

Experimental Climate Monitoring and Prediction

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

7 March 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 and February 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 most of the second quarter of 2013, beyond which there is great uncertainty due to the time of year.
(Text Courtesy IRI)

INDIAN OCEAN STATE

The Indian Ocean around Maldives particular to the South continues to have a warm anomaly.

Highlights

Monitoring and Predictions:

Northern regions shall expect high rainfall (65-85 mm) compared to the rest of the regions of Sri Lanka during 6th-12th March. During 8th-9th March Hambantota district shall be dry and Ratnapura district shall receive 65 mm of rainfall. However rainfall shall decrease drastically during 7th-9th March and shall remain constant for more regions.

Summary

Monitoring

Weekly Monitoring: Rainfall ranged between 5-165 mm during 26th February-5th March 2013. Maximum rainfall was observed on the 26th February for the Kurunegala district. On 26th February entire Sri Lanka faced dry condition and during 3rd-5th March entire Sri Lanka received rainfall.

Predictions

7-day prediction: Northern regions of Sri Lanka shall receive less than 65-85mm of rainfall and rest of Sri Lanka shall receive 5-65 mm of rainfall during 6th-12th March.

IMD WRF Model Forecast & IRI forecast: For 8th of March 2013, IMD WRF model predicts 65 mm of rainfall for Ratnapura district and less than 1 mm of rainfall for Hambantota district. For the same day rest of the country shall receive rainfall between 8-36 mm. For the 9th of March, IMD WRF model predicts less than 1 mm of rainfall for Mullaitivu, Mannar, Vavuniya, Anuradhapura, Puttalam, Kurunegala, Colombo, Kalutara, Hambantota and Moneragala. For the same day the model predicts 1-8 mm of rainfall for rest of the country except for few regions in Ratnapura and Badulla (8-36 mm). NOAA model predicts more or less constant rainfall condition for entire Sri Lanka from 6th-11th March.

30 Days Prediction: Overall- Existing rainfall condition shall decrease drastically during 7th-9th March and shall remain more or less constant (2-3 mm/day) during 9th-21st March. **Western Slopes** – The rainfall pattern existing in the entire country shall be present in this region, but the amount of rainfall shall be high. However, around 13th and 21st there shall be a peak in rainfall (7 mm/day), but these shall not be a significant events for the region. **Western Coast** – Drastical reduction of rainfall shall be observed during 7th-9th March and shall remain constant during 10th-17th March, but amount of rainfall shall be lower compared to western slopes. **Eastern slopes & Eastern Coast** – Rainfall shall decrease gradually during 7th-16th March and for the eastern coasts rainfall is not predicted for the period of 9th-15th March. **Northern region-** The rainfall pattern existing in the entire country shall be present in this region. **Southern Region-** Rainfall shall decrease gradually till 14th March.

Seasonal Prediction: As per IRI Multi Model Probability Forecast issued on February 2013; for March 2013 to May 2013, there is a 40% 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

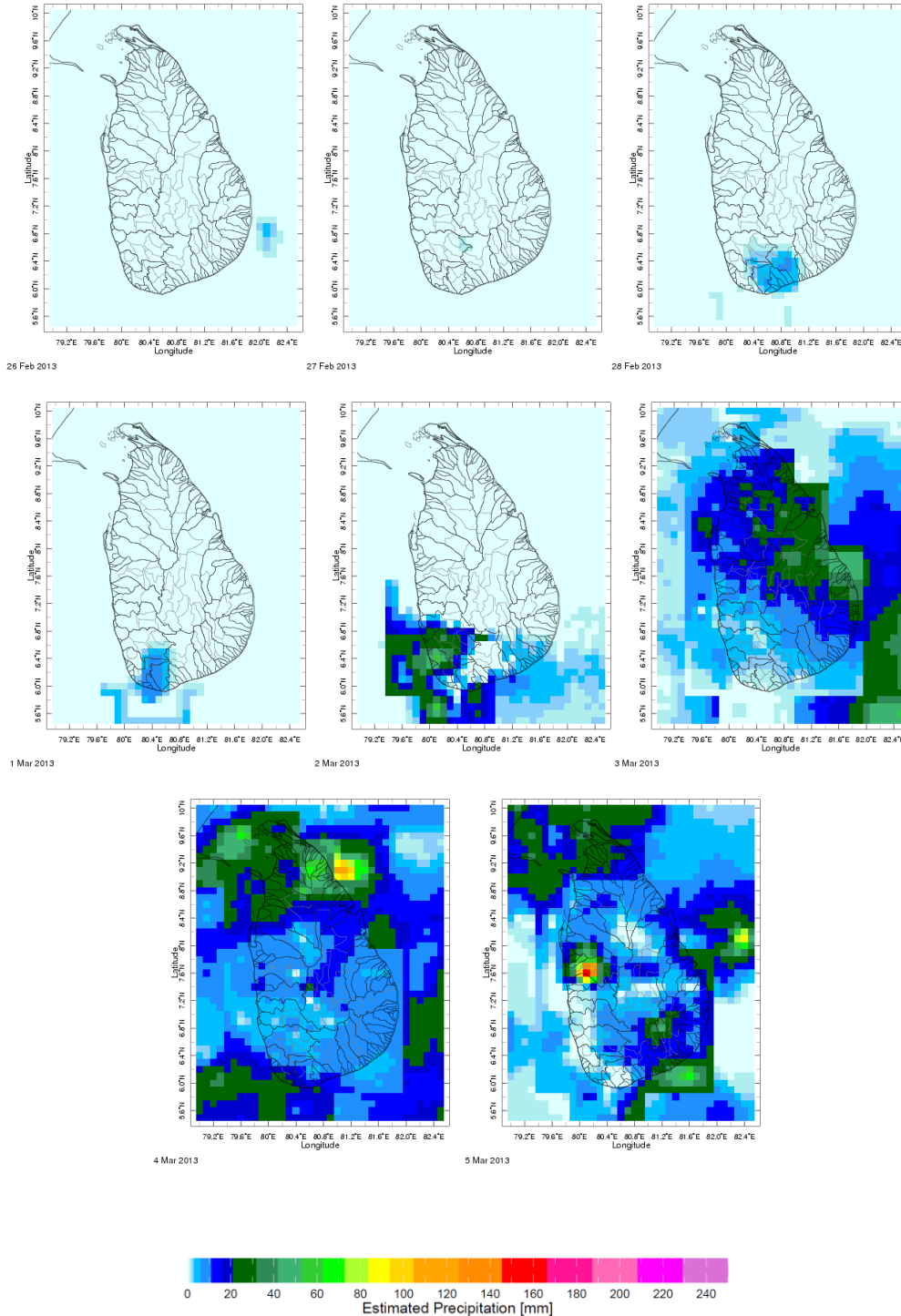
- NCEP GFS Ensemble 1-7 day predictions
- Weekly precipitation forecast (IRI)
- 1 month experimental predictions by Paul Roundy and L. Zubair
- Seasonal Predictions from IRI

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

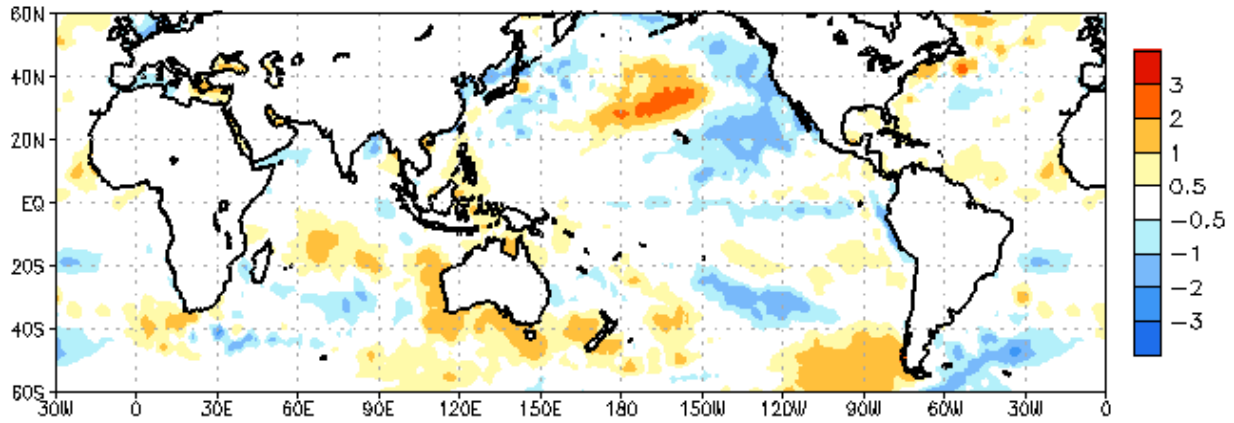
² These interpretations of hydro-meteorological conditions for the Mahaweli basins are provided for the use of the WMS/MASL.

1. Monitoring

a) Daily Satellite Derived Rainfall Estimate Maps: 26th February-5th March 2013 (Left-Right, Top-Bottom)



b) Weekly Average SST Anomalies

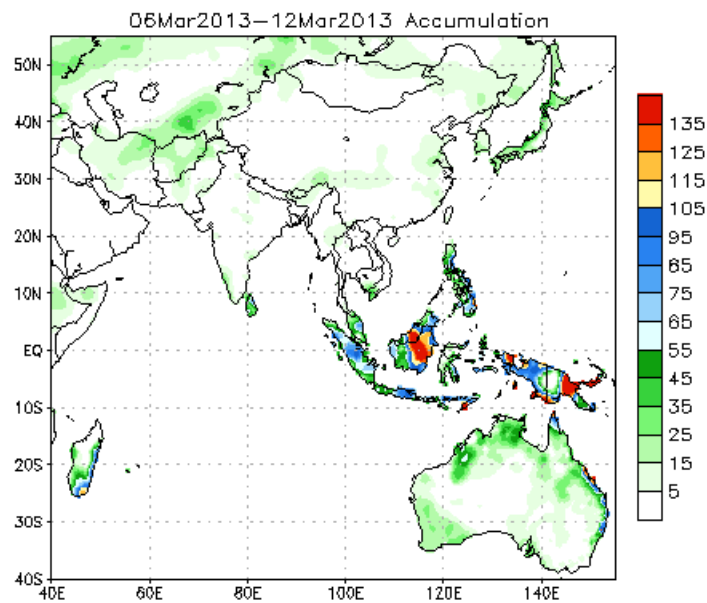


Weekly Average SST Anomalies ($^{\circ}$ C), 27th February, 2013

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

2. Predictions

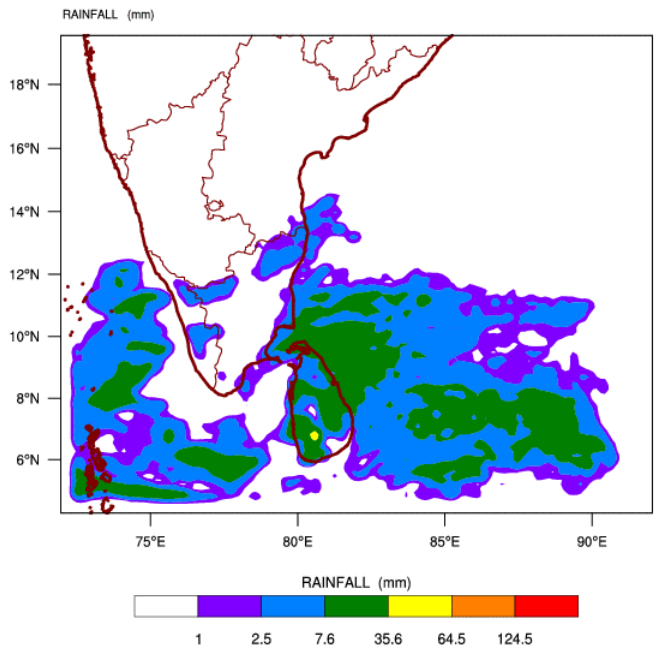
a) NCEP GFS Ensemble 1-7 day predictions, NOAA, Climate Prediction Centre, USA.



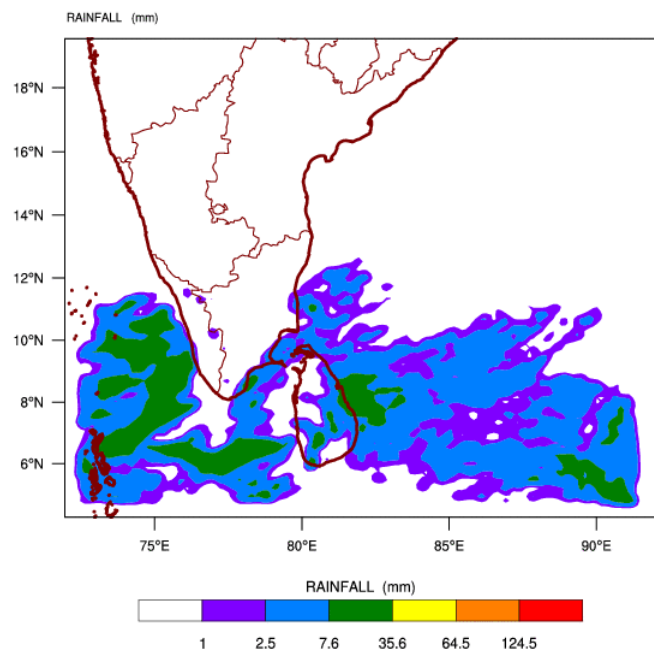
Source – NOAA Climate Prediction Center

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

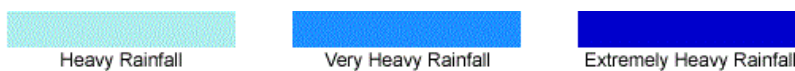
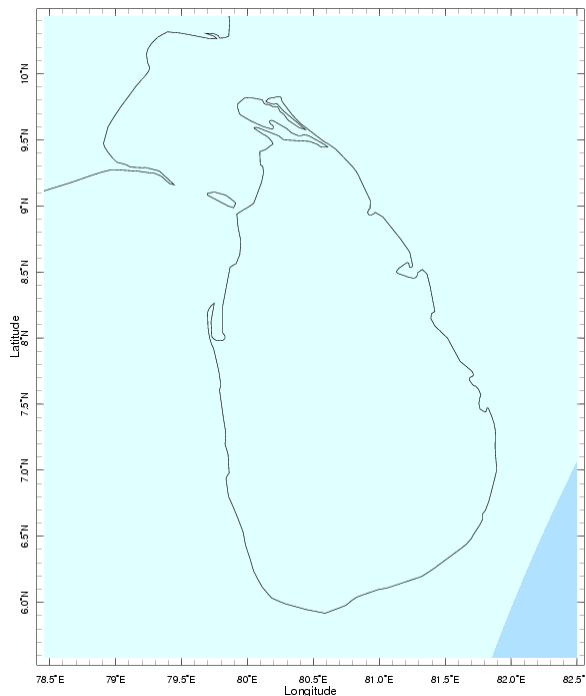
WRF MODEL FORECAST (48 HR.) RAINFALL(mm)
based on 00 UTC of 06-03-2013 valid for 03 UTC of 08-03-2013



WRF MODEL FORECAST (72 HR.) RAINFALL(mm)
based on 00 UTC of 06-03-2013 valid for 03 UTC of 09-03-2013



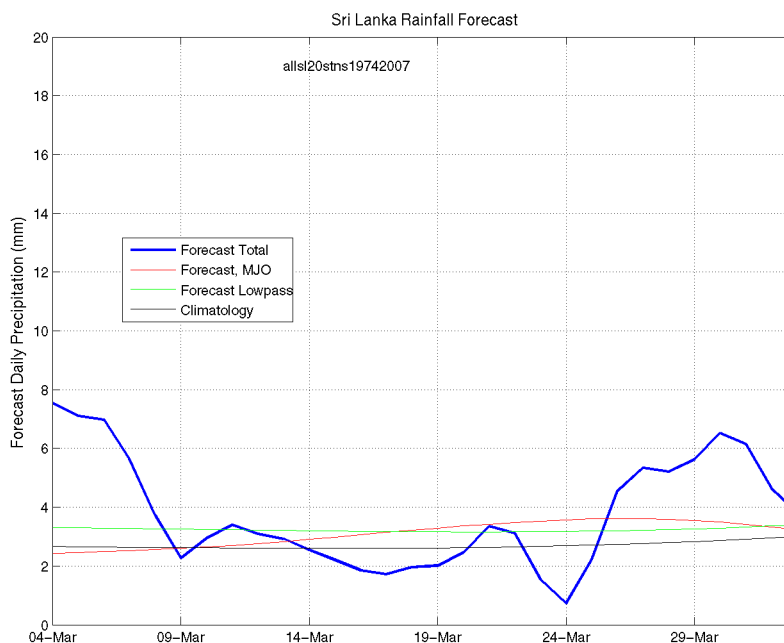
c) Weekly Precipitation Forecast for 6th-11th March 2013 (Precipitation Forecast in Context Map Tool, IRI)



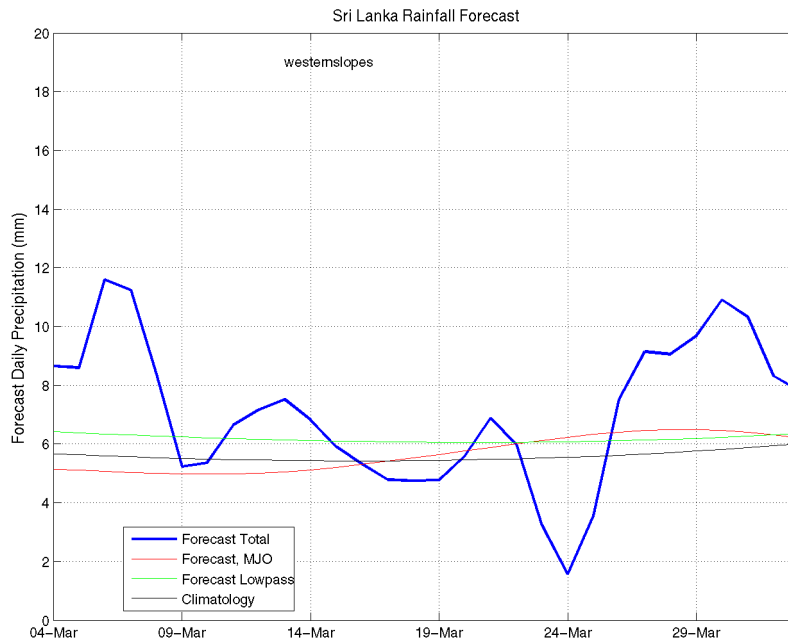
d) 1 month experimental predictions by Paul Roundy and L. Zubair

Predictions based on observed cloud cover and atmospheric waves. Issued 6th March, 2013

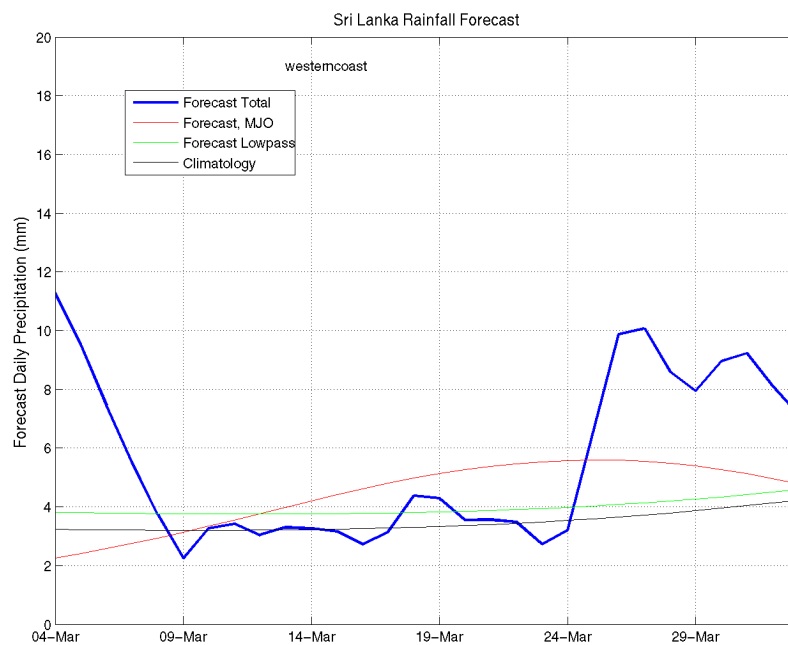
All Sri Lanka (Rainfall Scale from 0-20 mm/day)



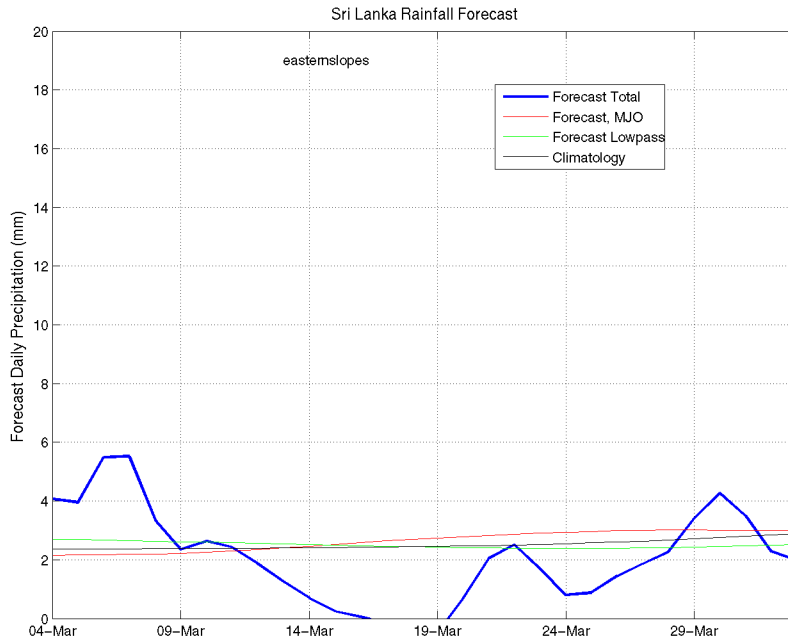
Western Slopes (Rainfall Scale from 0-20 mm/day)



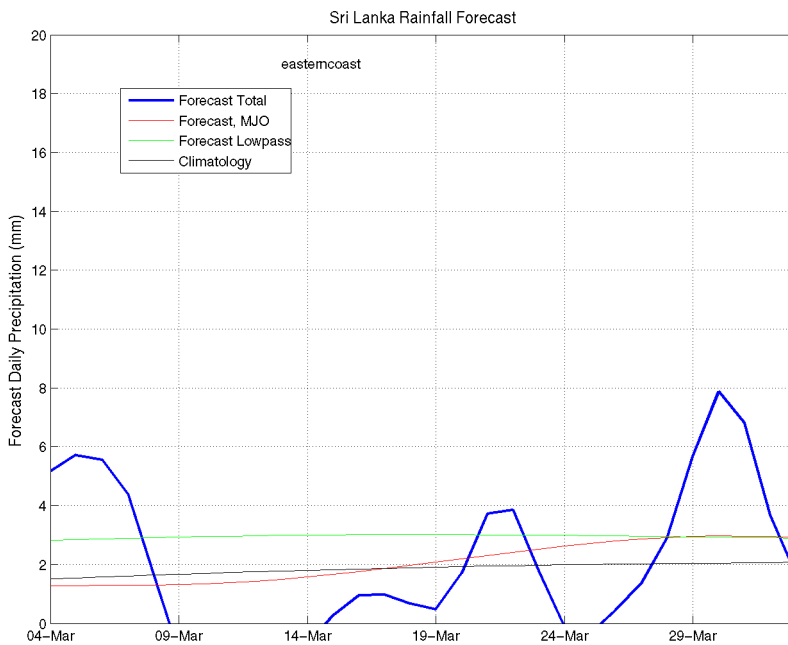
Western Coast (Rainfall Scale from 0-20 mm/day)



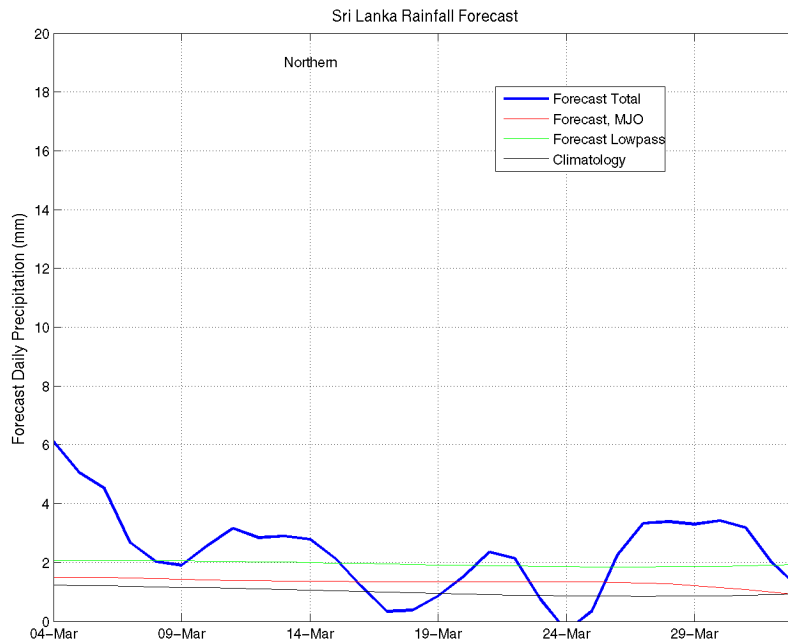
Eastern Slopes (Rainfall Scale- from 0-20 mm/day)



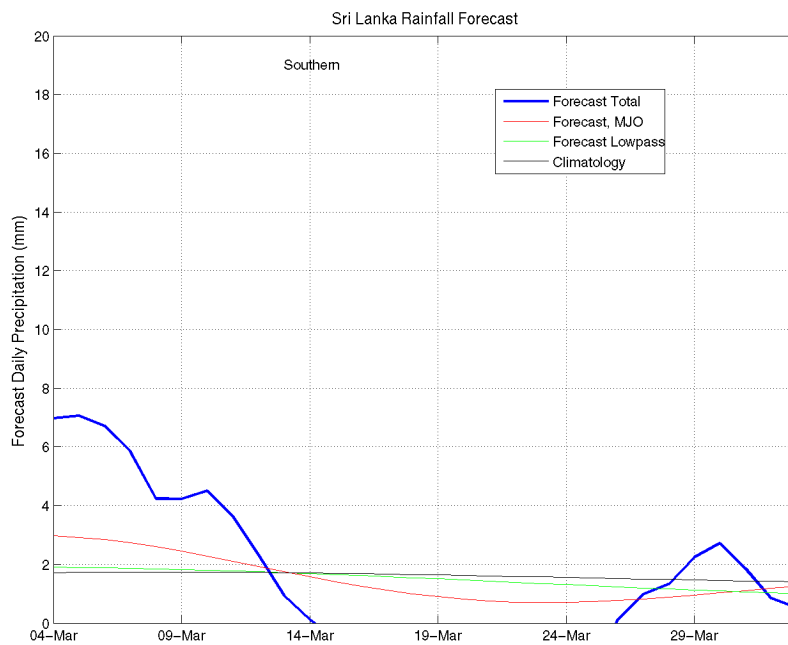
Eastern Coast (Rainfall Scale- from 0-20 mm/day)



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

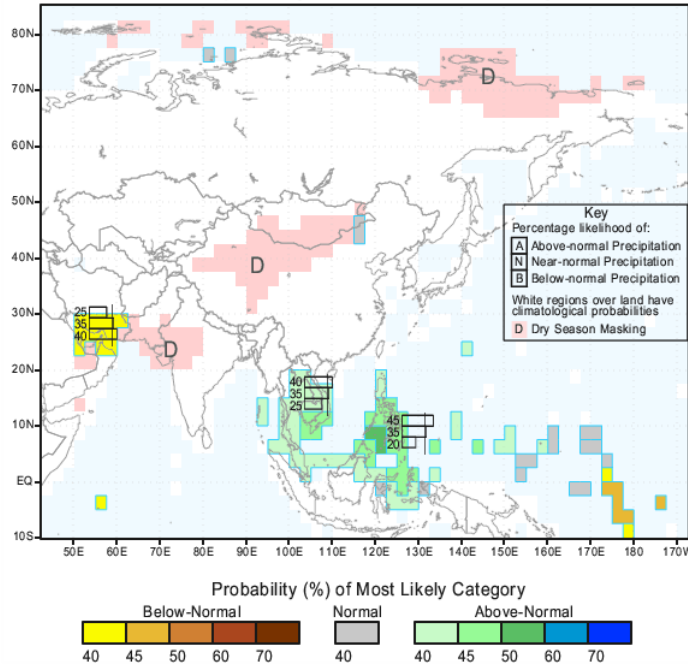


Southern Region (Rainfall Scale- from 0-20 mm/day)



e) Seasonal Rainfall and Temperature Predictions from IRI

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



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

