FECT Foundation for Environment Climate and Technology
c/o, Maintenance Office, Mahaweli Authority, Digana Village, Rajawella, Sri Lanka.
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# Experimental Climate Monitoring and Prediction

*by:* Revathy,M.S.,Sewwandhi Chandrasekara, Prabodha Agalawatte, Zeenas Yahiya, Lareef Zubair and Michael Bell (FECT and IRI[1])

**12 February 2014**

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**December 19, 2013**

## PACIFIC SEAS STATE

During November through early December the observed ENSO conditions remained neutral. Most of the ENSO prediction models indicate a continuation of neutral ENSO into early 2014.. During northern spring and Summer a warming tendency is seen in both dynamical and statistical models.

**(Text Courtesy IRI)**

## INDIAN OCEAN STATE

Southern sea of Sri Lanka showed +1$^0$C anomaly and rest of the seas around Sri Lanka showed neutral seas surface temperature during 24$^{th}$-30$^{th}$ November 2013.

## MJO STATE

### *Highlights*

**Monitoring and Predictions:**

*A decrease trend in rainfall observed over the country from 14$^{th}$ -23$^{rd}$ December. However, Eastern provinces are likely to experience significant rainfall during 28$^{th}$ and 29$^{th}$ December. The models predict dry conditions over the other parts of the country.*

### *Summary*

**Monitoring**

***Weekly Monitoring***: During 15$^{th}$ December Eastern province got rainfall ranged 10-30 mm/day. Maximum rainfall observed on 15$^{th}$ December for Batticaloa, Polonnaruwa and some parts of Ampara district. Rest of the days received lower amount of rainfall compared to the beginning of the week.

***Monthly Monitoring***: Nuwara-Eliya, Ratnapura and Monaragala districts received highest average rainfall during the month of November 2013.

**Predictions**

***7-day prediction:*** During 26$^{th}$ December-1$^{st}$ January 2014, entire Sri Lanka received rainfall below 5 mm.

***IMD WRF & IRI Model Forecast:*** For 28$^{th}$ of December, IMD WRF model predicts less than 7.5 mm of rainfall for Eastern and provinces and rest of the regions shall remain dry. For 29$^{th}$ of December, IMD WRF model predicts less than7.5 mm of rainfall for Western and central province. IRI model predicts dry condition over the country.

***30 Days Prediction: Overall***- Rainfall shall decrease gradually till 30$^{th}$ of December. ***Western Slopes*** –Rainfall shall decrease gradually during 25$^{th}$-30$^{th}$ December and it shall decrease gradually thereafter. ***Western Coast*** – Rainfall shall vary below 4 mm/day till 30$^{th}$ December. ***Eastern Slopes***– Rainfall shall decrease gradually till 30$^{th}$ of December below 2mm/day. ***Eastern Coast*** – The rainfall is not predicted from 27$^{th}$ December to 3$^{rd}$ January.. Thereafter it shall decrease. ***Northern region***- The rainfall decreases and rainfall is not predicted between 27$^{th}$ December to 3$^{rd}$ January. ***Southern Region***- The rainfall is likely increasing between 2-6 mm/day till 30$^{th}$ December.

***Seasonal Prediction***: As per IRI Multi Model Probability Forecast issued on November 2013; for December 2013 to February 2014, there is a 50-60% probability for temperature to be above normal in the country while the rainfall is to be climatological.

### *Inside this Issue*



[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.

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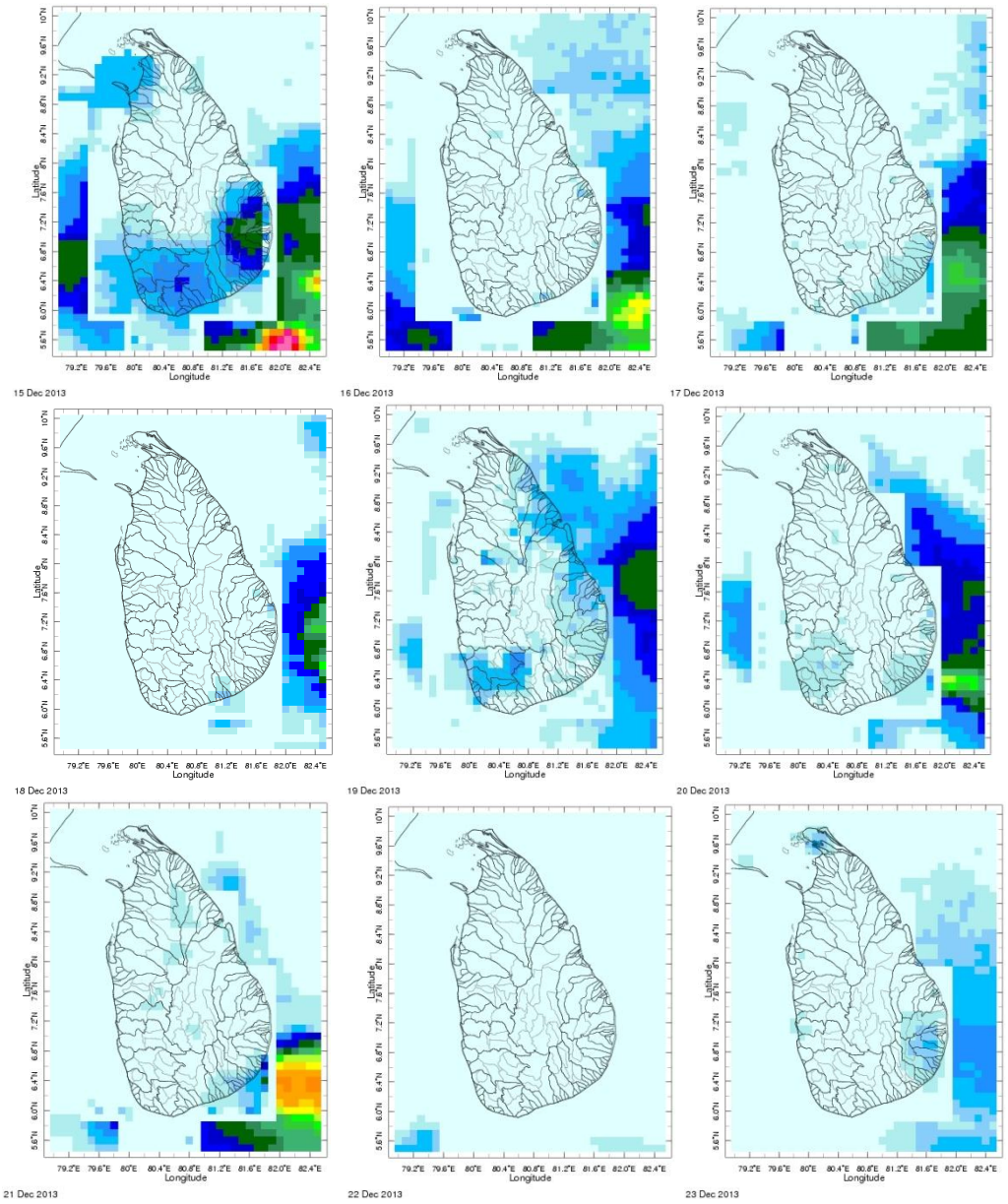
## 1. Monitoring

***a) Daily Satellite Derived Rainfall Estimate*** **Maps: 14th-23rd December *2013 (Left-Right, Top-Bottom)***



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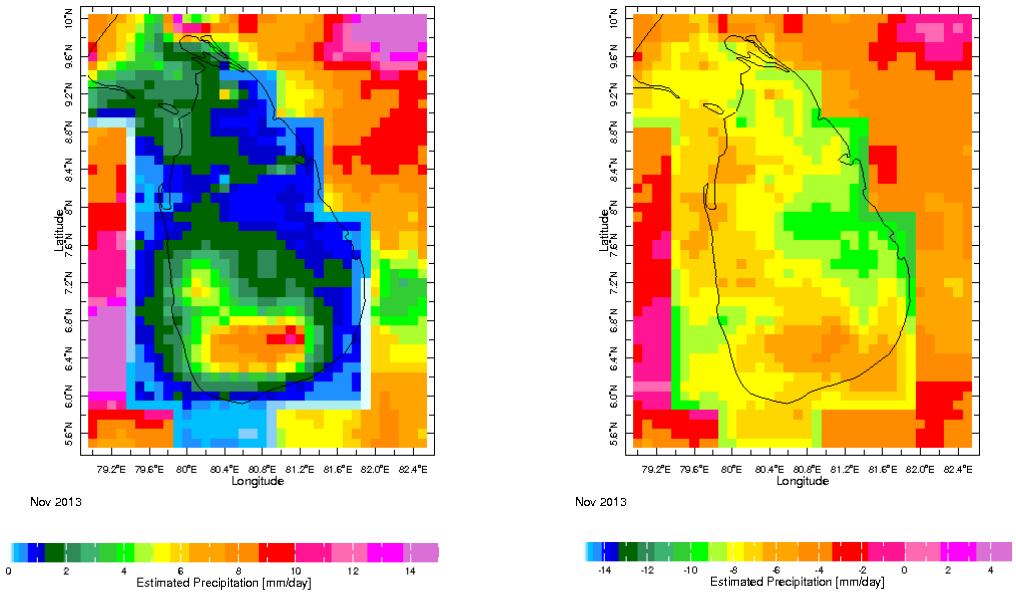
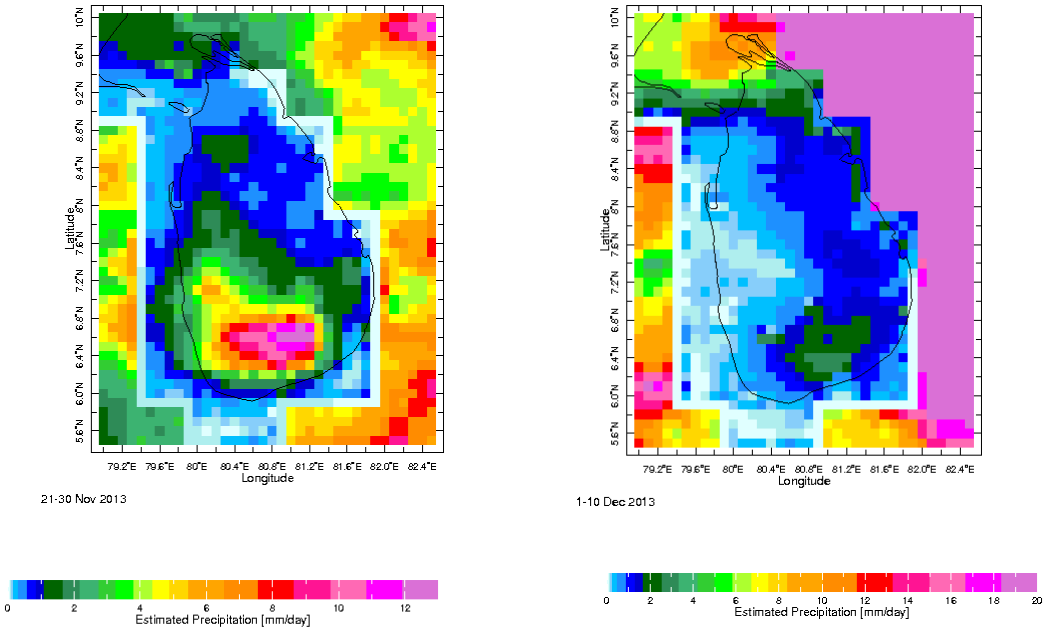
### b) Monthly Satellite Derived Rainfall Estimates for November 2013 (Total – Left and Anomaly - Right)




### c) Dekadal (10 Day) Satellite Derived Rainfall Estimates (21-30 November & 01-10 December, 2013)



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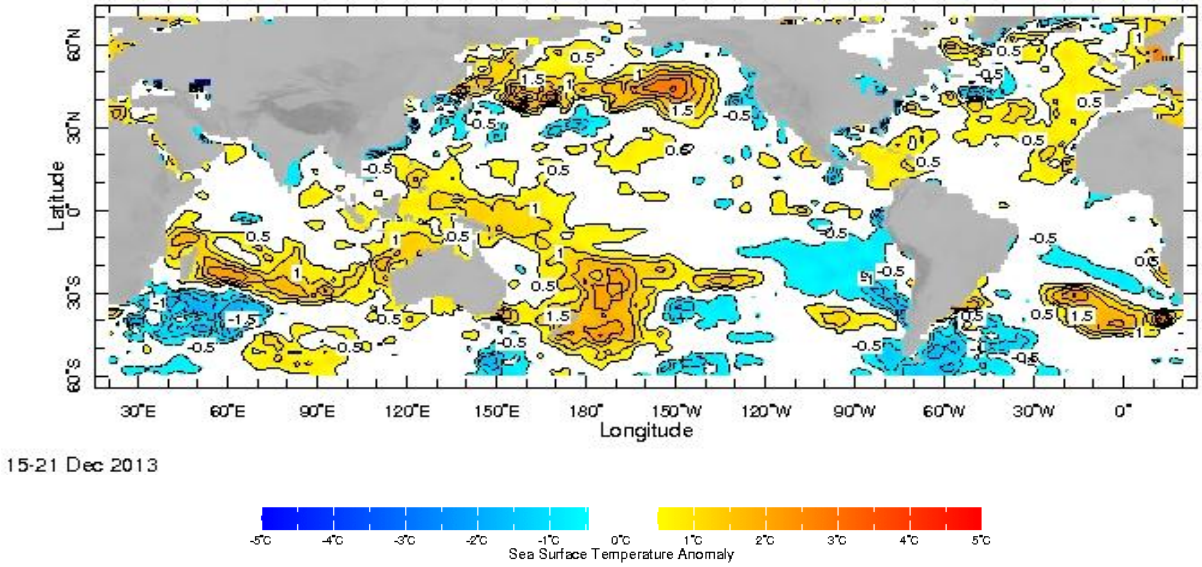
### *b) Weekly Average SST Anomalies*

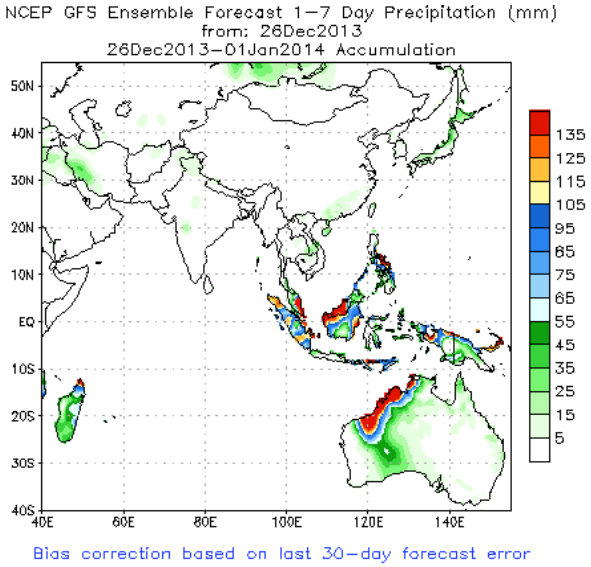



*Weekly Average SST Anomalies ($^0$C), 15$^{th}$-21$^{st}$ December, 2013*

**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**

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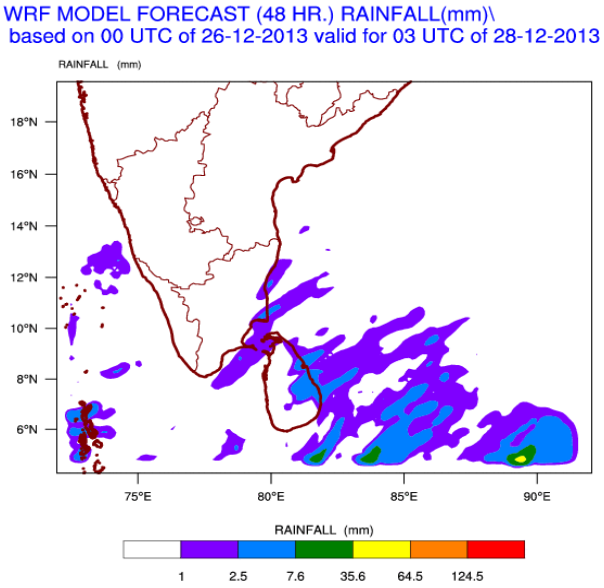
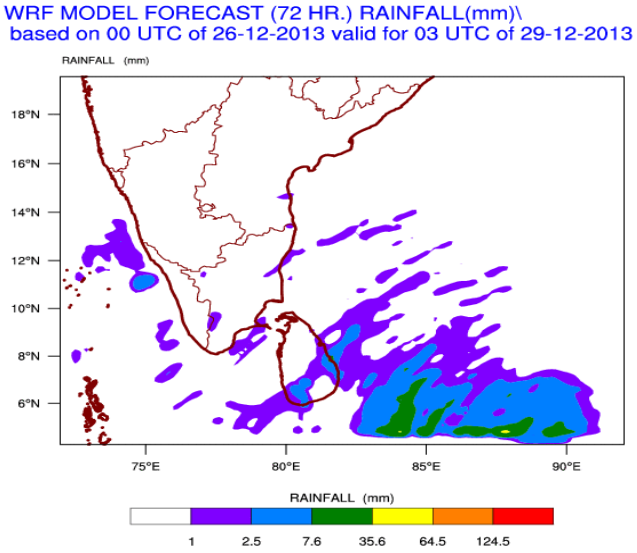
***b) WRF model forecast*** **RegionalMeteorological Center,Chennai, Indian Meteorological Department)**



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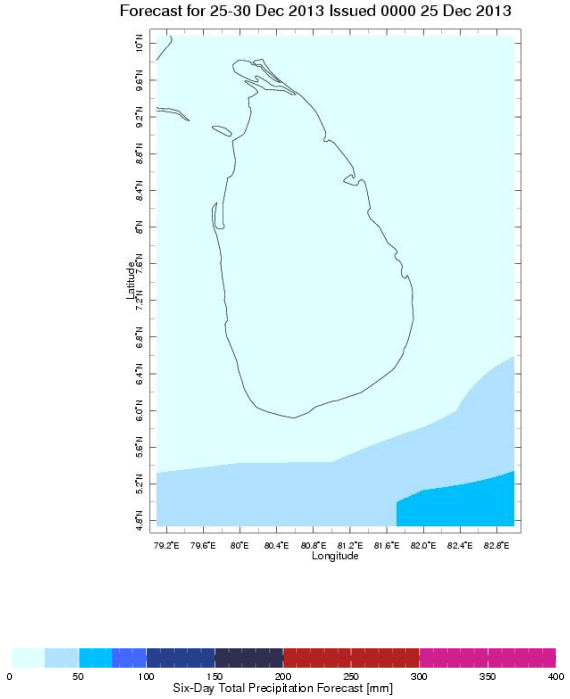
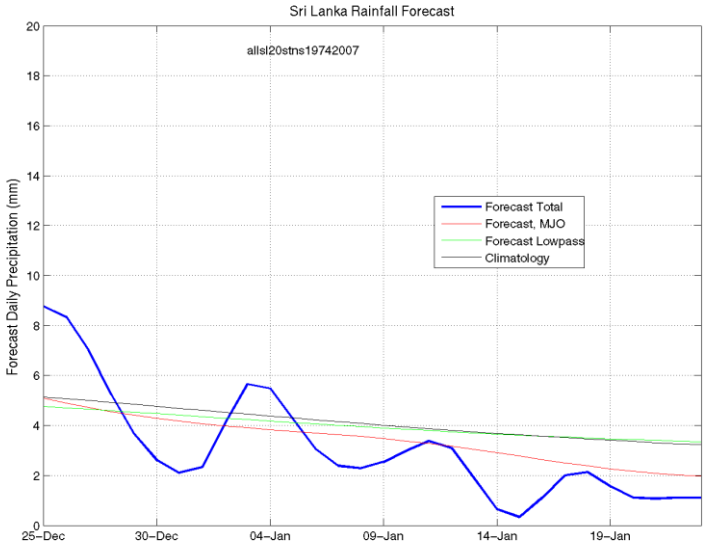
***b) Weekly Precipitation Forecast for 25th-30th December 2013 (Precipitation Forecast in Context Map Tool, IRI)***




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

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

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



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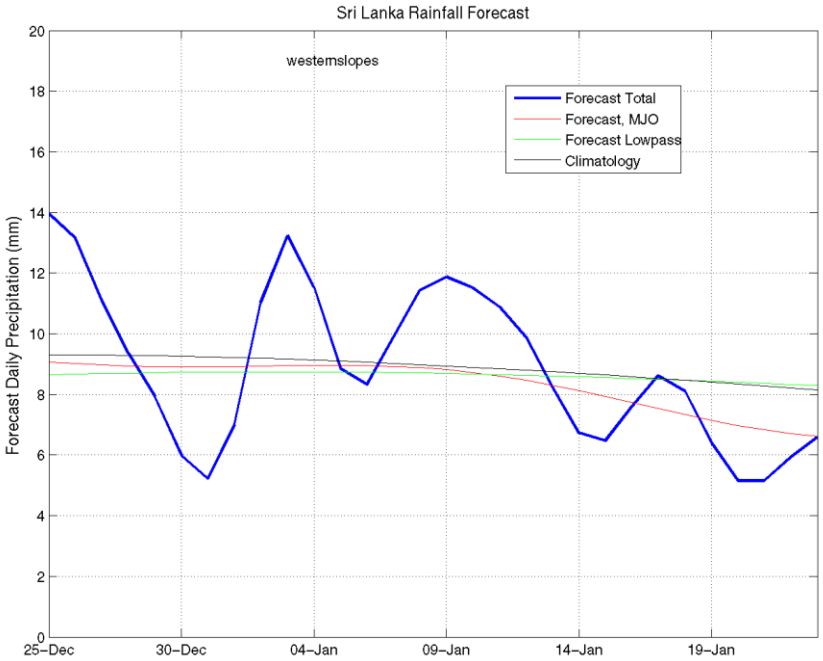
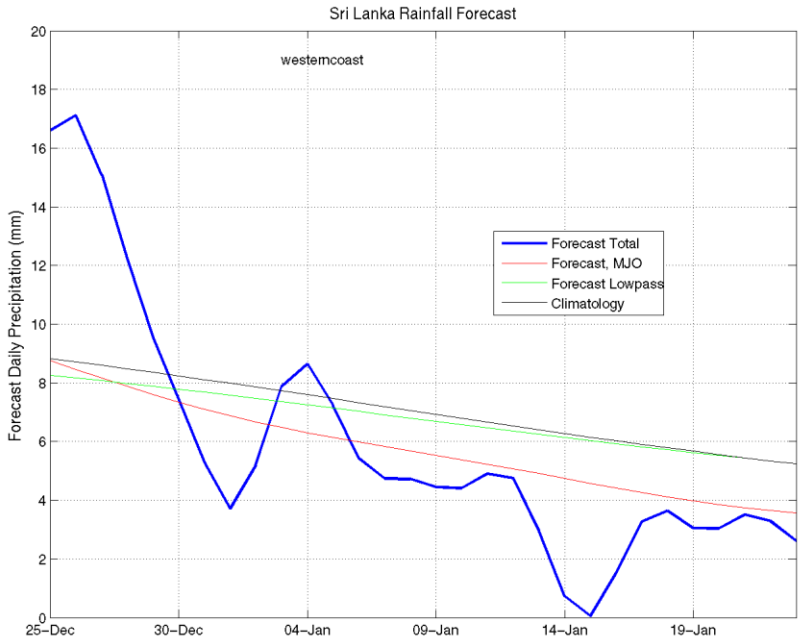
***Western Slopes (Rainfall Scale from 0-20 mm/day)***




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



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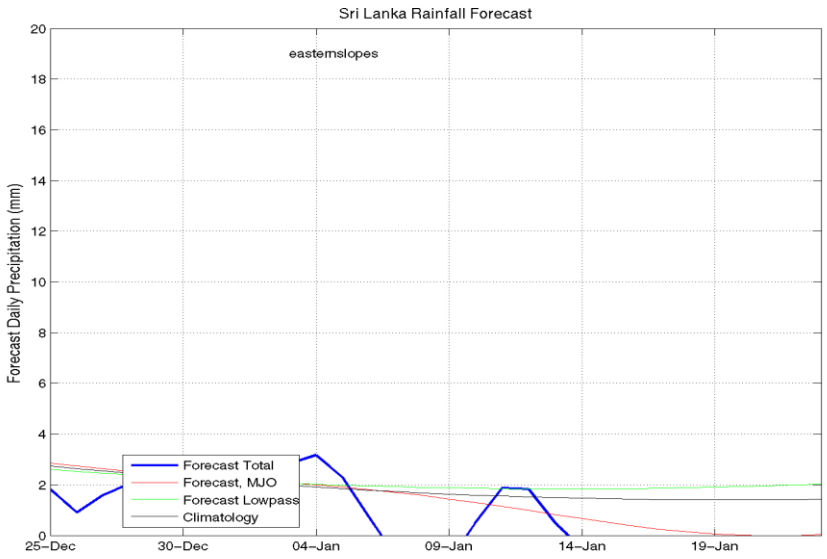
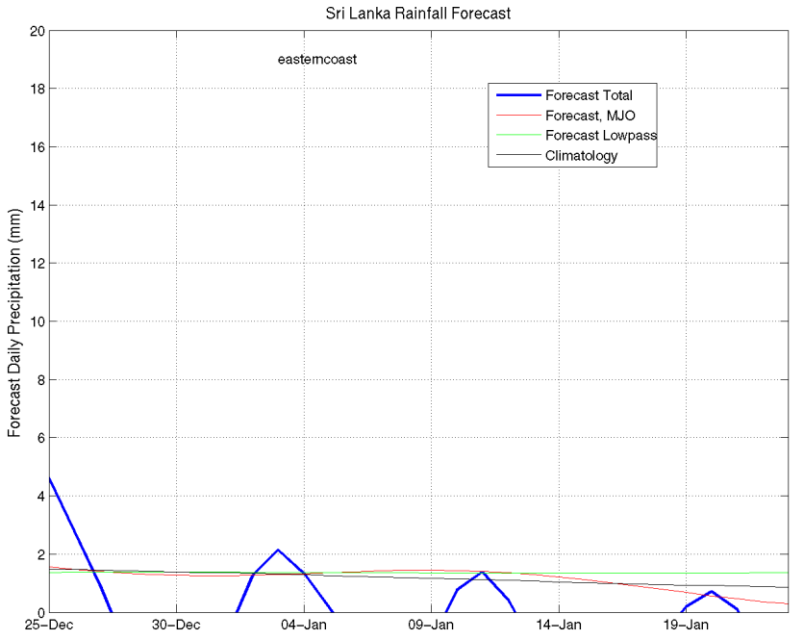
***Eastern Slopes (Rainfall Scale- from 0-20 mm/day)***




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



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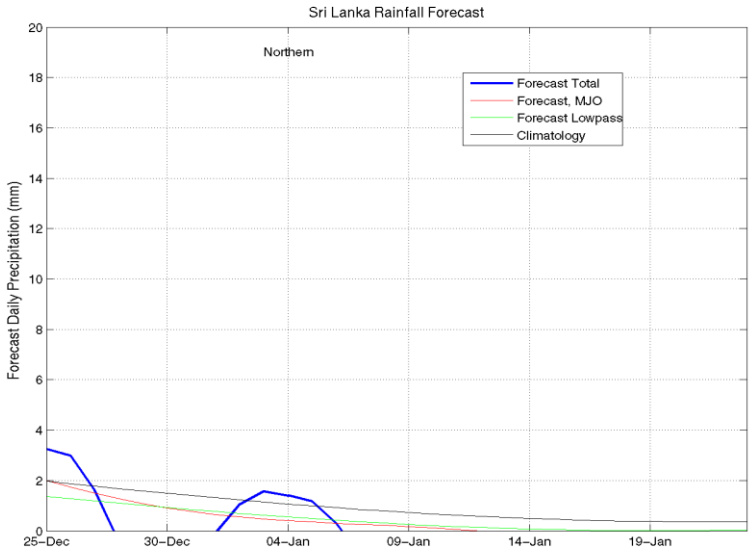
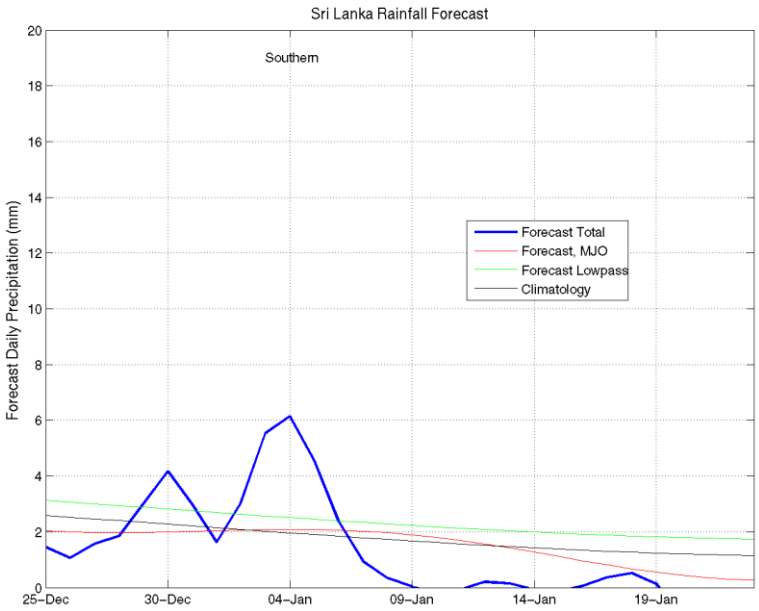
***Northern Region (Rainfall Scale- from 0-20 mm/day)***




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



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***e) Seasonal Rainfall and Temperature Predictions from IRI***