, signalling variations from average ocean temperatures, winds, surface pressure, and rainfall.

### **Early summer heat**

During the La Nina phase, surface winds (blowing from East to West) across the entire tropical Pacific are stronger than usual, and most of the tropical Pacific Ocean is cooler than average (and warmer to West). As warm water enters the nearby Indian Ocean, La Nina-induced surface wind anomalies result in large-scale anomalous heat transport in the equatorial Indian Ocean.

As a consequence, the IOD (a coupled ocean and atmosphere phenomenon) in the equatorial Indian Ocean is also perturbed and the change in temperature gradients across the Indian Ocean results in changes in the preferred regions of rising and descending moisture and air (wet and dry conditions).

This year, heatwaves affected North and North-West India in March itself and the effect of early summer heat is being felt in states such as Delhi, Maharashtra, Madhya Pradesh, Rajasthan and Uttar Pradesh, Lal said. Lack of rain and thundershower has also contributed to the soaring temperatures.

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