



Photo: Moneragala, WFP, Sept 2019

# SRI LANKA

## Climate & Food Security Monitoring Bulletin

3<sup>rd</sup> Quarter 2019 (July - September)

October 2019

Prepared by:

United Nations World Food Programme

International Water Management Institute



RESEARCH  
PROGRAM ON  
Water, Land and  
Ecosystems

# 1. Bulletin Highlights



From 23-29 September considerable rainfall occurred in all parts of the country, except the Northern areas. The latter part of the South-West monsoon - with an atmospheric disturbance due to cyclonic systems - caused heavy rains, creating floods that impacted 142,177 people.



Climate outlooks released by the Department of Meteorology show above average rainfall all over the country for the period of October to December due to Inter-monsoonal and monsoonal rains. At present the Inter-monsoon conditions are established over the country and recurrent evening showers are predicted together with high possibility of lightning.



For the first time since November 2018, water storage rates have increased. Between 1 September 2019 - 1 October 2019 water storage has risen of 3%. All major tanks saw increases apart from those in North and North-Central Provinces. Despite the increase, rates remain lower when compared with long-term averages



6,584 ha of crops have been damaged as a result of drought, mainly in dry-zone areas. This, however, is not significant enough to impact short to medium term food security as surplus food production is set to last until January 2020 due to productive Maha 2018/19 and Yala 2019 harvests. However, if Maha drier this could impact food security post January 2020.

Following the forecasts issued in the previous bulletin in August - jointly prepared by WFP and IWMI - it was predicted that the coming months would bring rains in the South, with the dry zone remaining dry. This has been the case, with the exception of mid to late September. This period saw abundant, and destructive, rainfall in the South, Central and Western areas of the country. Unlike the previous two quarters of 2019, the third quarter has consistently seen total rainfalls across the country higher than average. Overall, this has resulted in lowering of drought stress in many parts of the country, with normal moisture conditions prevailing. However the rain has not been distributed evenly (Figure 01).

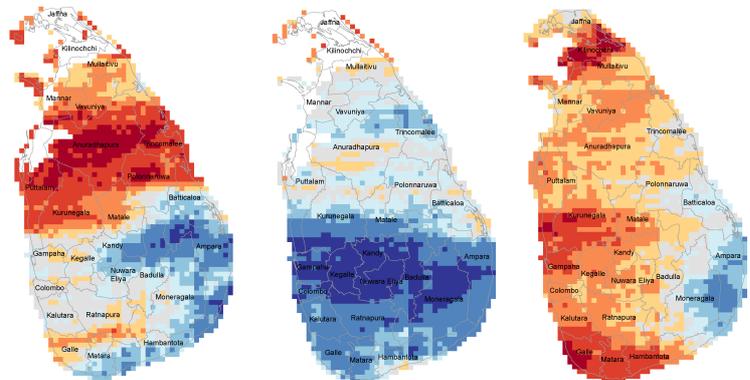
While, low rainfall in the North and East areas is normal during the South-Western Monsoon (May - September), the Rainfall Anomaly maps show rains have consistently been abnormally low in the dry zones – barring dekad 02, in September.

As the climate shifts into the second inter-monsoon period (October and November) and then into the North-West Monsoon (December to February), and the Maha cultivation season begins, sufficient rains are vitally important to the country. The dry-zone relies on these rains to ensure a successful cultivation season, and provision of sufficient water for domestic use.

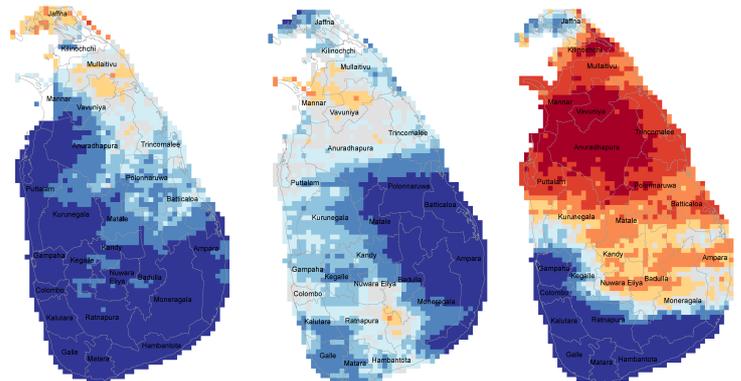
Predictions from the Department of Meteorology for the final quarter of 2019 indicate a 50% chance that rains will be above normal across the entire country. While this prediction should be considered with caution, the probabilistic models show that precipitation around the island should bring rainfall during the coming three months – particularly in October and November.

Figure 01: July-September Rainfall Anomaly – 10-Day Analysis

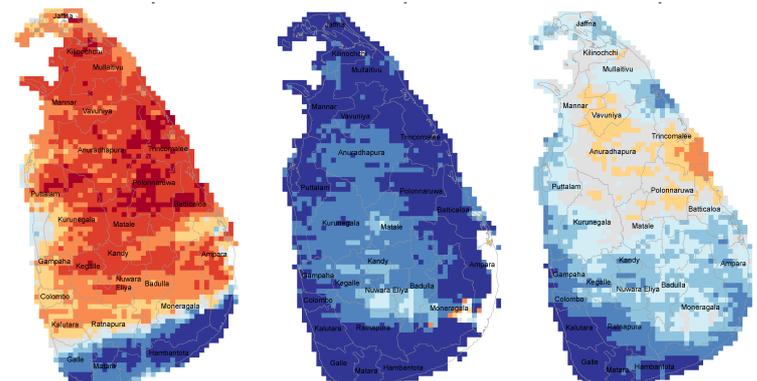
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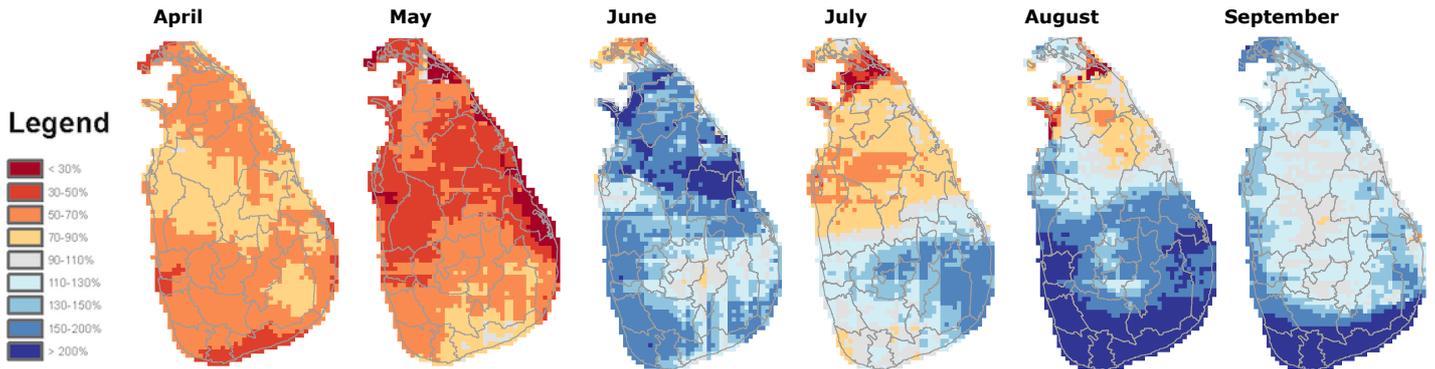


Source: Platform for Real-time Information and Situation Monitoring (PRISM) (CHIRPS Data)

## 2. Seasonal Observations

- ◆ The first half of the year was much drier than previous years. Average rainfall in the first six months is usually 38mm per day; however, the first six months in 2019 only produced 29.6mm. The drop of roughly 8.4mm per day is significant when measured across the time period. Only two of the six months saw rainfall on, or above, average.
- ◆ In contrast, all three months in the third quarter of 2019 have seen above average rainfall across the country. July saw 29.5mm per day (7.1mm above the average), August saw 29.2mm (4.6mm above), and September experienced a very high 66mm (20.7mm above). These trends are illustrated in Figure 02 and Figure 04.
- ◆ The rains in September, while significant, were destructive. Over a seven day period 142,177 people (36,717 households) were impacted by flooding, landslides or high winds. These rains fully damaged 99 houses, injured 10 people, and resulted in the loss of five lives.
- ◆ Most of the rain during the third quarter was predominantly concentrated in Gampaha, Colombo, Kalutara, Galle, Ratnapura, Matara and Hambantota Districts. This meant that, with the exception the latter half of September, the dry zone remained dry, only getting roughly 50-70% of the average rainfall for the same time in the year (Figure 02).

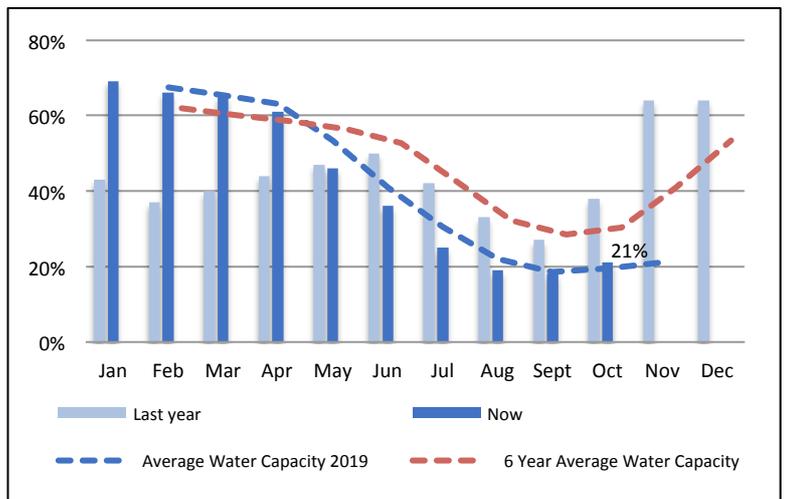
Figure 02: Rainfall Anomaly April – June 2019



Source: PRISM (CHIRPS data) Note: Rainfall Anomaly is based on average rain experience in the a given month over the average in the past 30 year

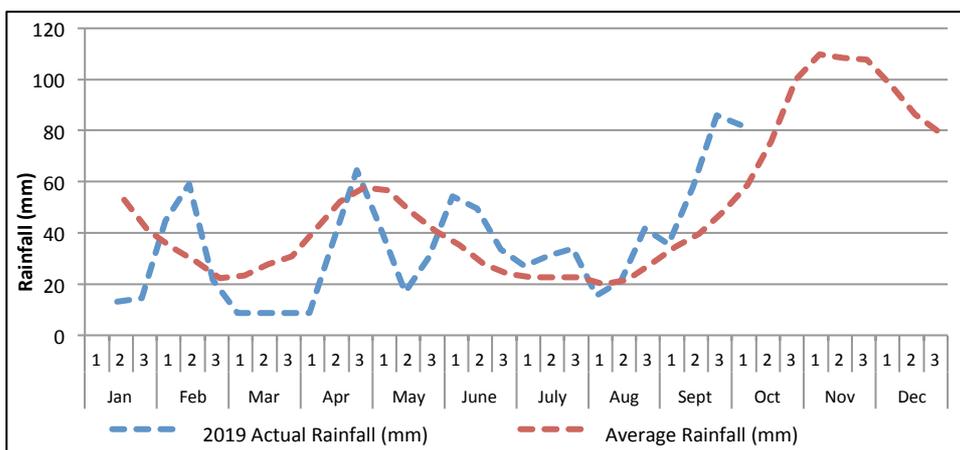
Figure 03: Major Water Reservoir Rate – at 1 October 2019

- ◆ One of the benefits seen during the third quarter is that the rains have halted the downward trajectory in the water rates of major reservoirs. In fact, from 1 September to 1 October storage rates from from 18% to 21% of maximum tank capacity (Figure 3).
- ◆ There were some reservoirs in the North and Central North that did not see a rise in water capacity. So while the overall rate has risen, there is still concern in the drier areas of the country.
- ◆ Average trends of water storage (Figure 03 - 6 Year Average Water Capacity), as well as average rainfall (Figure 04 – Average Rainfall), seemingly increase through November to January. This trend is critically important for the upcoming Maha harvest, and providing a surplus of water of drinking and domestic purposes.



Source: Department of Irrigation

Figure 04: Rainfall Actual 2019 vs 30 Year Average Trend – by Dekad



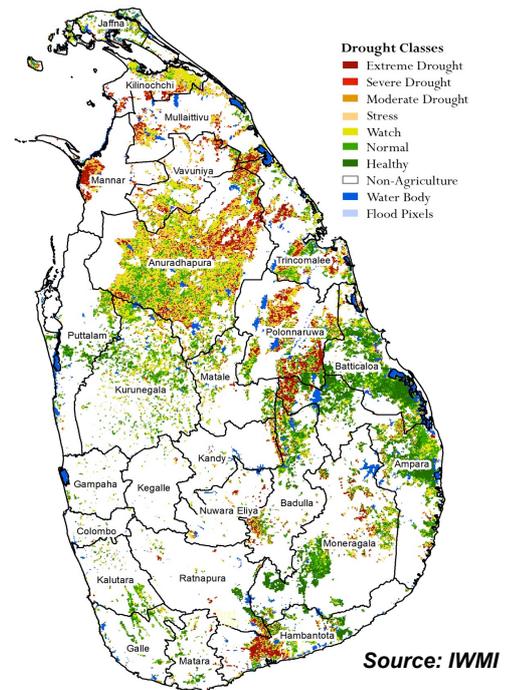
Source: DataViiz World Food Programme (CHIRPS data)

- ◆ Figure 04 (left) shows that since June, rains have been roughly on trend with the 30 year average.
- ◆ Rains seen this year have, however, been inconsistent and highly concentrated in short periods of time (seen through the spikes in Figure 04). The trend of dry conditions, followed by heavy rains, creates conditions that are conducive to flash flooding and landslides. Like the event from 23-29 September, the heavy rains were preceded by the drier months, resulting in a short but destructive event.

### 3. Agricultural Conditions and Food Security

- ◆ Integrated Drought Severity Index (IDSI) analyses agricultural drought conditions. Figure 05 shows, due to the heavy rains received through September, in many areas of the country overall health of agricultural land is moving to normal. However, there are still some areas of concern, particularly in Mannar, Mullaitivu, Vavuniya, parts of Anuradhapura and Trincomalee, Hambantota, and Polonnaruwa.
- ◆ No immediate food security emergencies are predicted due to an expected Maha 2019/20 paddy cultivation of 2.90 mMt and predictions of a Yala harvest of 1.54 mMt 2019.
- ◆ According to Department of Agriculture, paddy production for season 2018/19 is expected to meet domestic rice demand until January 2020. Total rice production is set to be 2.77 million Mt this year (Figure 06).
- ◆ Drought has again impacted the Yala production. 6,584ha were damaged in Kurunegala, Batticaloa, Ampara, Puttalam, Vavuniya, Mullaitivu, and Trincomalee as a direct result of prolonged dry conditions.
- ◆ The production loss is not enough to have an adverse impact on overall yields but is likely to impact the livelihood of local smallholder farmers.

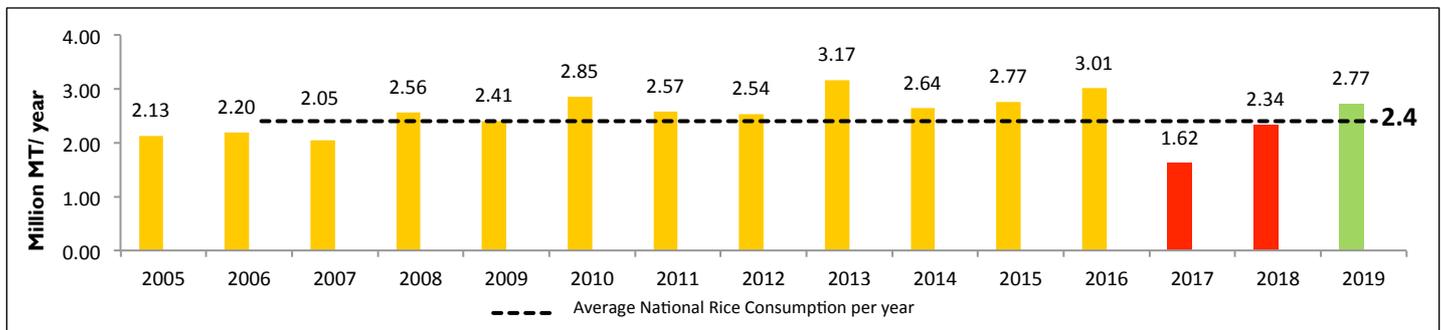
Figure 05: Integrated Drought Severity Index (IDSI) – 21-30 September 2019



#### Agricultural Market Shifts

- ◆ Price of many vegetables have seen changes in the past 4 weeks due to the prevailing rainy conditions. Most upcountry varieties have decreased in price as rain damage lowered the quality of stock. Conversely, most low-country vegetables increased in price, through lowering supplies due to the ending of the Yala harvest.
- ◆ Average price of most rices remains considerably lower than this time last year, in spite of a slight increase from August to September due to lower supply stocks from all major producing areas. This slight fluctuation is normal as Yala harvesting concludes and Maha cultivation begins.

Figure 06: Total Rice Production Outlook

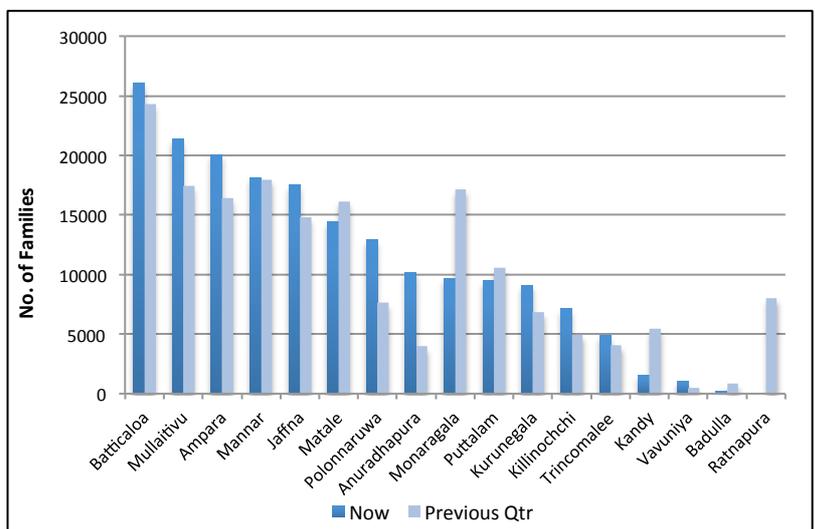


Source: Socio Economic Planning Centre of Department of Agriculture. Note: Total 2019 Rice Production includes forecasts for Yala 2019

### 4. Drinking Water Needs

- ◆ Access to drinking water remains a challenge in several districts. Special attention needs to be given to the intermediate zones mainly in the drought prone divisions in Batticaloa, Mullaitivu, Ampara, Mannar and Jaffna Districts, all of which have more families in need of water distribution compared with the end of last quarter.
- ◆ As of 1 October a total of 183,635 households across 16 districts are being supplied drinking water (Figure 09) - up from 177,173, but with one less district (Ratnapura).
- ◆ Heavy rain and increases in water storage around the Central and Southern areas means water distribution has been curtailed in these areas.

Figure 07: Status of Drinking Water Distribution - October 2019



Source: National Disaster Relief Services Center (NDRSC)

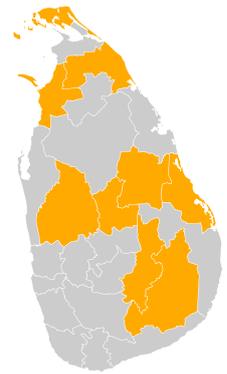
## 5. Suggested Targeted Interventions and Adaptation Measures

### Food Security Plan (based on nutritious diet affordability and crop damage rates)

- Track loss of crops as a result of water stress or dry conditions.
- Initiate community level agriculture infrastructure projects, in participation with local communities, to enhance food security measures for the medium to long-term.

#### Target Districts:

- Batticaloa
- Matale
- Moneragala
- Mullaittivu
- Mannar
- Kurunegala
- Badulla
- Polonnaruwa
- Jaffna

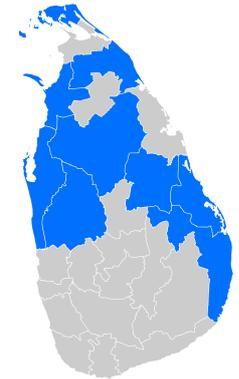


### Water Distribution and Trucking

- Enhance public awareness and media campaigns around water conservation and usage.
- Discussions around formalised water restrictions at local level.
- Identify sources for water distribution.
- Plan and conduct stakeholder discussions in severely affected areas for better drinking water management planning.

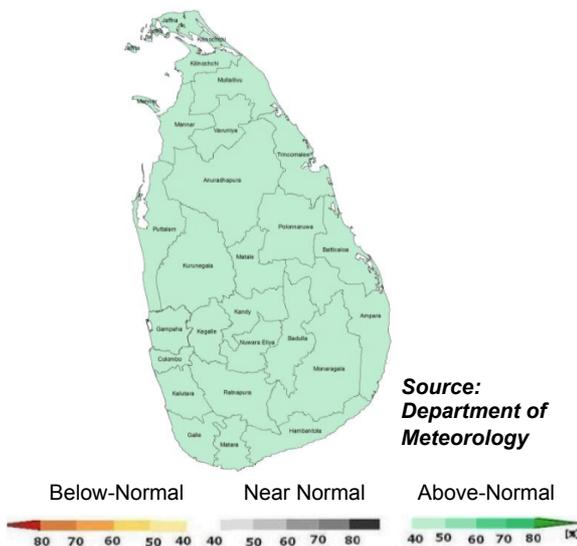
#### Target Districts:

- Jaffna
- Mannar
- Mullaittivu
- Kurunegala
- Anuradhapura
- Polonnaruwa
- Puttalam
- Batticaloa
- Ampara



## 6. Climate Forecast

Figure 08: Consensus Probabilistic Rainfall Forecast for October-December 2019



A detailed seasonal climate outlook for October, November and December was issued by the Department of Meteorology on 1 October 2019.

Most global models indicate that there is a higher chance of receiving above normal rainfall across the entire country throughout the final quarter of 2019. It is likely, though, that the majority of this rainfall will occur in October and November.

Temperatures are likely to be slightly warmer than average in Colombo, Gampaha, Galle, Nuwara Eliya, Ratnapura, Badulla, Kandy, Trincomalee, Batticaloa, Anuradhapura, Vavuniya, Puttalam, Mannar, Hambantota, Pottuvil and Kurunegala Districts

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*This Bulletin was prepared by the United Nations World Food Programme and the International Water Management Institute.*

*Support to World Food Programme is provided by the Government of Australia's Department of Foreign Affairs and Trade (DFAT) and USAID's The Office of U.S. Foreign Disaster Assistance (OFDA).*

*Support to IWMI is provided with CGIAR Research Program on Land, Water and Ecosystems (WLE).*

*Disclaimer: This bulletin looks into the key aspects of climatic seasonal trends and their impact on the population and food security during July to September 2019, through the products of Platform for Real-time Information and Situation Monitoring (PRISM) and through CGIAR. PRISM system is hosted at the Disaster Management Centre, has the capability of automatic capture of climate related and space based information.*