

## Experimental Climate Monitoring and Prediction

(Prepared for the Water Management Secretariat of the Mahaweli Authority)

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31 May 2012

### FECT BLOG

Past reports available at  
<http://fectsl.blogspot.com/>

and

<http://fectsl.wordpress.com/>

### FECT WEBSITE

<http://www.climate.lk>

and

<http://www.tropicalclimate.org/>

### ENSO Update

17 May 2012

Slightly more than half of the ENSO prediction models predict El Nino conditions developing around the July-September season, continuing through the rest of 2012. However 40-45% of the models indicate persistence of ENSO neutral conditions. Currently, no models indicate a re-emergence of La Nina conditions.

(IRI)

### Summary<sup>2</sup> Monitoring

**Weekly Monitoring:** From 22<sup>nd</sup> May -29<sup>th</sup> May rainfall ranged between 5-145 mm. During the week heavy rainfall was observed for the South-western regions of the island. On 22<sup>nd</sup> & 29<sup>th</sup> May, no rainfall was recorded compared to the rest of the days in the week.

**Monthly Monitoring:** During the month of April, the entire island has shown an above average rainfall.

### Predictions

**7 Day Prediction:** For the coming week, an accumulated rainfall of 5 - 55 mm is predicted for the South-western regions of the island, and 5 – 35 mm is predicted for the entire island.

**IMD WRF Model Forecast & IRI forecast:** For the 1<sup>st</sup> of June 2012, WRF Model Predicts less than 65 mm rainfall for Kalutara district. The rainfall shall spread towards Colombo, Gampaha, Kegalle, Ratnapura, Galle and Matara districts with a decreasing pattern. The WRF Model Predicts the same pattern of rainfall to continue on 2<sup>nd</sup> June 2012 for the above mentioned regions. IRI models forecast 5 - 25 mm of rainfall for the entire country.

**1 Month Prediction:** Overall, from 30<sup>th</sup> May - 02<sup>nd</sup> June 2012, rainfall shall increase drastically; then shall decrease gradually till the 16<sup>th</sup> June with minor fluctuation between 09<sup>th</sup>-06<sup>th</sup> June. There onwards rainfall shall increase gradually. *Western Slopes-* Rainfall predicted for western slopes is high compared to the other regions of Sri Lanka. A rapid increase of rainfall shall be expected during 30<sup>th</sup> May -02<sup>nd</sup> June and shall decrease gradually till 16<sup>th</sup> June with minor fluctuations during 04<sup>th</sup>-05<sup>th</sup> June and 09<sup>th</sup>-12<sup>th</sup> June. Then rainfall shall increase gradually. *Eastern Slopes-* Rainfall shall increase during 30<sup>th</sup> May - 01<sup>st</sup> June and shall gradually decrease till it reaches minimum predicted daily rainfall of 3 mm on 14<sup>th</sup> June. Thereafter rainfall shall increase drastically. *Northern Region-* Rainfall shall increase during 30<sup>th</sup> May - 02<sup>nd</sup> June and shall decrease till 07<sup>th</sup> June with the same rate. Rainfall shall be constant from 07<sup>th</sup> - 12<sup>th</sup> June 2012 and thereafter rainfall shall increase gradually.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast for June 2012 to August 2012, issued in May 2012, there is a 45%-50% probability for temperature to be above normal for the country. There is 40% probability for rainfall to be climatological.

### Inside this Issue

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- IMD WRF Model Forecast
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

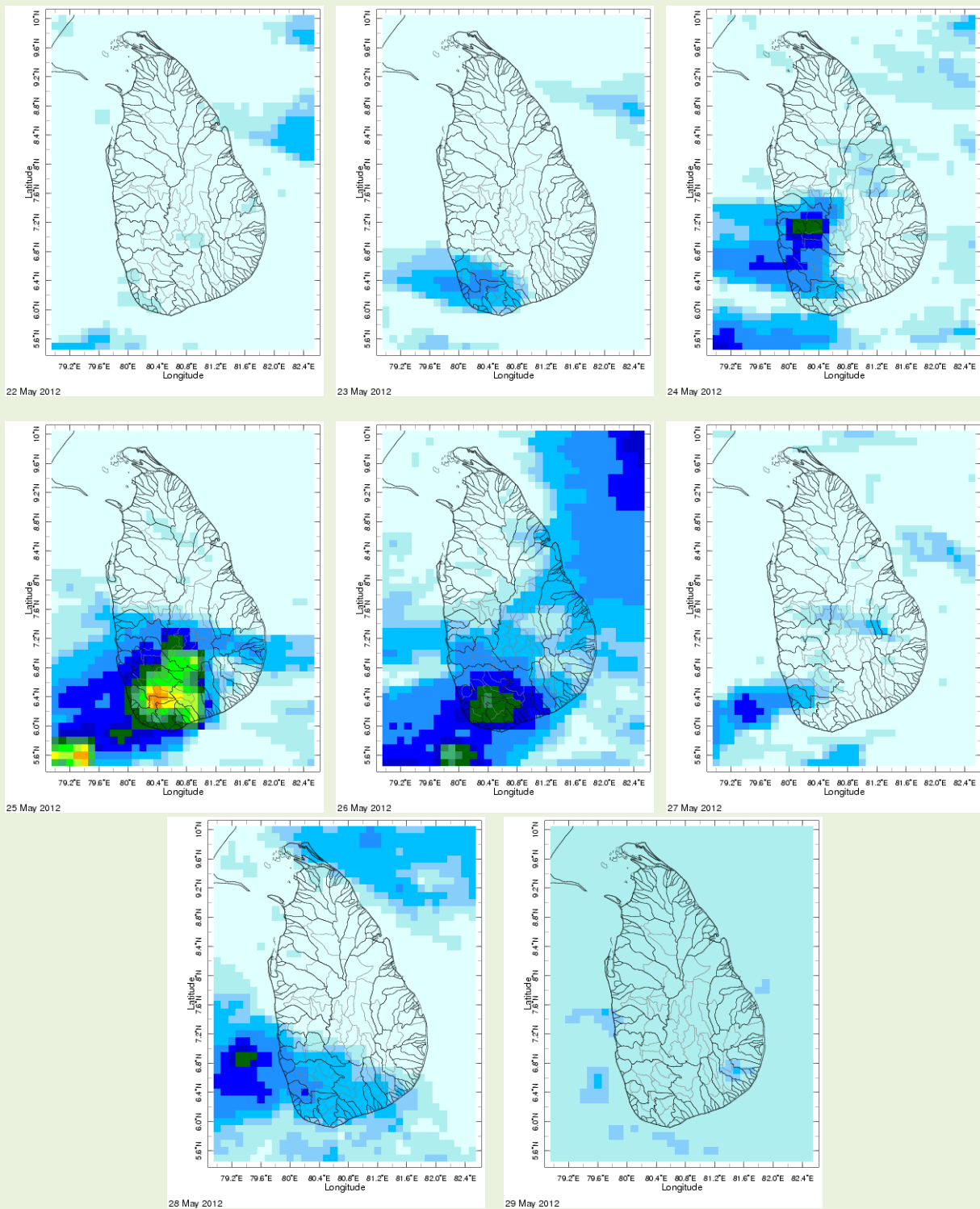
International Research Institute for Climate and Society.

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

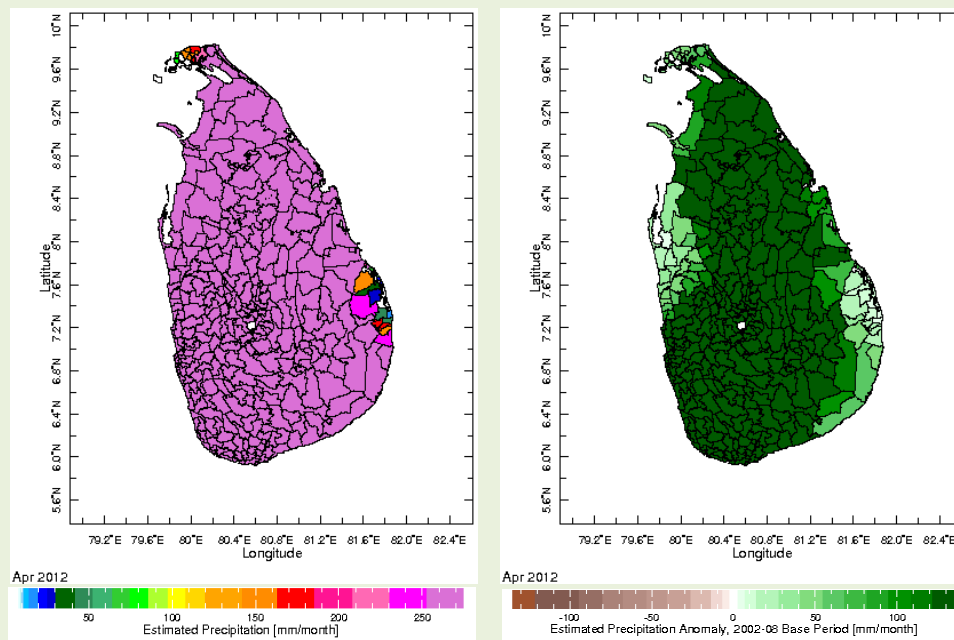
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

## 1. Monitoring

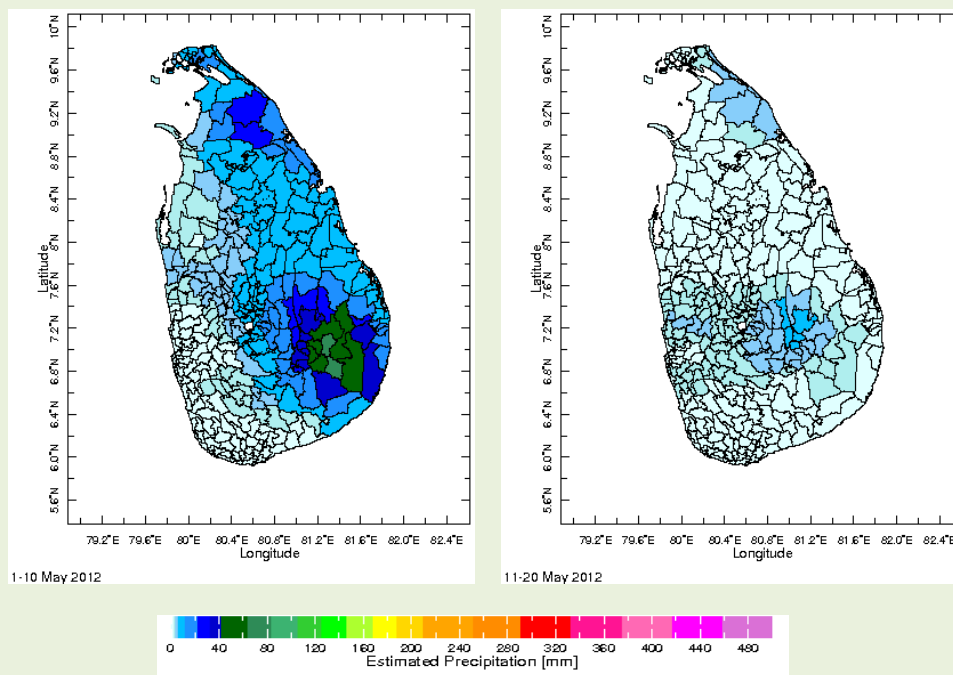
### a) Daily Satellite Derived Rainfall Estimate Maps: 22<sup>nd</sup> May – 29<sup>th</sup> May, 2012 (Left-Right, Top-Bottom)



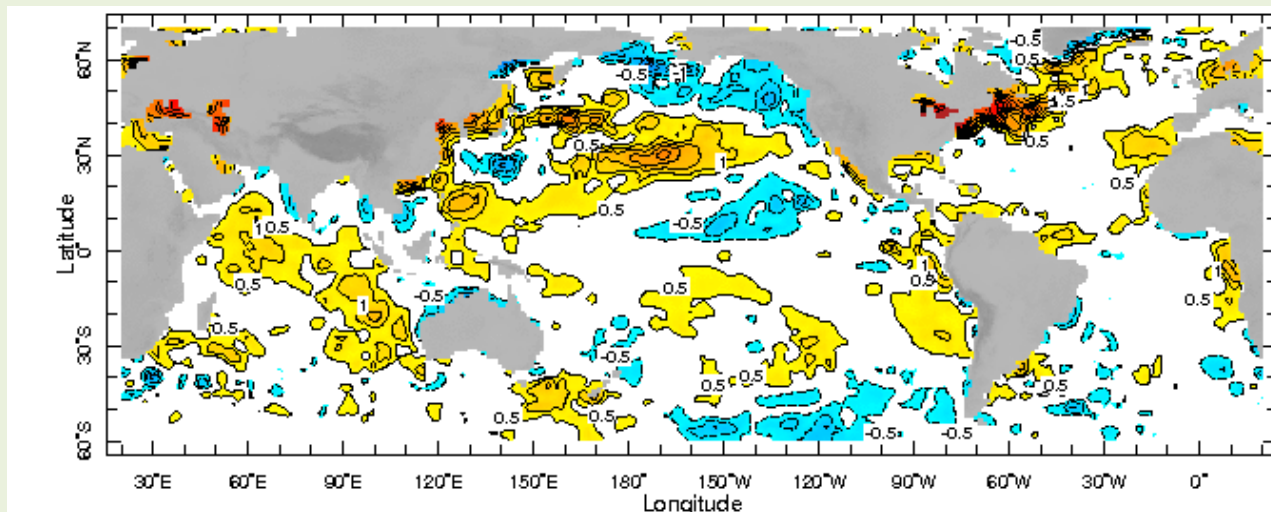
**b) Monthly Satellite Derived Rain fall Estimates for April 2012 (Total – Left and Anomaly -Right)**



**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (01-10 May & 11-20 May 2012)**



## d) Weekly Average SST Anomalies

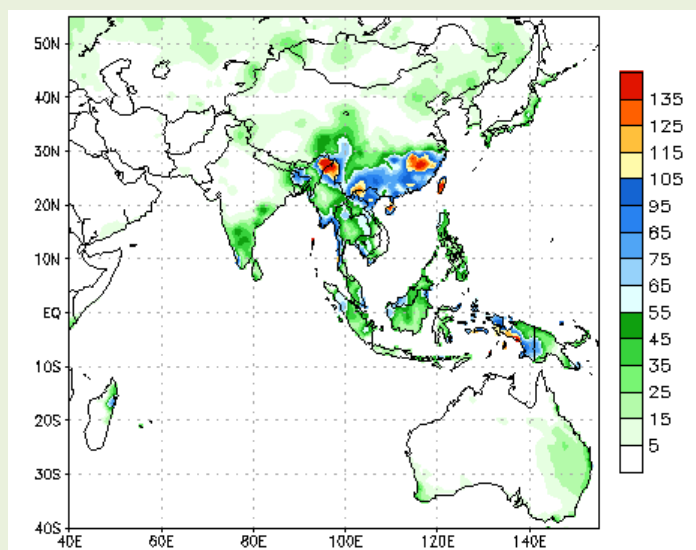


Weekly Average SST Anomalies ( $^{\circ}\text{C}$ ), 20<sup>th</sup> May – 26<sup>th</sup> May, 2012

Data Source: NCEP Global Sea Surface Temperature Analysis (Climatology 1979-1995)

## 2. Predictions

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



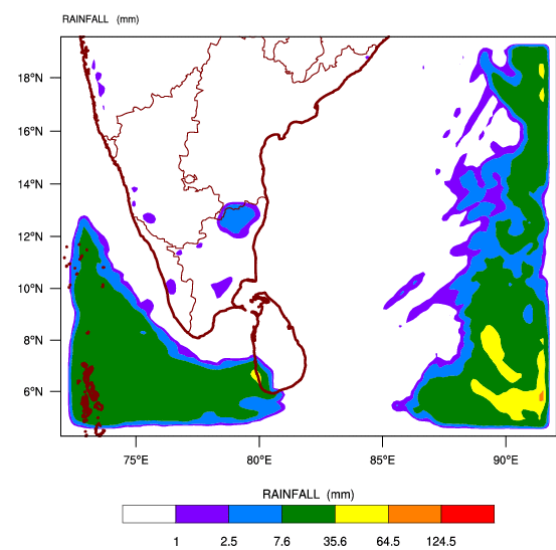
During next week, an accumulated rainfall of 5 mm -55 mm is predicted for the South-western regions of the island and 5 mm – 35 mm is predicted for the entire island.

Source – NOAA Climate Prediction Center

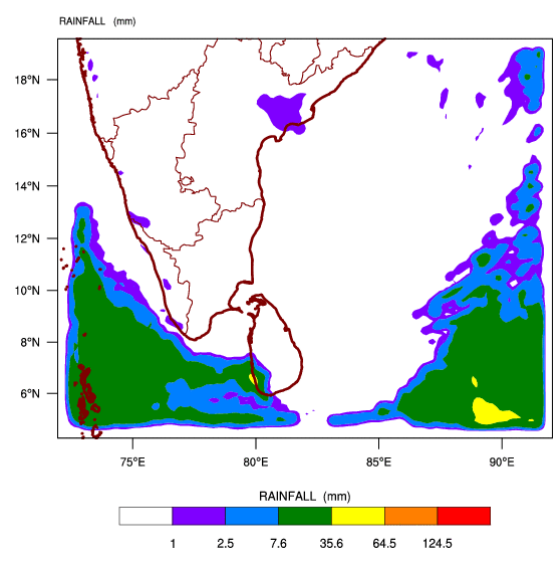
Map: Predicted accumulation of rainfall. (02<sup>nd</sup> June– 08<sup>th</sup> June, 2012 week)

**b) WRF Model Forecast (Regional Meteorological Center, Chennai, Indian Meteorological Department)**

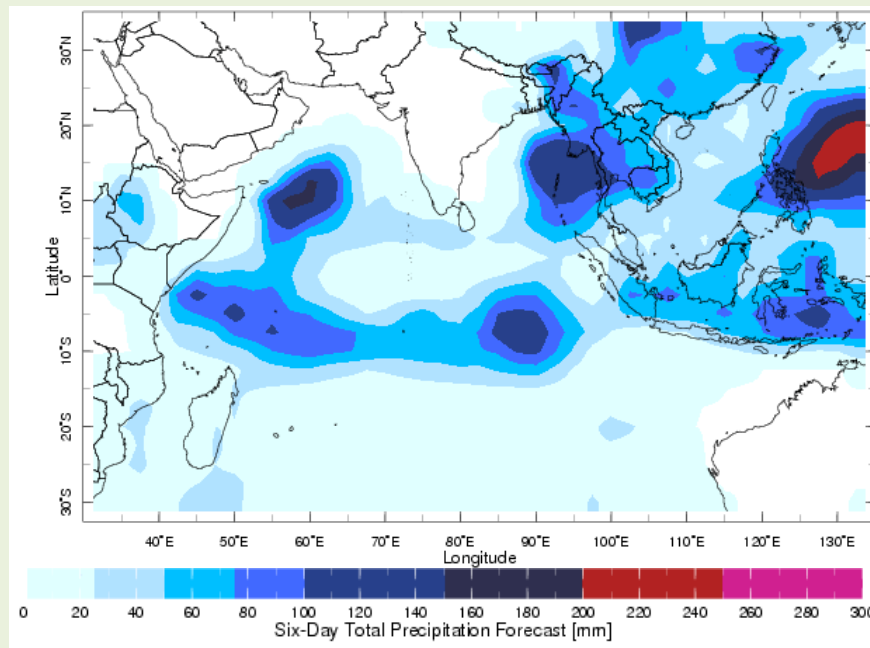
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 30-05-2012 valid for 03 UTC of 01-06-2012



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 30-05-2012 valid for 03 UTC of 02-06-2012



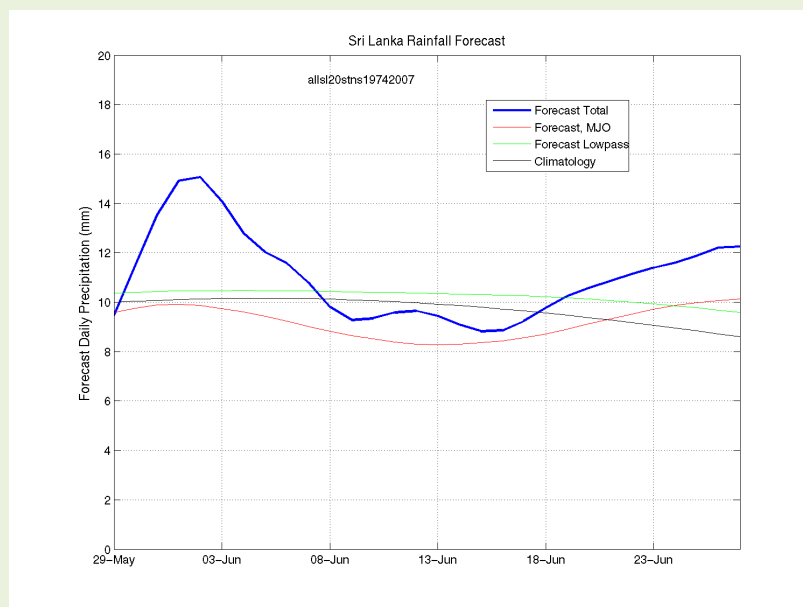
**c) Weekly Precipitation Forecast for 29 May – 3 June 2012 (Precipitation Forecast in Context Map Tool, IRI)**



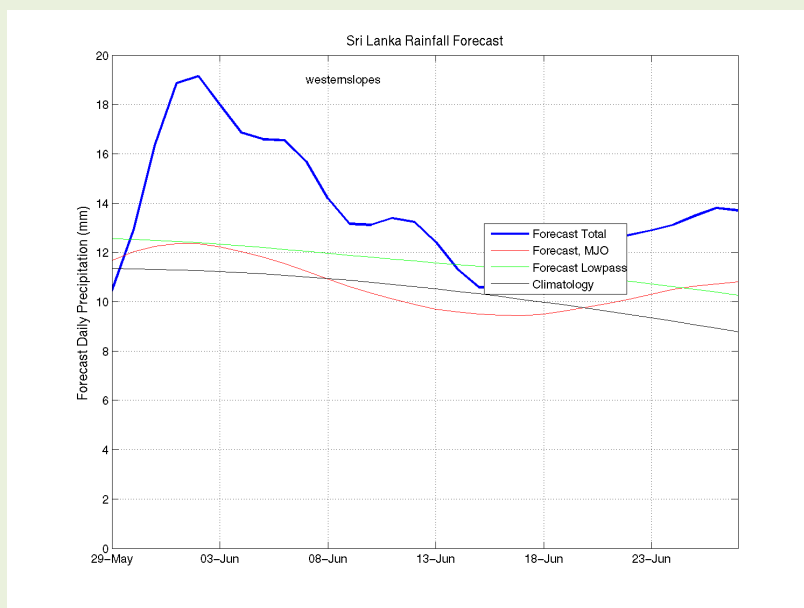
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 30<sup>th</sup> May, 2012

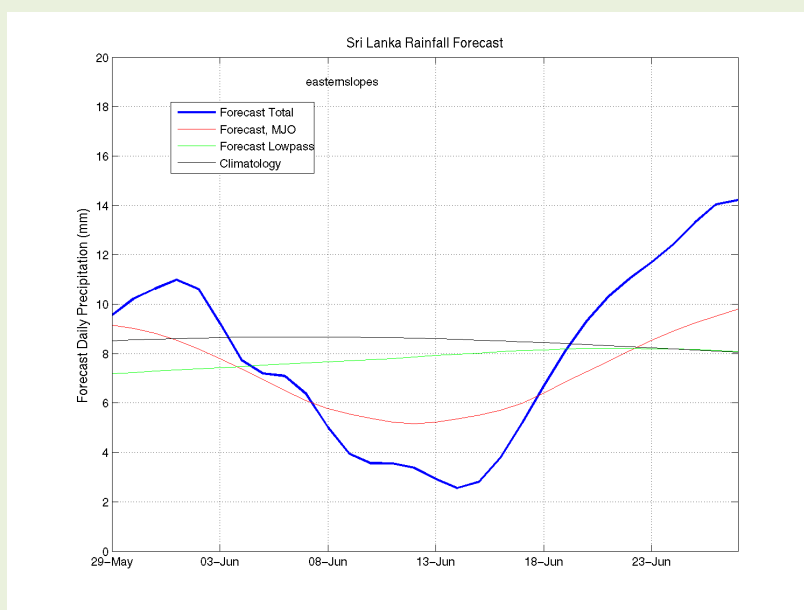
**All Sri Lanka (Rainfall Scale from 0-20 mm/day)**



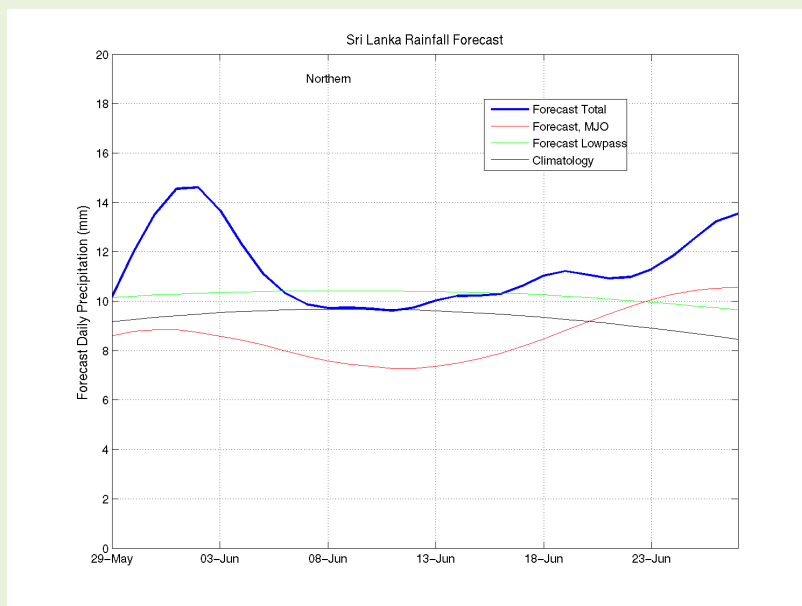
**Western Slopes (Rainfall Scale from 0-20 mm/day)**



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



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





## e) Seasonal Rainfall and Temperature Predictions from IRI

