

Experimental Climate Monitoring and Prediction

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8 August 2013

FECT BLOG

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

FECT WEBSITES

<http://www.climate.lk> and
<http://www.tropicalclimate.org/>

July 18, 2013 PACIFIC SEAS STATE

During June through early July the observed ENSO conditions remained neutral. Most of the ENSO prediction models indicate a continuation of neutral ENSO through the remainder of 2013. However a few (mainly statistical) models call for cooling towards borderline or weak La-Nina conditions for northern autumn into winter. While a few others (mainly dynamical) forecast developing El-Nino conditions during this same time frame.

(Text Courtesy IRI)

INDIAN OCEAN STATE

The sea surface temperature around Sri Lanka was neutral during 28th July-3rd August 2013.

MJO STATE

MJO is neutral and not influences Sri Lanka rainfall.

Highlights

Monitoring and Predictions:

Rainfall was quite heavy in July in the Southwestern regions of Sri Lanka. Compared to the rest of the island, the coastal belts of Galle to Puttalam are likely to receive heavier rainfall on coming two days (9th & 10th of August). Trincomalee district shall receive comparable amount of rainfall during 7th-12th August. Ongoing rainfall shall increase further, but vary between 4mm/day. However, eastern coast regions shall experience heavier rainfall during next week (9th-15th August) compared to rest of the regions. Significant rainfall events are not expected during next week period (9th-15th August).

Summary

Monitoring

Weekly Monitoring: Rainfall ranged between 5-80 mm during 30th July-6th August 2013. Maximum rainfall observed for small regions in Ratnapura district on 4th August. Beginning of the week was dry compared to the rest of the days in the week. However, rainfall decreased after 4th August.

Monthly Monitoring: Southwestern regions of Sri Lanka received an above average rainfall during the month of July. The entire country received less than 15 mm of daily rainfall, with Colombo and Gampaha districts receiving the highest rainfall during the month (14 mm/day).

Predictions

7-day prediction: Galle to Kalutara districts shall receive 55-95 mm of rainfall and shall spread northeastward in a reducing manner during 7th-13th August 2013. For the same period, Jaffna Peninsula shall receive 25-45 mm of rainfall and shall spread southward in a reducing manner

IMD WRF Model Forecast & IRI forecast: For 9th & 10th of August, IMD WRF model predicts less than 125 mm of rainfall for Galle to Puttalam districts and it shall spread eastward towards nearby regions in a reducing manner. For the same days Ampara, Batticaloa and Trincomalee shall receive less than 8mm of rainfall/day. NOAA model predicts more rainfall for Trincomalee and Mullativu districts compared to other regions during 7th-12th August.

30 Days Prediction: Overall- Ongoing rainfall is likely to increase till 11th August & shall decrease during 11th-15th. However, rainfall shall vary below 4mm/day. **Western Slopes** – The rainfall pattern persisting in the entire country shall be observed in this region. **Western Coast** – Rainfall is not predicted during 12th-17th August. There shall be rainfall during 9th-11th. After 17th of August rainfall shall increase gradually. **Eastern Slopes**– Existing rainfall shall increase gradually till 11th & shall decrease in same rate till 13th. Thereafter rainfall shall increase. **Eastern Coast** – Higher amount of rainfall is predicted for this region compare to other regions. Rainfall shall increase till 11th & gradually decrease till 17th. **Northern region-** Existing increasing trend of the rainfall shall persist till 10th & shall decrease with different rates during 10th-19th. During 14th-17th rainfall is likely to be constant. **Southern Region-** The rainfall shall increase in different rates till 14th. It shall decrease during 14th-17th.

Seasonal Prediction: As per IRI Multi Model Probability Forecast issued on July 2013; for August 2013 to October 2013, there is a 50-70% probability for temperature to be above normal in the country while the rainfall is to be climatological.

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- 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

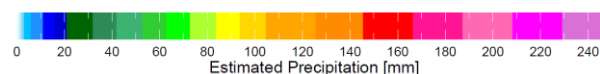
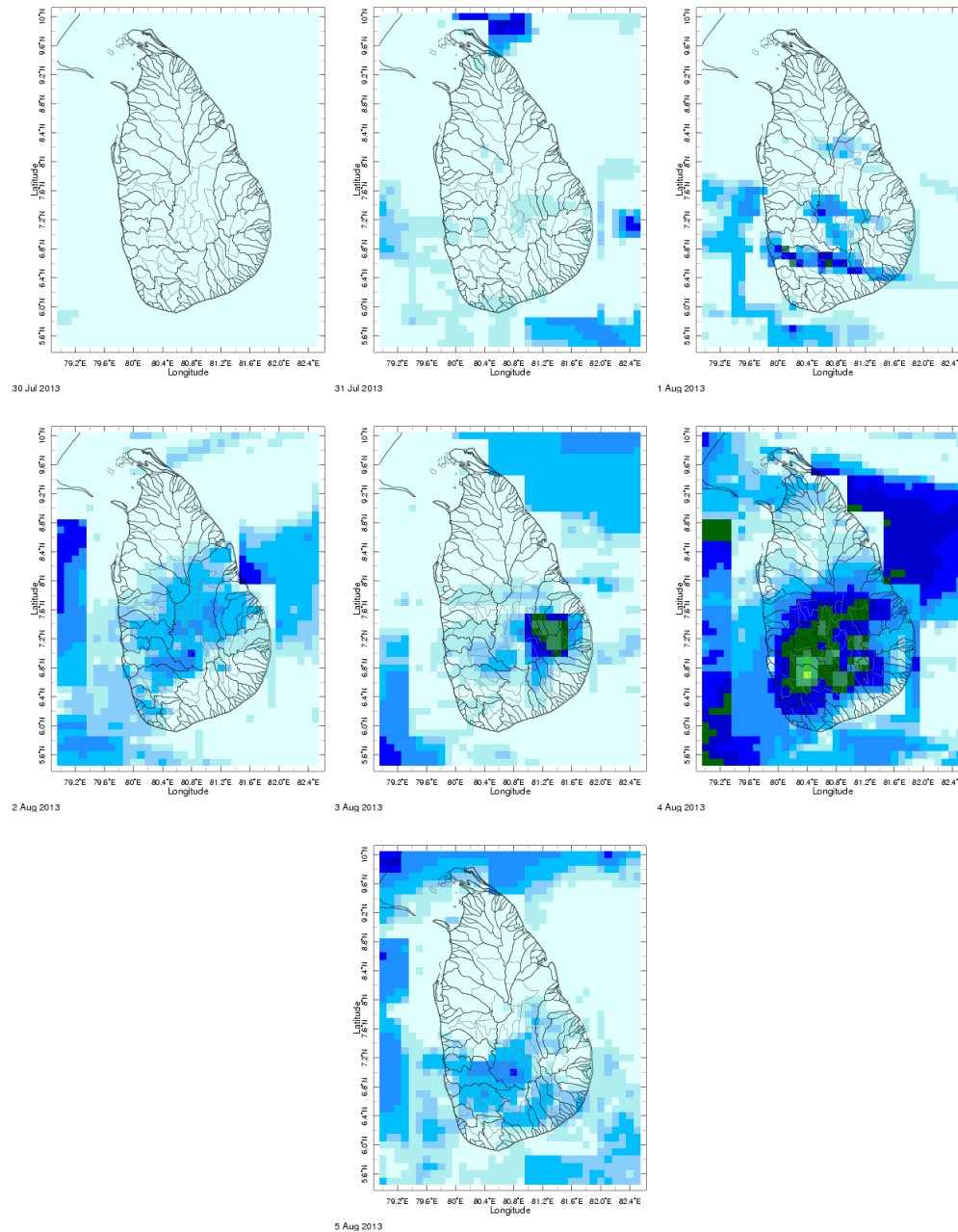
¹ International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

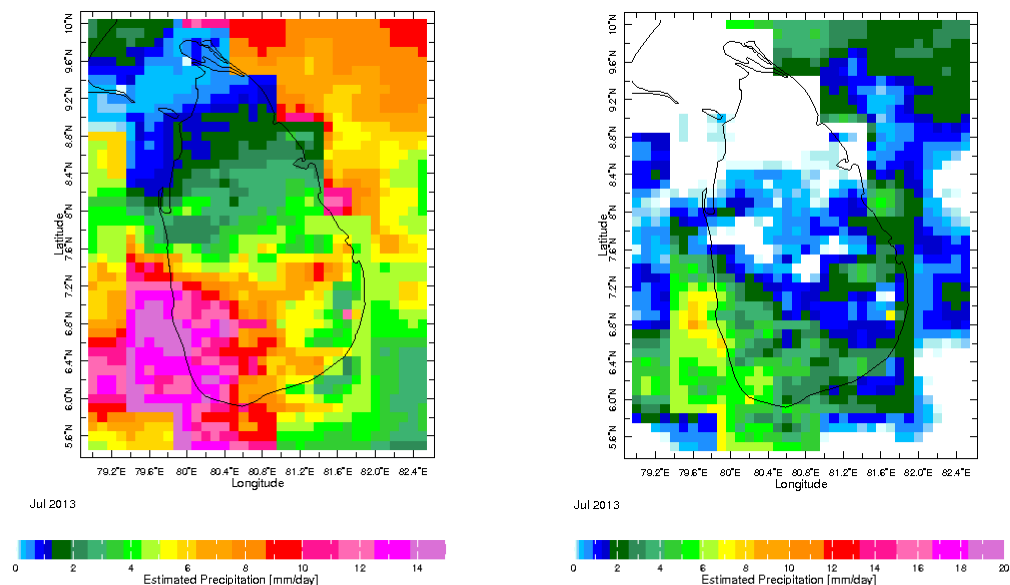
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

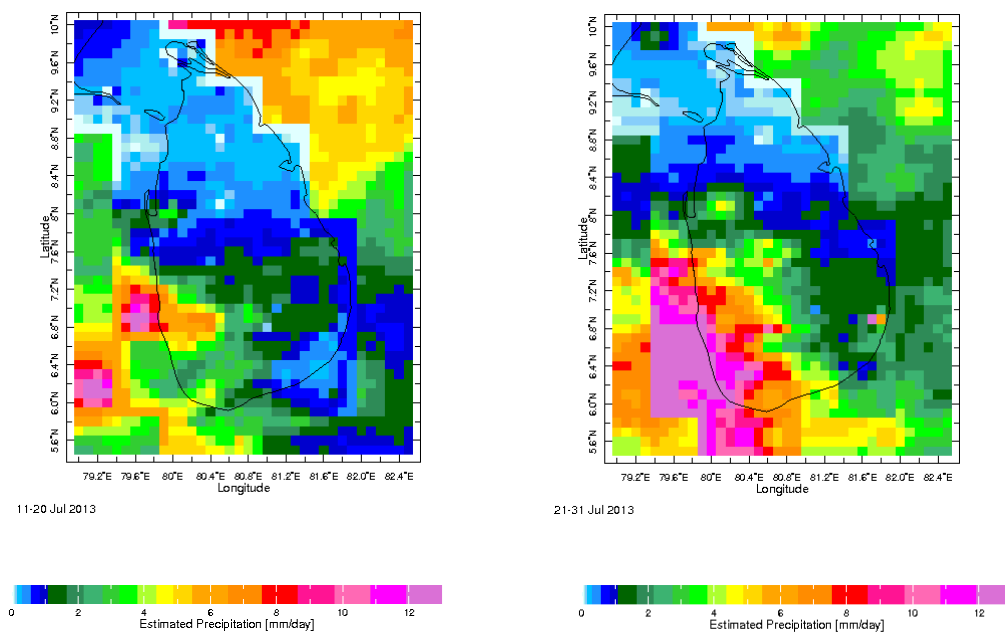
a) Daily Satellite Derived Rainfall Estimate Maps: 30th July-5th August 2013 (Left-Right, Top-Bottom)



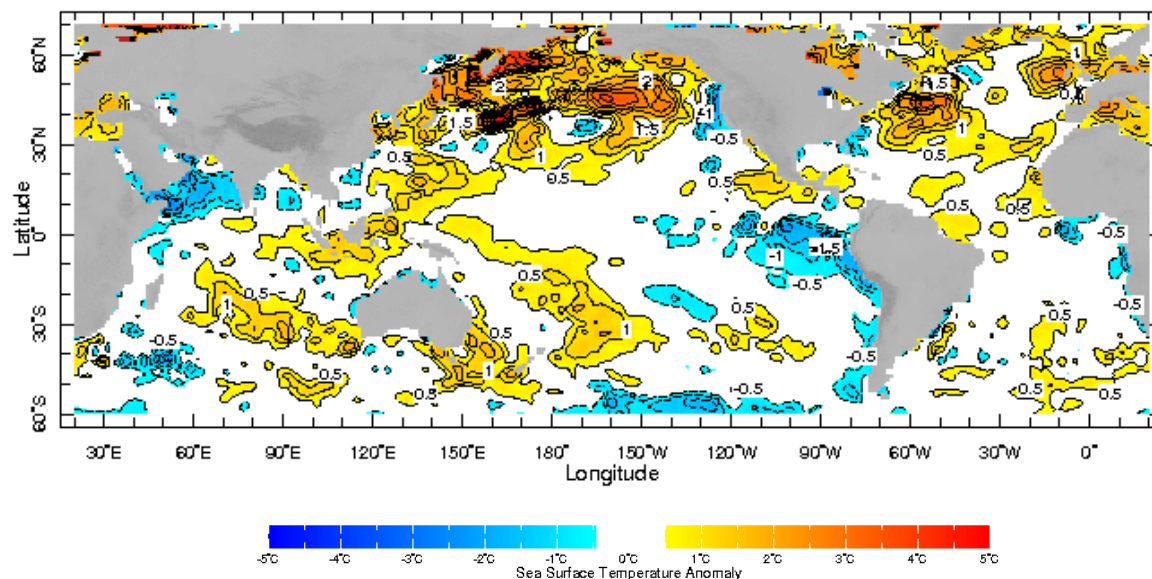
b) Monthly Satellite Derived Rainfall Estimates for July 2013 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (11-20 July & 21-30 July, 2013)



b) Weekly Average SST Anomalies

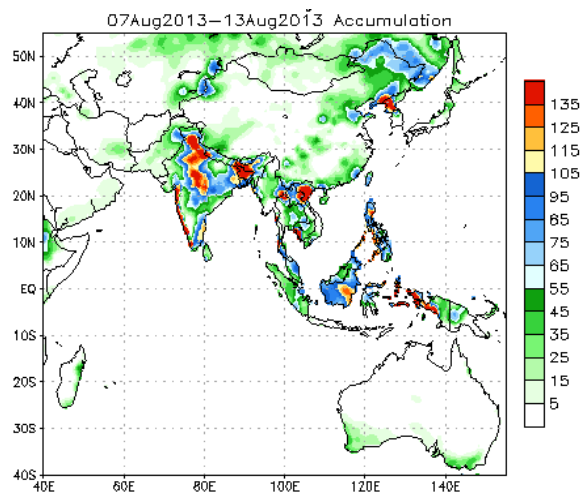


Weekly Average SST Anomalies ($^{\circ}\text{C}$), 28th July-3rd August, 2013

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

2. Predictions

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

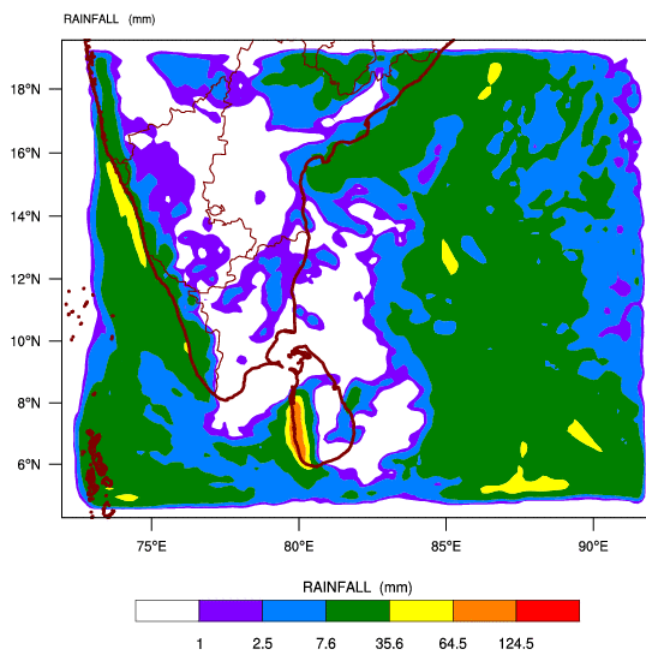


Bias correction based on last 30-day forecast error

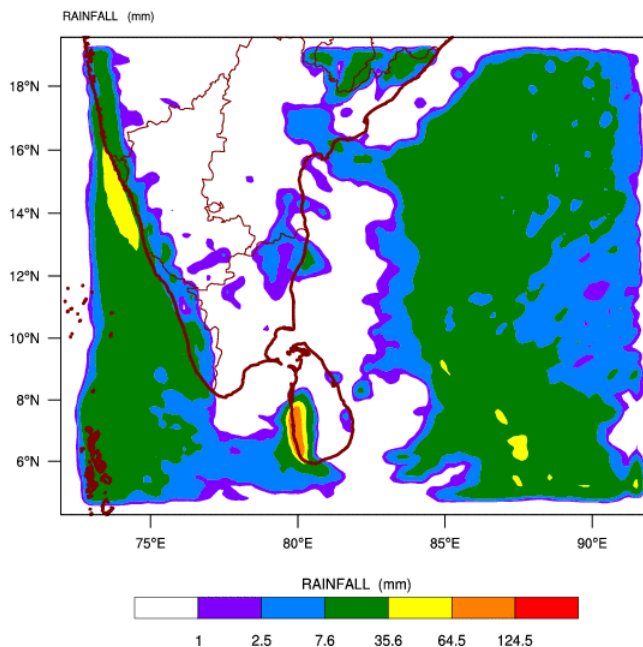
Source – NOAA Climate Prediction Center

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

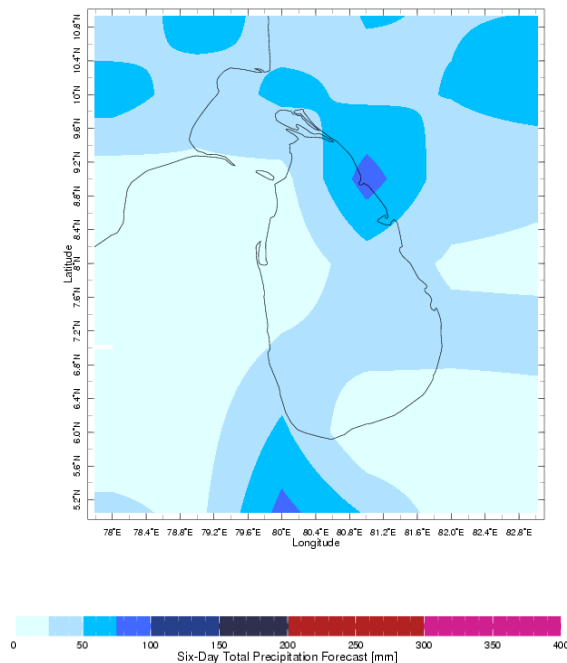
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 07-08-2013 valid for 03 UTC of 09-08-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 07-08-2013 valid for 03 UTC of 10-08-2013



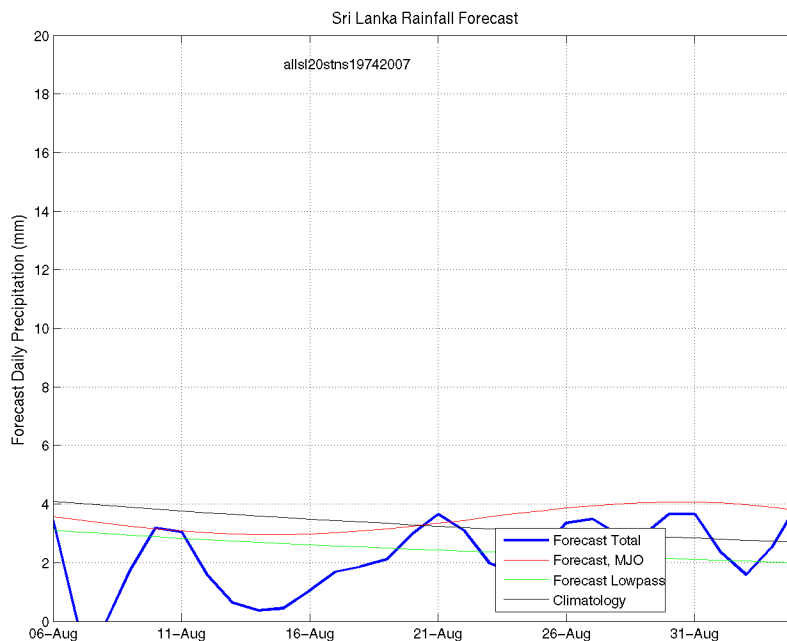
c) Weekly Precipitation Forecast for 7th-12th August 2013 (Precipitation Forecast in Context Map Tool, IRI)



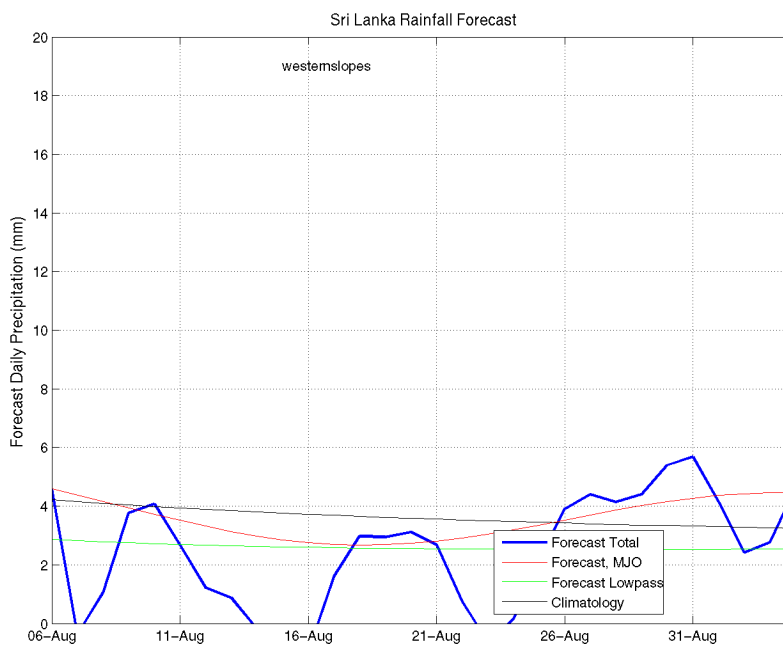
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 8th August, 2013

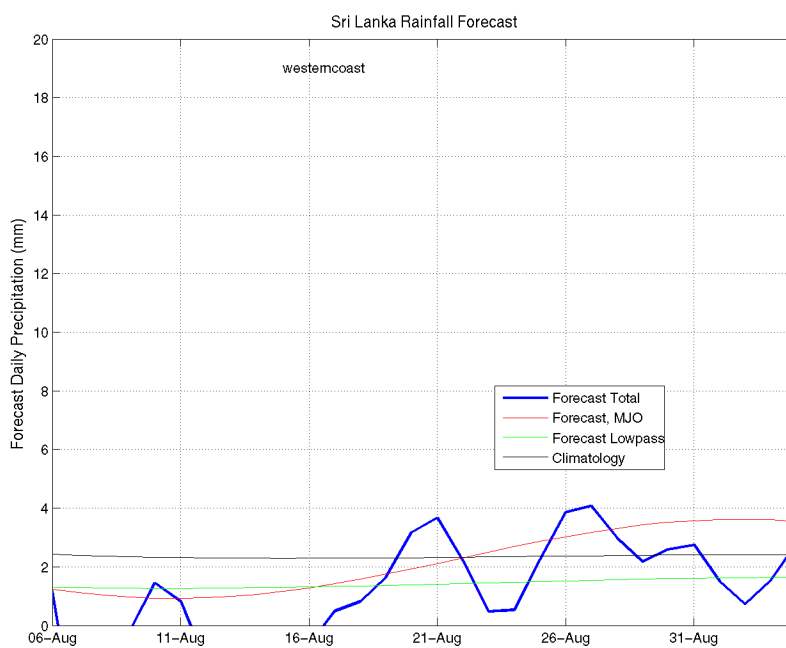
All Sri Lanka (Rainfall Scale from 0-20mm/day)



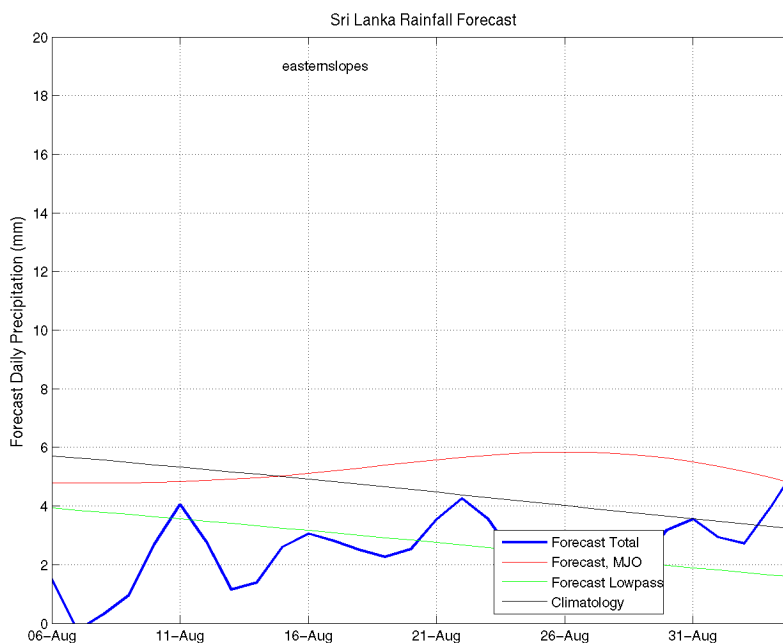
Western Slopes (Rainfall Scale from 0-20 mm/day)



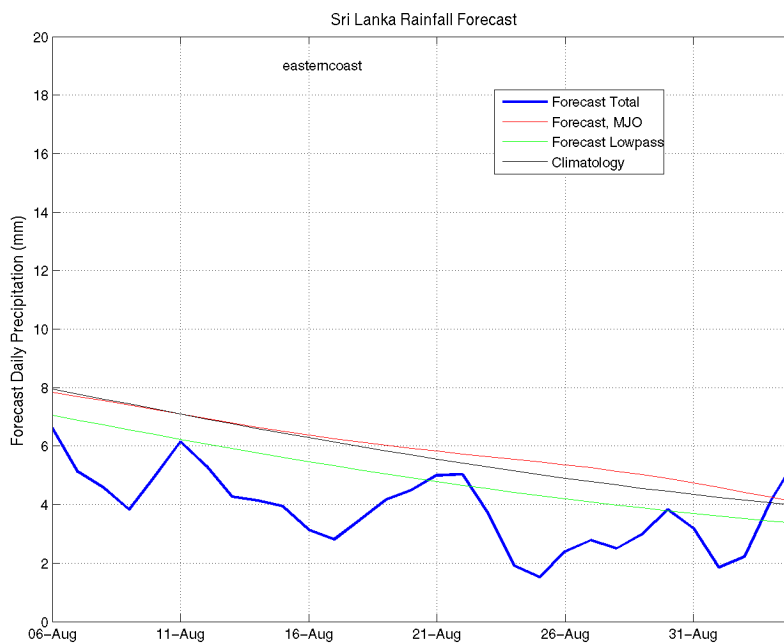
Western Coast (Rainfall Scale from 0-20 mm/day)



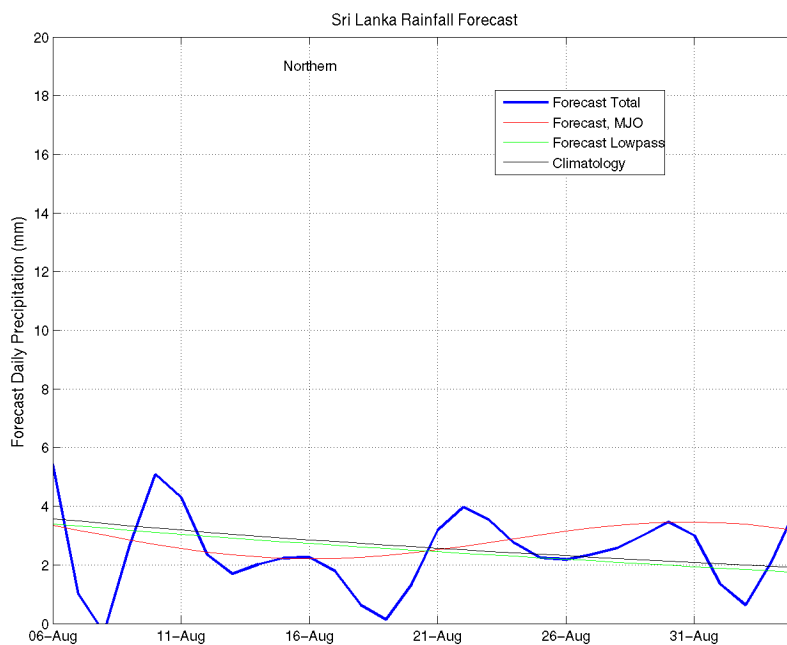
Eastern Slopes (Rainfall Scale- from 0-20 mm/day)



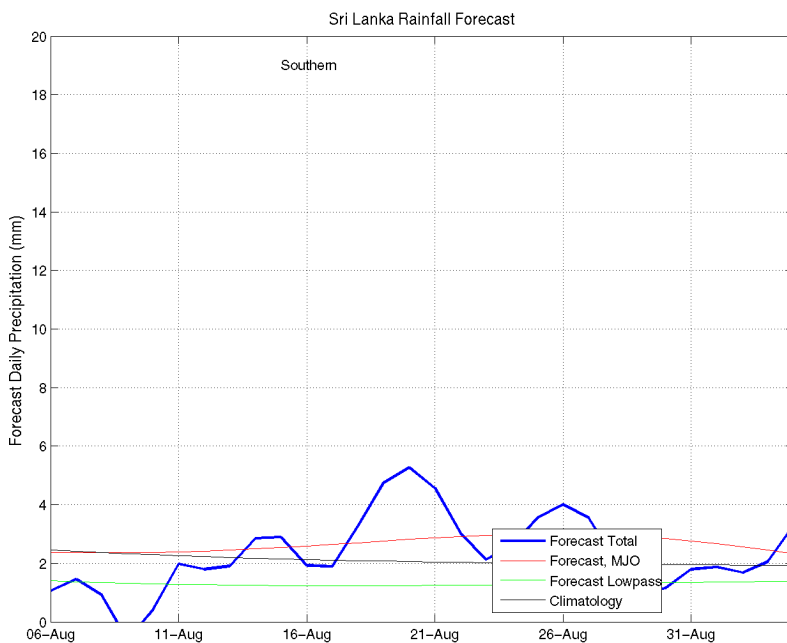
Eastern Coast (Rainfall Scale- from 0-20 mm/day)



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

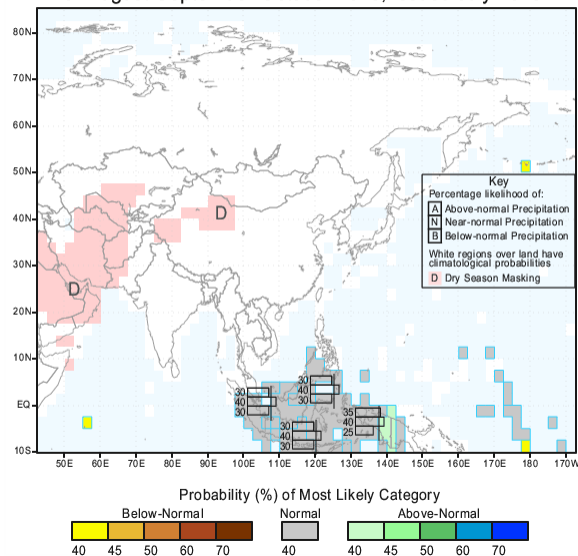


Southern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation
for August-September-October 2013, Issued July 2013



IRI Multi-Model Probability Forecast for Temperature
for August-September-October 2013, Issued July 2013

