

PRESS RELEASE

New Delhi, 1st September, 2011

**INDIA METEOROLOGICAL DEPARTMENT
MINISTRY OF EARTH SCIENCES**

Long Range Forecast Outlook for the 2011 September Rainfall

1. Background

As per the present long range forecasting schedule, India Meteorological Department (IMD) has issued operational long range forecasts for the 2011 southwest monsoon Season (June to September) rainfall over the country as a whole in two stages; on 19th April and 21st June. Along with update forecast for the season rainfall over the country as a whole issued in June, forecast for monthly rainfall (for July and August) over the country as a whole and season (June to September) rainfall over the four geographical regions (Northwest India, Central India, Northeast India and South Peninsula) were also issued. Forecast outlook for the rainfall during the second half (August-September) of the monsoon season was issued on 1st August. IMD has now prepared a forecast outlook for 2011 September rainfall.

2. Long Range Forecasts for 2011 SW Monsoon Rainfall Issued So Far

Summary of IMD's long range forecasts for the 2011 south-west monsoon season (June to September) issued so far are given in the table below. In the last column, the actual rainfall received till date is also given.

Region	Period	Forecast (% of LPA)		Actual Rainfall Received so far (1 June- 31st August) % of LPA
		1 st Stage	2 nd Stage	
All India	June to September	98 ± 5	95 ± 4	100
Northwest India	June to September	-	97 ± 8	104
Central India	June to September	-	95 ± 8	106
Northeast India	June to September	-	95 ± 8	86
South Peninsula	June to September	-	94 ± 8	105
All India	July	-	93 ± 9	86
All India	August	-	94 ± 9	110
All India	August +September	-	90 ± 8 (issued on 1 st August)	-

3. **5-Parameter Model for the September Rainfall Over the country as a whole**

The long period average (LPA) of the September rainfall over the country as whole based on the 1951-2000 climatology is 17.34cm and the coefficient of variation (C.V) is 23%. For the forecast of September rainfall over the country as a whole, a new Principal Component Regression (PCR) Model based on 5 predictors has been used. The model error of 5-parameter PCR model is 15% of LPA.

The 5-parameter PCR model was also used to prepare probability forecasts for five pre-defined categories of rainfall during the second half of the monsoon season. These are deficient (less than 77% of LPA), below normal (77-92% of LPA), near normal (93-108% of LPA), above normal (109-123% of LPA) and excess (above 123% of LPA). The forecasted probabilities for the rainfall during the second half of 2011 southwest monsoon season over the country as whole in percentage for the above 5 categories are 19%, 37%, 35%, 8% and 1% respectively. ***It may be noted that the above mentioned 5 pre-defined rainfall categories are different from the 5 rainfall categories used for the probability forecast of season (June to September) rainfall and second half of the season rainfall over the country as a whole.***

4. **ENSO Neutral conditions over Equatorial Pacific**

After the dissipation of the moderate to strong La Nina event around mid-May 2011, near neutral conditions are prevailing over equatorial Pacific. However, some La Nina aspects are still persisting particularly in the atmosphere features. In recent weeks, the equatorial India Ocean has also shown a cooling trend. The latest forecasts from a majority of the dynamical and statistical models suggest that though continuation of present ENSO-neutral conditions during 2011 September is the most likely scenario, the re-emergence of weak La Nina conditions can not be ruled out.

5. **Summary of the Forecast outlook for the 2011 September Rainfall**

Rainfall over the country as a whole for the 2011 September is likely to be below normal (77 to 92% of long period average (LPA)). Quantitatively, 2011 September rainfall for the country as a whole is likely to be 90% of LPA with a model error of $\pm 15\%$. However, if weak La Nina conditions re-emerge in September, the rainfall received can be more than expected.

The outlook for the 2011 Southwest Monsoon Season Rainfall is that the monsoon season (June to September) rainfall for the country as a whole is likely to be as was forecasted by IMD in June i.e. $95\% \pm 4\%$ of LPA. However, in view of latest meteorological conditions, it is likely to be on the positive side of the model error (i.e. $95\% + 4\%$). The season (June to September) rainfall over all the 4 geographical regions (Northwest India, Northeast India, Central India and South Peninsula) also likely to be within the limits of forecasts (i.e. 97% of LPA, 95% of LPA, 95% of LPA, and 94% of LPA respectively, all with model errors of $\pm 8\%$ of LPA) issued by IMD in June.