

Experimental Climate Monitoring and Prediction

by: Prabodha Agalawatte, Sewwandhi Chandrasekara, Sanjaya Ratnayake, Zeenas Yahiya,
Lareef Zubair and Michael Bell (FECT and IRI¹)

4 April 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/>

February 21, 2013 PACIFIC SEAS STATE

During January through mid-March the observed ENSO conditions have leaned towards La-Nina, but remained in the neutral range. Most of the ENSO prediction models call for neutral ENSO conditions through northern summer 2013, but some statistical models call for warming & possible weak El-Nino.

(Text Courtesy IRI)

INDIAN OCEAN STATE

The Indian Ocean around Sri Lanka particular to the South continues to have a warm anomaly up to 1°C. Warm SST conditions are spreading towards seas north of Sri Lanka.

Highlights

Monitoring and Predictions:

Southern half of the island shall be wetter than the rest of the regions for 2nd-8th April. For the coming two days (5th and 6th April) rainfall is expected in Ratnapura district. There is a 45-50% probability for temperature to be above normal in the country from April to June.

Summary

Monitoring

Weekly Monitoring: Rainfall ranged between 5-80 mm during 27th March-1st April 2013. Maximum rainfall was observed on the 30th March for the Mullativu district. On the 28th almost all of the country was wet and on the 31st dry conditions were observed in all parts of the country.

Predictions

7-day prediction: North-eastern coastal regions and South-western regions shall receive 25-35 mm of rainfall and less than 5 mm of rainfall for rest of the regions during 2nd-8th April.

IMD WRF Model Forecast & IRI forecast: For 5th of April 2013, IMD WRF model predicts less than 36 mm of rainfall for Hambantota, Ratnapura, Kegalle and Kurunegala districts and, spreads towards nearby regions in a reducing manner. In the same day, Puttalam, Northern half and Eastern regions shall receive less than 1 mm of rainfall. For the 6th of April, IMD WRF model predicts less than 36 mm of rainfall for the Ratnapura district and it shall spread towards nearby regions in a reducing manner. In the same day Monaragala and Badulla districts shall receive less than 8 mm of rainfall and rest of the regions shall expect less than 1 mm of rainfall. NOAA model predicts 25-50 mm of rainfall for South-western half of the island and the rest of the island shall receive less than 20 mm of rainfall from 3rd-8th April.

30 Days Prediction: Overall- Rainfall shall decrease gradually with different rates till 13th April. **Western Slopes** – The rainfall pattern existing in the island shall be present in this region **Western Coast** – Rainfall shall decrease drastically till 13th with frequent fluctuations. **Eastern slopes** - Rainfall shall decrease gradually till 7th and it is not predicted during 7th-13th. **Eastern Coast** – Rainfall shall decrease drastically till 15th and thereafter no significant amount of rainfall is predicted until the end of 30 day period. **Northern region-** Rainfall shall decrease drastically till 7th. Then until the 22nd significant rainfall is not predicted. Thereafter rainfall is expected to increase gradually. **Southern Region-** Rainfall pattern existing in the Northern region shall be present in this region.

Seasonal Prediction: As per IRI Multi Model Probability Forecast issued on March 2013; for April 2013 to June 2013, there is a 45-50% probability for temperature to be above normal in the country while the rainfall is to be climatological.

Inside this Issue

1. Monitoring

- Daily Satellite Derived Rain fall 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

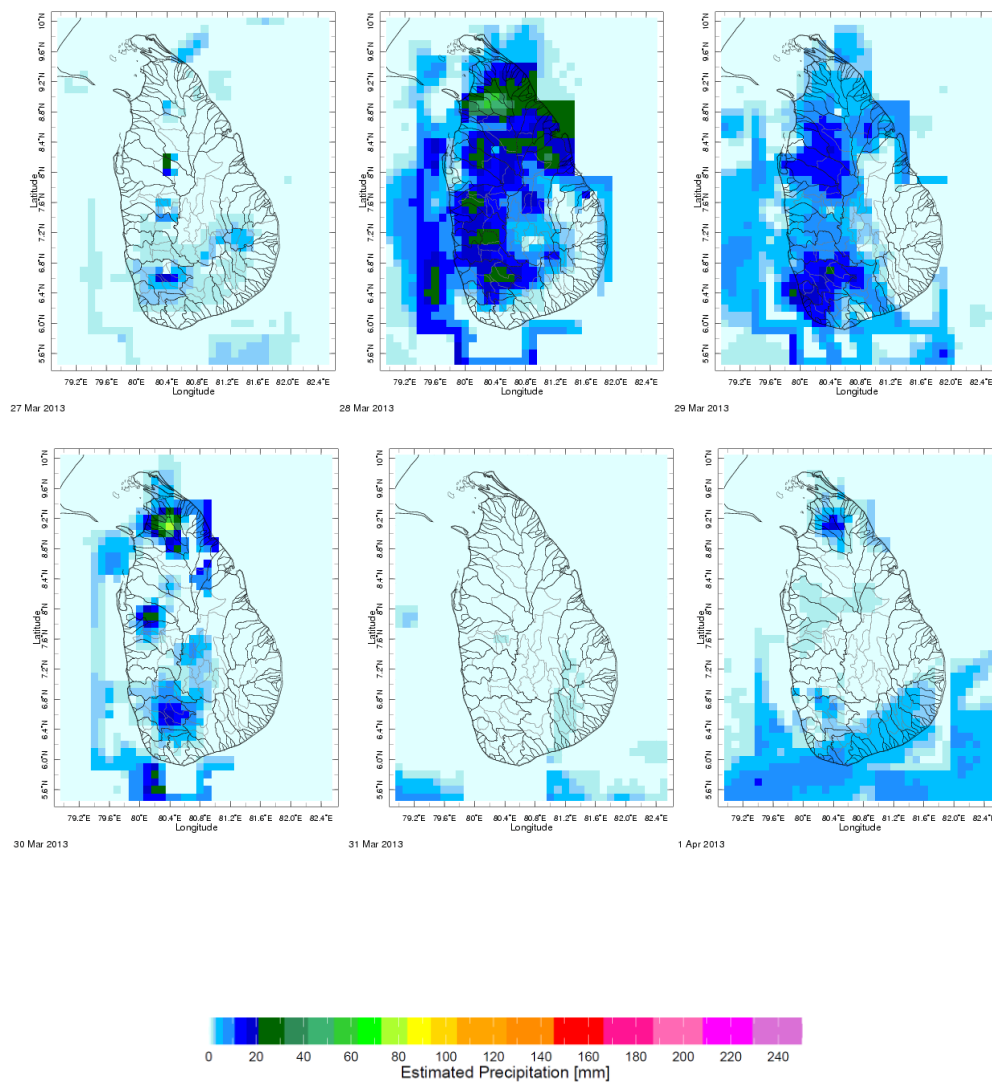
¹ International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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

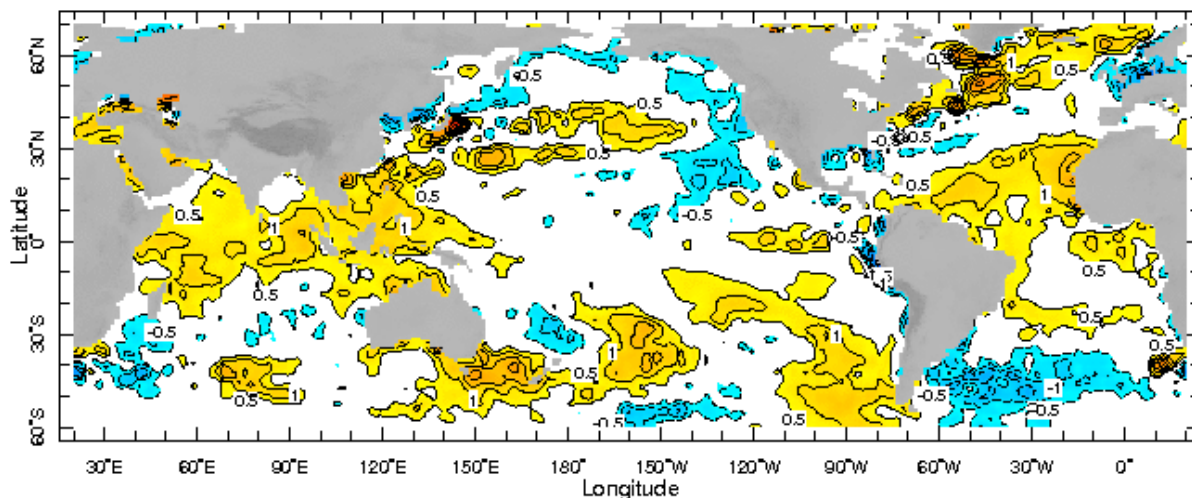
Official hydro-meteorological statements are provided by the Sri Lanka Department of Meteorology and Department of Irrigation.

1. Monitoring

a) Daily Satellite Derived Rainfall Estimate Maps: 27th March – 1st April 2013 (Left-Right, Top-Bottom)



b) Weekly Average SST Anomalies

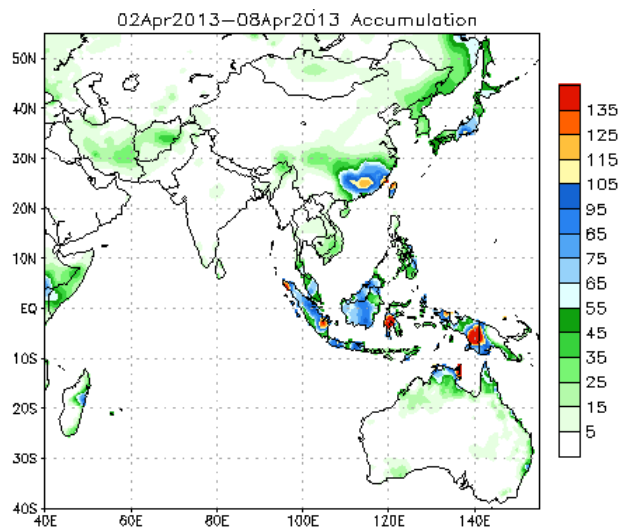


Weekly Average SST Anomalies ($^{\circ}\text{C}$), 24th-30th March, 2013

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

2. Predictions

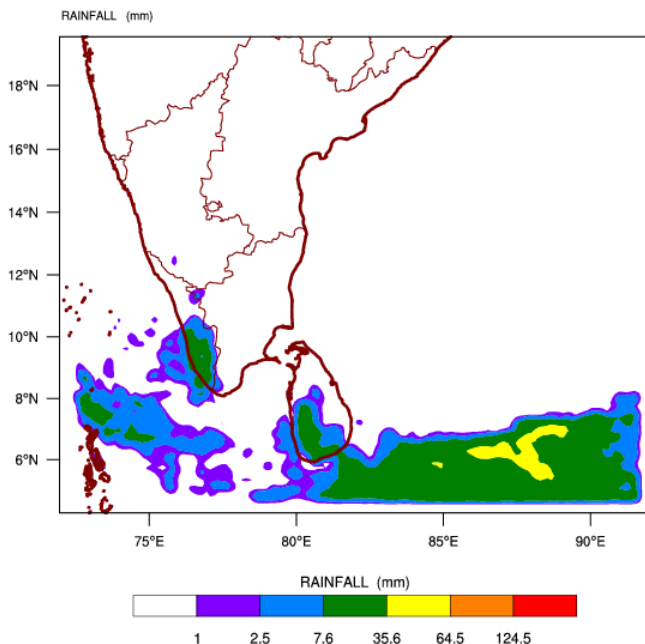
a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.



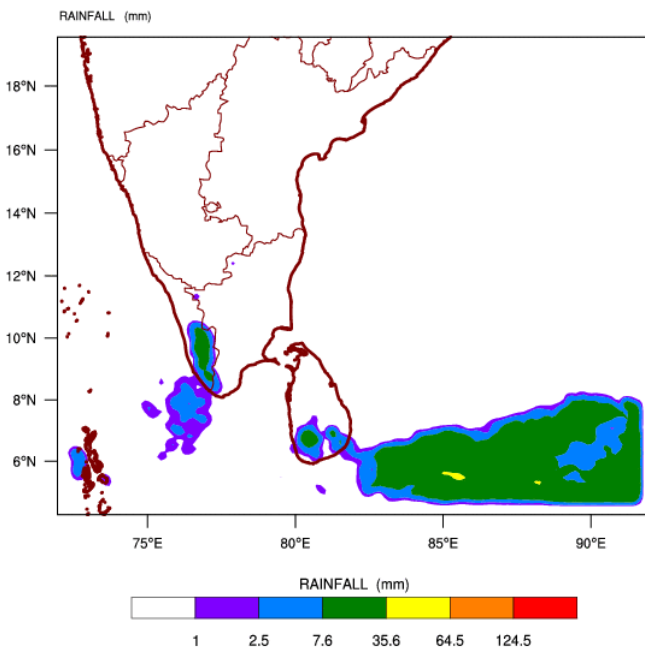
Source – NOAA Climate Prediction Center

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

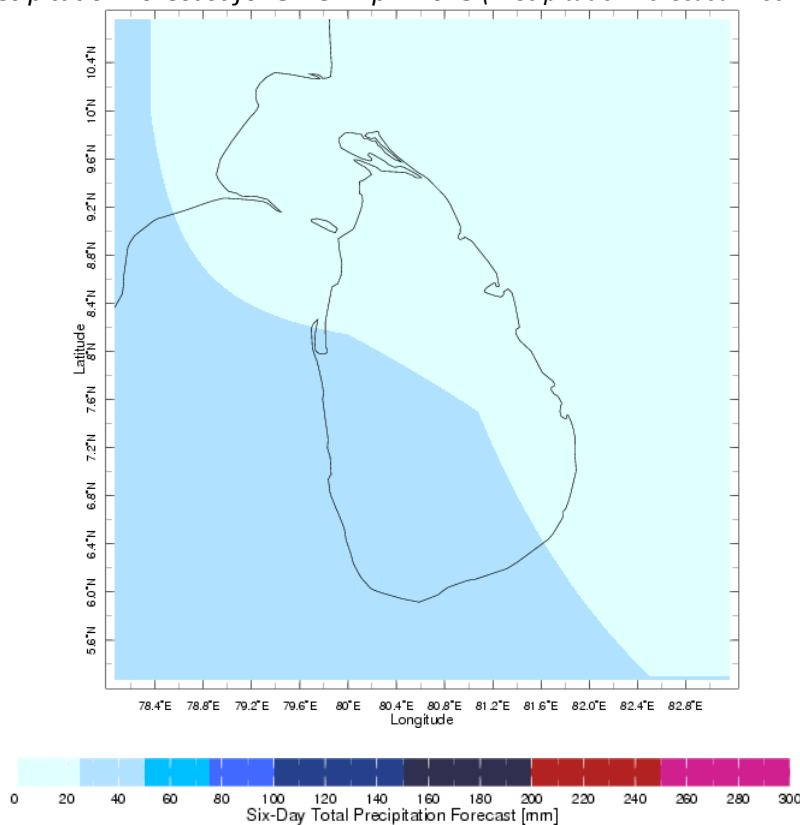
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 03-04-2013 valid for 03 UTC of 05-04-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 03-04-2013 valid for 03 UTC of 06-04-2013



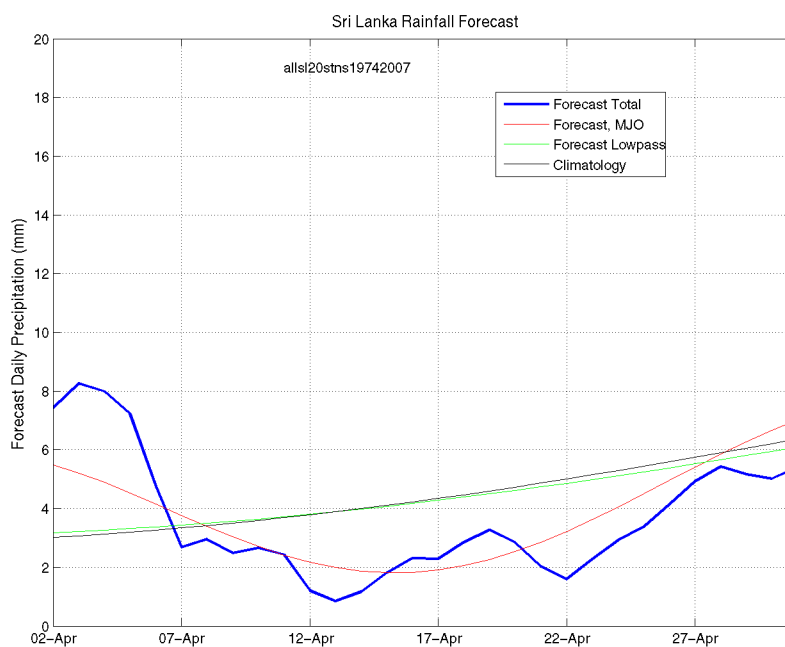
c) Weekly Precipitation Forecast for 3rd-8th April 2013 (Precipitation Forecast in Context Map Tool, IRI)



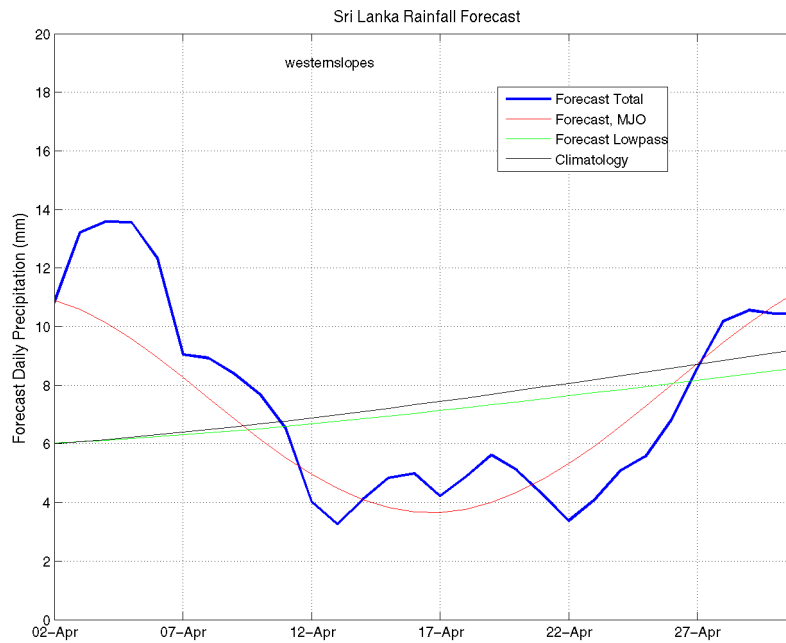
d) 1 month experimental predictions by Paul Roundy and L. Zubair

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

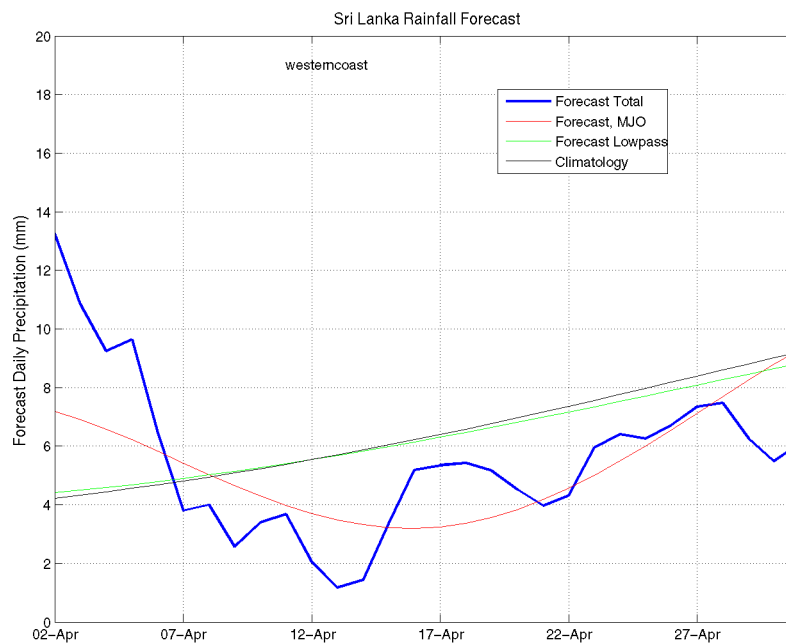
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



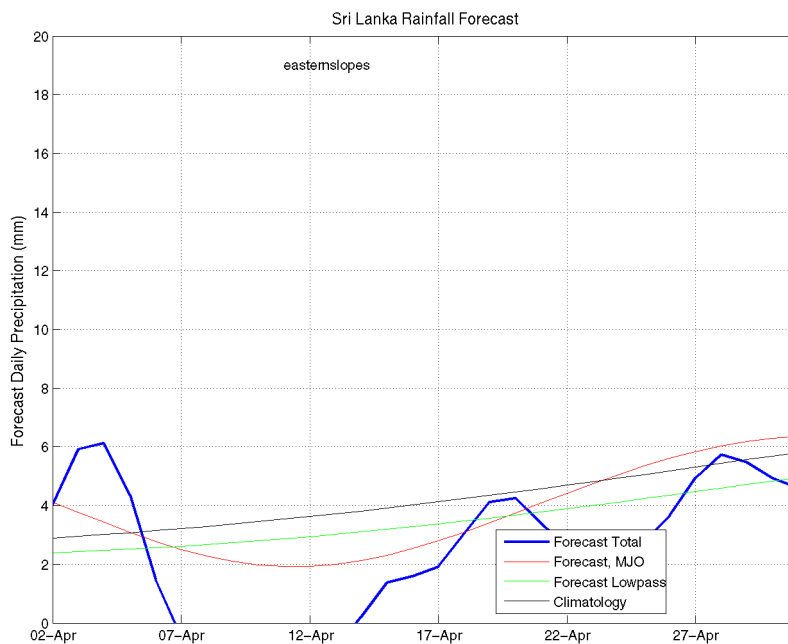
Western Slopes (Rainfall Scale from 0-20 mm/day)



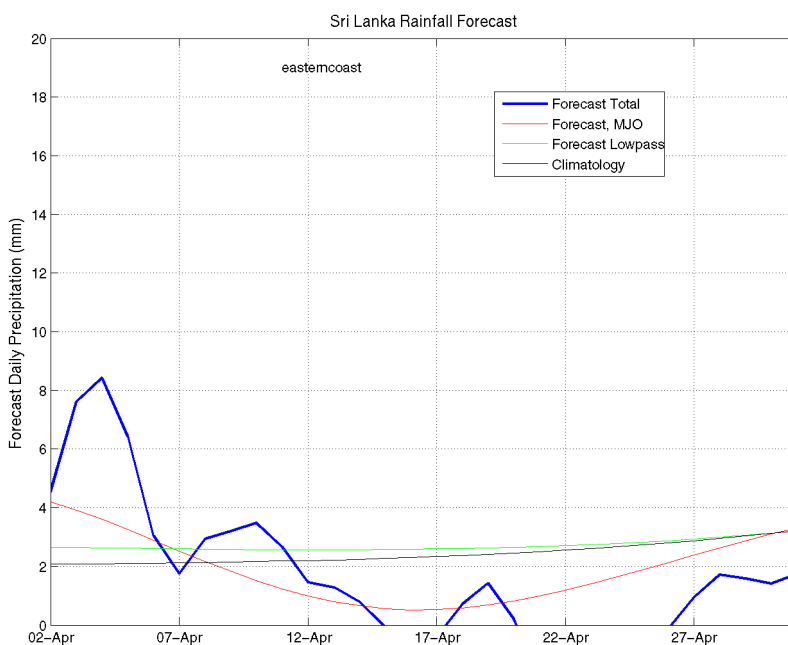
Western Coast (Rainfall Scale from 0-20 mm/day)



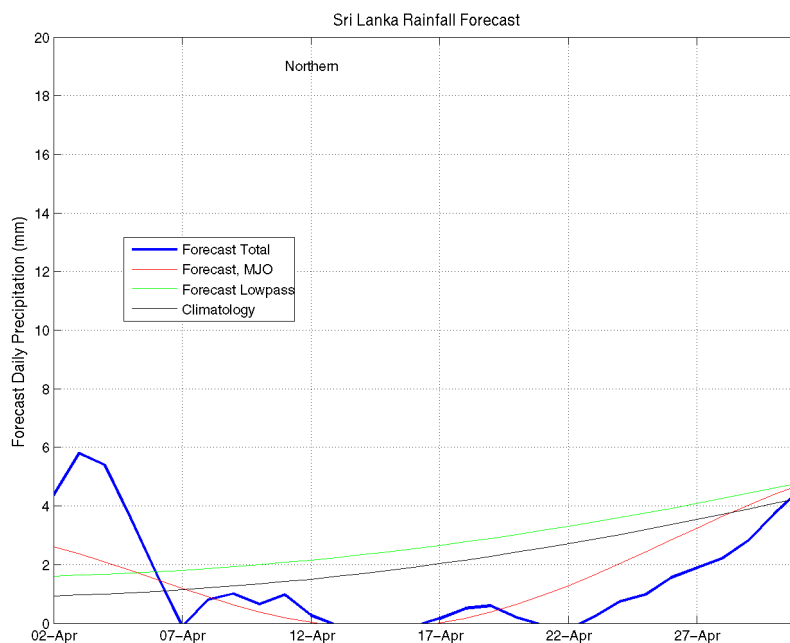
Eastern Slopes (Rainfall Scale- from 0-20 mm/day)



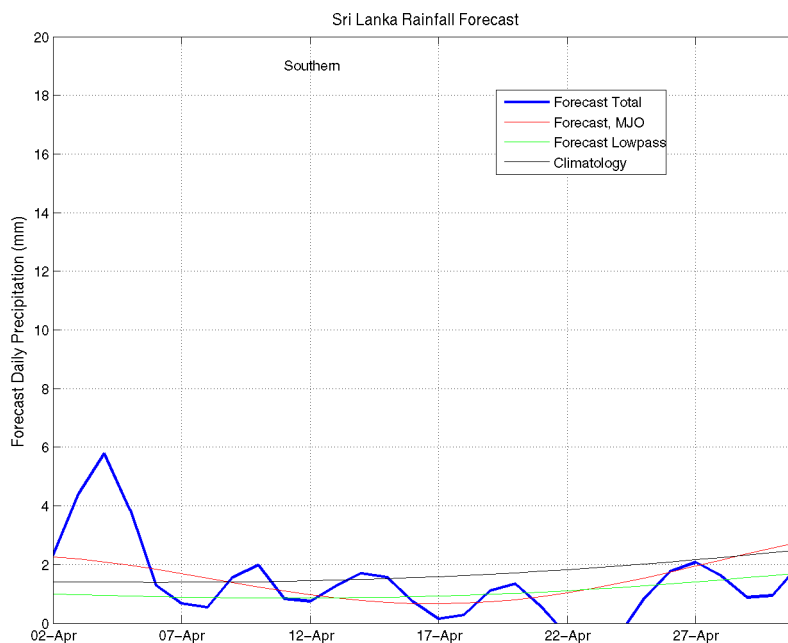
Eastern Coast (Rainfall Scale- from 0-20 mm/day)



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

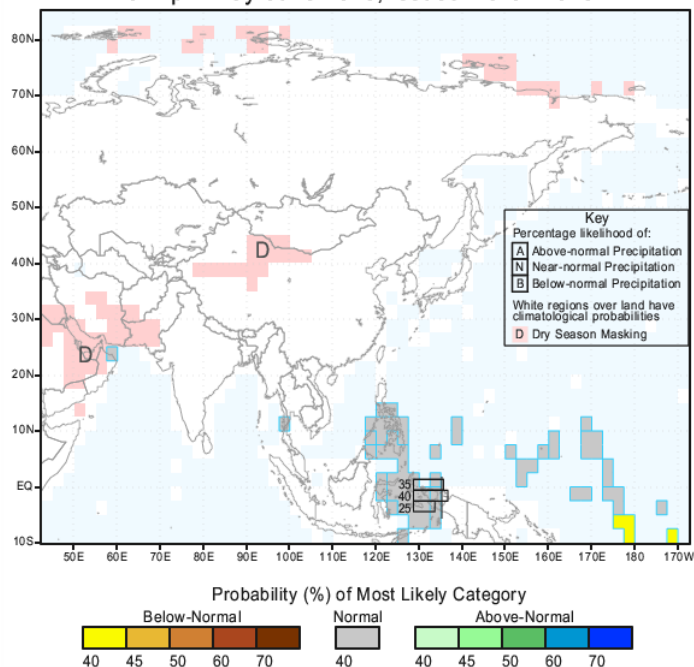


Southern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

IRI Multi-Model Probability Forecast for Precipitation
for April-May-June 2013, Issued March 2013



IRI Multi-Model Probability Forecast for Temperature
for April-May-June 2013, Issued March 2013

