

Experimental Climate Monitoring and Prediction

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April 9, 2015 PACIFIC SEAS STATE

During March through early-April 2015 the SST just met the thresholds for weak Niño conditions. Some of the atmospheric variables began indicating an El Niño pattern more than they had been earlier, including trade wind weakening and excess rainfall migrating farther to the east. The consensus of ENSO prediction models indicate weak El Niño conditions during the March-May 2015 season in progress, continuing and strengthening El Niño toward mid-2015.

(Text Courtesy IRI)

INDIAN OCEAN STATE

Neutral sea surface temperature was observed in the sea around Sri Lanka.

MJO STATE

MJO is in phase 3 and therefore shall enhance rainfall in Sri Lanka

Highlights

Heavy rainfall continued during the previous week with the highest rainfall observed in Puttalam and Kurunegala. Rainfall shall continue in the next week with more rainfall on the western side of the country. IMD WRF model predict heavy rainfall in the next two days while the NOAA NCEP model predicts a low amount of precipitation in the next 14 days.

Summary Monitoring

Weekly Monitoring: Heavy rainfall reaching up to 120 mm was observed in Puttalam and Kurunegala districts on the 31st of March. On the 1st of April rainfall decreased down to 30 mm in north-western Sri Lanka but increased up to 50 mm in western and Sabaragamuwa provinces. Up to 30 mm rainfall was observed in the entire country on the 2nd and light rainfall on the 3rd. No rainfall was observed on 4th and 5th of April and once again up to 30 mm rainfall was observed in Colombo, Gampaha, Kegalle and Ratnapura districts on the 6th.

Monthly Monitoring: In March 2015 the western side of the country received above average rainfall averaging up to 12 mm/day while the rest of the country received below average rainfall.

Predictions

14 day prediction: NOAA NCEP models predict less than 25 mm total rainfall in next two weeks.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, the south western and western regions of the country shall receive up to 35 mm rainfall on the 11th & 12th April. On the 11th the rainfall in Galle and Ratnapura districts may go up to 65 mm and on the 12th the rainfall in Kurunegala District shall receive heavy rainfall up to 125 mm. NOAA models predict up to 100 mm rainfall in the central mountain.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for April to June, the total 3 month precipitation shall be climatological. The 3 month average temperature has more than 60- 70% likelihood of being in the above-normal tercile during this period.

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

Weekly Hydro- Meteorological Report for Sri Lanka

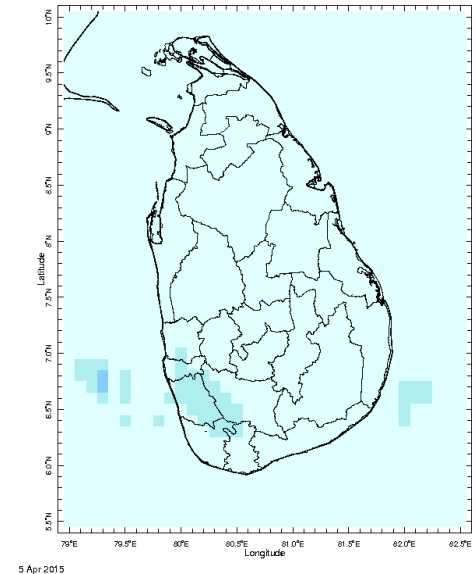
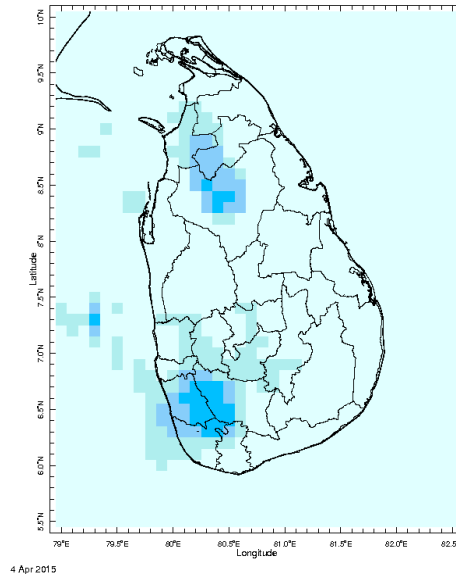
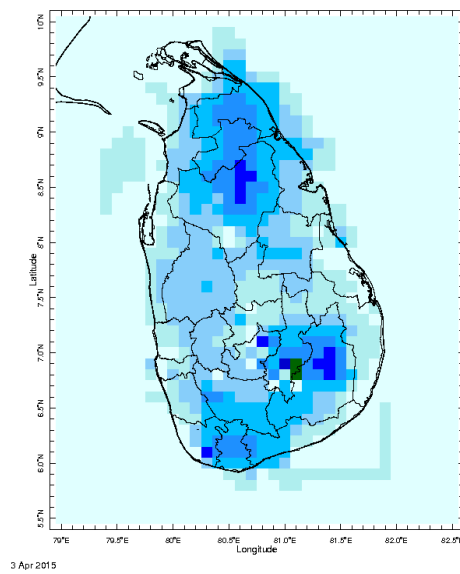
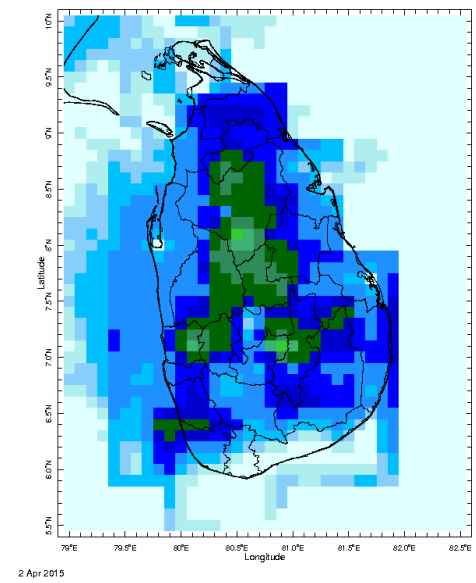
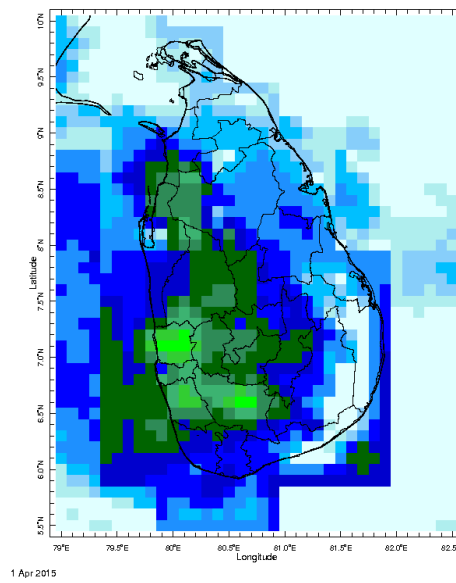
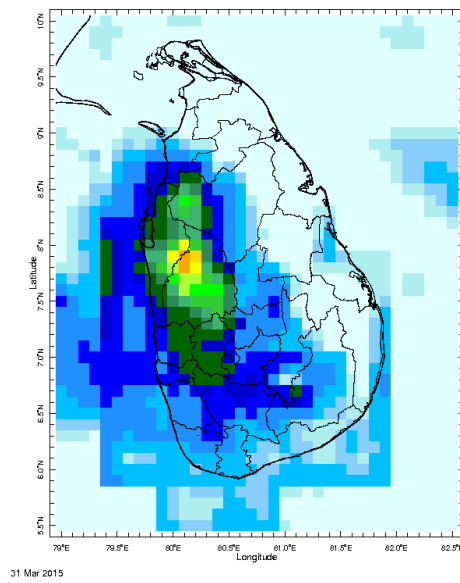
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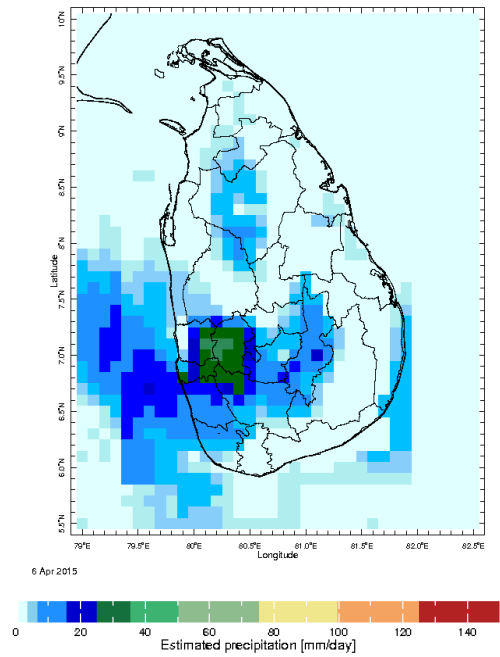
1. **Monitoring**
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Daily Rainfall Monitoring

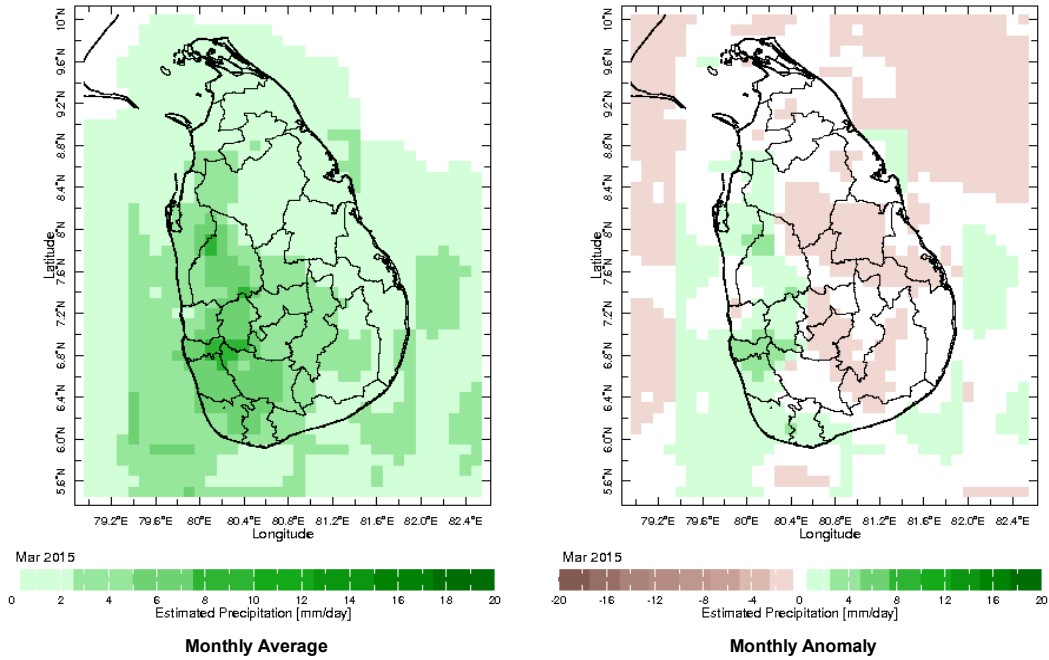
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



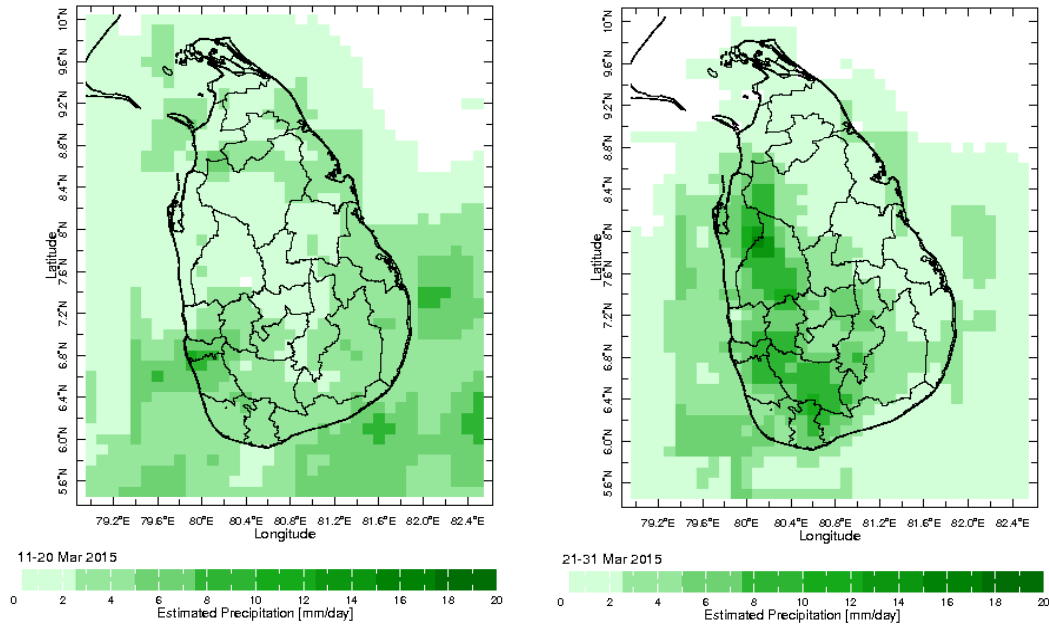


Monthly Rainfall Monitoring

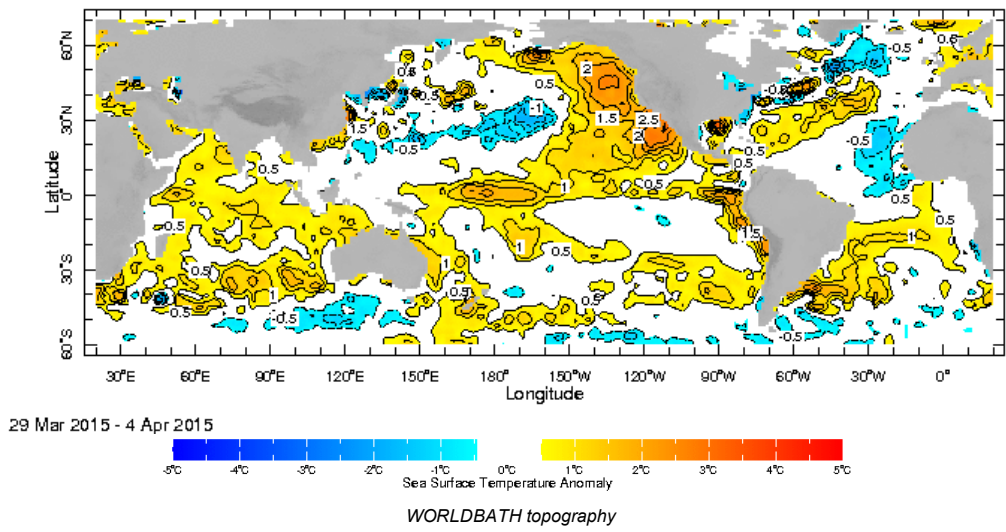
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall



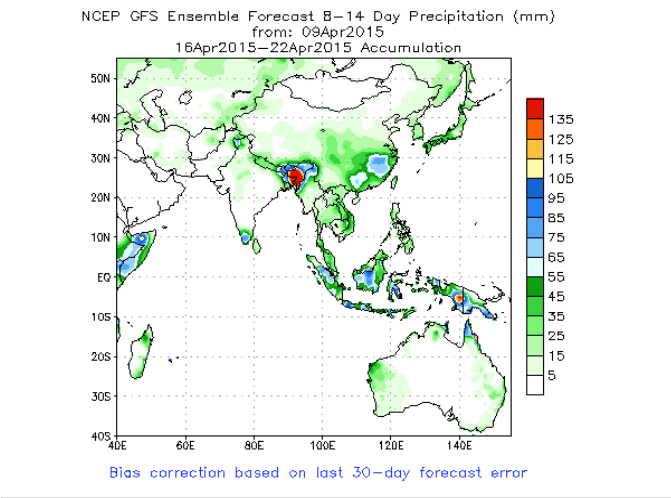
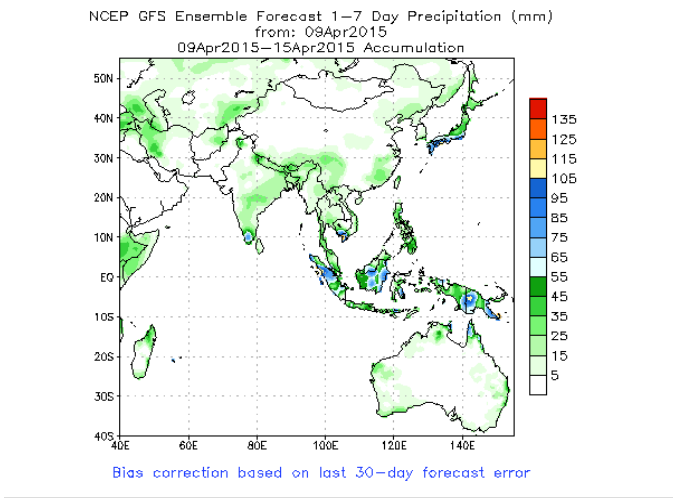
Dekadal (10 Day) Satellite Derived Rainfall Estimates



Weekly Average SST Anomalies

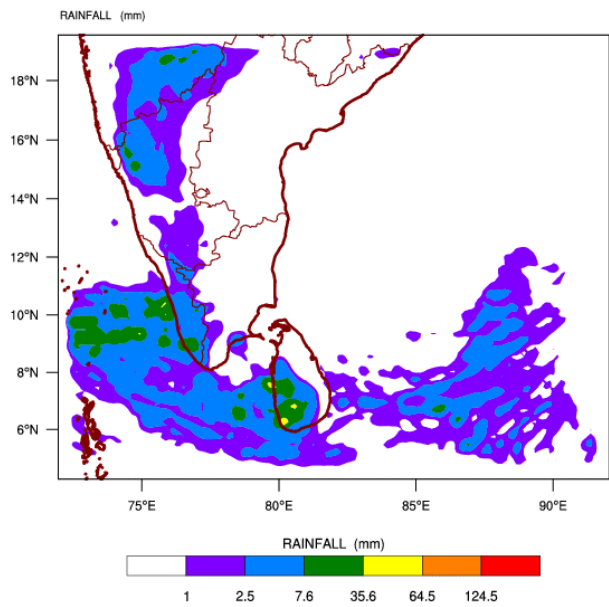


NCEP GFS 1- 14 Day prediction

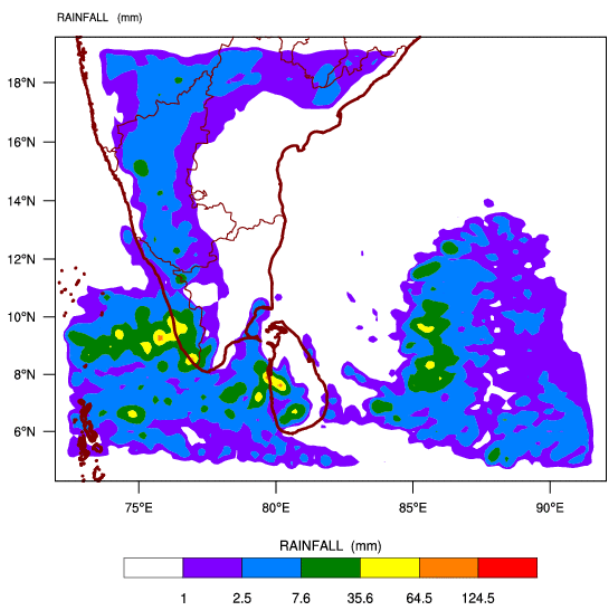


WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 09-04-2015 valid for 03 UTC of 11-04-2015

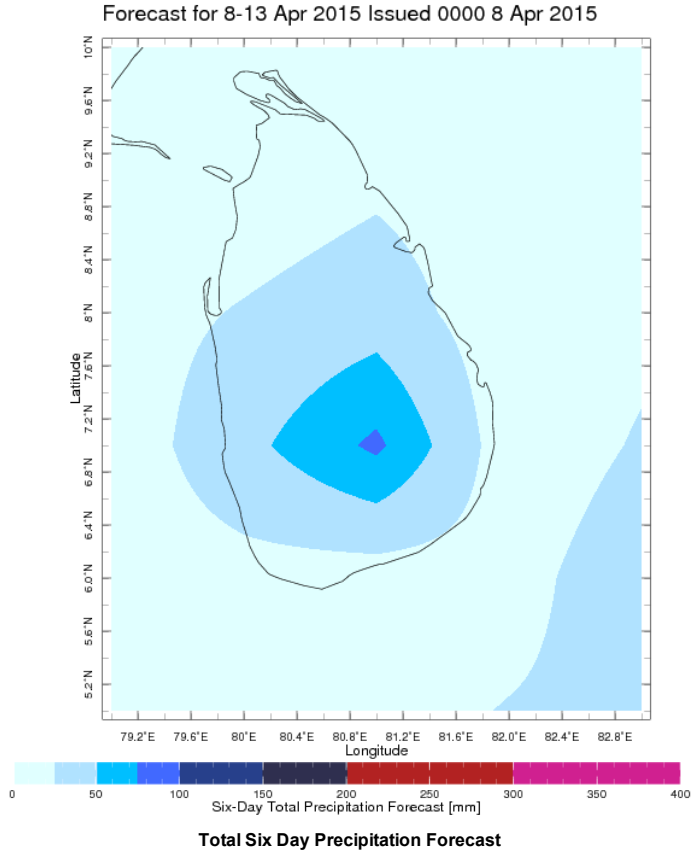
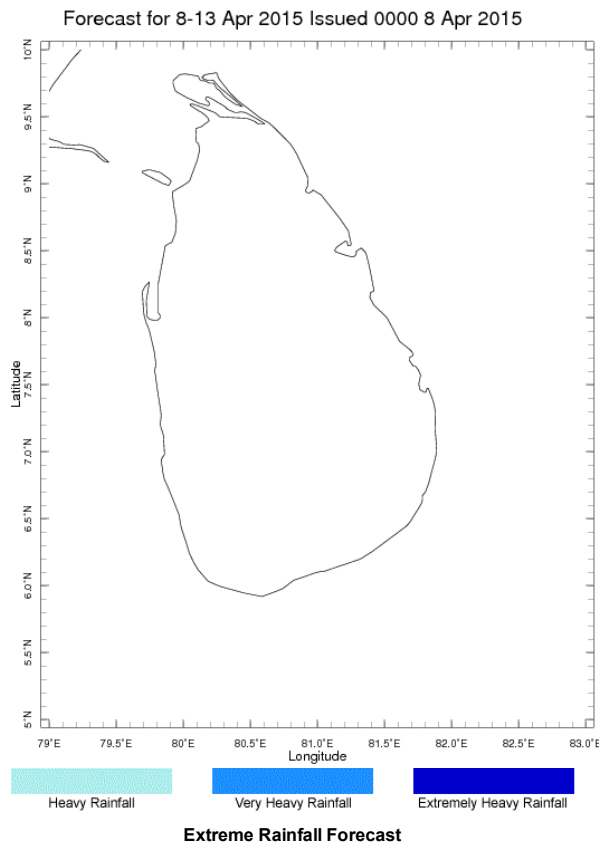


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 09-04-2015 valid for 03 UTC of 12-04-2015



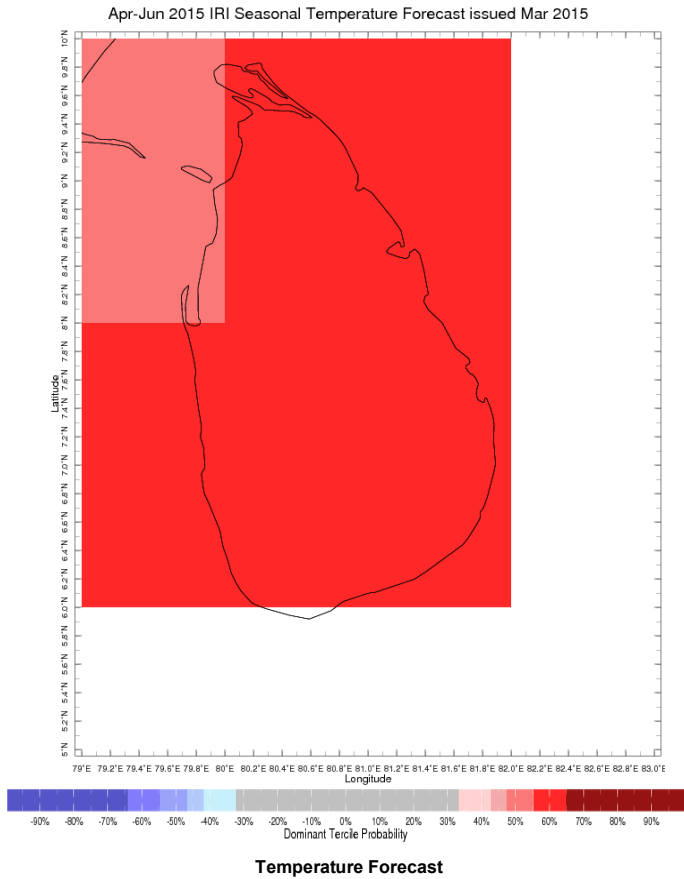
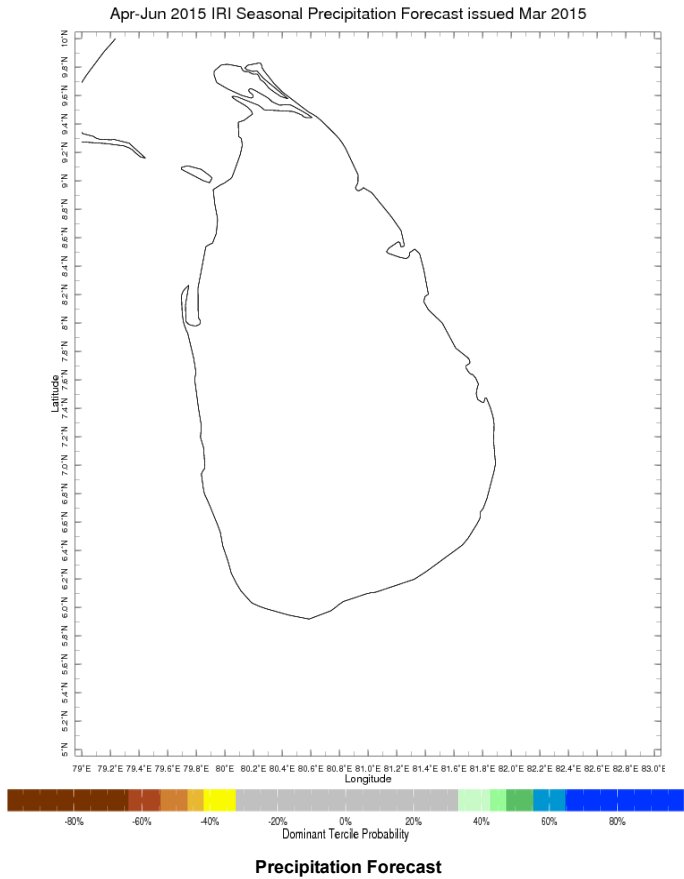
Weekly Rainfall Forecast

Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.



Seasonal Rainfall and Temperature Forecast

Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile probability levels. The upper side of the color bar shows the colors used for increasingly strong probabilities when the dominant tercile is the above-normal tercile, while the lower side shows likewise for the below-normal tercile. The gray color indicates an enhanced probability for the near-normal tercile (nearly always limited to 40%).



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