

THE CLIMATE OVER SRI LANKA

YALA SEASON 2017



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Summary

During the Yala season of Sri Lanka in 2017, rainfall was high at the start of the early Yala season (Apr- Jun) compared to last two years and further increased during late-April to mid-May. Rainfall decreased during late-May and remained low. Above average rainfalls were observed in May, August and September months.

Going into the Yala of 2017, most parts of the country received above average rainfall during late Maha of 2016/17 (January to March). South western regions of the island including western parts of the Anuradhapura district received above average rainfall during April to June. During July to September northern half of the island received above average rainfall while southern half received below average rainfall.

When monthly rainfall anomalies are concerned, the entire country received below average rainfall in April with May being mostly wet. In June and July south eastern regions were wetter while rest of the island was dryer than normal. Most parts of the island received above average rainfall in August. During September, wetter weather conditions declined, with only western coastal regions being wetter than normal.

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 2017, rainfall within Sri Lanka was high at the start of the early Yala season (Apr- Jun) compared to 2015 and 2016 and further increased during late-April to mid-May. Rainfall decreased during late-May and remained low compared to the rainfalls received in the recent years during this period. Rainfall received in late-September is the highest in last four years.

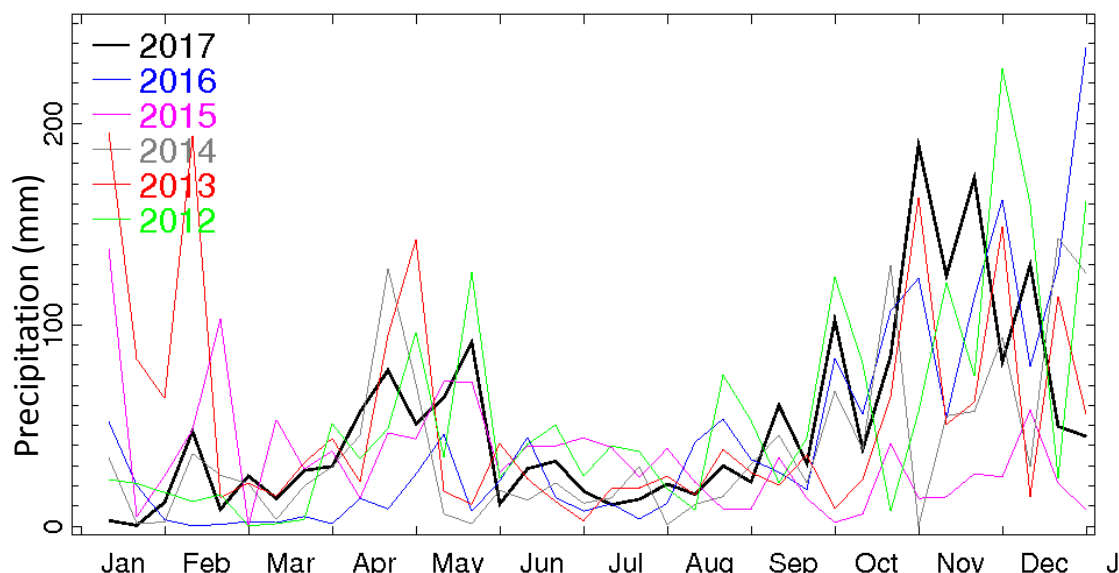


Figure 1: Multi-year decadal (10-day) precipitation comparison. The average rainfall for each dekad (roughly 10d days) over Sri Lanka estimated from satellites and ground observations is shown for the last 6 years as a line in a separate color over a common January – December axis with 2017 in bold black.

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 2017 period are shown in figure 4. In Sri Lanka above average rainfalls were observed in May, August and September months during the Yala season of 2017.

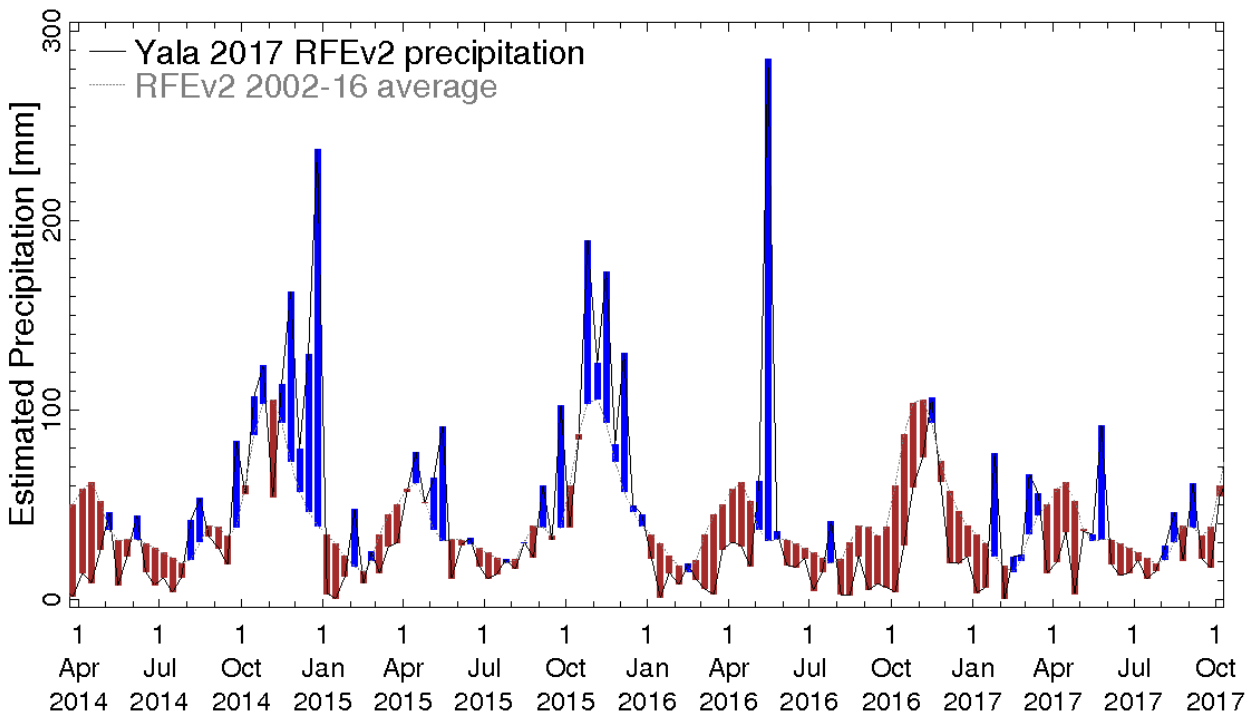


Figure 2: Dekadal precipitation and 2001-2017 average. The smoother curve shows the average over 2001-2017 – this annual cycle is reproduced for each year in the above figure. The departures from this average are shown in blue when wetter and brown when dryer for each month for the last three years. A dekad refers roughly to 10 days or more accurately as each month divided into three.

Comparison of 2017 Yala season with Past

In 2016, severe drought conditions were observed during early Maha (September-December) season after very high above average rainfall in May of that year. During the second half of Maha season (January-March) the mean rainfall in most parts of the country was above average. South western regions of the island including western parts of the Anuradhapura district received above average rainfall in the early Yala (April-June) season. During the late Yala (July-September) season northern half of the island received above average rainfall while southern half received below average rainfall.

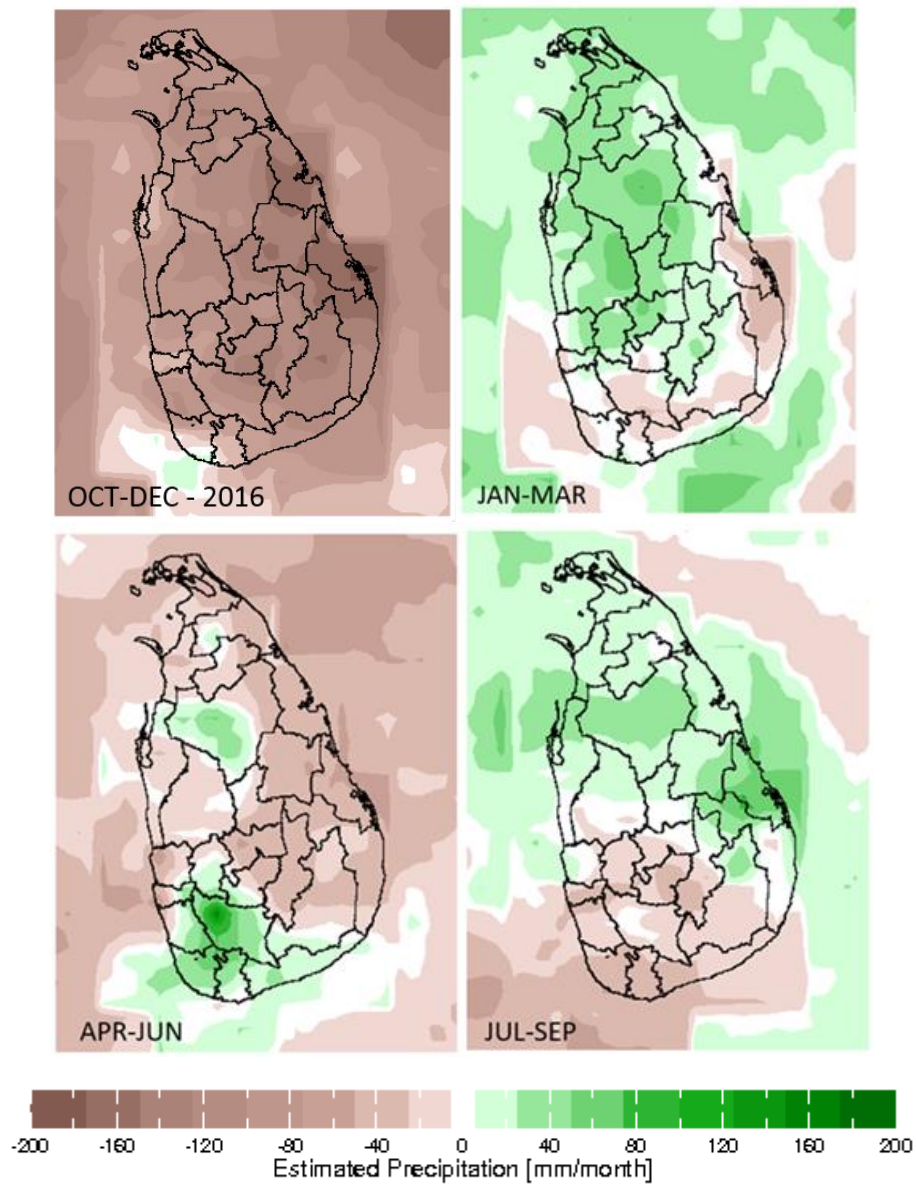


Figure 3: Quarterly seasonal rainfall anomalies for Sri Lanka for 2016/17. Rainfall anomalies for October-December 2016 (early Maha), January-March (late Maha), and the first (April-June) and second (July-September) half of Yala are shown. The average rainfall is calculated for January 1979-April 2017

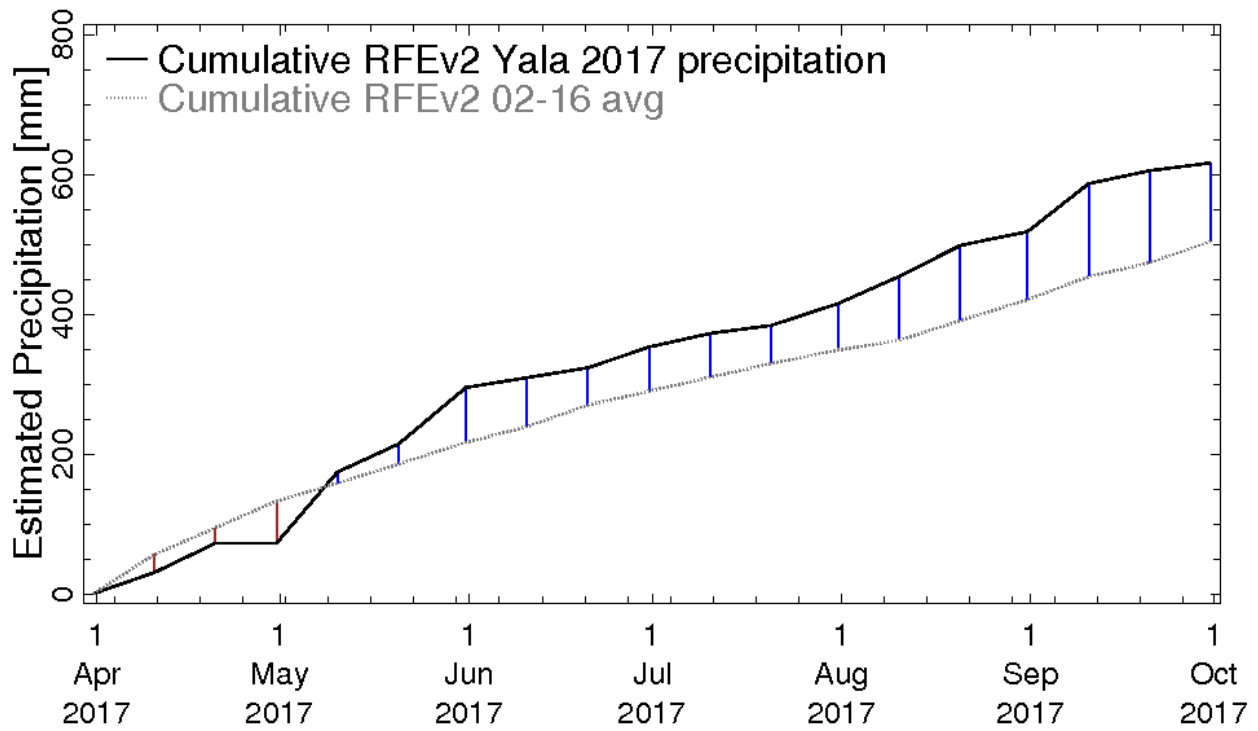


Figure 4: Decadal Cumulative Rainfall Graph. Cumulative decadal satellite derived estimates are shown in solid black line and the cumulative recent short term average precipitation is shown in grey dotted line for the most recent 12-months period in the selected region. The blue bars are indicative of 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 2001-2017. Wetter than normal is shown in green and dryer than normal in brown.

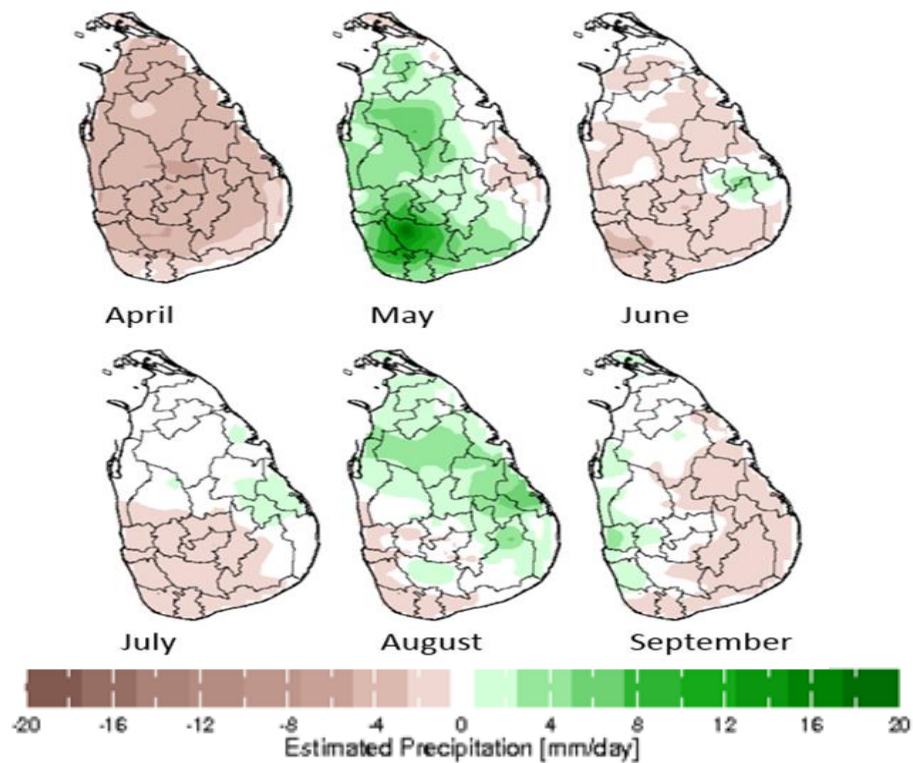


Figure 5: Monthly precipitation anomalies for Yala of 2017 by district

In April, the entire country received below average rainfall with May being mostly wet, especially in the southwestern regions. In June and July south eastern regions were wetter while rest of the island was dryer than normal. In August, most parts of the island received above average rainfall. Wetter weather conditions declined during September, with only western coastal regions being wetter than normal.

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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- Lyon, B. Zubair, L., V. Ralapanawe and Z. Yahiya, 2009 Fine scale evaluation of drought hazard for tropical climates, *Journal of Applied Meteorology and Climatology*, 48 (1): 77-88.
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