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Experimental Climate Monitoring and Prediction

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03 February 2016

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January 21, 2016

PACIFIC SEAS STATE

During mid-January 2015 the tropical Pacific SST was at a strong El Niño level, having peaked in November and December. All atmospheric variables strongly 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 strong El Niño conditions during the January-March 2016 season in progress. The beginning of a gradual weakening of the SST anomaly is underway, with the event dissipating to neutral conditions by late spring or early summer 2016.

(Text Courtesy IRI)

INDIAN OCEAN STATE

0.5^{0}C above average temperature was observed around Sri Lanka.

MJO STATE

MJO shall be in phase 4 therefore shall slightly enhance rainfall in Sri Lanka.

Highlights

Dry conditions were observed throughout the country between 27th January- 1st February except in the south western region of the country. In this region up to 40 mm rainfall was seen on the 26th. Furthermore, the entire country received less than average rainfall in January. Most models predict a continuation in dry conditions in the next two weeks.

Summary

Monitoring

***Weekly Monitoring*:** During the week 26th January – 1st February 2016, significant rainfall was only observed in Galle, Matara, Kalutara and Ratnapura districts on the 26th. Up to 40 mm rainfall was observed in these regions. Thereafter no rainfall was observed throughout the country during 27th- 31st January. On the 1st light rainfall was observed in Hambantota District while the south eastern sea received up to 40 mm rainfall.

***Monthly Monitoring*:** In January 2016 dry conditions were seen throughout the country. Below average rainfall was observed in the entire country except in Batticaloa district and some parts in Polonnaruwa, Trincomalee and Ratnapura districts where up to 4 mm/day rainfall was observed.

Predictions

14 day prediction: NOAA NCEP models predict up to 45 mm rainfall in north western regions in the country and up to 75 mm rainfall around Batticaloa during 2nd- 8th February. In the following week (9th-15th) no rainfall is expected.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, it shall not rain throughout the country during 3rd and 4th February 2016. IRI CFS models predict up to 50 mm rainfall around Batticaloa, Kalmunai during 1st- 6th February. There shall be up to 100 mm rainfall in the sea east of Kalmunai during this period.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for February to April, the total 3 month precipitation has 50% likelihood 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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[1] International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

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Weekly Hydro- Meteorological Report for Sri Lanka

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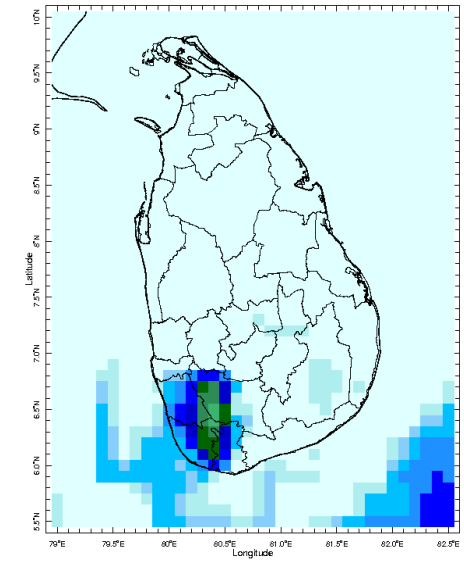
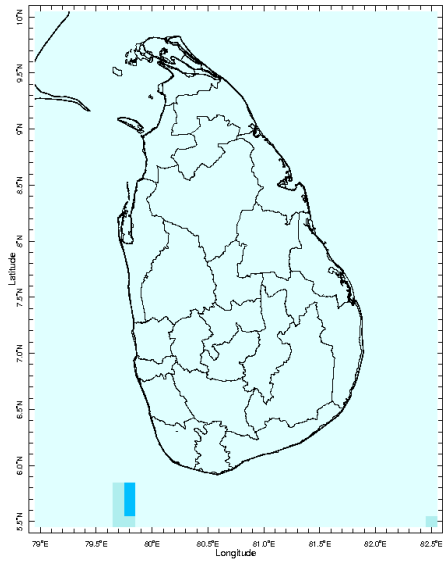
Daily Rainfall Monitoring

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



26 Jan 2016



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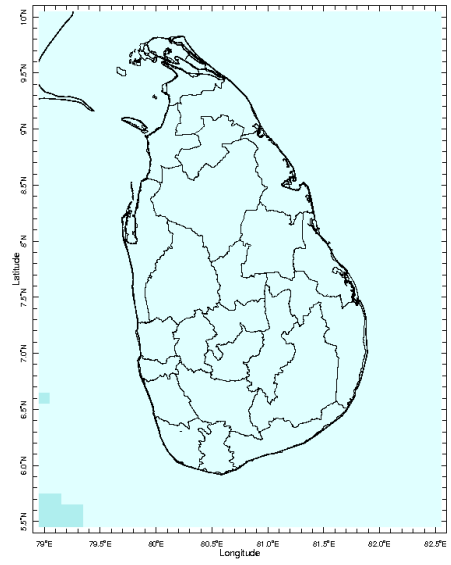

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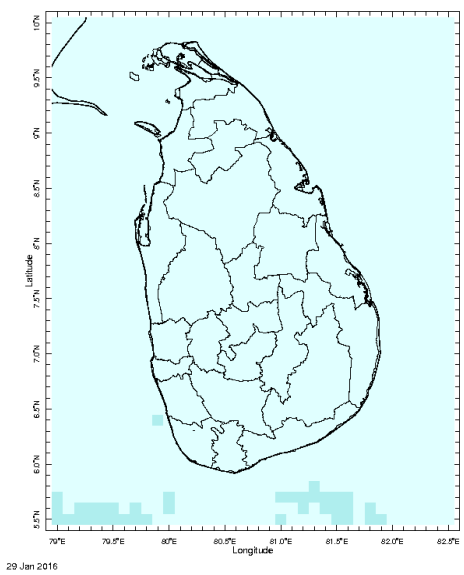

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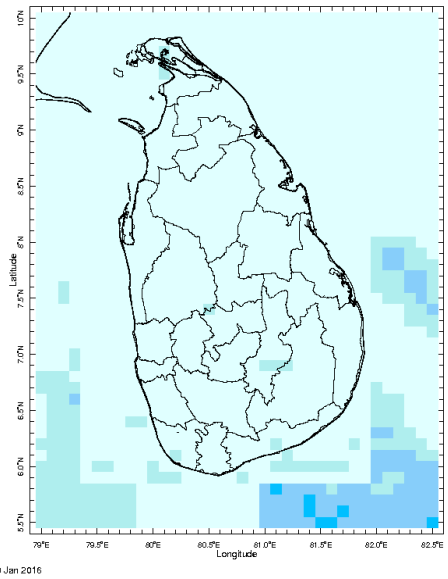
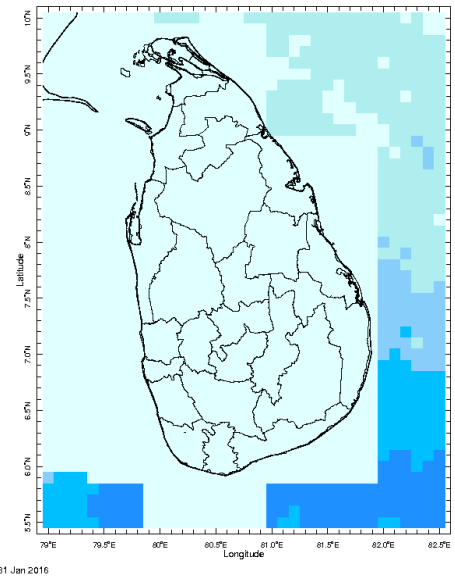
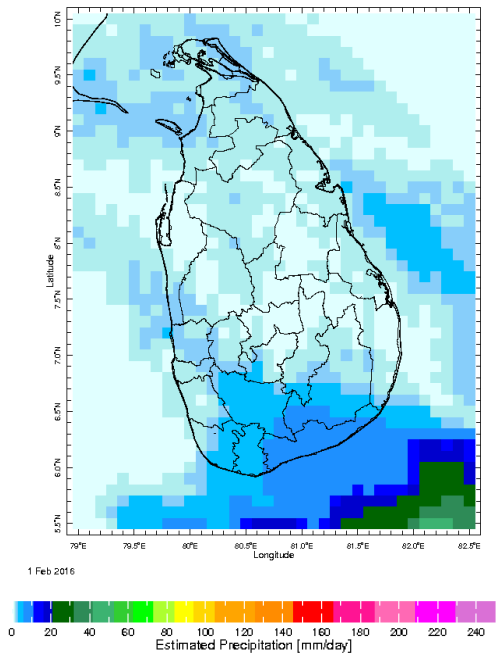


30 Jan 2016

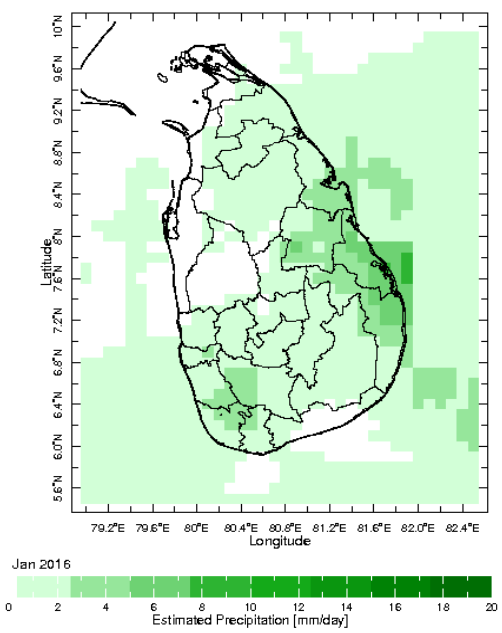


31 Jan 2016

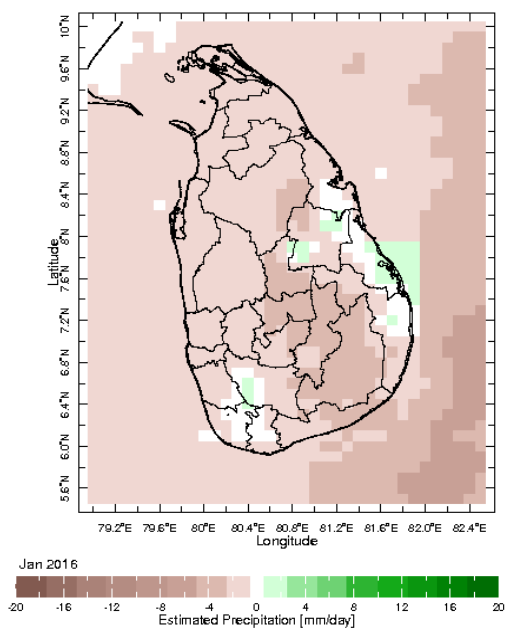


Monthly Rainfall Monitoring

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

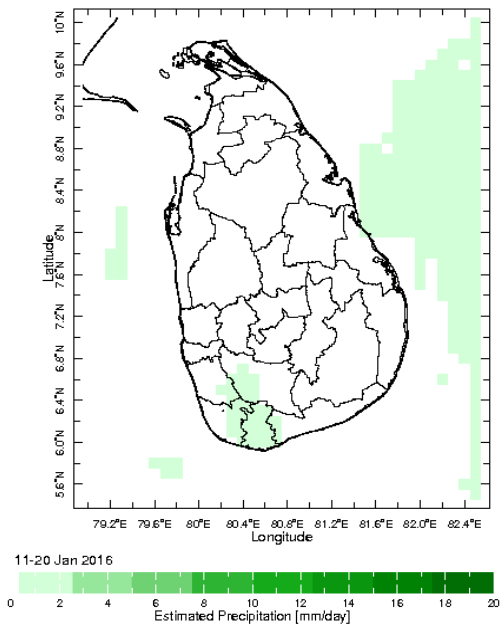


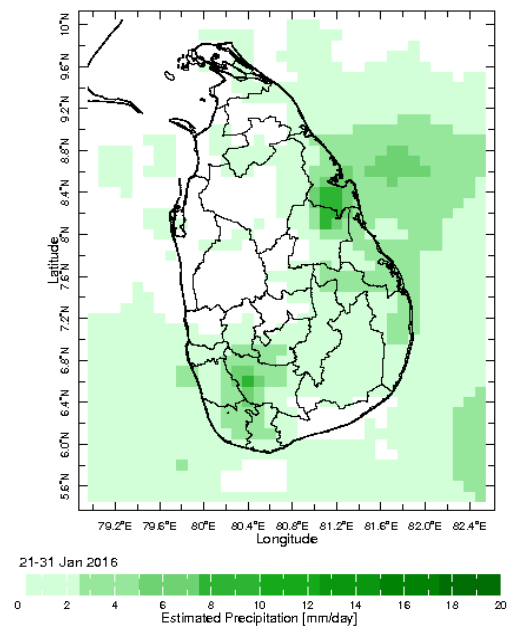
Monthly Average



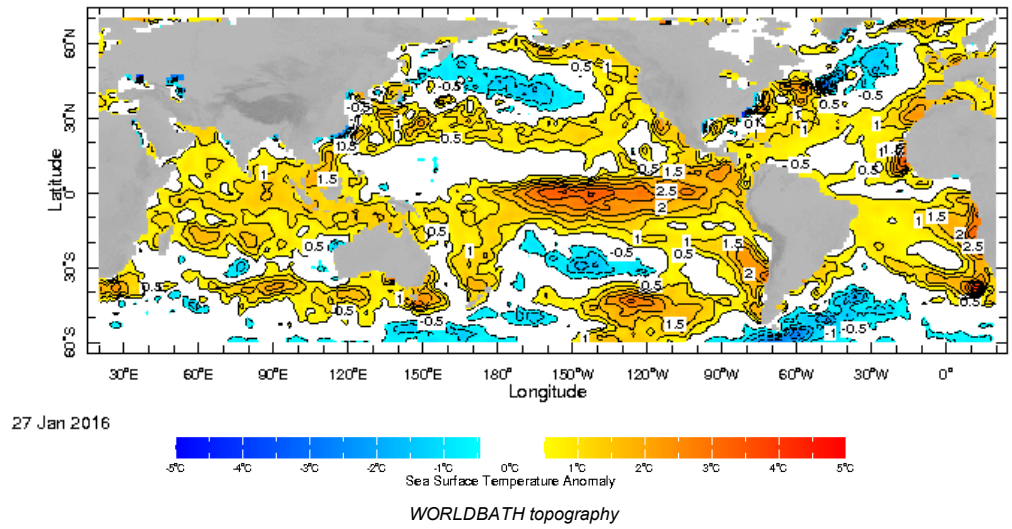
Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

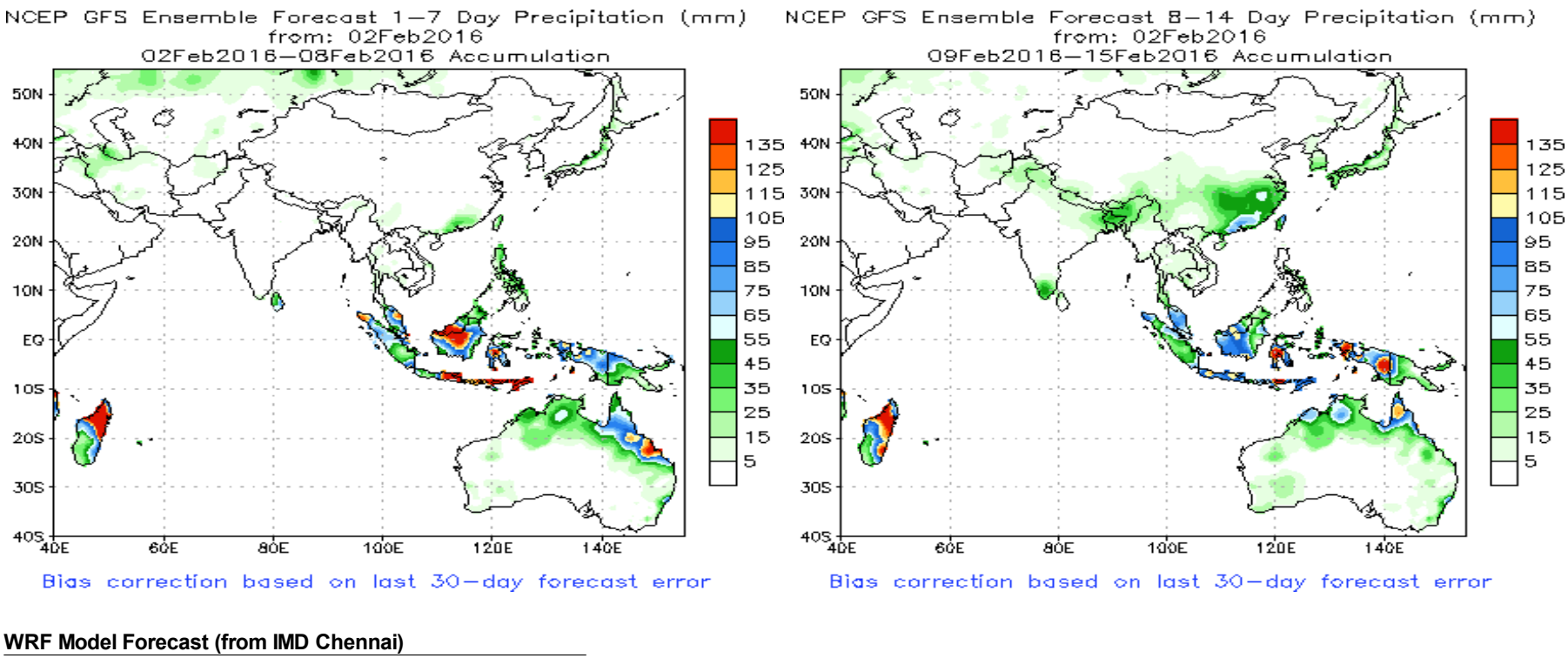




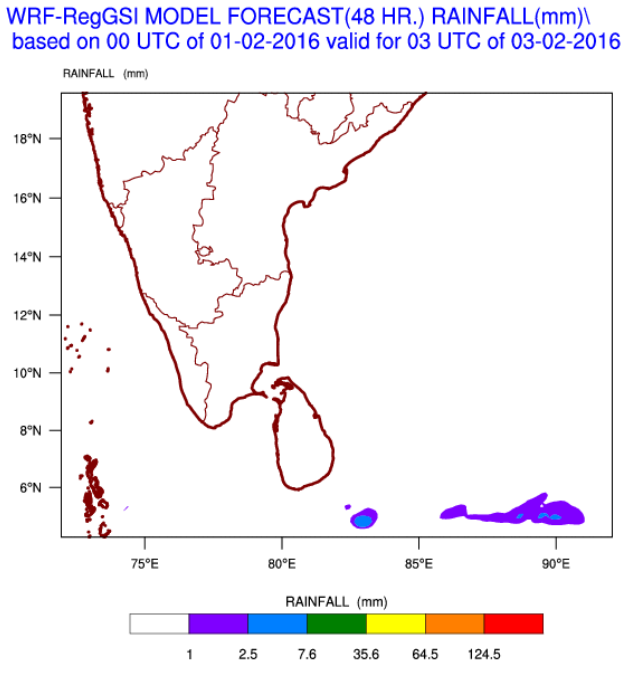
Weekly Average SST Anomalies

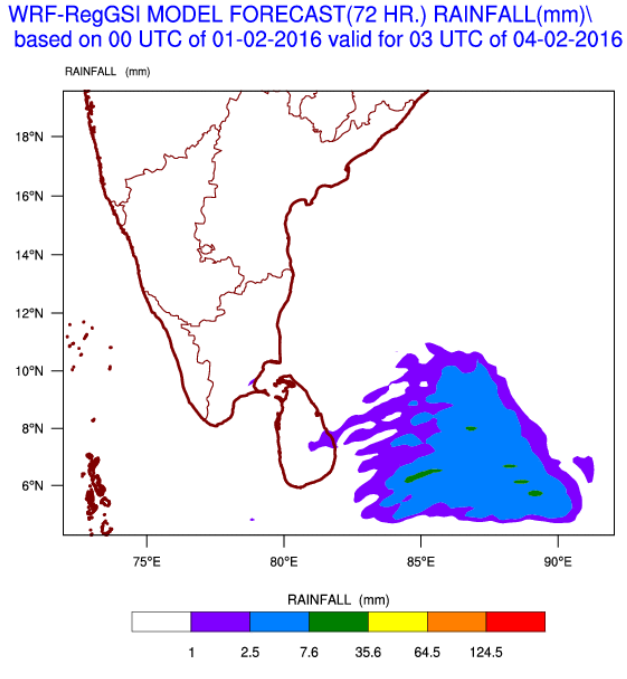


NCEP GFS 1- 14 Day prediction



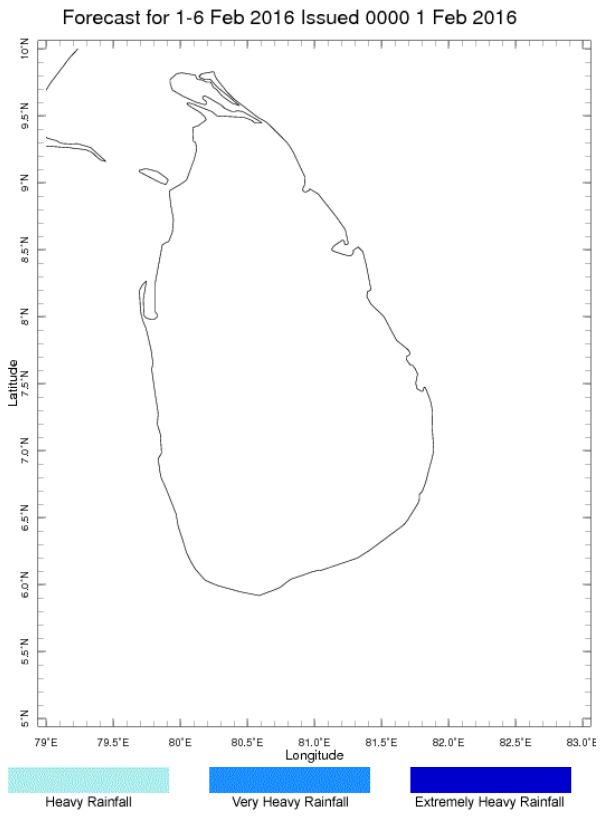
WRF Model Forecast (from IMD Chennai)



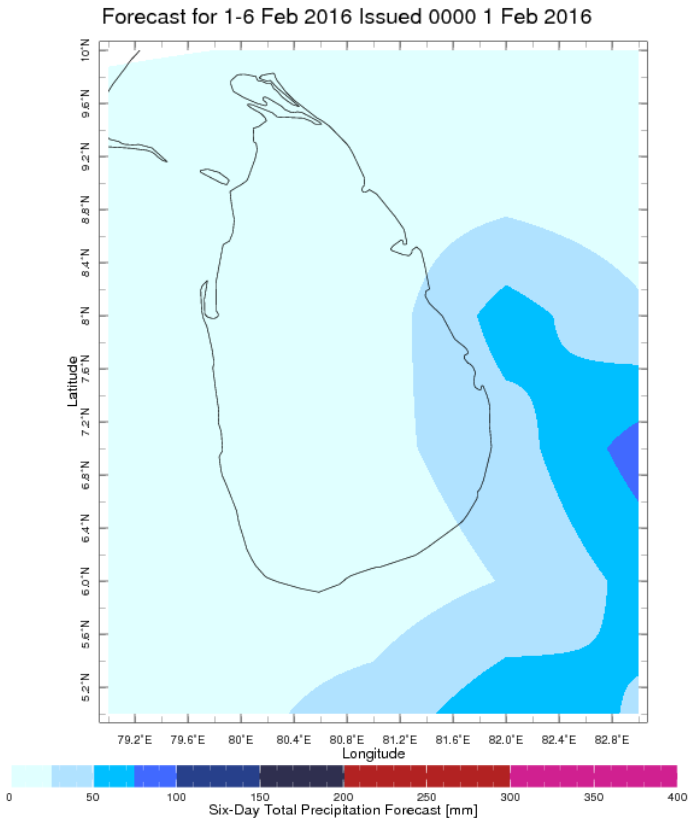


Weekly Rainfall Forecast

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.



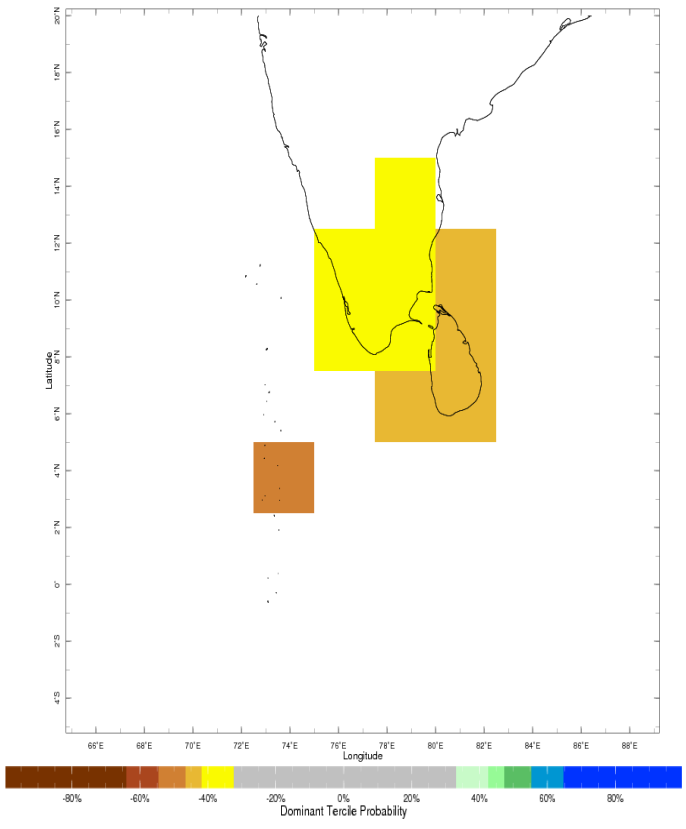
Extreme Rainfall Forecast



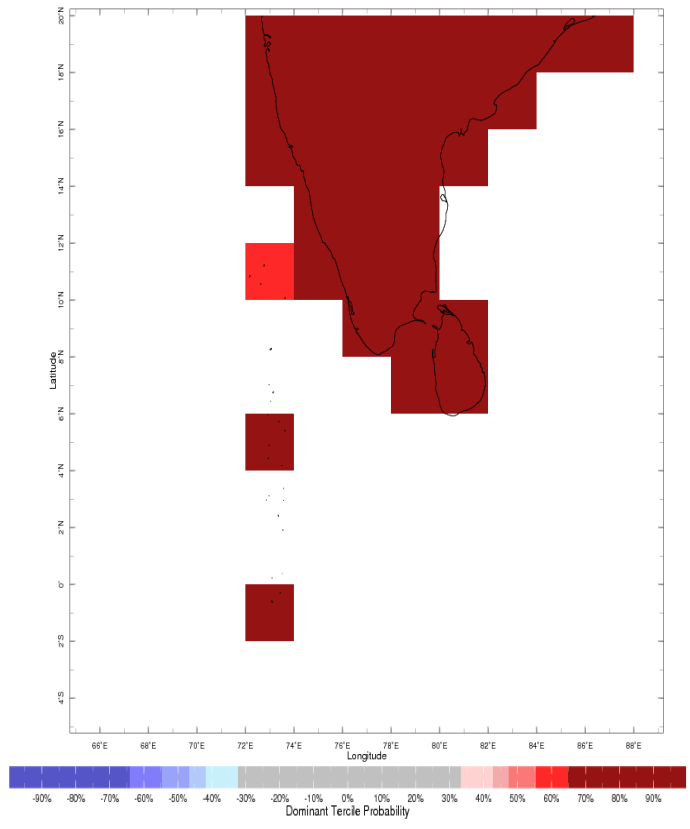
Total Six Day Precipitation Forecast

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%).



Precipitation Forecast



Temperature Forecast

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