

India Meteorological Department(IMD) releases first stage forecast of Southwest monsoon seasonal rainfall 2017

The IMD has predicted normal rainfall during the 2017 southwest monsoon season for the country as a whole is likely to be 96% of the long period average (LPA) with a model error of $\pm 5\%$. Forecast assessment suggests 38% of probability for near normal monsoon rainfall.

IMD issues various monthly and seasonal forecasts of rainfall for the southwest monsoon season (June to September). Operational forecasts for the southwest monsoon season rainfall are issued in two stages. The first stage forecast has been issued and the second stage forecast will be issued in June 2017. These forecasts are prepared using state-of-the-art Statistical Ensemble Forecasting system (SEFS) that is critically reviewed and improved regularly through in-house research activities. Since 2012, IMD has been using the dynamical global climate forecasting system (CFS) model, which was developed under the Monsoon Mission. The original coupled ocean-atmospheric model framework of CFS was adopted from the National Centres for Environmental Prediction (NCEP), USA. The CFS model was further modified to provide improved rainfall forecasts over the Indian monsoon region through research efforts taken up under the Monsoon Mission.

Monsoon Mission Coupled Forecasting System (MMCFS) based Assessment

For generating the forecast for the 2017 southwest Monsoon season rainfall, atmospheric and oceanic initial conditions during March 2017 were used. The forecast was computed as the average of the 44 ensemble members. The forecast based on the MMCFS suggests that the monsoon rainfall during the 2017 monsoon season (June to September) averaged over the country as a whole is likely to be $96\% \pm 5\%$ of the Long Period Average (LPA).

Forecast Based on the Operational Statistical Ensemble Forecasting System (SEFS)

Quantitatively, the monsoon seasonal rainfall is likely to be 96% of the Long Period Average (LPA) with a model error of $\pm 5\%$. Further, forecasts for the seasonal rainfall for the country suggest 38% probability for near normal rainfall scenario.

Sea Surface Temperature (SST) Conditions in the equatorial Pacific & Indian Ocean

The weak La Nina conditions developed in the later part of the last monsoon season peaked in December 2016 and started weakening thereafter. Currently, neutral conditions are prevailing over the equatorial Pacific. The atmospheric conditions over the Pacific also reflect neutral El Nino conditions. The latest forecast from MMCFS indicates weak El Nino conditions to develop during the latter part of the monsoon season. However, there is no one to one relationship between El Nino and Indian Monsoon. For example, during 34% of El Nino years, monsoon season rainfall was normal or above normal.

At present, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest forecast from the MMCFS indicates weak positive IOD conditions are likely to develop during the middle of the monsoon season and to persist for some more months subsequently. Positive IOD conditions are likely to be favourable for a normal/above

normal monsoon.

As the extreme sea surface temperature conditions over the Pacific particularly El Nino conditions over the Pacific (El Nino or La Nina) and positive IOD development over the equatorial Indian Ocean are known to have strong influence on the Indian summer monsoon, IMD is carefully monitoring the sea surface conditions over the Pacific and Indian oceans

IMD will issue the update forecasts in early June, 2017 as a part of the second stage long range forecast of monsoon rainfall. Along with the update forecast, separate forecasts for the monthly (July and August) rainfall over the country as a whole and seasonal (June-September) rainfall over various geographical regions of India will also be issued. By that time, more information on the evolution of El Nino and IOD will be available.

Normal monsoon to boost rural demand, manufacturing and economy

We believe that normal monsoon forecast by Indian Meteorological Department (IMD) is encouraging as normal monsoon behavior helps not only the agriculture sector but also boosts rural demand and manufacturing sector. We expect economy to grow at around 8% with a good growth in the agriculture sector, manufacturing sector and steady growth of the services sector.

Our country is still considered as agrarian economy and is largely dependent on the monsoon behavior in a particular year as a substantial part of the agricultural produce comes from the monsoon fed crops. So good monsoon is always considered as a big boon to India's economy and helps in increasing agricultural output. However, we need to focus on minimizing the wastages by augmenting storage capacities, modernizing or upgrading the godowns.

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Warm regards,

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