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Experimental Climate Monitoring and Prediction

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14 January 2016

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December 17, 2015

PACIFIC SEAS STATE

During mid-December 2015 the tropical Pacific SST was at a strong El Niño level. 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 December-February 2015-16 season in progress. Further strengthening is possible, but unlikely, into mid-winter 2015-16, with the event slowly weakening during spring 2016.

(Text Courtesy IRI)

INDIAN OCEAN STATE

1^{0}C above average Sea Surface temperature was observed around Sri Lanka.

MJO STATE

MJO shall be in phase I in the next few days, which shall slightly enhance rainfall in Sri Lanka

Highlights

During the week 6th – 12th January, ocean near Kattankudy received the highest rainfall up to 180 mm on 6th January while Relatively high rainfall was observed in several regions in Batticaloa, Ampara and Polonnaruwa on the same day. No significant rainfall was observed during the rest of week. NOAA NCEP models predict decrease of rainfall during next week in the entire country. MJO shall be in phase 1 which shall enhance rainfall conditions in Sri Lanka.

Summary

Monitoring

***Weekly Monitoring*:** Only eastern, central and south western regions of the country received rainfall during 6th – 12th January. Rainfall up to 180 mm was observed around the ocean near Kattankudy on 6th January while region from Kalkudah to Kalmunai received rainfall up to 160 mm. Eastern region of Polonnaruwa and northern region of Ampara received rainfall up to 90 mm and Galle received rainfall up to 50 mm on the same day. On 7th January, eastern region of Matale, Dehiattakandiya, and region around Ginigathhena to Nallathanniya, Kuruwita and Pelawatta received rainfall up to 20 mm. No significant rainfall was observed in entire country where only Sinharaja forest reserve received rainfall up to 30 mm on 9th January.

***Monthly Monitoring*:** North province, northern regions of Central, Uva and Sabaragamuwa provinces, northern region of Ampara, Colombo and Polonnaruwa received above average rainfall while eastern province, south province, northern region of Mannar, north eastern region of Anuradhapura, western region of Mullaitivu and the ocean around Trincomalee to Ampara, Galle to Hambantota received below average rainfall.

Predictions

14 day prediction: NOAA NCEP models predict slight rainfall up to 25 mm in eastern region of the country during 13th – 19th January. Rest of the country is not expected to receive rainfall in this period. The rainfall is expected to increase slightly during 20th – 26th January and total rainfall up to 45 mm is expected around northern, central, eastern and western regions and the southern region is not expected to receive rainfall.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, only eastern coastal region around Batticaloa is expected to receive slight amounts of rainfall. Apart from that rainfall is not expected in any part of the country. IRI CFS models do not predict any significant rainfall event during 13th to 18th January 2016.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for January to March, 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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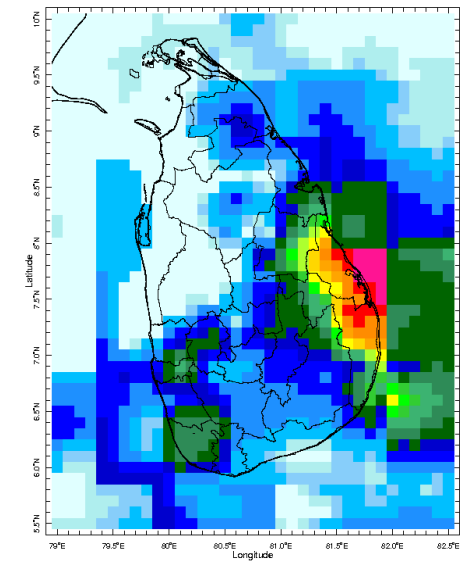
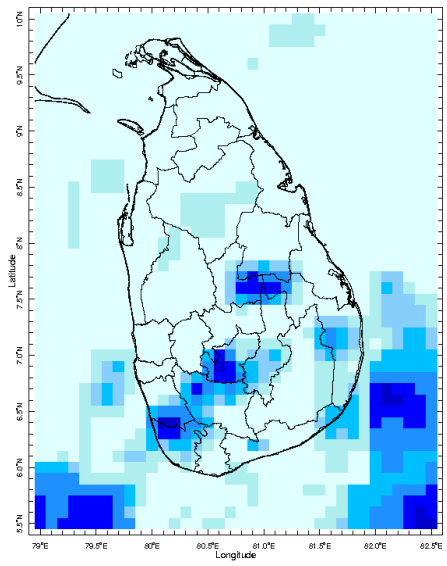
Daily Rainfall Monitoring

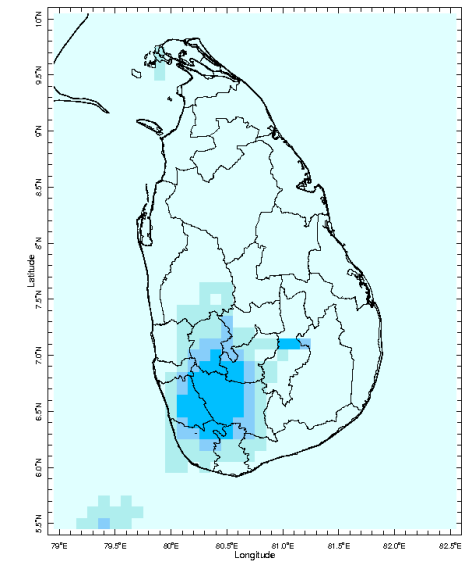
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



6 Jan 2016



7 Jan 2016



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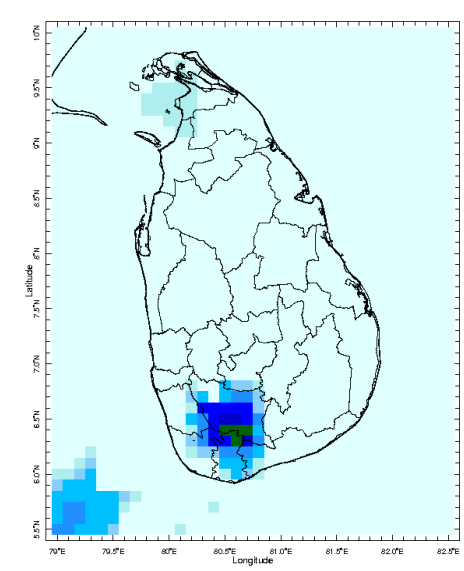
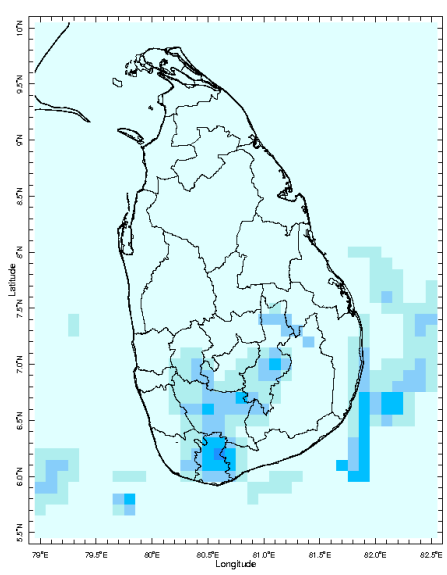
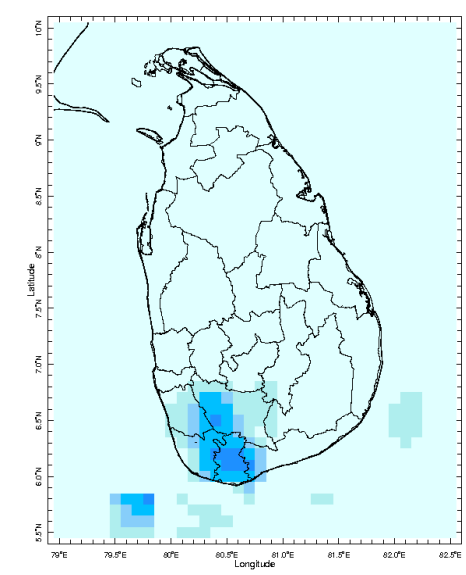


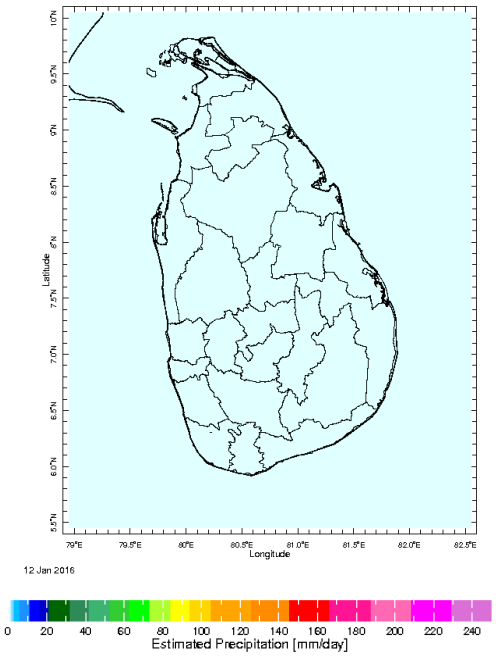
9 Jan 2016



10 Jan 2016

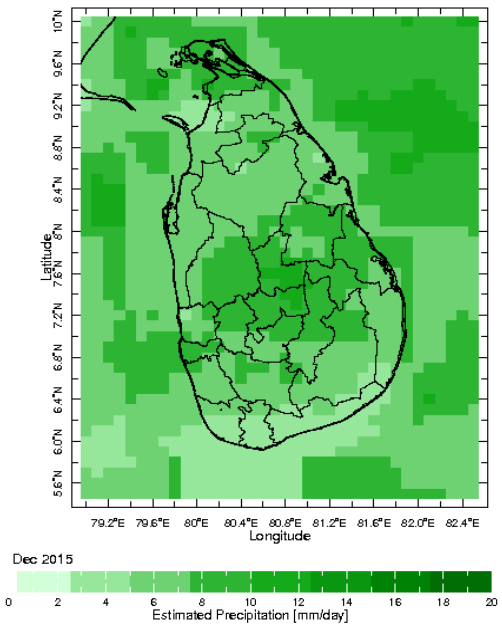


11 Jan 2016

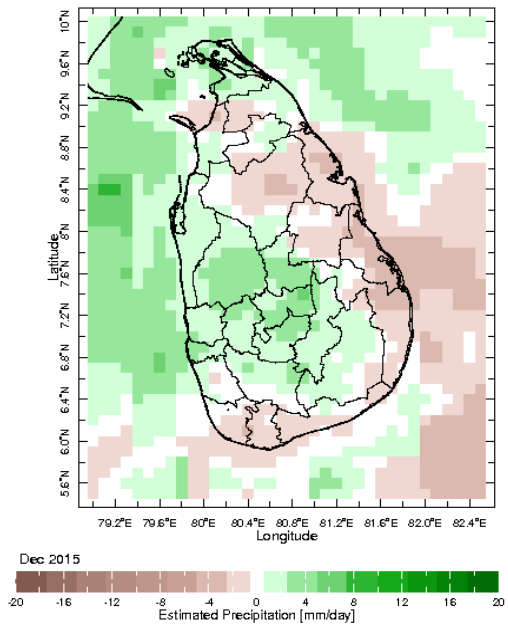


Monthly Rainfall Monitoring

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

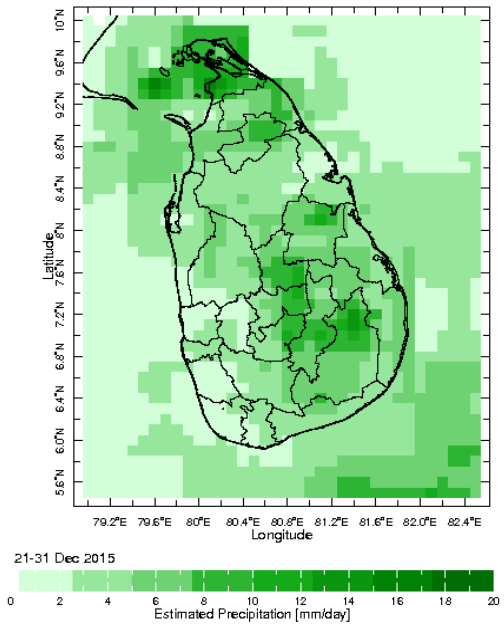


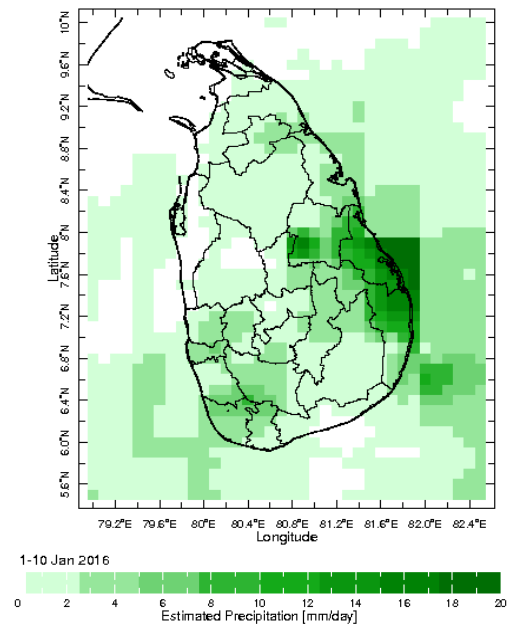
Monthly Average



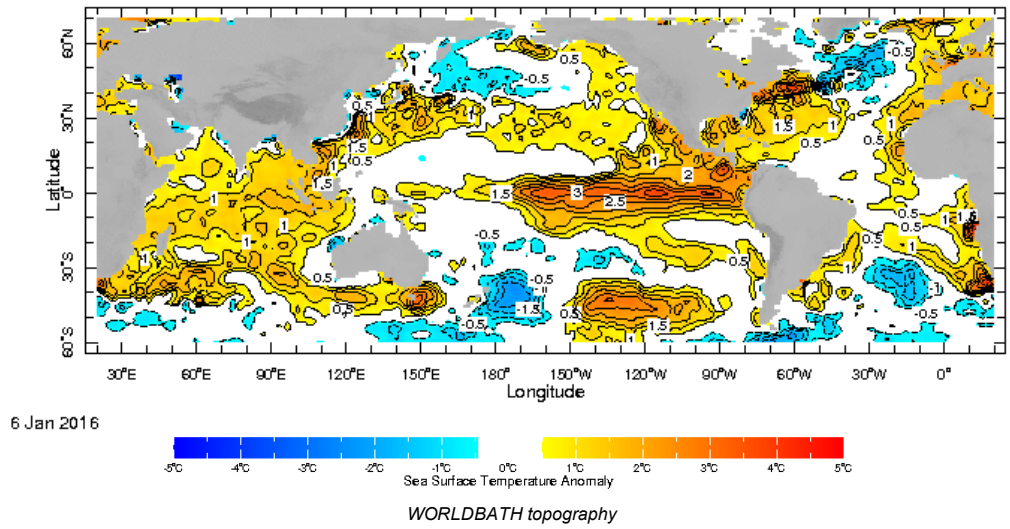
Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

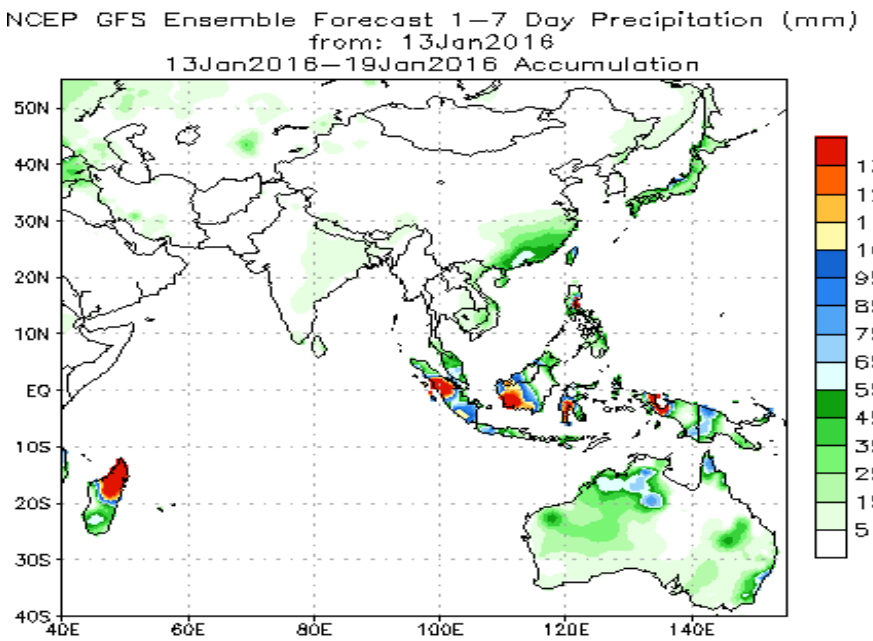


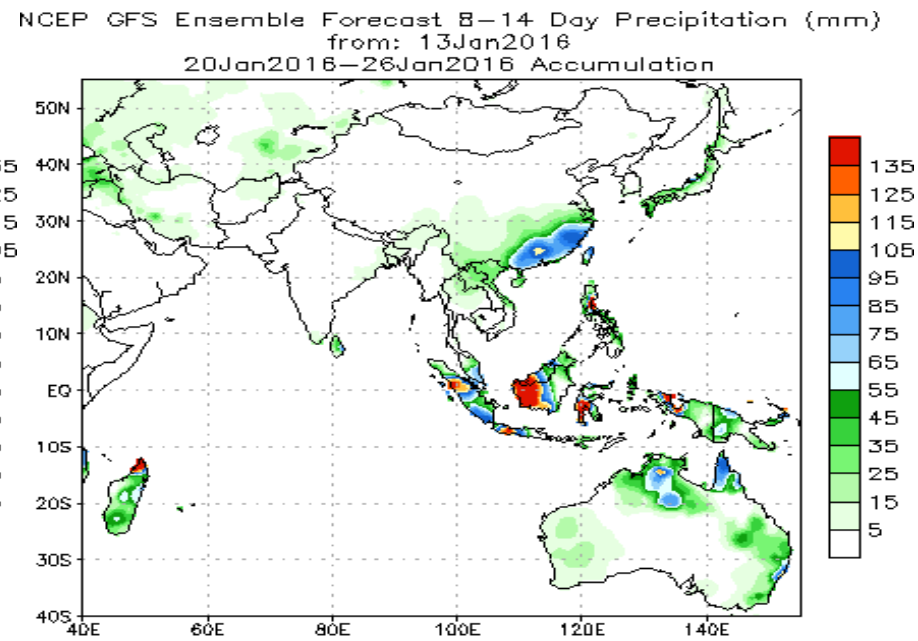


Weekly Average SST Anomalies

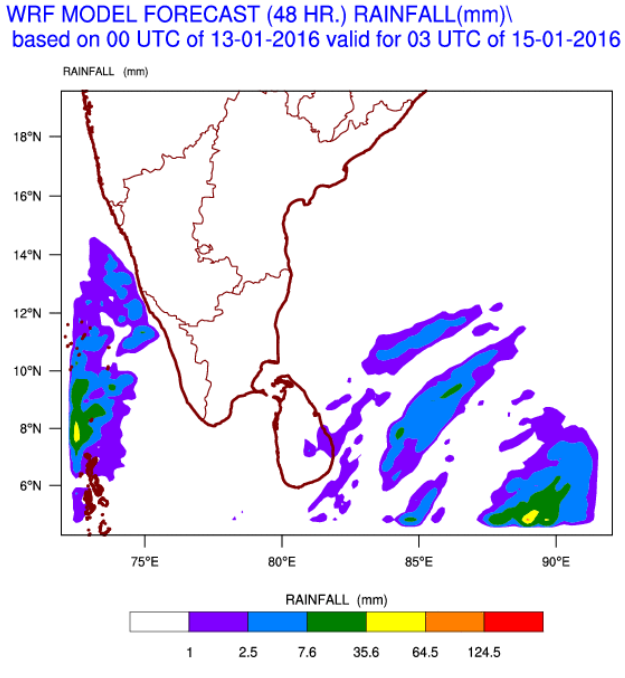


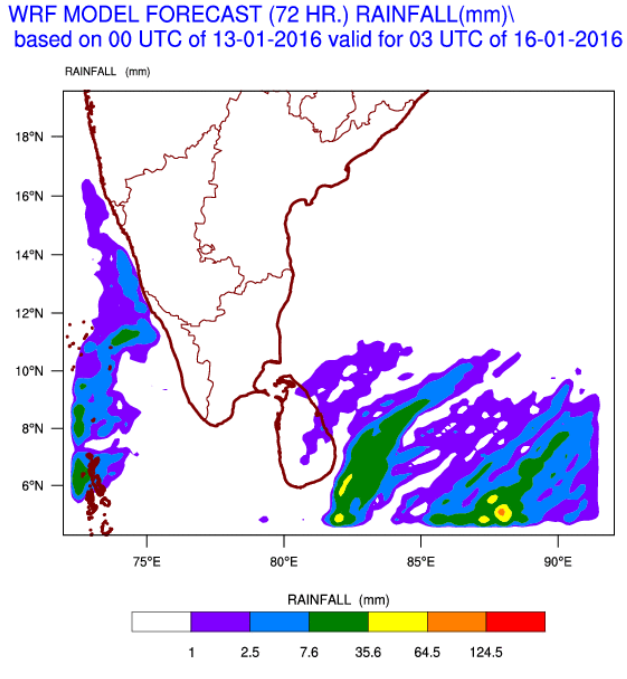
NCEP GFS 1- 14 Day prediction





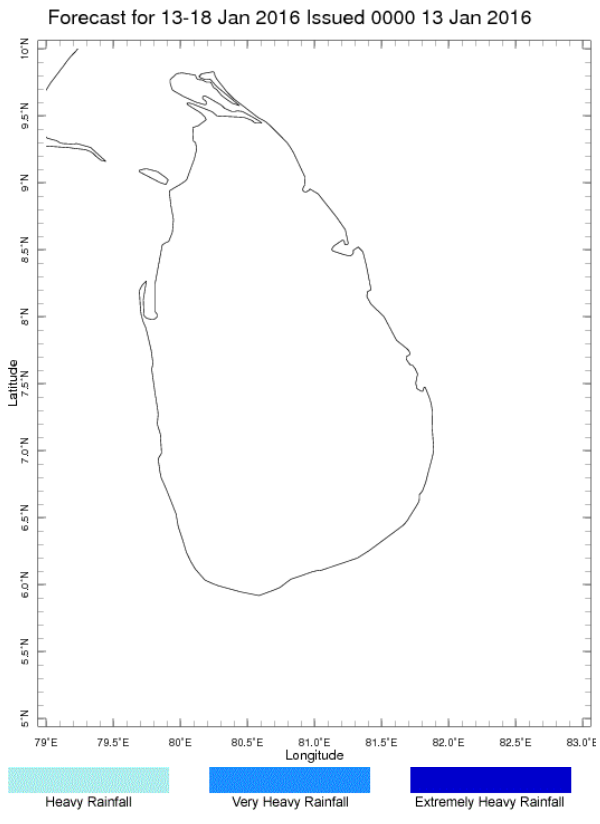
WRF Model Forecast (from IMD Chennai)



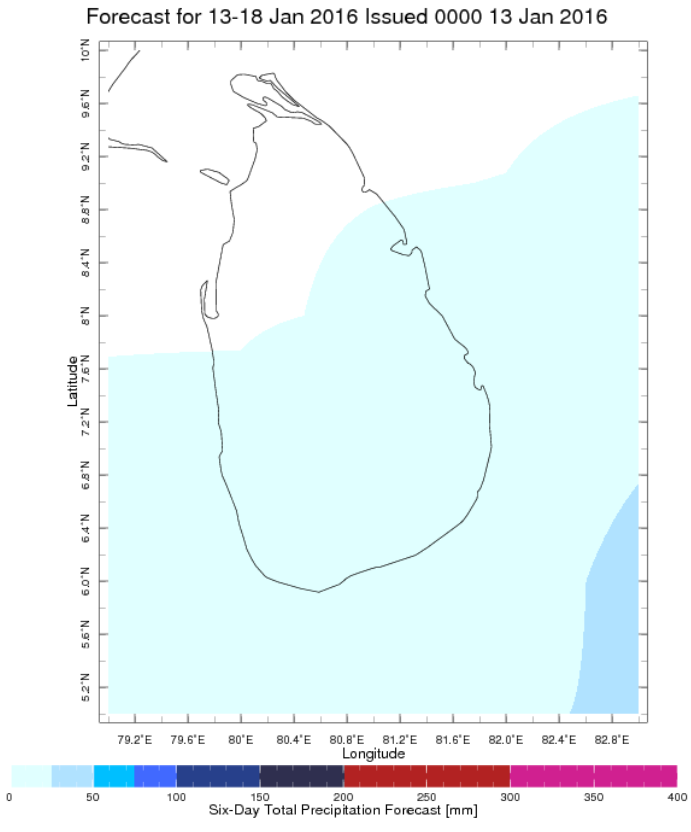


Weekly Rainfall Forecast

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.



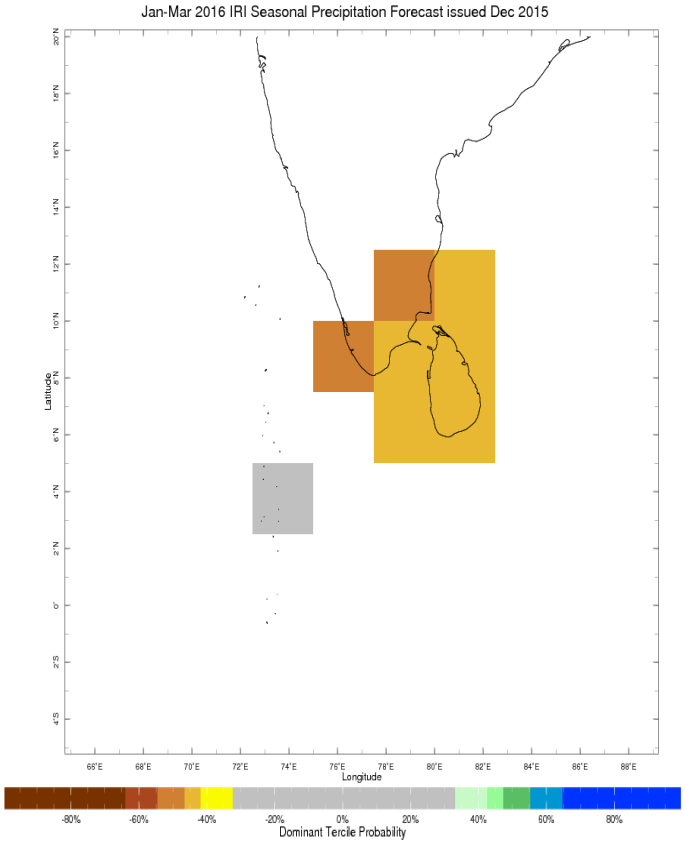
Extreme Rainfall Forecast



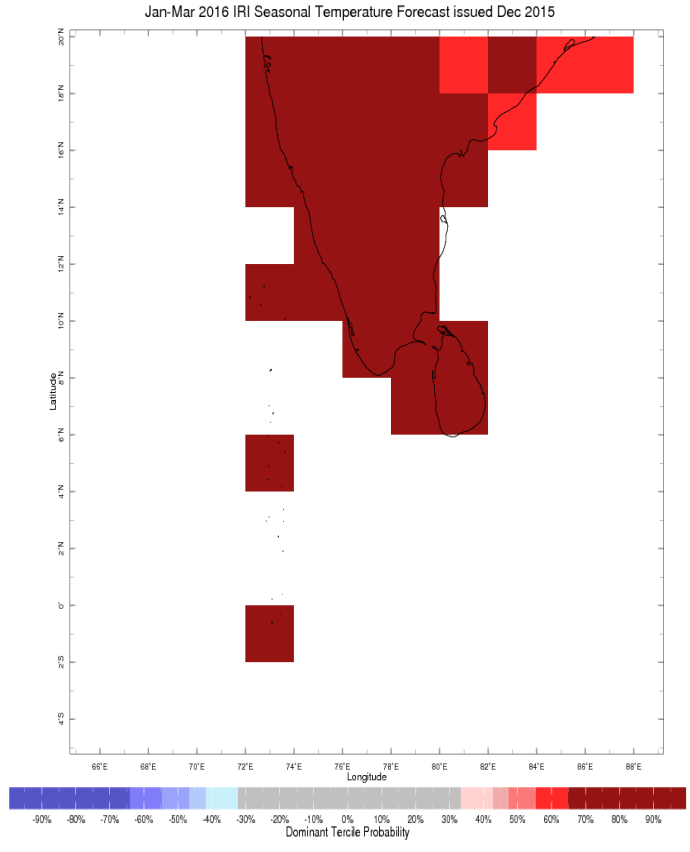
Total Six Day Precipitation Forecast

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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