

## Experimental Climate Monitoring and Prediction

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28 April 2016

### FECT BLOG

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

<http://fectsl.wordpress.com/>

### FECT WEBSITES

<http://www.climate.lk> and  
<http://www.tropicalclimate.org/>

### April 21, 2016 PACIFIC SEAS STATE

During mid-April 2016 the positive tropical Pacific SST anomaly was weakening, now indicating only a moderate strength El Niño. All atmospheric variables continue to support the El Niño pattern, but at reduced strength. This includes weakened trade winds and excess rainfall in the east-central tropical Pacific, extending eastward to a lesser extent than last month. Most ENSO prediction models indicate continued weakening El Niño conditions during the rest of the northern spring season, returning to neutral by late spring or early summer 2016, with La Niña development likely by fall.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

1°C above average sea surface temperature was observed around Sri Lanka.

### MJO STATE

MJO is weak and therefore it shall not affect the rainfall.

### Highlights

Rainfall was received only in south western and north central regions of the country on 20<sup>th</sup> and 21<sup>st</sup> April but there was no rainfall during 22<sup>nd</sup> -26<sup>th</sup>. Highest rainfall of 90 mm was seen near Hanwella and surrounding regions on 21<sup>st</sup> April. NOAA NCEP models predict up to 65 mm rainfall in south western region of the country during 27<sup>th</sup> - 26<sup>th</sup> April. MJO is weak so there shall be no effect on rainfall by the MJO.

### Summary

#### Monitoring

**Weekly Monitoring:** Rainfall was received in south western region and north central province of the country on 20<sup>th</sup> and 21<sup>st</sup> April but no considerable rainfall was seen during 22<sup>nd</sup>- 26<sup>th</sup> April. On the 20<sup>th</sup>, near Ratnapura town, Anuradhapura city and surrounding areas received up to 40 mm rainfall while up to 30 mm rainfall was received in south eastern sea around Kirinda. Up to 90 mm rainfall was seen in Hanwella and surrounding regions while up to 70 mm rainfall received in southern region of Colombo, Avissawella, Pannipitiya and surrounding regions on the 21<sup>st</sup>. Central region of Anuradhapura and the sea west of Colombo district received up to 30 mm rainfall on the same day. No rainfall was seen on the 22<sup>nd</sup>. Up to 20 mm slight rainfall received only in Kalutara and northern region of Galle on 23<sup>rd</sup> April. 24<sup>th</sup> and 25<sup>th</sup> April were mostly dry and again up to 20 mm rainfall was seen in Maho and western region of Anuradhapura on the 26<sup>th</sup>.

**Monthly Monitoring:** During March 2016 most regions of the country received below average rainfall. Rainfall received by Ratnapura, Kalutara, northern regions of Colombo and Galle, western and southern regions of Puttalam was about 10 mm/day less than the historical average for this month. Above average rainfall was only seen in Kegalle, western region of Kandy, southern region of Matale and the south eastern region of Kurunegala district.

#### Predictions

**14-day prediction:** NOAA NCEP models predict up to 65 mm rainfall in the south western region of the country during 27<sup>th</sup> April- 3<sup>rd</sup> May and 4<sup>th</sup>-10<sup>th</sup> May.

**IMD WRF & IRI Model Forecast:** According to the IMD WRF model, up to 35 mm rainfall is expected near Colombo and Kalutara and the sea west of Puttalam on 29<sup>th</sup> of April while the rest of the country shall receive a slight rainfall except northern and eastern regions. On 30<sup>th</sup> April, the models predict no rainfall in the entire country but up to 65 mm rainfall in the sea west to Puttalam. IRI CFS model predicts up to 75 mm total rainfall around Badulla during 27<sup>th</sup> April – 2<sup>nd</sup> May while up to 50 mm rainfall is expected around Kandy, Eastern region of Ratnapura and Nuwara Eliya.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for May to July, the total 3-month precipitation shall be climatological. The 3-month temperature has more than 70-80% likelihood in the entire country of being in the above-normal tercile during this period.

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- NCEP GFS Ensemble 1-14 day predictions
- WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)
- Weekly precipitation forecast (IRI)
- Seasonal Predictions from IRI

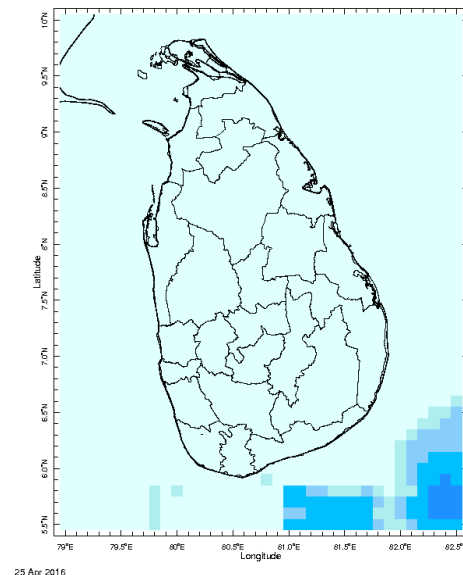
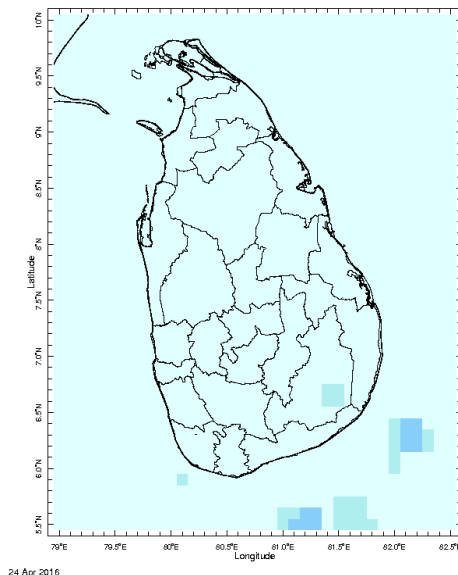
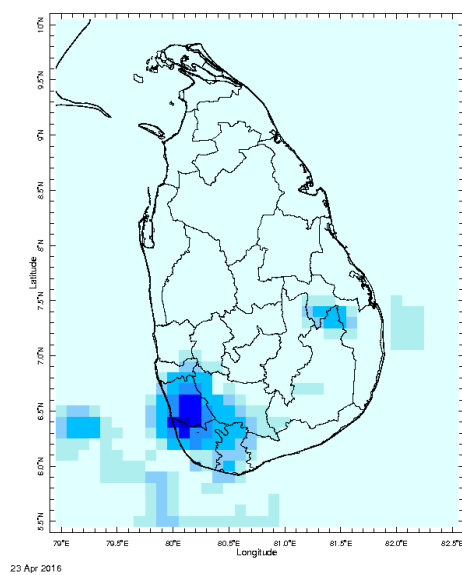
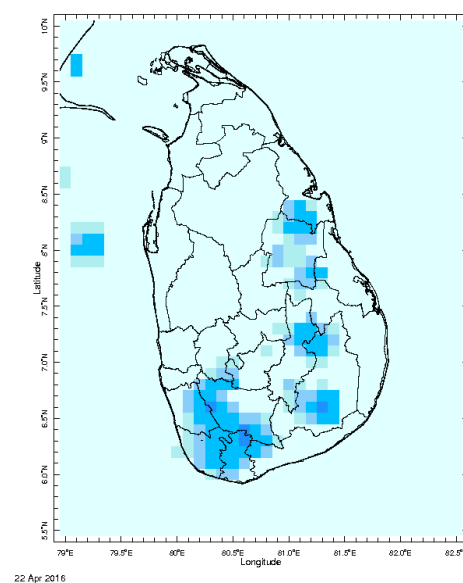
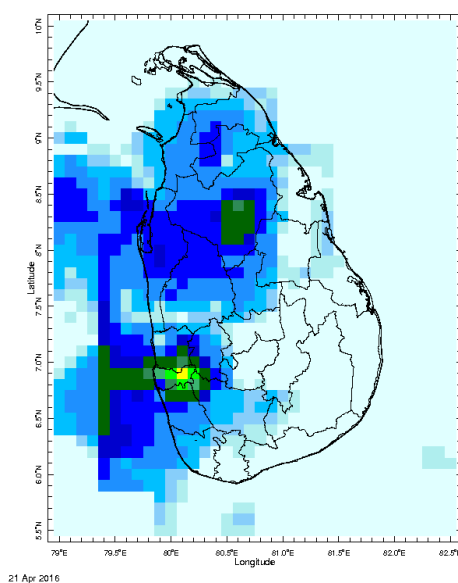
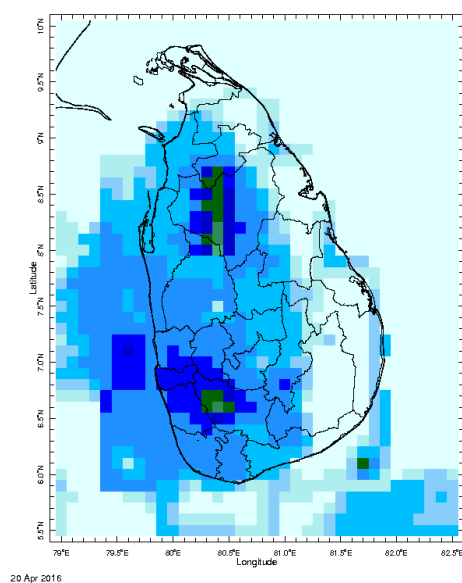
## Weekly Hydro- Meteorological Report for Sri Lanka

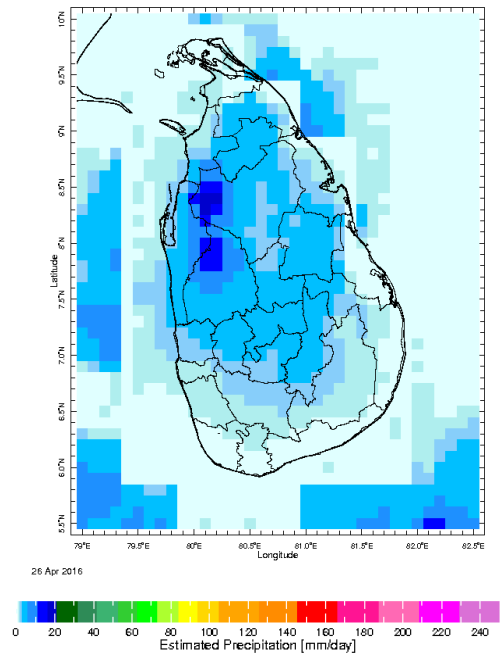
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  - b. WRF Model Forecast (48 hours and 72 Hours Ahead)
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### Daily Rainfall Monitoring

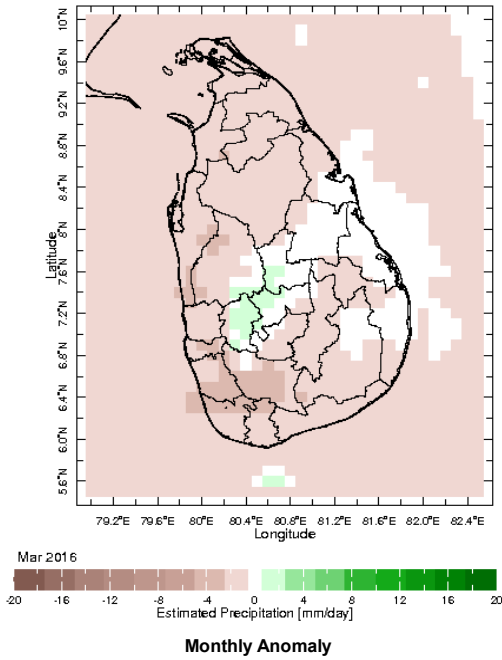
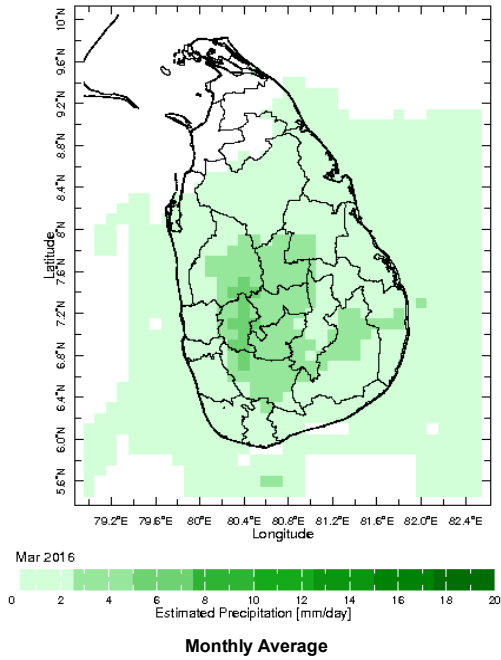
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



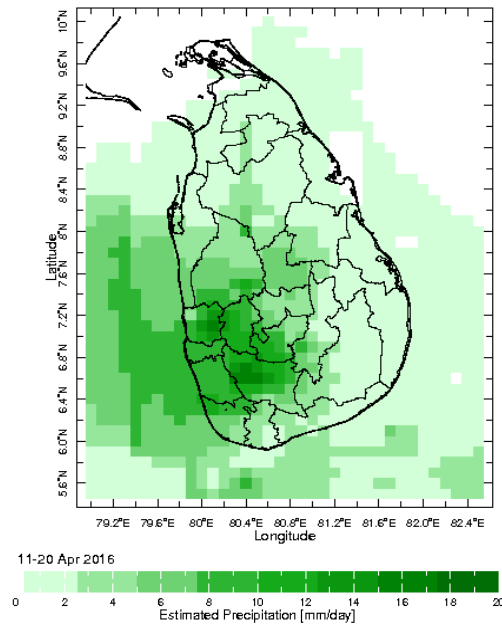
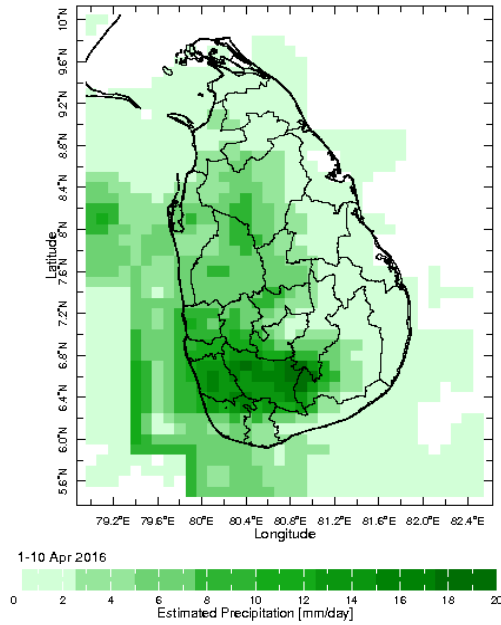


Monthly Rainfall Monitoring

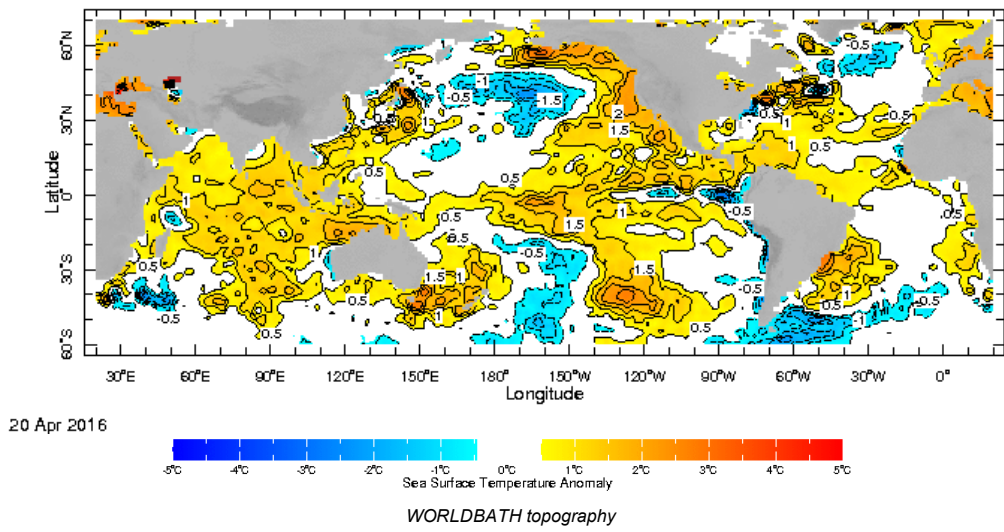
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



Dekadal (10 Day) Satellite Derived Rainfall Estimates

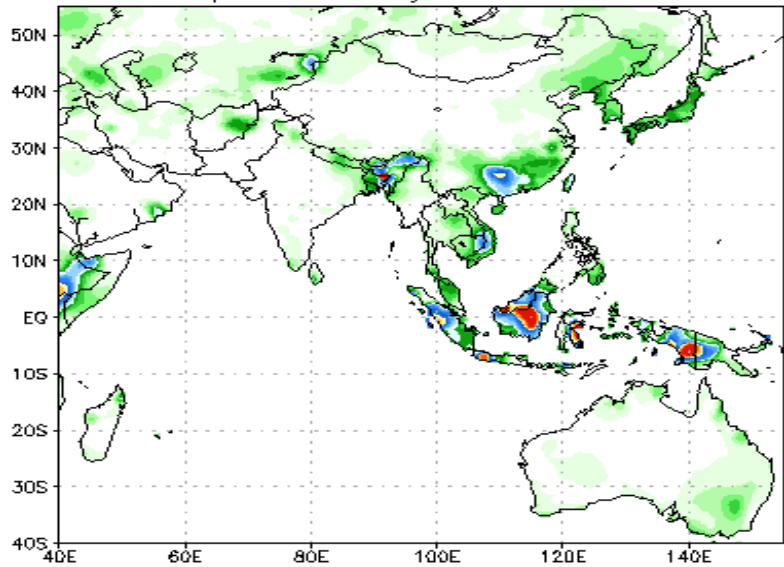


Weekly Average SST Anomalies



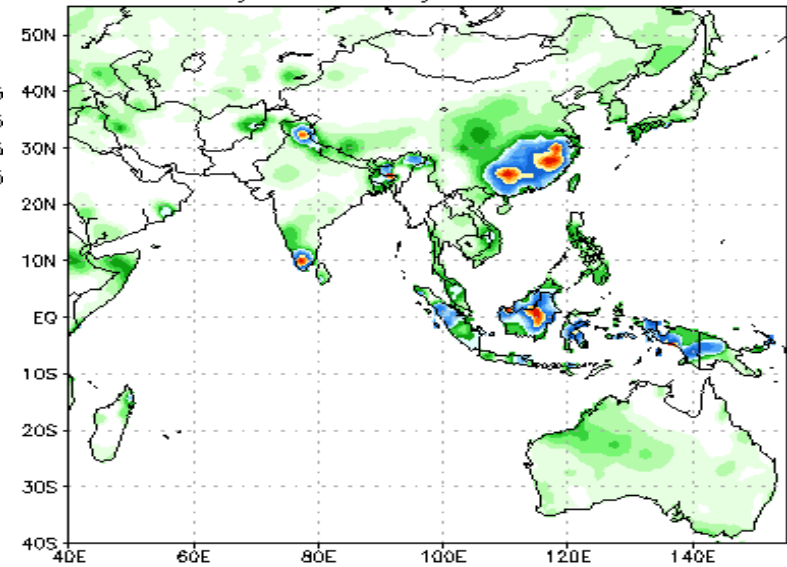
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
from: 27Apr2016  
27Apr2016–03May2016 Accumulation



Bias correction based on last 30–day forecast error

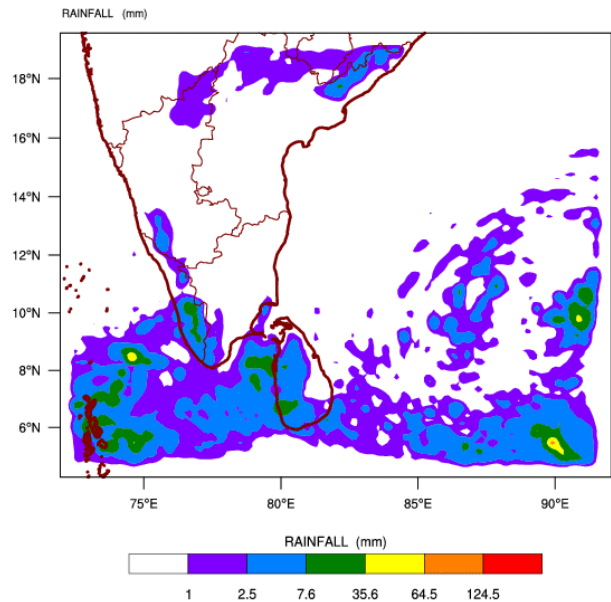
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)  
from: 27Apr2016  
04May2016–10May2016 Accumulation



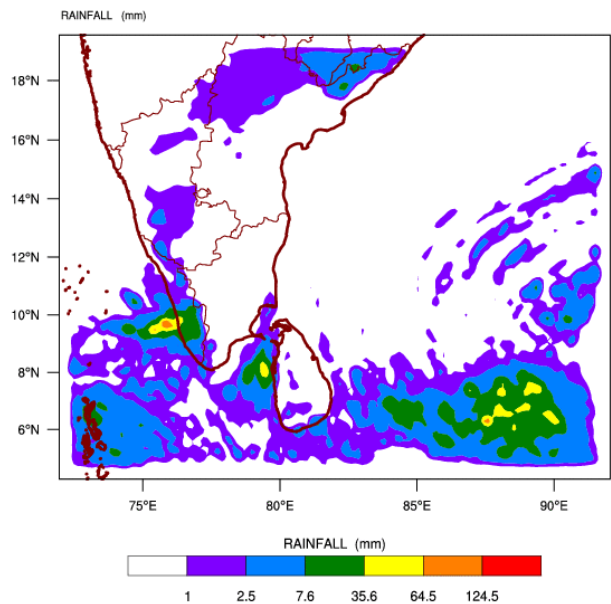
Bias correction based on last 30–day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 27-04-2016 valid for 03 UTC of 29-04-2016



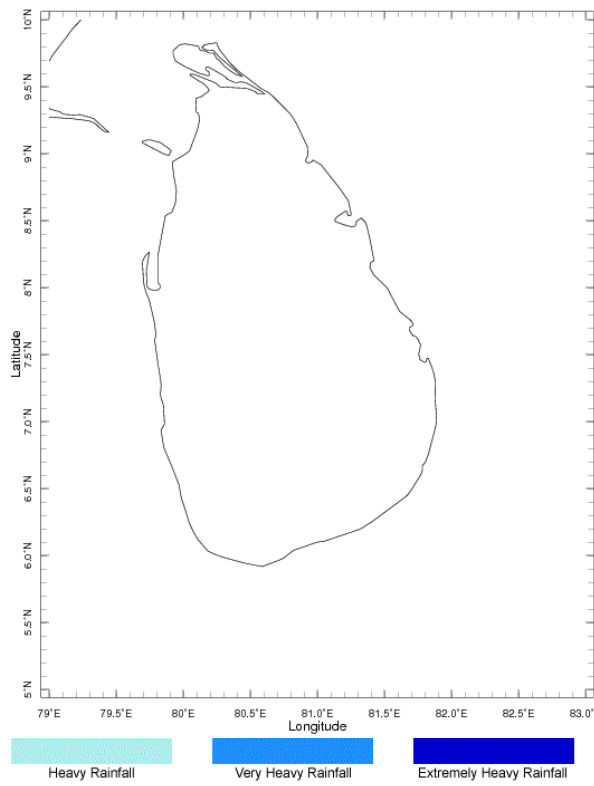
WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 27-04-2016 valid for 03 UTC of 30-04-2016



Weekly Rainfall Forecast

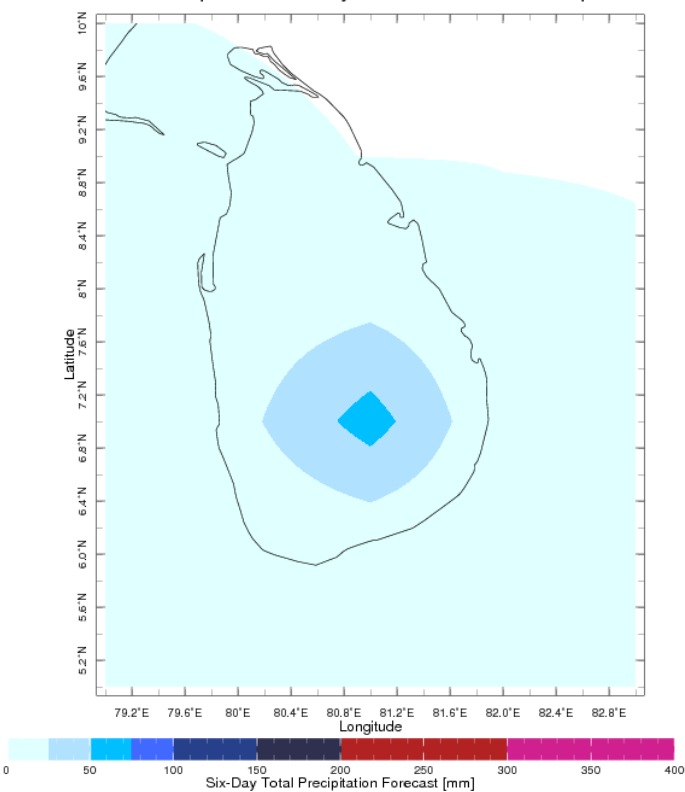
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 27 Apr 2016 - 2 May 2016 Issued 0000 27 Apr 2016



Extreme Rainfall Forecast

Forecast for 27 Apr 2016 - 2 May 2016 Issued 0000 27 Apr 2016

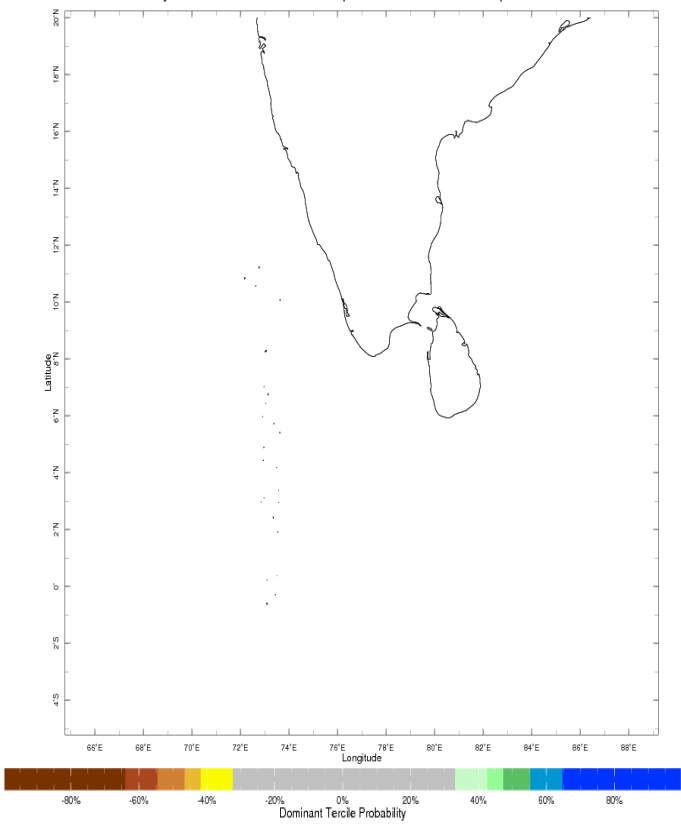


Total Six Day Precipitation Forecast

Seasonal Rainfall and Temperature Forecast

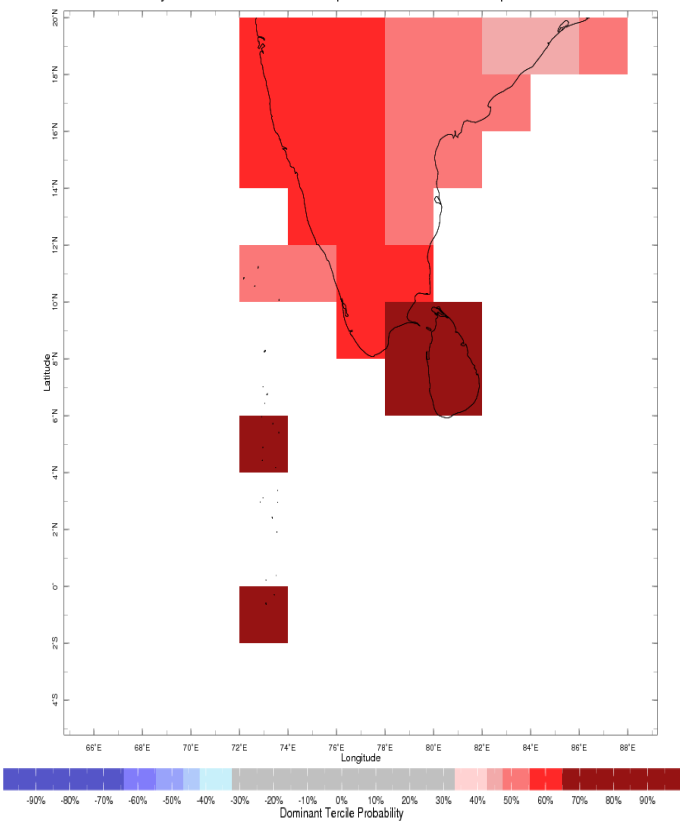
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant 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%).

May-Jul 2016 IRI Seasonal Precipitation Forecast issued Apr 2016



Precipitation Forecast

May-Jul 2016 IRI Seasonal Temperature Forecast issued Apr 2016



Temperature Forecast

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