

## Experimental Climate Monitoring and Prediction

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07 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/>

### 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

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

### MJO STATE

MJO phase is in 3 therefore shall slightly enhance rainfall in Sri Lanka.

### Highlights

East, south, west, central and south west regions of the country received rainfall during 30<sup>th</sup> March-5<sup>th</sup> April. Highest rainfall of 90 mm was observed around Ratnapura and Balangoda on 30<sup>th</sup> March and 3<sup>rd</sup> April while central regions of Kegalle and Kurunegala and Haputale received rainfall up to 60 mm on these days. NOAA NCEP model predicts up to 25 mm total rainfall in south western regions of the country during 6<sup>th</sup> –12<sup>th</sup> April and around central, western and south western regions during 13<sup>th</sup>-19<sup>th</sup> April. MJO is in phase 3 and shall slightly enhance rainfall in Sri Lanka.

### Summary

#### Monitoring

**Weekly Monitoring:** Rainfall received in south west, central, east, south and west regions of the country during 30<sup>th</sup> Mar- 5<sup>th</sup> Apr. Ratnapura received up to 90 mm rainfall on 30<sup>th</sup> March while southern region of Kegalle, Nikaweratiya, Wariyapola and Kuruwita received up to 60 mm rainfall. Central regions of Kurunegala and Kegalle, Northern region of Ratnapura and south western region of Monaragala received rainfall up to 40 mm on the same day. Up to 30 mm rainfall was seen only in the south western sea on 31<sup>st</sup> March. Katugastota received rainfall up to 40 mm and Wattedegama, Matale area received up to 30 mm rainfall on 1<sup>st</sup> April. It did not rain in the entire country on 2<sup>nd</sup> April. Up to 90 mm rainfall was seen near Balangoda while the surrounding region received rainfall up to 70 mm on 3<sup>rd</sup> April. Buttala, Wellawaya and the surrounding region of Balangoda received rainfall up to 40 mm on the same day. Eastern and central regions of Ratnapura and south western region of Monaragala received rainfall up to 40 mm on 4<sup>th</sup> April while up to 30 mm rainfall observed in western sea close to Negombo on 5<sup>th</sup> April.

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

#### Predictions

**14 day prediction:** NOAA NCEP models predict up to 25 mm rainfall in each week, during 6<sup>th</sup> – 12<sup>th</sup> April and 13<sup>th</sup> – 19<sup>th</sup> April in the south western region of the country.

**IMD WRF & IRI Model Forecast:** According to the IMD WRF model, up to 60 mm rainfall is expected in Ratnapura, Galle and Colombo on 8<sup>th</sup> April while slight amount of rainfall is expected in the rest of the country except eastern and north eastern coastal regions. Kalutara, Galle, Puttalam and western coastal region can expect rainfall up to 60 mm on 9<sup>th</sup> April. IRI CFS models predict up to 75 mm total precipitation around Nuwara Eliya, Kandy, Badulla and up to 50 mm total precipitation in Monaragala, Kegalle, Rathnapura and western region of the country during 6<sup>th</sup>-11<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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- Weekly precipitation forecast (IRI)
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<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

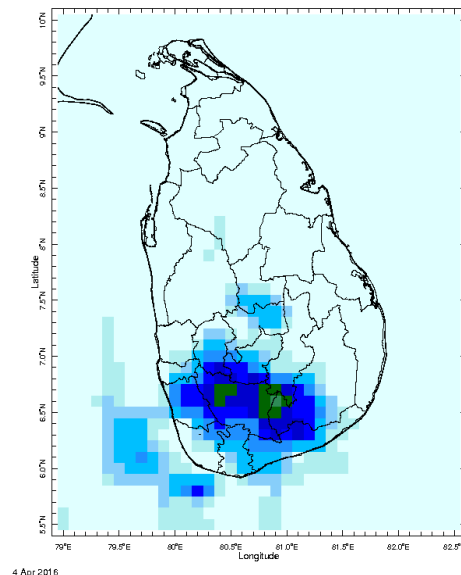
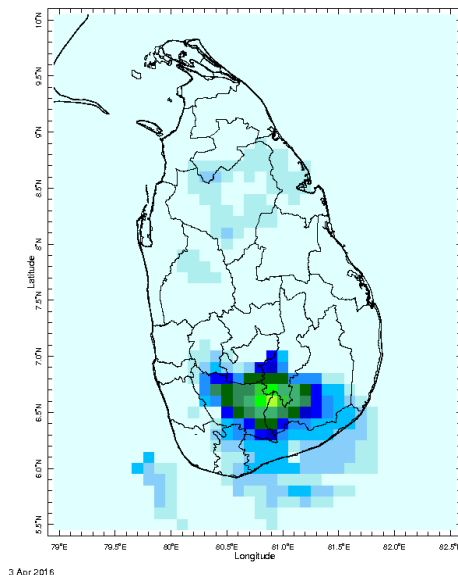
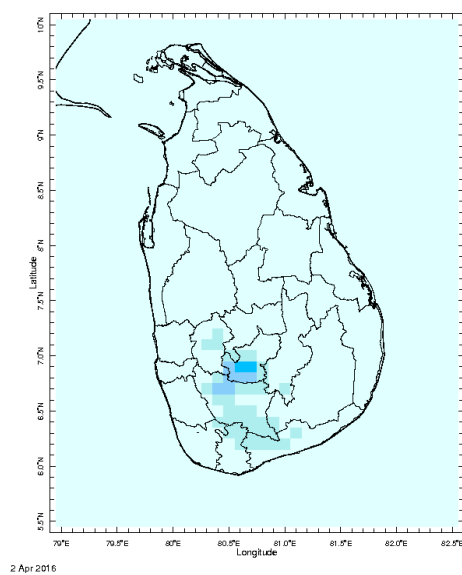
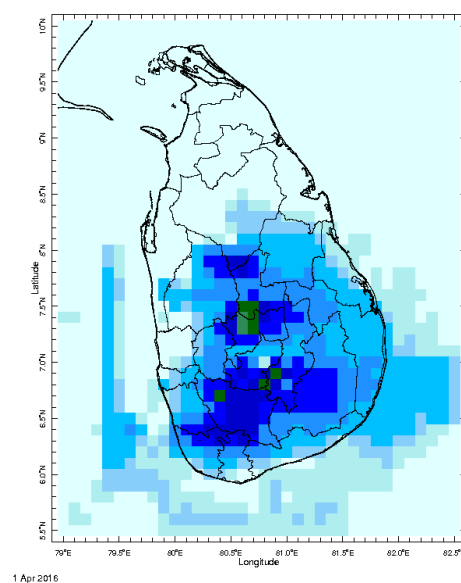
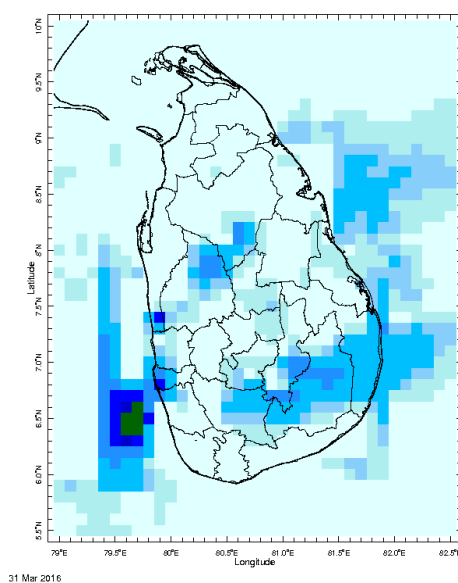
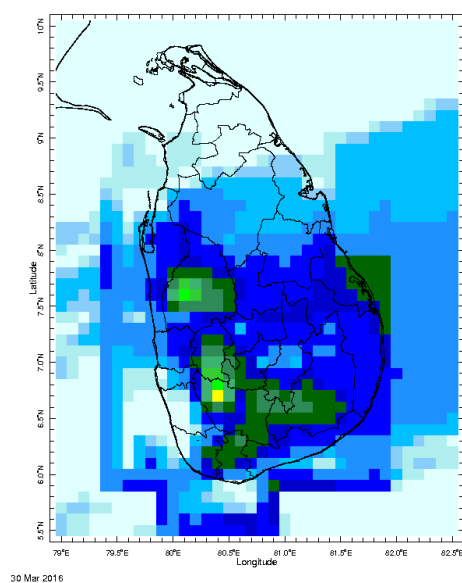
## Weekly Hydro- Meteorological Report for Sri Lanka

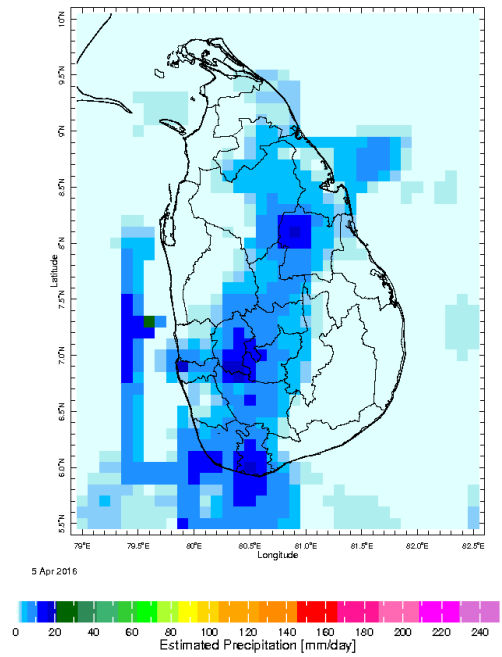
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### Daily Rainfall Monitoring

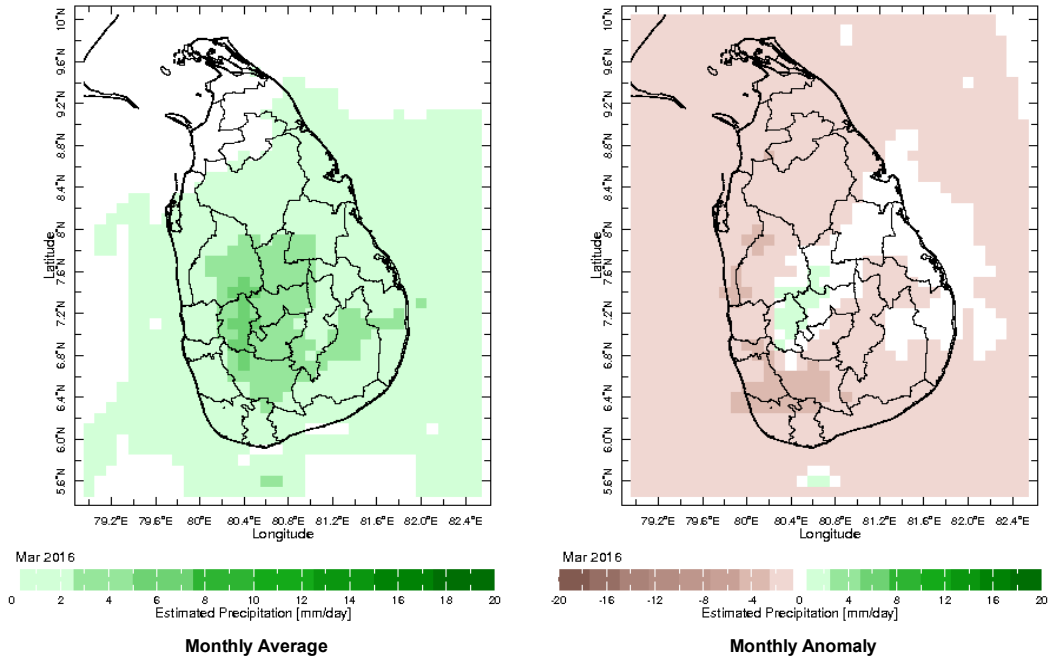
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



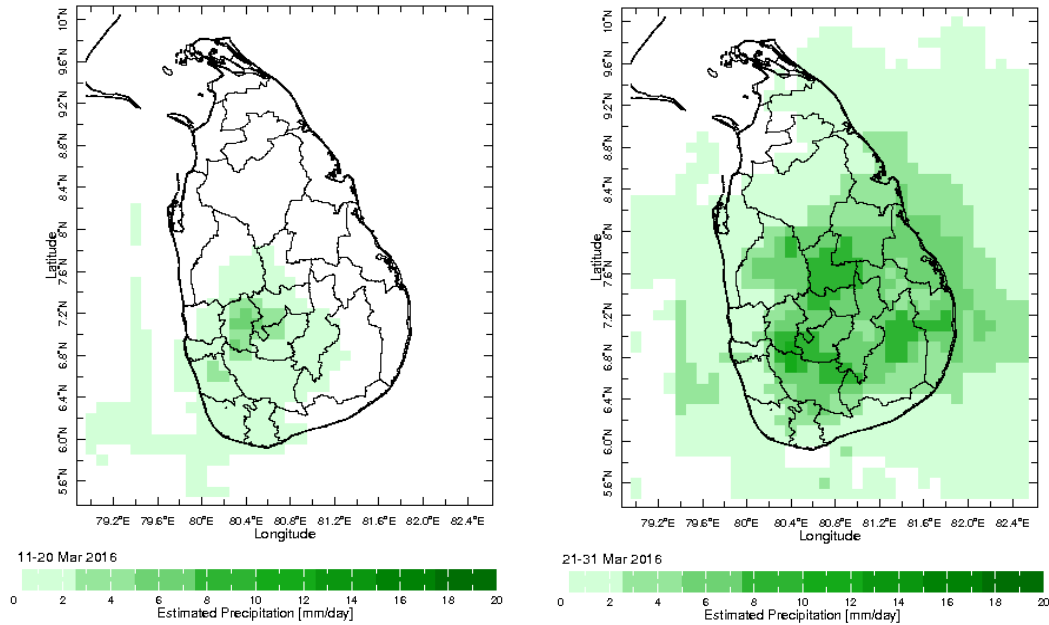


Monthly Rainfall Monitoring

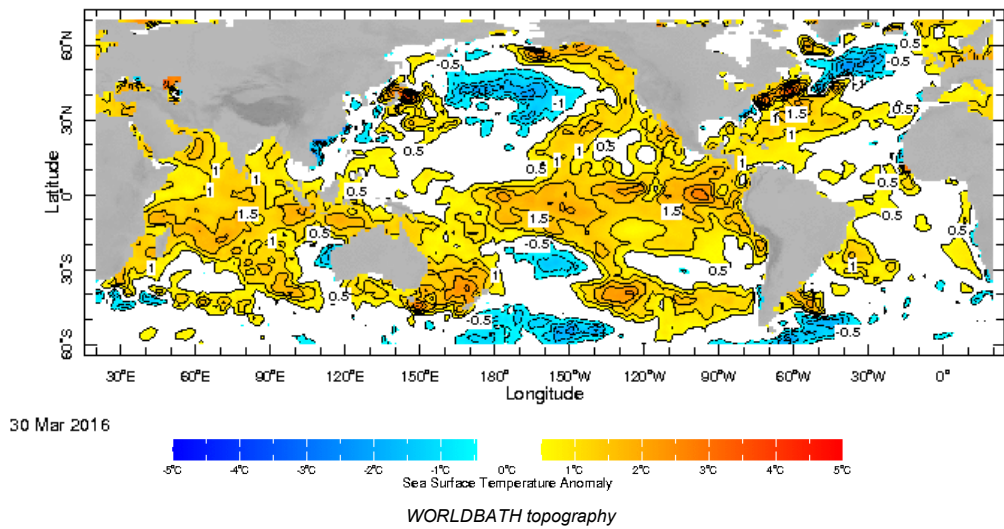
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



Dekadal (10 Day) Satellite Derived Rainfall Estimates

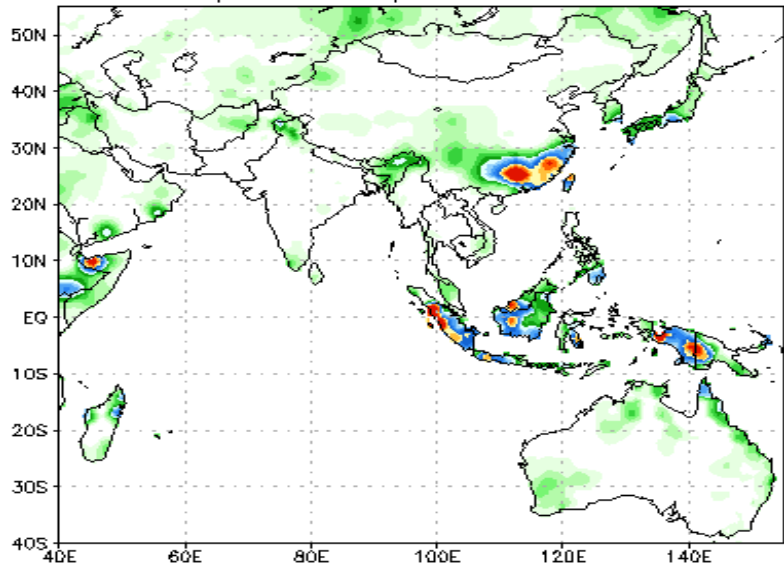


Weekly Average SST Anomalies



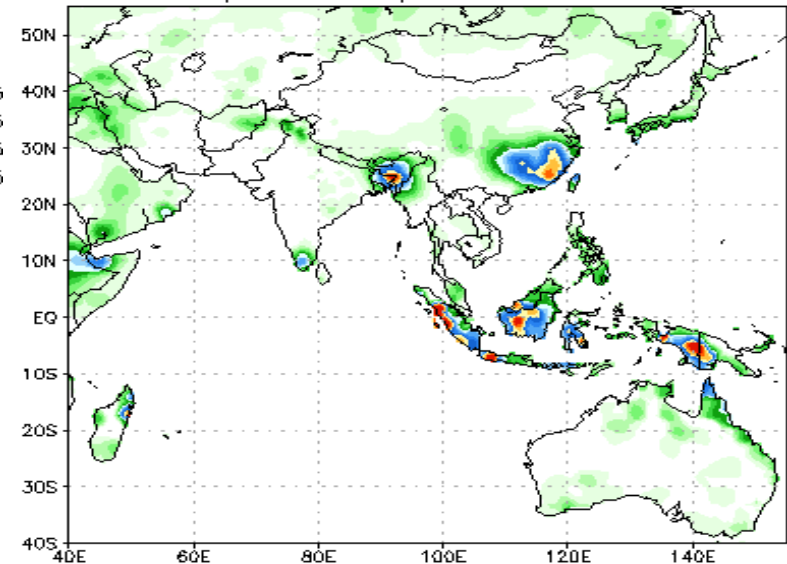
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)  
from: 06Apr2016  
06Apr2016–12Apr2016 Accumulation



Bias correction based on last 30–day forecast error

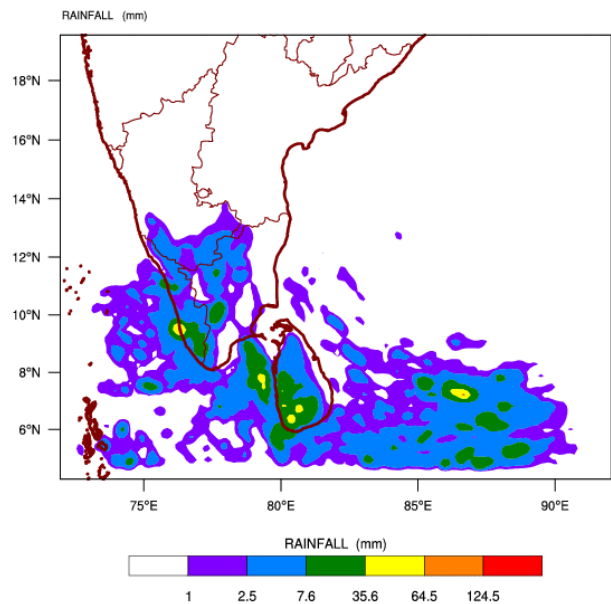
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)  
from: 06Apr2016  
13Apr2016–19Apr2016 Accumulation



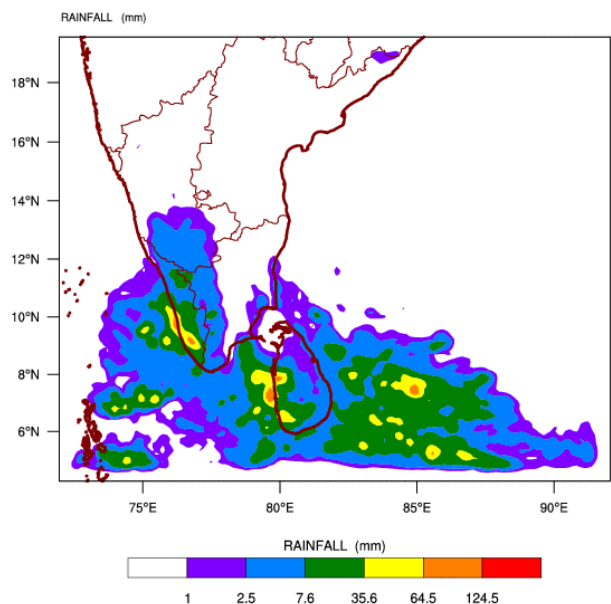
Bias correction based on last 30–day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 06-04-2016 valid for 03 UTC of 08-04-2016

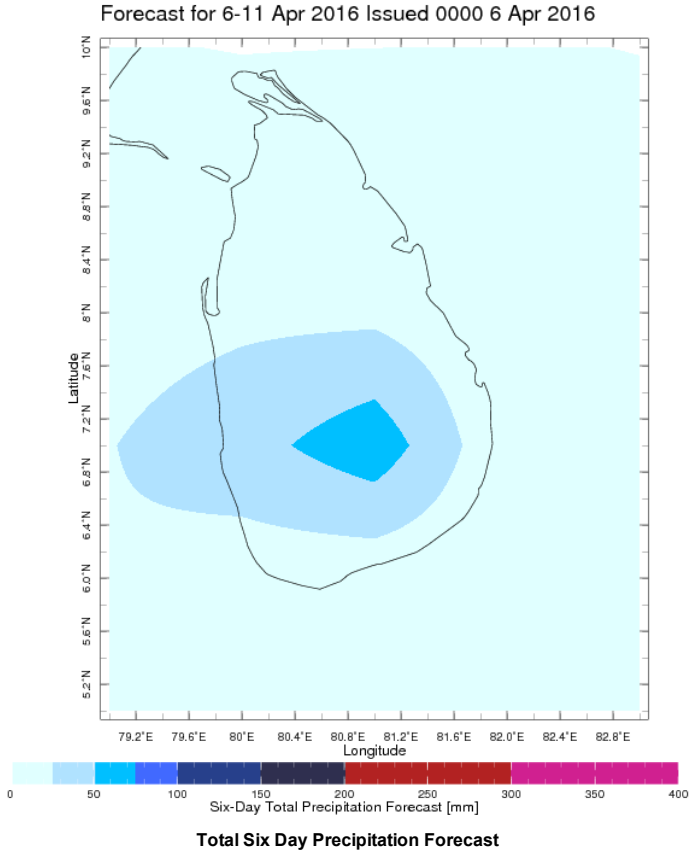
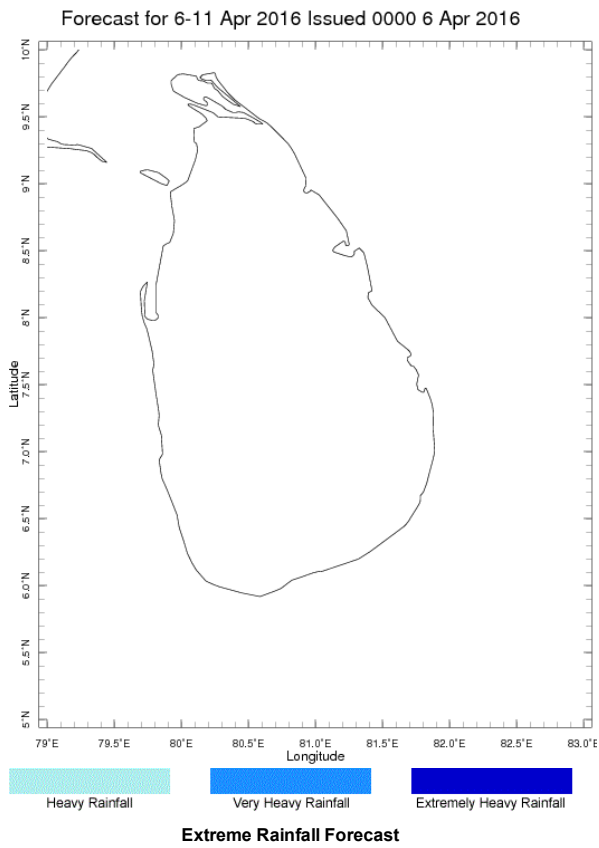


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 06-04-2016 valid for 03 UTC of 09-04-2016



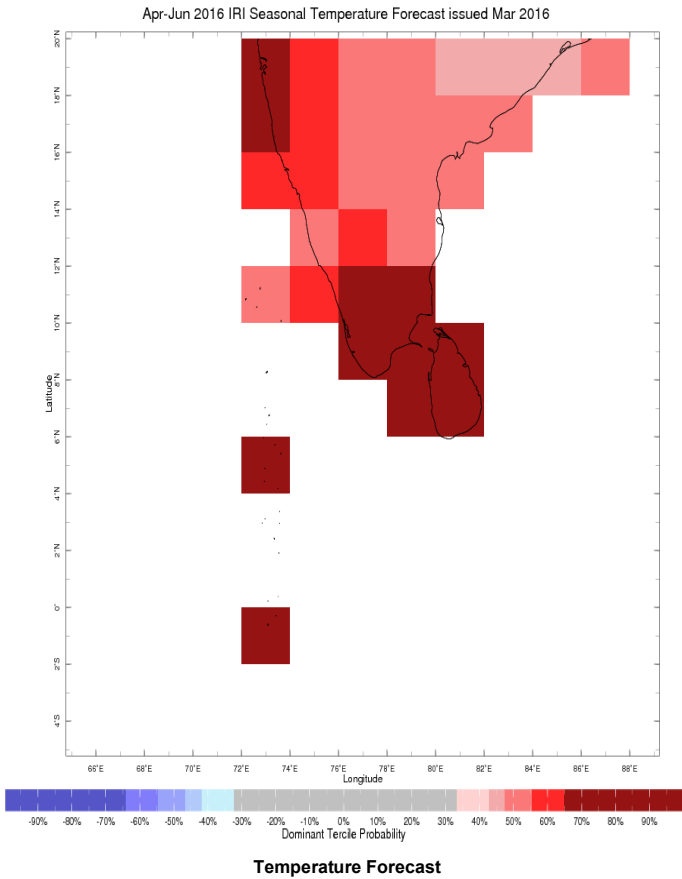
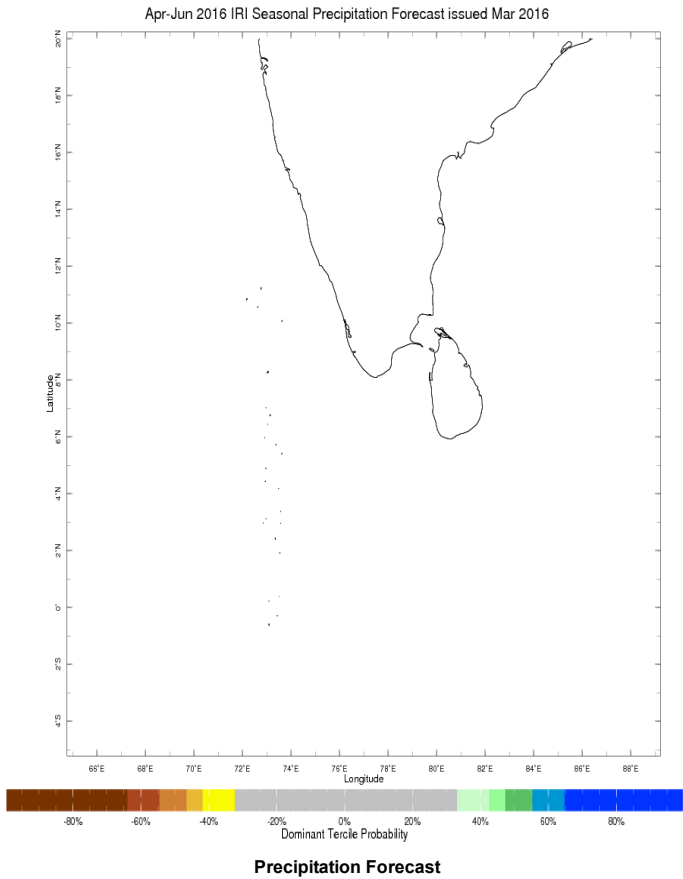
Weekly Rainfall Forecast

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.



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%).



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