



भारत सरकार

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Ministry of Earth Sciences (MoES)

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INDIA METEOROLOGICAL DEPARTMENT

Forecast of the Onset Date of Southwest Monsoon - 2020 over Kerala

1. Background

Advance of the southwest monsoon over Indian main land is marked by monsoon onset over Kerala and is an important indicator characterizing the transition from hot and dry season to a rainy season. As the monsoon progresses northward, relief from scorching summer temperatures is experienced over the areas. Southwest monsoon sets over Kerala on 1st June with a standard deviation of about 7 days. 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 ± 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 over Kerala during the past 15 years (2005-2019) were proved to be correct except in 2015. Forecast verification for the recent 5 years (2015-2019) is given in the table below.

| Year | Actual Onset Date | Forecast Onset Date |
|------|----------------------|----------------------|
| 2015 | 5 th June | 30 th May |
| 2016 | 8 th June | 7 th June |
| 2017 | 30 th May | 30 th May |
| 2018 | 29 th May | 29 th May |
| 2019 | 8 th June | 6 th June |

2. Forecast for the 2020 Southwest Monsoon Onset over Kerala

This year, the onset of southwest monsoon over Kerala this year is likely to be slightly delayed as compared to normal date of onset. The monsoon onset over Kerala this year is likely to be on 5th June with a model error of ± 4 days.

3. Status of the 2020 Southwest Monsoon and Advance over the Andaman Sea

In the Indian monsoon region, initial monsoon rains are experienced over south Andaman Sea and the monsoon winds then advance in a north-westwards across the Bay of Bengal. As per the new normal dates of monsoon onset/progress, the southwest monsoon advances over the Andaman Sea around 22nd May. At present, a well-marked Low-Pressure Area lies over southeast Bay of Bengal & neighborhood. It is very likely to concentrate into a Depression over the same region during next 12 hours and further intensify into a Cyclonic Storm over central parts of south Bay of Bengal by 16th May evening. Associated with this event, conditions are likely to become favorable for advance of Southwest Monsoon into Andaman Sea, Andaman & Nicobar Islands and

some parts of southeast Bay of Bengal, during next 48 hours. Past data suggest that there is no association of the date of monsoon advance over the Andaman Sea either with the date of monsoon onset over Kerala or with the seasonal monsoon rainfall over the country.

4. New Normal Dates of Onset/Progress and Withdrawal of Southwest Monsoon over India

India Meteorological Department (IMD) had released new normal dates of onset and withdrawal of southwest monsoon based on recent data in a press release dated 15th April 2020. The normal dates of onset are revised based on data during 1961-2019 and normal dates of withdrawal are revised based on data during 1971-2019. Now the detailed report (CRS Research Report. No. 3/2020) on the new normal dates of monsoon onset and withdrawal is ready and given in the below link.

http://www.imdpune.gov.in/Clim_Pred_LRF_New/Reports.html