

## Experimental Climate Monitoring and Prediction

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21 November 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/>

### October 17, 2013 PACIFIC SEAS STATE

During September through October the observed ENSO conditions remained neutral. Most of the ENSO prediction models indicate a continuation of neutral ENSO through 2013 & the first quarter of 2014. A long lasting mean disagreement between statistical and dynamical models (statistical leaning cooler, dynamical warmer) has diminished. The average forecast of all models indicates a gradual warming tendency during the first half of the 2014.

(Text Courtesy IRI)

### INDIAN OCEAN STATE

Southern sea of Sri Lanka showed +1<sup>0</sup>C anomaly and rest of the seas around Sri Lanka showed neutral seas surface temperature during 3<sup>rd</sup>-9<sup>th</sup> November 2013.

### MJO STATE

MJO is neutral and shall not influence Sri Lanka rainfall.

### Highlights

#### Monitoring and Predictions:

Rainfall shall increase gradually till 27<sup>th</sup> of November and shall decrease gradually thereafter till 2<sup>nd</sup> of December. Western coast shall receive significant high rainfall during 26<sup>th</sup>-29<sup>th</sup> November. However, significant minimum rainfall is likely to observe during 1<sup>st</sup>-4<sup>th</sup> December 2013. For the coming week (22<sup>nd</sup>-28<sup>th</sup> November) western coastal regions and Badulla and, Moneragala districts are likely to observe more rainfall compared to the rest of the island.

### Summary

#### Monitoring

**Weekly Monitoring:** During 13<sup>th</sup>-19<sup>th</sup> November 2013, rainfall ranged 5-60 mm/day. However, entire country received less than 10 mm/day of scattered rainfall throughout the week, except small region in Jaffna 18<sup>th</sup> November.

**Monthly Monitoring:** Jaffna and Batticaloa districts received an above average rainfall during the month of September.

#### Predictions

**7-day prediction:** During 20<sup>th</sup>-26<sup>th</sup> November 2013, western half of the island shall experience 5-35 mm of rainfall and shall spread towards central hills in a decreasing pattern.

**IMD WRF Model Forecast & IRI forecast:** For 22<sup>nd</sup> of November, IMD WRF model predicts less 36 mm of rainfall for the entire Kalutara-Hambantota and Ratnapura districts and some regions in Nuwara-Eliya, Badulla and Moneragala districts. For 23<sup>rd</sup> of November, IMD WRF model predicts less 36 mm of rainfall for the entire country, except for coastal regions of Kilinochchi-Kalutara and Trincomalee-Ampara districts (less than 1 mm of rainfall). NOAA model predicts heavy rainfall for Badulla and Moneragala districts during 20<sup>th</sup> -25<sup>th</sup> November 2013.

**30 Days Prediction: Overall-** Rainfall shall increase gradually till 27<sup>th</sup> of November and shall decrease gradually thereafter till 2<sup>nd</sup> of December. However, significant minimum rainfall is likely to observe during 1<sup>st</sup>-4<sup>th</sup> December 2013. **Western Slopes** – The rainfall pattern persisting in the entire country shall be observed in this region with high amount of rainfall. **Western Coast** – The rainfall pattern persisting in the entire country shall be observed in this region with high amount of rainfall. However, significant high rainfall is likely to observe during 26<sup>th</sup>-29<sup>th</sup> November. **Eastern Slopes**– The rainfall shall vary below 6 mm/day till the end of November and rainfall is not predicted until the 1<sup>st</sup> week of December. **Eastern Coast** – The rainfall shall vary below 2 mm/day till 26<sup>th</sup> of November and rainfall is not predicted until the 1<sup>st</sup> week of December. **Northern region-** The rainfall pattern persisting in the entire country shall be observed in this region with low amount of rainfall. **Southern Region-** The rainfall pattern persisting in the entire country shall be observed in this region.

**Seasonal Prediction:** As per IRI Multi Model Probability Forecast issued on October 2013; for November, December 2013 to January 2014, 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

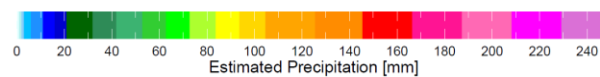
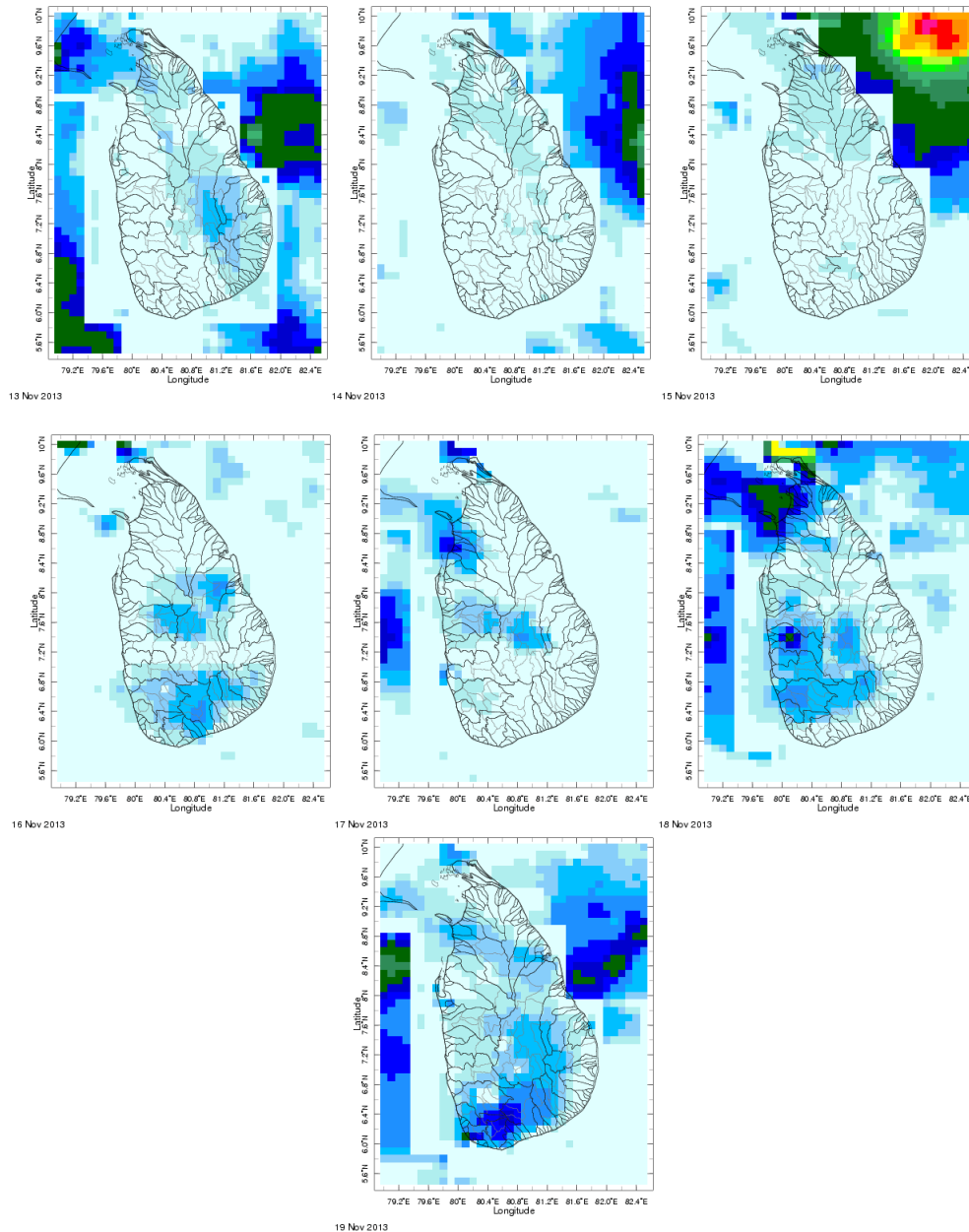
- NCEP GFS Ensemble 1-7 day predictions
- WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

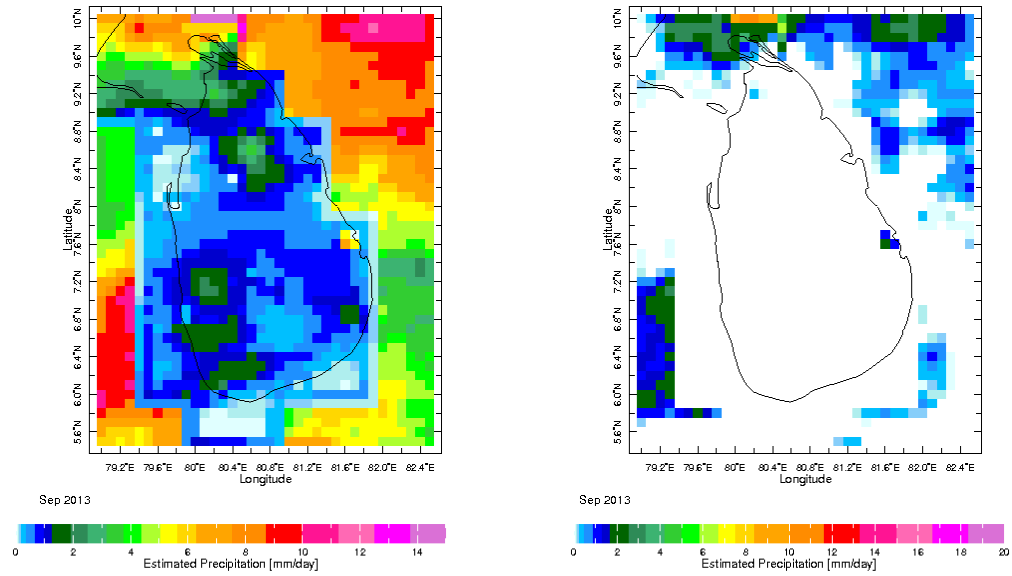
<sup>2</sup> These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

## 1. Monitoring

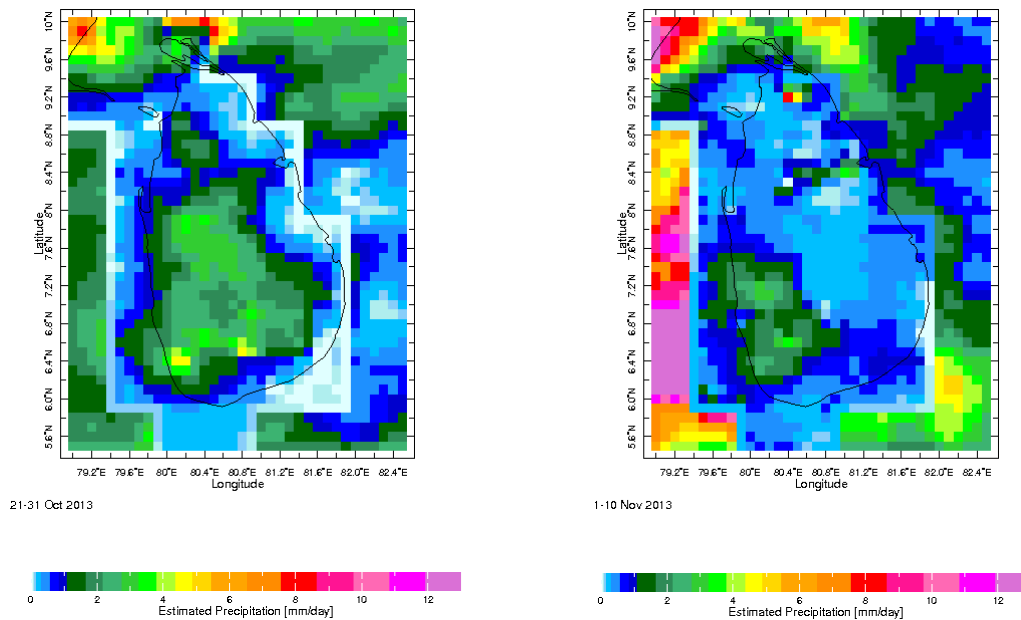
### a) Daily Satellite Derived Rainfall Estimate Maps: 13<sup>th</sup>-19<sup>th</sup> November 2013 (Left-Right, Top-Bottom)



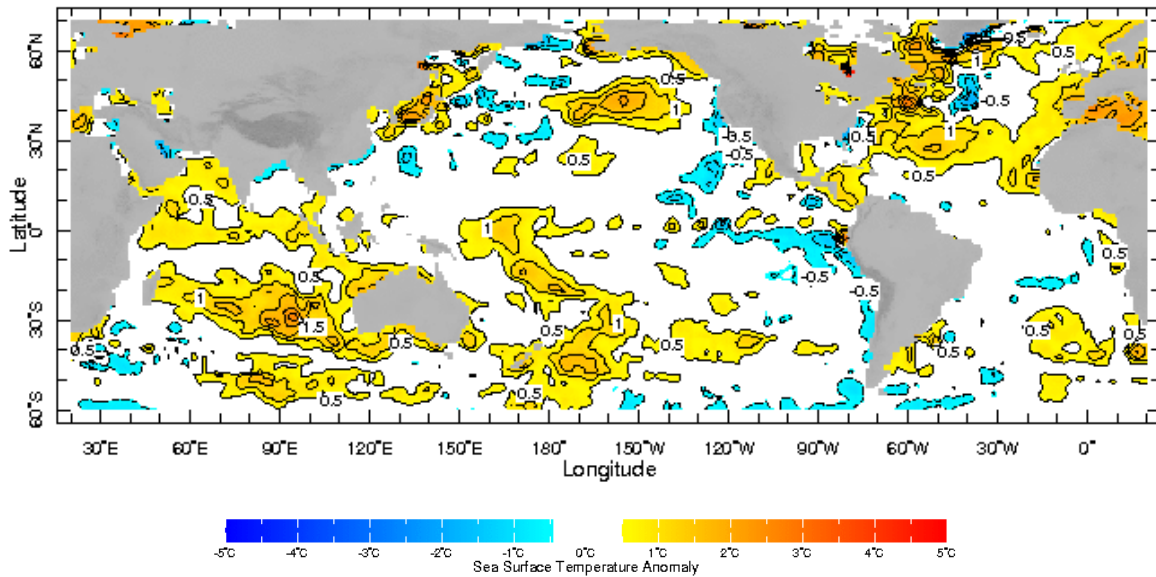
**b) Monthly Satellite Derived Rainfall Estimates for September 2013 (Total – Left and Anomaly - Right)**



**c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-31 October & 01-10 November, 2013)**



**b) Weekly Average SST Anomalies**

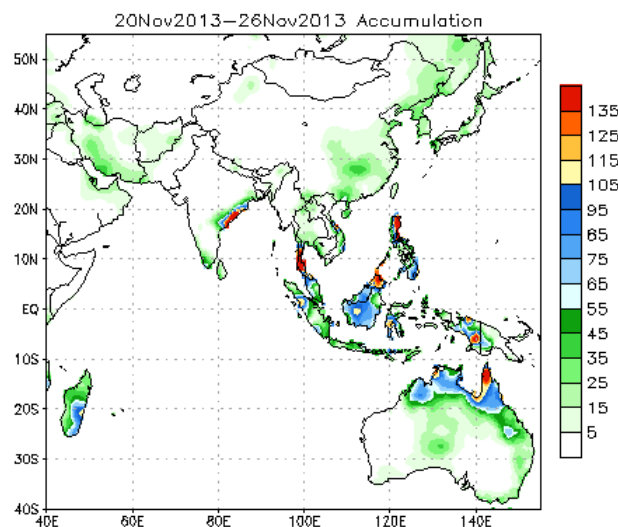


Weekly Average SST Anomalies ( $^{\circ}$ C), 3<sup>rd</sup>-9<sup>th</sup> November, 2013

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

**2. Predictions**

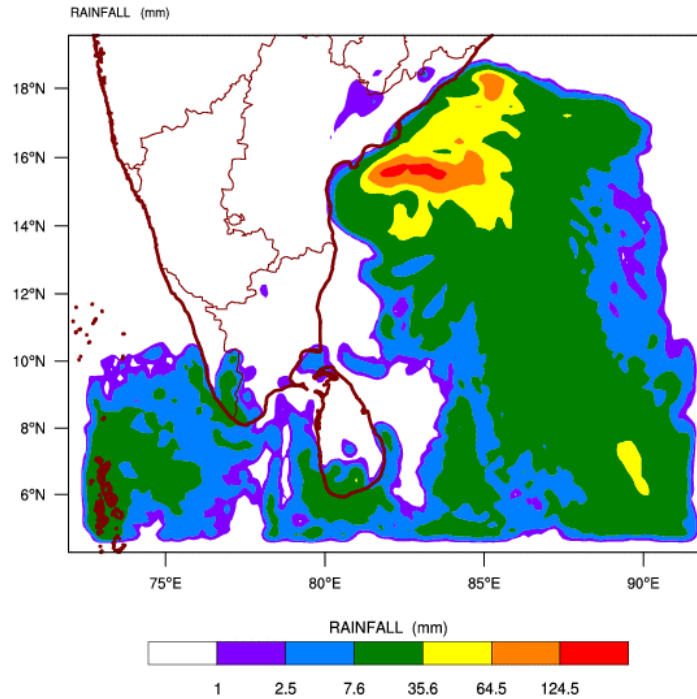
**a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.**



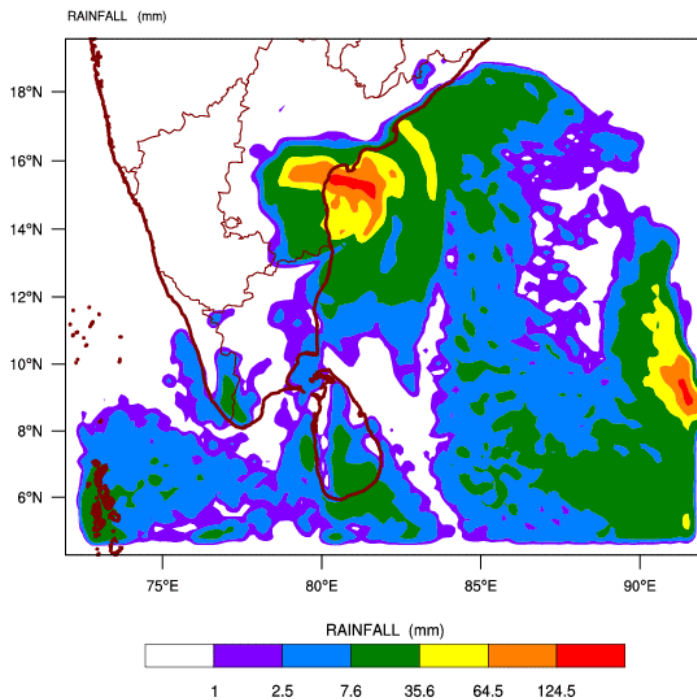
Source – NOAA Climate Prediction Center

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

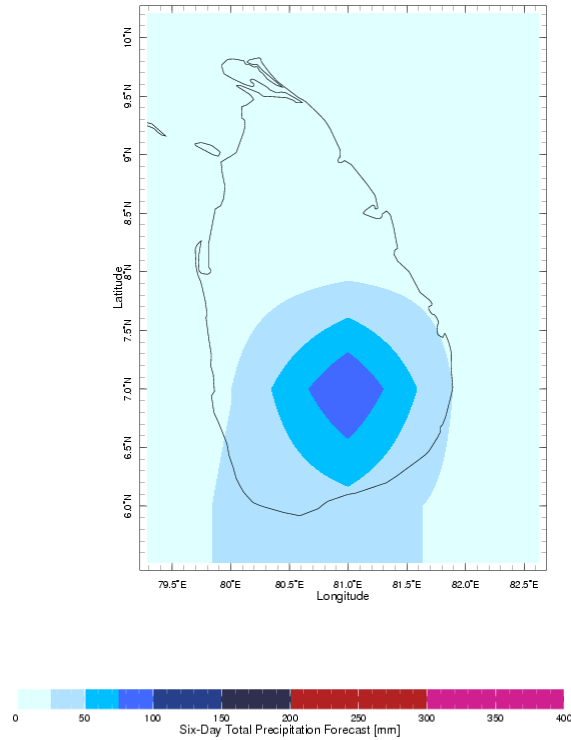
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\  
based on 00 UTC of 20-11-2013 valid for 03 UTC of 22-11-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\  
based on 00 UTC of 20-11-2013 valid for 03 UTC of 23-11-2013



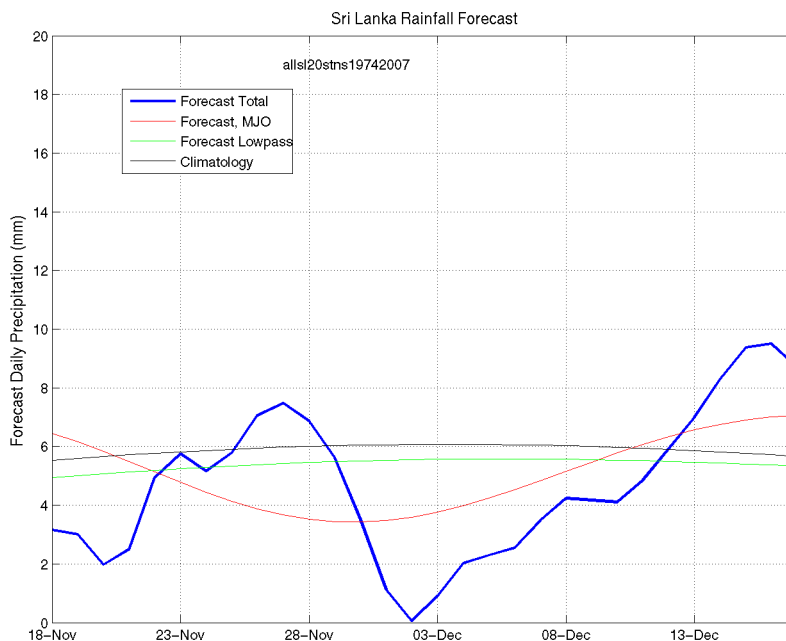
**c) Weekly Precipitation Forecast for 20<sup>th</sup>-25<sup>th</sup> November 2013 (Precipitation Forecast in Context Map Tool, IRI)**



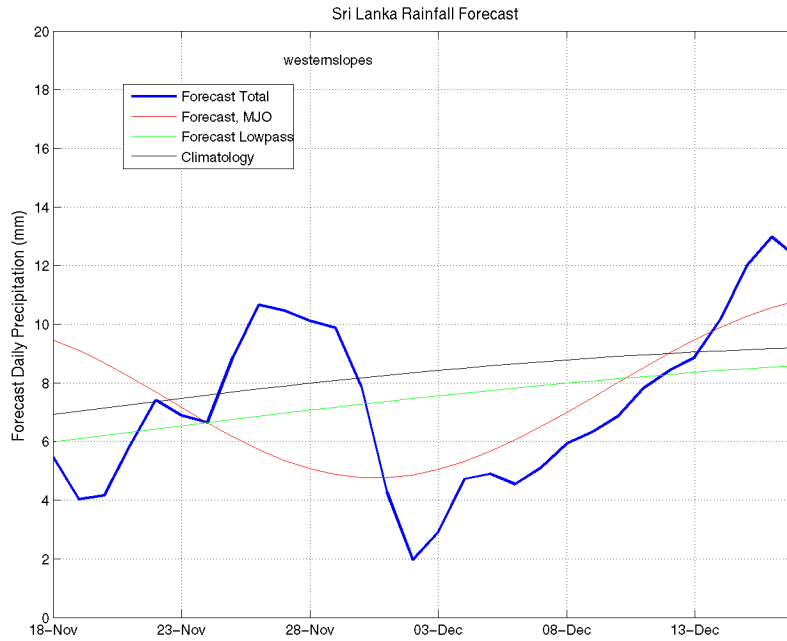
**d) 1 month experimental predictions by Paul Roundy and L. Zubair**

Predictions based on observed cloud cover and atmospheric waves. Issued 20<sup>th</sup> November, 2013

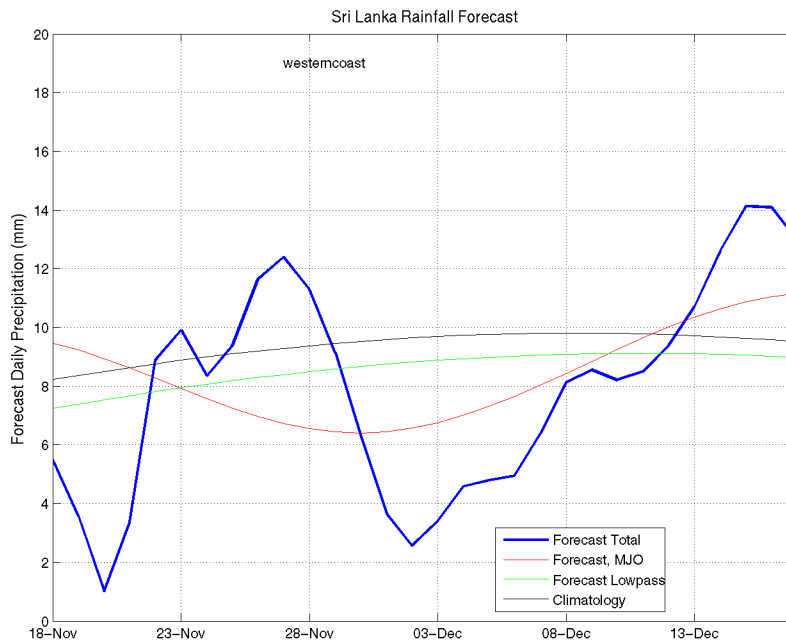
**All Sri Lanka (Rainfall Scale from 0-20mm/day)**



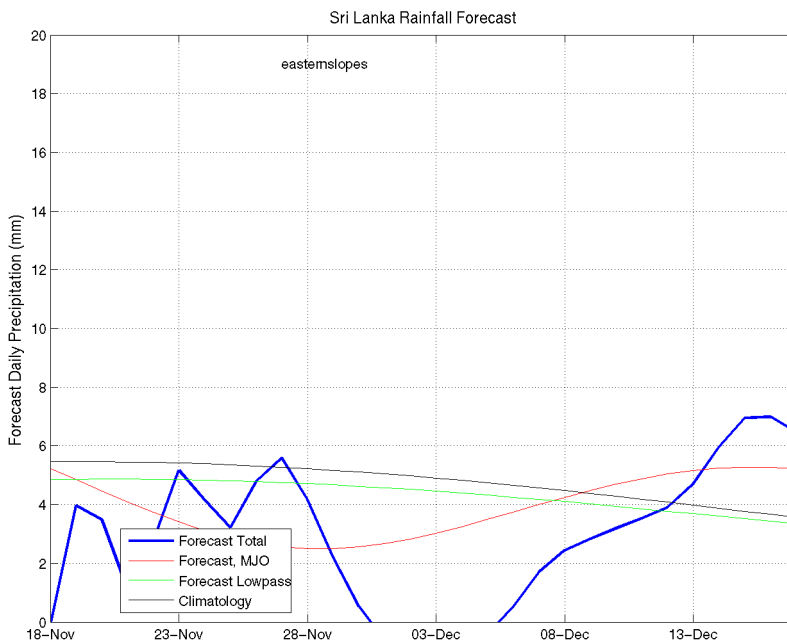
**Western Slopes (Rainfall Scale from 0-20 mm/day)**



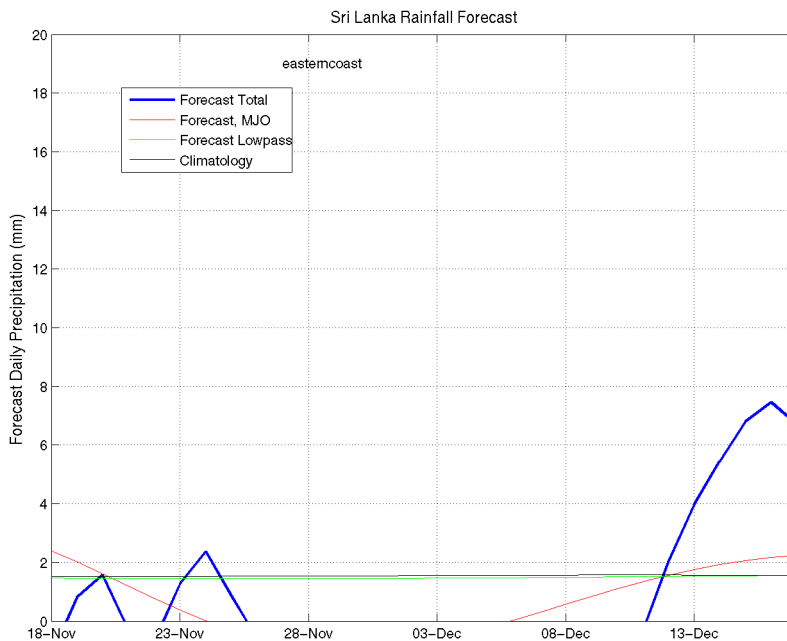
**Western Coast (Rainfall Scale from 0-20 mm/day)**



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

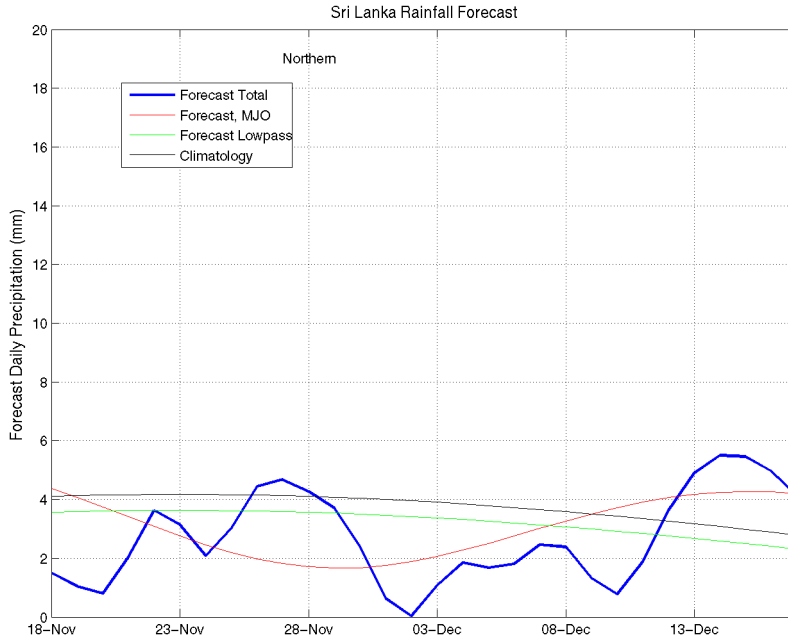


**Eastern Coast (Rainfall Scale- from 0-20 mm/day)**

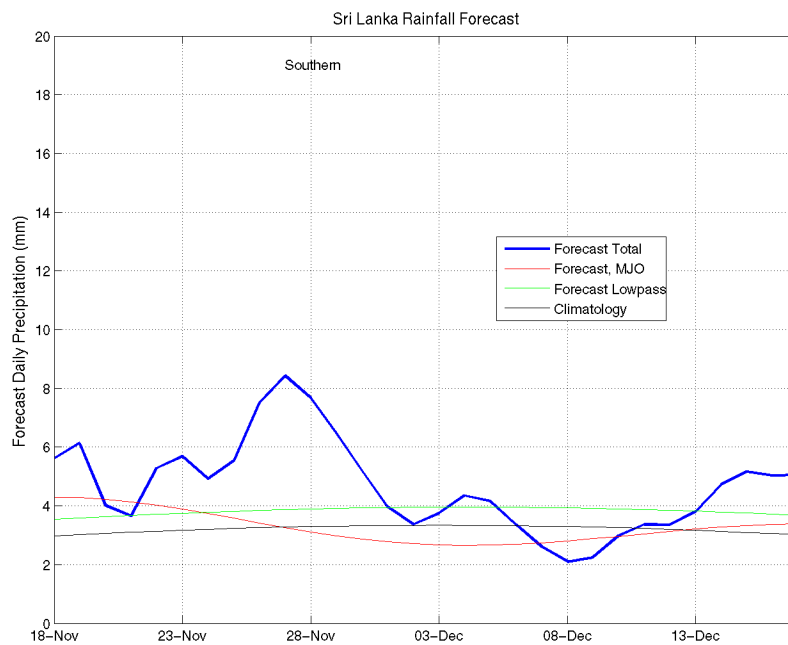




**Northern Region (Rainfall Scale- from 0-20 mm/day)**

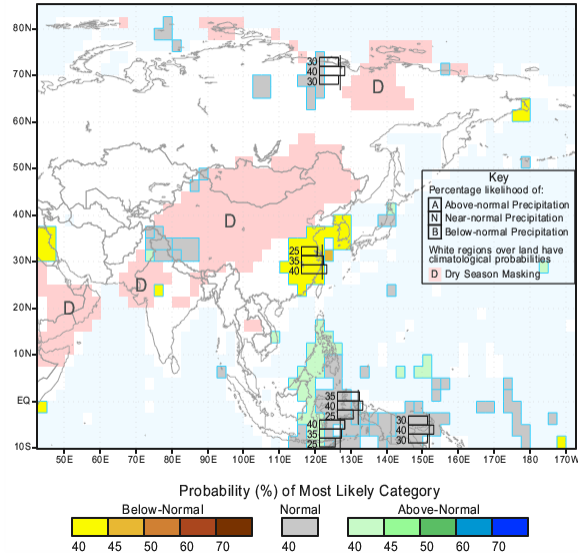


**Southern Region (Rainfall Scale- from 0-20 mm/day)**



**e) Seasonal Rainfall and Temperature Predictions from IRI**

IRI Multi-Model Probability Forecast for Precipitation  
for November-December-January 2014, Issued October 2013



IRI Multi-Model Probability Forecast for Temperature  
for November-December-January 2014, Issued October 2013

