

Experimental Climate Monitoring and Prediction

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

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11 October 2012

FECT BLOG

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

and

<http://fects.l.wordpress.com/>

FECT WEBSITES

<http://www.climate.lk>

and

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

ENSO Update

4 October 2012

More than 80% of the ENSO prediction models predict El Nino SST conditions during the September- November season, continuing into Northern winter 2012-13. Among those predicting El Nino, very few predict more than a weak event. (IRI)

Summary²

Monitoring

Weekly Monitoring: During 3rd-8th of October, rainfall ranged between 0-60 mm. No significant amount of rainfall reported during 3rd-5th in any part of the country. On the 8th entire country received rainfall and heavy rainfall was received for Northern half of the country.

Monthly Monitoring: In September, Central and South Eastern regions of the country received below average rainfall and the rest of the country received above average rainfall. Particularly Western, South Western and Jaffna peninsula regions were observed having a high positive anomaly.

Predictions

7-day prediction: During this week, an accumulated rainfall of 65- 75 mm is predicted for the Southwestern region of the island. Rest of the country except North and North-Central regions shall receive 15- 55 mm rainfall.

IMD WRF Model Forecast & IRI forecast: On 12th of October Northern half and Uva regions shall receive less than 36 mm rainfall and rainfall shall spread towards southern half of the country with a decreasing pattern. However Southern province shall expect no rainfall for the same day. On 13th North and North-Central regions shall receive rainfall less than 36 mm and scattered areas of the Southern half of the country shall receive rainfall less than 8 mm. NOAA models forecast 20 mm rainfall for South and South-Eastern regions and 40 mm rainfall for the rest of the country.

1 Month Prediction: Overall- Rainfall shall fluctuate between 2-6 mm throughout the next 30 days. **Western Slopes-** Rainfall shall fluctuate until the 21st of October and shall stop completely by the 26th after decreasing rapidly in 21st- 26th period. After the 26th it shall steadily increase upto 7 mm until the 29th. Then once again rainfall shall decrease until the 3rd of November and shall increase thereafter. **Eastern slopes-** Same rainfall pattern shall exists as mentioned for the entire country, except on 26th daily rainfall shall not reach 0 mm as previous. **Northern-** Rainfall shall decrease down to 1 mm until 14th of October. Afterthat a gradual increment of rainfall is expected until the 20th and thereafter shall decrease gradually 29th. Thereafter rainfall shall increase gradually till beginning of the November 2012.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for October 2012 to December 2012, issued in September 2012, there is a 50%-60% probability for temperature to be above normal in the country while the rainfall is to be climatological.

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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

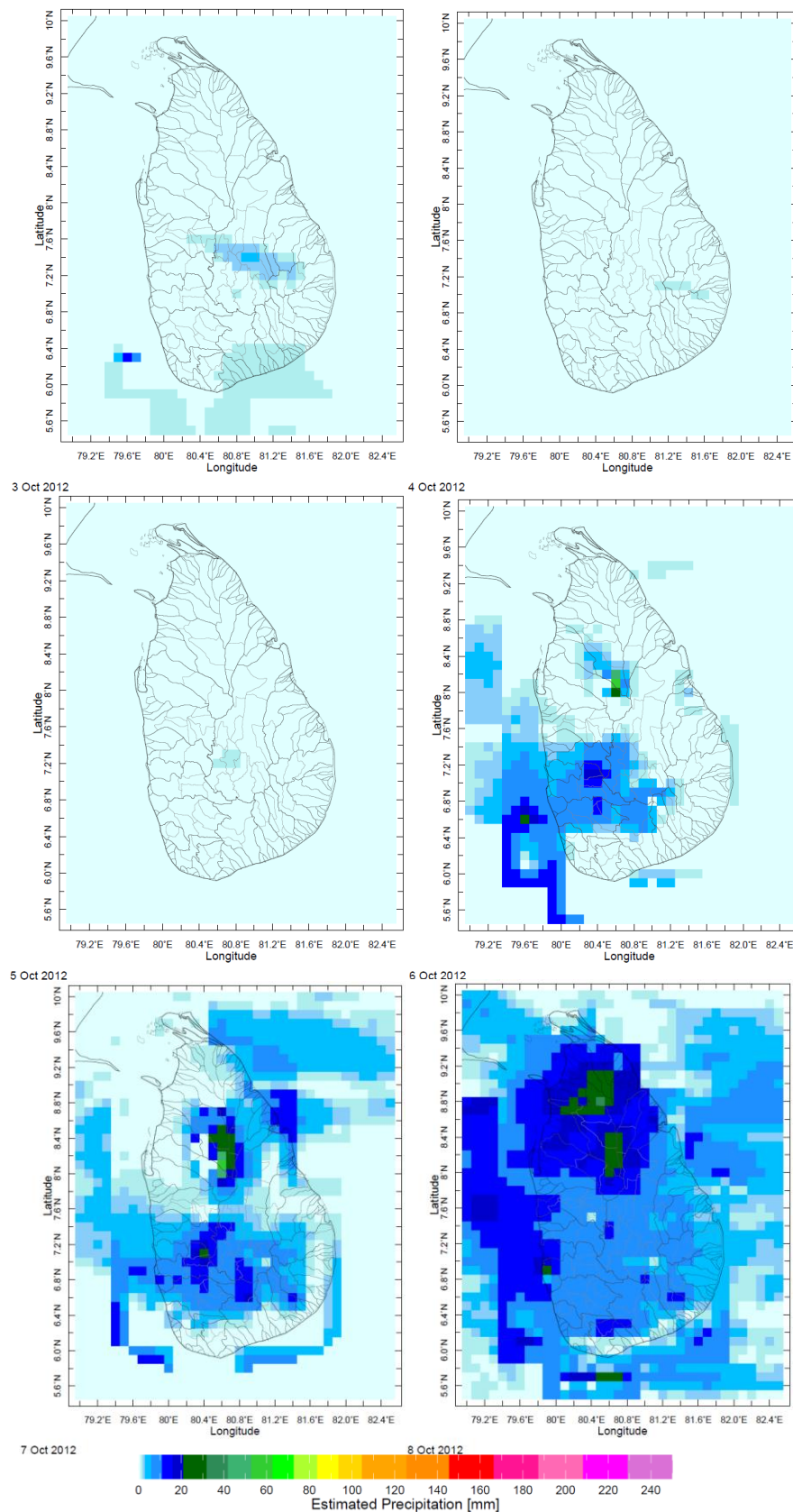
¹ International Research Institute for Climate and Society.

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

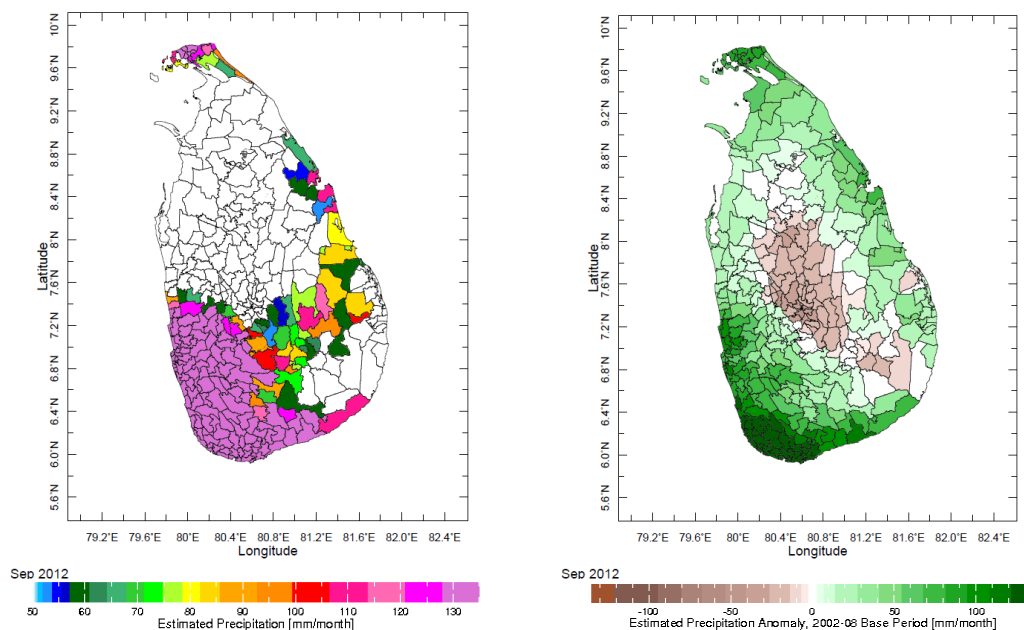
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

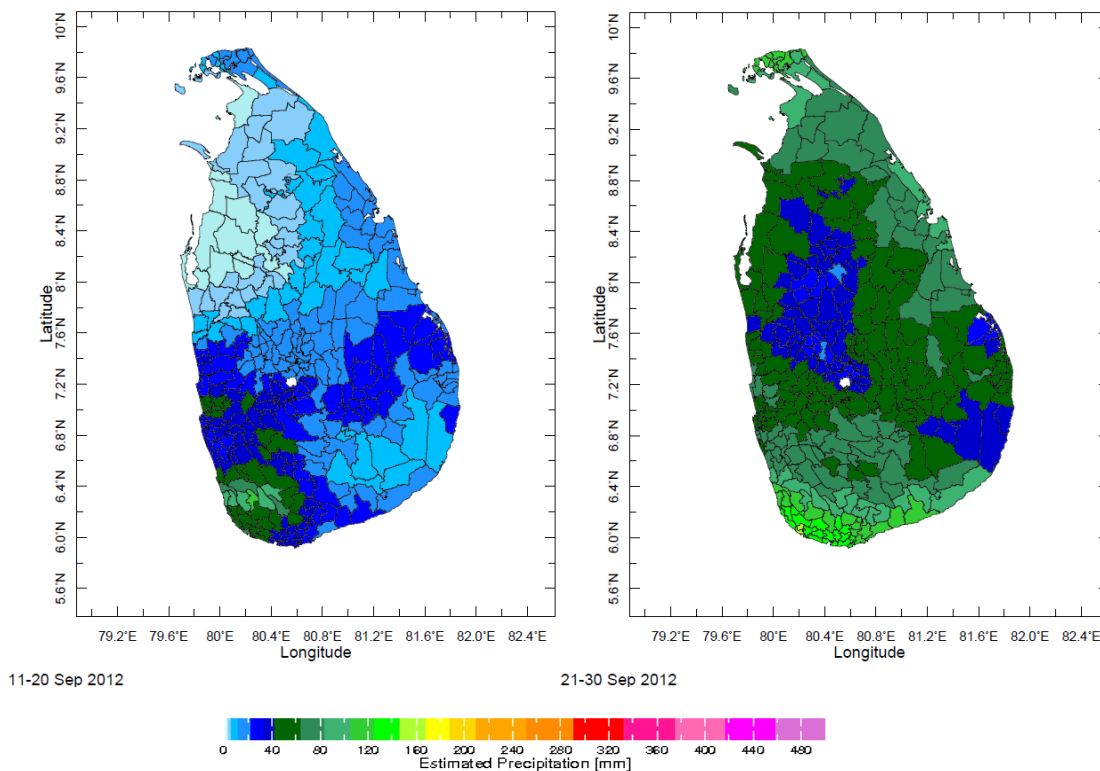
a) Daily Satellite Derived Rainfall Estimate Maps: 3rd -8th October, 2012 (Left-Right, Top-Bottom)



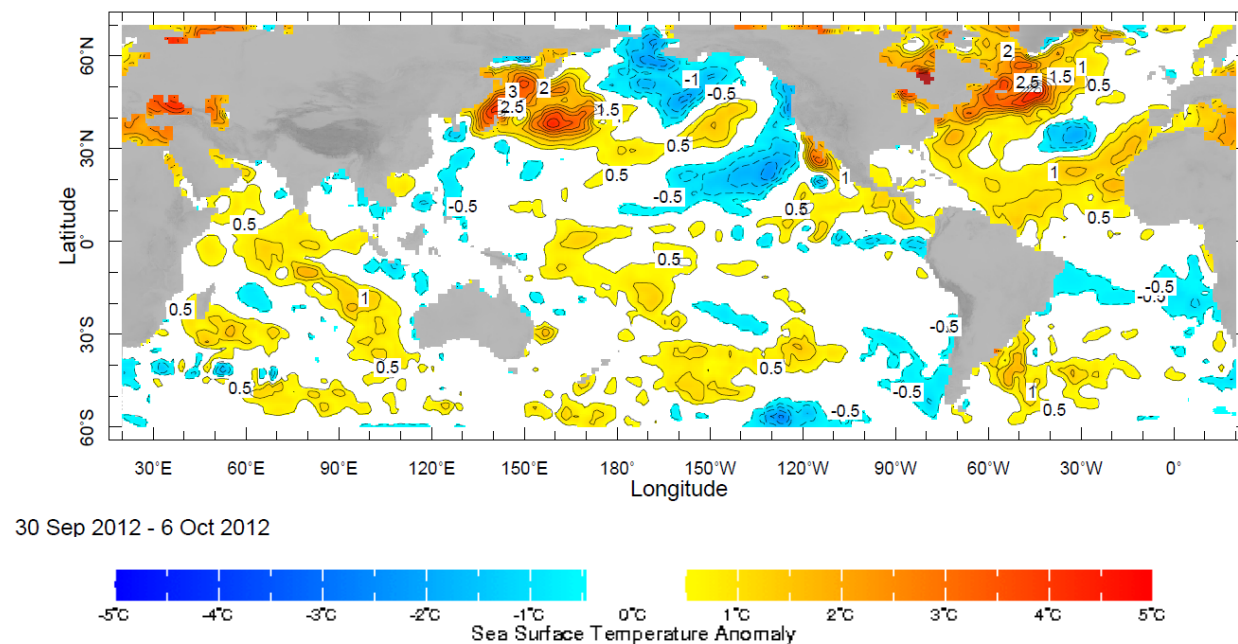
b) Monthly Satellite Derived Rainfall Estimates for September 2012 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 & 21-30 September, 2012)



d) Weekly Average SST Anomalies



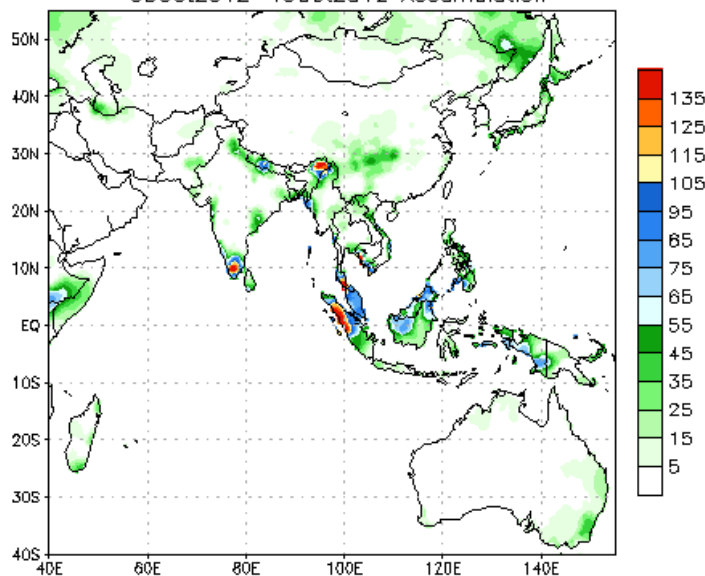
Weekly Average SST Anomalies ($^{\circ}\text{C}$), 30th Sept- 6th Oct, 2012

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

2. Predictions

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

NCEP GFS Ensemble Forecast 1-7 Day Precipitation (mm)
from: 09Oct2012
09Oct2012-15Oct2012 Accumulation

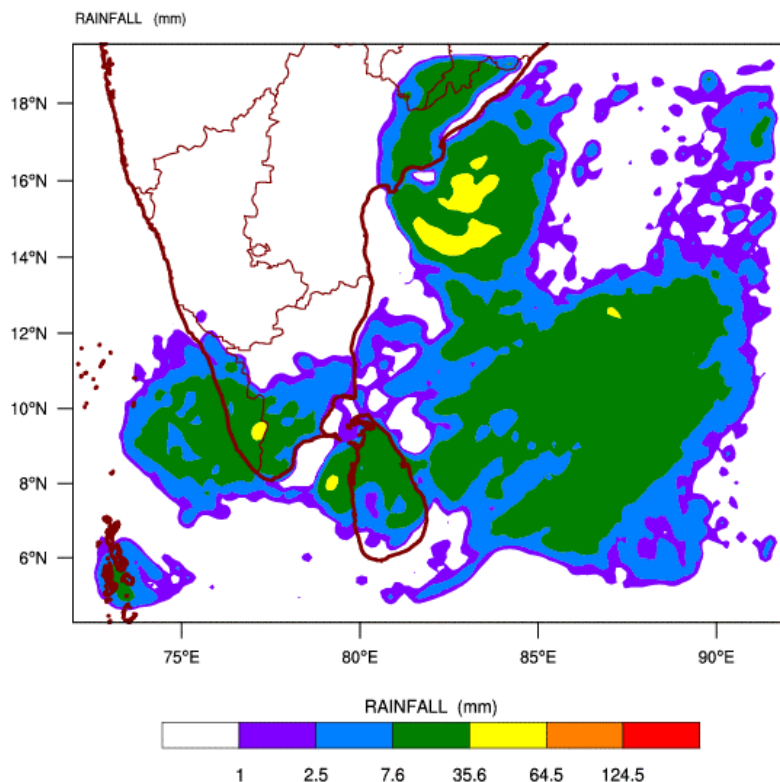


Bias correction based on last 30-day forecast error

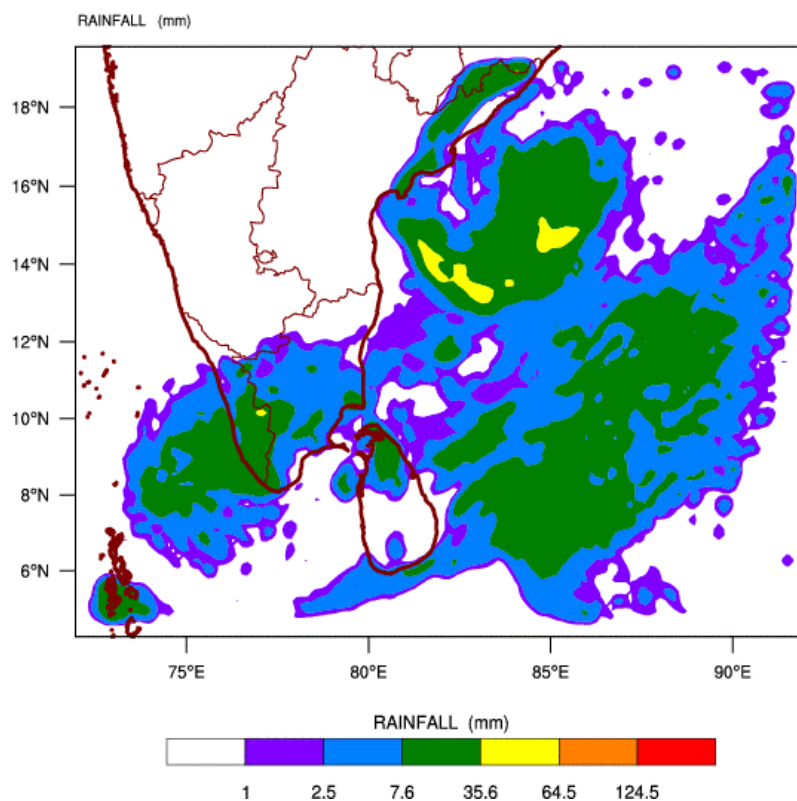
Source - NOAA Climate Prediction Center

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

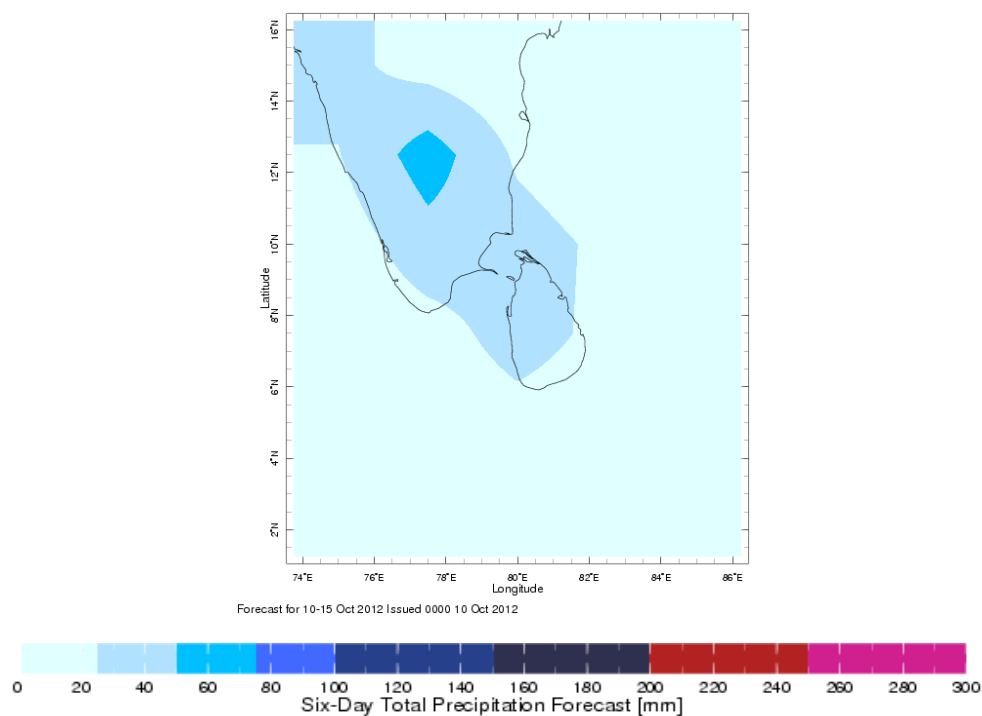
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 10-10-2012 valid for 03 UTC of 12-10-2012



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 10-10-2012 valid for 03 UTC of 13-10-2012



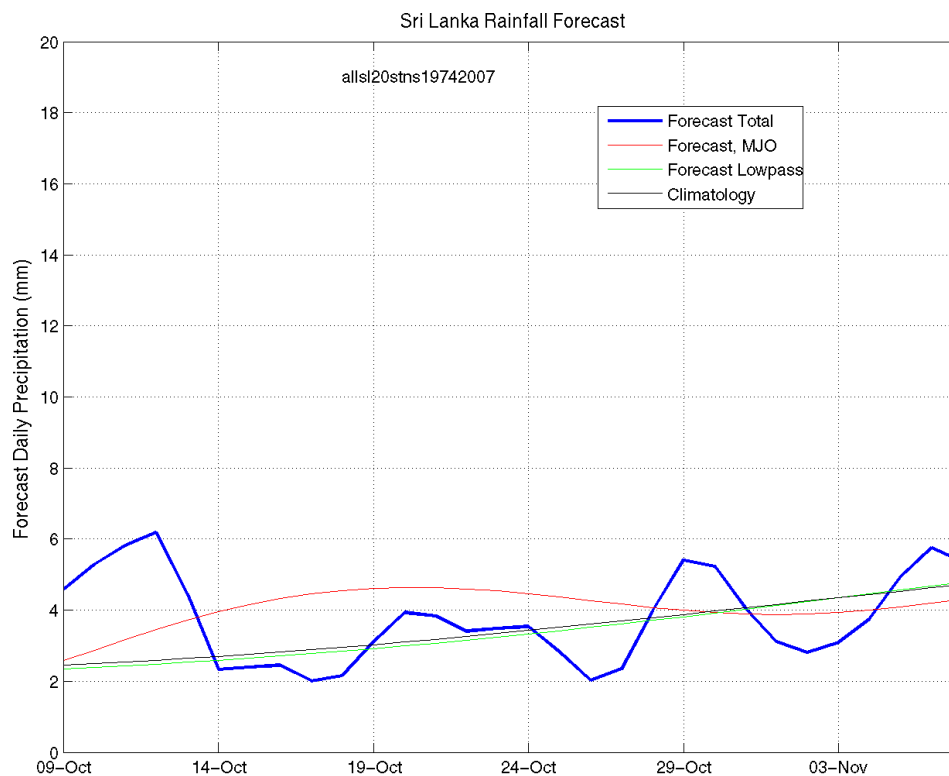
c) Weekly Precipitation Forecast for 10th -15th Oct 2012 (Precipitation Forecast in Context Map Tool, IRI)



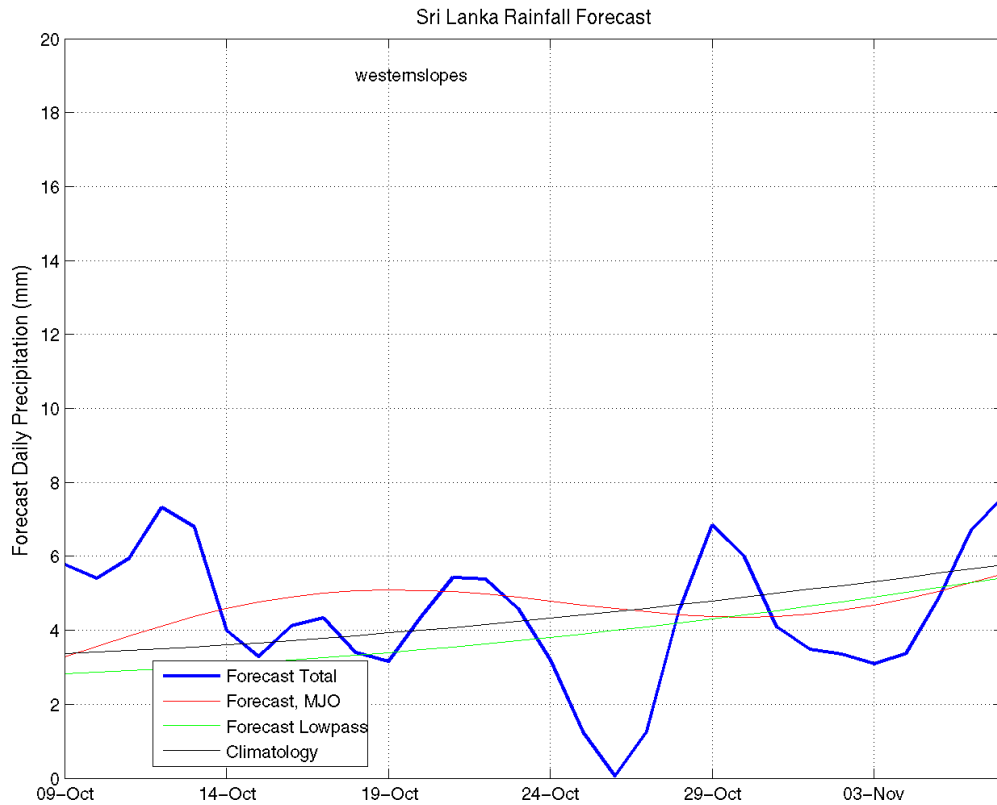
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 11th October, 2012

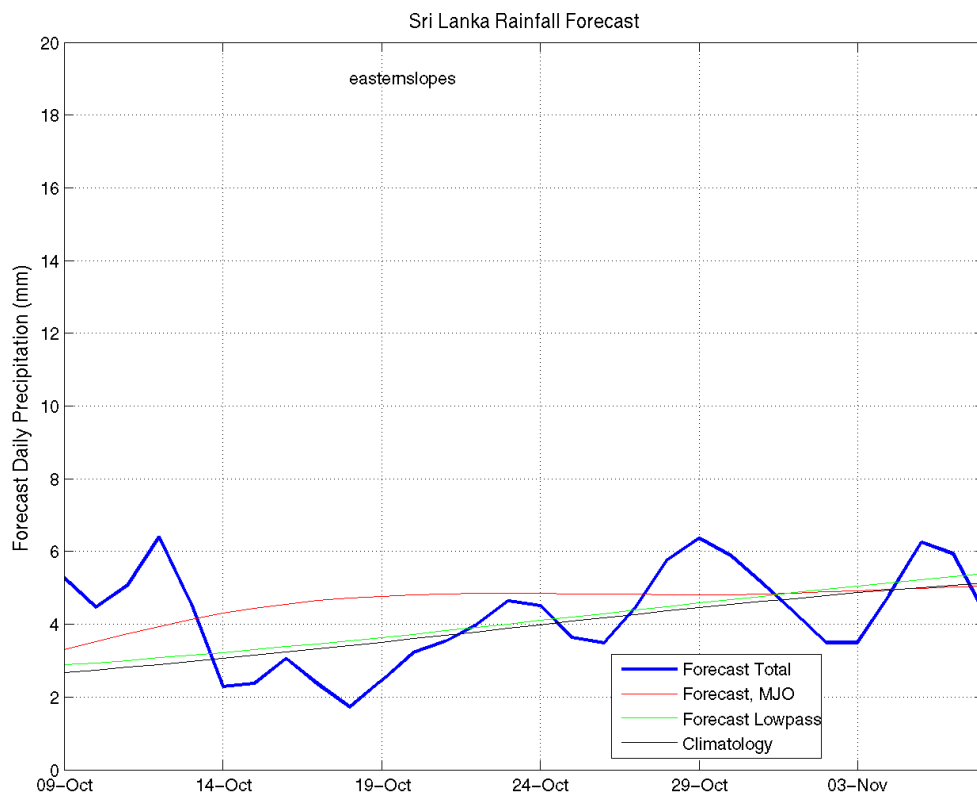
All Sri Lanka (Rainfall Scale from 0-20mm/day)



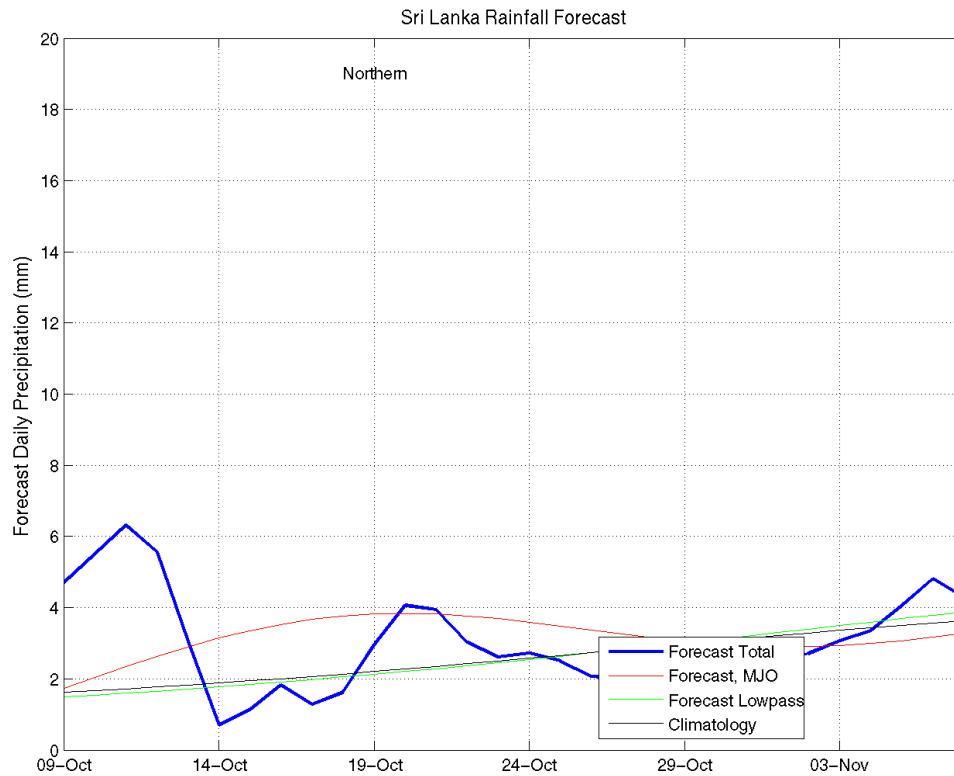
Western Slopes (Rainfall Scale from 0-20 mm/day)



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

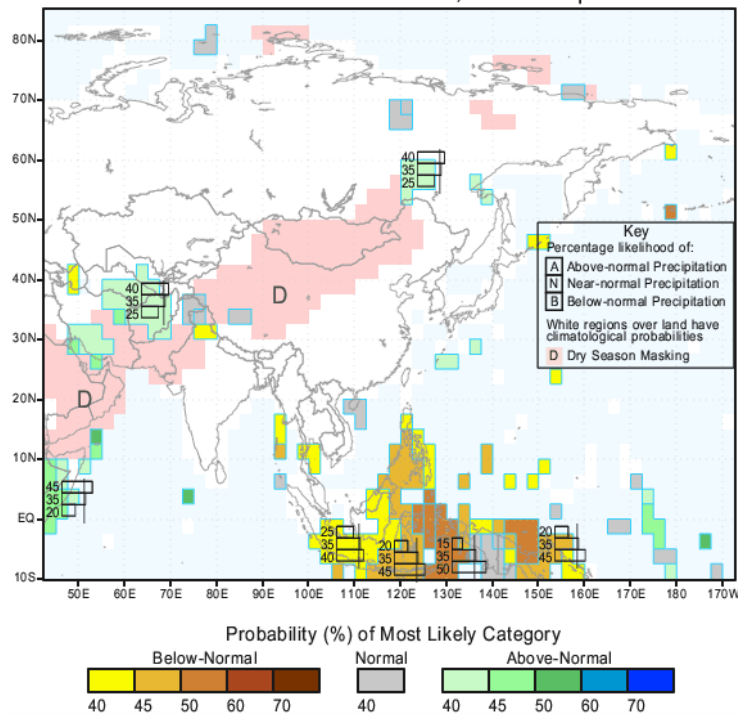


Northern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation
for October-November-December 2012, Issued September 2012



d) Seasonal Rainfall and Temperature Predictions from IRI Cntd...

IRI Multi-Model Probability Forecast for Temperature
for October-November-December 2012, Issued September 2012

