

Experimental Climate Monitoring and Prediction

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20 June 2013

FECT BLOG

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June 6, 2013 PACIFIC SEAS STATE

During April through May the 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 monsoon into the latter part of the 2013.
(Text Courtesy IRI)

INDIAN OCEAN STATE

The neutral sea surface temperature anomaly which was observed in the Indian Ocean around Sri Lanka had continued during 9th-15th June 2013.

Highlights

Monitoring and Predictions:

In the coming week, Southwestern regions shall experience significant amount of rainfall, especially Colombo & Kalutara districts. Heavy rainfall shall be observed in the western coastal belt of the island in the coming two days (21st and 22nd June). However, in most of regions of Sri Lanka, existing rainfall shall increase slightly till 25th and it shall start to reduce afterwards, till 27th. There shall be significant rainfall around 25th for western coastal regions.

Summary

Monitoring

Weekly Monitoring: Rainfall ranged between 5-50 mm during 11th-18th June 2013. Entire country received rainfall during this week and particularly southern half of the country experienced heavier rainfall than the rest of the country.

Monthly Monitoring: In May, entire Sri Lanka received above average rainfall. Entire country received less than 15 mm of daily rainfall and Western province received highest rainfall during the month, of 10-15 mm/day.

Predictions

7-day prediction: Southwestern regions, especially Colombo and Kalutara districts shall receive 55-105 mm of rainfall & it shall spread in a reducing manner toward the center of the island (5-55 mm) in North-eastern direction during 19th-25th June 2013.

IMD WRF Model Forecast & IRI forecast: For 21st June, IMD WRF model predicts 65-125 mm rainfall for Kalutara district and it shall spread in a reducing manner towards the Northern and Southern coastal regions and, central region of the island. However, eastern half of the island shall not receive rainfall. For 22nd June, the same rainfall pattern as 21st shall continue, but amount of rainfall shall increase further for above defined areas (i.e. Kalutara, Colombo and Kegalle districts shall receive 65-125 mm rainfall). NOAA model predicts heavy rainfall especially for the area between Kalutara and Colombo districts which daily rainfall shall be 50-75 mm.

30 Days Prediction: Overall- Existing rainfall shall increase slightly till 25th and it shall start to reduce till 27th. Thereafter, rainfall shall show fluctuation between 5-9 mm/day. **Western Slopes** – The rainfall pattern existing in the entire country shall be present in this region, with higher amount of rainfall. **Western Coast** – The rainfall pattern existing in the entire country shall be present in this region, but there shall be significant amount of rainfall around 25th. **Eastern Slopes** – The rainfall gradually increase till 25th and thereafter it shall remain constant around 6-8 mm/day. **Eastern Coast** – The rainfall pattern existing in the Eastern slope shall be present in this region with higher amount of rainfall. **Northern region-** The decreasing trend of rainfall shall persist till 22nd and start fluctuations (between 6-9 mm/day) thereafter. **Southern Region-** The rainfall pattern existing in the entire country shall be present in this region, but amount of rainfall is lower than the entire country.

Seasonal Prediction: As per IRI Multi Model Probability Forecast issued on May 2013; for June 2013 to August 2013, there is a 60-70% probability for temperature to be above normal in the country while the rainfall is to be climatological.

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2. Predictions

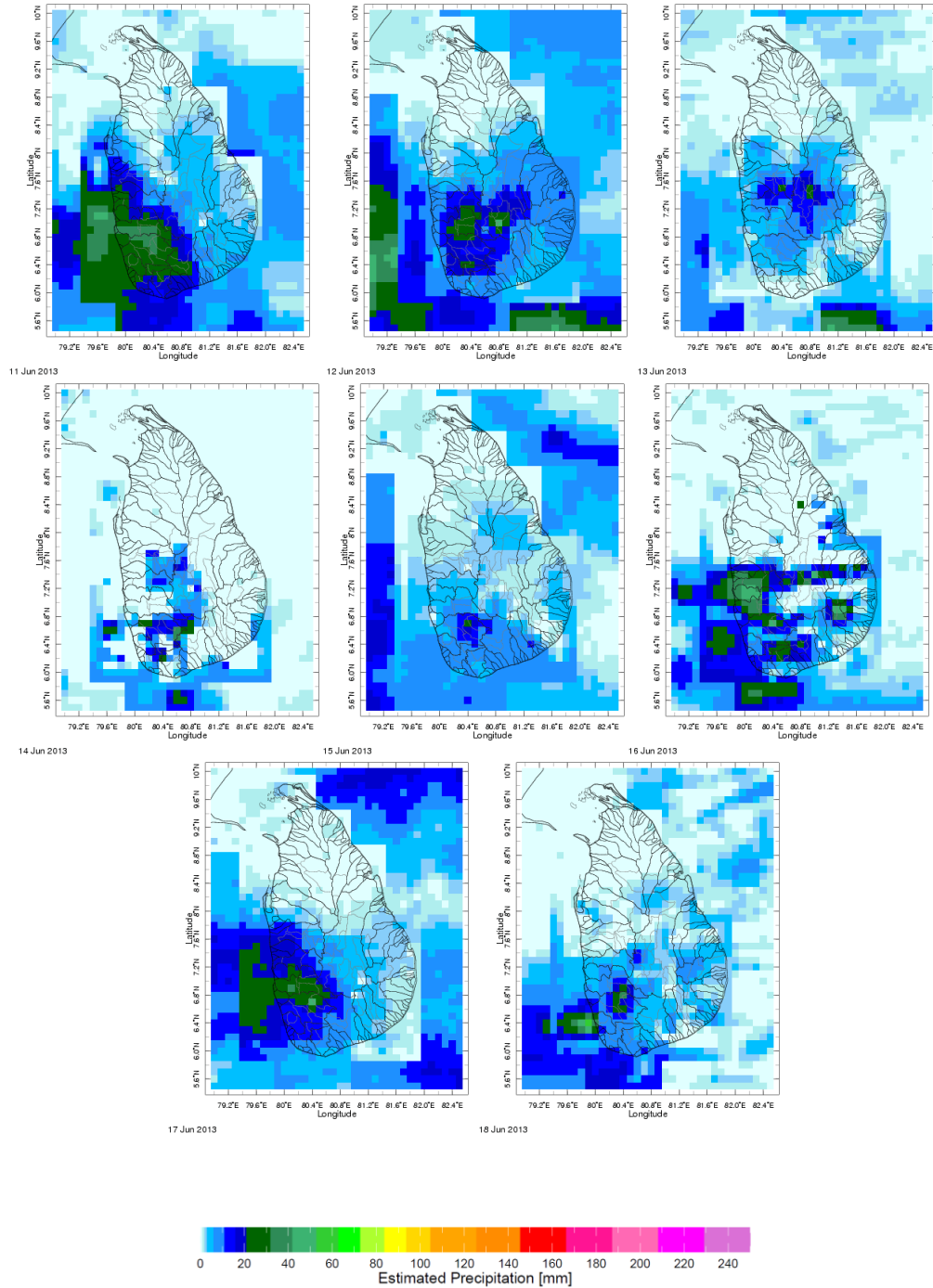
- NCEP GFS Ensemble 1-7 day predictions
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

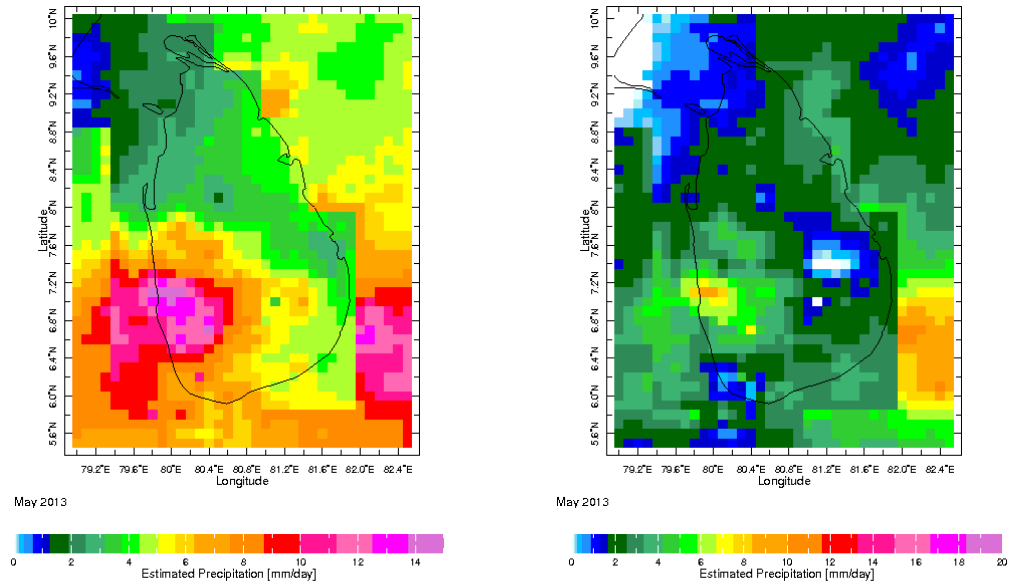
² These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

1. Monitoring

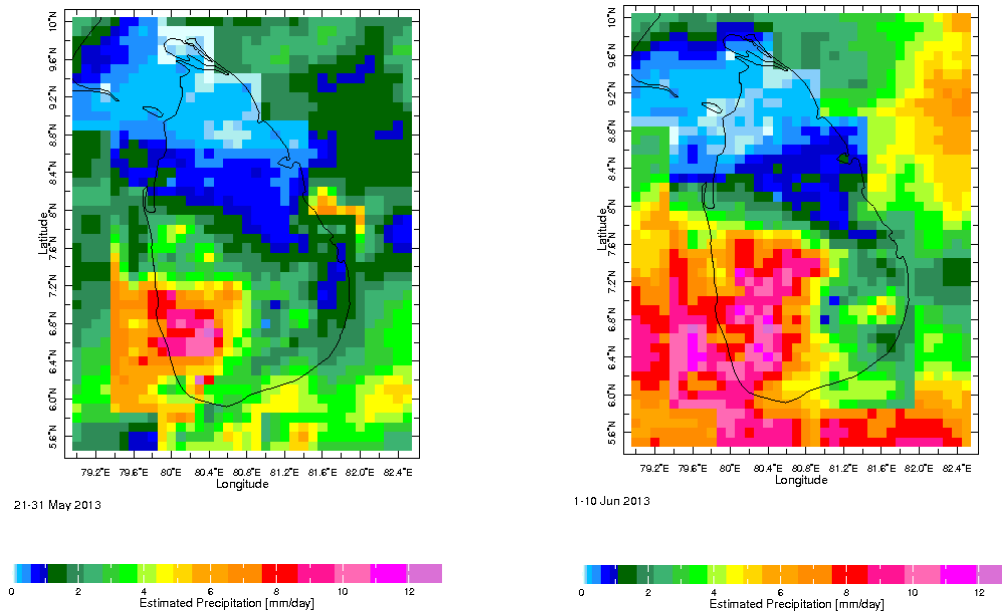
a) Daily Satellite Derived Rainfall Estimate Maps: 11th–18th June 2013 (Left-Right, Top-Bottom)



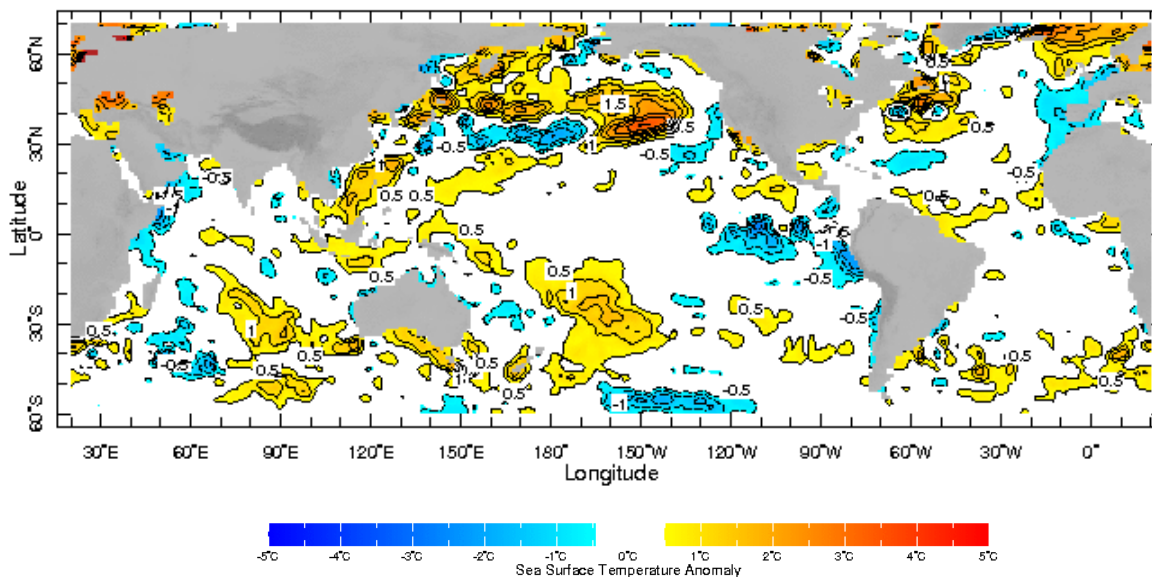
b) Monthly Satellite Derived Rainfall Estimates for May 2013 (Total – Left and Anomaly -Right)



c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-31 May & 1-10 June, 2013)



b) Weekly Average SST Anomalies

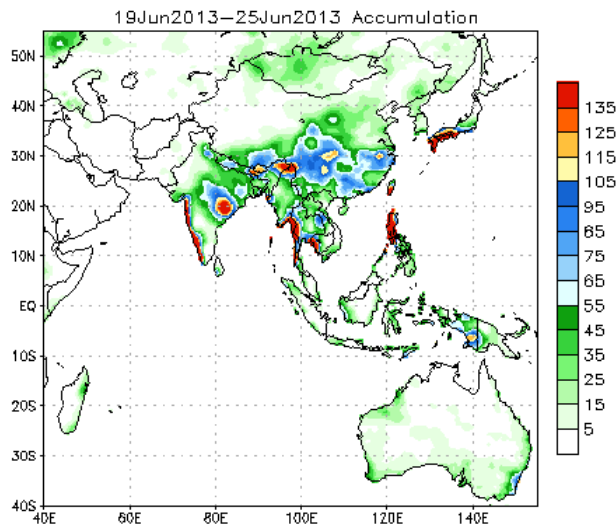


Weekly Average SST Anomalies ($^{\circ}$ C), 9th-15th June, 2013

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

2. Predictions

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

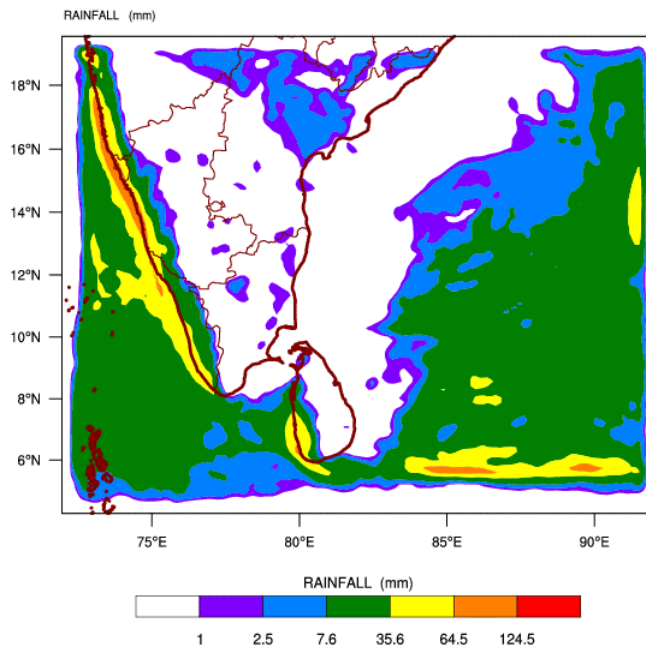


Bias correction based on last 30-day forecast error

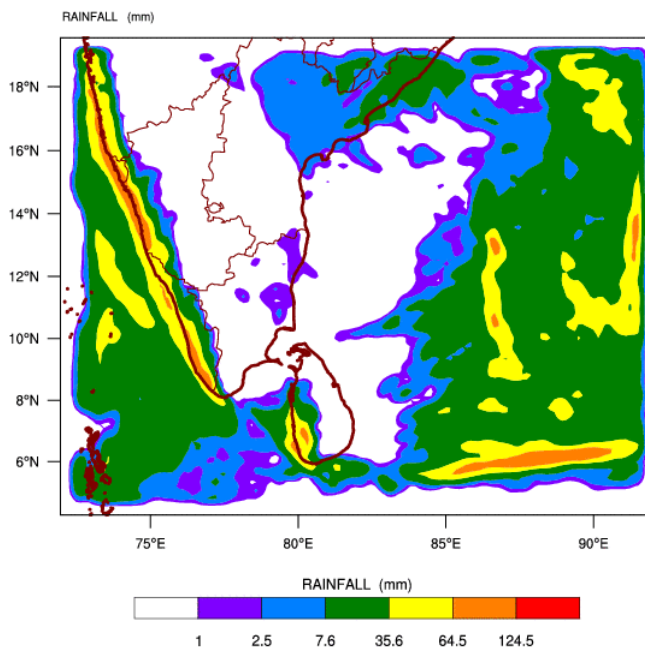
Source – NOAA Climate Prediction Center

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

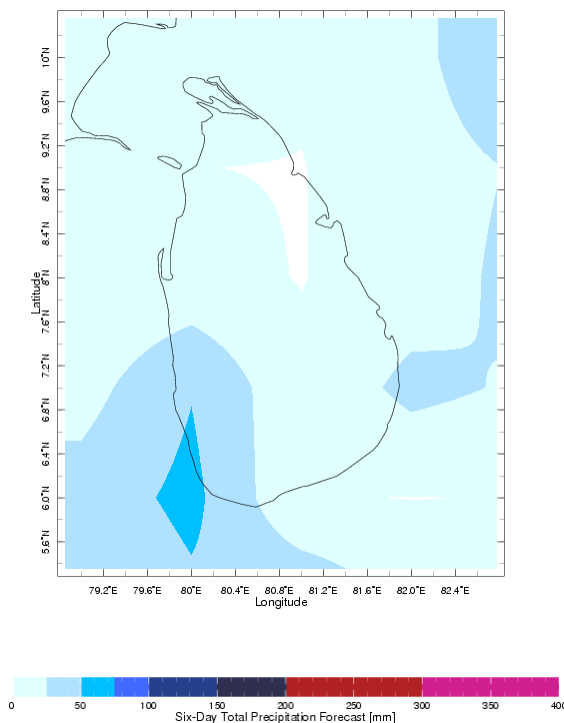
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 19-06-2013 valid for 03 UTC of 21-06-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 19-06-2013 valid for 03 UTC of 22-06-2013



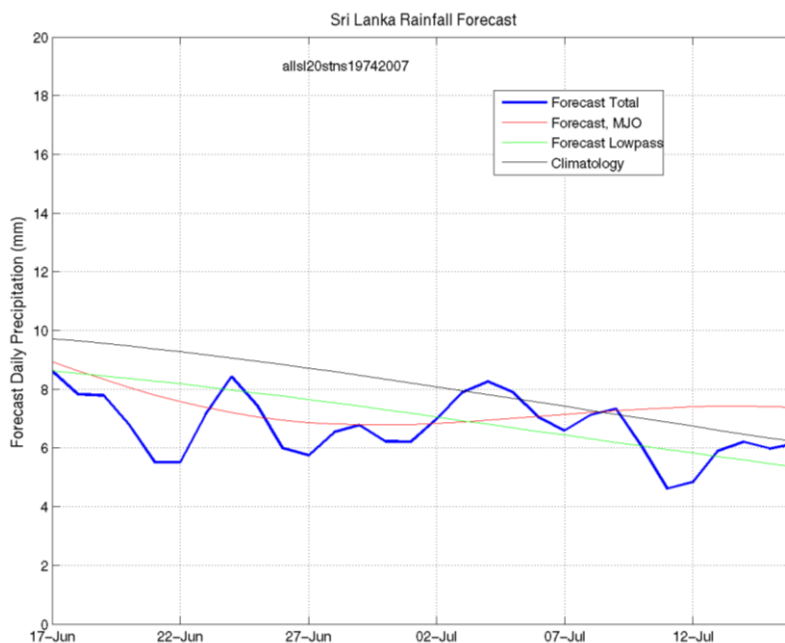
c) Weekly Precipitation Forecast for 16th-21st June 2013 (Precipitation Forecast in Context Map Tool, IRI)



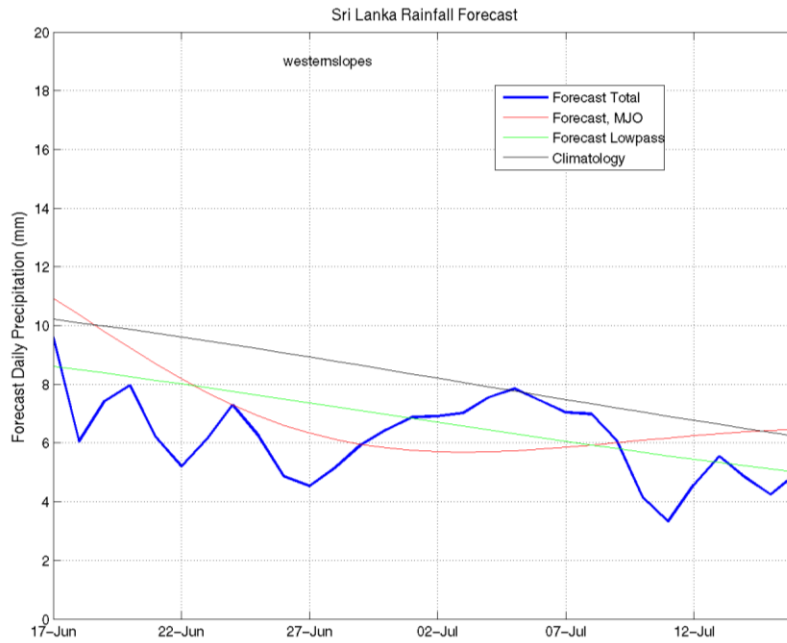
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 19th June, 2013

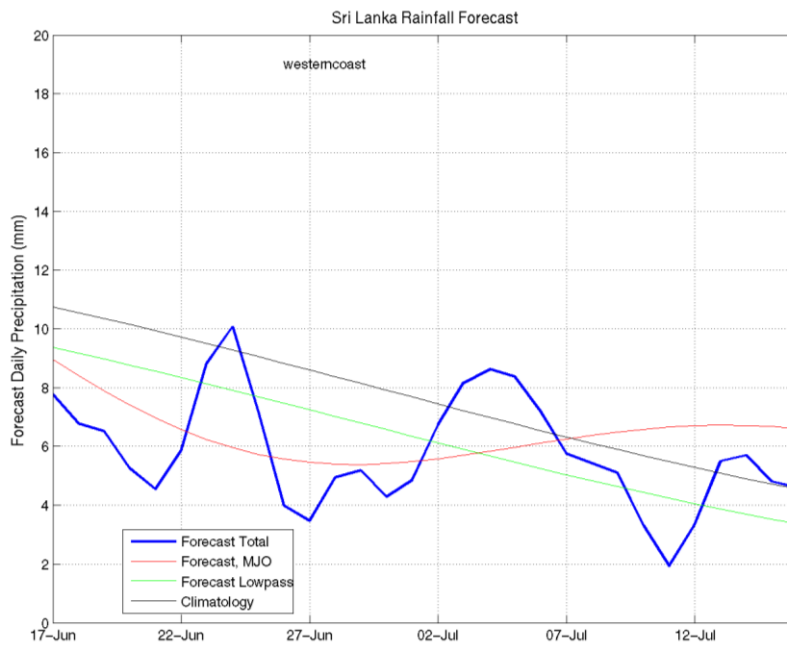
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



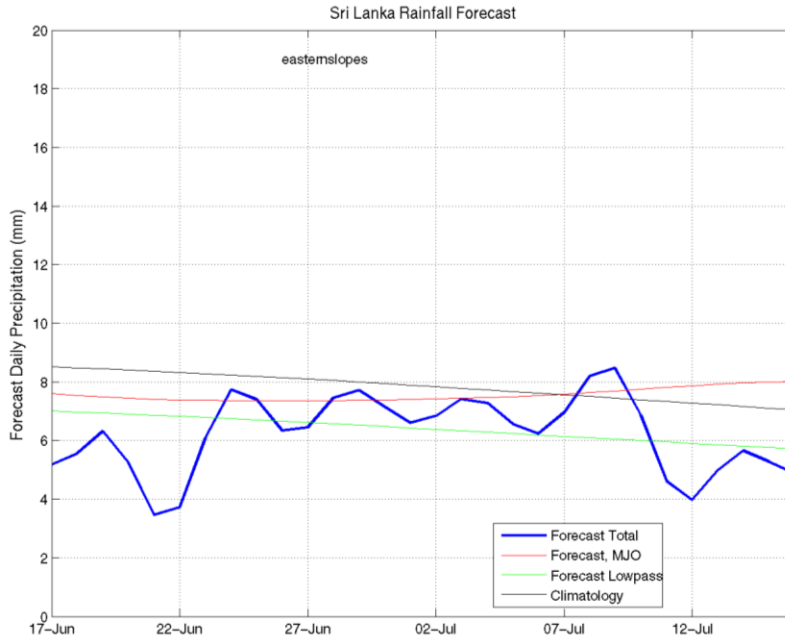
Western Slopes (Rainfall Scale from 0-20 mm/day)



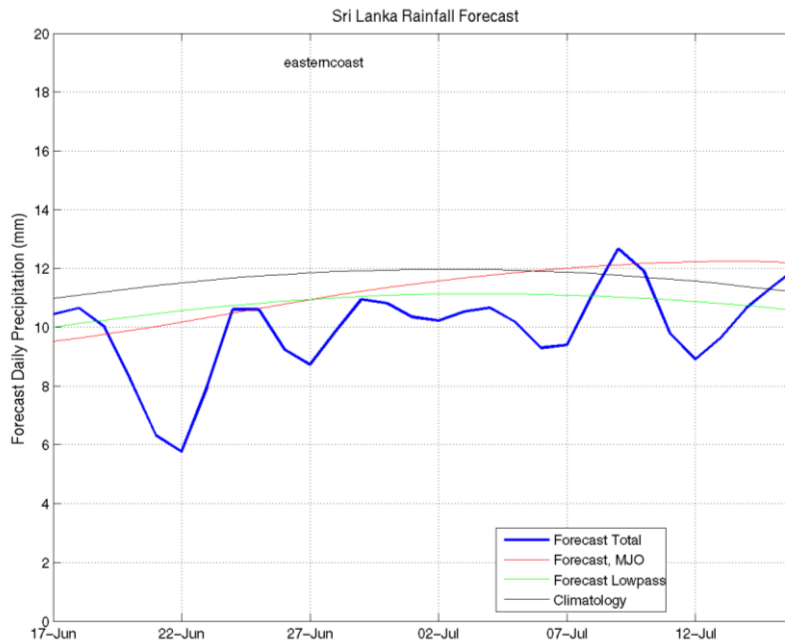
Western Coast (Rainfall Scale from 0-20 mm/day)



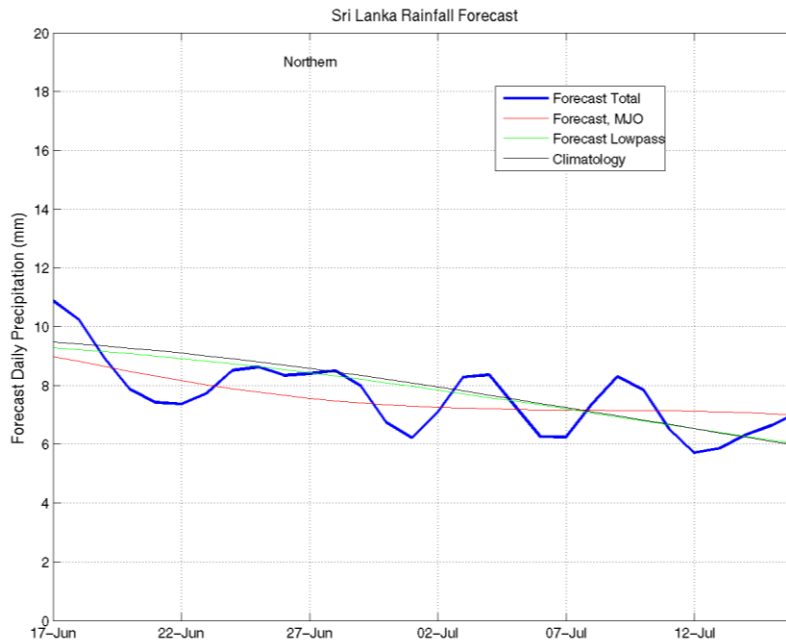
Eastern Slopes (Rainfall Scale- from 0-20 mm/day)



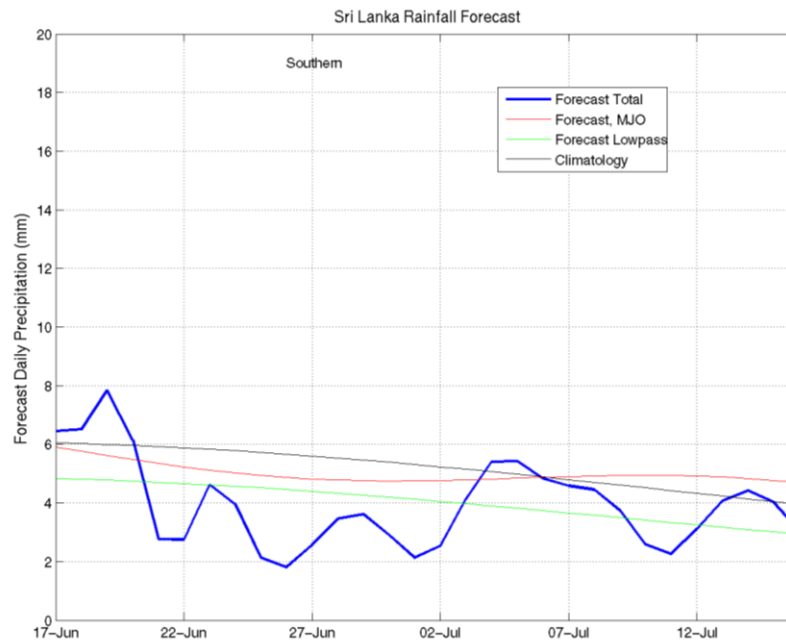
Eastern Coast (Rainfall Scale- from 0-20 mm/day)



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

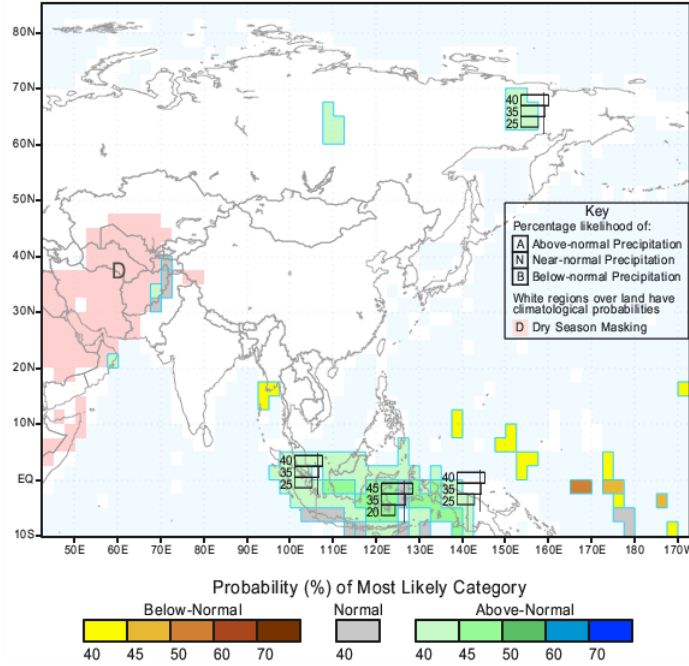


Southern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

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



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

