

Experimental Climate Monitoring and Prediction

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

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Lareef Zubair and Michael Bell (FECT and IRI¹)

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FECT BLOG

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

and

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

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<http://www.climate.lk>

and

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

ENSO Update

16 August 2012

More than 75% of the ENSO prediction models predict El Nino conditions developing around the August- October season, continuing through the rest of 2012. Meanwhile, about 20% of the models still indicate persistence of ENSO- neutral conditions, No models indicate a re-emergence of La Nina conditions (IRI)

Summary² Monitoring

Weekly Monitoring: During the last week (29th August- 04th September) rainfall ranged between 0 mm- 60 mm. During first half of the week (29 Aug-01 Sep) southern half of the country showed wet conditions with high rainfall in the Western and South Western regions. A scattered rainfall was experienced during second half with more rainfall for the Western, South Western, Southern and Central regions.

Monthly Monitoring: During August South Western, Western and Some parts of Badulla and Ampara districts experienced an above average rainfall with quite high positive anomaly in the South Western region. The rest of the country experienced below average rainfall during this period.

Predictions

IMD WRF Model Forecast & IRI forecast: On the 7th IMD WRF model predicts 1mm-36mm rainfall for the Puttalam, Colombo, Gampaha, Kalutara, Galle and Matara districts and Jaffna Peninsula with more rainfall of up to about 36mm for Galle and Matara Districts. It also predicts up to 8mm rainfall for some parts of the Ampara, Badulla and Nuwara Eliya Districts. On the 8th it Predicts up to about 8mm rainfall for the same areas except Matara, Jaffna and Ampara districts with an extension towards Mannar. Further it predicts same rainfall for the Trincomalee area and some parts of the Batticaloa district. NOAA models forecast Predicts up to 50mm total rainfall for the whole country.

1 Month Prediction: Overall a rapid increase of rainfall shall be expected till the 9th September followed by a rapid decrease till the 12th. Thenafter rainfall shall show some fluctuations with low rainfall. *Western Slopes-* Rainfall shall increase rapidly till the 8th September followed by a rapid decrease till the 12th. Thenafter it shall show a decreasing trend with some fluctuations till the 21st. It shall again show an increasing trend with some fluctuations till the 4th October. *Eastern slopes-* Highly fluctuated rainfall shall be expected and the maximum rainfall shall not exceed 4mm. *Northern-* No Significant rainfall shall be expected.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for September 2012 to November 2012, issued in August 2012, there is a 50%-60% probability for temperature to be above normal in

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

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

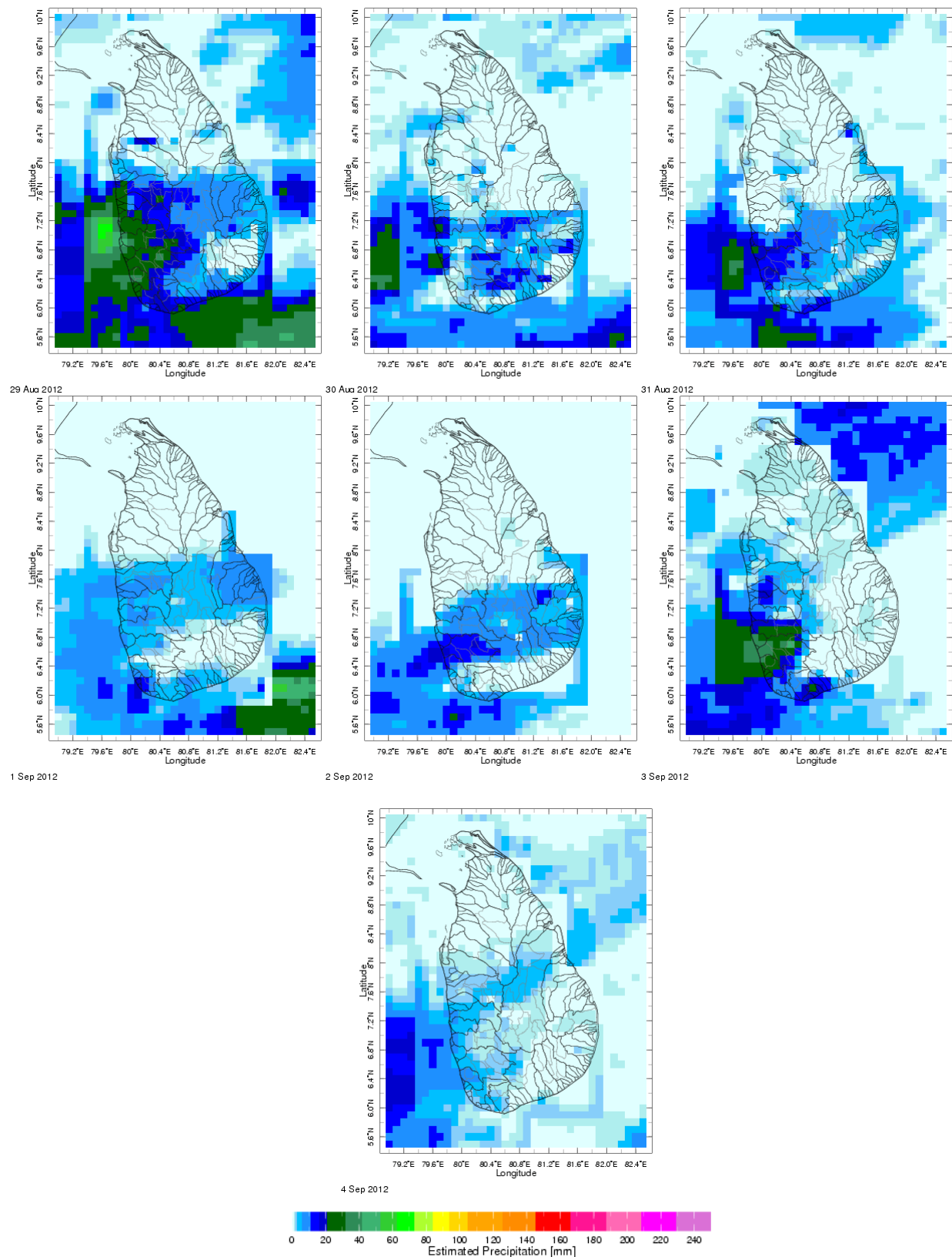
International Research Institute for Climate and Society.

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

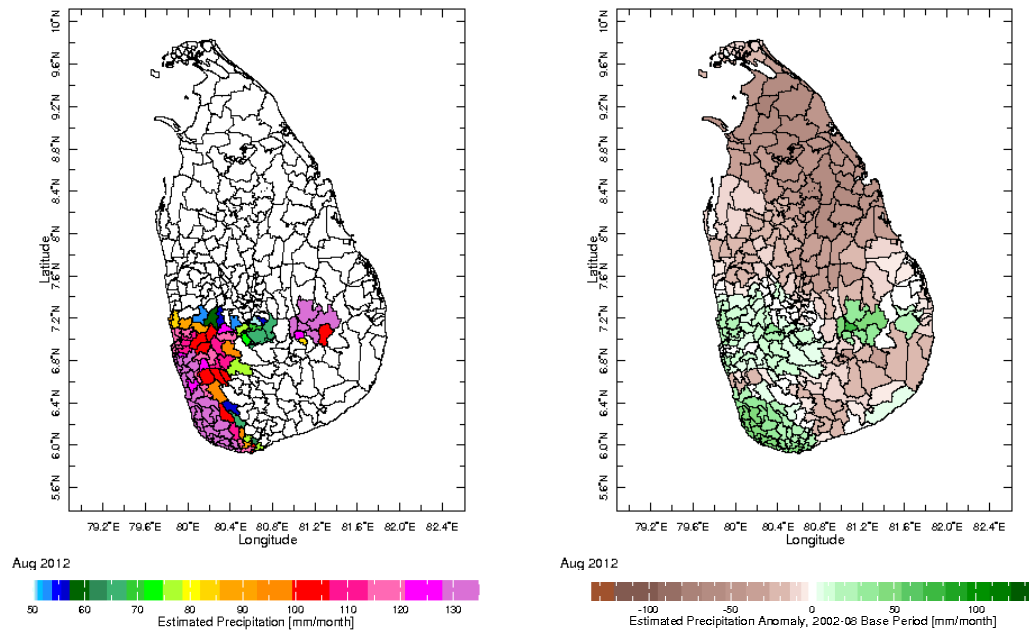
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

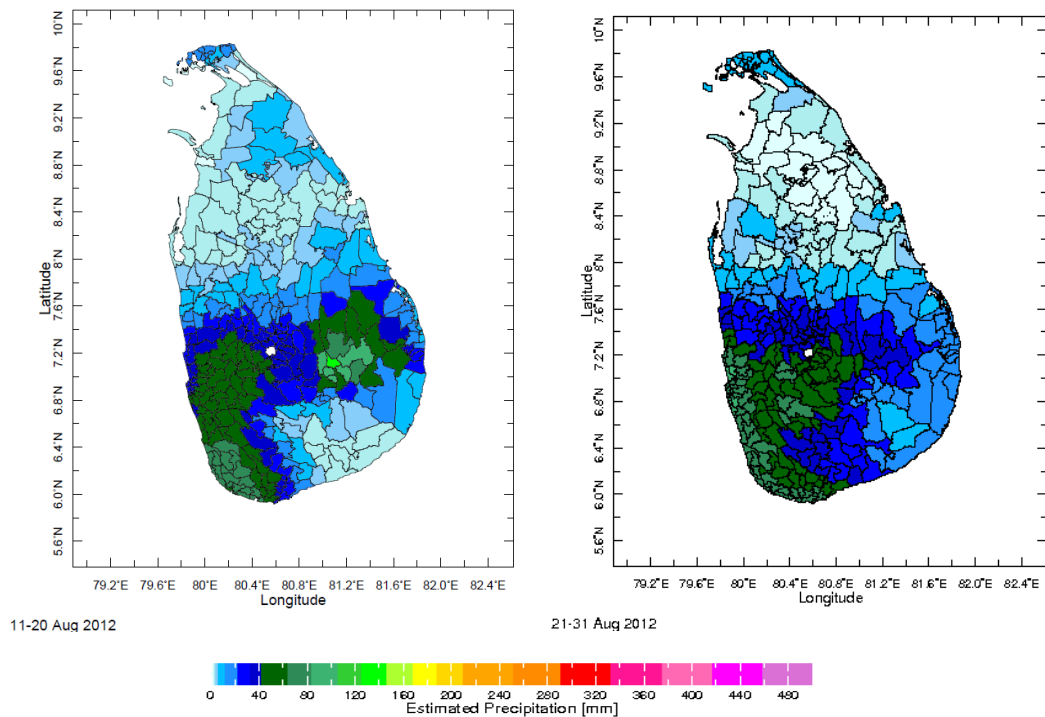
a) Daily Satellite Derived Rainfall Estimate Maps: 29th Aug, 2012- 04th Sept, 2012 (Left-Right, Top-Bottom)



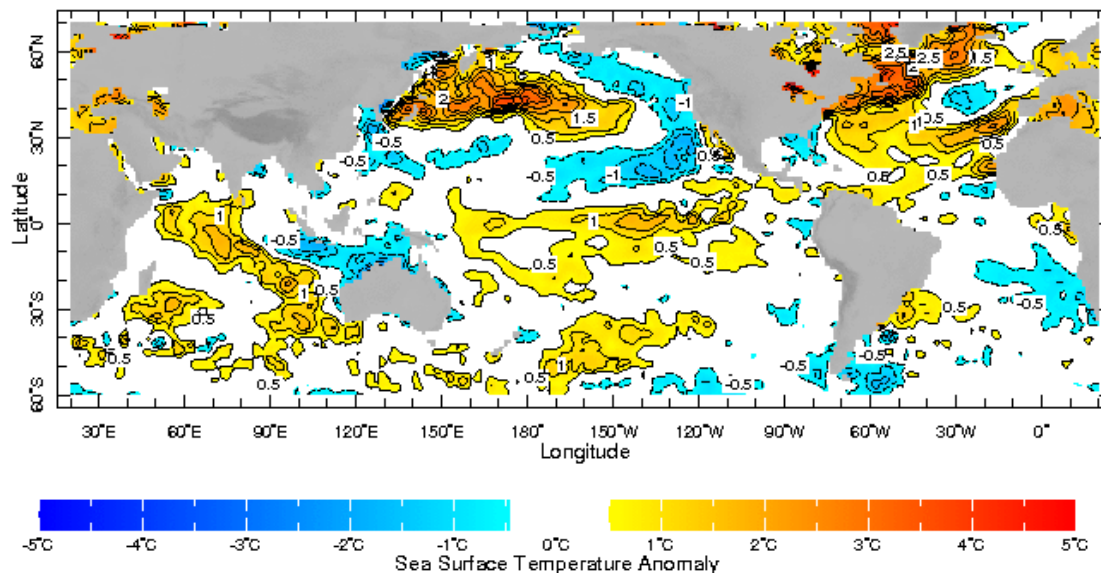
b) Monthly Satellite Derived Rain fall Estimates for August 2012 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 & 21-31 August 2012)



d) Weekly Average SST Anomalies



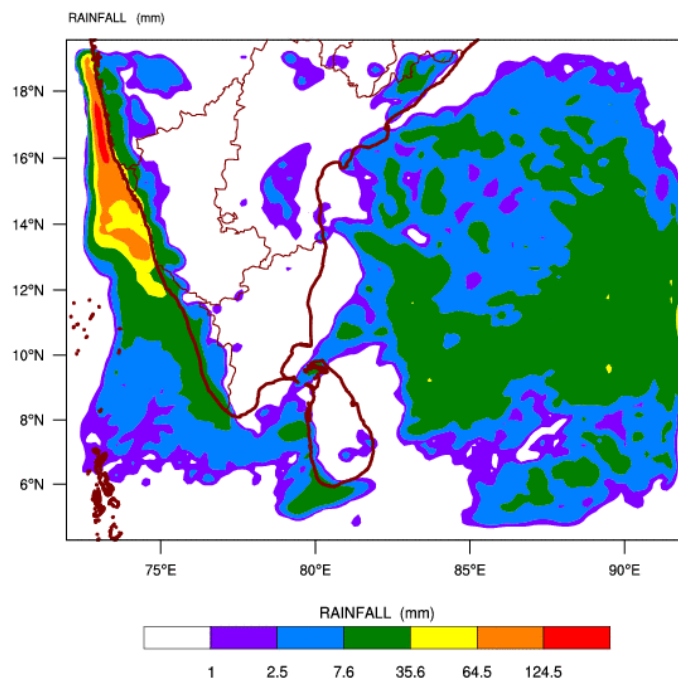
Weekly Average SST Anomalies ($^{\circ}\text{C}$), 26th Aug, 2012 -01st Sept, 2012

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

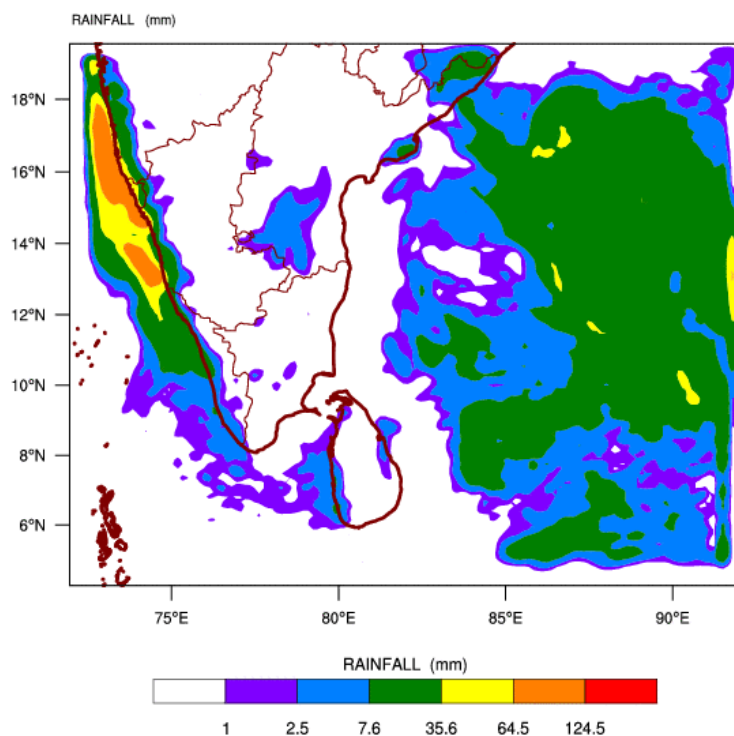
2. Predictions

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

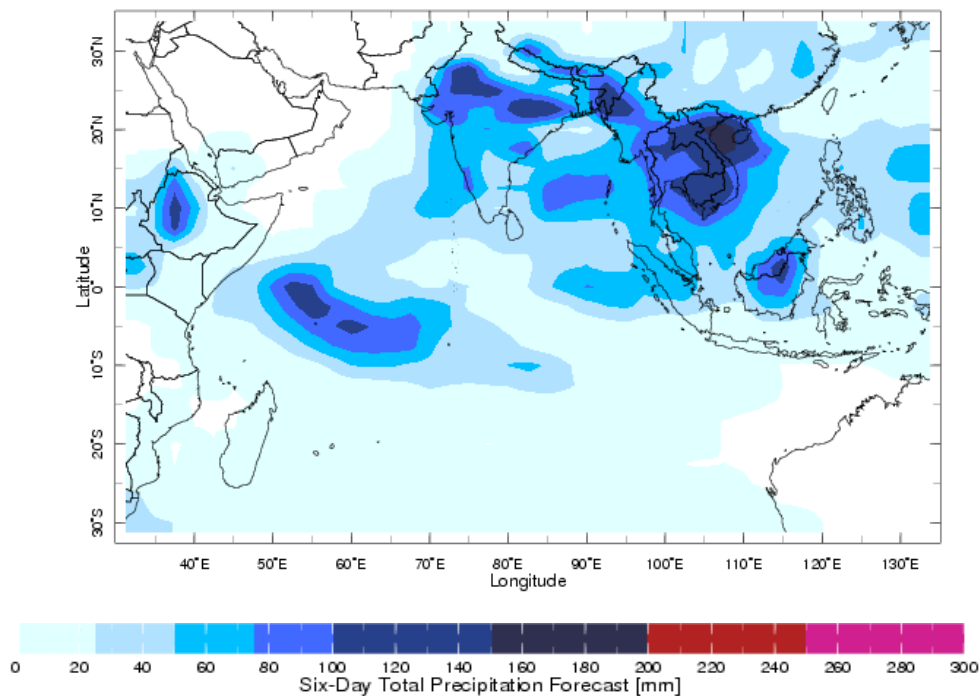
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 05-09-2012 valid for 03 UTC of 07-09-2012



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 05-09-2012 valid for 03 UTC of 08-09-2012



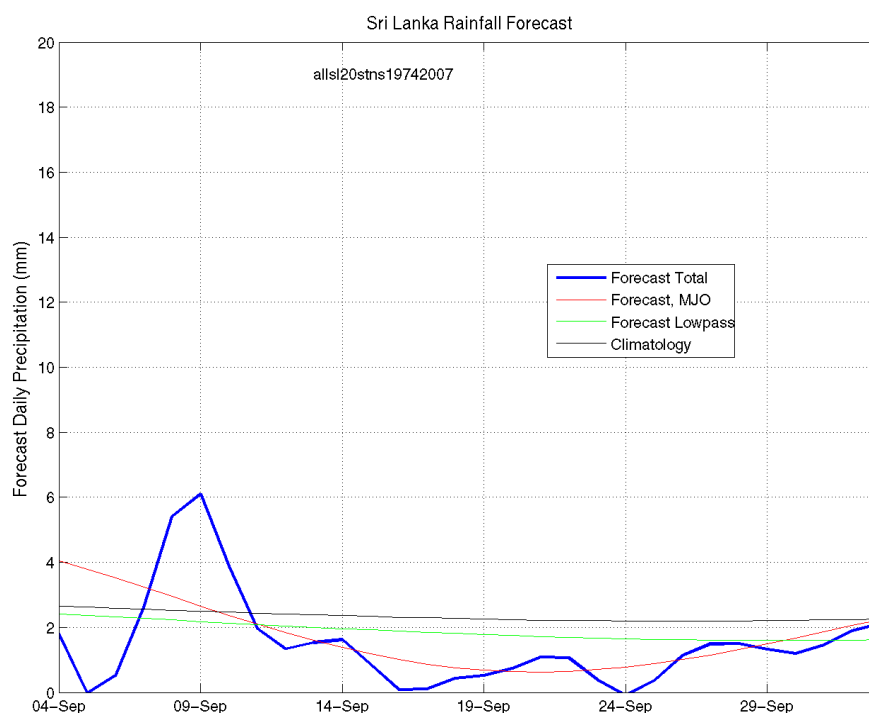
b) Weekly Precipitation Forecast for 4-9 Sept 2012 (Precipitation Forecast in Context Map Tool, IRI)



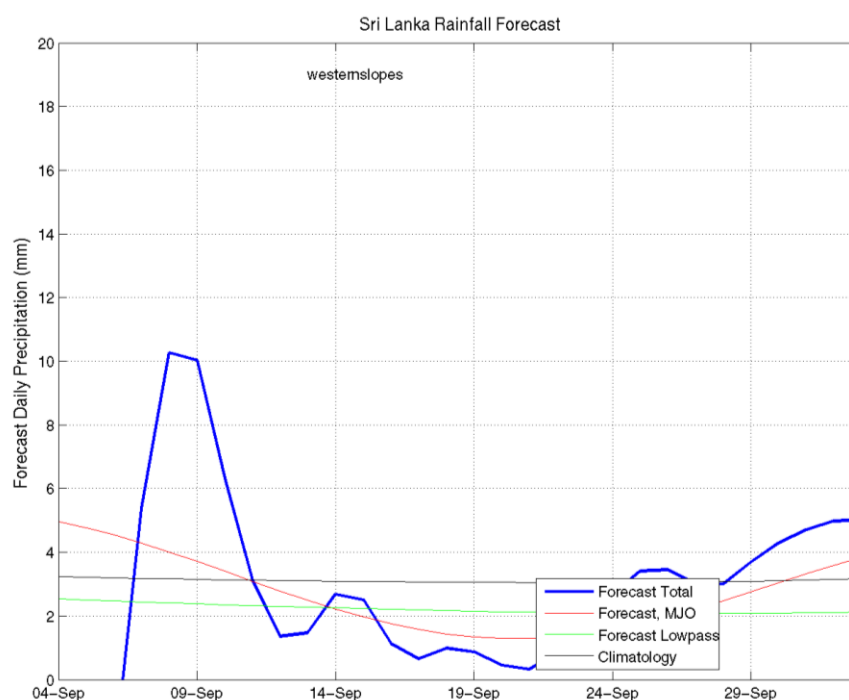
c) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 06th Sept, 2012

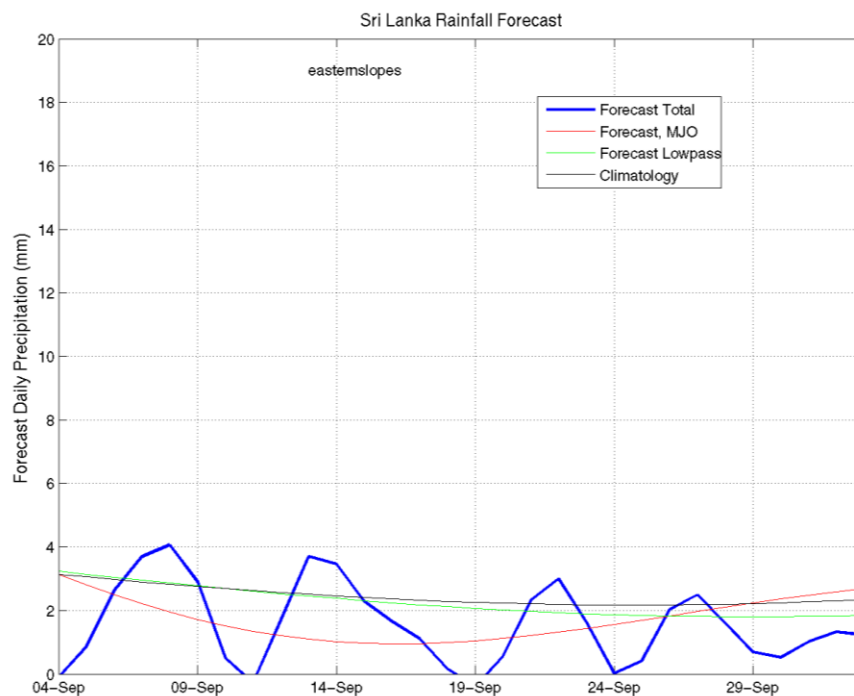
All Sri Lanka (Rainfall Scale from 0-20mm/day)



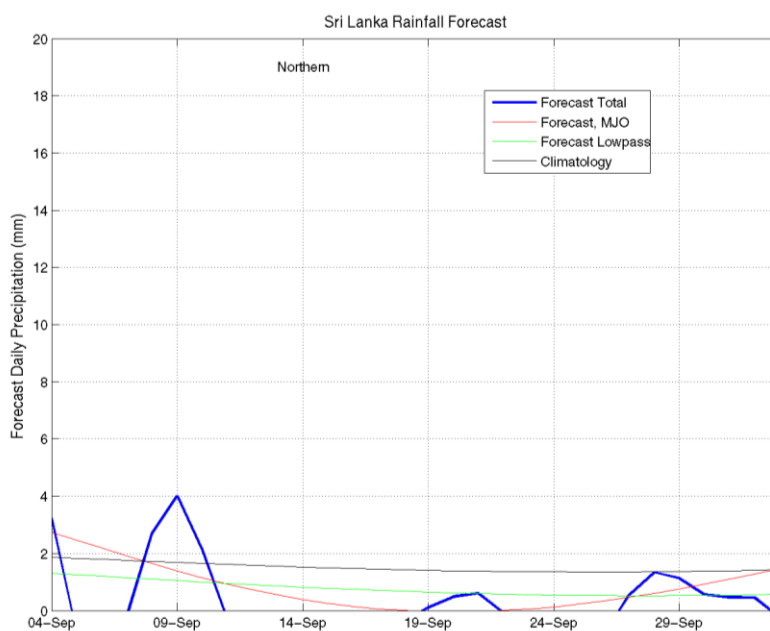
Western Slopes (Rainfall Scale from 0-20 mm/day)



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

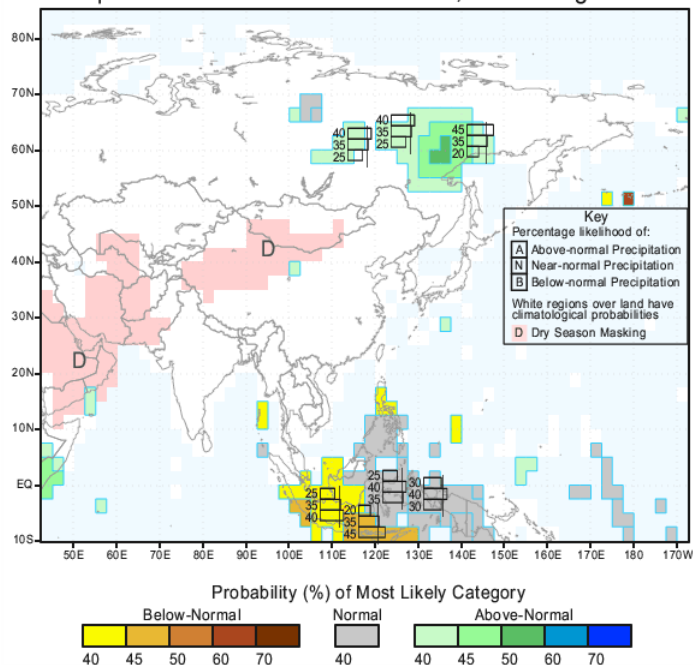


Northern Region (Rainfall Scale- from 0-20 mm/day)



d) Seasonal Rainfall and Temperature Predictions from IRI

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



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

