

THE CLIMATE OVER SRI LANKA

YALA SEASON 2016



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Summary

During the Yala season of Sri Lanka in 2016, above average rainfalls were observed in May. Rainfall within Sri Lanka increased during late-April to mid-May and was very high during mid-May, compared to past five years. Rainfall received in May is the highest in last five years.

Going into the Yala of 2016, whole country received below average during late Maha of 2015/16 (January to March). In the early Yala season, below average rainfall were observed in Monaragala district while rest of the country received above average rainfall. Drought conditions were observed during July to September.

When monthly rainfall anomalies are concerned, most parts of the country received below average rainfall in April with May being wet in the entire country. Most parts of the island received below average rainfall in June. In July, south western regions were dryer while rest of the island received average and above average rainfall. The entire country experienced dryer weather conditions during August and September.

Data

We use ground observations and satellite derived estimates. Ground observations although more accurate are not immediately available and are expensive – thus we rely largely on satellite estimated data. We have found that satellite derived data approximately follow the ground observations in the past with a systematic under-estimation of about 10-20% particularly in the hill country. This small systematic deviation is due to reasons such as double cloud cover (affecting satellite readings), wind conditions, topographical features of the region, and time of measurement and possible measurement errors of ground data. Until ground readings are collated, quality controlled and made available affordably, we can use satellite data with some confidence.

Island-Wide Rainfall over the last Five Years

In 2016, rainfall within Sri Lanka increased during late-April to mid-May and was very high during mid-May, compared to past five years. Rainfall decreased during late-May and remained low compared to the rainfalls received in the recent years during this period. Rainfall received in May is the highest in last five years.

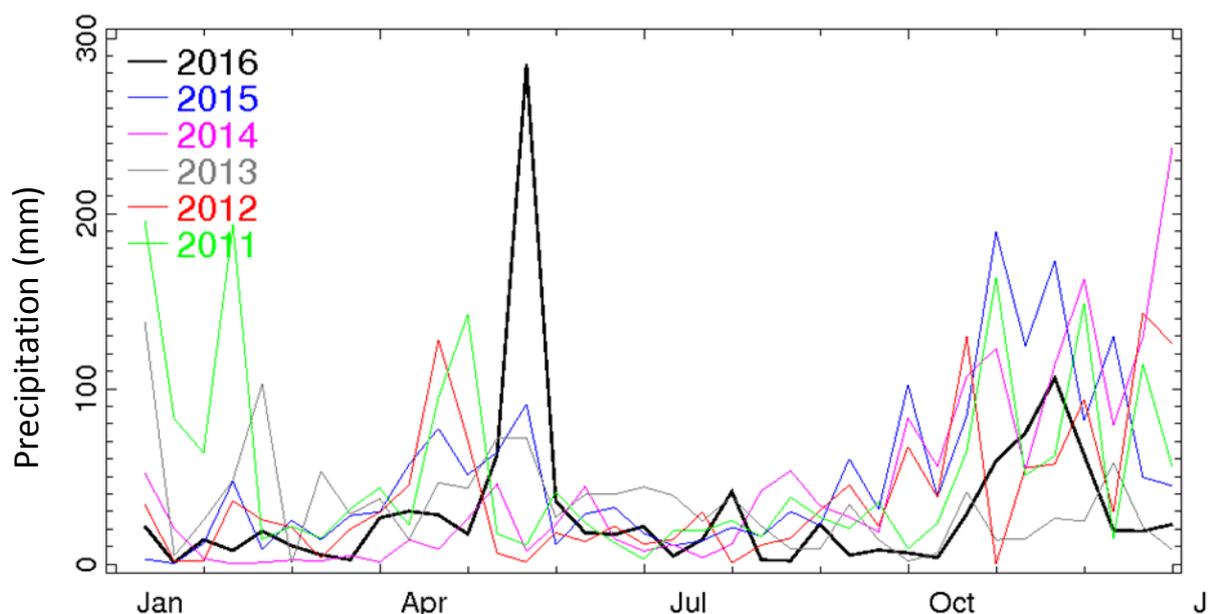


Figure 1: Multi-year decadal (10-day) precipitation comparison. The average rainfall for each dekad (roughly 10d days) over Sri Lanka estimated from satellites and ground observations is shown for the last 6 years as a line in a separate colour over a common January – December axis with 2016 in bold black.

Recent Rainfall Surpluses/Shortfalls

The severity of drought could be expressed in terms of rainfall-deficits and its duration. The monthly rainfall surpluses and deficits for the last three years with respect to the average for 2002 to 2016 period is shown in figure 4. In Sri Lanka above average rainfalls were observed in May and cumulative rainfall is high after mid-May during the Yala season of 2016.

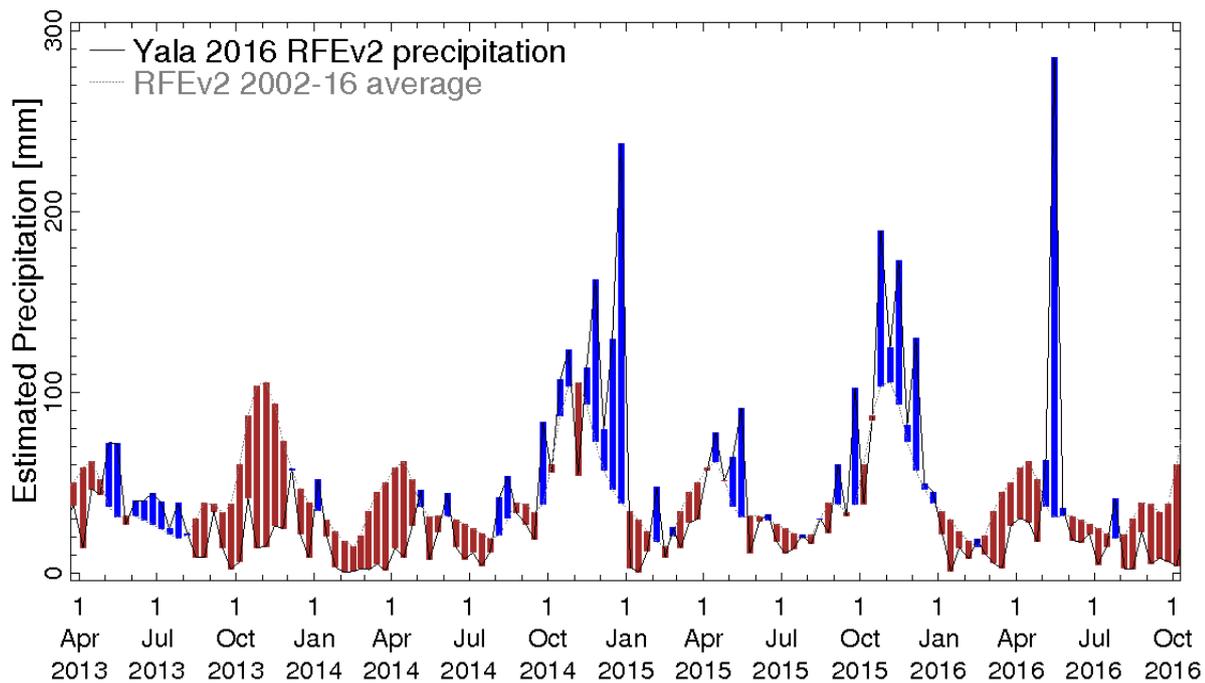


Figure 2: Dekadal precipitation and 2001-2016 average. The smoother curve shows the average over 2001-2016 – this annual cycle is reproduced for each year in the above figure. The departures from this average are shown in blue when wetter and brown when dryer for each month for the last three years. A dekad refers roughly to 10 days or more accurately as each month divided into three.

Comparison of 2016 Yala season with Past Data

In 2015, the mean rainfall in most parts of the country was above average during early Maha (October-December) season. During the second half of Maha season (January-March) severe drought conditions were observed. In the early Yala (April-June) season below average rainfall were observed in Monaragala district while rest of the country received above average rainfall. The entire country received below average rainfall during the late Yala (July-September) season.

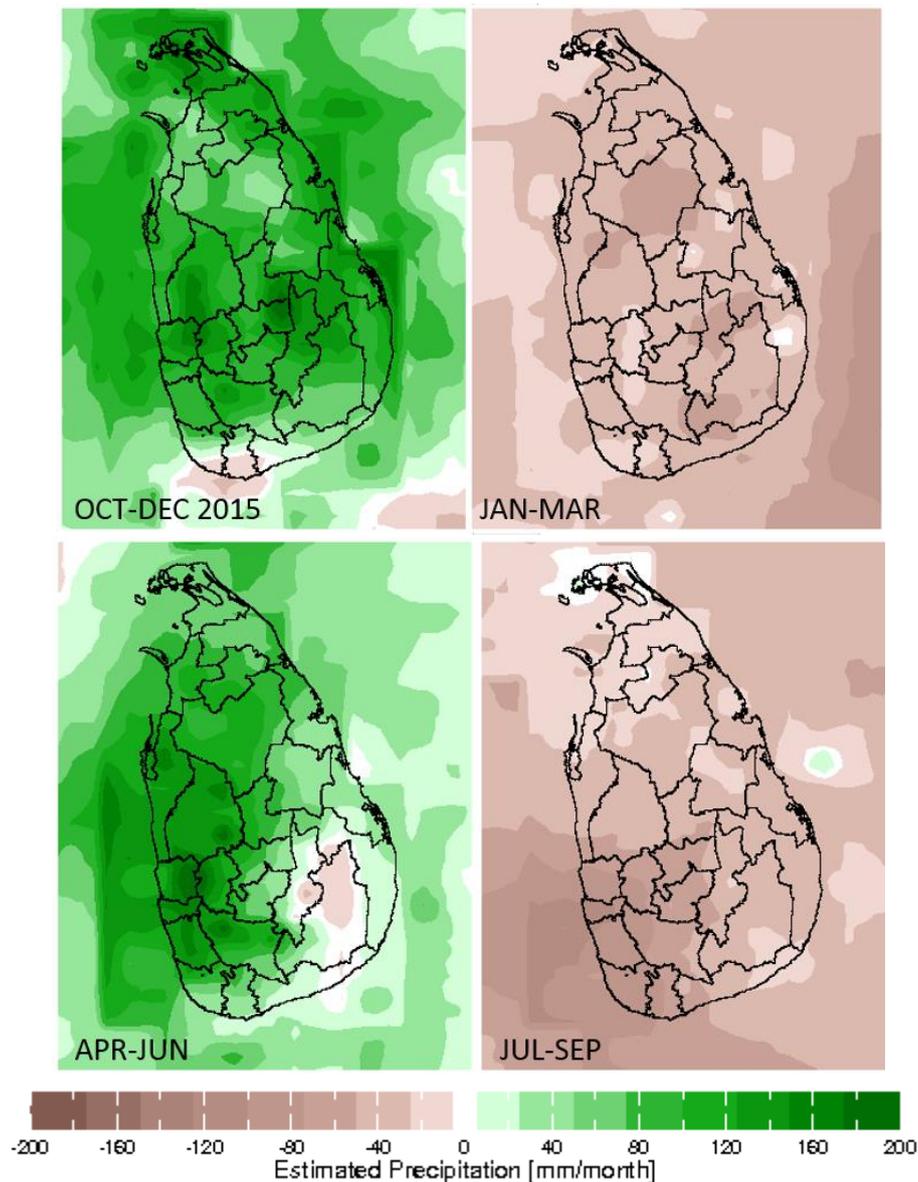


Figure 3: Quarterly seasonal rainfall anomalies for Sri Lanka for 2015/16. Rainfall anomalies for October-December 2015 (early Maha), January-March (late Maha), and the first (April-June) and second (July-September) half of Yala are shown. The average rainfall is calculated for January 1979-April 2016

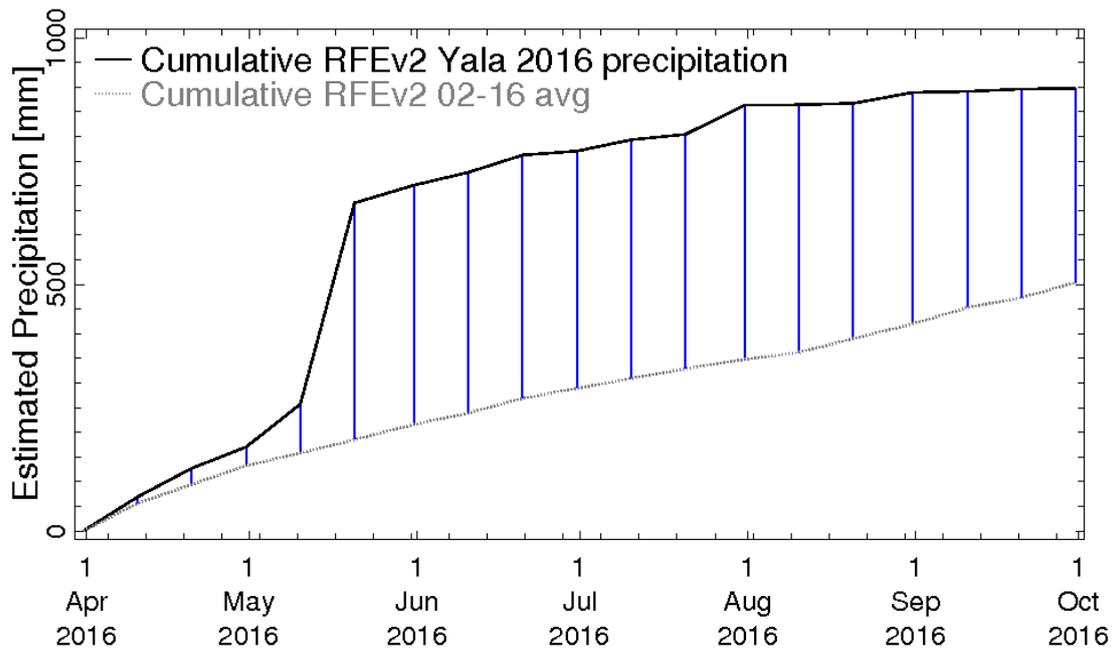


Figure 4: Decadal Cumulative Rainfall Graph. Cumulative decadal satellite derived estimates are shown in solid black line and the cumulative recent short term average precipitation is shown in grey dotted line for the most recent 12-month period in the selected region. The blue bars are indicative of estimates that are above the short-term average.

Monthly Rainfall by District

Anomalies – departures from the average for each month and district – are shown in Figure 5. The average rainfall has been calculated for the base period 2001-2016. Wetter than normal is shown in green and dryer than normal in brown.

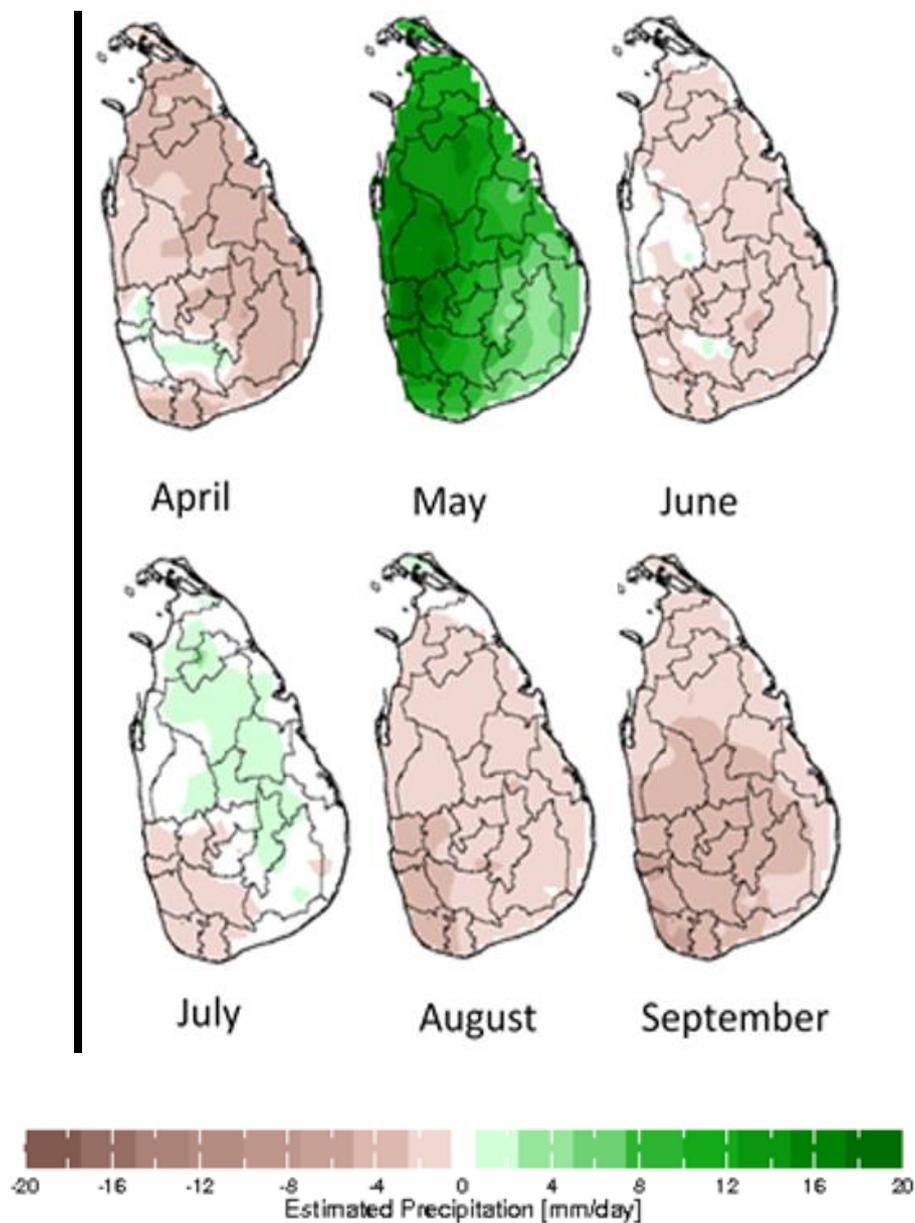


Figure 5: Monthly precipitation anomalies for Yala of 2016 by district

In April, most parts of the country received below average rainfall with May being wet in the entire country. In June, most parts of the island received below average rainfall. In July, south western regions were dryer while rest of the island received average and above average rainfall. Dryer weather conditions prevailed during August and September.

Further Information

Technical details regards the Maha climate are provided in a series of research papers published in the International Journals cited below and available via www.climate.lk. Our seasonal and weekly updates are available at <http://fectsl.blogspot.com>

References

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