

Experimental Climate Monitoring and Prediction

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11 July 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/>

June 5, 2013 PACIFIC SEAS STATE

During May through June observed ENSO conditions remained neutral.

Most of the ENSO prediction models indicate a continuation of neutral ENSO into northern autumn. However few models, mainly but not exclusively statistical models, call for cooling towards borderline or weak La-Nina conditions during the coming northern summer season into the latter part of the 2013.

(Text Courtesy IRI)

INDIAN OCEAN STATE

The sea surface temperature North-West of Sri Lanka is anomalously cold during 30th June-6th July 2013. There is a weak negative Indian Ocean Dipole state with warmer Arabian sea and cold regions around Sumatra.

MJO STATE

MJO is entering phase 2 and is likely to enter phase 3 both of which influences Sri Lanka rainfall. However, the signal is modest at present but bears watching.

Highlights

Monitoring and Predictions:

Rainfall was quite heavy in June in the Southern half of Sri Lanka, and July is predicted to be lower although with wetter Southwestern regions in the next week. Compared to the rest of the island, the coastal belts of Puttalam to Galle is likely to receive heavier rainfall on coming two days (12th and 13th of July). Ongoing rainfall shall increase gradually till 14th July & decrease drastically thereafter till 17th. However, significant rainfall events around 14th (peak) & 17th (trough) shall be expected for many regions.

Summary

Monitoring

Weekly Monitoring: Rainfall ranged between 5-145 mm during 3rd-9th July 2013. Maximum rainfall observed for Ampara district on 6th July. Entire country experienced rainfall throughout the week and on 6th July North-eastern regions experienced heavy rainfall compared to other regions of Sri Lanka.

Monthly Monitoring: Southern half of the Sri Lanka received an above average rainfall during the month of June. The entire country received less than 15 mm of daily rainfall, with Ratnapura district receiving the highest rainfall during the month (14mm/day).

Predictions

7-day prediction: Southwestern and central hill regions shall receive 5-55 mm of rainfall during 10th-16th July 2013.

IMD WRF Model Forecast & IRI forecast: For 12th of July, IMD WRF model predicts less than 35 mm of rainfall for coastal regions of Puttalam to Kalutara and it shall spread towards central hills. For the 13th of July, coastal Colombo to Galle districts shall receive 35-65 mm of rainfall and it shall spread as previous day in a reducing manner. NOAA model predicts more rainfall for the Southwestern regions during 9th-14th July compared to rest of the regions of Sri Lanka.

30 Days Prediction: Overall-Ongoing rainfall shall increase gradually till 14th July & decrease drastically thereafter till 17th. However, significant rainfall events around 14th (peak) & 17th (trough) shall be expected. **Western Slopes** – The rainfall pattern persisting in the entire country shall be observed in this region with higher amounts of rainfall. The extreme significant events expected around 14th & 17th July. **Western Coast** – The rainfall pattern persisting in the entire country shall be observed in this region with higher amounts of rainfall. **Eastern Slopes** – The rainfall pattern persisting in the entire country shall be observed in this region with higher amounts of rainfall. **Eastern Coast** – Ongoing rainfall shall decrease gradually till 17th and shall gradually increase till 20th. However, significant rainfall events are not expected. **Northern region** – The rainfall pattern persisting in the entire country shall be observed in this region with higher amounts of rainfall. But significant events are not expected. **Southern Region** – The rainfall pattern persisting in the entire country shall be observed in this region with higher amounts of rainfall. But amount of rainfall shall be low.

Seasonal Prediction: As per IRI Multi Model Probability Forecast issued on June 2013; for July 2013 to September 2013, 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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- Monthly Rain fall Estimates
- Decadal (10 Day) Satellite Derived Rainfall Estimates
- Weekly Average SST Anomalies

2. Predictions

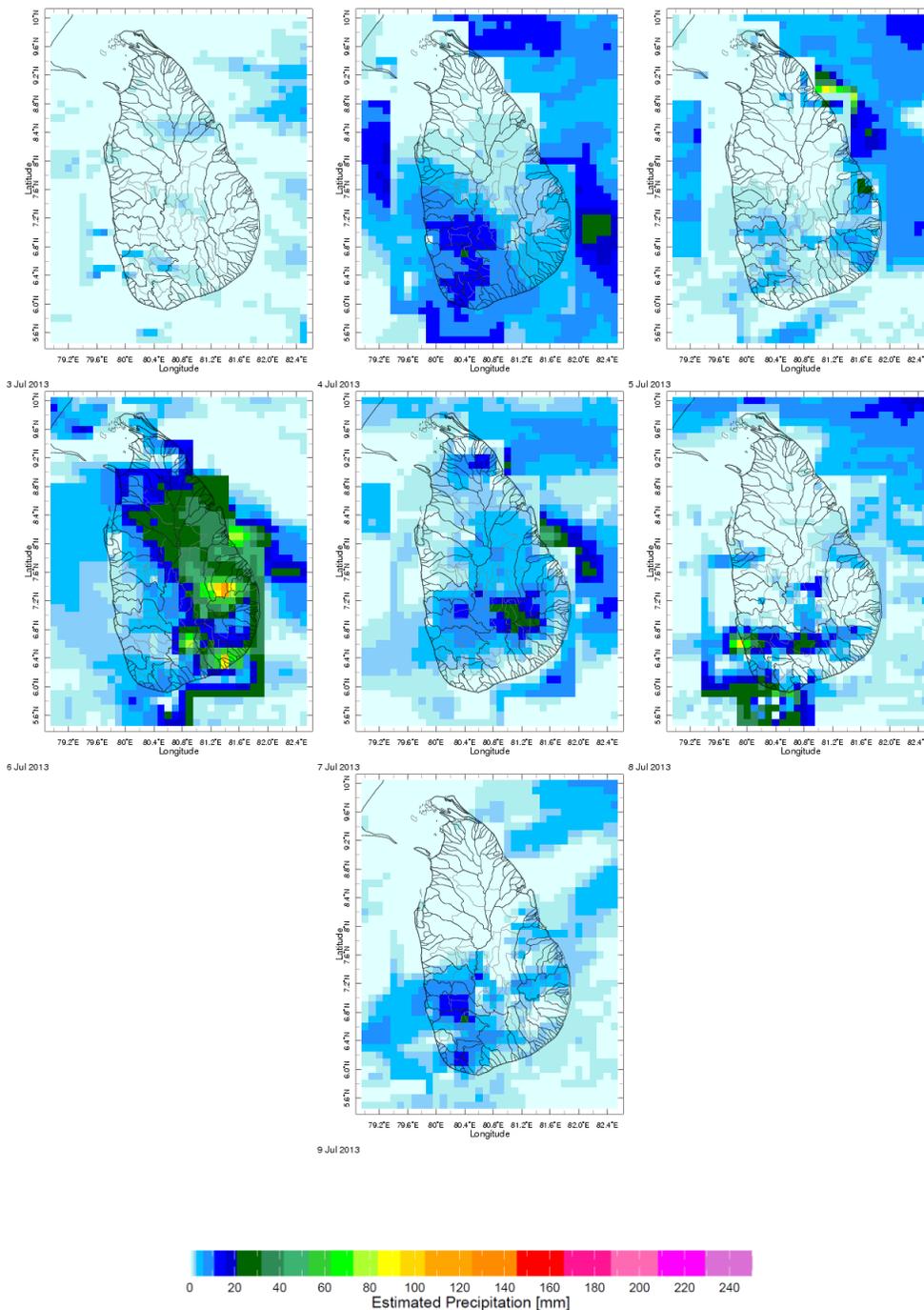
- NCEP GFS Ensemble 1-7 day predictions
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

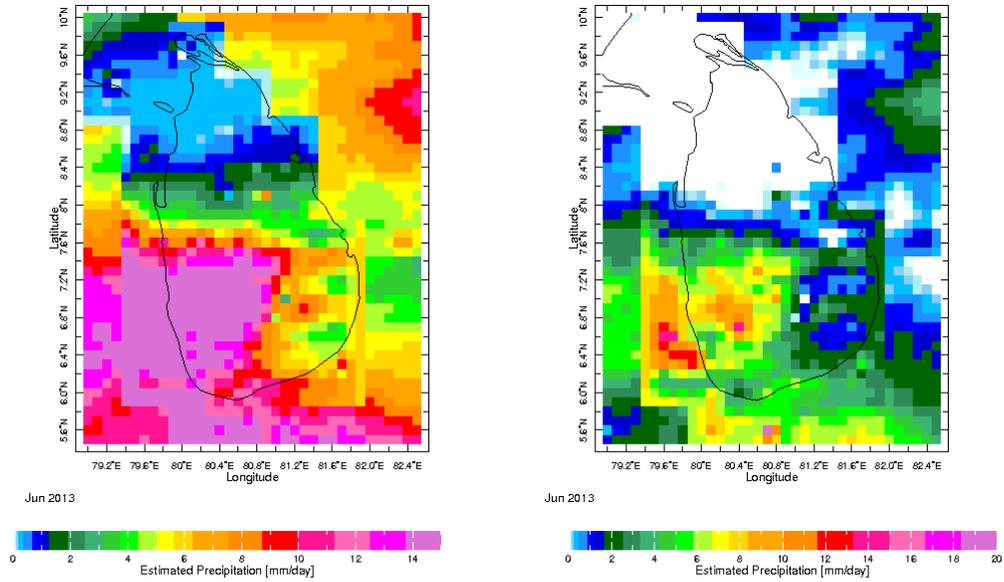
² These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

1. Monitoring

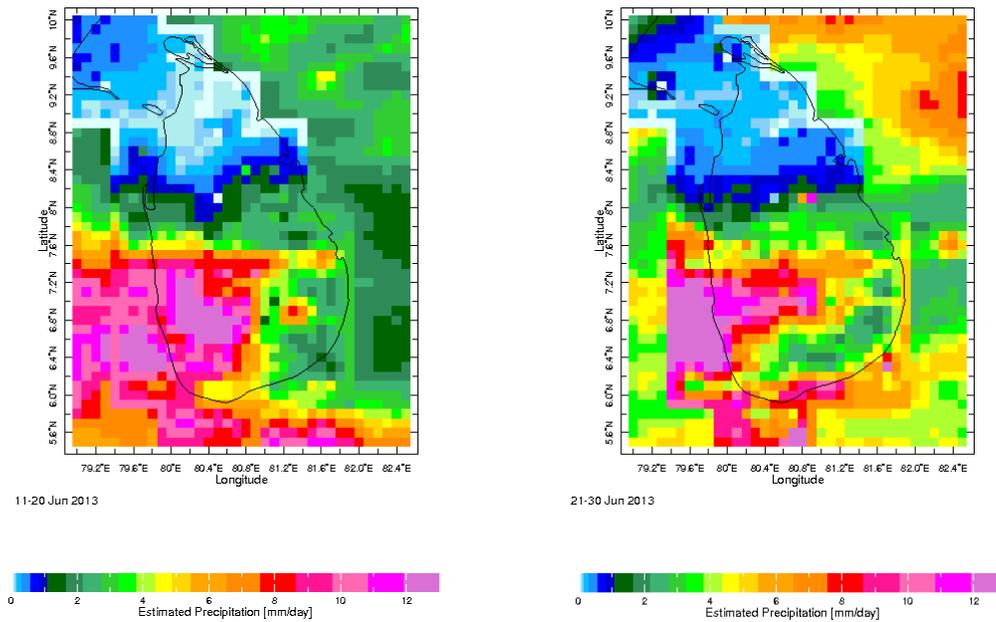
a) Daily Satellite Derived Rainfall Estimate Maps: 3rd-9th July 2013 (Left-Right, Top-Bottom)



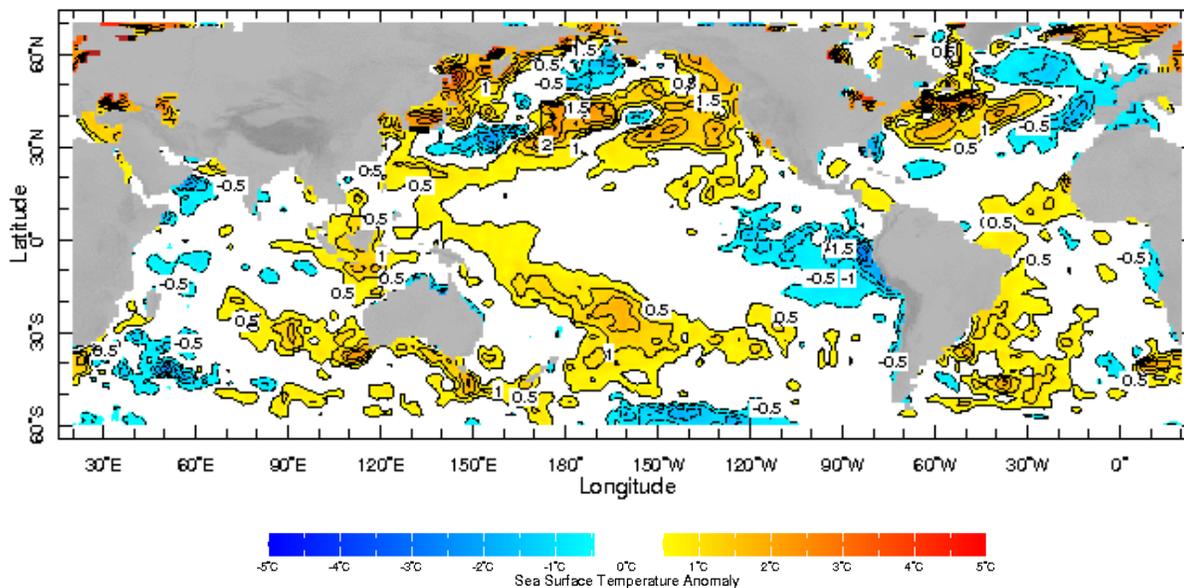
b) Monthly Satellite Derived Rainfall Estimates for June 2013 (Total – Left and Anomaly -Right)



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



b) Weekly Average SST Anomalies

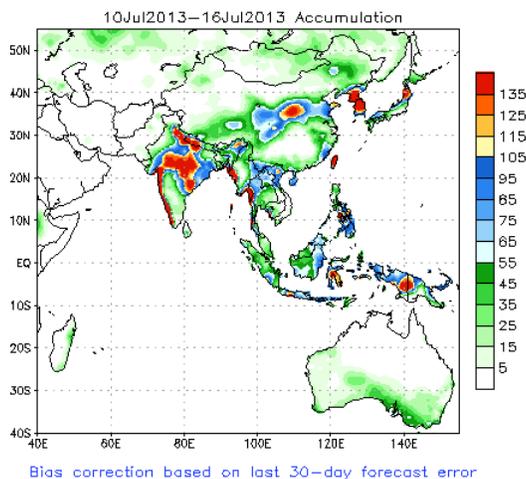


Weekly Average SST Anomalies ($^{\circ}$ C), 30th June-6th July, 2013

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

2. Predictions

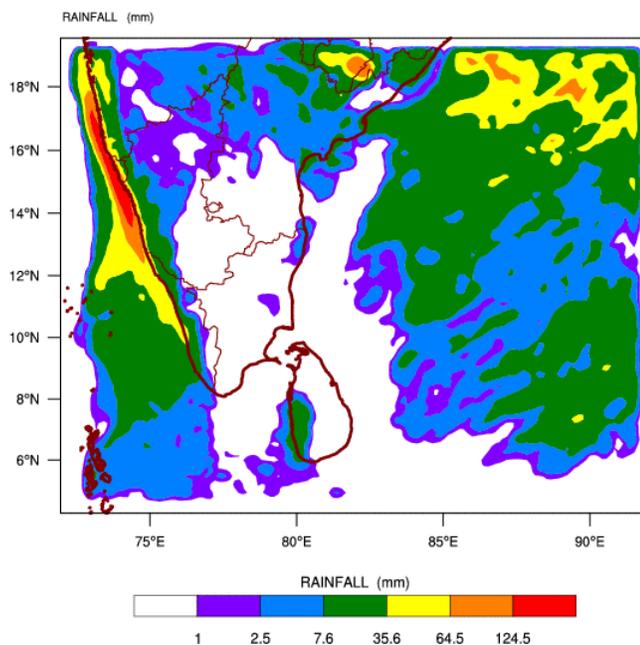
a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.



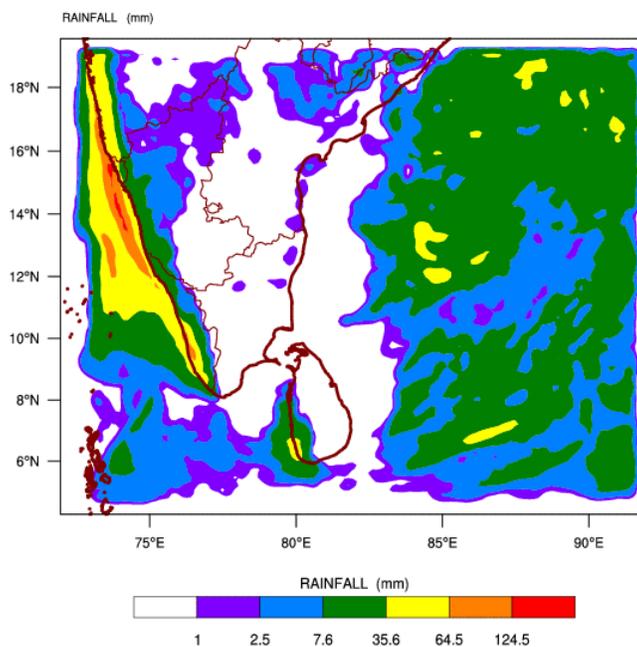
Source – NOAA Climate Prediction Center

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

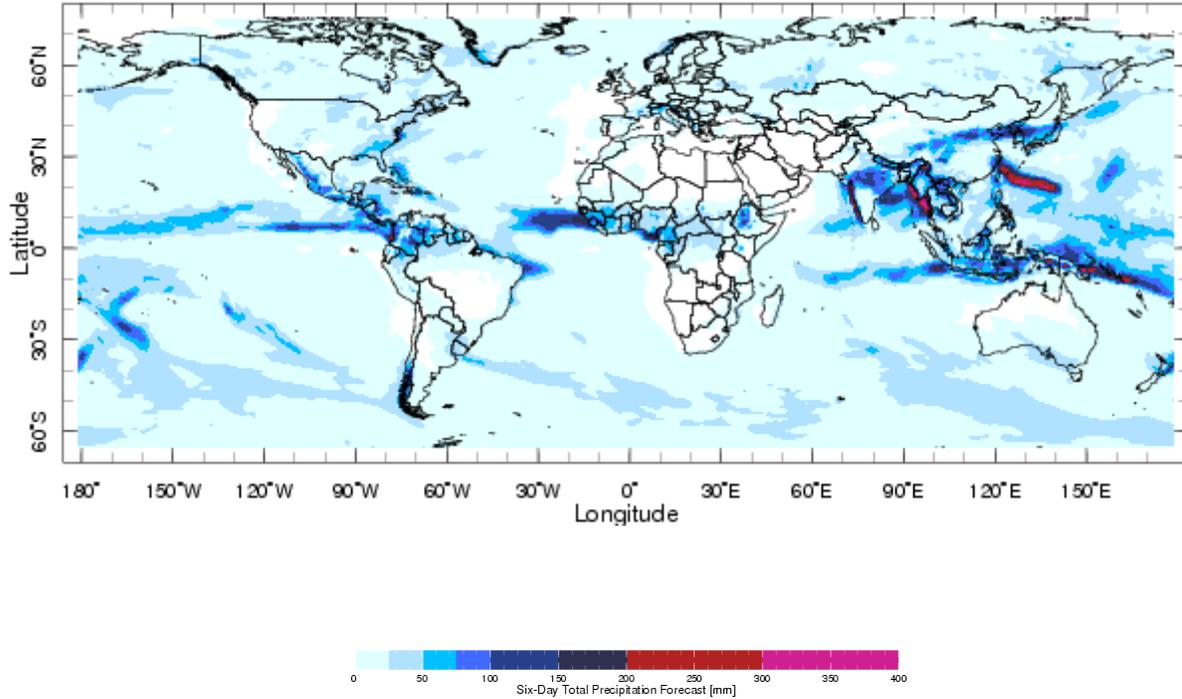
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 10-07-2013 valid for 03 UTC of 12-07-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 10-07-2013 valid for 03 UTC of 13-07-2013



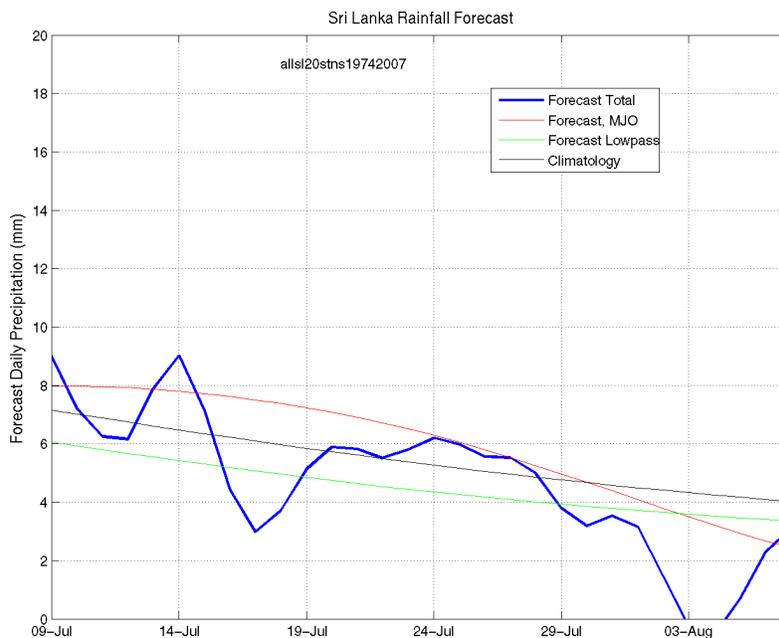
c) Weekly Precipitation Forecast for 9th-14th July 2013 (Precipitation Forecast in Context Map Tool, IRI)



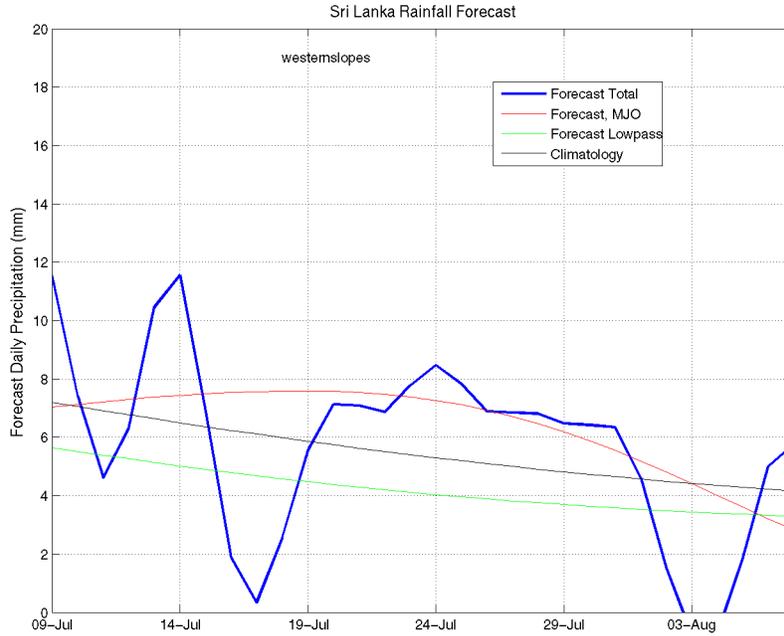
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 11th July, 2013

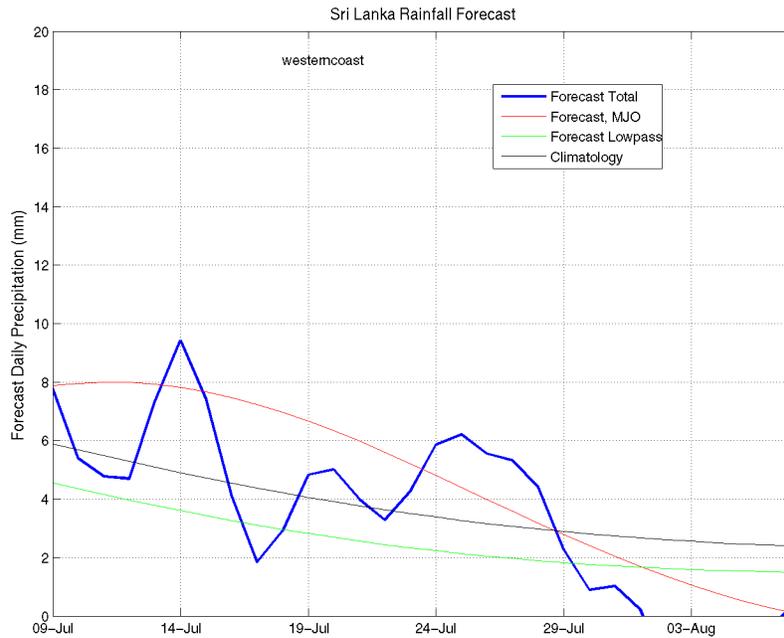
All Sri Lanka (Rainfall Scale from 0-20mm/day)



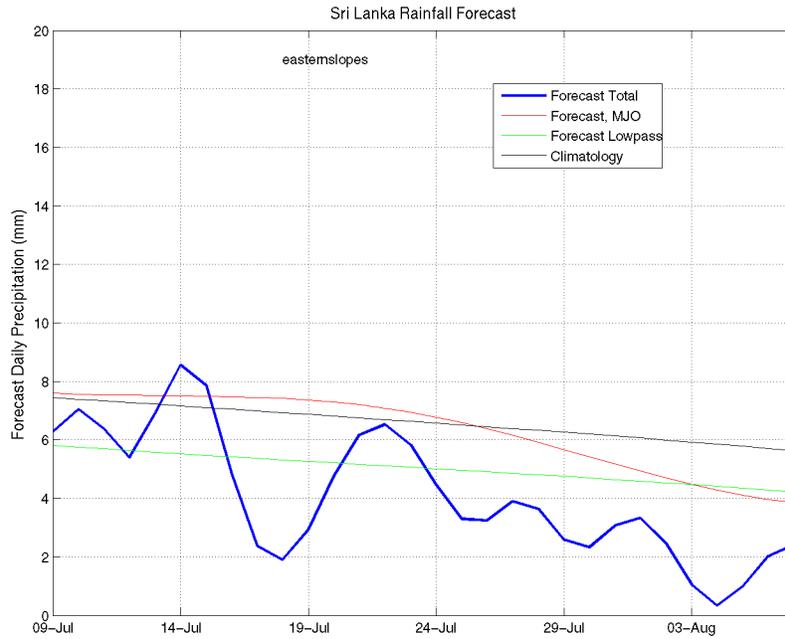
Western Slopes (Rainfall Scale from 0-20 mm/day)



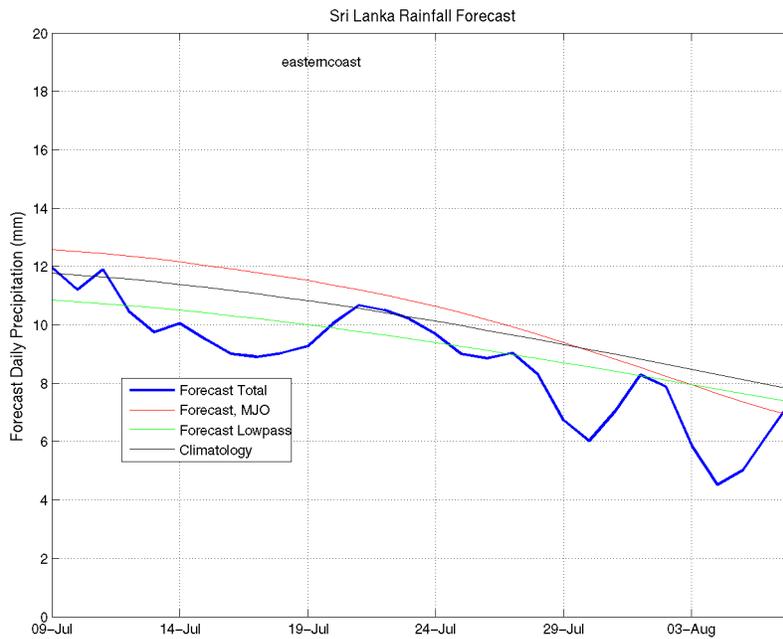
Western Coast (Rainfall Scale from 0-20 mm/day)



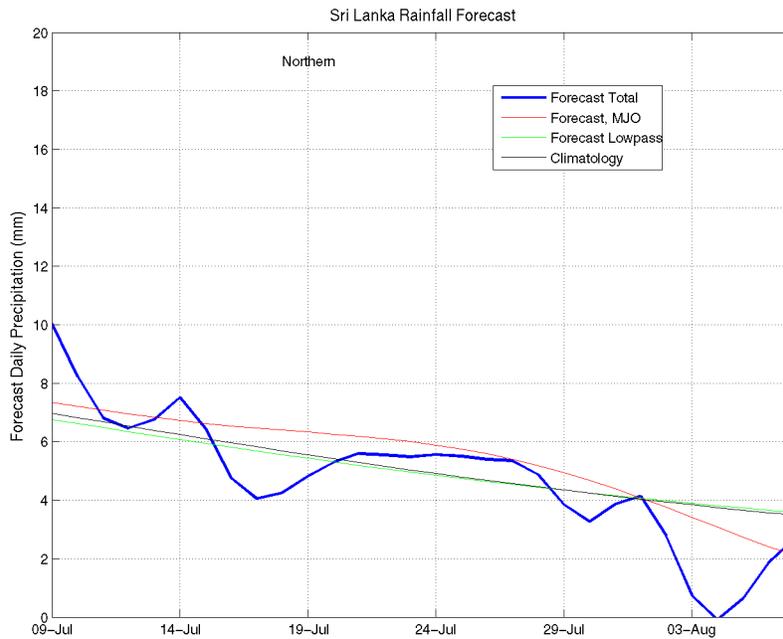
Eastern Slopes (Rainfall Scale- from 0-20 mm/day)



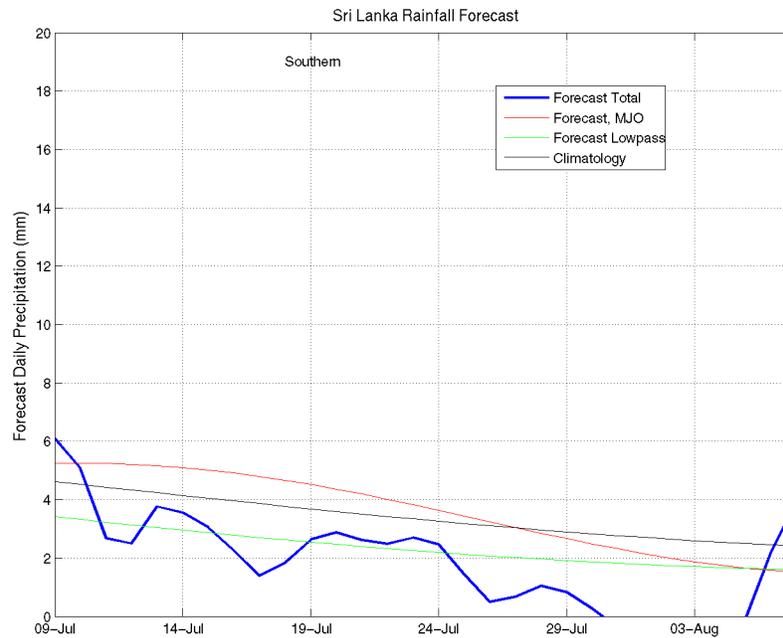
Eastern Coast (Rainfall Scale- from 0-20 mm/day)



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

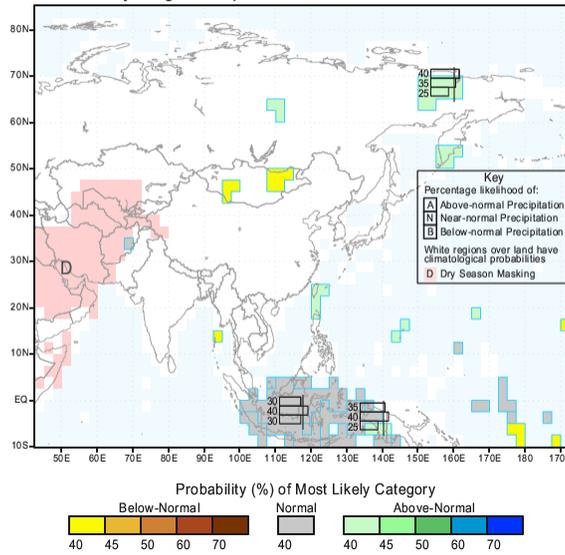


Southern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

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



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

