

## Experimental Climate Monitoring and Prediction

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11 April 2014

### 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/>

### 10 April, 2014 PACIFIC SEAS STATE

During February through March the observed ENSO conditions varied from the borderline of weak La Niña to cool-neutral. However, many of the ENSO prediction models indicate a warming trend, with neutral ENSO during northern spring 2014 and a fairly likely development of weak El Niño conditions by the end of northern summer

(Text Courtesy IRI)

### INDIAN OCEAN STATE

The seas around Sri Lanka showed neutral sea surface temperature during 23<sup>rd</sup>-29<sup>th</sup> March 2014.

### MJO STATE

MJO is neutral.

### Highlights

#### Monitoring and Predictions:

Existing rainfall condition shall increase gradually till 15<sup>th</sup> and it shall decrease gradually thereafter for coastal regions of Sri Lanka. For the coming two days (12<sup>th</sup> & 13<sup>th</sup> April 2014), Ratnapura district shall receive less than 36 mm of rainfall. During 7<sup>th</sup>-12<sup>th</sup> April, Badulla district is likely to experience heavy rainfall.

### Summary

#### Monitoring

**Weekly Monitoring:** During 31<sup>st</sup> March-6<sup>th</sup> April 2014, Sri Lanka received rainfall ranged 5-70 mm. The maximum amount of rainfall observed for Anuradhapura district on 5<sup>th</sup> April 2014. End of the week received more rainfall compared to beginning of the week.

**Monthly Monitoring:** Southwest regions of Sri Lanka received more average rainfall compared to the rest of the regions during March 2014. However during February 2014, entire country experienced below normal rainfall and highest negative anomaly recorded at Ratnapura district.

#### Predictions

**14 day prediction:** During 8<sup>th</sup>-21<sup>st</sup> April 2014, Entire country shall receive less than 5 mm/day of rainfall.

**IMD WRF & IRI Model Forecast:** For 12<sup>th</sup> & 13<sup>th</sup> of April, IMD WRF model predicts less than 36 mm of rainfall for Ratnapura district & shall spread towards Northeast in a reducing manner. IRI model predicts less than 75 mm/6 days of rainfall for Badulla district and shall spread towards nearby districts in a reducing manner (7<sup>th</sup>-12<sup>th</sup> April 2014).

**30 Days Prediction: Overall-** Existing rainfall condition shall increase gradually till 15<sup>th</sup> and it shall decrease gradually thereafter. However, significant rainfall is not expected. **Western Slopes-** The rainfall is likely to decrease till 20<sup>th</sup> April. **Western Coast-** The rainfall pattern persisting in the entire country shall be observed in this region. **Eastern Slopes-** Existing rainfall shall increase gradually till 20<sup>th</sup>. **Eastern Coast-** The rainfall pattern persisting in the entire country shall be observed in this region. **Northern-** The rainfall pattern persisting in the entire country shall be observed in this region. **Southern Region-** The rainfall pattern persisting in the entire country shall be observed in this region. However, rainfall is not predicted during 15<sup>th</sup>-24<sup>th</sup>.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast issued on March 2014; for April 2014 to June 2014, there is a 40-45% probability for temperature to be above normal in the country while the rainfall is to be climatological.

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#### 2. Predictions

- NCEP GFS Ensemble 1-14 day predictions
- WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

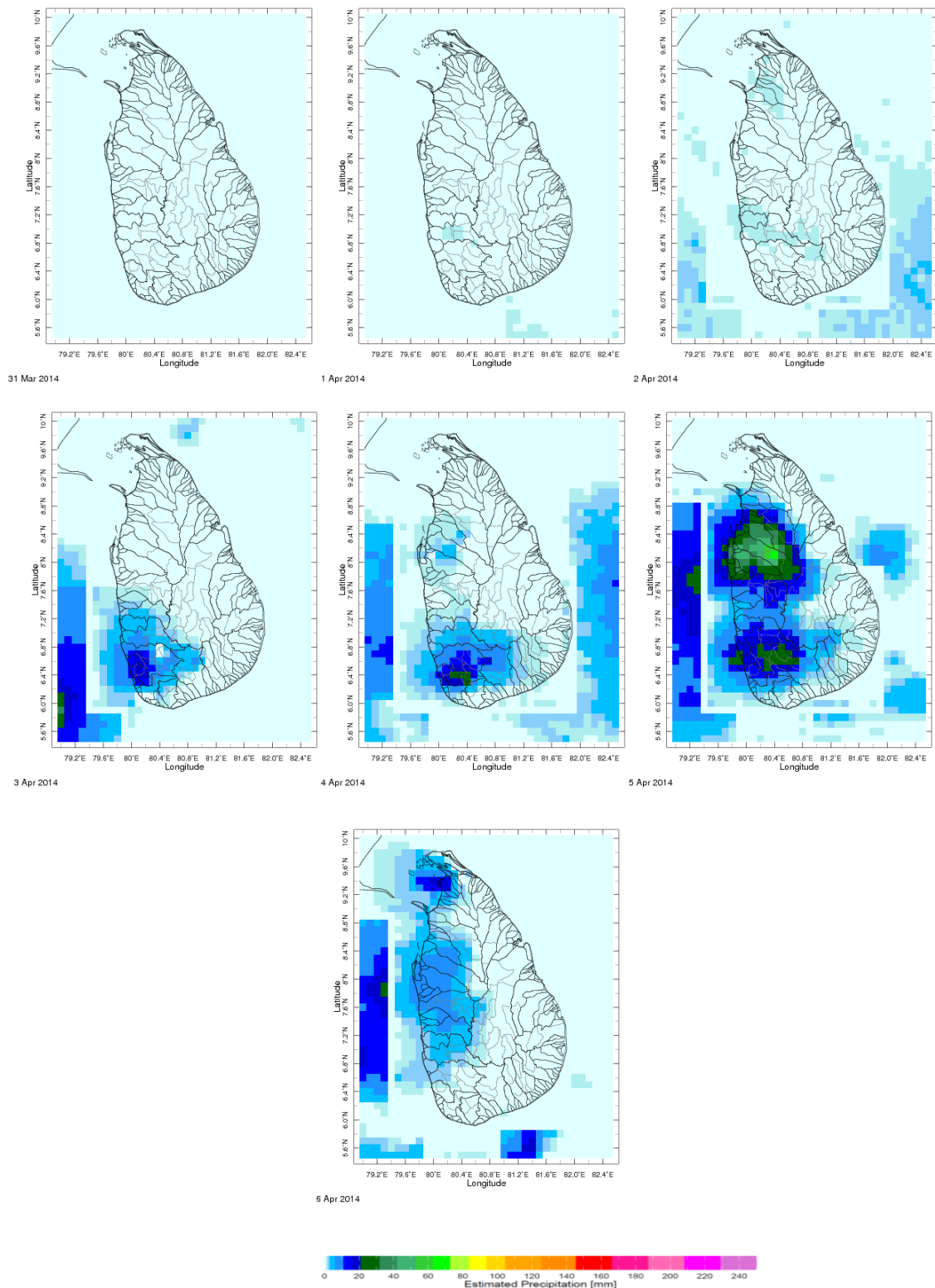
<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

<sup>2</sup> These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

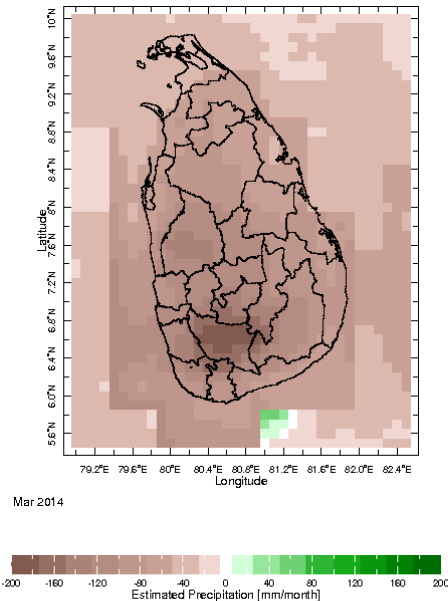
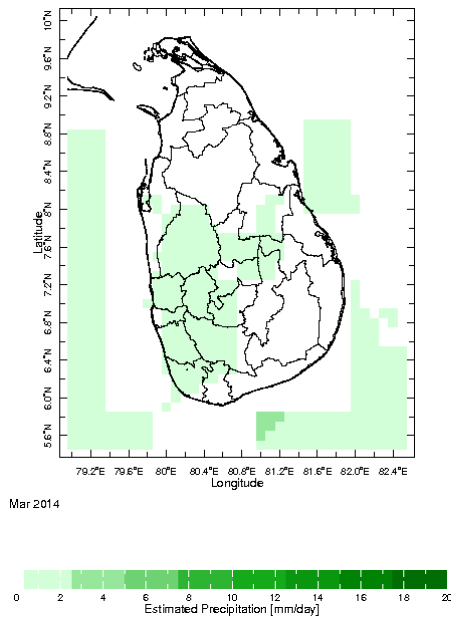
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

## 1. Monitoring

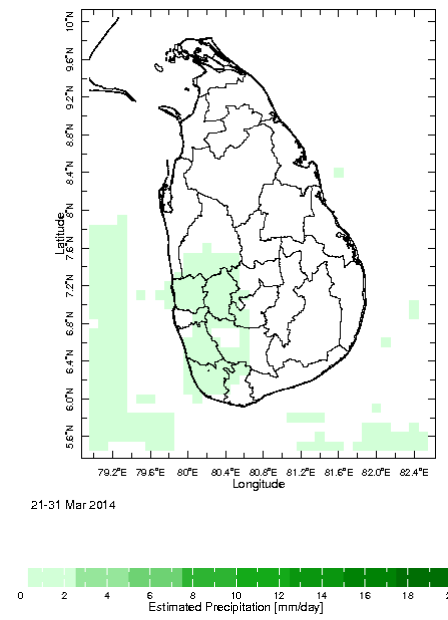
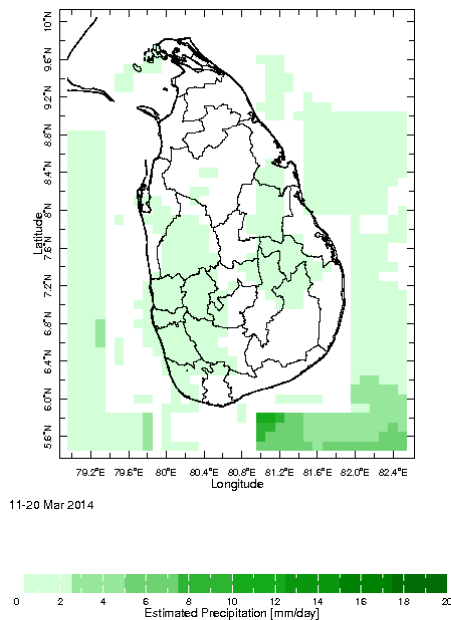
### a) Daily Satellite Derived Rainfall Estimate Maps: 31<sup>st</sup> March-6<sup>th</sup> April 2014 (Left-Right, Top-Bottom)



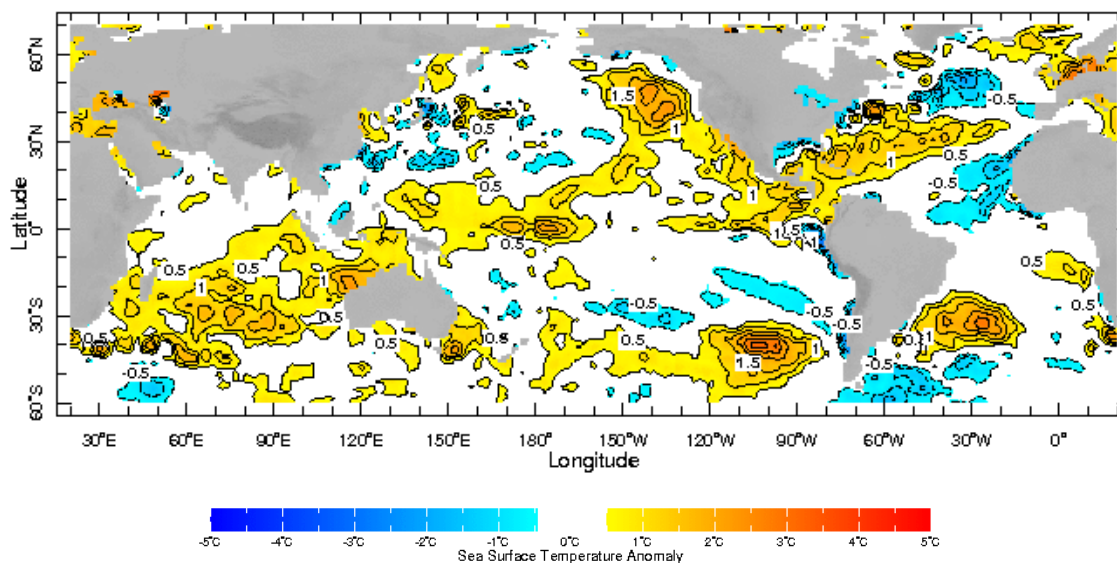
**b) Monthly Satellite Derived Rainfall Estimates for March 2014 (Average – Left and Anomaly - Right)**



**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 March & 21-31 March, 2014)**



**d) Weekly Average SST Anomalies**

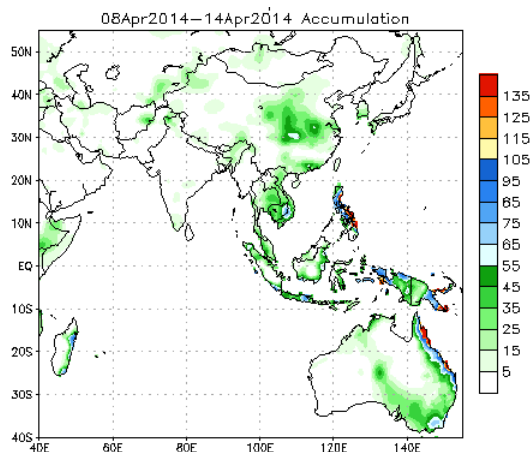


**Weekly Average SST Anomalies ( $^{\circ}\text{C}$ ), 23<sup>rd</sup>-29<sup>th</sup> March, 2014**

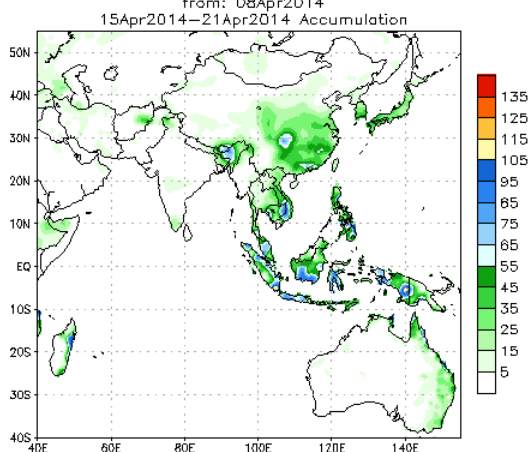
Data Source: NCEP Environmental monitoring center (Climatology 1971-2000)

## 2. Predictions

### a) NCEP GFS Ensemble 1-14 day predictions, NOAA, Climate Prediction Centre, USA.



NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)  
from: 08Apr2014

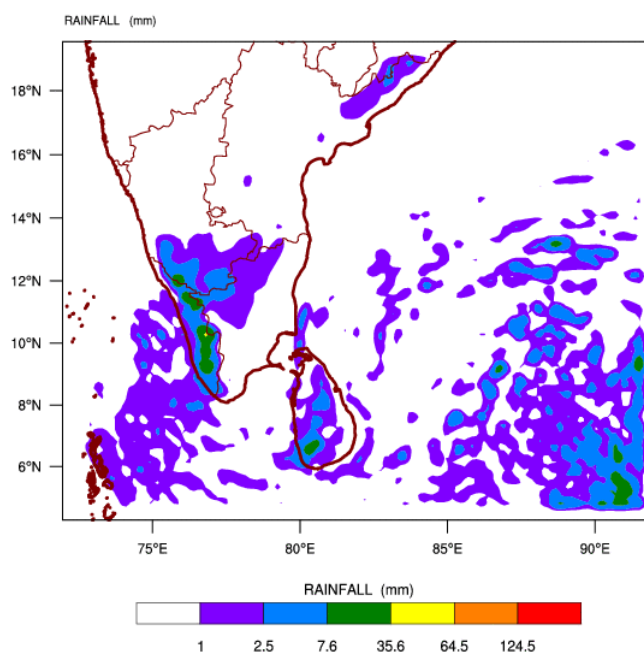


Bias correction based on last 30-day forecast error

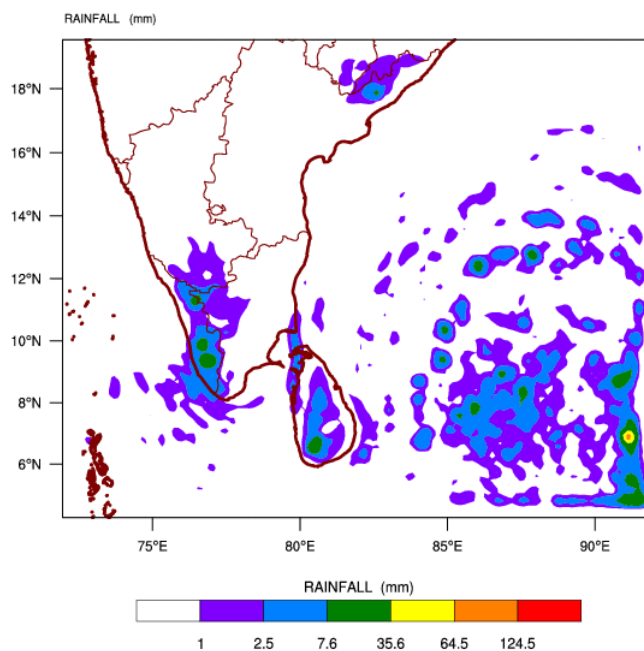
Source – NOAA Climate Prediction Center

**b) WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)**

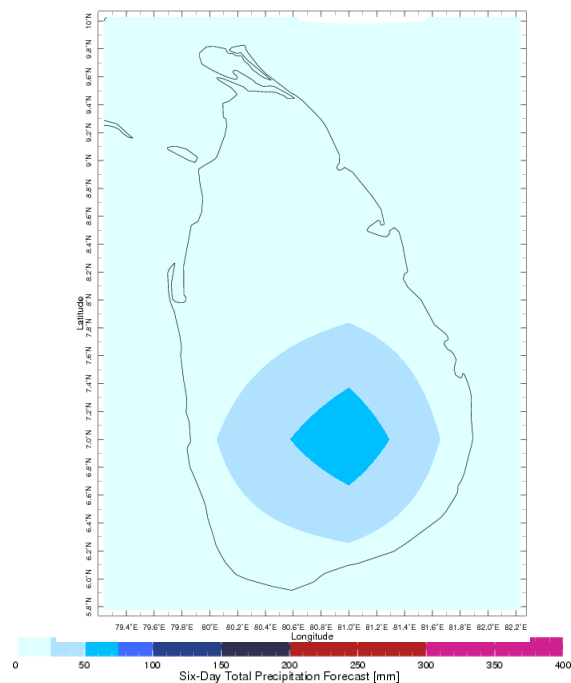
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 10-04-2014 valid for 03 UTC of 12-04-2014



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 10-04-2014 valid for 03 UTC of 13-04-2014

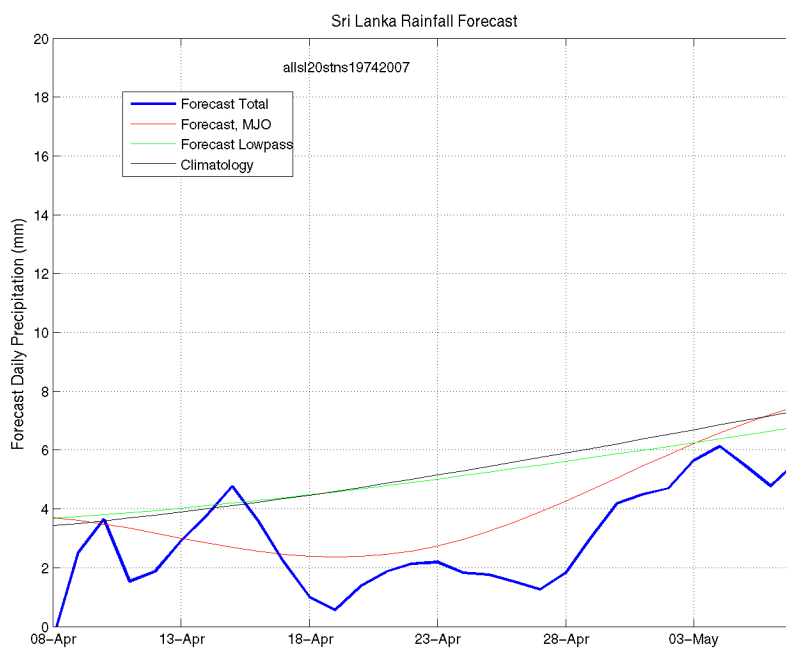


**c) Weekly Precipitation Forecast for 7<sup>th</sup>-12<sup>th</sup> April 2014 (Precipitation Forecast in Context Map Tool, IRI)**



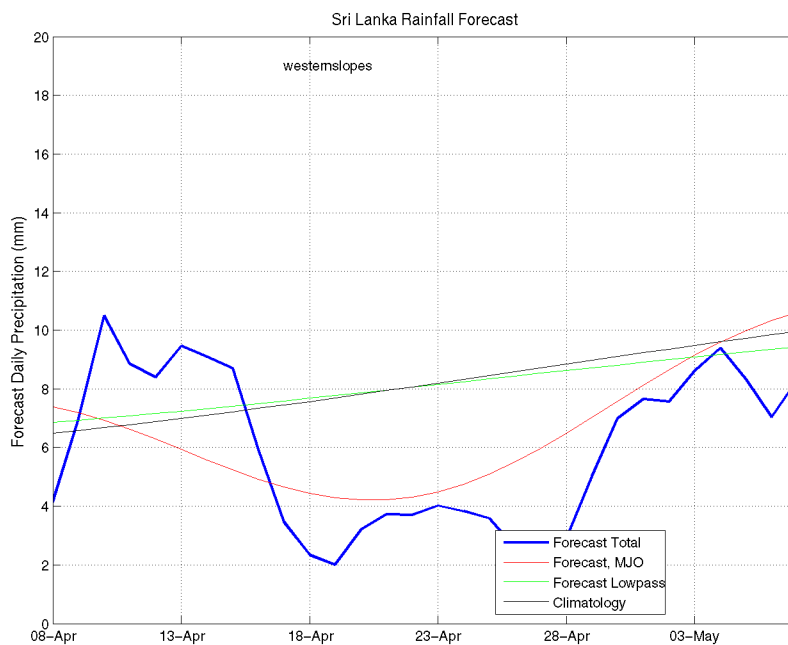
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 8<sup>th</sup> April, 2014

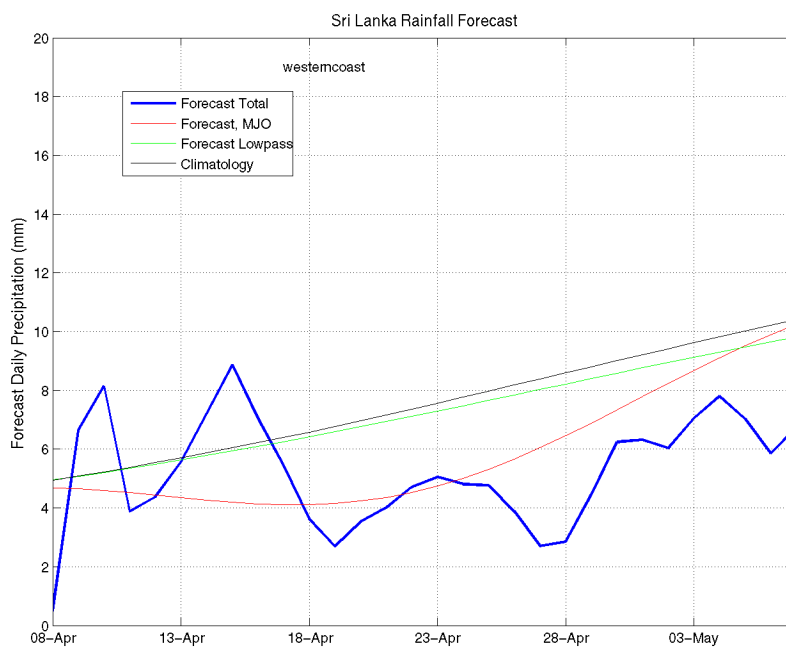


**All Sri Lanka (Rainfall Scale from 0-20 mm/day)**

## Western Slopes (Rainfall Scale from 0-20 mm/day)

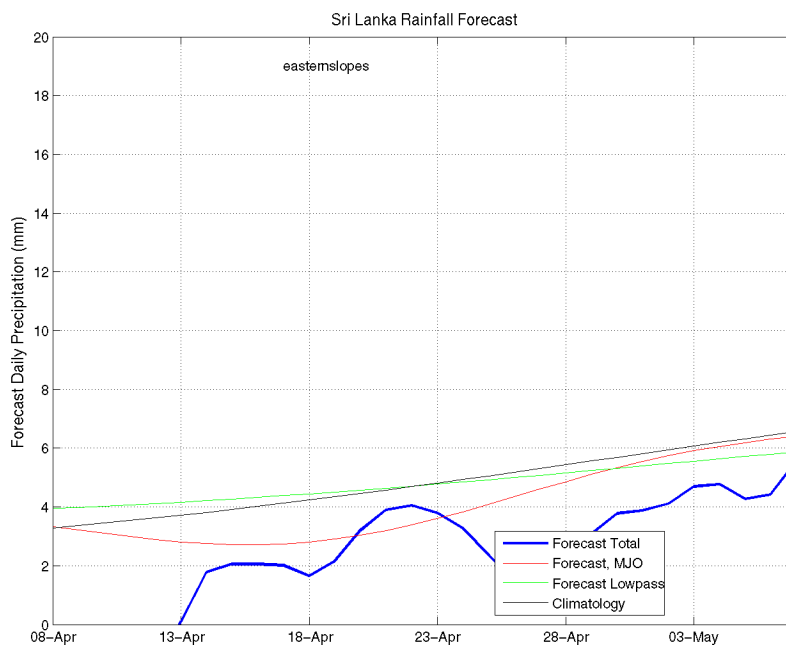


## Western Coast (Rainfall Scale from 0-20 mm/day)

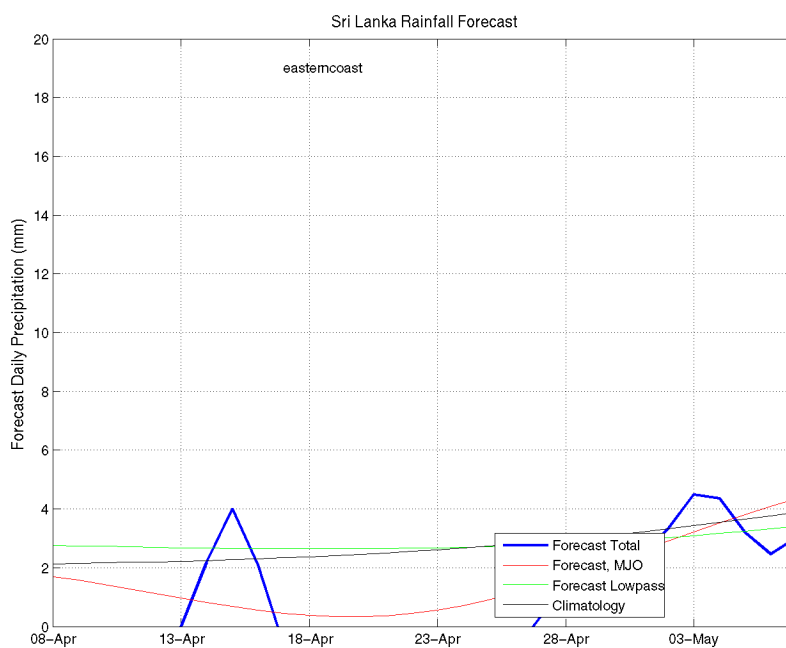




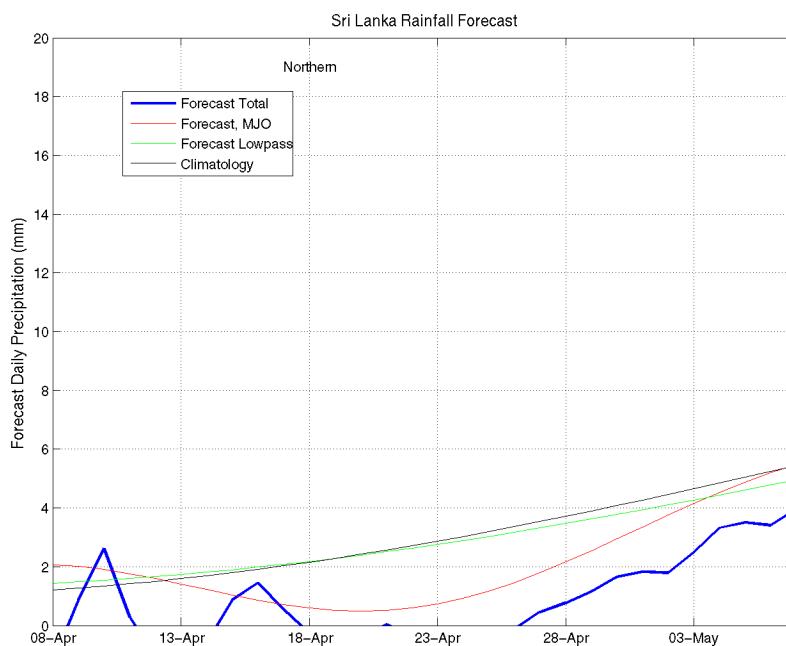
**Eastern Slopes (Rainfall Scale- from 0-20 mm/day)**



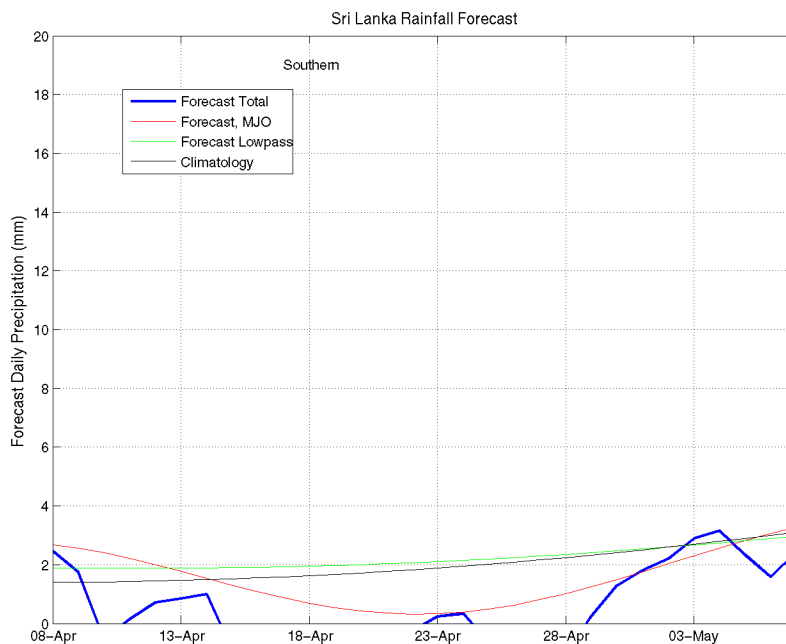
**Eastern Coast (Rainfall Scale- from 0-20 mm/day)**



**Northern Region (Rainfall Scale- from 0-20 mm/day)**

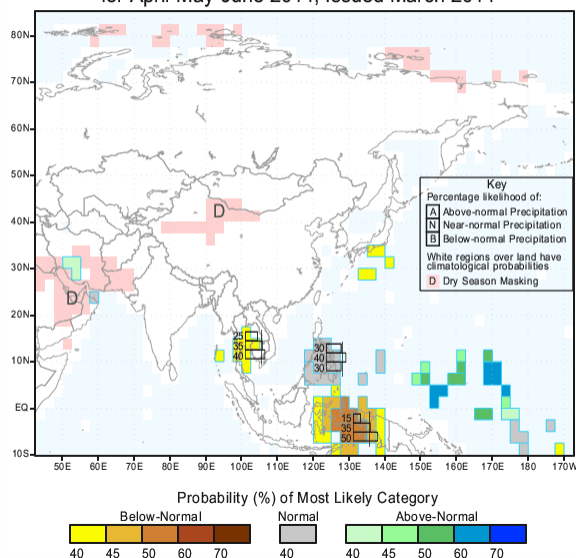


**Southern Region (Rainfall Scale- from 0-20 mm/day)**



## e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation  
for April-May-June 2014, Issued March 2014



IRI Multi-Model Probability Forecast for Temperature  
for April-May-June 2014, Issued March 2014

