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Experimental Climate Monitoring and Prediction

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25 July 2018

Highlights

- ***The IRI weekly rainfall forecast predicts total rainfall up to 50 mm in Colombo, Kalutara, Ratnapura and Galle districts during 24th -29th July.***
- ***Between 16 - 22 Jul: up to 20 mm of rainfall was recorded in Nuwara Eliya district on the 16th.***
- ***From 15 - 21 Jul: minimum temperature of 20 ^{o}C was recorded from Nuwara Eliya district while eastern coastal regions including Jaffna, Kilinochchi, Vavuniya and Anuradhapura districts recorded a maximum temperature between 35-40 ^{o}C.***
- ***From 16 - 22 Jul: up to 36 km/h, westerly winds were experienced by the entire island.***
- ***0.5 ^{o}C below average sea surface temperature was observed in the seas around Sri Lanka.***

Monitoring

Rainfall

***Weekly Monitoring*:** On the 16th, Nuwara Eliya districts received up to 20 mm of rainfall; and Matale, Kandy, Badulla, Monaragala, Kegalla, Ratnapura, Gampaha, Colombo, Kalutara and Galle districts up to 5 mm. No significant rainfalls were recorded in any part of the island on the 17th and 18th. On the 19th, Kurunegala, Matale, Kandy, Badulla, Nuwara Eliya and Batticaloa districts received up to 5 mm of rainfall. No significant rainfalls were recorded in any part of the island during 20th – 22nd.

Total Rainfall for the Past Week: The RFE 2.0 tool shows total rainfall 10-25 mm of total rainfall in Ratnapura, Monaragala, Badulla and Ampara districts; and up to 5-10 mm in Matale, Kandy and Mannar districts. Below average rainfall up to 25-50 mm is shown for Colombo, Kalutara and Ratnapura districts; and up to 10-25 mm is shown for Puttalam, Kurunegala, Matale, Badulla, Monaragala, Gampaha, Kegalla, Kandy, Nuwara Eliya, Galle, Matara Trincomalee districts.

***Monthly Monitoring*:** During June - above average rainfall conditions were experienced by the western and south-western regions of the island. Ratnapura district received up to 210 mm above average rainfall; Kegalla, Nuwara Eliya and Kalutara districts up to 150 mm; and Puttalam, Kurunegala, Colombo, Galle and Matara districts up to 60 mm. The CPC Unified Precipitation Analysis tool shows up to 500 mm of total rainfall in Ratnapura district; up to 300 mm Kegalla, Colombo and Kalutara districts; up to ~200 mm Gampaha, Galle and Nuwara Eliya districts; and up to 150 mm in Jaffna, Vavuniya, Anuradhapura, Trincomalee, Polonnaruwa, Kurunegala, Matale, Kandy, Badulla, Monaragala, Ampara and Hambantota districts.

Ocean State (*Text Courtesy IRI*)

Pacific sea state: July 18, 2018

In mid-July 2018, the east-central tropical Pacific waters reflected ENSO-neutral conditions, with slightly above average SST. The key atmospheric variables also suggested neutral conditions. The subsurface water temperature continued to be above-average. The official CPC/IRI outlook calls for neutral conditions through northern summer season, with a 65% chance of El Niño development during fall, rising to 70% for winter 2018-19. An El Niño watch is in effect. The latest forecasts of statistical and dynamical models collectively favor weak El Niño development by late summer or early fall, growing to weak or moderate strength during late fall and winter; forecasters are largely buying into this scenario now that the spring barrier is largely passed.

Indian Ocean State

0.5 ^{o}C below average sea surface temperature was observed in the seas around Sri Lanka.

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Predictions

Rainfall

14-day prediction:

NOAA NCEP models:

From 24th – 29th Jul: Total rainfall between 15-25 mm in Colombo, Ratnapura, Kegalla, Kandy, Nuwara Eliya, Matara and Trincomalee districts.

From 29th Jul – 4th Aug: Total rainfall between 35-45 mm in Trincomalee district; and between 25-35 mm in Colombo, Kegalla and Nuwara Eliya, Ratnapura, Galle, Matara, Anuradhapura, Vavuniya and Kilinochchi districts.

IMD NCMWRF Forecast:

26th July: Up to 10 mm of rainfall in Nuwara Eliya and Badulla districts.

27th July: Up to 10 mm of rainfall in Badulla district.

IRI Model Forecast:

From 24th – 29th Jul: Total rainfall up to 50 mm expected in Colombo, Kalutara, Ratnapura and Galle districts.

MJO based OLR predictions

For the next 15 days:

MJO shall suppress the rainfall in Sri Lanka.

[1] International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

FOUNDATION FOR ENVIRONMENT, CLIMATE AND TECHNOLOGY

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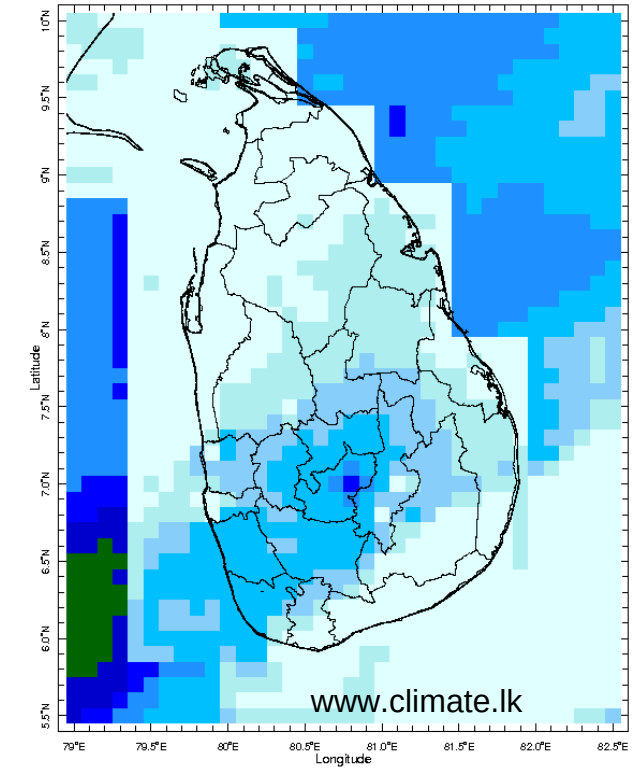
Weekly Hydro- Meteorological Report for Sri Lanka

Inside This Issue

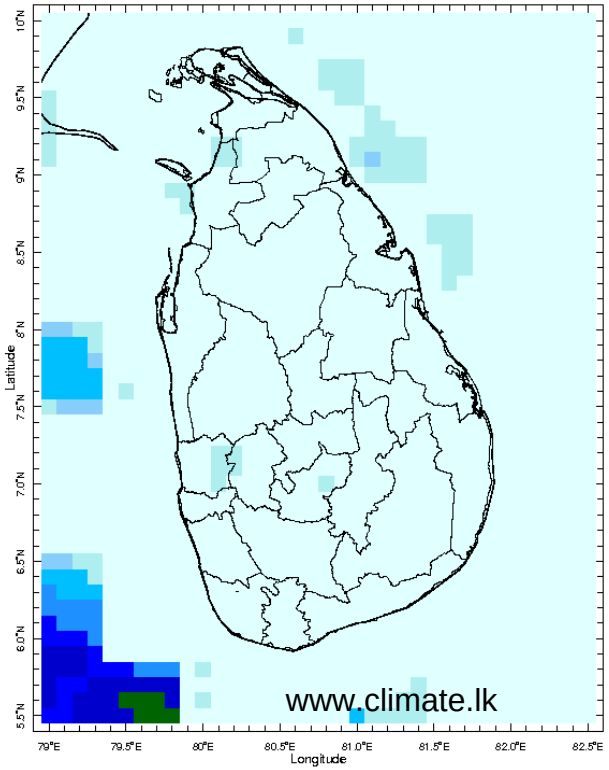
MONITORING

Daily Rainfall Monitoring

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



16 Jul 2018



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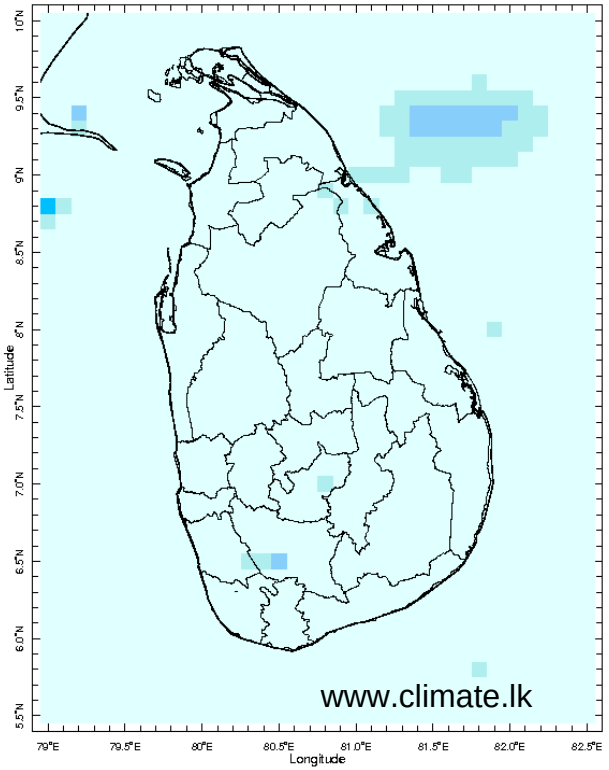

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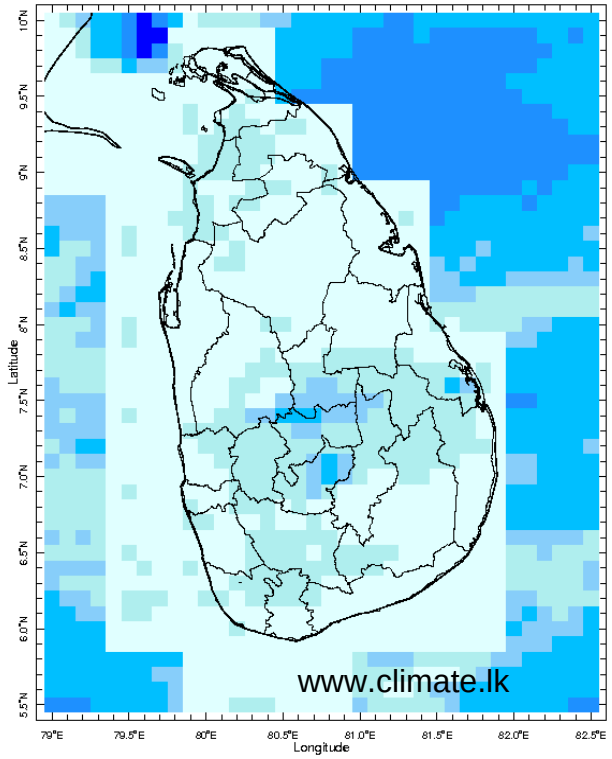

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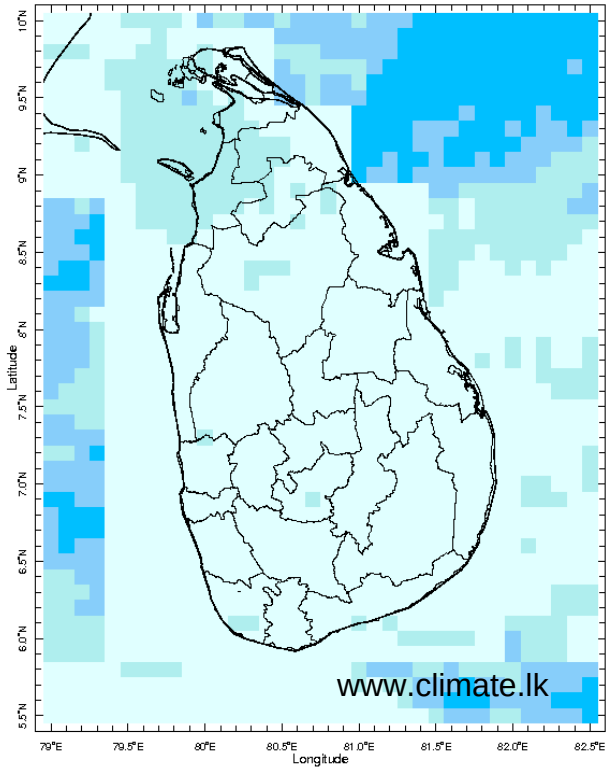

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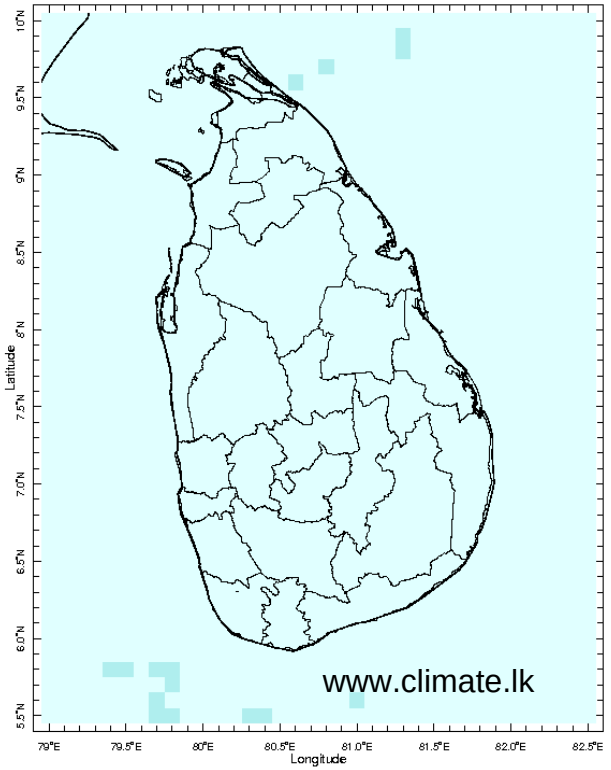
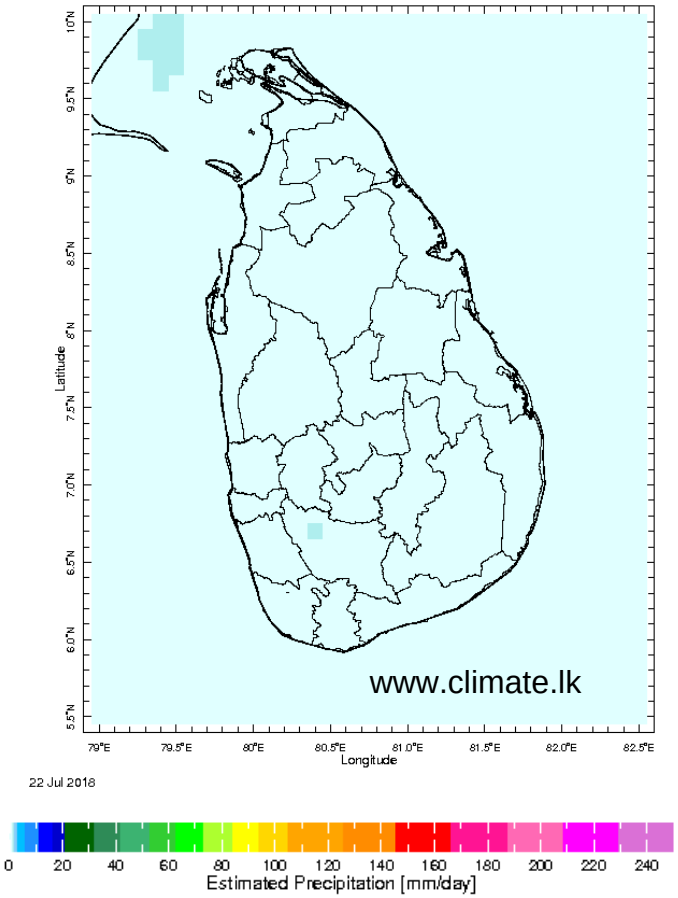
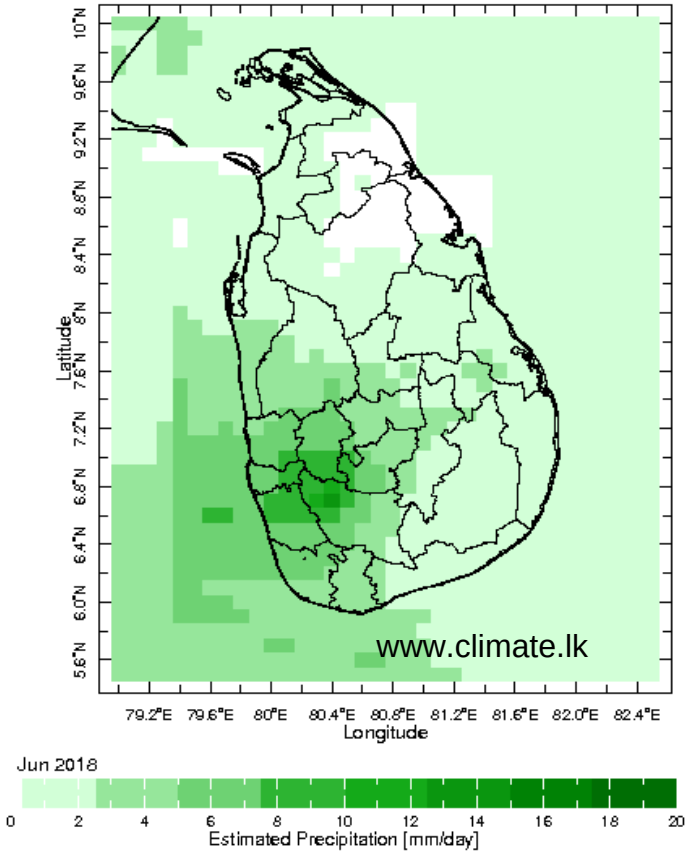


21 Jul 2018

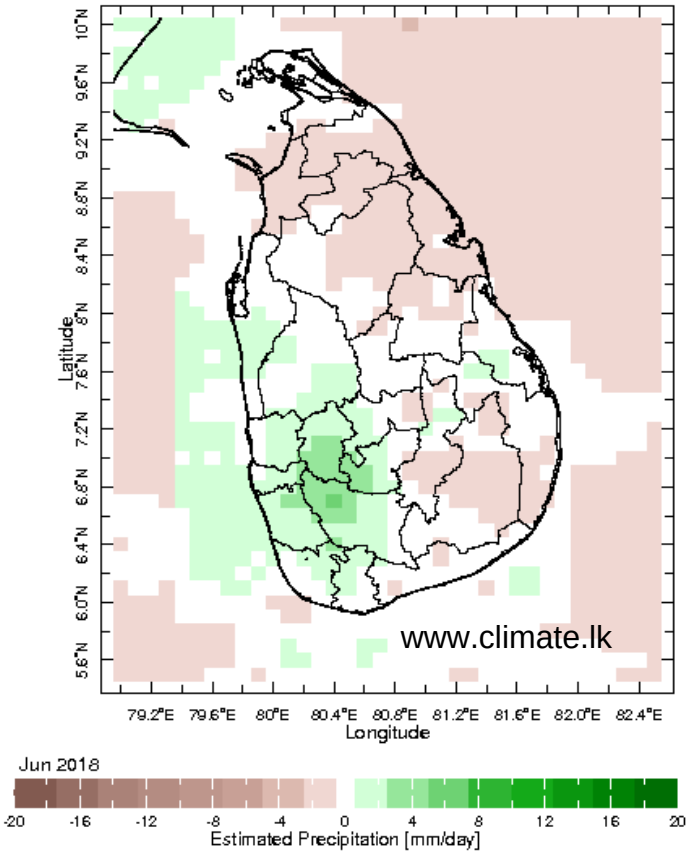

10°N
9.5°N
9°N
8.5°N
8°N
7.5°N
7.0°N
6.5°N
6.0°N
5.5°N
Latitude
79°E
79.5°E
80°E
80.5°E
81.0°E
81.5°E
82.0°E
82.5°E
Longitude
www.climate.lk
22 Jul 2018
0
20
40
60
80
100
120
140
160
180
200
220
240
Estimated Precipitation [mm/day]

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

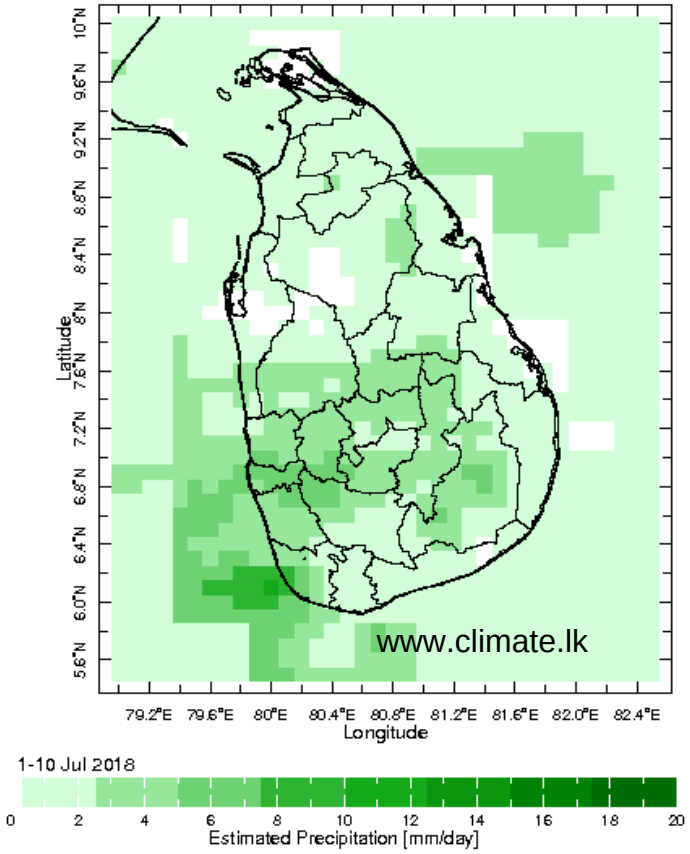


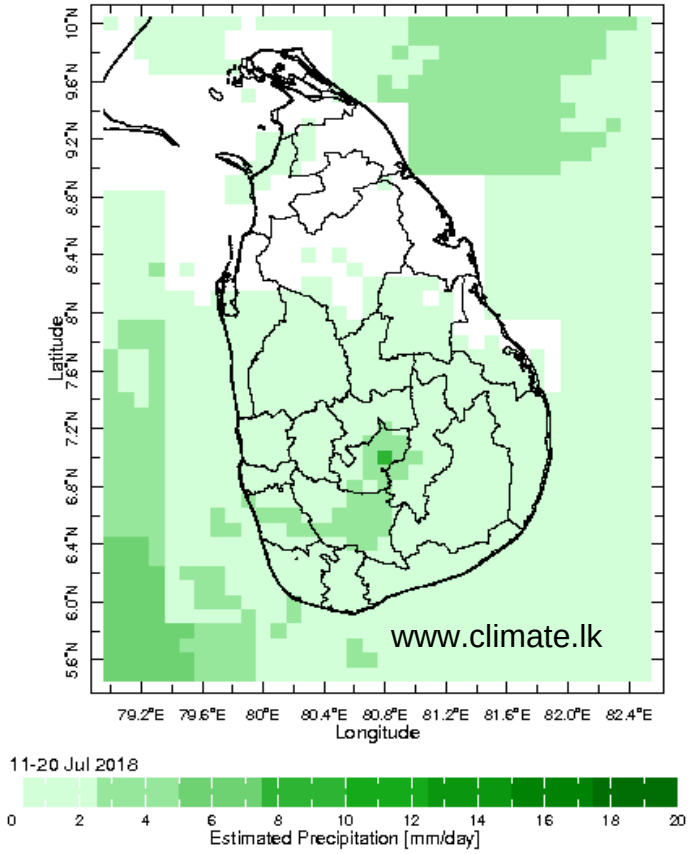
Monthly Average



Monthly Anomaly

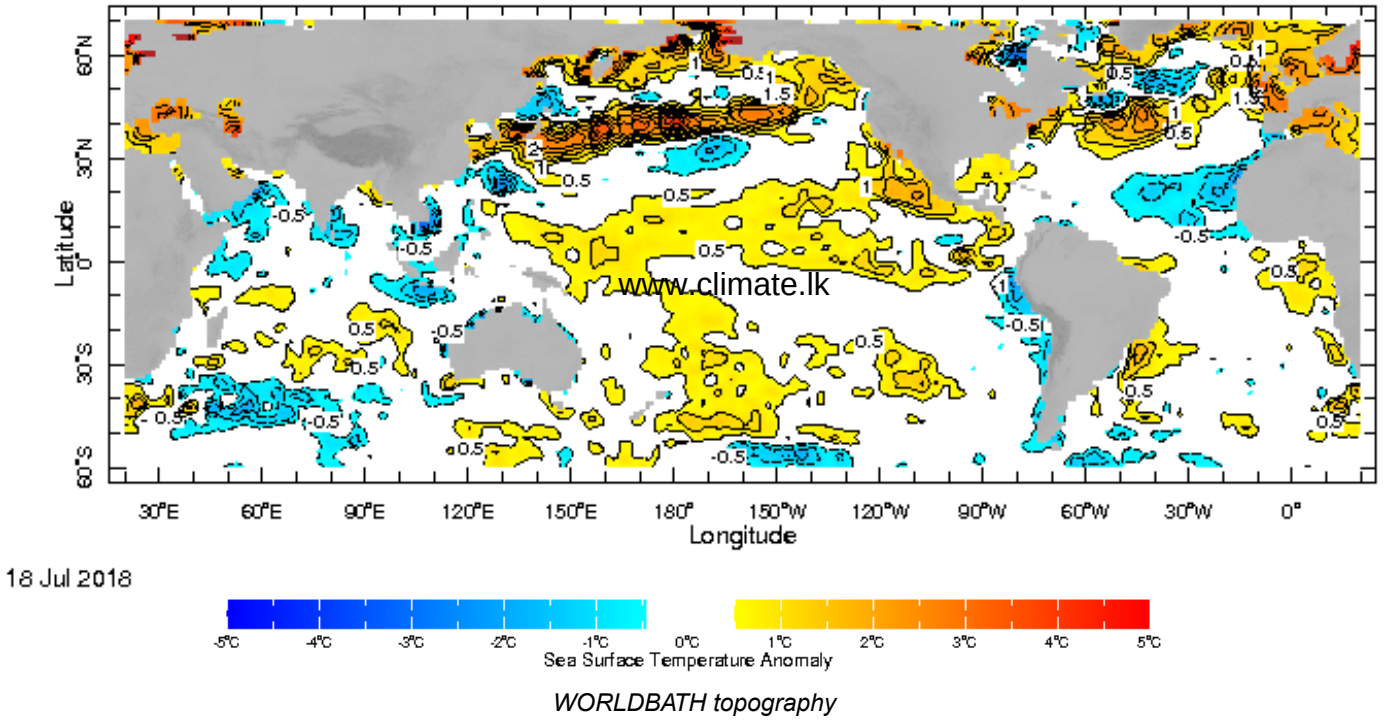
Dekadal (10 Day) Satellite Derived Rainfall Estimates





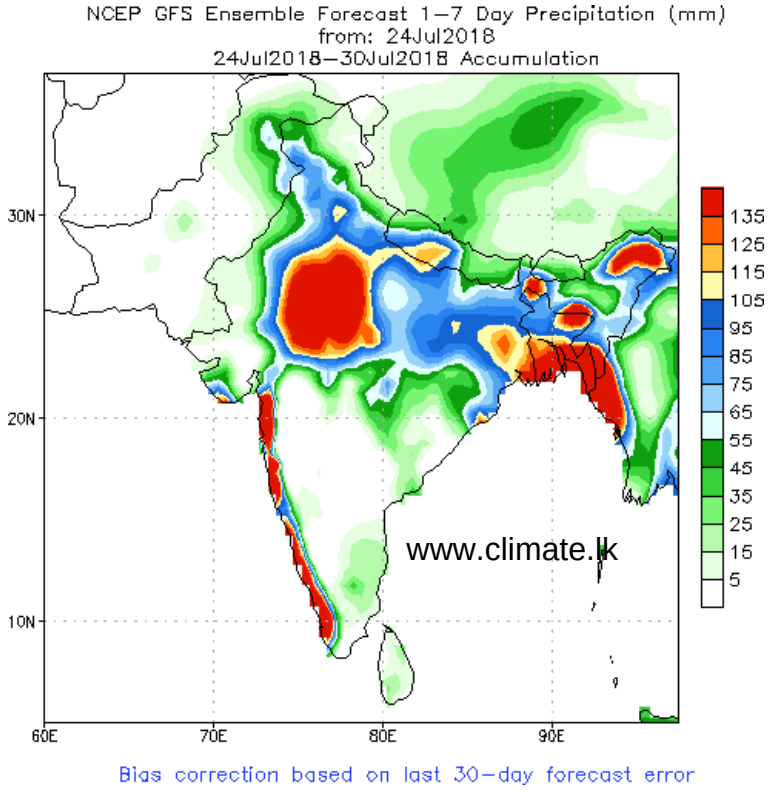
Weekly Average SST Anomalies

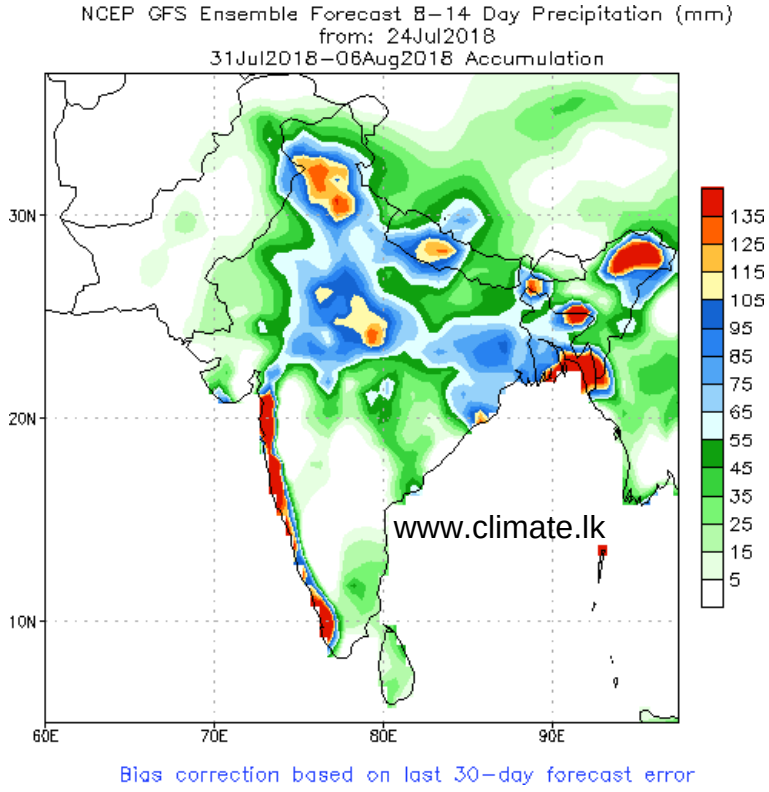
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP



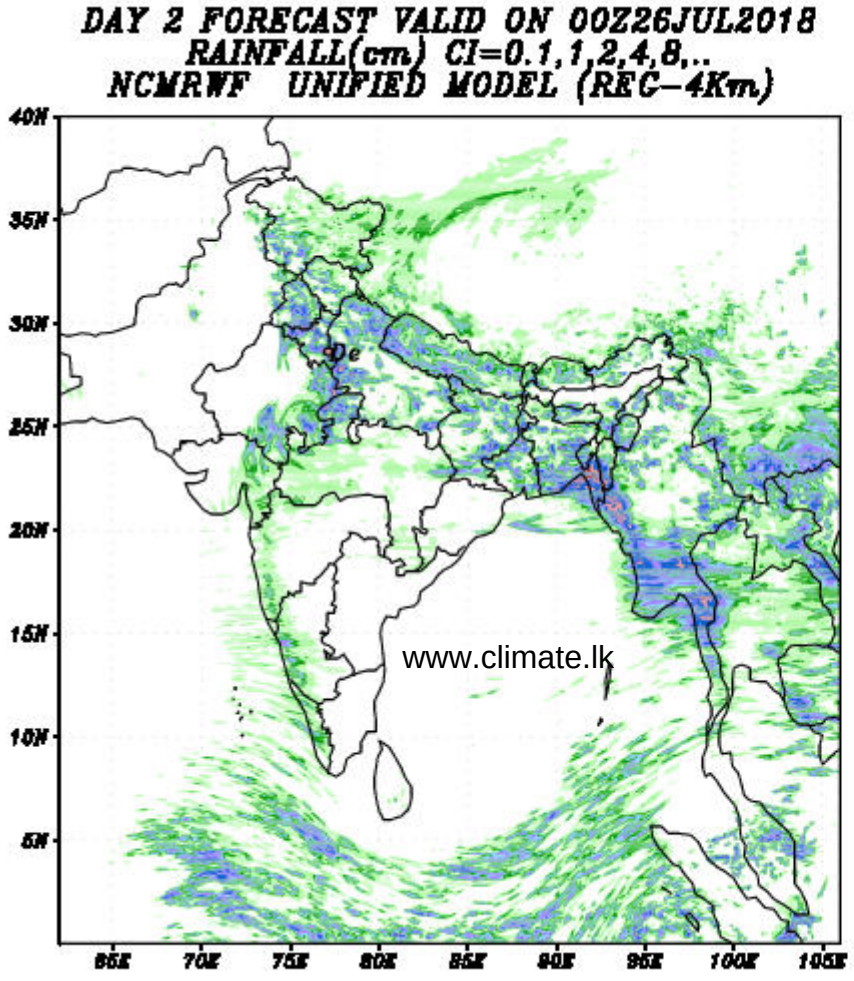
PREDICTIONS

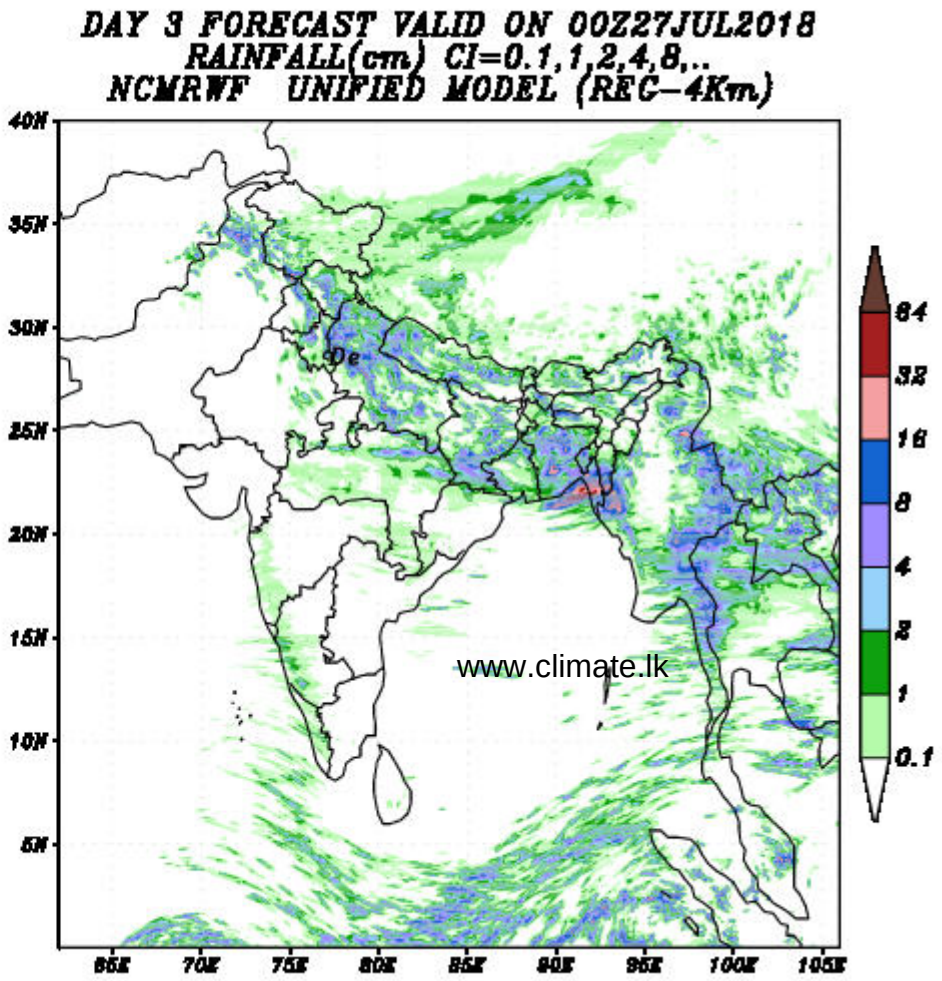
NCEP GFS 1- 14 Day prediction





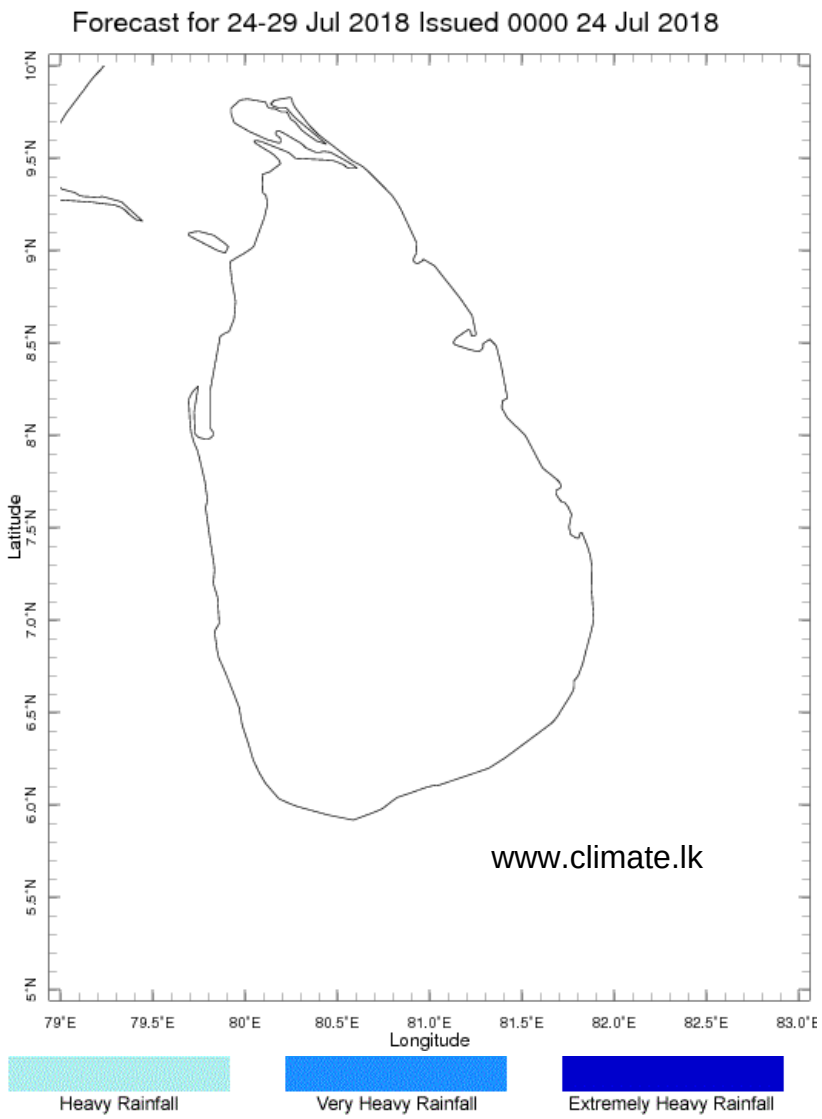
WRF Model Forecast (from IMD Chennai)



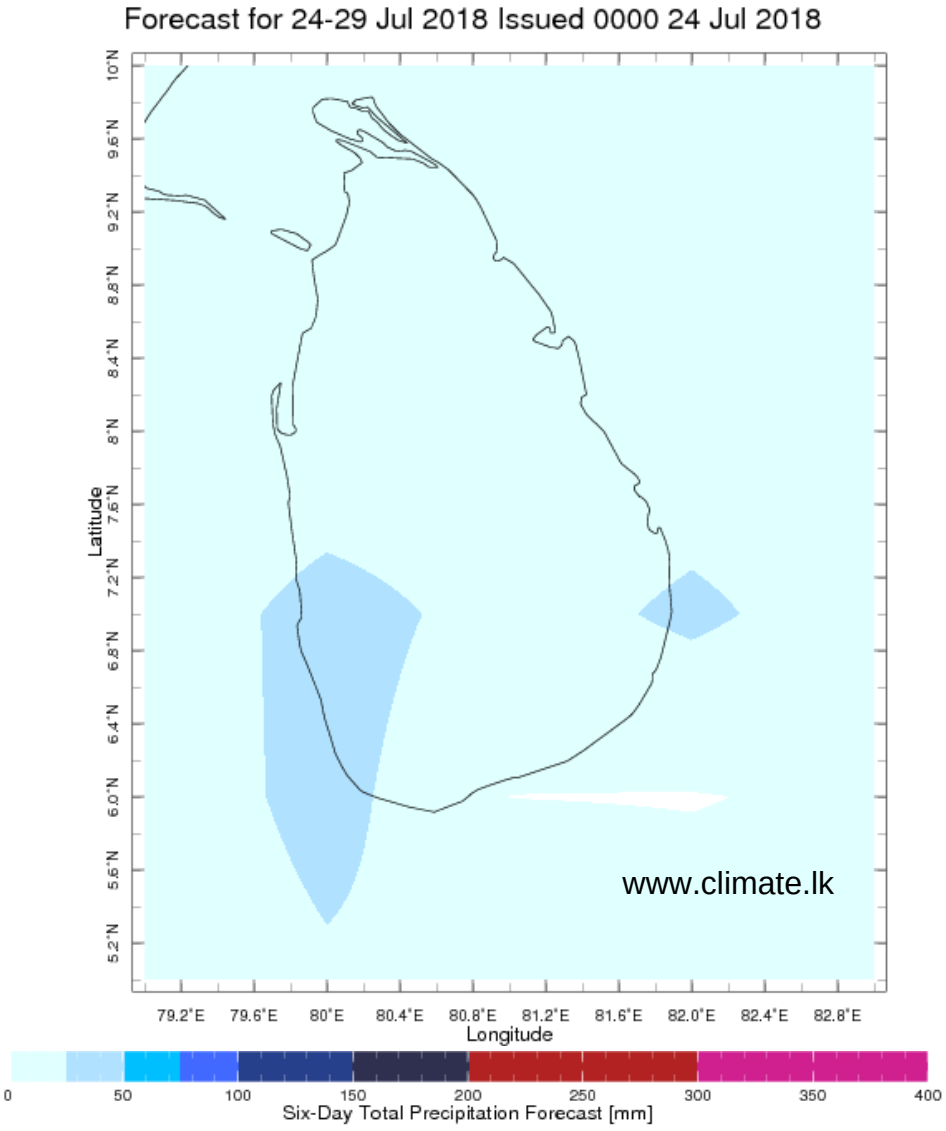


Weekly Rainfall Forecast from IRI

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.



Extreme Rainfall Forecast



Total Six Day Precipitation Forecast