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Monitoring of Meteorological Dryness Through Standardized Precipitation Index (SPI) at the end of February_2024

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PREAMBLE

In order to provide latest information regarding meteorological drought to improve the nation's preparedness for drought and more specifically, enhance drought readiness the Department of Meteorology initiate a monthly drought monitoring bulletin since January 2018.

Meteorological drought is usually defined on the basis of the degree of dryness (in comparison to some "normal" or average amount) and the duration of the dry period. This Drought Monitoring Bulletin has been prepared using the World Meteorological Organization (WMO) recommended Standardized Precipitation Index (SPI) technique. Monthly rainfall data from more than 250 stations were used to prepare this high resolution maps .

INTERPRETATION OF MAPS

A 1-month SPI map is very similar to a map displaying the percentage of normal precipitation for a 30-day period. In fact, the derived SPI is a more accurate representation of monthly precipitation because the distribution has been normalized. 1-month SPI reflects short-term conditions, its application can be related closely to meteorological types of drought along with short-term soil moisture and crop stress, especially during the growing season.

The 3-month SPI provides a comparison of the precipitation over a specific 3-month period with the precipitation totals from the same 3-month period for all the years included in the historical record. A 3-month SPI reflects short and medium term moisture conditions and provides a seasonal estimation of precipitation. In primary agricultural regions, a 3-month SPI might be more effective in highlighting available moisture conditions.

The 6-month SPI compares the precipitation for that period with the same 6-month period over the historical record. For example, a 6-month SPI at the end of March compares the precipitation total for the October previous year to March this year period with all the past totals for that same period.

The 9-month SPI provides an indication of inter-seasonal precipitation patterns over a medium timescale duration. Droughts usually take a season or more to develop. SPI values below -1.5 for these timescales are usually a good indication that dryness is having a significant impact on agriculture and may be affecting other sectors as well.

OBSERVED FEATURES

The maps represent monthly accumulated rainfall (mm) during February 2024 (Fig 1) monthly received rainfall as a percentage with respect to 30 year average (1981-2010) for February 2024 (Fig 2).

Below normal rainfalls were received over most parts except some parts in Galle, Kalutara,Matara and Rathnapura districts where near normal rainfalls were received. (Fig 1 & Fig 2).

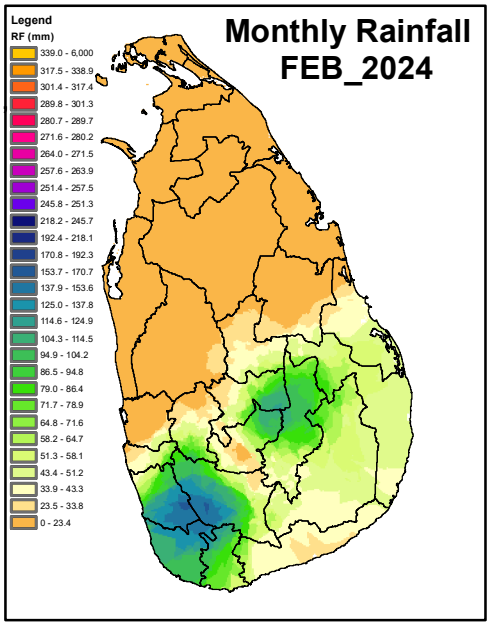


Fig 1 : Monthly accumulated rainfall

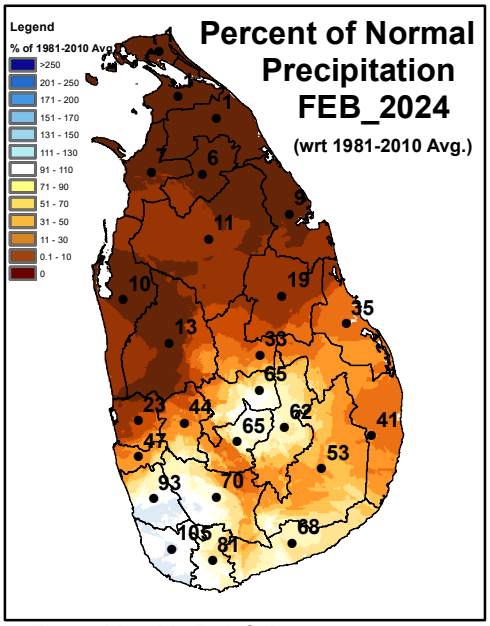


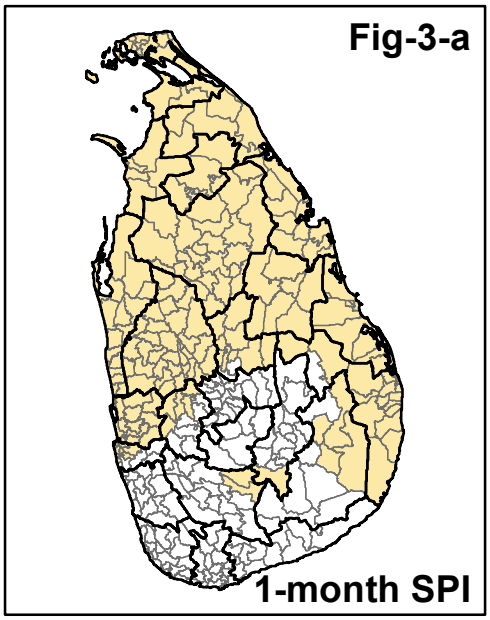
Fig 2 : Monthly Rainfall as a percentage from long-term average (1981-2010) map

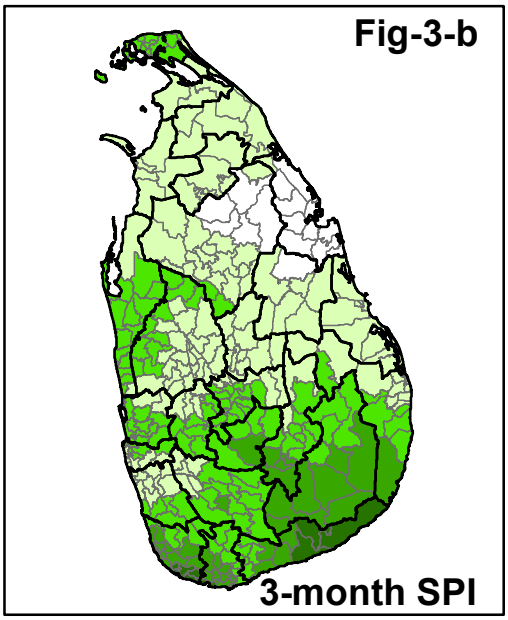
Figure 3 a, b, c ,d, e represents 3-month, 6-months, 9-month, 12-month and18-months SPI calculations using standared color code provided by WMO respectively. They show the degree of wetness and dryness across the country during the periods under review.

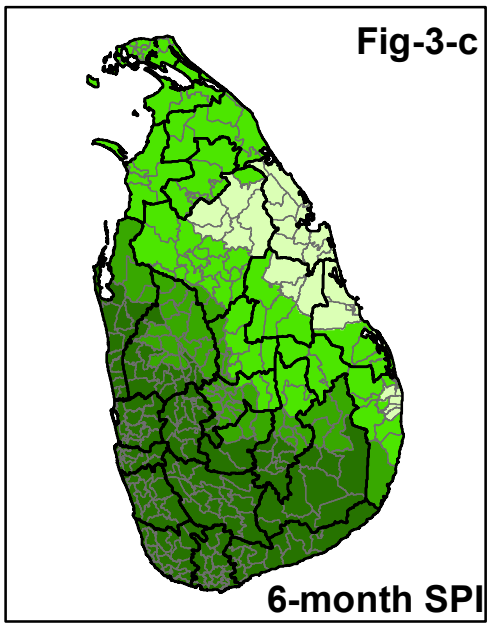
Legend

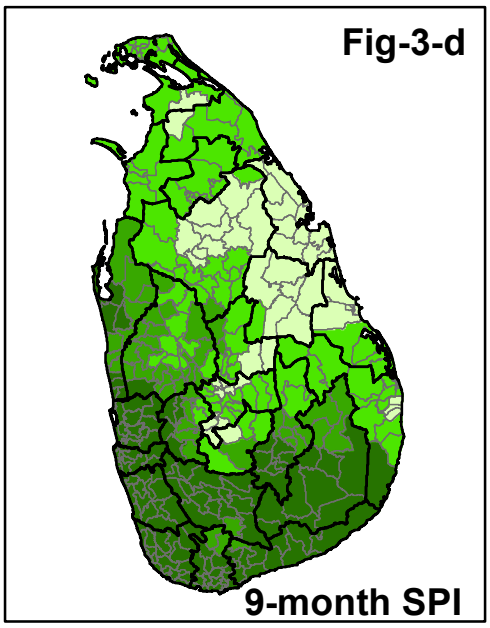
SPI Classification

- -2.0 and below (Extremely dry)
- -1.5 - -1.99 (Severely dry)
- -1.0 - -1.49 (Moderately dry)
- -0.5 - -0.99 (Mildly dry)
- -0.49 - +0.49 (Normal)
- +0.5 -).99 (Mildly wet)
- +1.0 - +1.49 (Moderately wet)
- +1.5 - +1.99 (Severely wet)
- +2.0 and above (Extremely wet)









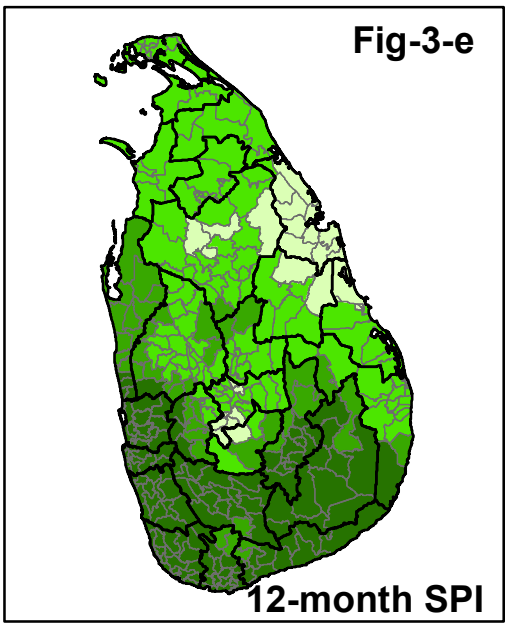


Fig 3 : 1 month (3-a), 3 month (3-b), 6 month (3-c) , 9 month (3-d) , and 12 month (3-e) SPI values through the end of February 2024 for the 331 Divisional Secretariat Divisions (DSD) in Sri Lanka

Mildly dry conditions were observed in Nothern, North western, North central and Eastern provinces under1 month SPI scales (Fig 3-a).

Most of the other SPI scales including 3 months indicate normal and wet conditions in most parts of the island (Fig 3-b, Fig 3-c, Fig 3-d, Fig 3-e).

Note;- Data used to develop the maps are not quality controlled.