

## Experimental Climate Monitoring and Prediction

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13 June 2013

### 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/>

### June 6, 2013 PACIFIC SEAS STATE

During April through May the observed ENSO conditions remained neutral. Most of the ENSO prediction models indicate a continuation of neutral ENSO into northern autumn. However few models, mainly but not exclusively statistical models, call for cooling towards borderline or weak La-Nina conditions during the coming northern summer monsoon into the latter part of the 2013.  
(Text Courtesy IRI)

### INDIAN OCEAN STATE

The cold anomaly which was observed in the Indian Ocean around Sri Lanka had continued during 26<sup>th</sup> May-1<sup>st</sup> June 2013.

### Highlights

#### Monitoring and Predictions:

*In the coming week, Southwestern regions shall experience significant amount of rainfall, especially Colombo & Kalutara districts. Heavy rainfall shall be observed in the western coastal belt of the island in the coming two days (14<sup>th</sup> and 15<sup>th</sup> June). However, in most of regions of Sri Lanka, existing rainfall shall increase gradually till 17<sup>th</sup> and thereafter it shall show a decreasing trend. Most of the regions shall experience significant amount of rainfall around 17<sup>th</sup> June.*

### Summary

#### Monitoring

**Weekly Monitoring:** Rainfall ranged between 5-50 mm during 4<sup>th</sup>-10<sup>th</sup> June 2013. Maximum rainfall was observed for the southern half of the island during 7<sup>th</sup>-8<sup>th</sup>. However, entire country received rainfall during 4<sup>th</sup>-8<sup>th</sup> & magnitude of the rainfall reduced thereafter.

**Monthly Monitoring:** In May, entire Sri Lanka received above average rainfall. Entire country received less than 15 mm of daily rainfall and Western province received highest rainfall during the month, of 10-15 mm/day.

#### Predictions

**7-day prediction:** Southwestern regions shall receive 55-105 mm of rainfall & it shall spread in a reducing manner toward the center of the island in North-eastern direction during 12<sup>th</sup>-18<sup>th</sup> June 2013.

**IMD WRF Model Forecast & IRI forecast:** For 14<sup>th</sup> June, IMD WRF model predicts 65-125 mm rainfall for coastal regions between Colombo-Matara and it shall spread in a reducing manner towards the Northern and Southern coastal regions and, central region of the island. However, eastern half of the island shall not receive rainfall. For 7<sup>th</sup> May, rainfall pattern exists on 14<sup>th</sup> shall continue, but amount of rainfall shall be between less than 65 mm. NOAA model predicts heavy rainfall for the southwestern regions of Sri Lanka, especially 100-150 mm of daily rainfall shall be present for Colombo and Kalutara districts.

**30 Days Prediction: Overall-** Existing rainfall shall increase gradually, but it shall remain almost constant (between 6-10 mm/day). However, rainfall shall show decreasing trend. **Western Slopes** – The rainfall shall show decreasing trend with fluctuations. **Western Coast** – The decreasing trend of the rainfall shall start after 17th with fluctuations. Significant rainfall shall be present around 17th. **Eastern Slopes** – The rainfall gradually increase till 23rd. **Eastern Coast** – The rainfall increase drastically till 17th (peak of the rainfall the prediction period) and remain between 8-12 mm/day with fluctuations. **Northern region-** The rainfall shall increase till 17th and shall decrease thereafter. **Southern Region-** The rainfall pattern shall show decreasing trend.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast issued on May 2013; for June 2013 to August 2013, there is a 60-70% probability for temperature to be above normal in the country while the rainfall is to be climatological.

### Inside this Issue

#### 1. Monitoring

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

#### 2. Predictions

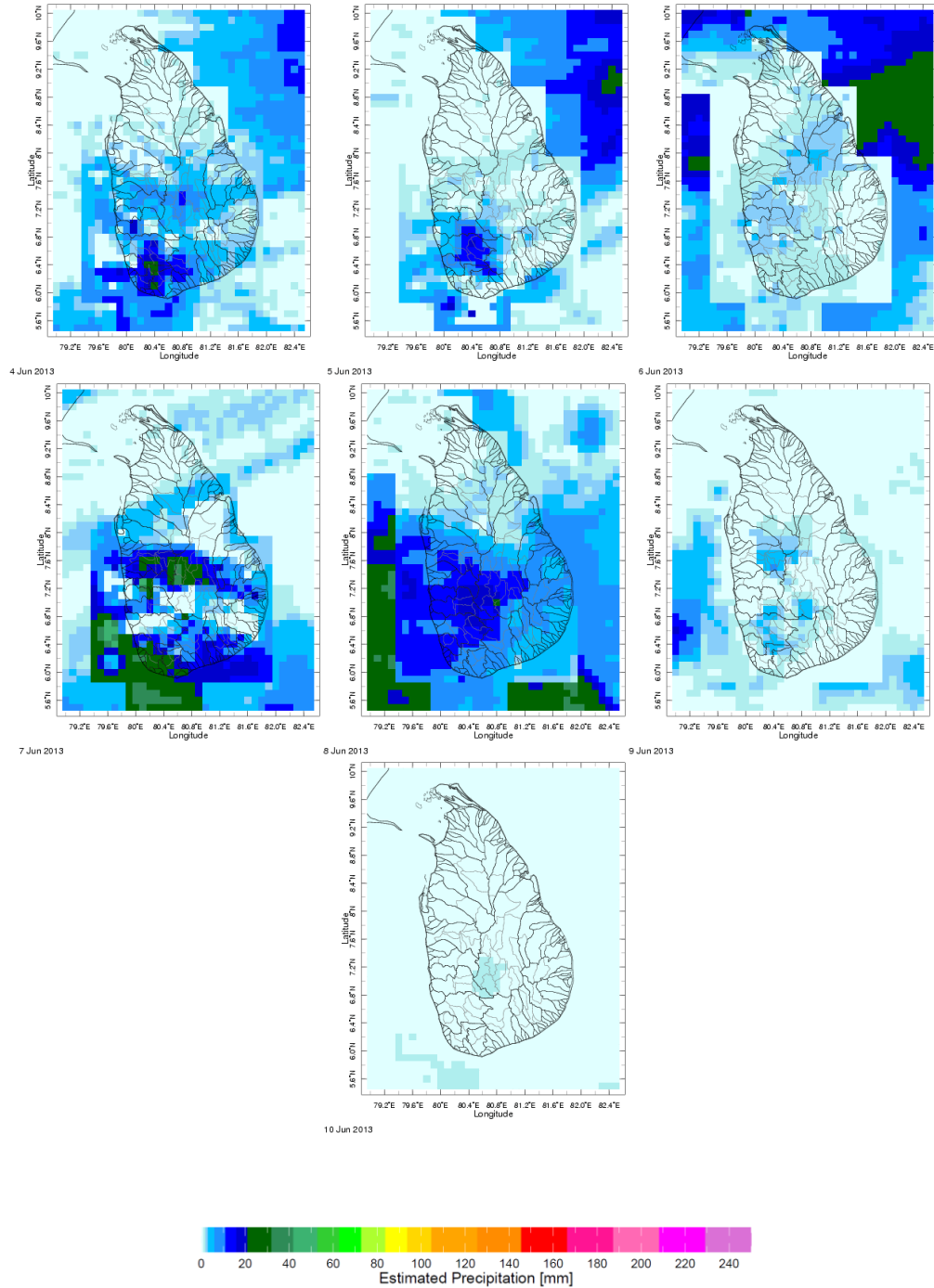
- NCEP GFS Ensemble 1-7 day predictions
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

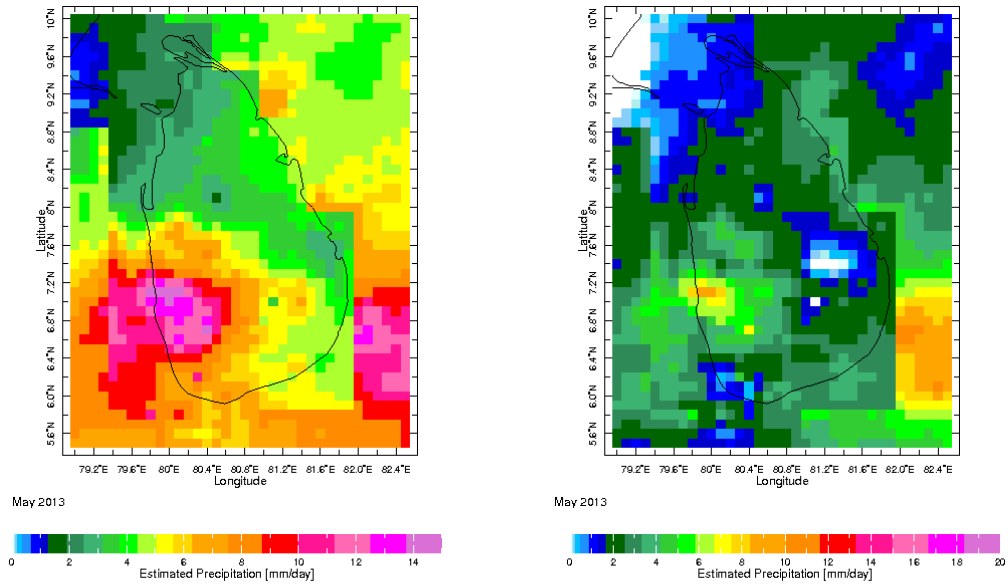
<sup>2</sup> These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

## 1. Monitoring

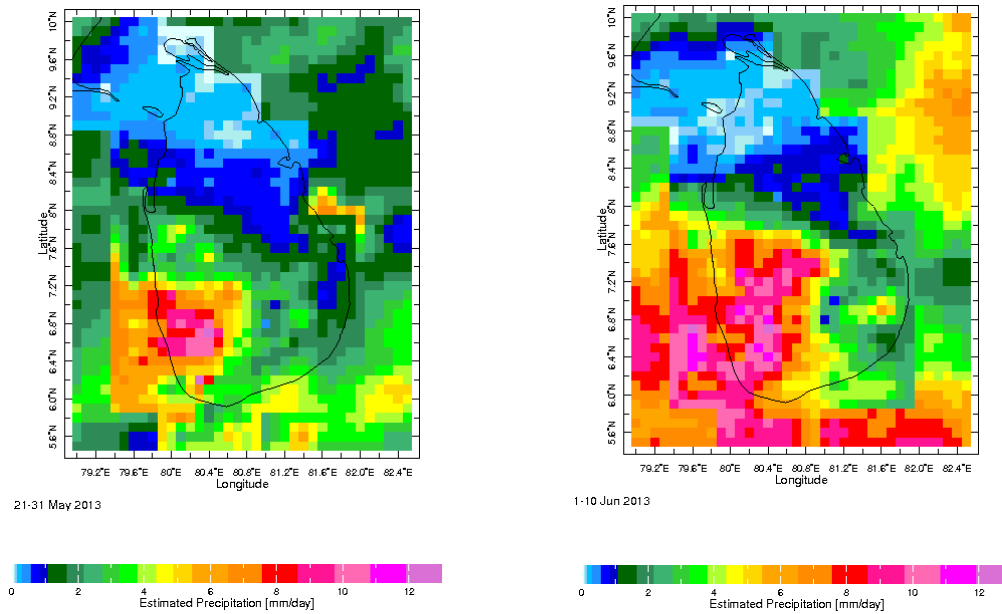
### a) Daily Satellite Derived Rainfall Estimate Maps: 4<sup>th</sup>–10<sup>th</sup> June 2013 (Left-Right, Top-Bottom)



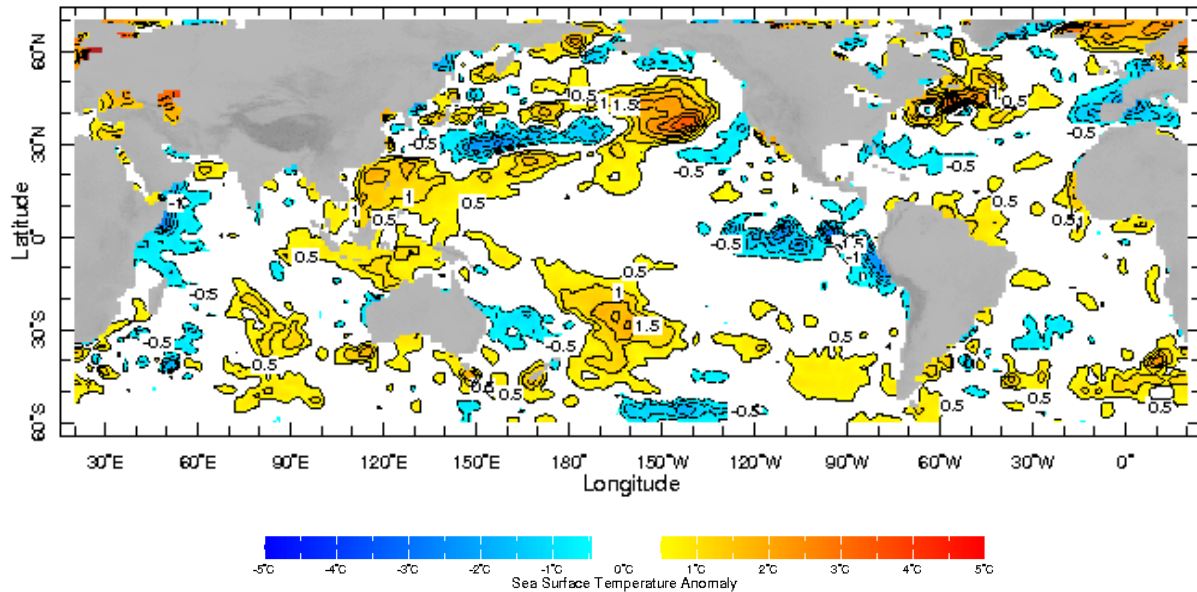
**b) Monthly Satellite Derived Rainfall Estimates for May 2013 (Total – Left and Anomaly -Right)**



**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-31 May & 1-10 June, 2013)**



**b) Weekly Average SST Anomalies**

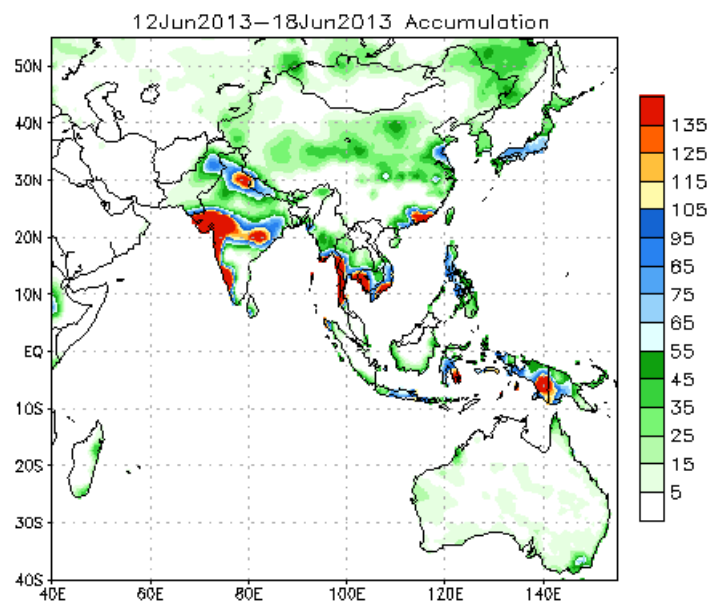


Weekly Average SST Anomalies ( $^{\circ}\text{C}$ ), 2<sup>nd</sup>-8<sup>th</sup> June, 2013

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

**2. Predictions**

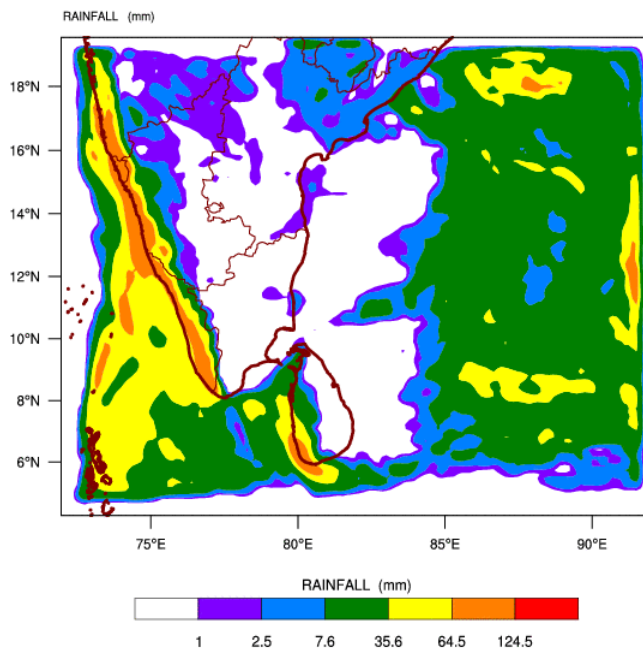
**a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.**



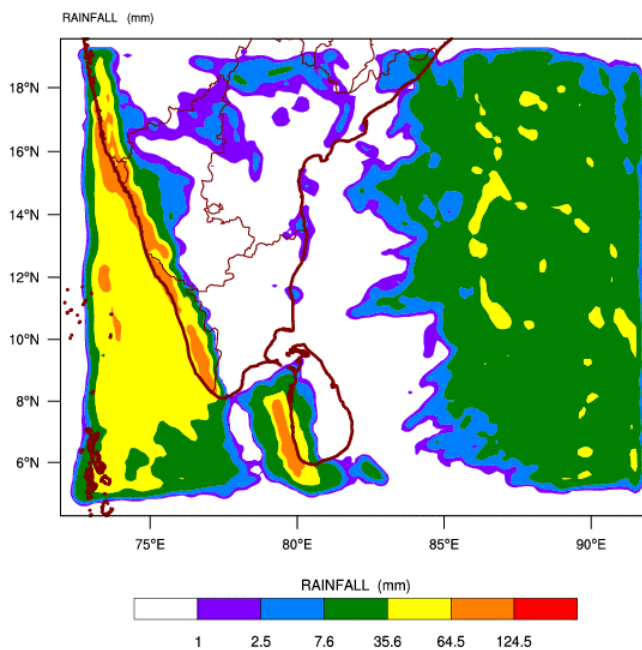
Bias correction based on last 30-day forecast error

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

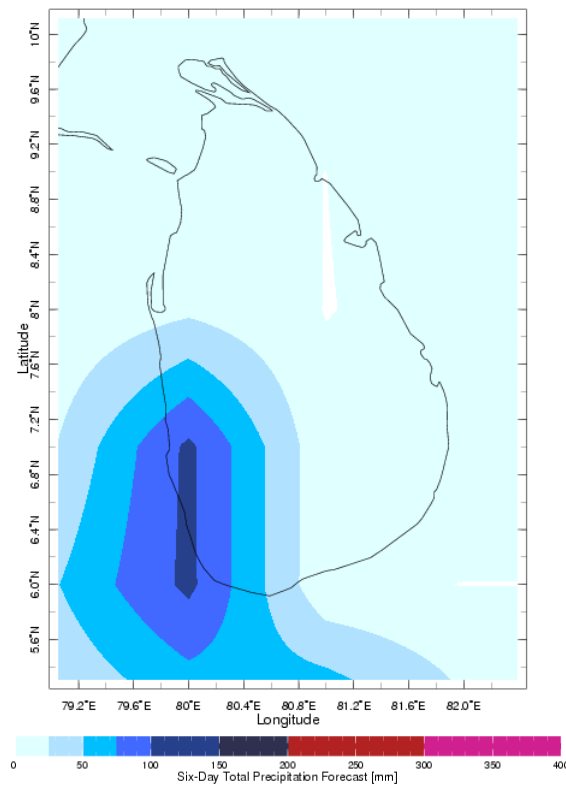
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)  
based on 00 UTC of 12-06-2013 valid for 03 UTC of 14-06-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)  
based on 00 UTC of 12-06-2013 valid for 03 UTC of 15-06-2013



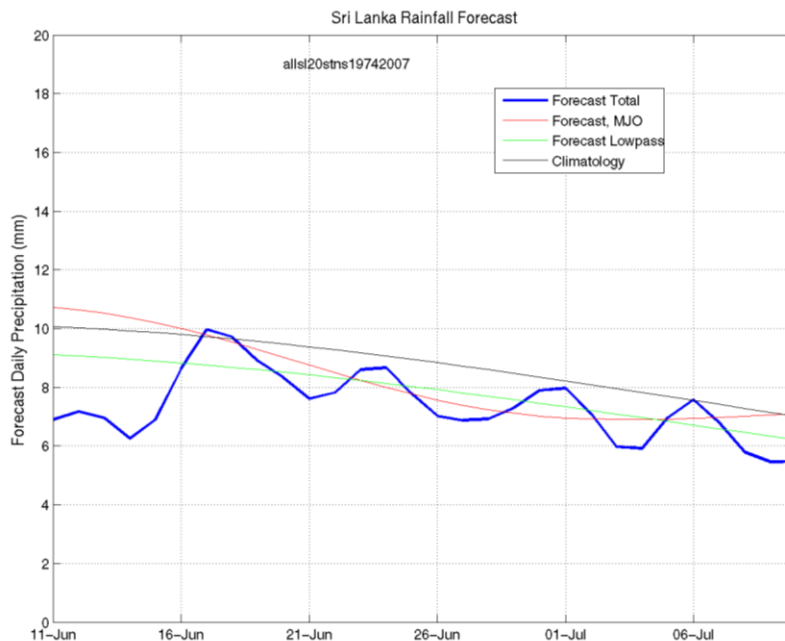
**c) Weekly Precipitation Forecast for 11<sup>th</sup>-16<sup>th</sup> June 2013 (Precipitation Forecast in Context Map Tool, IRI)**



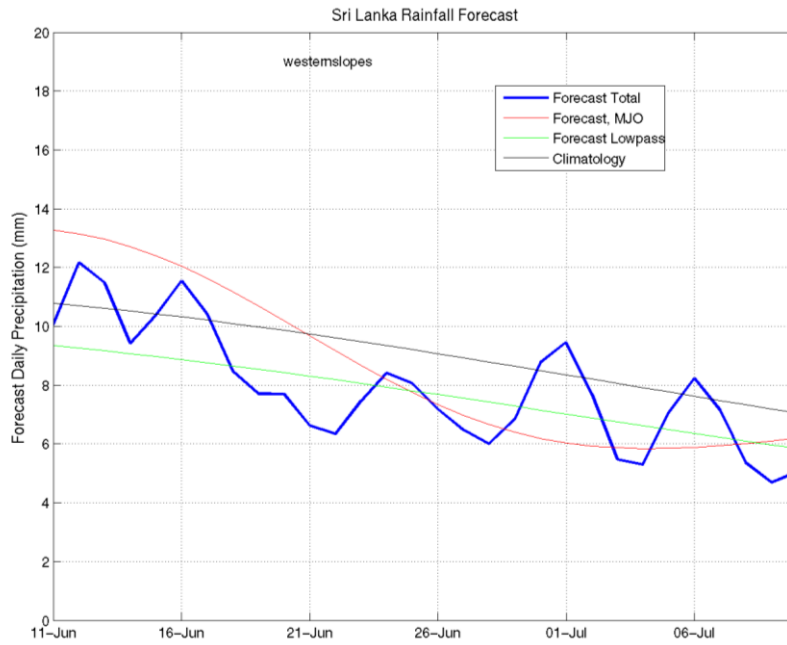
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 13<sup>th</sup> June, 2013

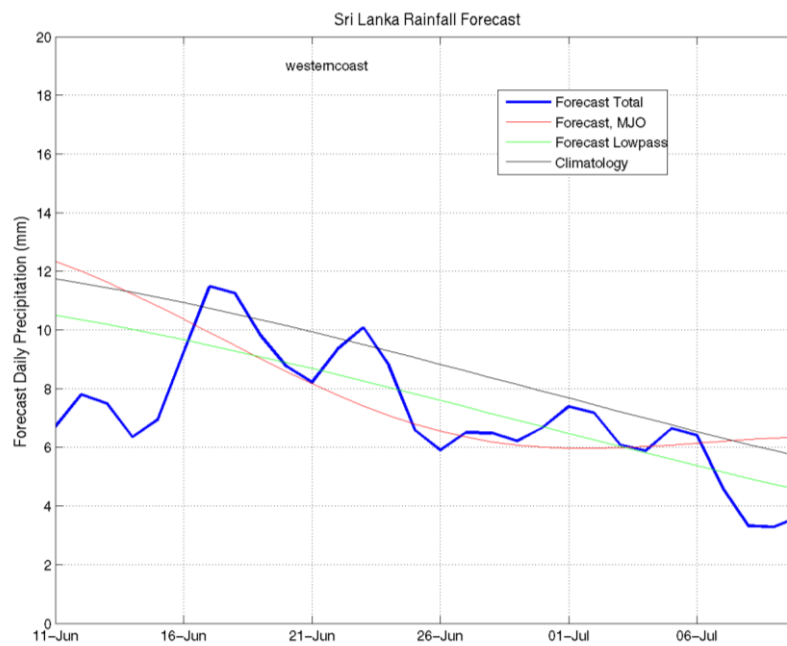
**All Sri Lanka (Rainfall Scale from 0-20 mm/day)**



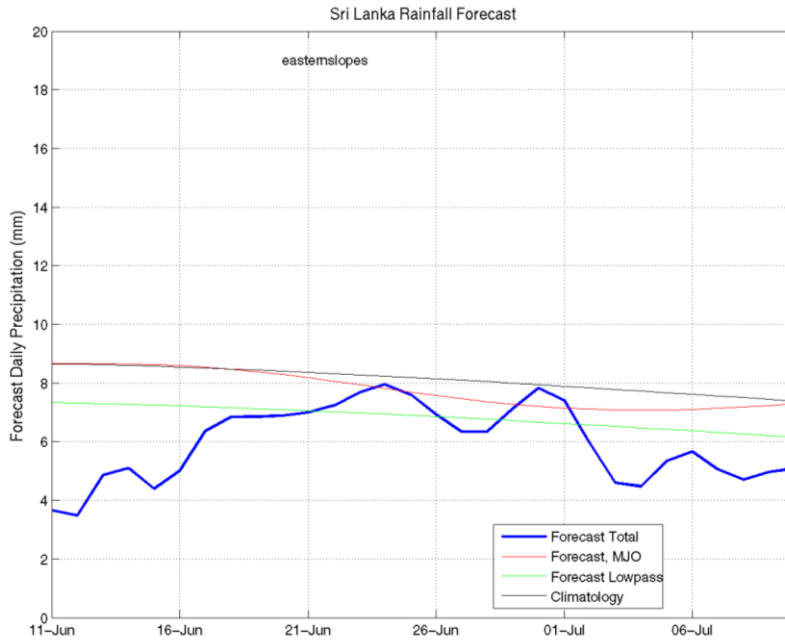
**Western Slopes (Rainfall Scale from 0-20 mm/day)**



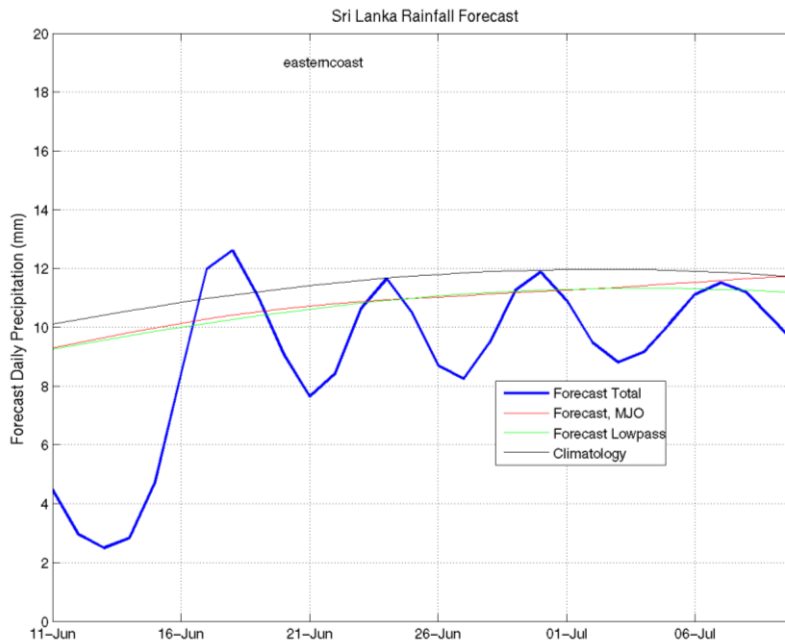
**Western Coast (Rainfall Scale from 0-20 mm/day)**



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

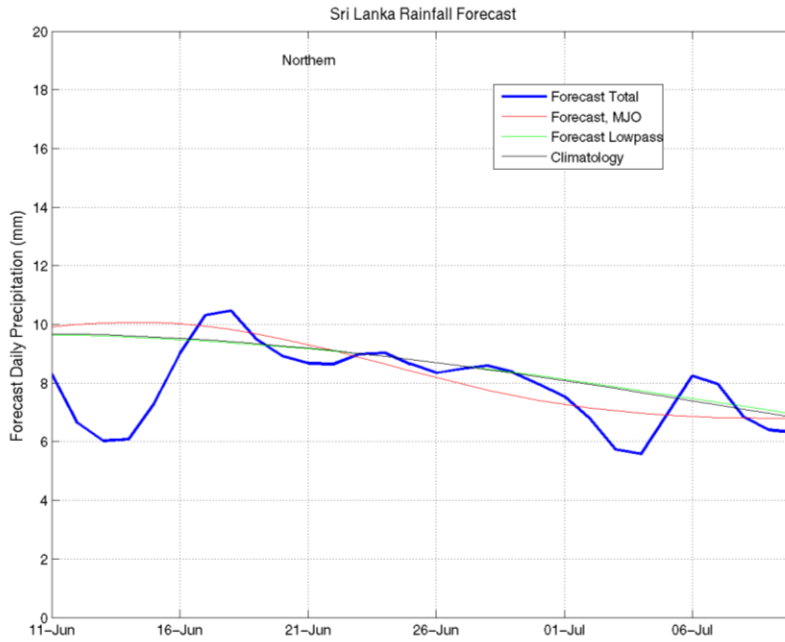


**Eastern Coast (Rainfall Scale- from 0-20 mm/day)**

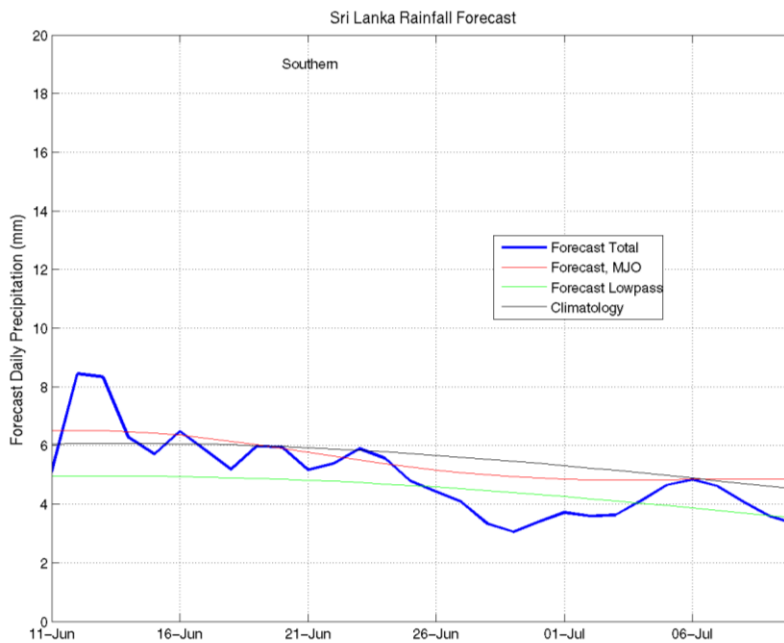




**Northern Region (Rainfall Scale- from 0-20 mm/day)**

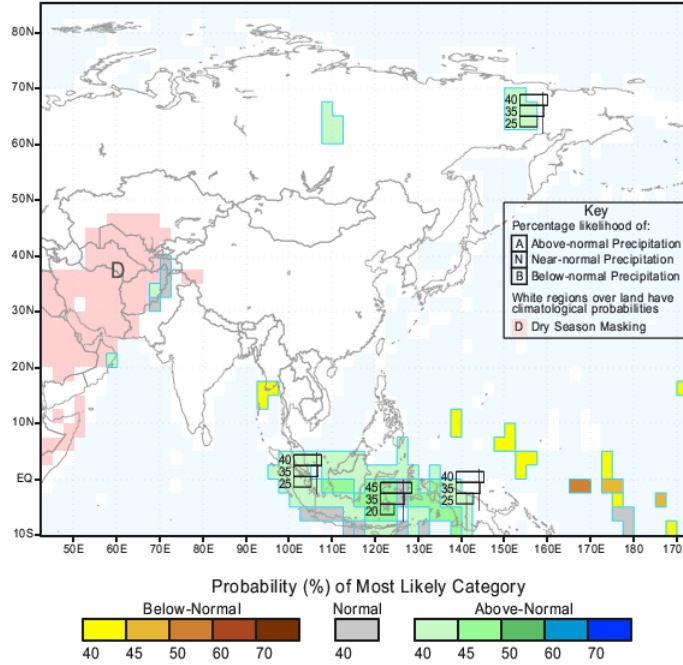


**Southern Region (Rainfall Scale- from 0-20 mm/day)**



*e) Seasonal Rainfall and Temperature Predictions from IRI*

IRI Multi-Model Probability Forecast for Precipitation  
for June-July-August 2013, Issued May 2013



IRI Multi-Model Probability Forecast for Temperature  
for June-July-August 2013, Issued May 2013

