

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
RAJYA SABHA  
UNSTARRED QUESTION NO. 3357  
TO BE ANSWERED ON TUESDAY, JULY 23, 2019**

**WRONG FORECAST OF MONSOON**

**3357. SHRIMATI VIJILA SATHYANANTH:**

**Will the Minister of EARTH SCIENCES be pleased to state:**

- (a) whether it is a fact that the progress of the monsoon in the country was not as predicted by the Indian Meteorological Department (IMD);**
- (b) if so, the details thereof;**
- (c) what are the reasons for the IMD predicting wrong weather forecast; and**
- (d) the steps taken in this regard?**

**ANSWER**

**MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND  
MINISTRY OF EARTH SCIENCES  
(DR. HARSH VARDHAN)**

- (a) & (b) No Sir. India Meteorological Department (IMD) issues forecast for monsoon onset over Kerala. According to the forecast issued in May 2019, the onset of monsoon over Kerala for this year was likely to be delayed and was expected on 6<sup>th</sup> June with a model error of  $\pm 4$  days. The onset of monsoon over Kerala has occurred on 8<sup>th</sup> June 2019 within the forecast limit, against the normal date of 1<sup>st</sup> June. The Press Release, issued on 15<sup>th</sup> May 2019, regarding forecasting of date of onset of Southwest Monsoon 2019 over Kerala is given in Annexure. Afterwards, there had been delay in the progress of monsoon further, due to the weakening of monsoon current, in view of formation of a cyclonic Storm 'VAYU' in the Arabian Sea.**

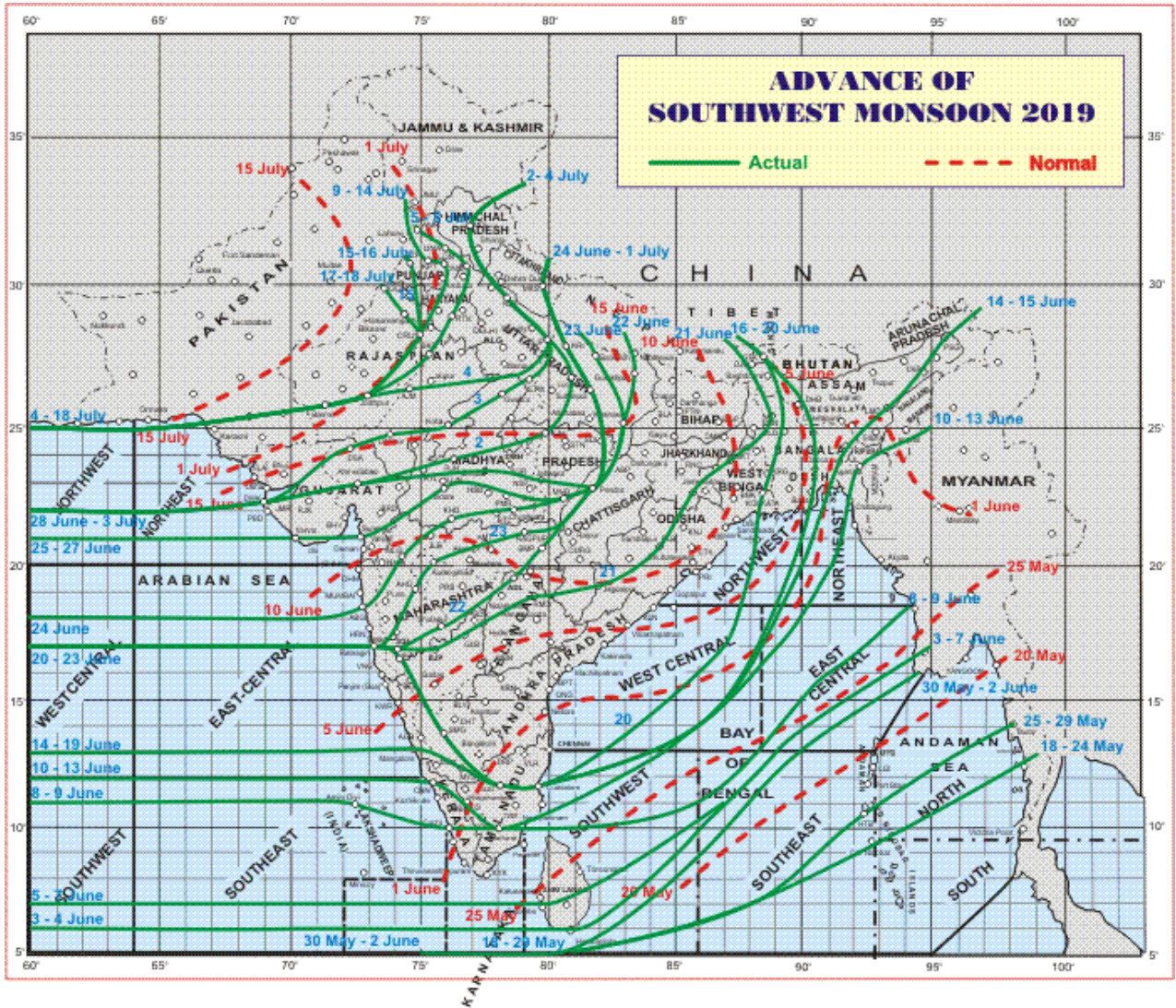
**The progress of southwest monsoon till 18<sup>th</sup> July 2019 is shown in Figure - 1.**

**After the onset, further progress of the monsoon across the country is done by considering spatial continuity of rainfall pattern and referring to the satellite imageries.**

**An improved suite of numerical prediction models have already been implemented operationally at IMD for enhanced short range forecast through assimilation of all available Indian and global satellite data in real time by which the accuracy of forecast has improved in the recent past. The rainfall prediction for the forthcoming days from these numerical models is considered for predicting the progress of monsoon across the country. Using this method, the progress of monsoon expected during next seven days' period is brought out in the daily weather bulletins during advance phase of monsoon.**

**(c) and (d) Do not arise.**

**Figure -1**



## **Annexure**

**PRESS RELEASE**  
New Delhi, 15 May 2019



**भारत सरकार**

**Government of India**

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

**Ministry of Earth Sciences (MoES)**

**भारत मौसम विज्ञान विभाग**

**INDIA METEOROLOGICAL DEPARTMENT**

### **Forecast of the Onset Date of Southwest Monsoon - 2019 over Kerala**

#### **1. Background**

Southwest monsoon sets over Kerala on 1<sup>st</sup> June with a standard deviation of about 7 days. The event marks the start of rainy season over the region and as the monsoon progresses northward, relief from scorching summer temperatures is experienced over the areas. India Meteorological Department (IMD) has been issuing operational forecasts for the date of monsoon onset over Kerala from 2005 onwards. An indigenously developed state of the art statistical model with a model error of  $\pm 4$  days is used for the purpose. The 6 Predictors used in the models are; i) Minimum Temperatures over North-west India, ii) Pre-monsoon rainfall peak over south Peninsula, iii) Outgoing Long wave Radiation (OLR) over south China Sea, (iv) Lower tropospheric zonal wind over southeast Indian ocean, (v) upper tropospheric zonal wind over the east equatorial Indian Ocean, and (vi) Outgoing Long wave Radiation (OLR) over the south-west Pacific region.

IMD's operational forecasts of the date of monsoon onset during the past 14 years (2005-2018) were proved to be correct except in 2015. Forecast verification for the recent 5 years (2014-2018) is given in the table below.

Year	Actual Onset Date	Forecast Onset Date
2014	6th June	5th June
2015	5th June	30th May
2016	8th June	7th June
2017	30th May	30th May
2018	29 <sup>th</sup> May	29 <sup>th</sup> May

#### **2. Advance of monsoon over the Andaman Sea**

Conditions are becoming favourable for advance of southwest monsoon over the southern part of Andaman Sea, Nicobar Islands and adjoining southeast Bay of Bengal during 18-19<sup>th</sup> May 2019.

#### **3. Forecast for the 2019 Monsoon Onset over Kerala**

*This year, the statistical model forecast suggests that the monsoon onset over Kerala is likely to be slightly delayed. The southwest monsoon onset is likely to set over Kerala on 6<sup>th</sup> June with a model error of  $\pm 4$  days.*