



**Earth System Science Organization (ESSO)
Ministry of Earth Sciences (MoES)
INDIA METEOROLOGICAL DEPARTMENT**

Forecast of the Onset Date of Southwest Monsoon - 2016 over Kerala

1. Background

The onset of southwest monsoon over Kerala signals the arrival of monsoon over the Indian subcontinent and represents beginning of rainy season over the region. The normal monsoon onset over Kerala is 01 June. Since 2005, India Meteorological Department (IMD) has been issuing operational forecasts for the date of monsoon onset over Kerala using an indigenously developed statistical model with a model error of ± 4 days. The model uses the following six predictors:

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.

The forecasts of the monsoon onset issued during the past 11 years (2005-2015) except 2015 were proved to be correct. The verification of the forecast for the last 5 years is given below.

Year	Actual Onset Date	Forecast Onset Date
2011	29 th May	31 st May
2012	5 th June	1 st June
2013	1 st June	3 rd June
2014	6 th June	5 th June
2015	5 th June	30 th May

2. Advance of monsoon over the Andaman Sea

The southwest monsoon advances over the Andaman Sea normally around 20th May with a standard deviation of about one week. Strong convective activity has been observed over the equatorial Indian Ocean for the last several days. A well marked low pressure area has formed over the Indian Ocean which will concentrate into a depression and move north-westwards. As a result, conditions are becoming favorable for the onset of southwest monsoon over Nicobar Islands, south Andaman Sea and parts of south Bay of Bengal around 17th May and advancement over the entire Andaman Sea close to its normal date. 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.

3. Forecast for the 2016 Monsoon Onset over Kerala

The statistical model forecast suggests that the monsoon onset over Kerala in this year is likely to be slightly delayed. The southwest monsoon is likely to set over Kerala on 7th June with a model error of ± 4 days.