

Experimental Climate Monitoring and Prediction

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June 18, 2015 PACIFIC SEAS STATE

During late May through early-June 2015 the SST was at a moderate El Niño level. The atmospheric variables support the El Niño pattern, including weakened trade winds and excess rainfall in the east-central tropical Pacific. The consensus of ENSO prediction models indicate continuation of moderate El Niño conditions during the June-August 2015 season in progress, likely strengthening further between summer and fall, and lasting into early 2016.

(Text Courtesy IRI)

INDIAN OCEAN STATE

1 °C above average temperature was observed around Sri Lanka and the anomaly goes further up towards the south sea

MJO STATE

MJO is in Phase 7 and therefore shall suppress rainfall in Sri Lanka in a significant manner.

Highlights

During 24th – 30th July 2015 Western and Eastern provinces mostly received rainfall up to 20-50 mm. On 26th and 28th June, rainfall up to 30 mm was observed in Western province and the ocean near Western province. Rainfall up to 50 mm was observed in Ampara on 29th June. NOAA models predict high rainfall in south western and southern regions of the country in the next fortnight. MJO is in phase 7 and this shall lead to a suppression in rainfall significantly.

Summary

Monitoring

Weekly Monitoring: During the time period 24th June – 30th June 2015, rainfall was mostly observed in Western and Eastern regions. On 24th and 25th June, there was no significant rainfall was observed in the country except Puttalam district which received rainfall up to 30 mm and the ocean near Western region received rainfall up to 30 mm. On 26th June Western province, Galle, Matara, Kegalle, Western region of Ratnapura received rainfall up to 20-30mm while Gampaha, Southern regions of Galle and Matara received highest rainfall up to 30 mm. On 27th and 30th June, only light rainfall was observed in the country and on 28th up to 30 mm rainfall was observed in Western and Sabaragamuwa provinces, Galle, Matara and the Southern regions of Puttalam and Kurunegala. And also the ocean near Western province received rainfall up to 30 mm. On 29th June up to 50 mm rainfall was observed in the Northern region of Ampara district.

Monthly Monitoring: In the month June 2015, western, Sabaragamuwa and south eastern regions of the country received above average rainfall of upto 8 mm/day. The rest of the country received below average rainfall during this month.

Predictions

14 day prediction: NOAA NCEP models predict high rainfall in southern region of the country during 1st – 14th July. Up to 55 mm total rainfall is expected during the first week. Rainfall shall reach up to 75 mm in the following week in south western region of the country.

IMD WRF & IRI Model Forecast: According to the IMD WRF model on the 3rd of July Western region of the country shall receive rainfall up to 35 mm/day while Kegalle district shall receive rainfall up to 65 mm. The rest of the country shall receive slight amounts of rainfall. The rainfall shall continue on 4th July and Gampaha and Kegalle districts shall receive rainfall up to 65 mm while the rest of the country shall receive slight rainfall. IRI CFS model also predicts high rainfall in Western province on 1st – 6th July.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for July to September, the total 3 month precipitation has a 40% chance of being below average. The 3 month temperature has more than 70-80% likelihood in the entire country of being in the above-normal tercile during this period.

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- Seasonal Predictions from IRI

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

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

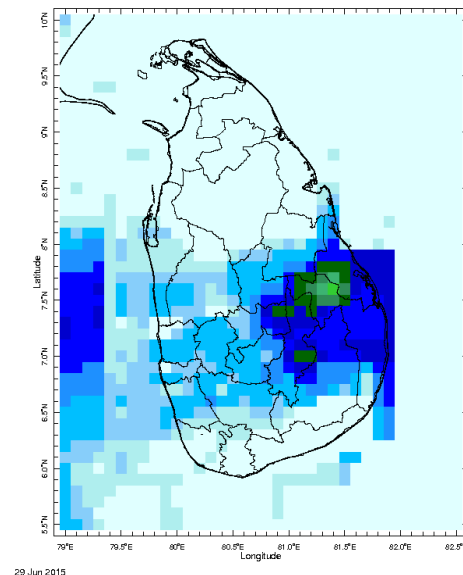
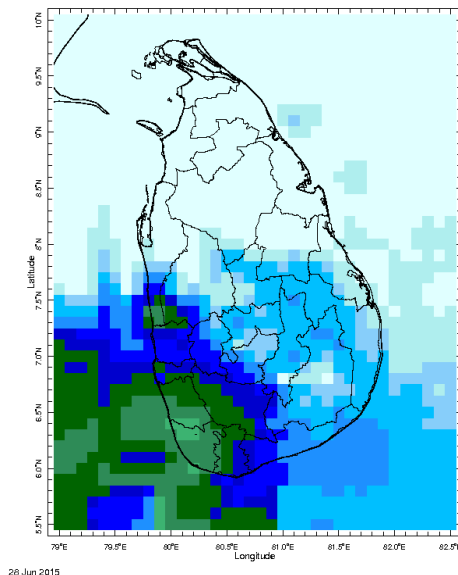
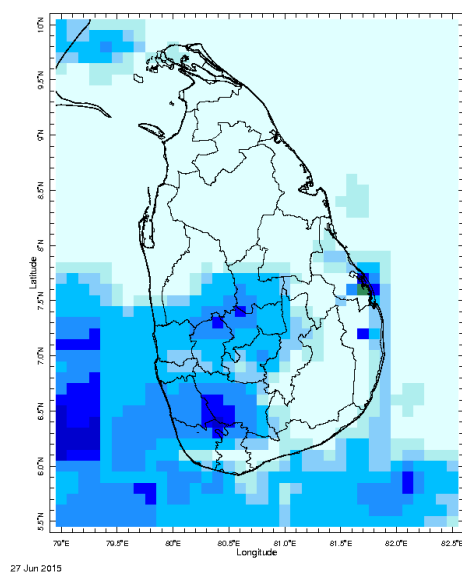
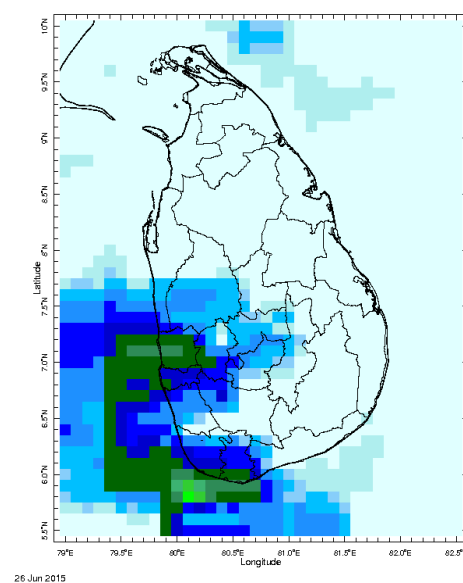
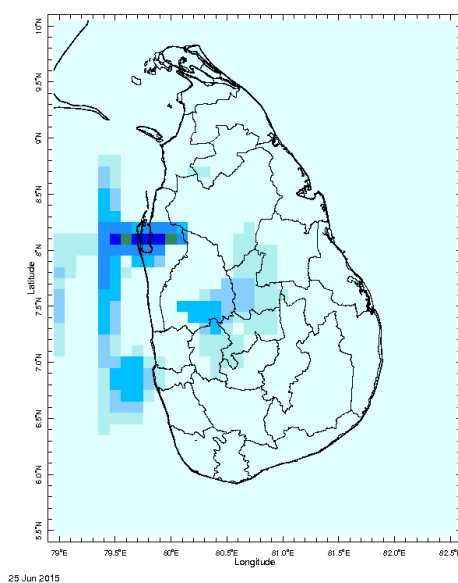
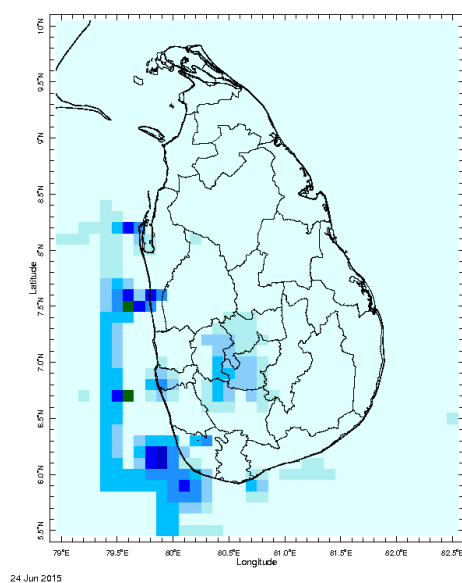
Weekly Hydro- Meteorological Report for Sri Lanka

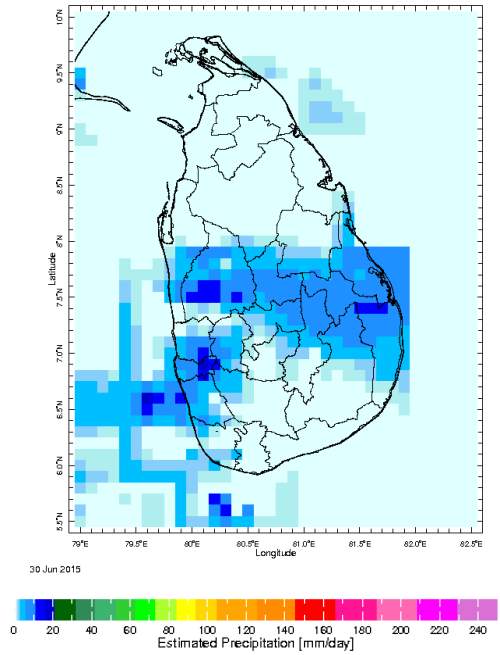
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Daily Rainfall Monitoring

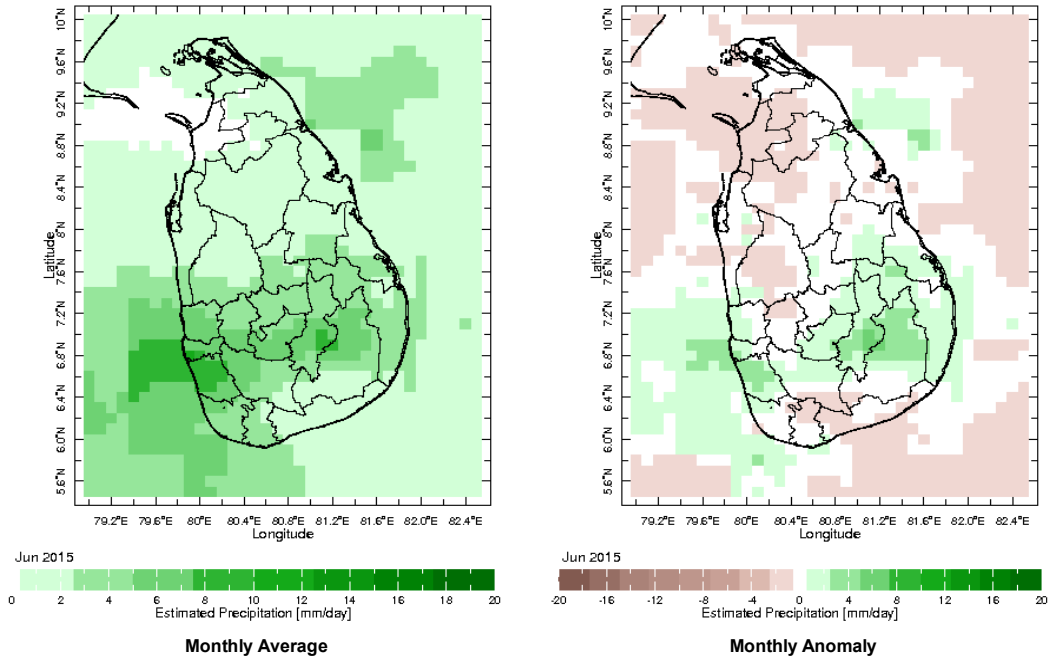
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



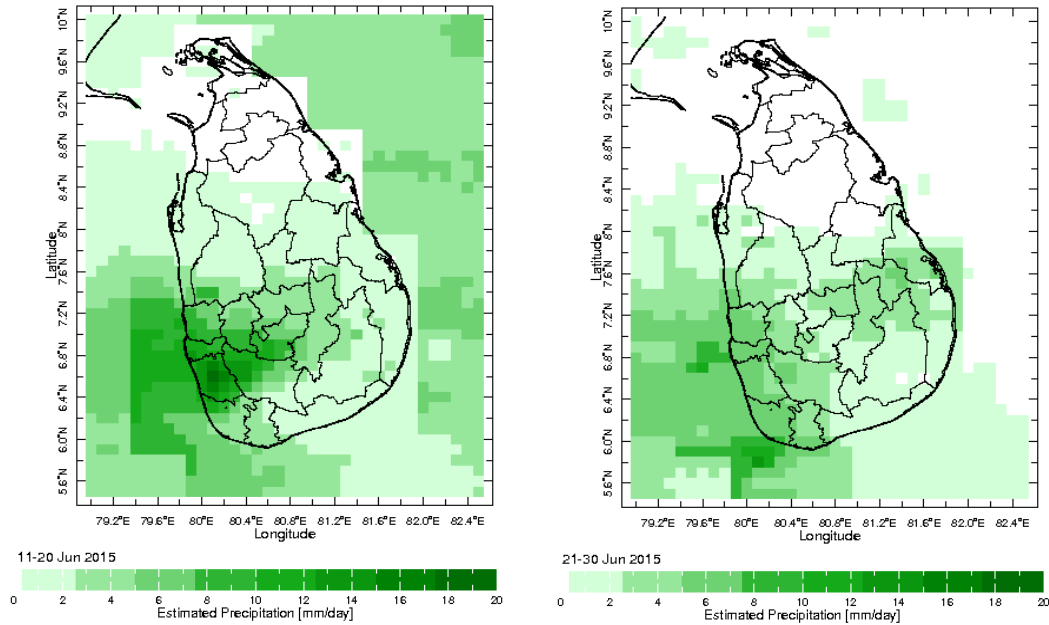


Monthly Rainfall Monitoring

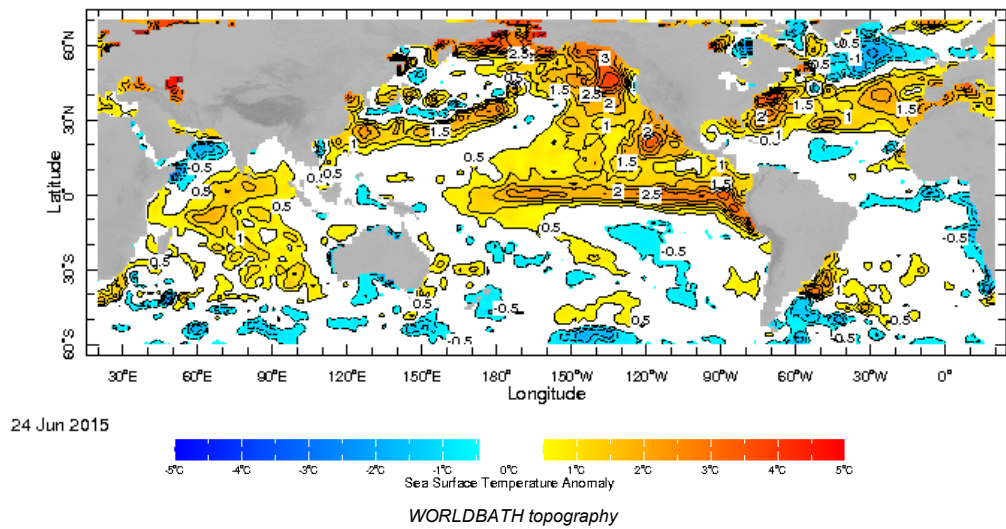
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places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



Dekadal (10 Day) Satellite Derived Rainfall Estimates

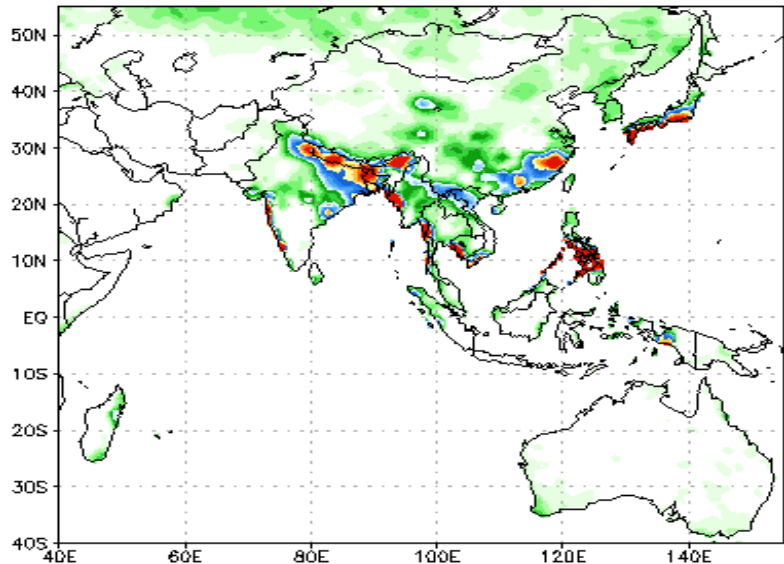


Weekly Average SST Anomalies



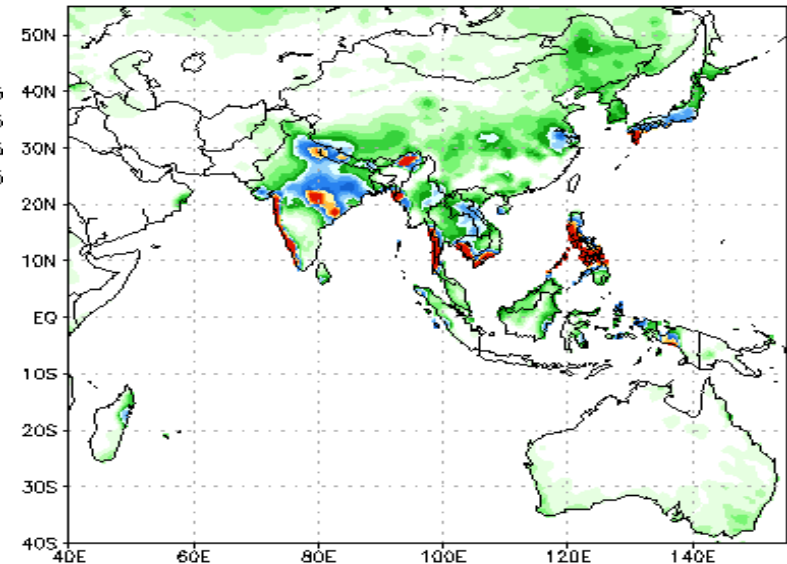
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)
from: 01Jul2015
01Jul2015–07Jul2015 Accumulation



Bias correction based on last 30-day forecast error

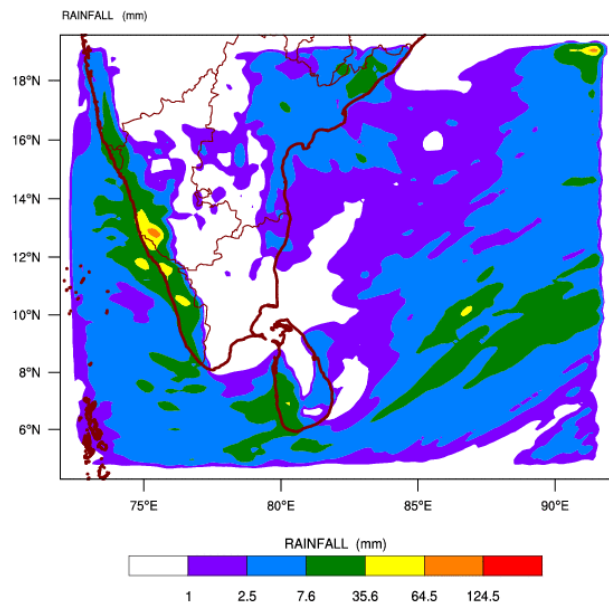
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)
from: 01Jul2015
08Jul2015–14Jul2015 Accumulation



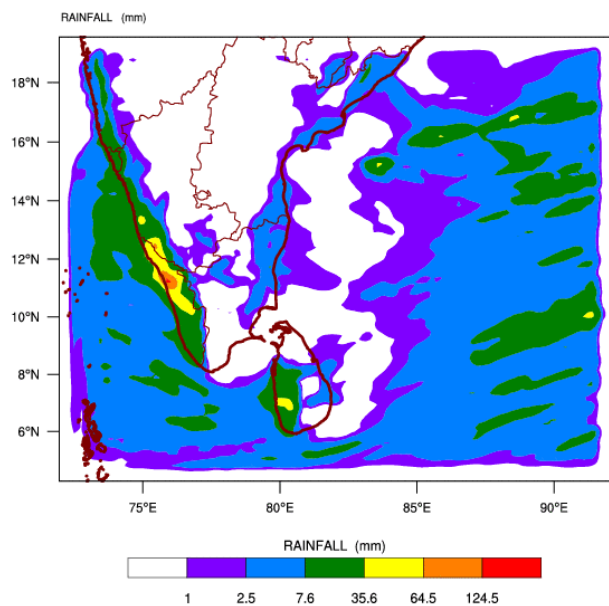
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 01-07-2015 valid for 03 UTC of 03-07-2015

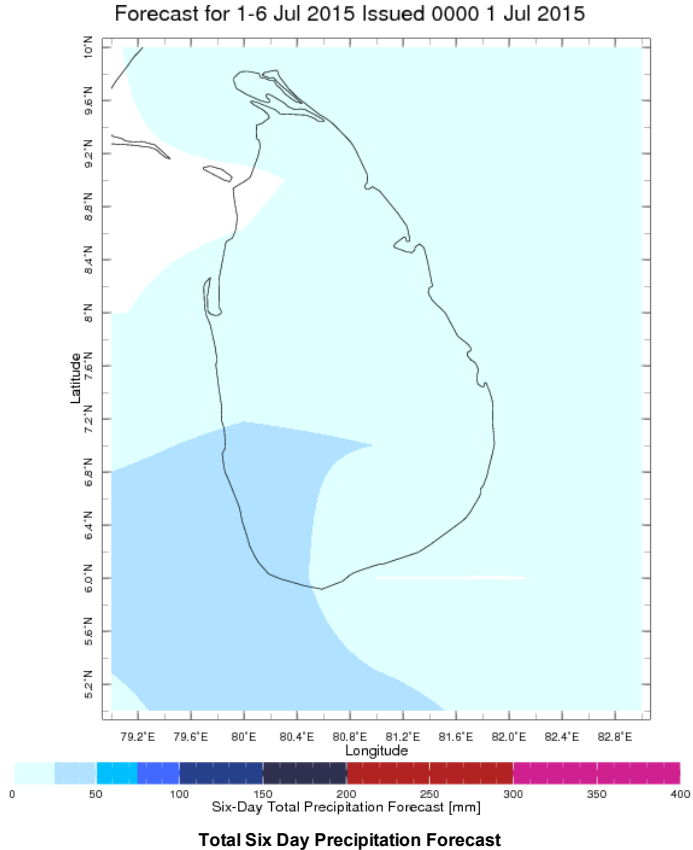
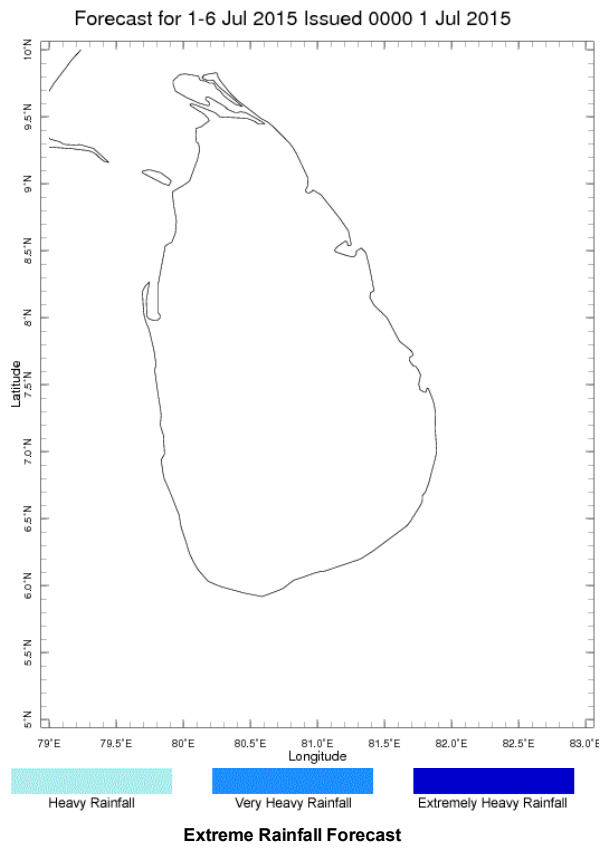


WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 01-07-2015 valid for 03 UTC of 04-07-2015



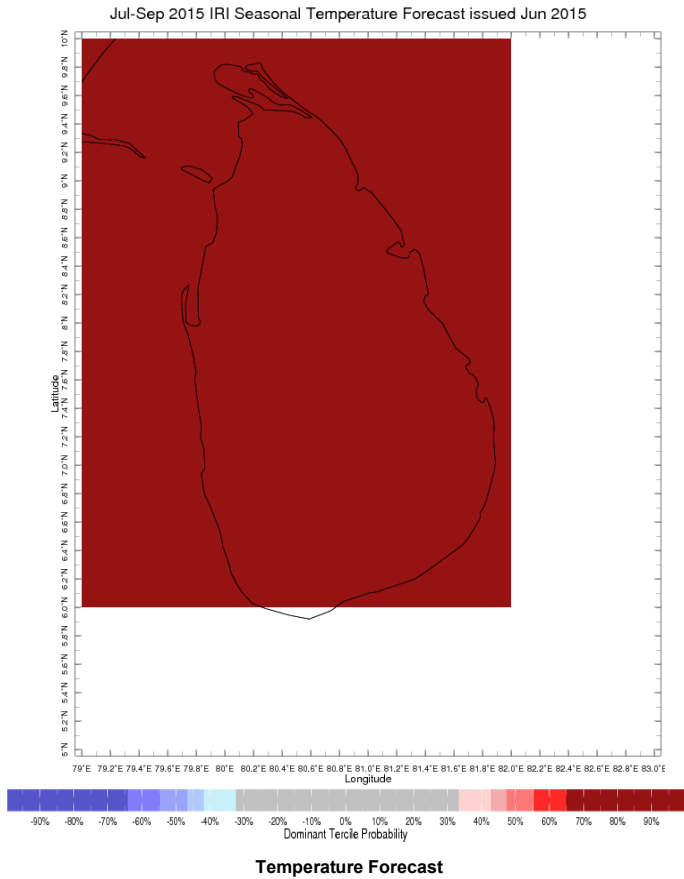
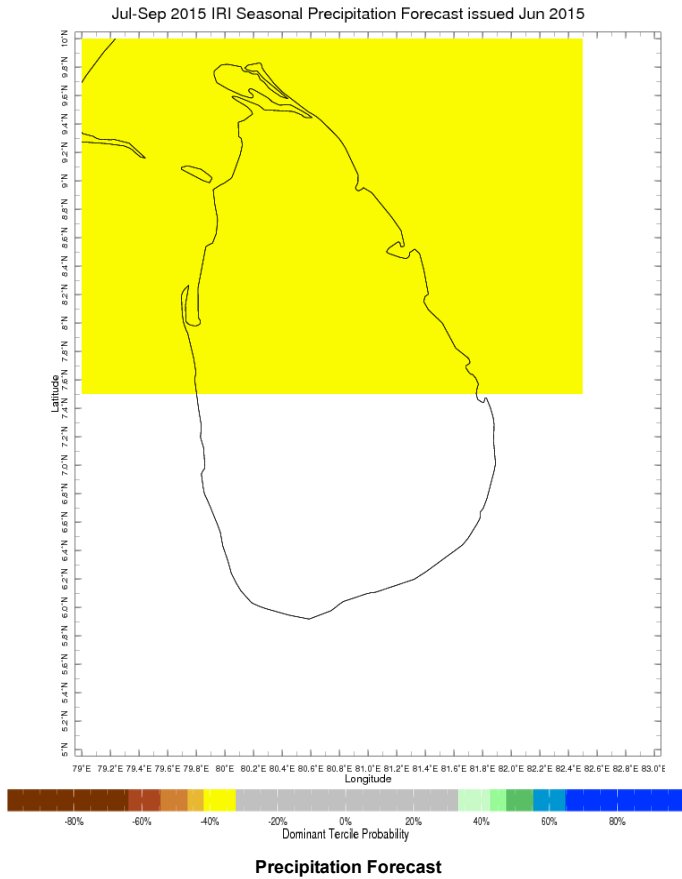
Weekly Rainfall Forecast

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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