

Experimental Climate Monitoring and Prediction

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28 January 2016

FECT BLOG

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January 21, 2016 PACIFIC SEAS STATE

During mid-January 2016 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°C above average
temperature was observed
around Sri Lanka.

MJO STATE

MJO shall be in phase 3
therefore shall slightly enhance
rainfall in Sri Lanka.

Highlights

Slight amounts of rainfall was observed in the country during the week 19th – 25th January. Kantale received heavy rainfall on 23rd January. Ocean around Nilaveli received rainfall on 23rd and 24th January and the rest of the country did not receive significant rainfall during this period. NOAA NCEP models predict no rainfall during next week in the entire country. MJO shall be in phase 3 therefore rainfall conditions shall slightly enhance in Sri Lanka.

Summary

Monitoring

Weekly Monitoring: During the week 19th – 25th January, eastern and south western regions received rainfall. No significant rainfall was observed in the entire country during 19th, 20th and 21st January. Ocean around Kattankudy and Kalkudah received rainfall up to 20 mm on 22nd January. Rainfall up to 100 mm was observed around Kantale on 23rd January while northern region of Polonnaruwa received rainfall up to 80 mm and southern region of Batticaloa and ocean around Nilaveli also received rainfall up to 40 mm. On 24th January, ocean around Nilaveli received rainfall up to 60 mm while Kuruvita and southern region of Nuwara Eliya received rainfall up to 50 mm. Rainfall up to 30 mm was observed around Dehiattakandiya on 25th January.

Monthly Monitoring: In the month of December 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 no rainfall in the entire country during 27th January – 2nd February. The rainfall shall be slightly increased during 3rd – 9th February where eastern region of the country shall receive rainfall up to 35 mm and northern, western and central regions shall receive rainfall up to 25 mm while southern region shall not receive any rainfall.

IMD WRF & IRI Model Forecast: According to the IMD WRF model, there shall not be significant rainfall throughout the country during 29th and 30th January 2016. Galle region might receive slight rainfall on the 30th. IRI CFS models predict total precipitation up to 25 mm around eastern, central and southern regions during 27th January to 1st February 2016.

Seasonal Prediction: As per IRI Multi Model Probability Forecast for February to April, the total 3 month precipitation has 40% likelihood in north eastern areas and 50% likelihood in the rest of the country 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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- WRF model forecast Regional Meteorological Center, Chennai, Indian Meteorological Department)
- Weekly precipitation forecast (IRI)
- Seasonal Predictions from IRI

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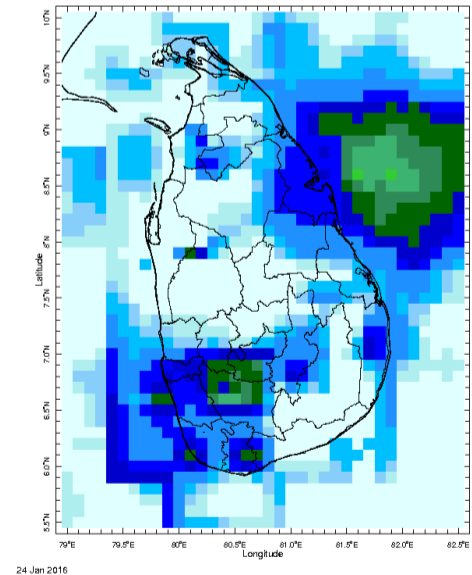
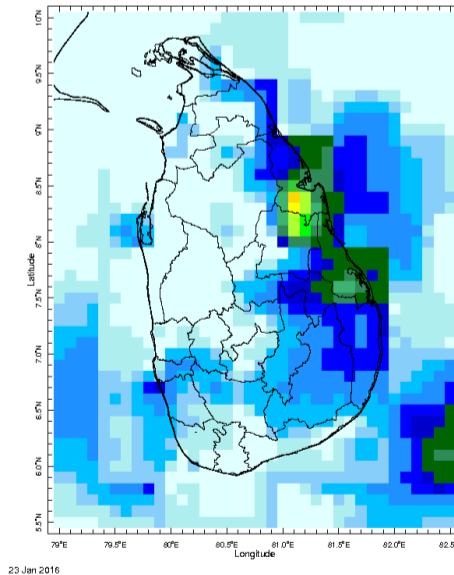
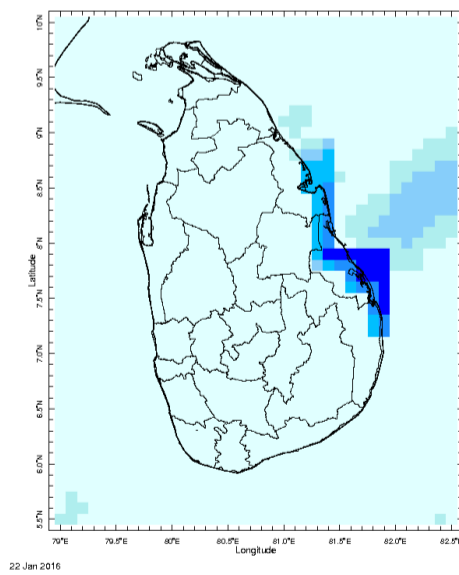
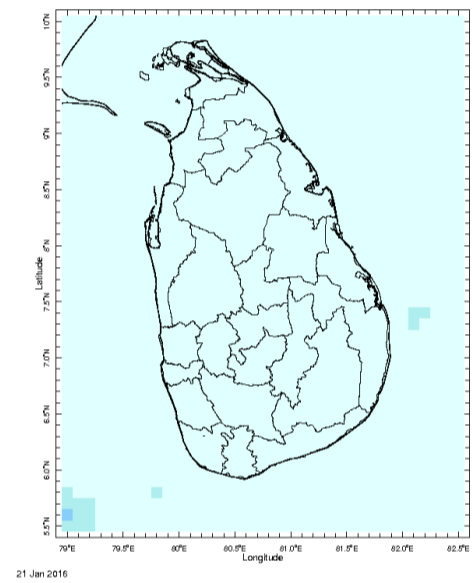
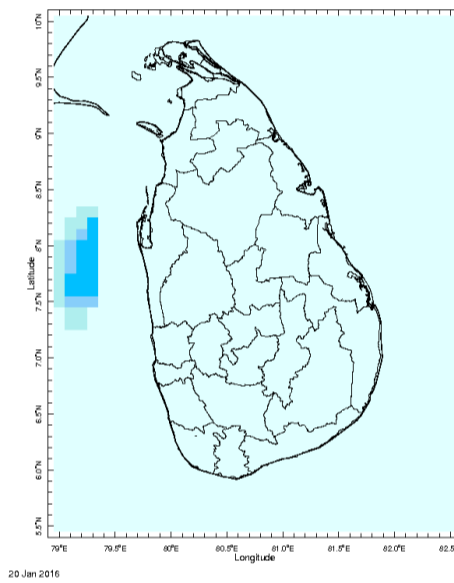
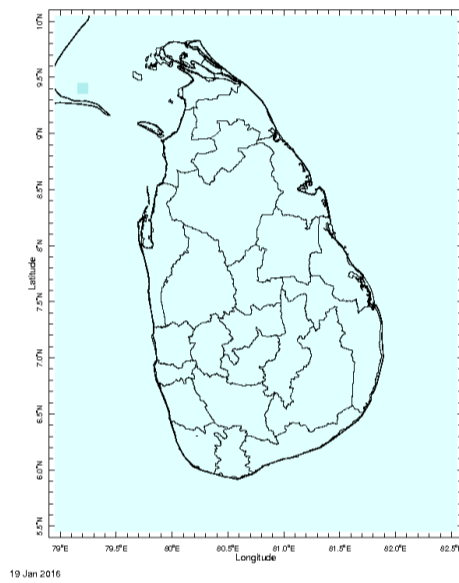
Weekly Hydro- Meteorological Report for Sri Lanka

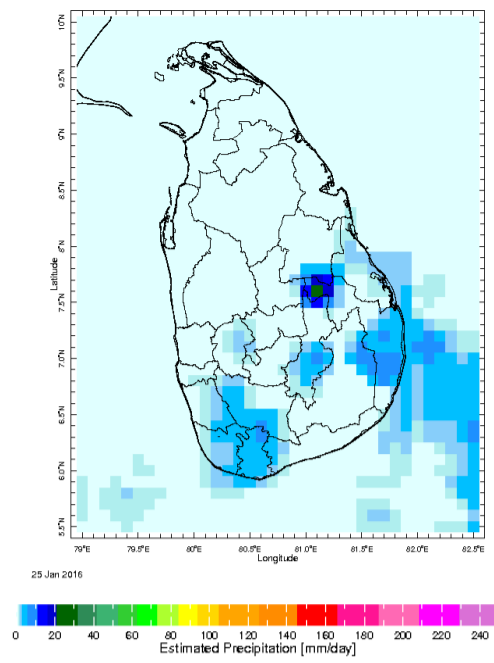
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Daily Rainfall Monitoring

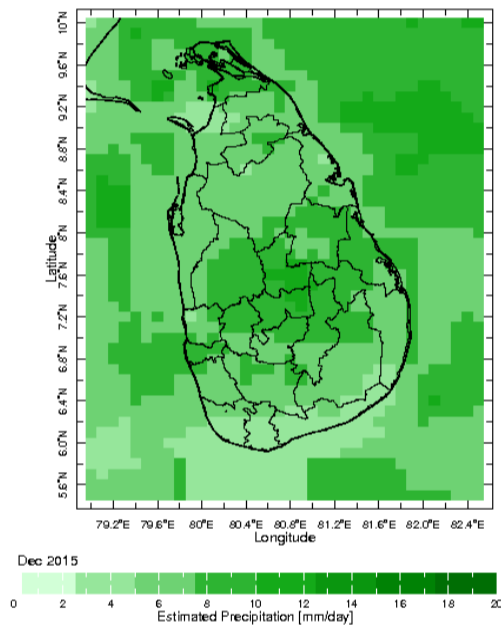
The following figures show the satellite observed rainfall in the last 7 days in Sri Lanka.



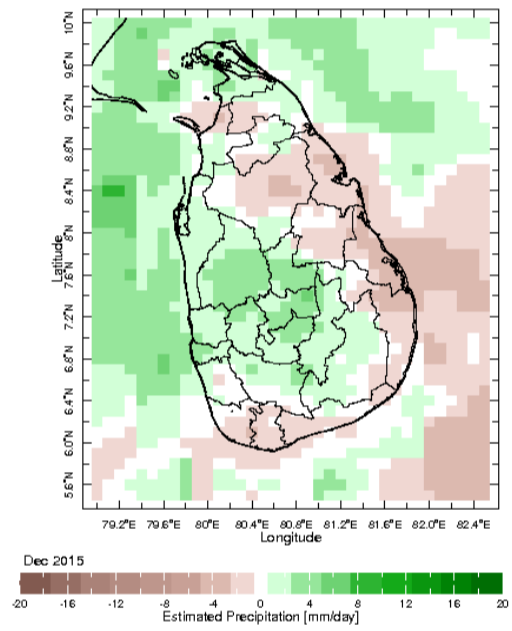


Monthly Rainfall Monitoring

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

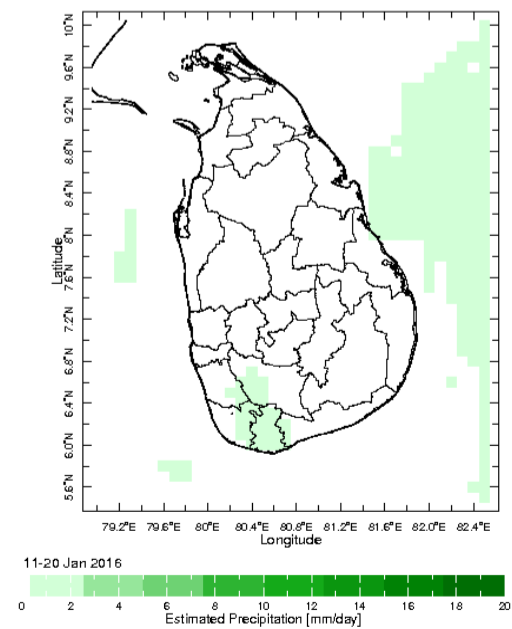
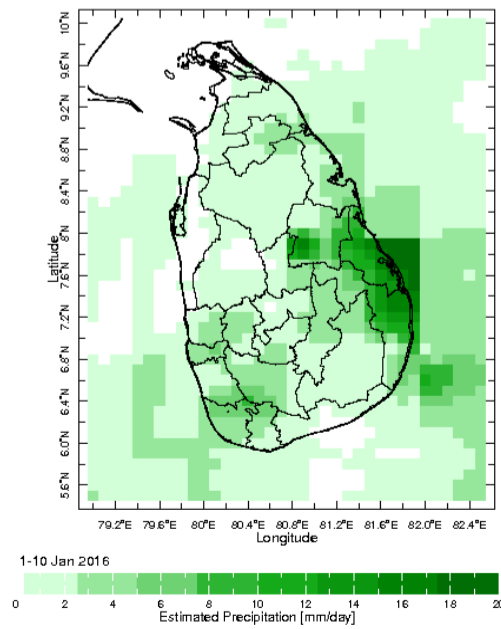


Monthly Average

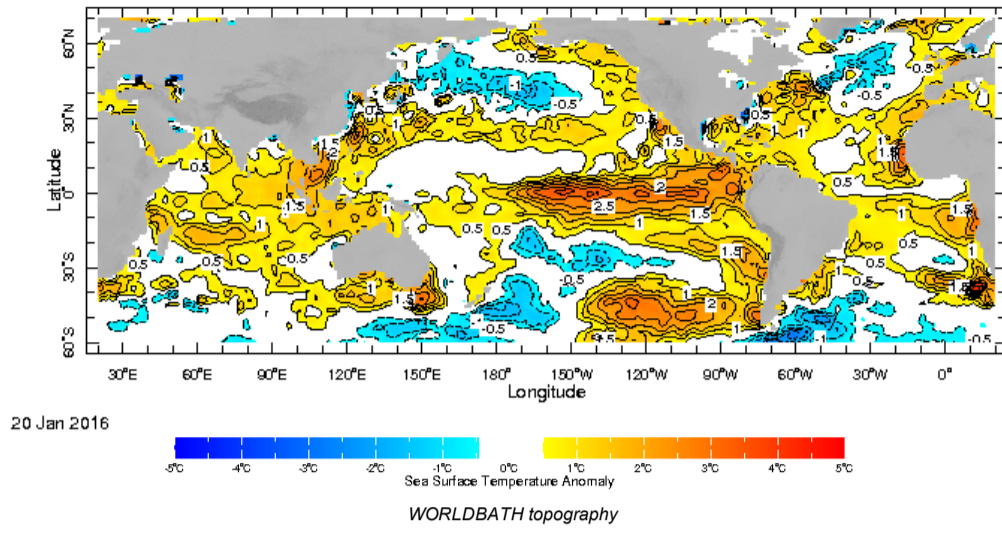


Monthly Anomaly

Dekadal (10 Day) Satellite Derived Rainfall Estimates

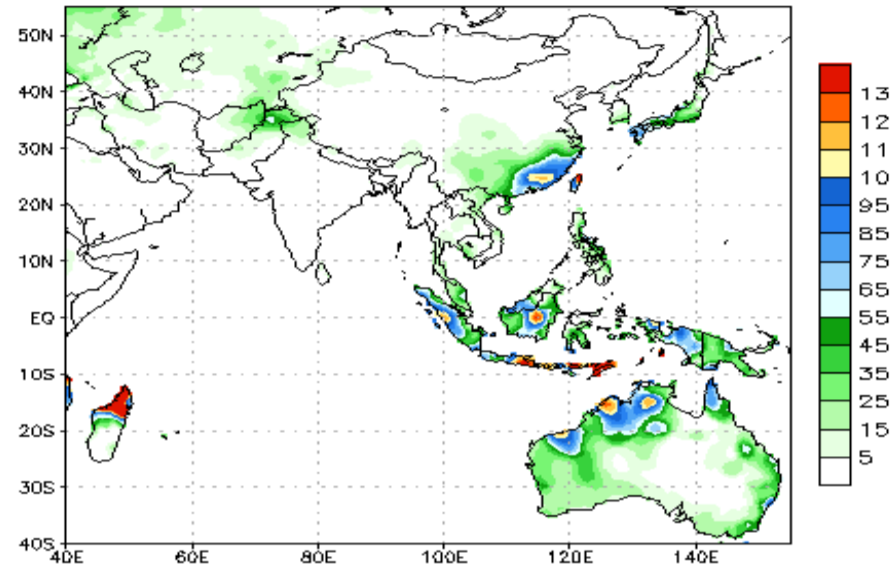


Weekly Average SST Anomalies



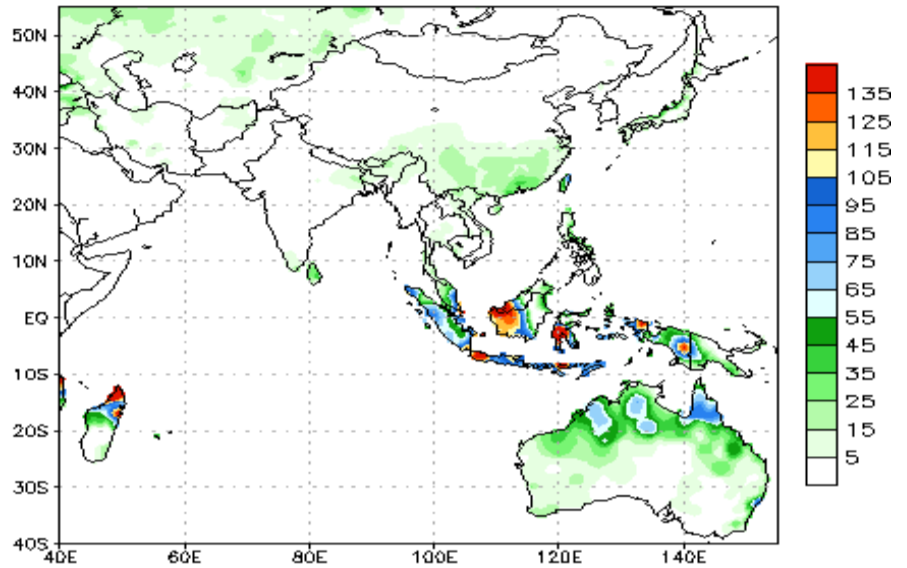
NCEP GFS 1- 14 Day prediction

NCEP GFS Ensemble Forecast 1–7 Day Precipitation (mm)
from: 27Jan2016
27Jan2016–02Feb2016 Accumulation



Bias correction based on last 30-day forecast error

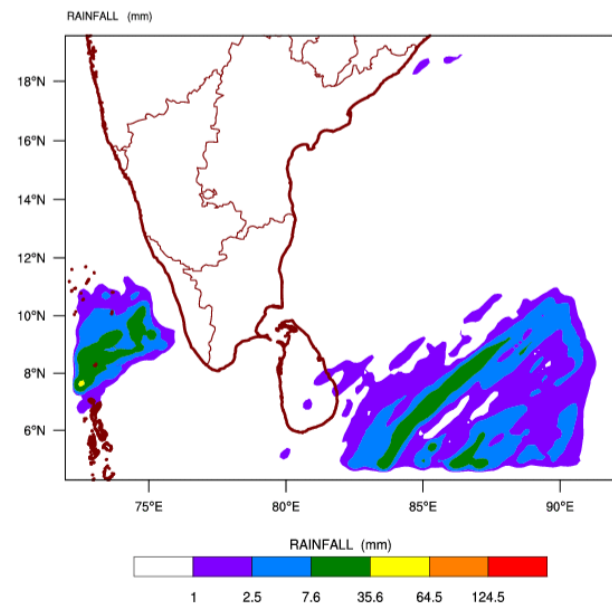
NCEP GFS Ensemble Forecast 8–14 Day Precipitation (mm)
from: 27Jan2016
03Feb2016–09Feb2016 Accumulation



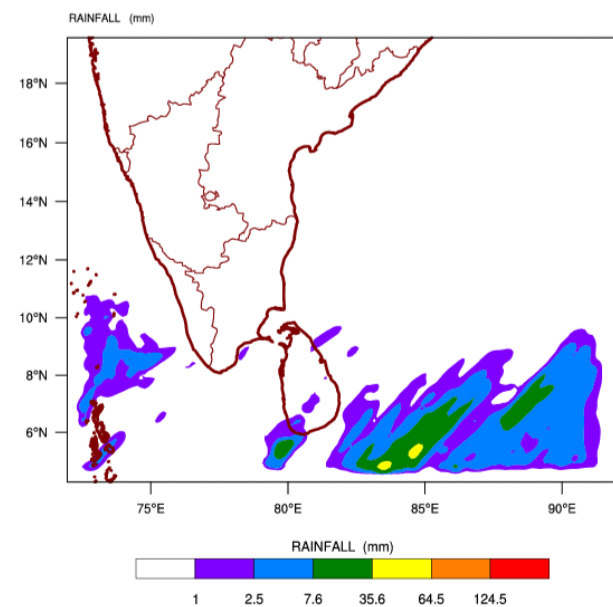
Bias correction based on last 30-day forecast error

WRF Model Forecast (from IMD Chennai)

WRF MODEL FORECAST (48 HR.) RAINFALL(mm)\
based on 00 UTC of 27-01-2016 valid for 03 UTC of 29-01-2016



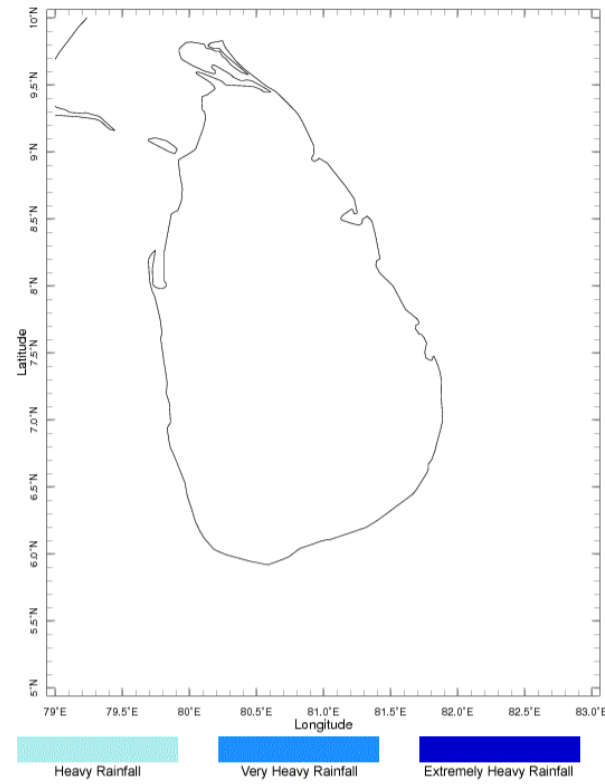
WRF MODEL FORECAST (72 HR.) RAINFALL(mm)\
based on 00 UTC of 27-01-2016 valid for 03 UTC of 30-01-2016



Weekly Rainfall Forecast

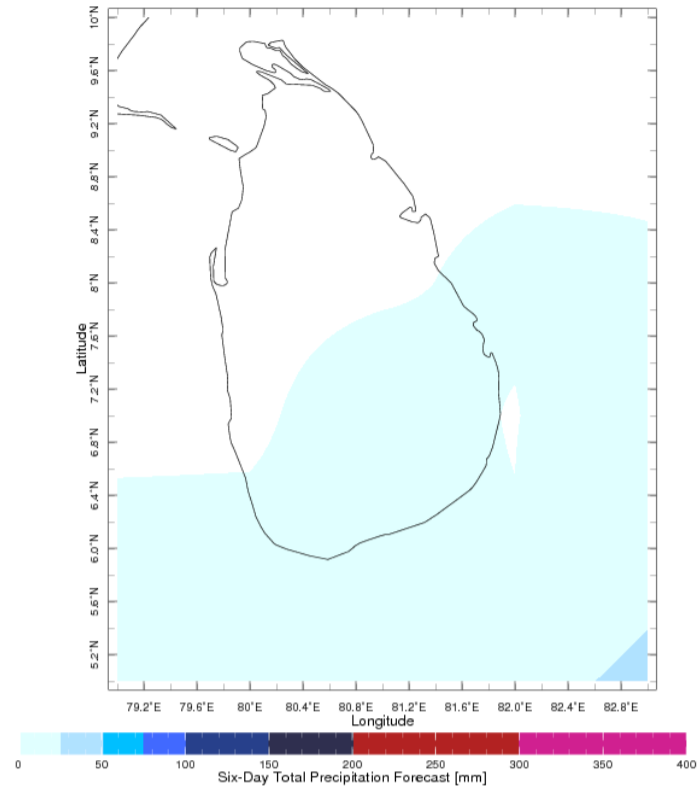
Total rainfall forecast from the IRI for next six days is provided in figures below. The figure to the left shows the expectancy of heavy rainfall events during these six days while the figure to the right is the prediction of total rainfall amount during this period.

Forecast for 27 Jan 2016 - 1 Feb 2016 Issued 0000 27 Jan 2016



Extreme Rainfall Forecast

Forecast for 27 Jan 2016 - 1 Feb 2016 Issued 0000 27 Jan 2016

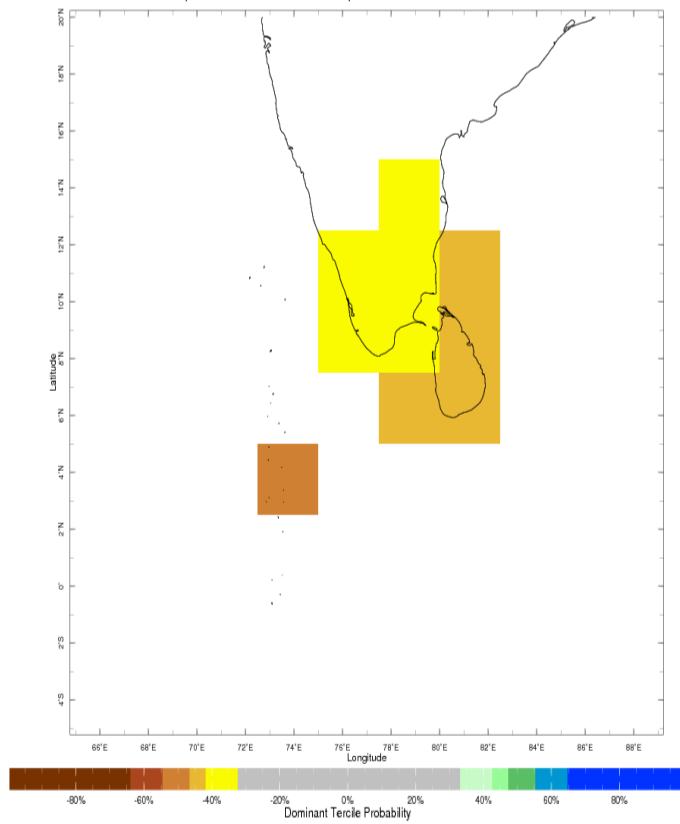


Total Six Day Precipitation Forecast

Seasonal Rainfall and Temperature Forecast

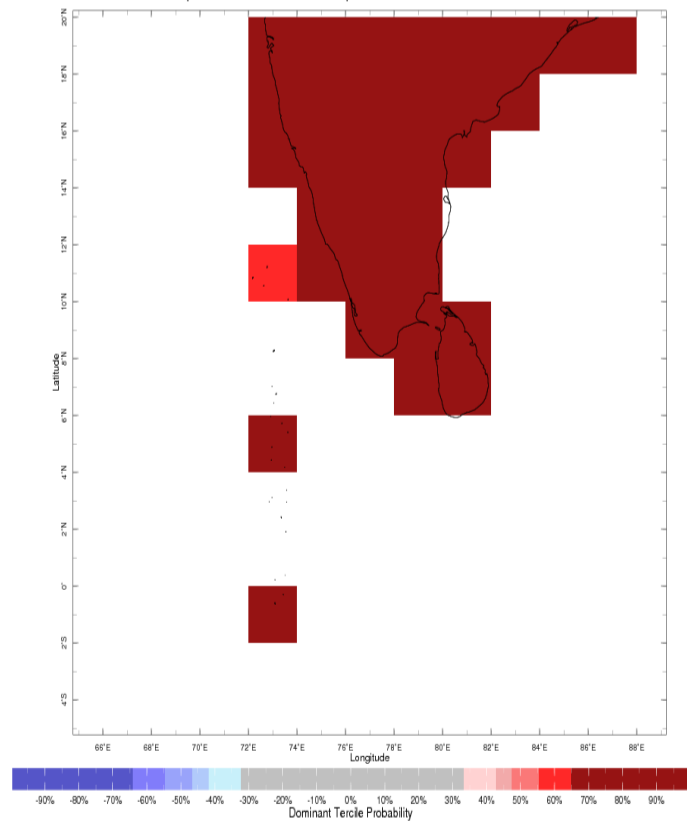
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile – that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant tercile 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%).

Feb-Apr 2016 IRI Seasonal Precipitation Forecast issued Jan 2016



Precipitation Forecast

Feb-Apr 2016 IRI Seasonal Temperature Forecast issued Jan 2016



Temperature Forecast

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