

# Tracking the unpredictable

## Characteristics of NE monsoon

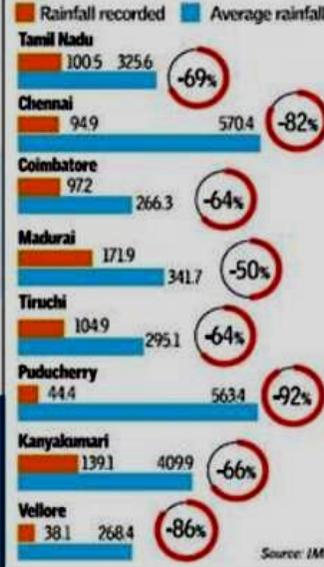
- It is also called as the 'winter monsoon'
- Normally, rain occurs in spells that last four days. Much of the rain occurs during night and the early morning hours
- When there is a weather system close to the coast, it rains throughout the day
- Long spells of dry weather are common during this monsoon

Chennai is among the worst-hit districts, with an 80 per cent shortfall so far this

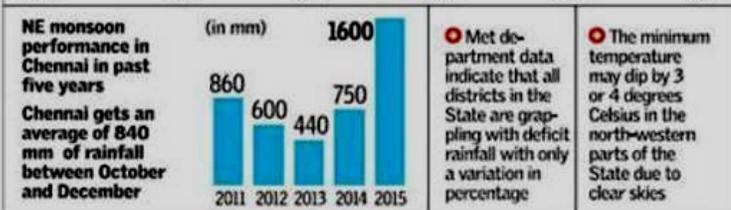
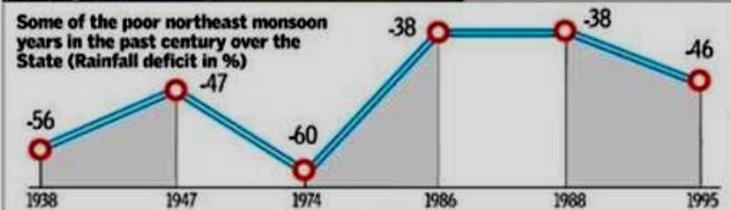
Average rainfall during NE monsoon over the State: 438.2 mm

Month	October	November	December
Rainfall (mm)	180.2	170	88

Rainfall deficit over Tamil Nadu from Oct. 1- Nov. 23, 2016 (in mm)



IN CONTRAST: A file photo of the city, during the floods last year; a satellite image taken on Saturday indicates clear skies and dry weather for the next four days.



- Met department data indicate that all districts in the State are grappling with deficit rainfall with only a variation in percentage
- The minimum temperature may dip by 3 or 4 degrees Celsius in the north-western parts of the State due to clear skies

With current rainfall deficit of nearly 70 per cent over the State, experts say this year could witness one of the worst northeast monsoons of the century

Sometimes, when people have serious discussions on the monsoons, the northeast comes off as a poor cousin to its more ferocious southwest monsoon. In fact, the northeast monsoon is also known as the 'post-monsoon' season or 'retreating southwest monsoon' as if the northeast monsoon had little character of its own.

However fickle and temperamental it is, the northeast monsoon is the lifeline of Tamil Nadu, which receives an estimated average 48 per cent of its rainfall in the season between October and December. The difference between a good monsoon and a poor monsoon year is the difference in the quality of life, and the livelihood of the people of this State.

Last November, the State, particularly the coastal districts of Chennai and Cuddalore, was battling one of the most devastating monsoons of the century. In less than a week, Chennai will be into the first year anniversary of the December deluge that left a trail of destruction and clear vision of how unprepared the city was to handle floods of that magnitude at any rate.

But, this November, which is normally the wettest month of the year, presents a stark contrast with hardly any rain. The State stares at a bleak northeast monsoon and is struggling with nearly 70 per cent deficient rainfall so far since October 1. That is the nature of the monsoon.

Cool, wet days of the monsoon have become a distant memory for many residents, and interior districts like Vellore are already experiencing ‘winter-like’ weather with minimum temperature dipping several notches below normal.

Because of the State’s reliance on the northeast monsoon rain, which falls between October and December, for its water requirements, Tamil Nadu is often prone to droughts when the ‘winter monsoon’ fails. While prolonged dry spells are considered ‘normal’ in the course of the monsoon, the delayed onset and weak weather systems have been a cause of worry. Is 2016 going to be a year of failed monsoon? The impact on the already-dismal storage levels in waterbodies and in agriculture — where farmers have been doubly disappointed with Cauvery water flow too — is likely to be devastating.

### **80 per cent shortfall**

The data of the Meteorological Department indicates that all districts are grappling with deficit rainfall with only a variation in percentage. Cuddalore and Chennai are among the worst-hit districts with an 80 per cent shortfall so far this month. With the department forecasting that there may not be much rain till November-end, as there is no strong weather system to trigger monsoon activity, November is likely to end up as one of the driest months in the past few decades.

S. Balachandran, Director of Area Cyclone Warning Centre, Chennai, said: “We are likely to have largely dry weather for the next four days across the State. Chilly weather will continue to prevail over most parts of the State because of clear skies. The minimum temperature may dip by three or four degree Celsius in the north-western parts of the State for the same reason.”

It may be recalled that the MeT department had worked on a monsoon outlook, predicting that the State would receive 90 to 100 per cent of its average rainfall. Some weather models showed that the monsoon may end on a negative note.

## Going by the past

Mr. Balachandran said the northeast monsoon is 'complicated', and it is known to bring in an intense spell of rainfall in a short time too. As it happened in 2015, when nearly 30 cms of rain fell on December 1 alone in Chennai, which was a record-breaking event.

The State, thus, is justified in continuing to pin its hope on December, believing the monsoon is likely to revive. However, the question of whether the rainfall will bridge the shortfall remains to be answered.

S.B. Thampi, Deputy Director General of Meteorology, Regional Meteorological Centre, Chennai, said: "We are expecting rains to revive from the first week of December, with the rainfall intensity increase from the second week. Long range forecast is sometimes not reliable as numerical weather models indicate that the monsoon may wind up on negative side. But, we have to wait till the year end to re-evaluate the deficiency and to see if December will compensate for the loss so far."

Meteorologists and weather bloggers cite that easterly wave, which are winds from easterly direction that triggers clouding and rainfall, was weak this time. Two depressions that formed in the southwest Bay of Bengal travelled initially towards Tamil Nadu coast and recurved towards Bangladesh, limiting the chances of rainfall.

Elaborating on the monsoon pattern, Mahesh Palawat, chief meteorologist, Skymet Weather Services, a private weather forecasting agency, said: "The sea surface temperature must be 29 degree Celsius or more to develop weather systems. This year, there is a poor chance for Tamil Nadu to end with good rainfall. It may record only less than 50 per cent of its average rainfall. Some southern parts may get good rains," he said.

Going by the current rainfall deficit over the State, this year could be one of the worst northeast monsoons of the century. Y.E.A. Raj, former deputy director general of meteorology, Chennai, recalled that the State saw a severe drought in 1974 when the rains were inadequate by nearly 60 per cent during winter monsoon. Tamil Nadu records an average of 438.2 mm of rainfall during this season.

“This century has witnessed seven poor monsoon years with below 40 per cent rainfall. Unlike the southwest monsoon or summer monsoon, when convective activity too brings evening showers, this season needs easterlies and moisture to come from the Bay of Bengal to induce rains,” he said.

At present, there is more northerly wind, which denotes cold, dry wind, blowing over the region.

Normally, three or four weather systems form over the Bay of Bengal in November. There is, so far, no strong system to bring heavy spells this time.

“In 1974 there was a massive drought which even led to no water supply in Egmore railway station to fill in trains. Following it, drought mitigation efforts like desilting waterbodies were taken in large scale and even talks on cloud-seeding operations were taken up. However, the rains of 1975 solved the issue,” he recalled.

Chennai experienced one of the worst droughts recently in 2003, when it recorded only 74 cm against the average 140 cm, he added.

### **Bloggers chime in**

Meanwhile, independent weather bloggers claim that Tamil Nadu is headed for one of the monsoons in 150 years, if December rains do not materialise. Chennaiyil Oru Mazhaikalam's K. Srikanth points out that the State has recorded 11 cm against the normal of 33 cm in October and November.

Overall, 1876 holds the record of the worst monsoon performance with lowest cumulative rainfall of 12 cm.

Given the unpredictable and chaotic nature of the this monsoon, December seems to be Tamil Nadu's only hope.