

## Experimental Climate Monitoring and Prediction

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31 March 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/>

### March 17, 2016 PACIFIC SEAS STATE

During mid-March 2016 the tropical Pacific SST was weakening, but still at a strong El Niño level. All atmospheric variables continue to support the El Niño pattern, including weakened trade winds and excess rainfall in the east-central tropical Pacific, extending eastward. Most ENSO prediction models indicate continued weakening El Niño conditions over the coming several months, returning to neutral by late spring or early summer 2016, and a chance for La Niña development by fall.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

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

### MJO STATE

MJO phase is in 8 and therefore shall suppress rainfall in Sri Lanka in a significant manner.

### Highlights

Dry weather conditions continued in the entire country during 23<sup>rd</sup> – 26<sup>th</sup> March and thereafter north east, east and central regions of the country received rainfall during 27<sup>th</sup> – 29<sup>th</sup> March. Highest rainfall of 70 mm was observed around Katugastota and central region of Monaragala while Elahara and Polonnaruwa regions received rainfall up to 60 mm on this day. NOAA NCEP model predict no rainfall in the entire country during next two weeks whereas IRI CFS models predict up to 100 mm total precipitation around Nuwara Eliya and Badulla during 30<sup>th</sup> March- 4<sup>th</sup> April. MJO is in phase 8 and shall significantly suppress rainfall in Sri Lanka.

### Summary

#### Monitoring

**Weekly Monitoring:** Rainfall received in north east, east and central regions of the country during 23<sup>rd</sup>– 29<sup>th</sup> March while dry weather conditions were observed in other regions. No rainfall was observed during 23<sup>rd</sup> – 26<sup>th</sup> in the entire country. Up to 35 mm rainfall was observed in the eastern region of Matale, near Balangoda and Hasalaka, Rakwana, Girandurukotte and near coastal region of Batticaloa on 27<sup>th</sup> March. Central region of Monaragala and Katugastota received up to 70 mm rainfall while near Elahara and Polonnaruwa regions were obtained up to 60 mm rainfall on 28<sup>th</sup> March. Polonnaruwa, Nuwara Eliya, Kandy and Matale districts received rainfall up to 40 mm on the same day. Rainfall was observed up to 20 mm in southern region of Badulla, central region of Monaragala, western region of Nuwara Eliya and Kandy on 29<sup>th</sup> March whereas up to 40 mm rainfall was received around sea near Pottuvil.

**Monthly Monitoring:** During February 2016 most regions of the country observed below average rainfall; and above average rainfall was observed in the northern region of Ratnapura, western region of Gampaha, Colombo, Kalutara, Galle, north region of Matara and the sea around western, south eastern and south western regions of the country.

#### Predictions

**14 day prediction:** NOAA NCEP models predict no rainfall in the entire country during 30<sup>th</sup> March - 5<sup>th</sup> April and 6<sup>th</sup> – 12<sup>th</sup> April.

**IMD WRF & IRI Model Forecast:** IMD WRF model forecast Colombo, Gampaha, Kalutara, Galle and coastal region of western province to receive up to 60 mm rainfall on 1<sup>st</sup> April whereas slight amount of rainfall shall obtain in the rest of the country except northern region. On 2<sup>nd</sup> April, up to 60 mm rainfall is expected around Kegalle. IRI CFS models predict up to 100 mm total precipitation around Nuwara Eliya and Badulla and up to 50 mm total precipitation in Monaragala and Rathnapura during 30<sup>th</sup> March- 4<sup>th</sup> April.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for April to June, 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

<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

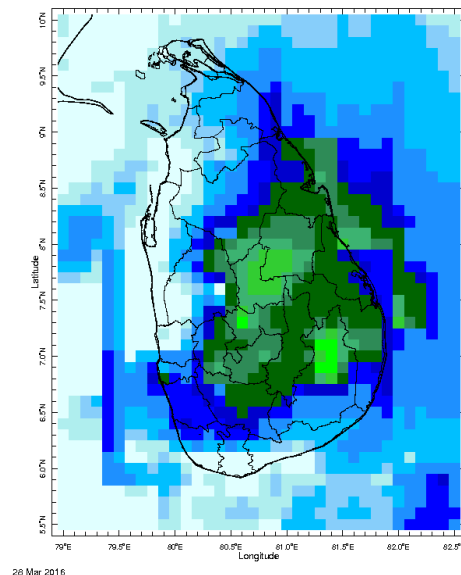
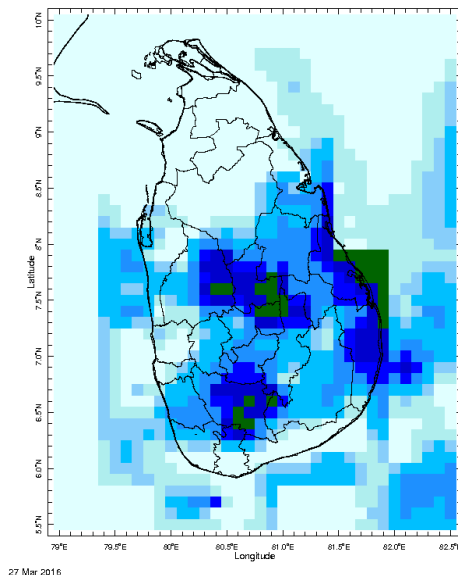
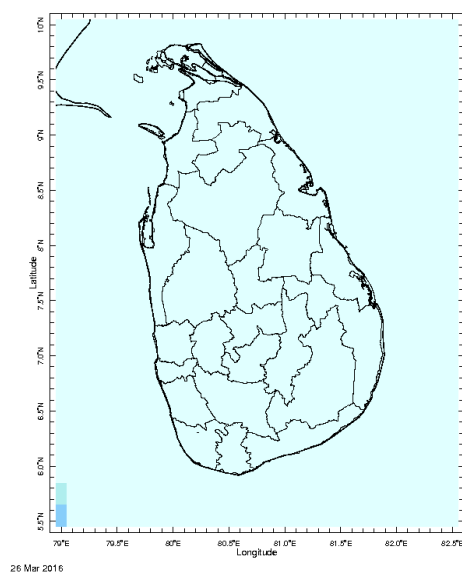
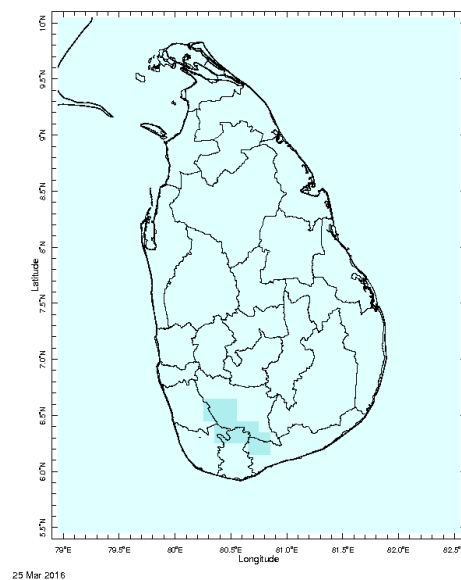
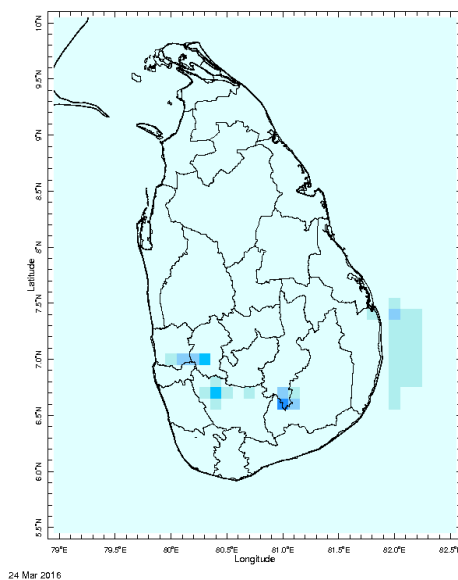
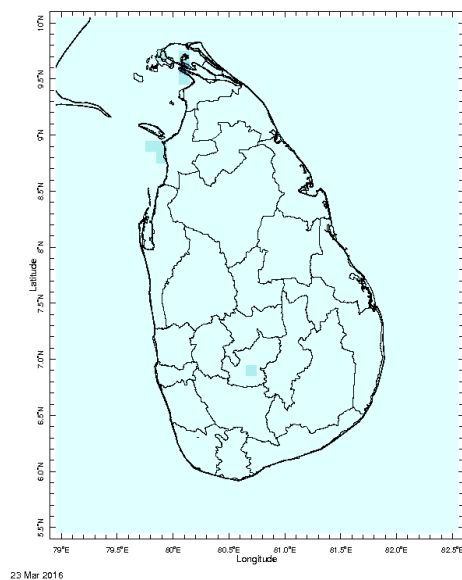
## Weekly Hydro- Meteorological Report for Sri Lanka

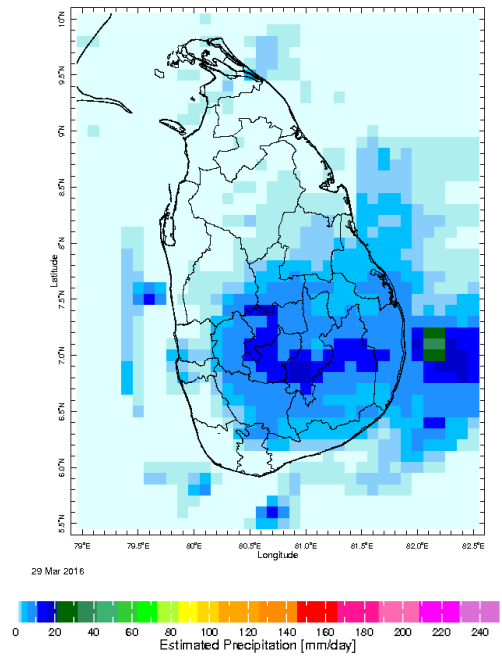
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### Daily Rainfall Monitoring

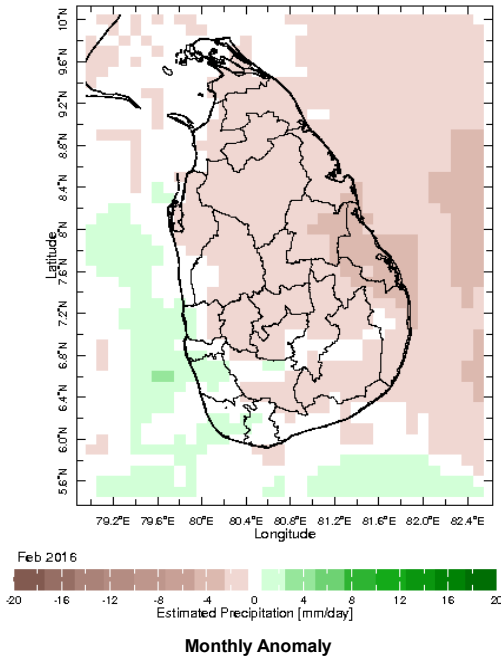
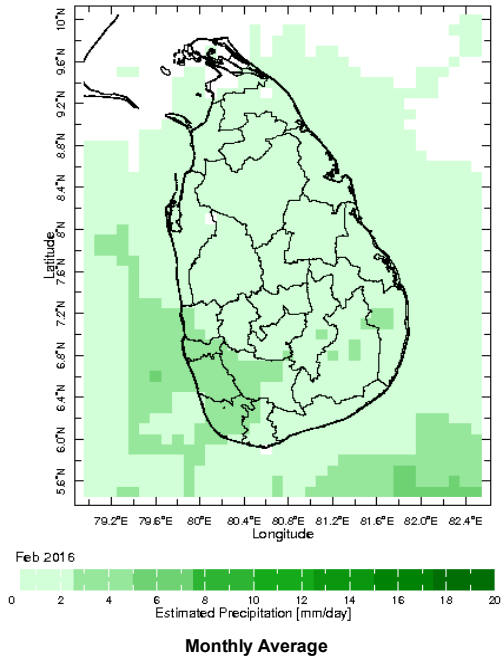
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



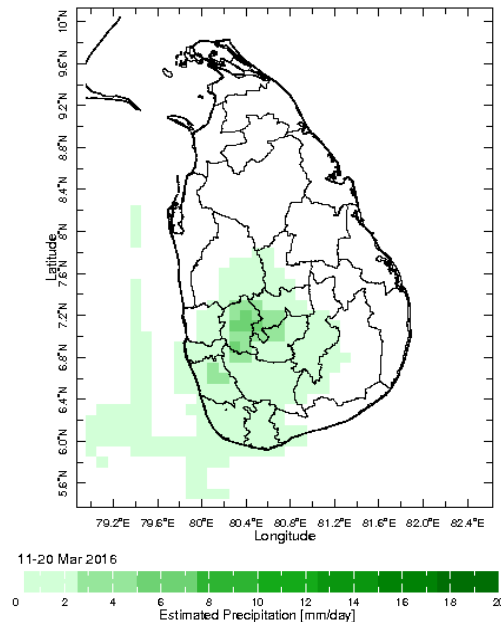
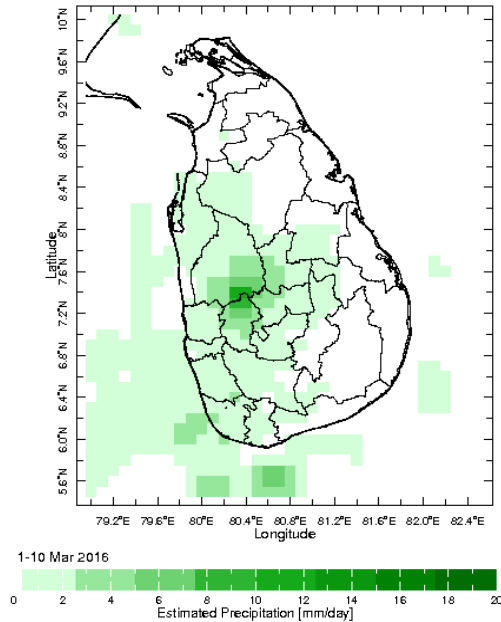


Monthly Rainfall Monitoring

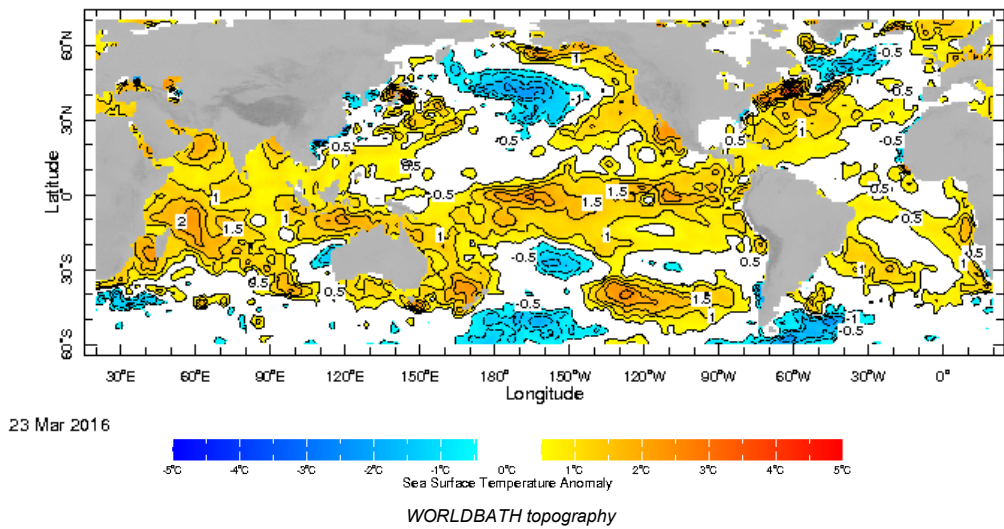
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



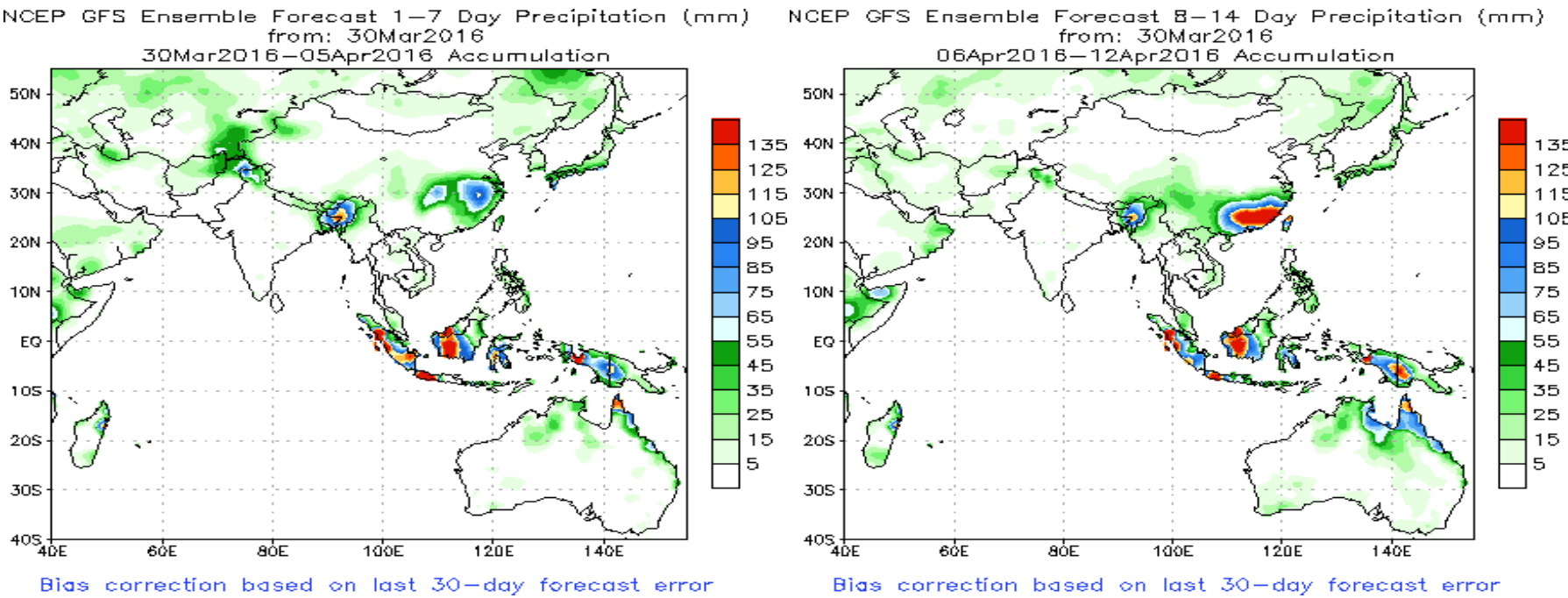
Dekadal (10 Day) Satellite Derived Rainfall Estimates



Weekly Average SST Anomalies

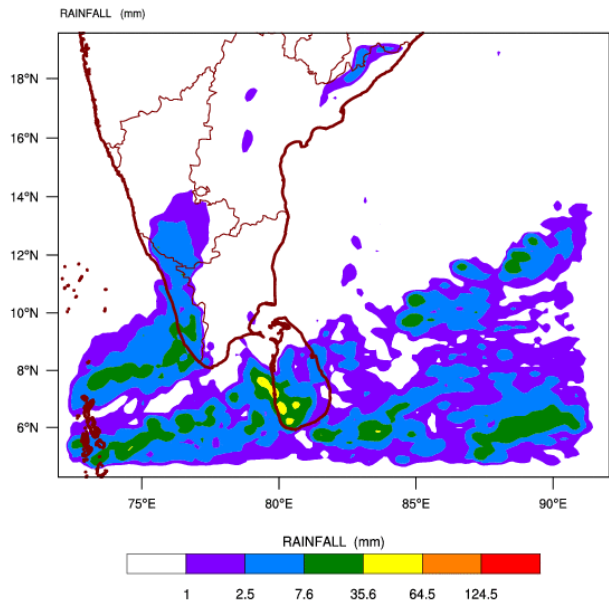


NCEP GFS 1- 14 Day prediction

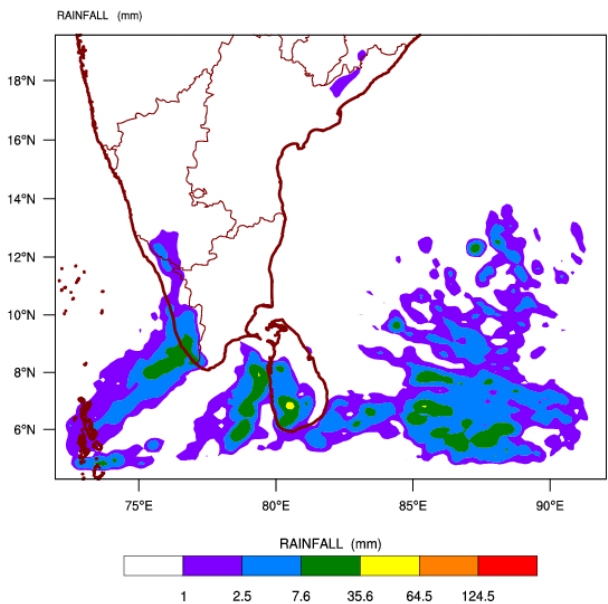


WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 30-03-2016 valid for 03 UTC of 01-04-2016



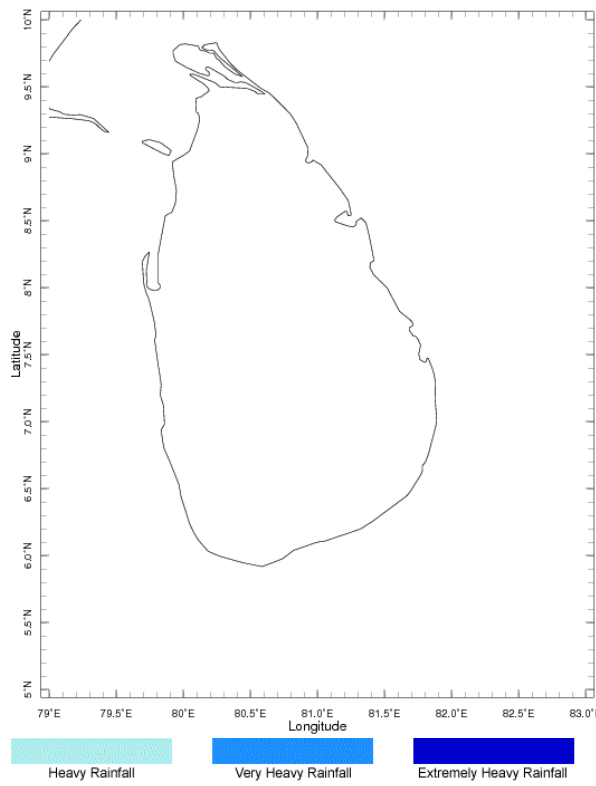
WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 30-03-2016 valid for 03 UTC of 02-04-2016



Weekly Rainfall Forecast

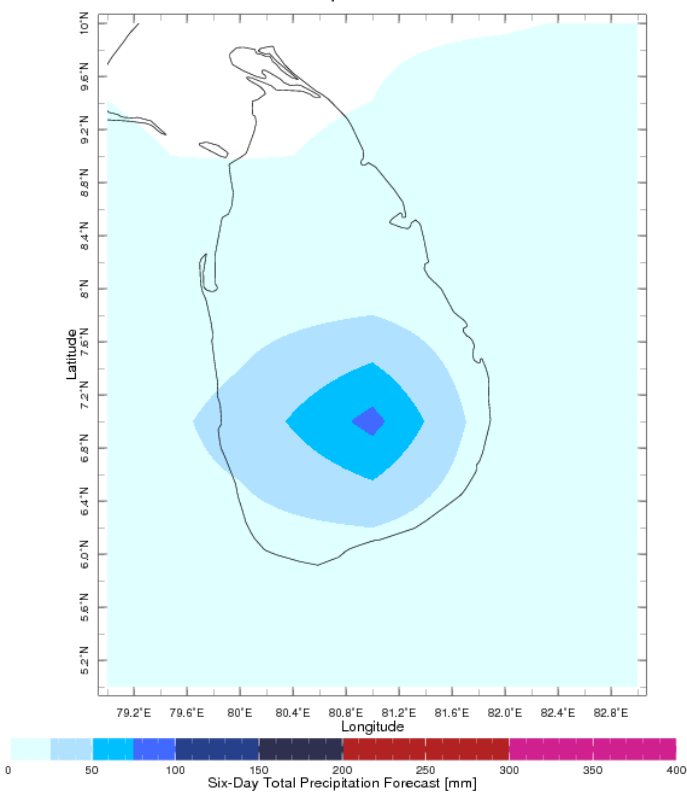
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 30 Mar 2016 - 4 Apr 2016 Issued 0000 30 Mar 2016



Extreme Rainfall Forecast

Forecast for 30 Mar 2016 - 4 Apr 2016 Issued 0000 30 Mar 2016

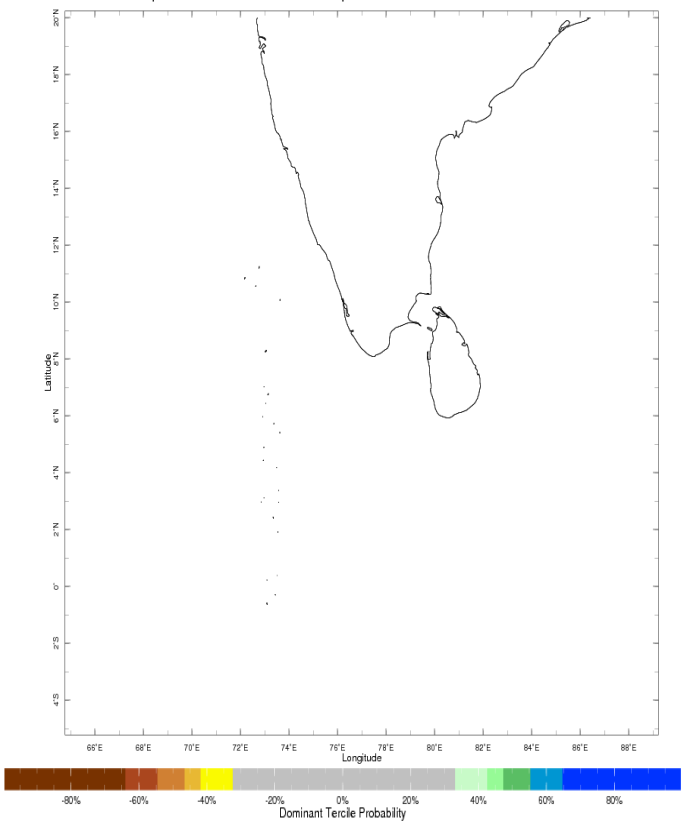


Total Six Day Precipitation Forecast

Seasonal Rainfall and Temperature Forecast

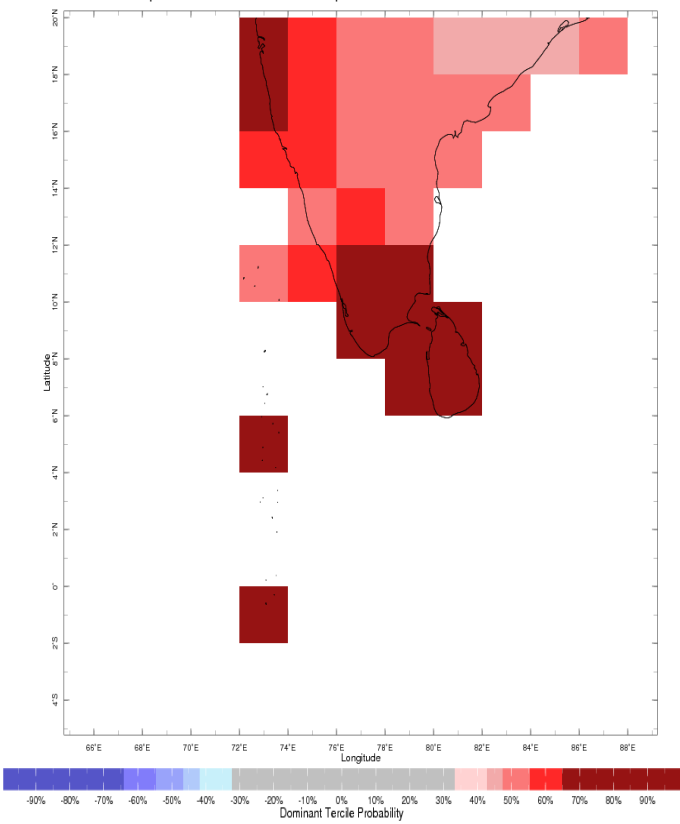
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant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

Apr-Jun 2016 IRI Seasonal Precipitation Forecast issued Mar 2016



Precipitation Forecast

Apr-Jun 2016 IRI Seasonal Temperature Forecast issued Mar 2016



Temperature Forecast

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