

## Experimental Climate Monitoring and Prediction

by: Sewwandhi Chandrasekara, Prabodha Agalawatte, Zeenas Yahiya,  
Lareef Zubair and Michael Bell (FECT and IRI<sup>1</sup>)

7 May 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/>

### 17 April, 2014 PACIFIC SEAS STATE

During March through mid-April the observed ENSO conditions moved from cool-neutral to warm-neutral. All of the ENSO prediction models indicate a warming trend, with neutral ENSO during northern spring 2014 transitioning to El Niño conditions by the middle of northern summer.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

Eastern seas of Sri Lanka showed +0.5°C anomaly during 27<sup>th</sup> April-3<sup>rd</sup> May 2014.

### MJO STATE

MJO is neutral.

### Highlights

#### Monitoring and Predictions:

Existing rainfall condition shall increase till 11<sup>th</sup> May and for most of the regions significant rainfall events are likely to experience during 9<sup>th</sup>-13<sup>th</sup> May 2014. Thereafter rainfall shall decrease gradually. However, during 5<sup>th</sup>-10<sup>th</sup> May North, North-eastern and Southern districts shall receive heavy rainfall and Galle district is likely to expect significant heavy rainfall (150-200 mm/6 days)

### Summary

#### Monitoring

**Weekly Monitoring:** During 28<sup>th</sup> April-5<sup>th</sup> May 2014, Sri Lanka received rainfall ranged 5-50 mm. The maximum amount of rainfall observed for Anuradhapura district on 2<sup>nd</sup> May and on the same day entire country received rainfall.

**Monthly Monitoring:** The border regions of Kurunegala and Anuradhapura and, Vavuniya and Mannar districts received above normal rainfall during April 2014 and rest of the districts received below normal rainfall during April 2014.

#### Predictions

**14 day prediction:** During 6<sup>th</sup>-12<sup>th</sup> May 2014, rainfall shall vary between 5-65 mm/day and amount of rainfall shall increase towards southwestern regions of Sri Lanka. During 13<sup>th</sup>-19<sup>th</sup> May 2014, entire country shall receive less than 55 mm/day of rainfall and shall spread from central hills to surrounding districts in a reducing manner.

**IMD WRF & IRI Model Forecast:** For 8<sup>th</sup> & 9<sup>th</sup> of May, IMD WRF model predicts less than 1 mm/day of rainfall central hills and nearby districts and shall increase towards coastal regions of Sri Lanka. For the same days North, North-eastern and Southern districts shall receive less than 36 mm/day of rainfall. IRI model predicts 150-200 mm/6 days of rainfall for Galle district and amount of rainfall shall decrease towards north-east direction (5<sup>th</sup>-10<sup>th</sup> May 2014).

**30 Days Prediction: Overall-** Existing rainfall condition shall increase till 11<sup>th</sup> May and significant rainfall event is likely to experience during 10<sup>th</sup>-12<sup>th</sup> May 2014. Thereafter rainfall shall decrease gradually during prediction period (7<sup>th</sup>-14<sup>th</sup> May 2014). **Western Slopes-** The rainfall pattern persisting in the entire country shall observe in this region with high amount of rainfall. **Western Coast-** The rainfall pattern persisting in the entire country shall observe in this region. But significant rainfall event is expected during 9<sup>th</sup>-11<sup>th</sup> May 2014. **Eastern Slope-** The rainfall pattern persisting in the western coast region shall observe in this region. **Eastern Coast-** Existing rainfall shall increase gradually till 10<sup>th</sup> May and remain more or less constant during the prediction period. **Northern-** The rainfall pattern persisting in the entire country shall observe in this region. **Southern Region-** The rainfall pattern persisting in the entire country shall observe in this region, but significant rainfall event is likely to observe during 11<sup>th</sup>-13<sup>th</sup> May 2014.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast issued on April 2014; for May 2014 to July 2014, there is a 45-55% probability for temperature to be above normal in the country while the rainfall is to be climatological.

### Inside this Issue

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- Monthly Rain fall Estimates
- Decadal (10 Day) Satellite Derived Rainfall Estimates
- Weekly Average SST Anomalies

#### 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

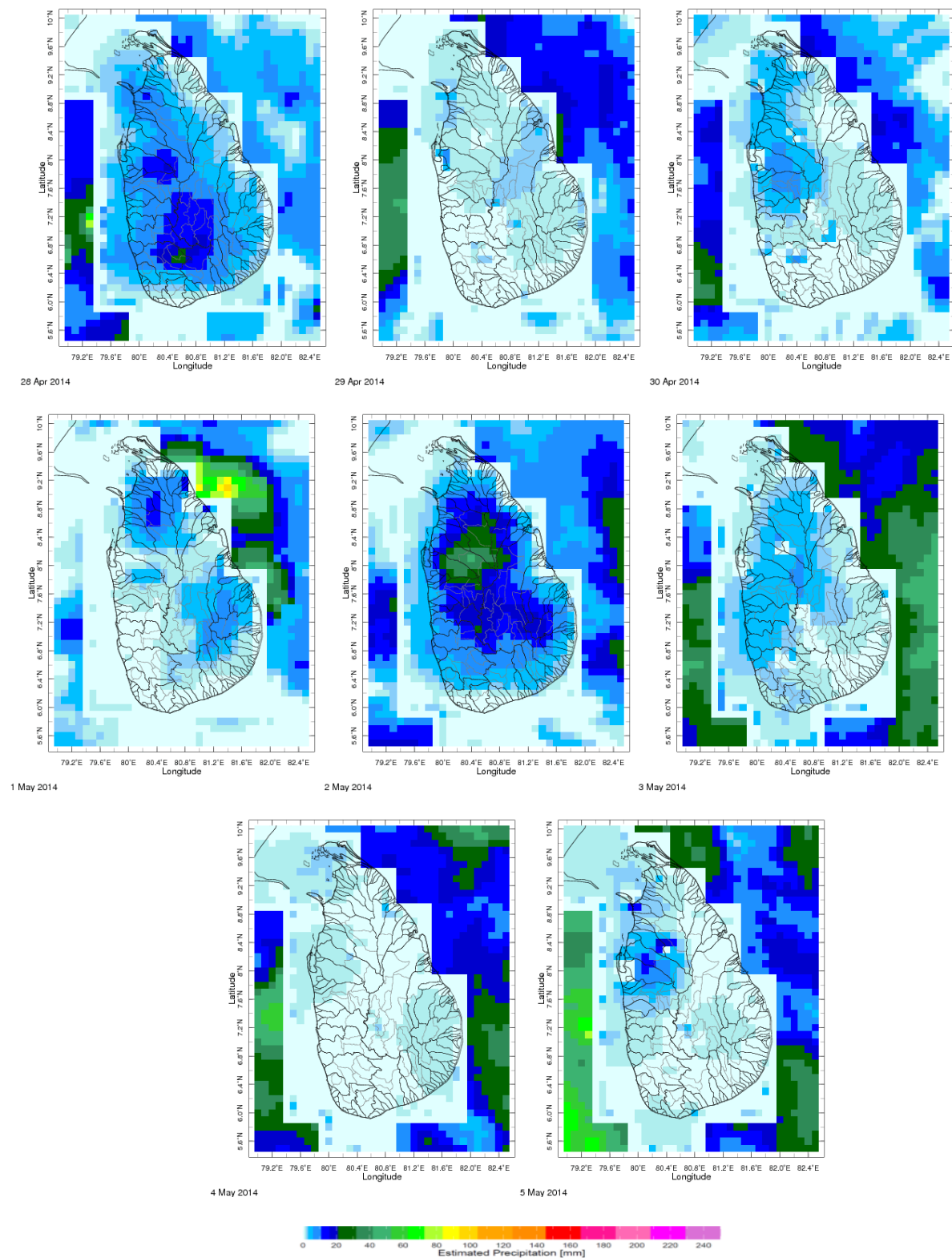
<sup>1</sup> International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

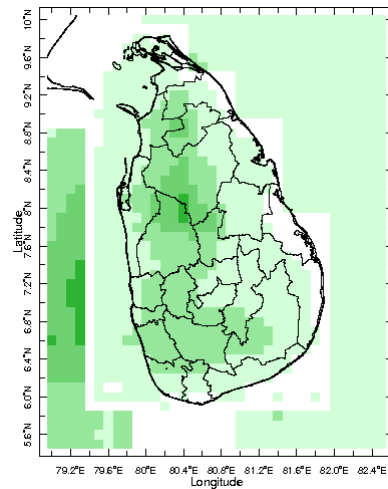
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

## 1. Monitoring

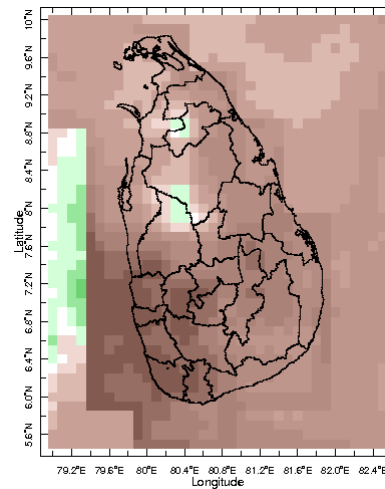
### a) Daily Satellite Derived Rainfall Estimate Maps: 28<sup>th</sup> April-5<sup>th</sup> May 2014 (Left-Right, Top-Bottom)



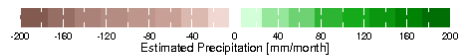
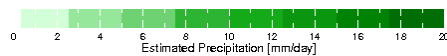
**b) Monthly Satellite Derived Rainfall Estimates for April 2014 (Average – Left and Anomaly - Right)**



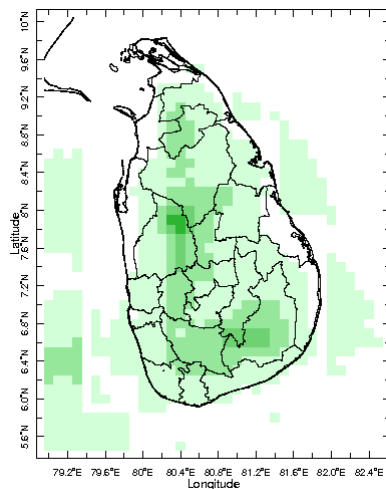
Apr 2014



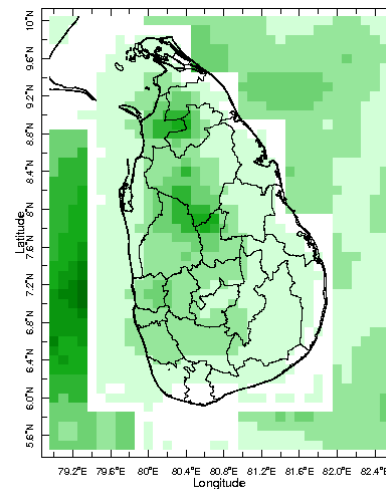
Apr 2014



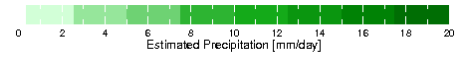
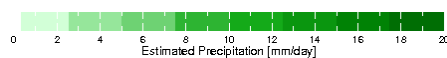
**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 April & 21-30 April, 2014)**



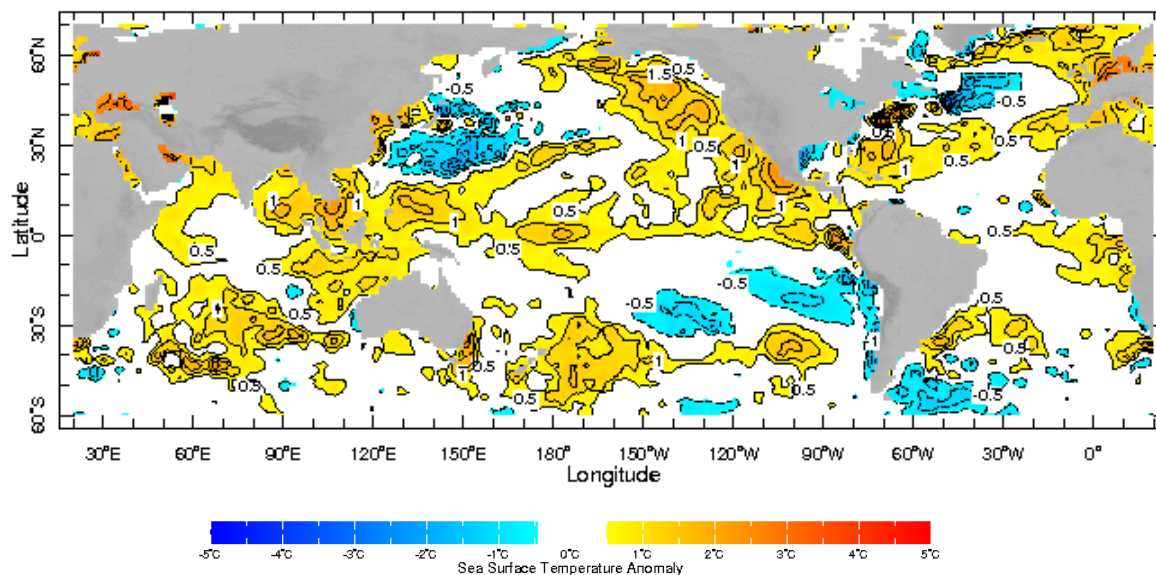
11-20 Apr 2014



21-30 Apr 2014



**d) Weekly Average SST Anomalies**



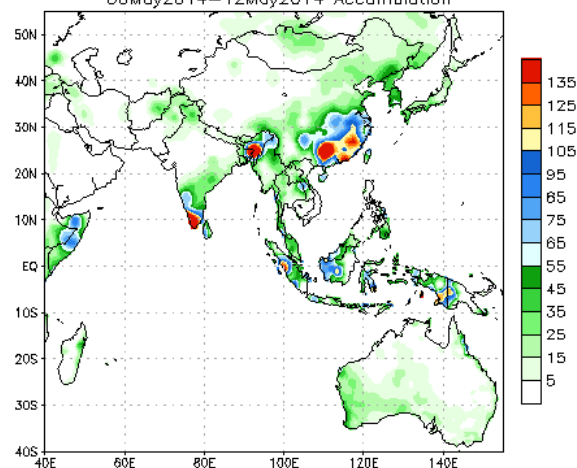
**Weekly Average SST Anomalies ( $^{\circ}\text{C}$ ), 27<sup>th</sup> April-3<sup>rd</sup> May, 2014**

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

## 2. Predictions

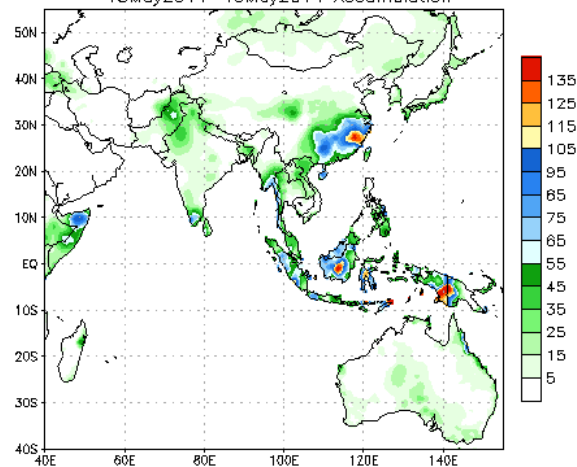
### a) NCEP GFS Ensemble 1-14 day predictions, NOAA, Climate Prediction Centre, USA.

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)  
from: 06May2014  
06May2014-12May2014 Accumulation



Bias correction based on last 30-day forecast error

NCEP GFS Ensemble Forecast 8-14 Day Precipitation (mm)  
from: 06May2014  
13May2014-19May2014 Accumulation

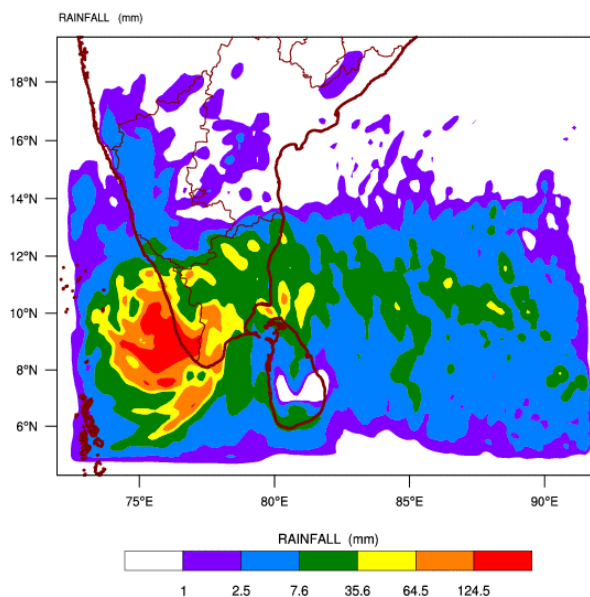


Bias correction based on last 30-day forecast error

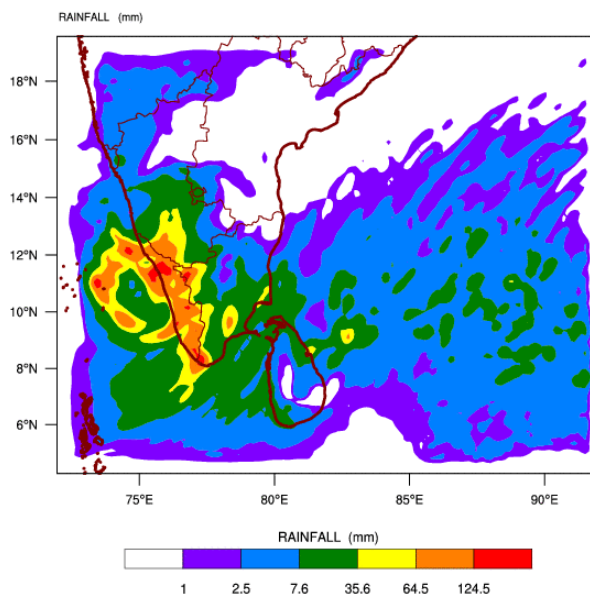
Source – NOAA Climate Prediction Center

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

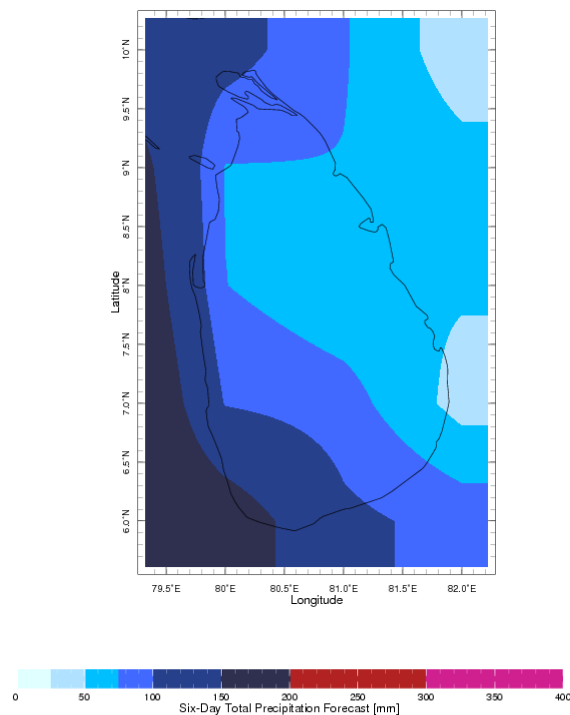
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 06-05-2014 valid for 03 UTC of 08-05-2014



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 06-05-2014 valid for 03 UTC of 09-05-2014

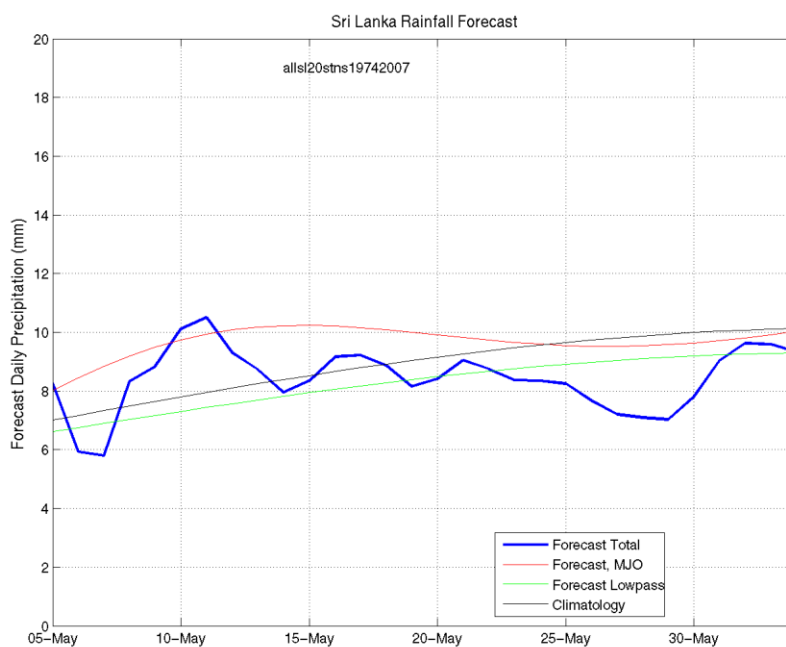


**c) Weekly Precipitation Forecast for 5<sup>th</sup>-10<sup>th</sup> May 2014 (Precipitation Forecast in Context Map Tool, IRI)**



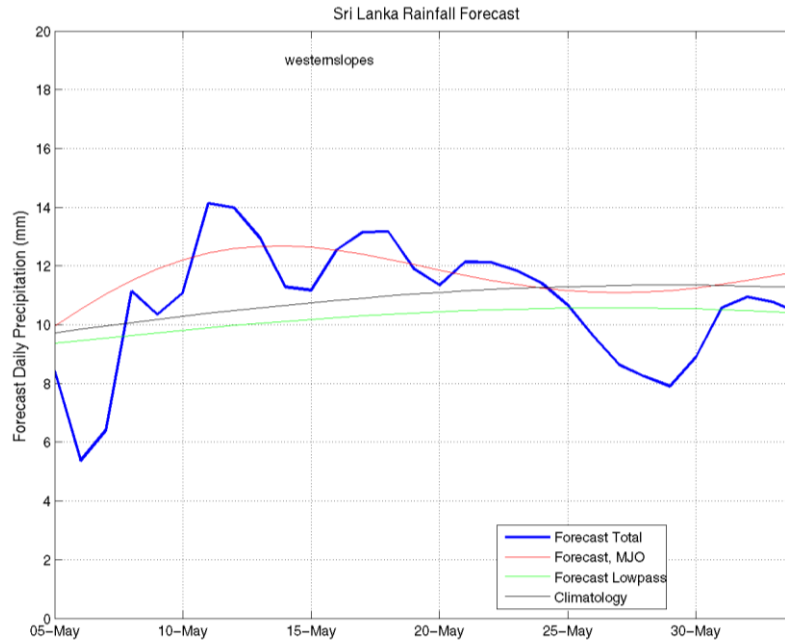
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 6<sup>th</sup> May, 2014

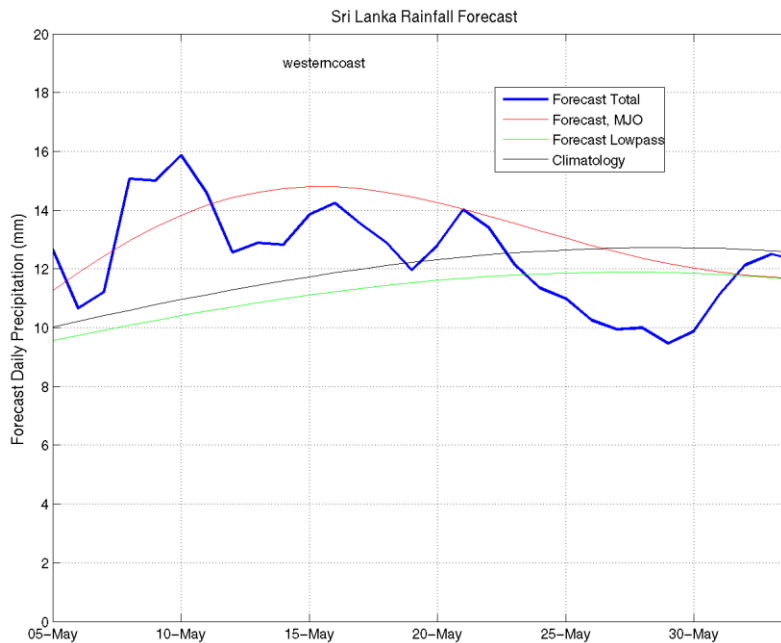


**All Sri Lanka (Rainfall Scale from 0-20 mm/day)**

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

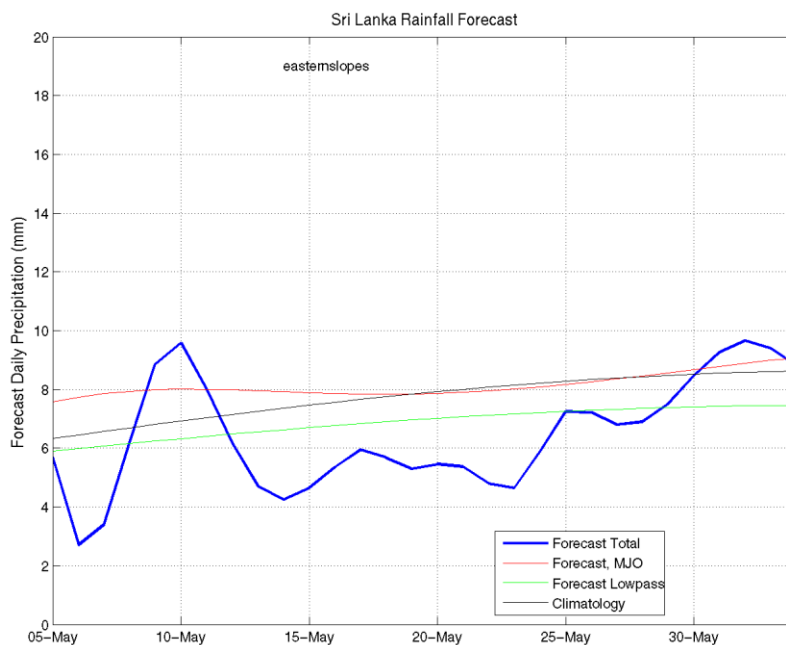


## Western Coast (Rainfall Scale from 0-20 mm/day)

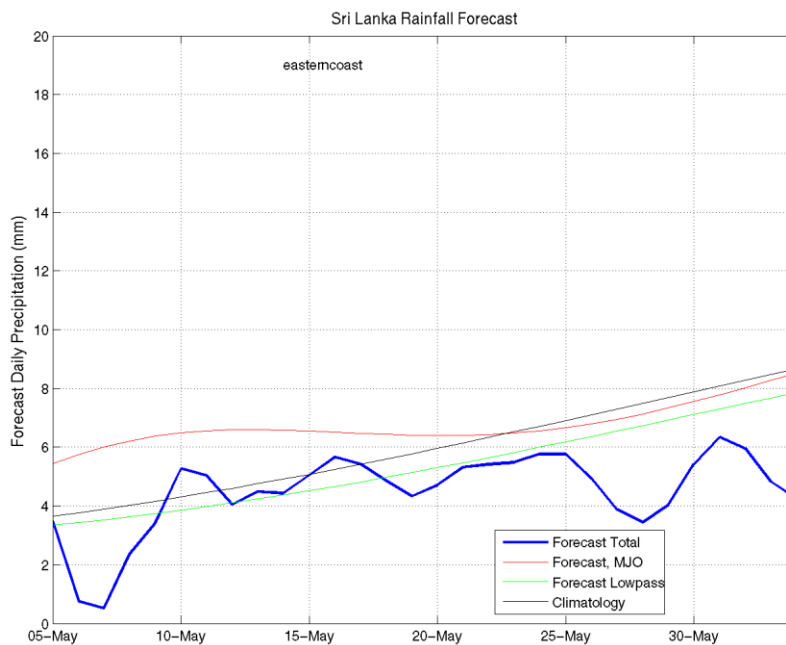




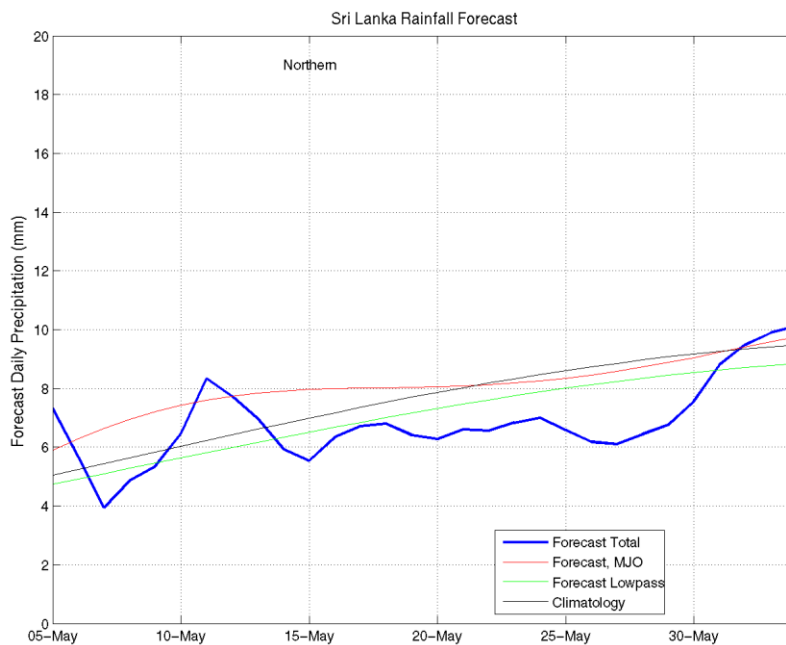
**Eastern Slopes (Rainfall Scale- from 0-20 mm/day)**



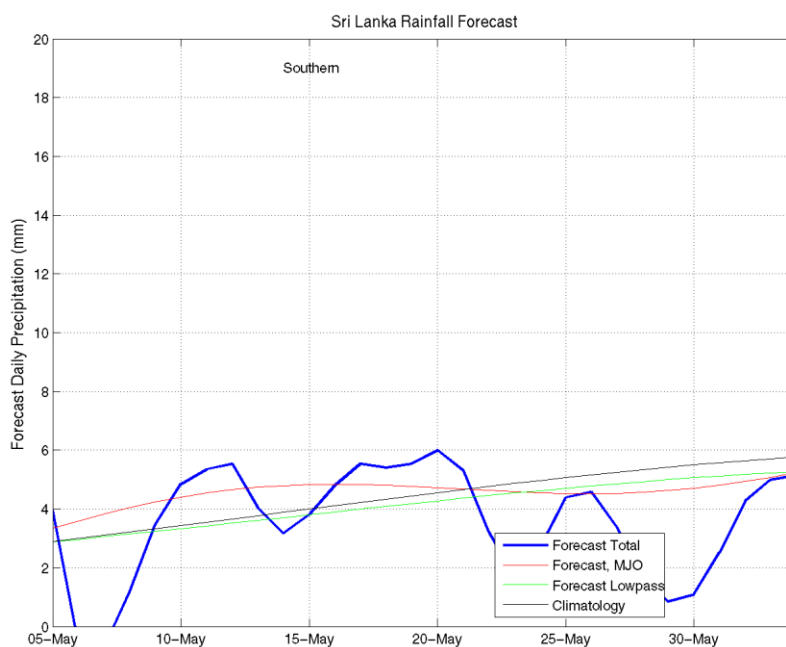
**Eastern Coast (Rainfall Scale- from 0-20 mm/day)**



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

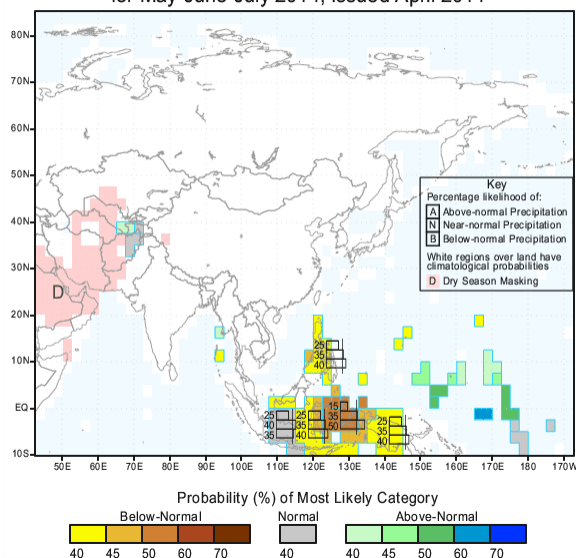


## Southern Region (Rainfall Scale- from 0-20 mm/day)



## e) Seasonal Rainfall and Temperature Predictions from IRI

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



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

