

Experimental Climate Monitoring and Prediction

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4 July 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/>

June 20, 2013 PACIFIC SEAS STATE

During May through mid-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 23rd-29th June 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 Matara to Colombo is likely to receive heavier rainfall on coming two days (5th and 6th of July). Ongoing rainfall shall decrease gradually till 9th July & increase slightly thereafter till 11th. However, for the Eastern coast, there is likely be comparatively higher rainfall than the other regions. Significant rainfall event shall observe around 11th.

Summary

Monitoring

Weekly Monitoring: Rainfall ranged between 5-80 mm during 26th June-2nd July 2013. Maximum rainfall observed for Kalutara district on 30th June. Entire country experienced rainfall throughout the week and Southern half of the island receive more rainfall compared to the rest of the island.

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 (14 mm/day).

Predictions

7-day prediction: Southwestern regions shall receive 55-95 mm of rainfall and it shall spread towards central hills in a reducing manner during 3rd-9th July 2013.

IMD WRF Model Forecast & IRI forecast: For 5th of July, IMD WRF model predicts 35-65 mm of rainfall for coastal regions of Matara to Colombo and it shall reduce towards central hills and Northern and Southern coastal regions. For the same day Batticaloa and Ampara districts shall receive less than 8 mm of rainfall. For the 6th of July, coastal Galle to Colombo 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 2nd-7th July compared to rest of the regions of Sri Lanka.

30 Days Prediction: Overall- Ongoing rainfall shall decrease gradually till 9th July & increase slightly thereafter till 11th. But no significant rainfall events shall be expected. **Western Slopes** – The rainfall is likely to increase during 5th-6th & thereafter decrease till 12th. There shall be significant peak around 15th but magnitude shall be low. **Western Coast** – The rainfall is likely to decrease till 10th & slightly increase. After 13th rainfall shall decrease again. However, no significant events are expected. **Eastern Slopes** – The rainfall is likely to gradually increase till 6th shall remain constant till 10th. Thereafter the rainfall is likely to decrease. **Eastern Coast** – There shall be comparatively higher rainfall than the other regions, but existing rainfall is likely to decrease till 9th & shall increase sharply till 11th. Significant rainfall event is likely to observe around 11th. **Northern region-** Rainfall shall decrease gradually till 7th & shall increase gradually. After 11th rainfall shall gradually decrease. **Southern Region-** Rainfall shall varies around 3-5 mm/day till 20th July.

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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- Daily Satellite Derived Rain fall Estimates
- Monthly Rain fall Estimates
- Decadal (10 Day) Satellite Derived Rainfall Estimates
- Weekly Average SST Anomalies

2. Predictions

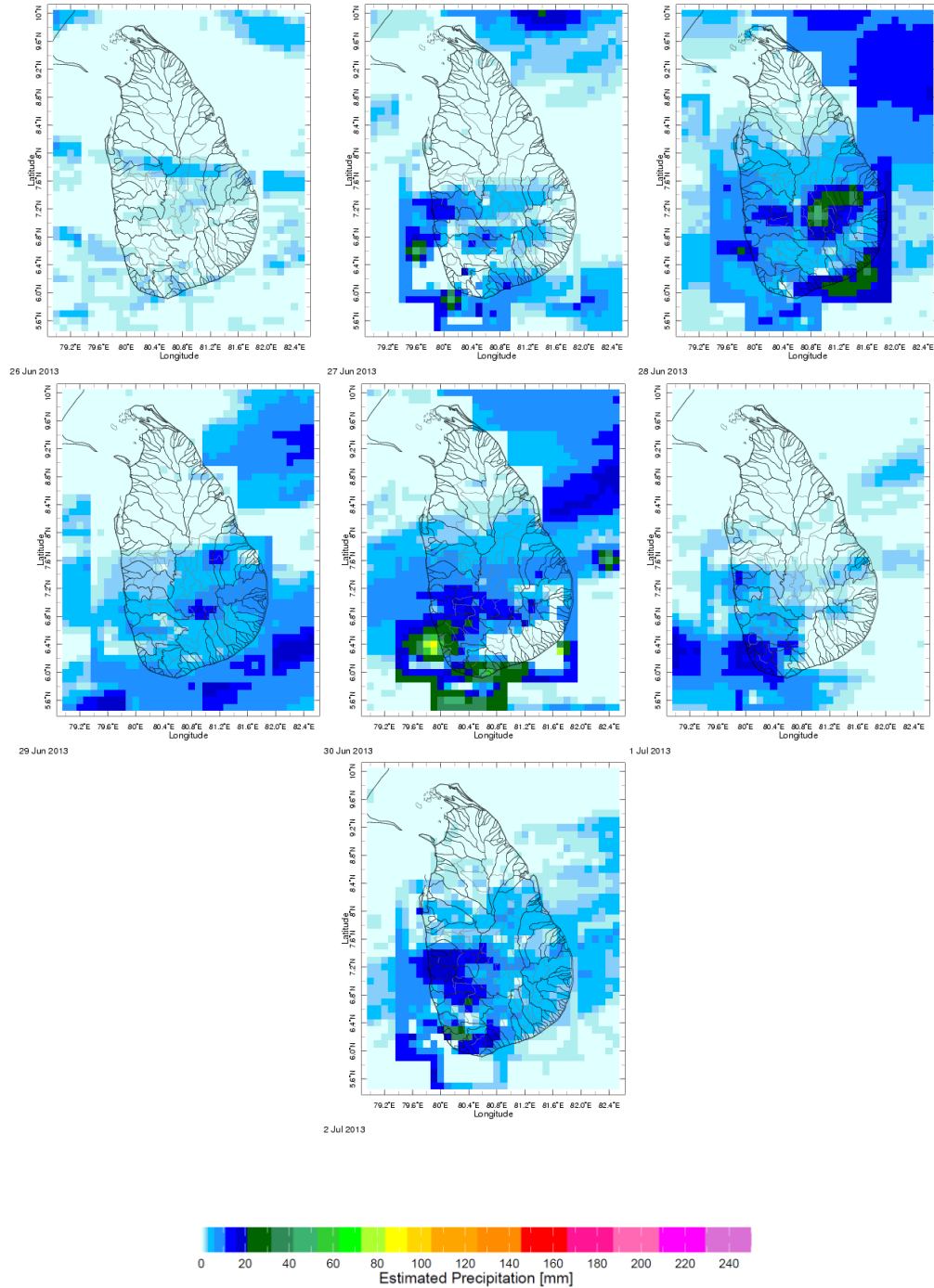
- NCEP GFS Ensemble 1-7 day predictions
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

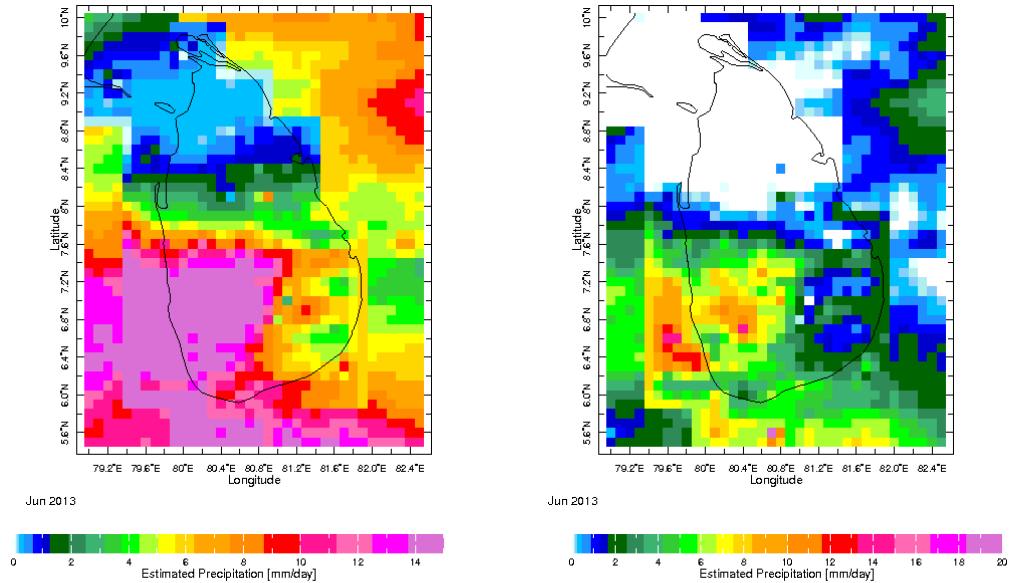
² These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

1. Monitoring

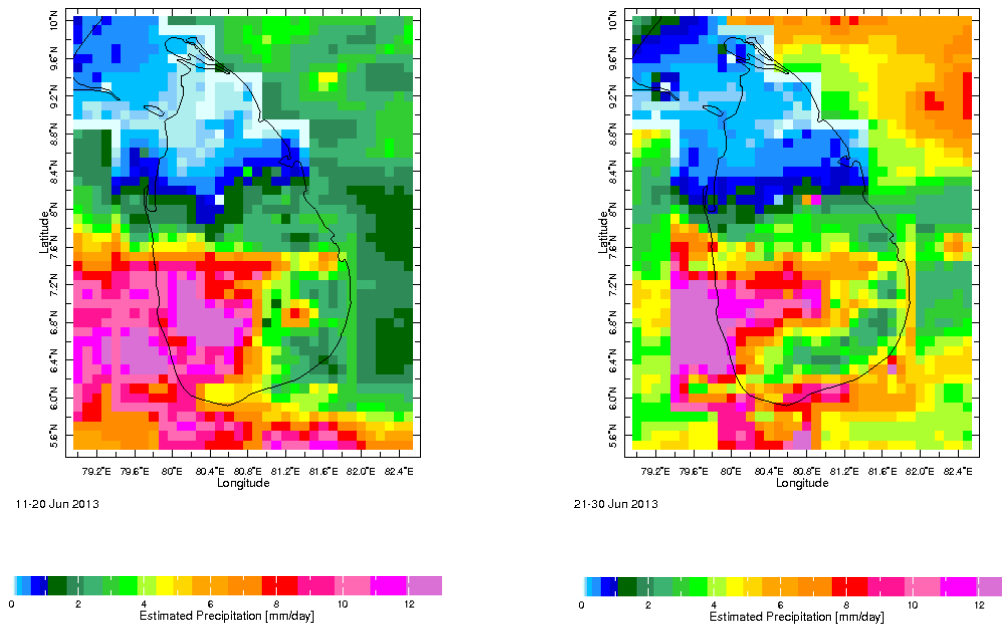
a) Daily Satellite Derived Rainfall Estimate Maps: 26th June–2nd July 2013 (Left-Right, Top-Bottom)



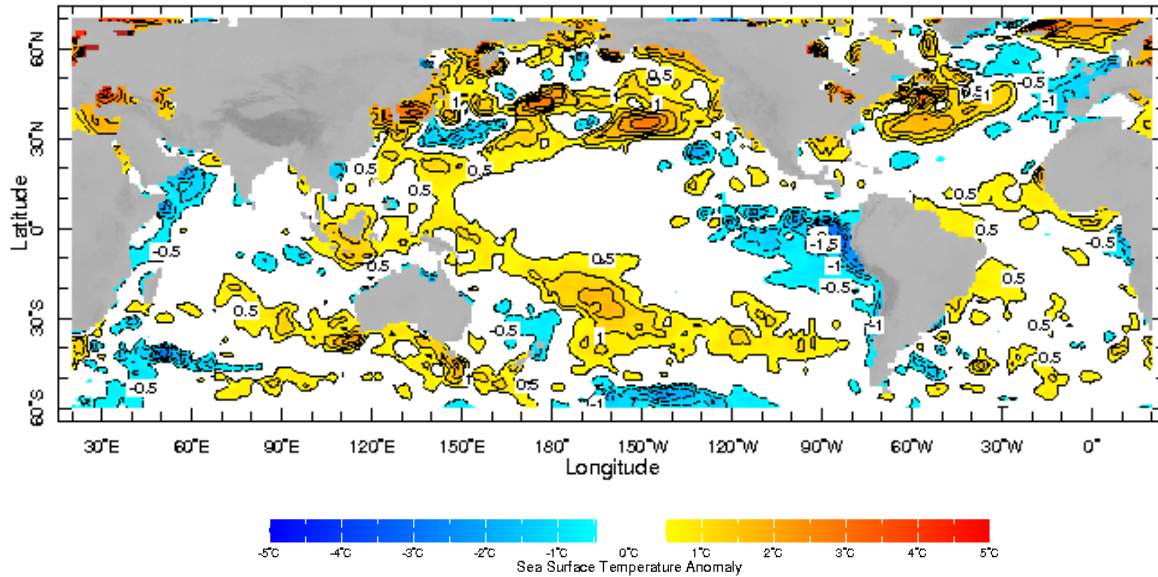
b) Monthly Satellite Derived Rainfall Estimates for June 2013 (Total – Left and Anomaly -Right)



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



b) Weekly Average SST Anomalies

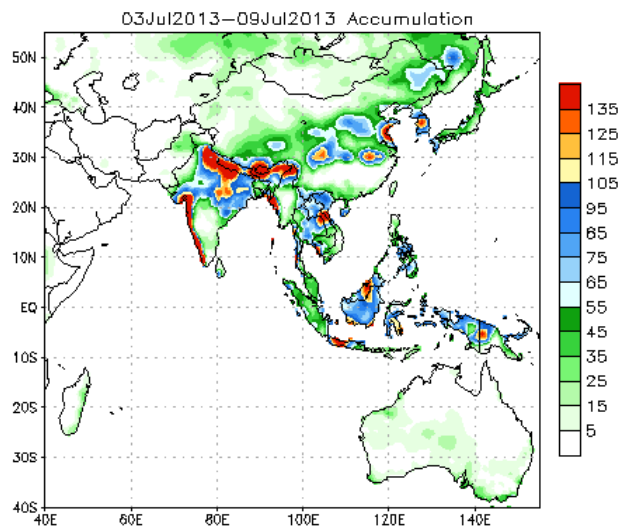


Weekly Average SST Anomalies ($^{\circ}$ C), 23rd -29th June, 2013

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

2. Predictions

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

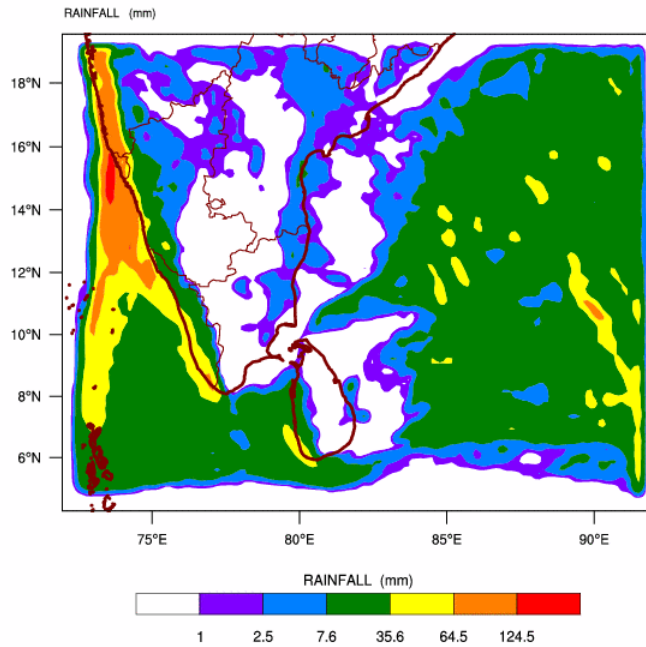


Bias correction based on last 30-day forecast error

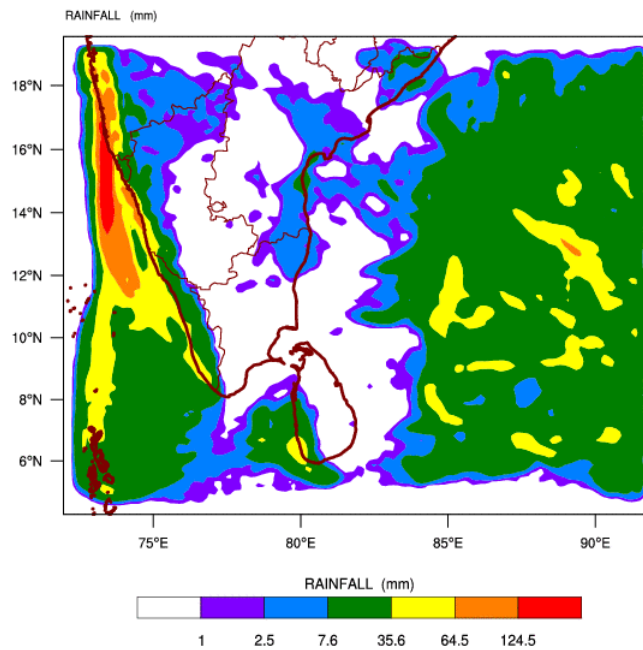
Source – NOAA Climate Prediction Center

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

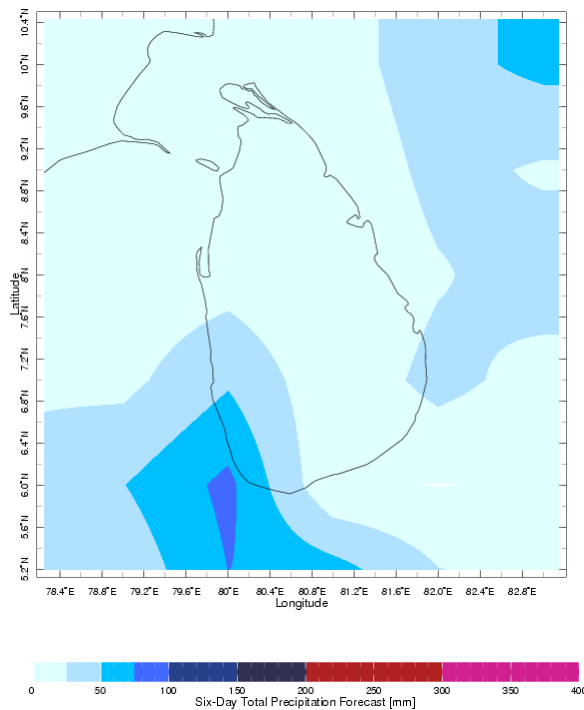
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 03-07-2013 valid for 03 UTC of 05-07-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 03-07-2013 valid for 03 UTC of 06-07-2013



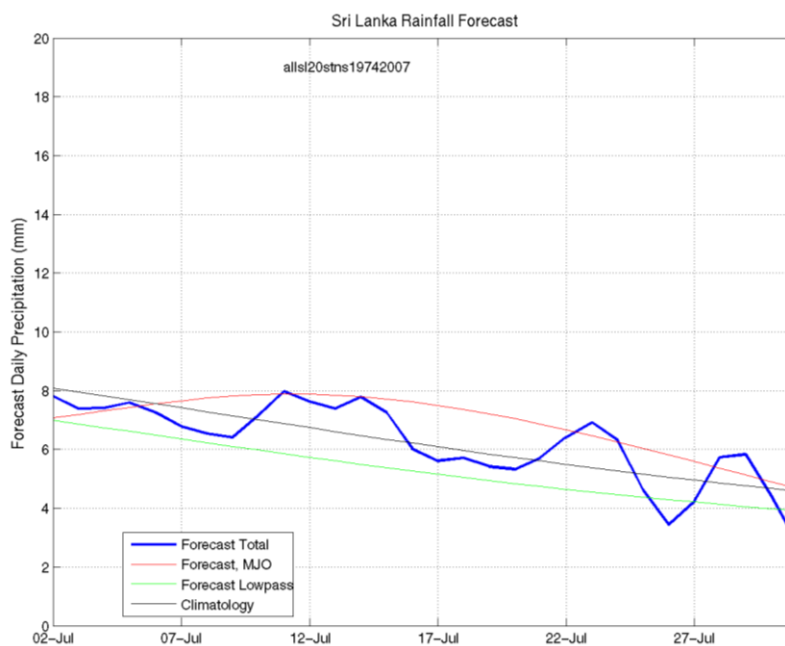
c) Weekly Precipitation Forecast for 2th-7th July 2013 (Precipitation Forecast in Context Map Tool, IRI)



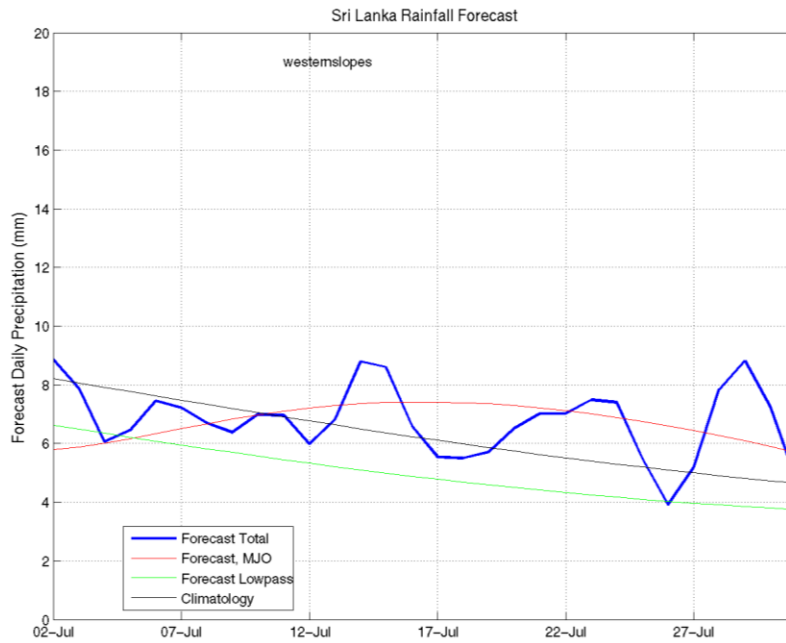
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 4th July, 2013

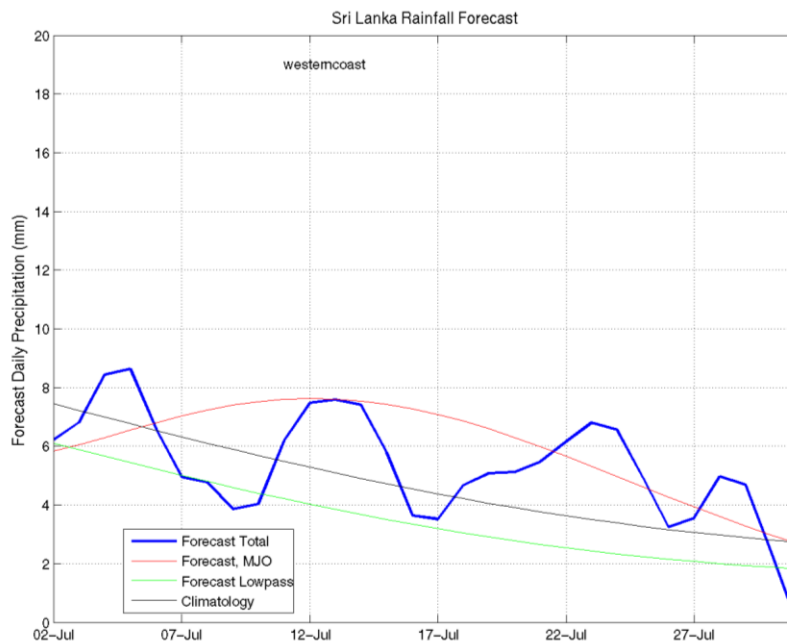
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



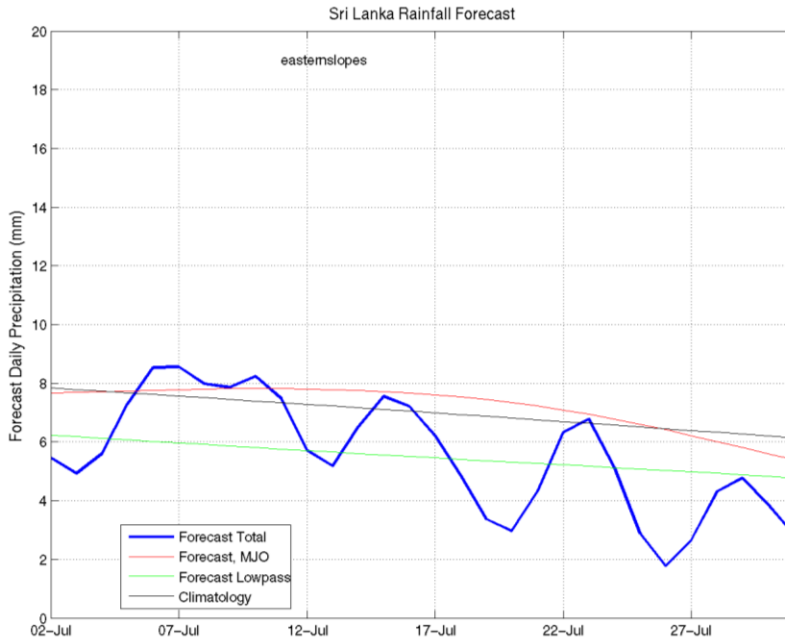
Western Slopes (Rainfall Scale from 0-20 mm/day)



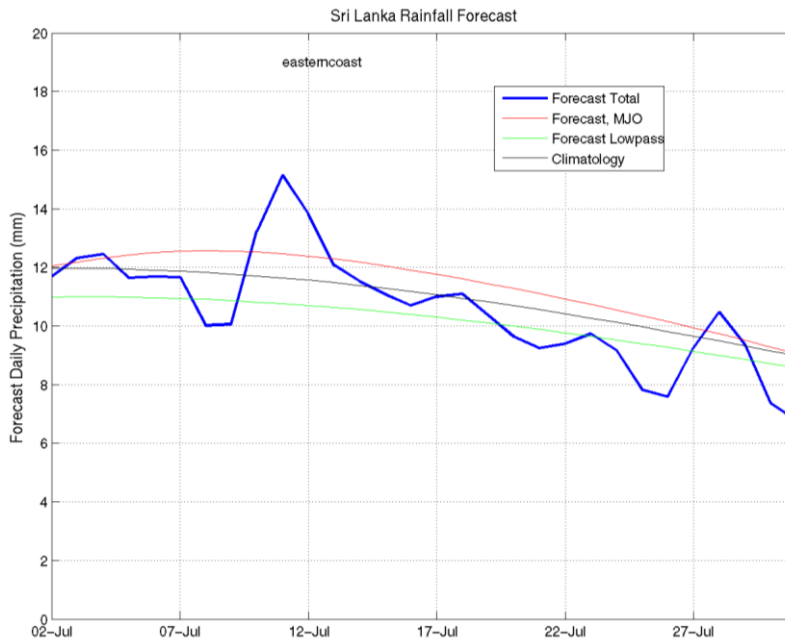
Western Coast (Rainfall Scale from 0-20 mm/day)



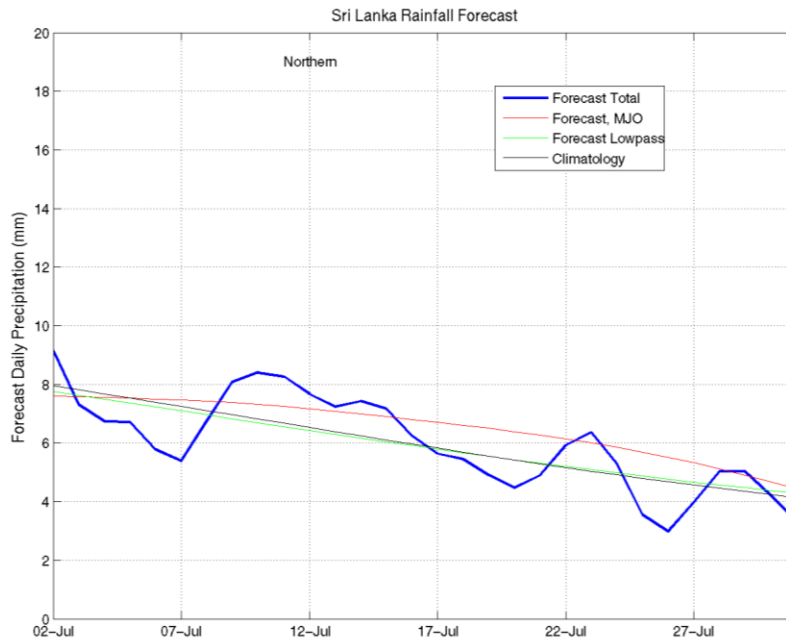
Eastern Slopes (Rainfall Scale- from 0-20 mm/day)



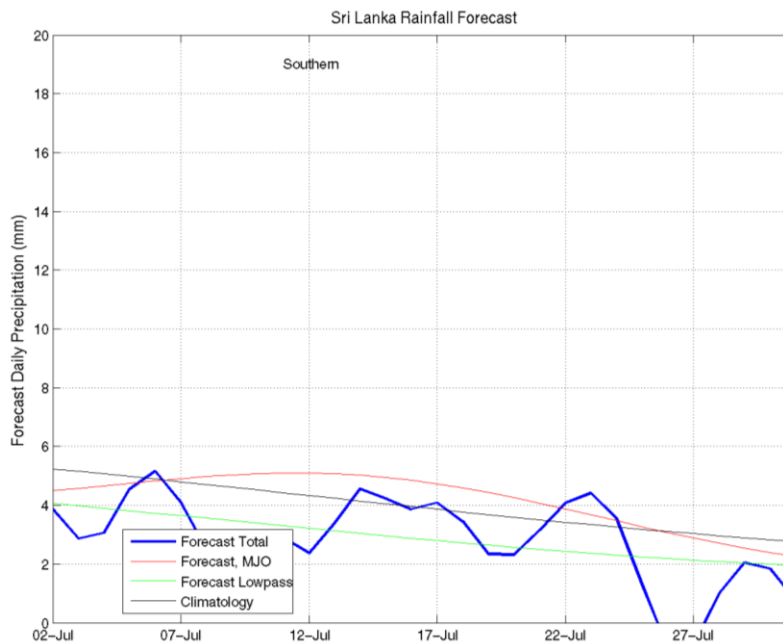
Eastern Coast (Rainfall Scale- from 0-20 mm/day)



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

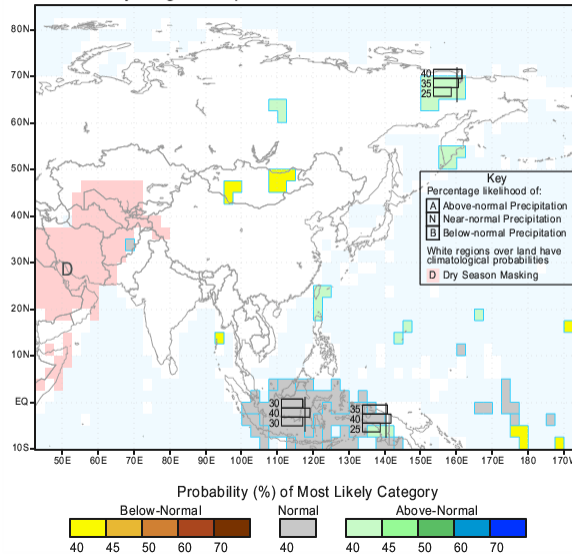


Southern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

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



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

