

Experimental Climate Monitoring and Prediction

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Highlights

- The WRF model predicts up to 36 mm of rainfall in Western region of the country on 18th and 19th of May.
- Between 8-14 May: highest rainfall of 160 mm were recorded on the 12th in Mullaitivu districts.
- From 7-13 May: minimum temperature of 15 °C was recorded from Nuwara Eliya district while northern and northeastern regions of the island recorded a maximum temperature between 30-35 °C.
- From 8-14 May: up to 18 km/h, southwesterly winds were experienced by the southern regions; and speeds less than 11 km/h in the northern and central regions of the island.
- 0.5° C above average sea surface temperature was observed in the seas around Sri Lanka.

Monitoring

Rainfall

Weekly Monitoring: On May 10th, Anuradhapura, Kandy, Badulla districts received up to 40 mm of rainfall; Matale, Kurunegala and Nuwara Eliya districts up to 30 mm; Polonnaruwa, Ampara, Kegalla and Ratnapura districts up to 20 mm; and most parts of the island up to 10 mm. On the 11th Hambantota district received up to 40 mm of rainfall; Matale district up to 30 mm; Vavuniya, Anuradhapura, Kurunegala, Kandy, Badulla, Monaragala, Ampara, Ratnapura and Matara districts up to 20mm; and most parts of the island up to 10 mm. On the 12th Mullaitivu district received up to 160 mm of rainfall; Vavuniya district up to 90 mm; Anuradhapura district up to 60 mm; Mannar, Matale, Kegalla, Ratnapura, Badulla, Monaragala districts and northern region of Trincomalee district up to 30 mm; and Kilinochchi and Colombo districts up to 20 mm. On the 13th Polonnaruwa district received up to 50 mm of rainfall; Matale and Anuradhapura districts up to 30 mm; and Badulla, Monaragala and Ratnapura districts up to 20 mm. On the 14th Ratnapura district received up to 60 mm of rainfall; Kalutara, Galle and Matara districts up to 30 mm; and Gampaha, Colombo and Trincomalee districts up to 20 mm.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall up to 200 mm in Mullaitivu district; up to 100 mm in Vavuniya, Anuradhapura, Matale, Polonnaruwa, Badulla, Kegalla and Ratnapura districts; up to 75 mm in Kurunegala, Kandy, Nuwara Eliya, Monaragala, Hambantota, Matara, Galle, Kalutara and Colombo districts; and up to 50 mm Ampara and Trincomalee districts. It shows above average rainfall of 100-200 mm for Mullaitivu and Vavuniya districts; and 50-100 mm for Anuradhapura, Matale, Badulla and Ratnapura districts; and up to 25-50 for most parts of the island.

Monthly Monitoring: During April - below average rainfall conditions were experienced in the entire island. Matale, Gampaha, Colombo, Ratnapura and Kandy districts received up to 210 mm below average rainfall; and many parts of the island received up to 150 mm. Monthly average rainfall for Anuradhapura, Kurunegala, Gampaha, Colombo, Ratnapura, Kegalla, Galle and Matara districts amounted to 210 mm/month; and 150 mm/month for Puttalam, Kandy, Matale, Badulla, Hambantota and Monaragala districts. The CPC Unified Precipitation Analysis tool shows ~200 mm of total rainfall in Anuradhapura, Gampaha, Colombo, Kalutara, Galle and Ratnapura districts; up to ~100 mm in Matale, Kandy, Nuwara Eliya, Badulla, Monaragala, Kurunegala and Hambantota districts; and up to ~75 mm Ampara, Puttalam and Mannar districts;

Ocean State (Text Courtesy IRI)

Pacific sea state: May 11, 2017

By mid-May 2017, the tropical Pacific remained in an ENSO-neutral state, with above-average SSTs present in the eastern Pacific Ocean, and near-average SSTs across the central and east-central part of the basin. The collection of ENSO prediction models indicates increasing chances of El Niño into the summer and fall of 2017.

Indian Ocean State

0.5° C above average sea surface temperature was observed in the seas around Sri Lanka.

Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 16th – 22nd May: Total rainfall between 35-45 mm in Colombo, Kegalle and Ratnapura districts; between 25-35 mm in Anuradhapura, Kurunegala, Gampaha, Kandy, Nuwara Eliya and Matara districts. Between 15-25 mm in Puttalam, Mannar, Vavuniya, Polonnaruwa, Matale, and Hambantota districts. Between 5-15 mm in Jaffna, Kilinochchi, Mullaitivu, Trincomalee, Badulla and Monaragala districts.

From 22nd -29th May: Total rainfall between 35-45 mm in Colombo, Ratnapura and Matara districts; between 25-35 mm in Anuradhapura, Gampaha, Kegalla, and Hambantota districts; between 15-25 mm in Mannar, Vavuniya, Puttalam, Kurunegala, Kandy, Nuwara Eliya Badulla and Monaragala districts; between 5-15 mm in Jaffna, Kilinochchi, Mullaitivu, Trincomalee, Polonnaruwa and Matale districts.

IMD WRF & IRI Model Forecast:

18th May: Up to 36 mm of rainfall Gampaha, Colombo, Kalutara and Galle districts; up to 8 mm of rainfall in Puttalam, Kurunegala, Kegalla, Nuwara Eliya, Ratnapura and Matara districts.

19th May: Up to 36 mm of rainfall Gampaha, Colombo, Kalutara and Galle districts; up to 8 mm of rainfall in Puttalam, Kurunegala, Kegalla, Nuwara Eliya, Ratnapura and Matara districts.

Seasonal Prediction: IRI Multi Model Probability Forecast

Apr to Jun: the total 3-month precipitation shall be climatological for the whole country. The 3-month temperature has more than 70-80% likelihood in the whole of the island of being in the above-normal tercile.

MJO based OLR predictions

For the next 15 days:

MJO shall enhance the rainfall in Sri Lanka.

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Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

FECT BLOG

Past reports available at <http://fectsl.blogspot.com/> and <http://fectsl.wordpress.com/>

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Weekly Hydro- Meteorological Report for Sri Lanka

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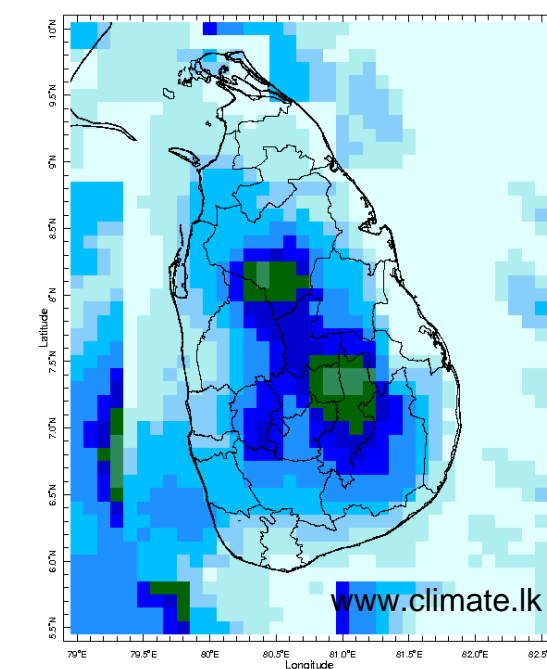
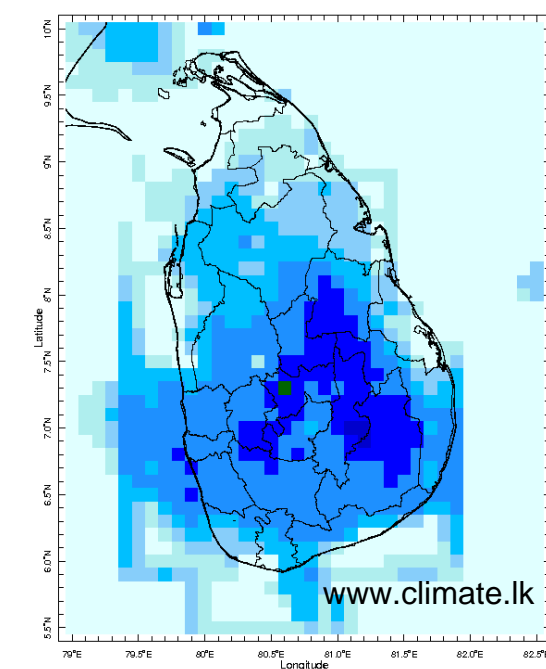
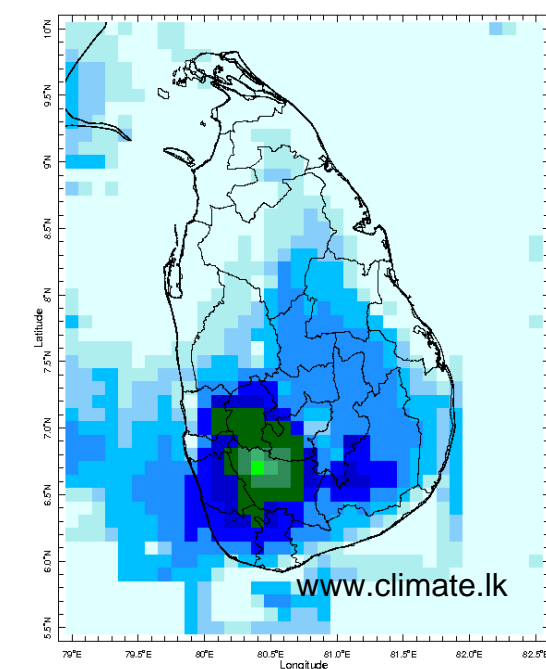
2. Predictions

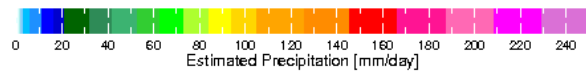
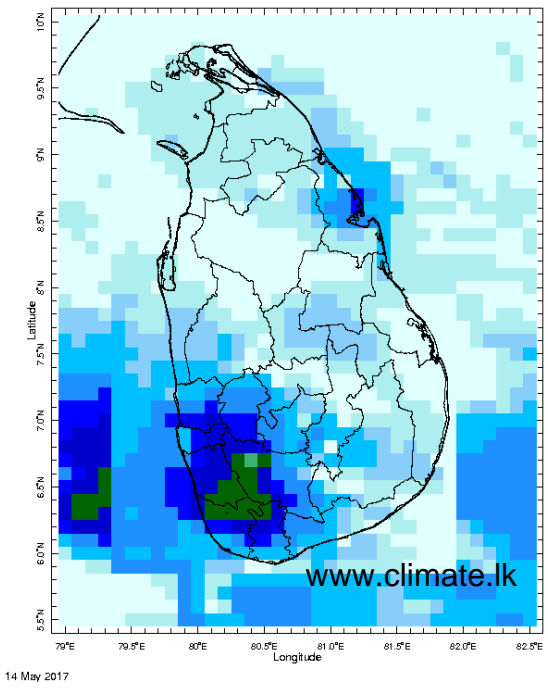
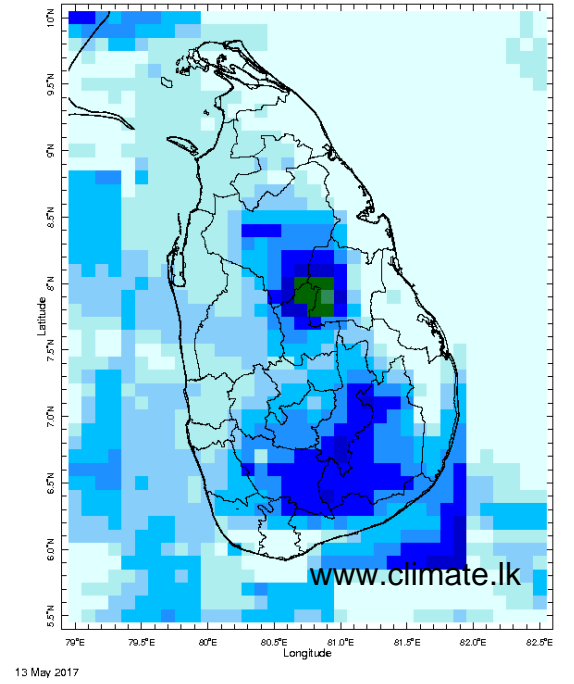
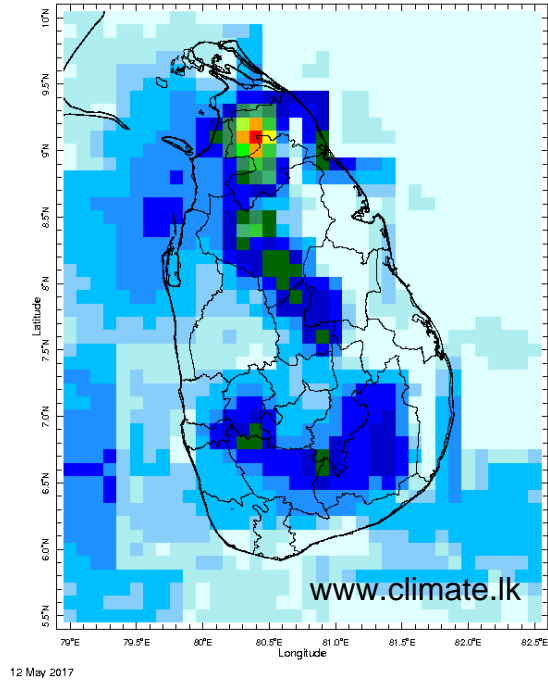
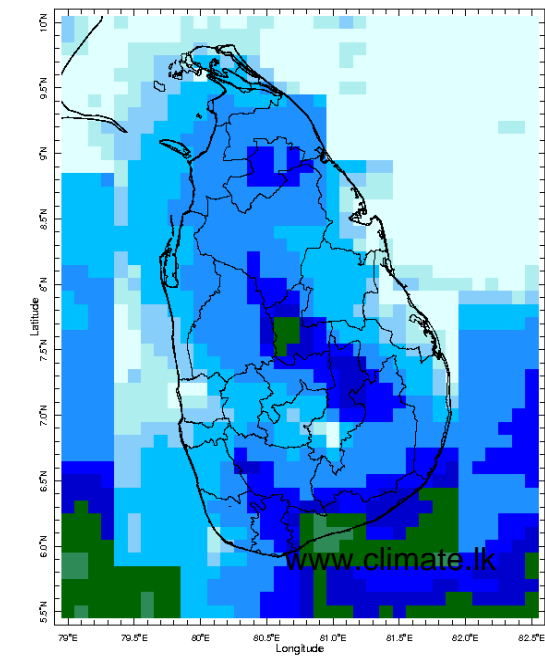
- a. NCEP GFS Ensemble 1-14 day Rainfall Predictions
- b. WRF Model Rainfall Forecast from IMD Chennai
- c. Weekly Precipitation Forecast from IRI
- d. Seasonal Predictions from IRI

MONITORING

Daily Rainfall Monitoring

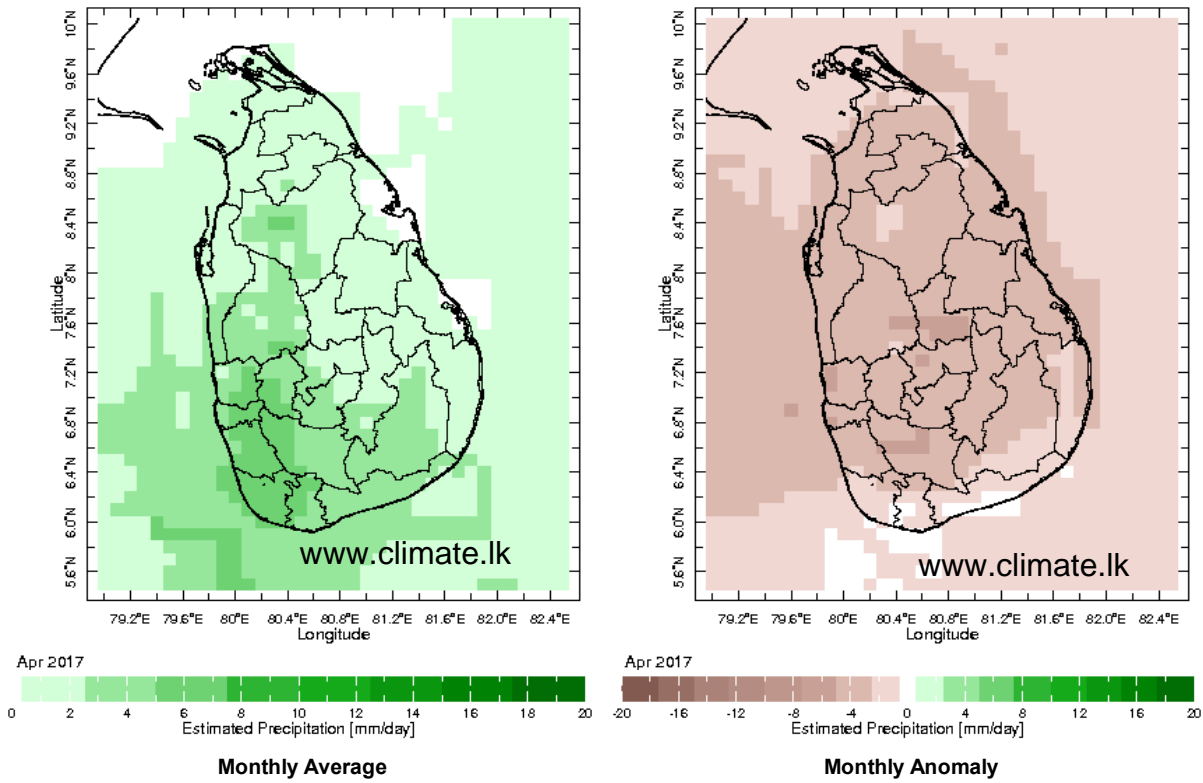
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



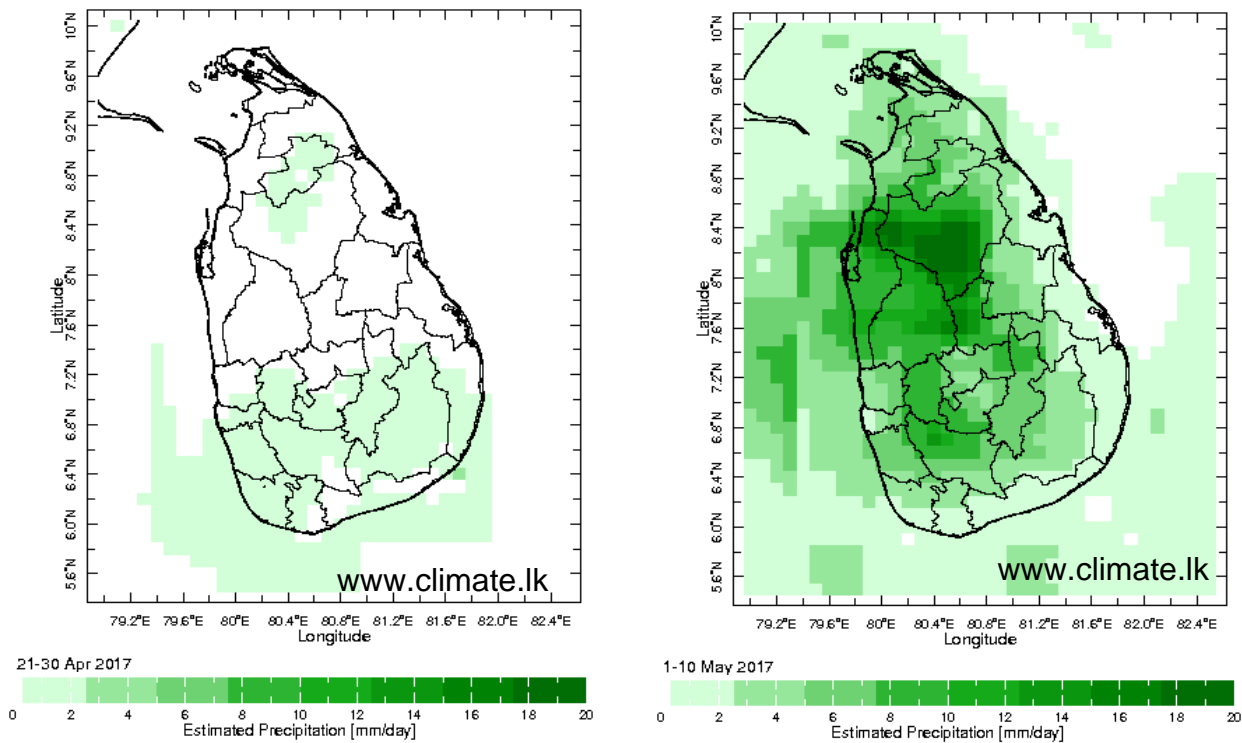


Monthly Rainfall Monitoring

The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall

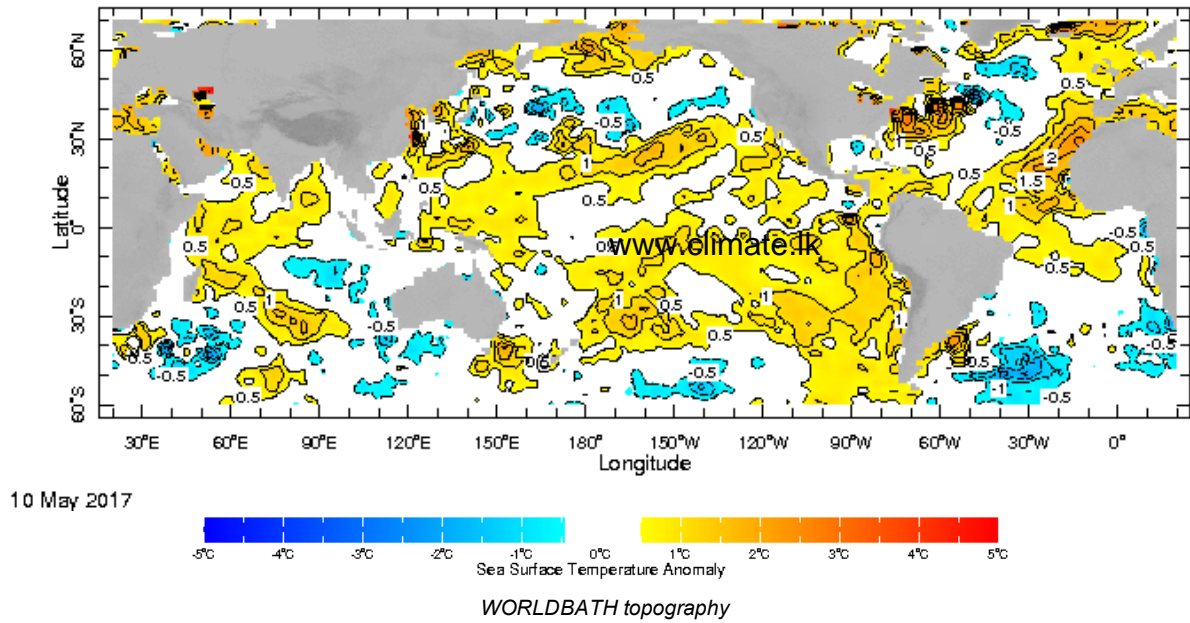


Dekadal (10 Day) Satellite Derived Rainfall Estimates

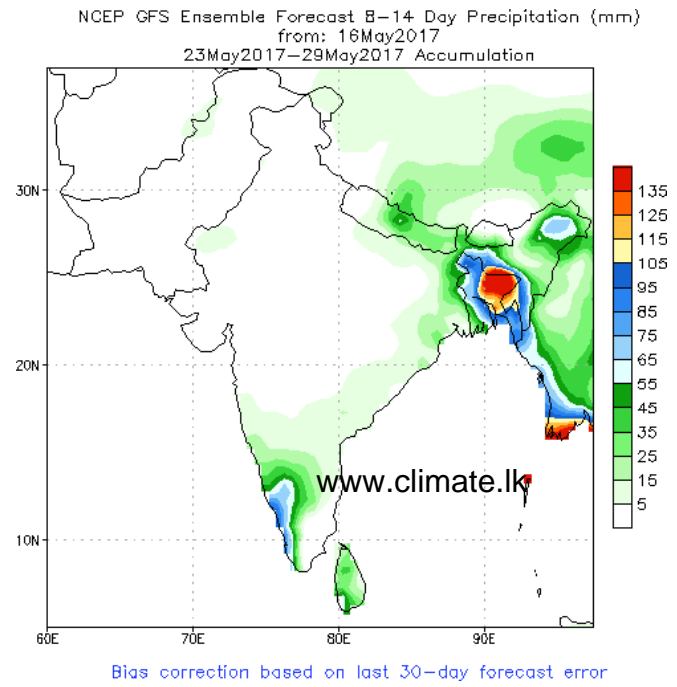
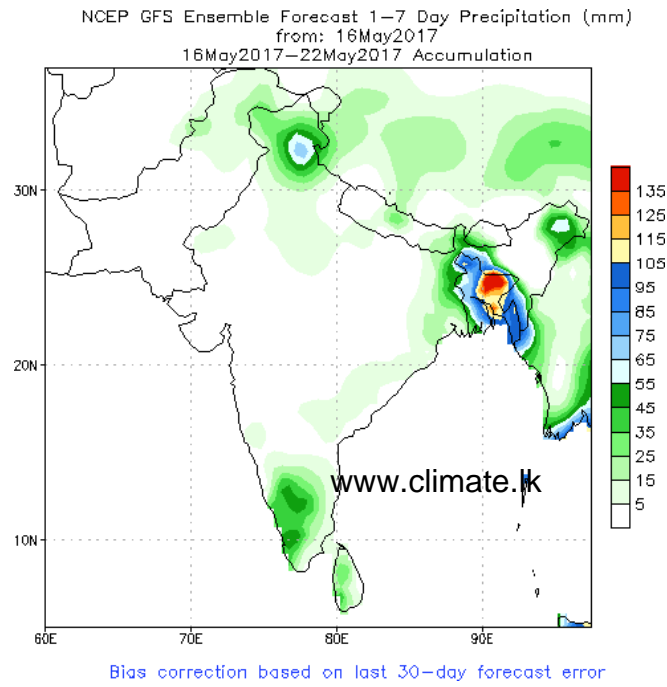


Weekly Average SST Anomalies

Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP

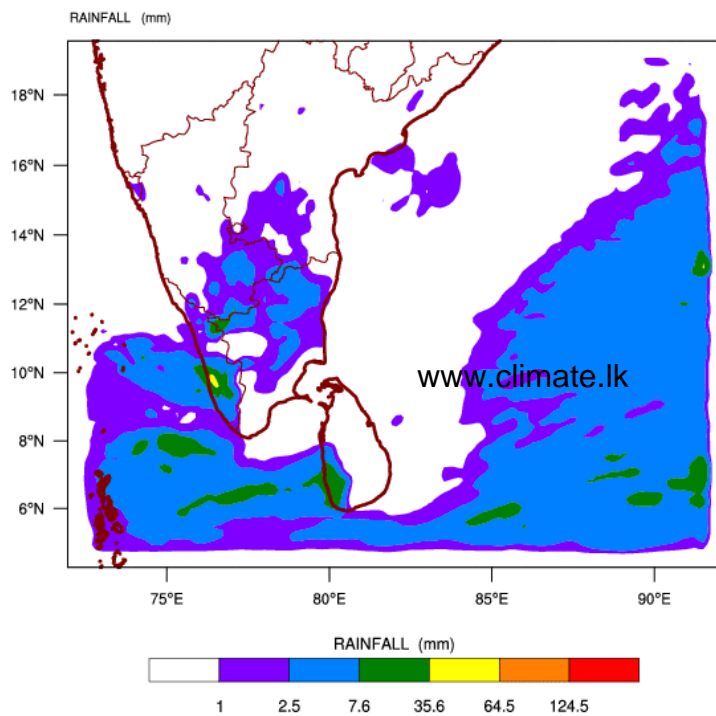


NCEP GFS 1- 14 Day prediction

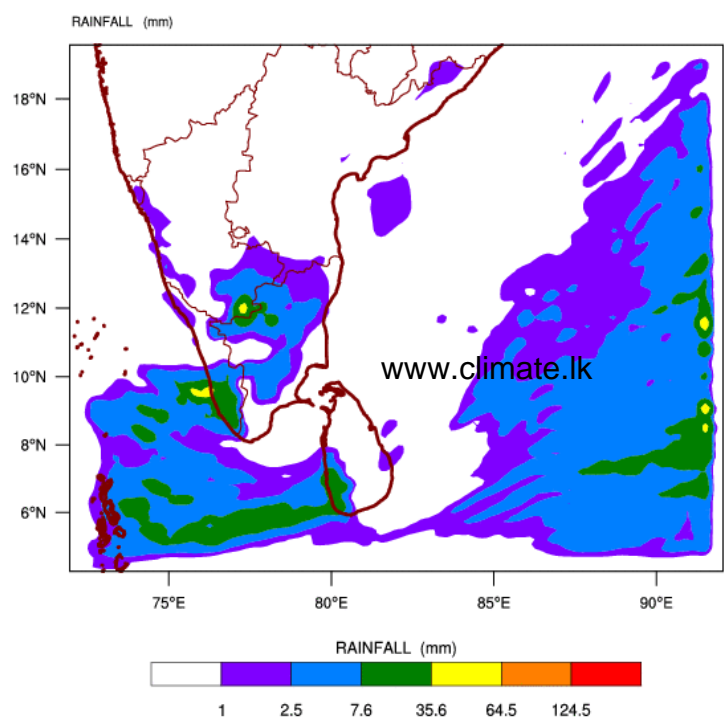


WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 16-05-2017 valid for 03 UTC of 18-05-2017

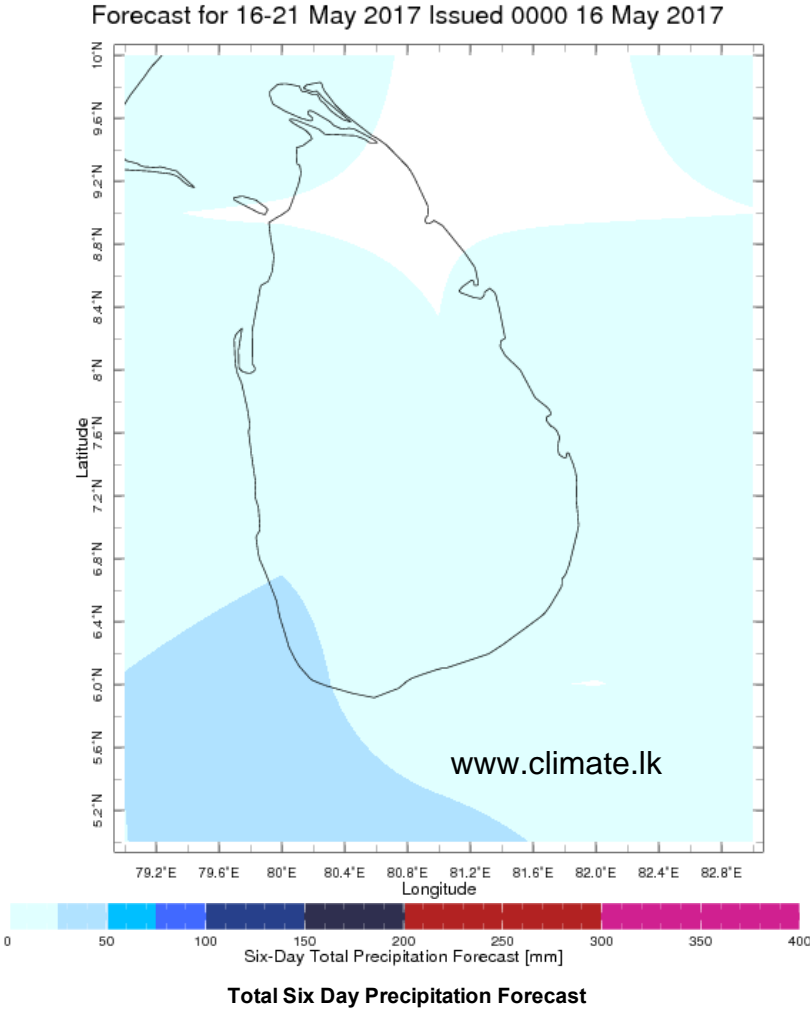
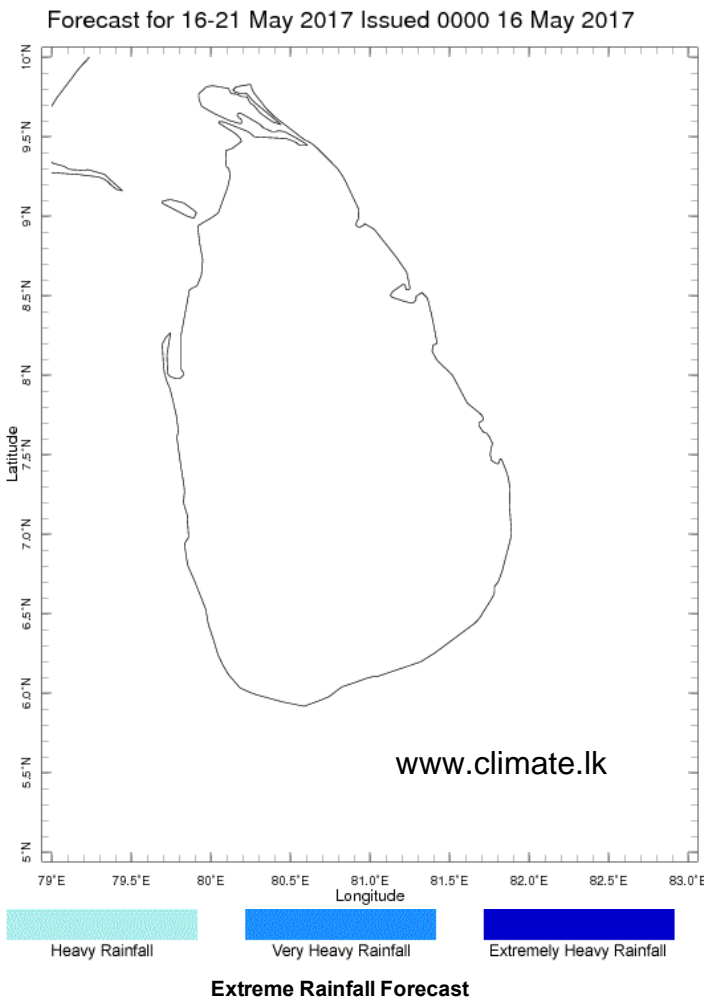


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 16-05-2017 valid for 03 UTC of 19-05-2017



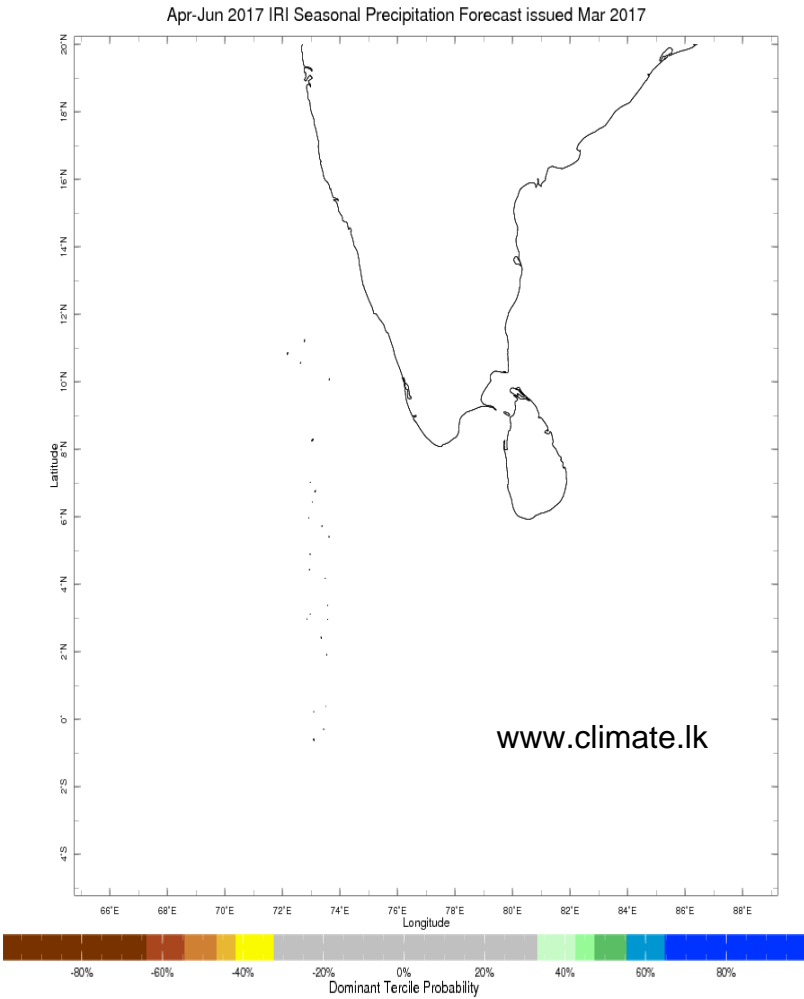
Weekly Rainfall Forecast from IRI

Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

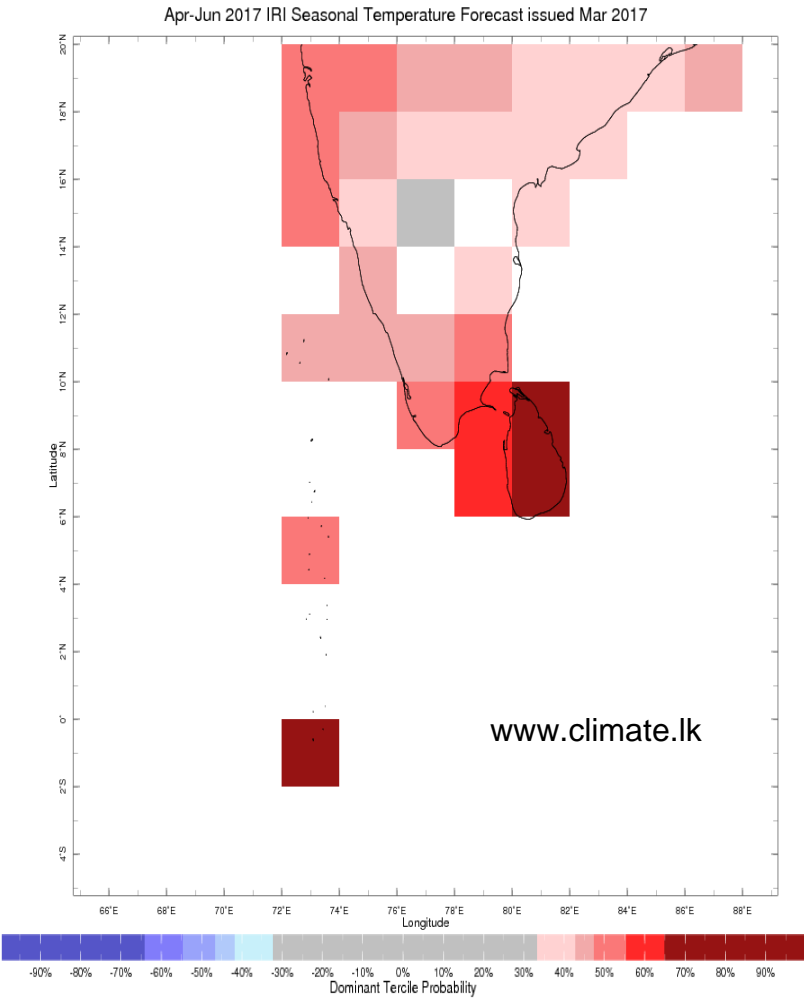


Seasonal Rainfall and Temperature Forecast

Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile probability levels. The upper side of the color bar shows the colors used for increasingly strong probabilities when the dominant tercile is the above-normal tercile, while the lower side shows likewise for the below-normal tercile. The gray color indicates an enhanced probability for the near-normal tercile (nearly always limited to 40%).



Precipitation Forecast



Temperature Forecast

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