

Experimental Climate Monitoring and Prediction for the Maldives

–January 2015

Prepared by Staff from Foundation for Environment, Climate and Technology, Sri Lanka and USA, Maldives Meteorological Service, and International Research Institute for Climate and Society

5 February 2014

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PACIFIC SEAS STATE

January 15, 2015

During December 2014 through early January 2015 the SST exceeded thresholds for weak Niño conditions, although the anomaly level has weakened recently. Meanwhile, only some of the atmospheric variables indicate an El Niño pattern. Most of the ENSO prediction models indicate weak El Niño conditions during the January-March season in progress, continuing through most or all of northern spring 2015.

(Text Courtesy IRI)

INDIAN OCEAN STATE

Jan 31, 2014

Neutral Sea surface temperature was observed around Maldives.

Highlights²

During December below average rainfall was observed throughout Maldives contributing to a further increase in the rainfall deficit which had persisted throughout the previous year. Despite having relatively higher rainfall towards the end of the year 2014, the rainfall deficit in southern islands too has reached to a magnitude of about 15% of expected rainfall during the year. Most of ENSO prediction models indicate a weak El Niño condition during January to March.

Summary²

CLIMATOLOGY

Monthly Climatology: In February, northern islands receive around 50 mm rainfall and this increases up to 150 mm in southern islands. The same rainfall pattern can be observed in March as well. In April rainfall increases throughout the country with northern islands receiving rainfall up to 100 mm and southern islands receiving rainfall up to 200 mm. Wind direction is south-westerly in February and March and in April northern islands receive south-easterly wind while southern islands receive easterly wind.

MONITORING

Weekly Monitoring: On 28th and 29th January southern islands received up to 100 mm rainfall. Thereafter significant amounts of rainfall was not observed in any part of the country.

Monthly and Seasonal Monitoring: During December 2014, less than 10 mm average rainfall was observed throughout the Maldives resulting in a below average rainfall in the entire country. The rainfall deficit is high in the entire country which is roughly 30% in the northern islands and central islands and about 15% in southern islands.

PREDICTIONS

Weekly Rainfall Forecast: According to NOAA models, heavy rainfall up to 100 mm in total is expected in central islands and up to 75 mm in southern islands during 4th- 9th February 2015.

Seasonal Rainfall and Temperature Prediction: As per IRI Multi Model Probability Forecast for February to April, the total 3 month precipitation shall be in below-normal tercile with a 40% probability. The 3 month average temperature has a 60- 70% likelihood for central islands and about 90% likelihood for southern-most islands of being in the above-normal tercile during this period.

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¹ International Research Institute for Climate and Society.

Hydro-Meteorological Monitoring and Predictions for Maldives

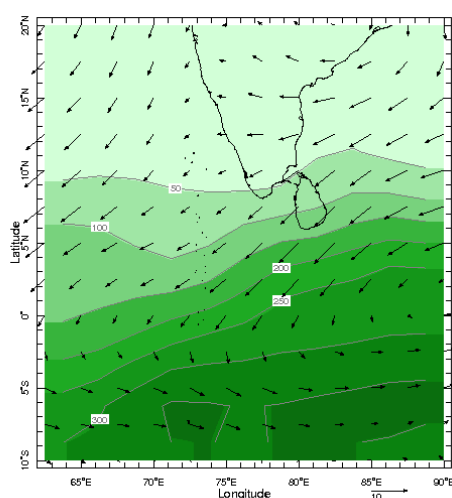
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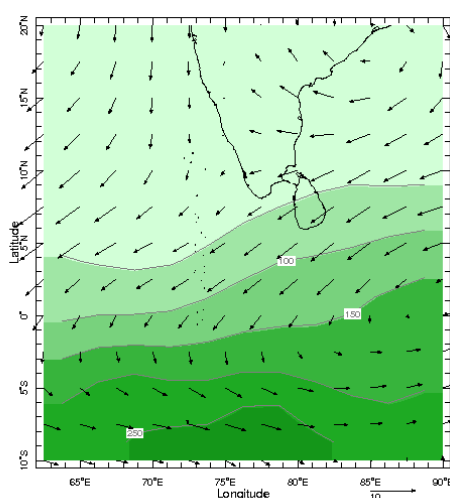
Climatology

Regions between contour lines show the average observed rainfall during each month. Darker shades of green show higher average rainfall. Arrows show the wind direction during the month while the size of the arrow shows the magnitude of the wind speed.



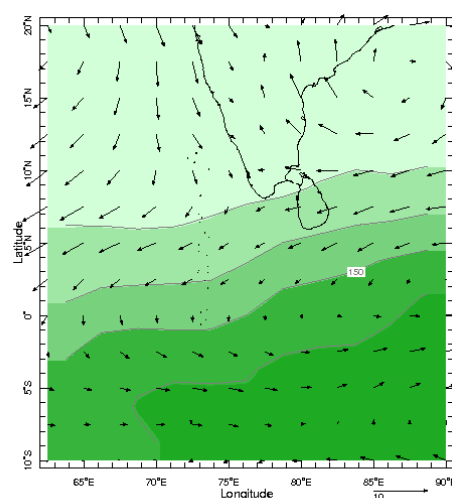
Time Jan Pressure 925.0 mb

January



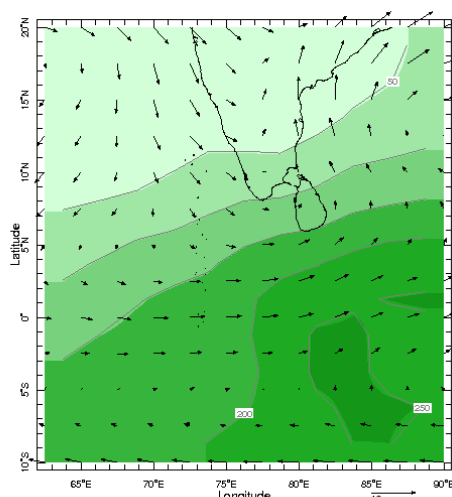
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February



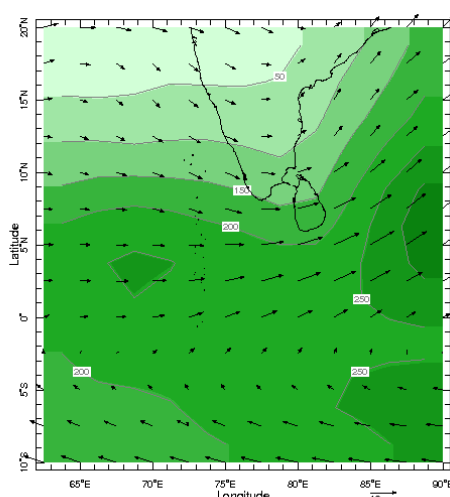
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March



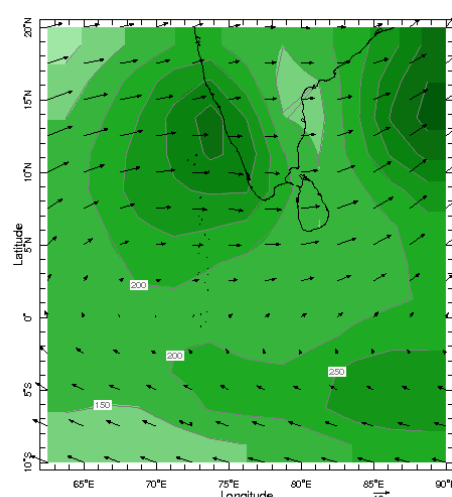
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April



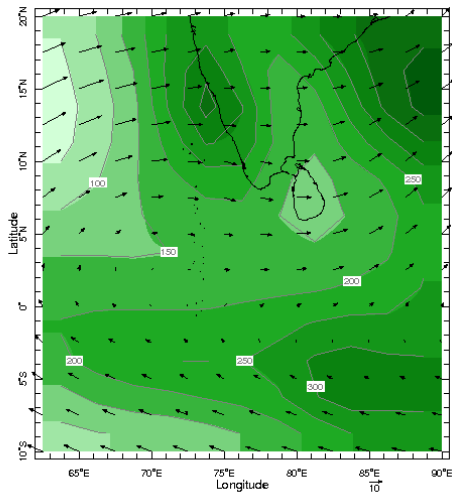
Time May Pressure 925.0 mb

May



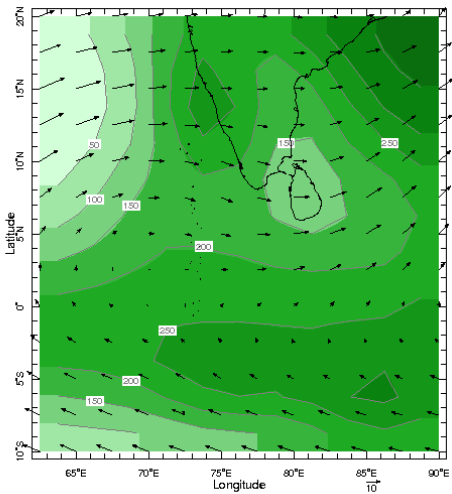
Time Jun Pressure 925.0 mb

June



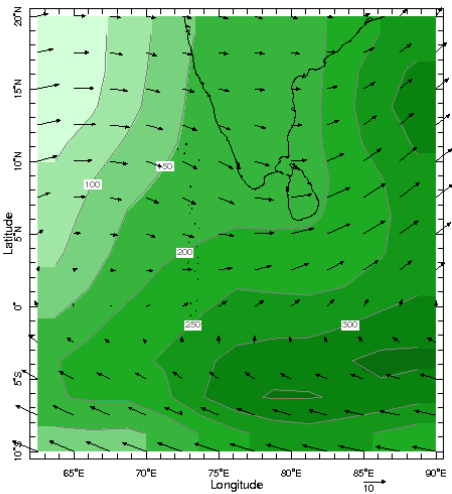
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July



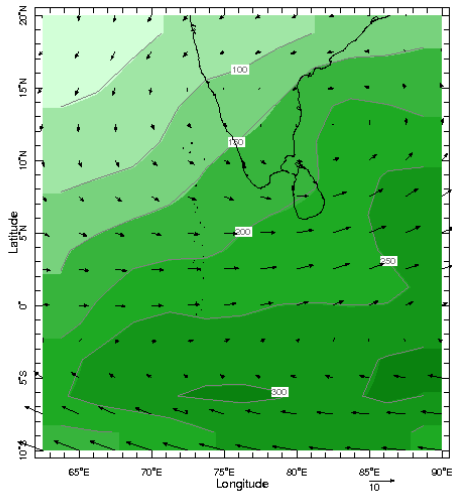
Time Aug Pressure 925.0 mb

August



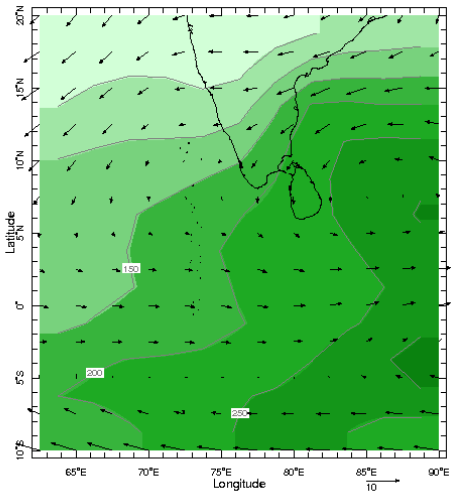
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September



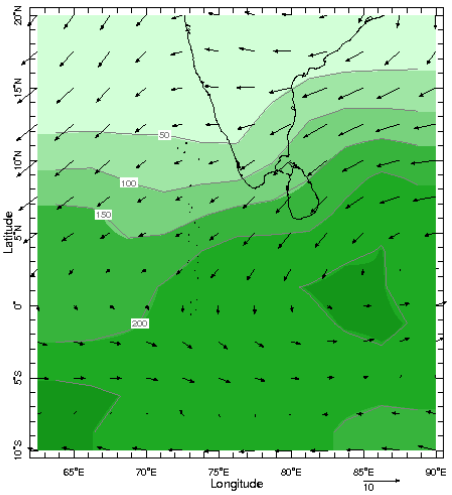
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October



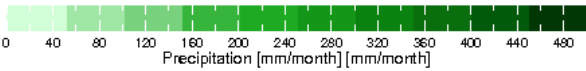
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November



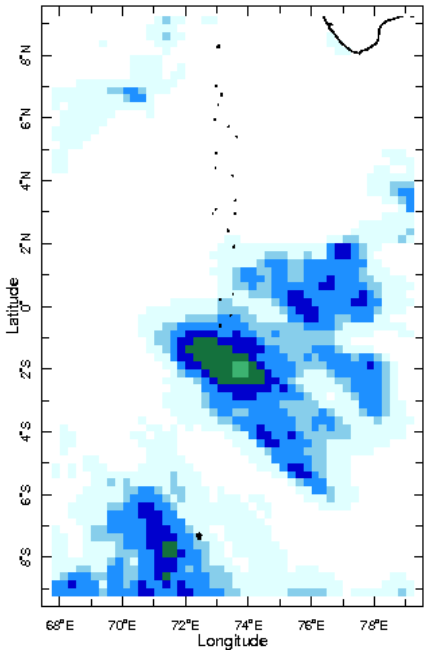
Time Dec Pressure 925.0 mb

December

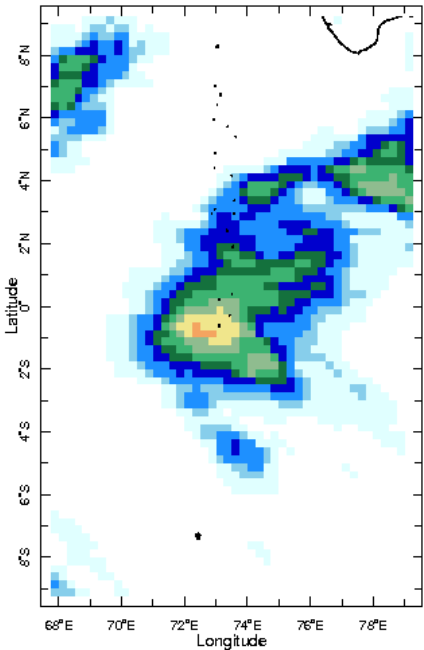


Daily Rainfall Monitoring

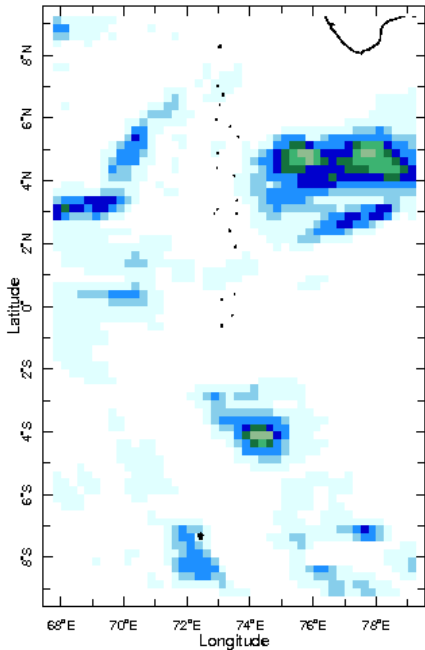
The following figures show the observed rainfall in the last 7 days in Maldives.



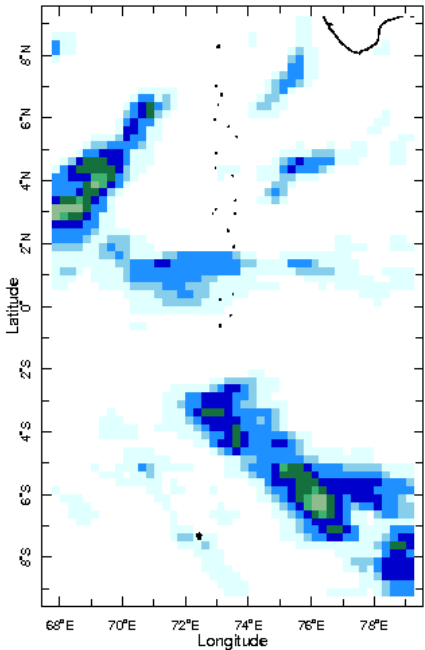
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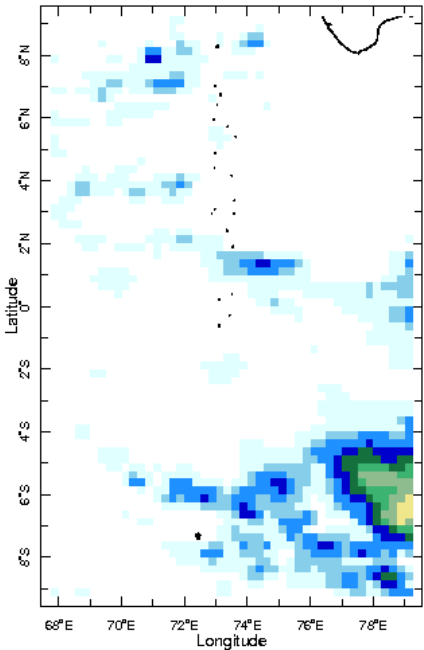
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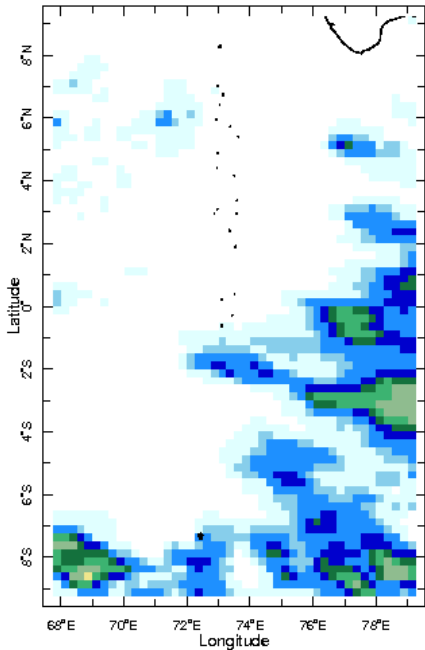
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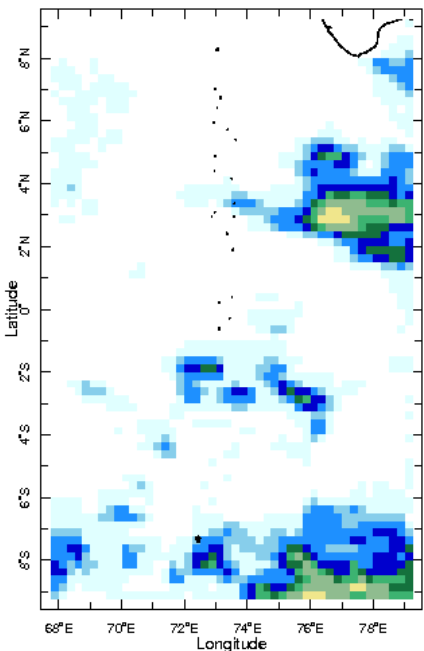
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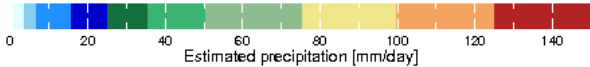
1 Feb 2015



2 Feb 2015

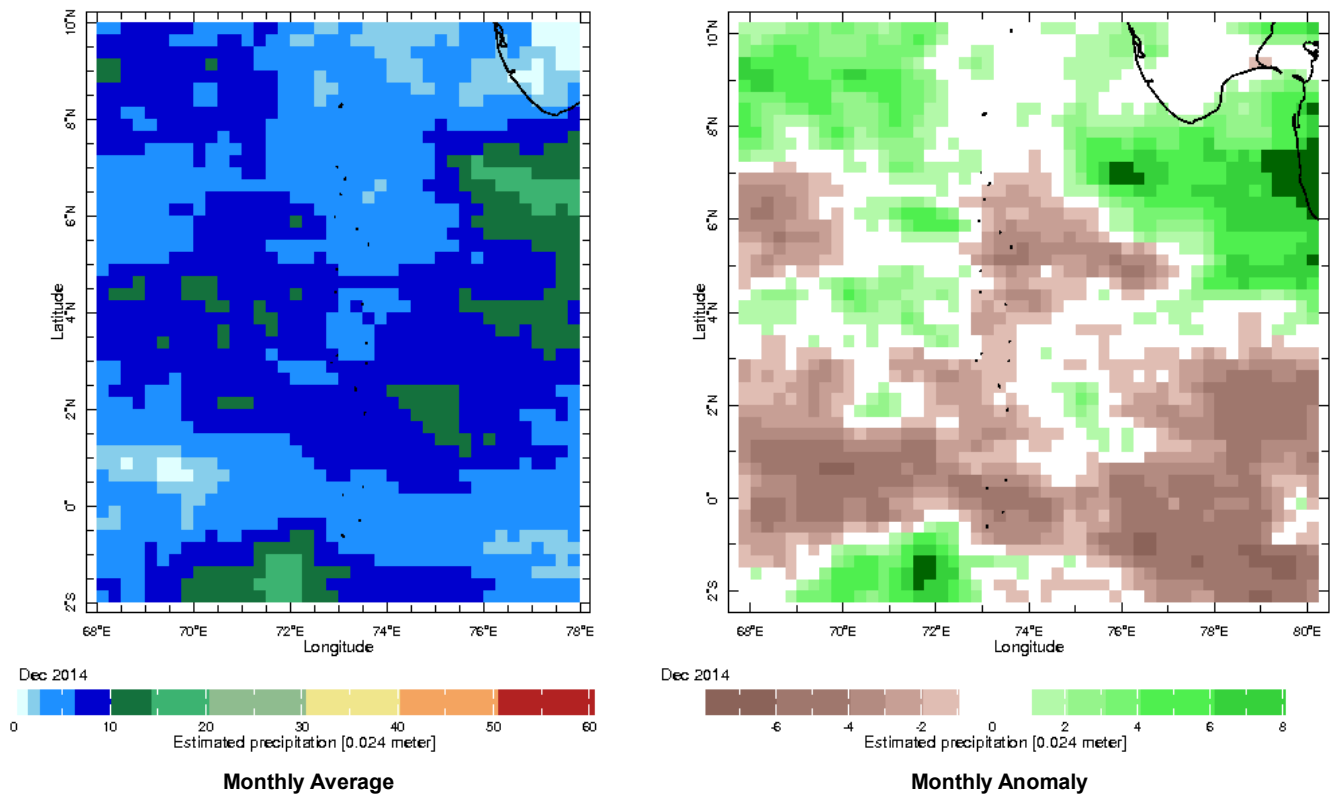


3 Feb 2015



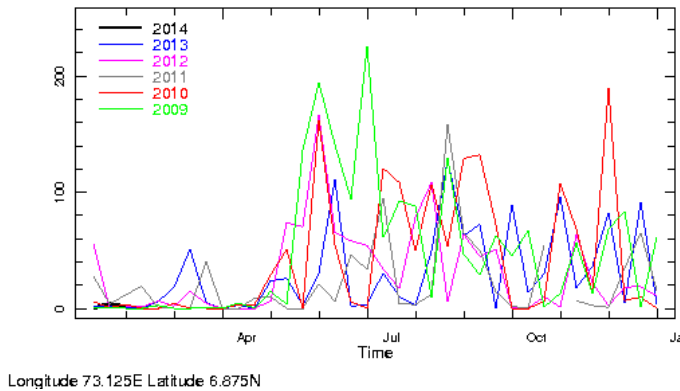
Monthly Rainfall Monitoring

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

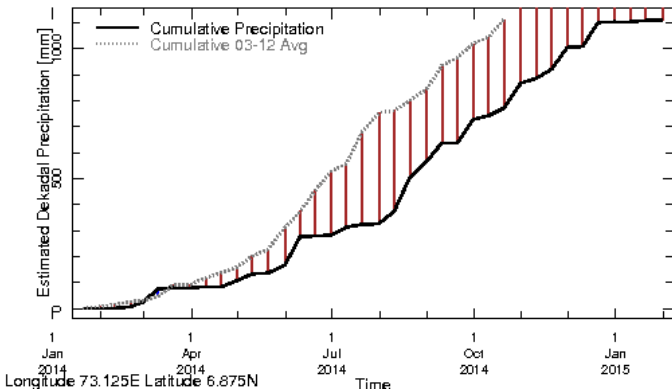


Monthly and Seasonal Monitoring

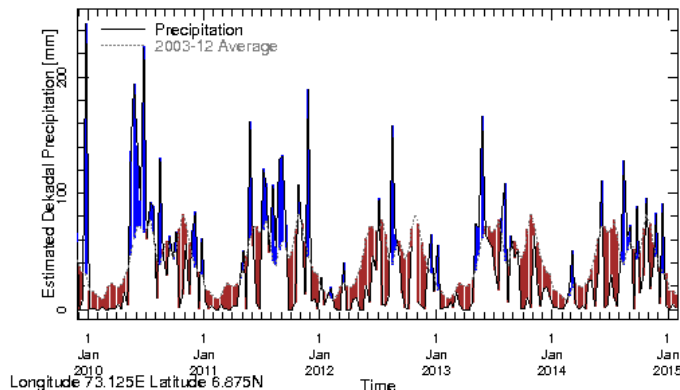
Northern Maldives:



Rainfall in the current year (black) compared to rainfall in previous 5 years

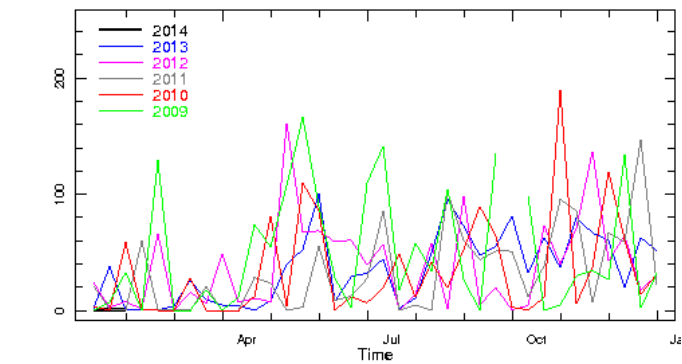


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

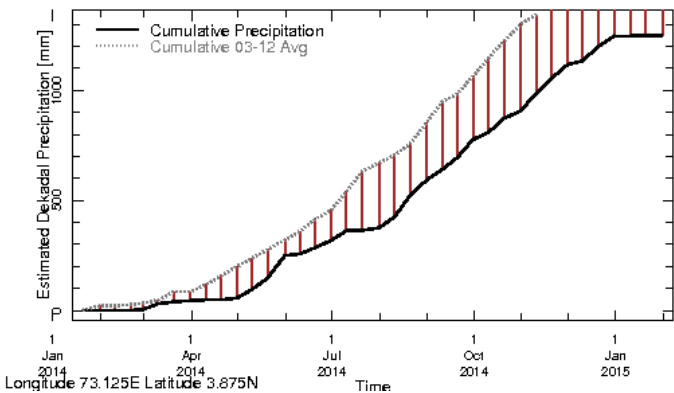


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

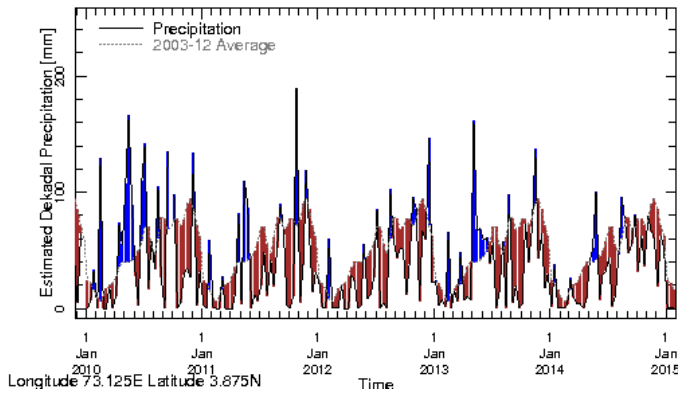
Central Maldives:



Rainfall in the current year (black) compared to rainfall in previous 5 years

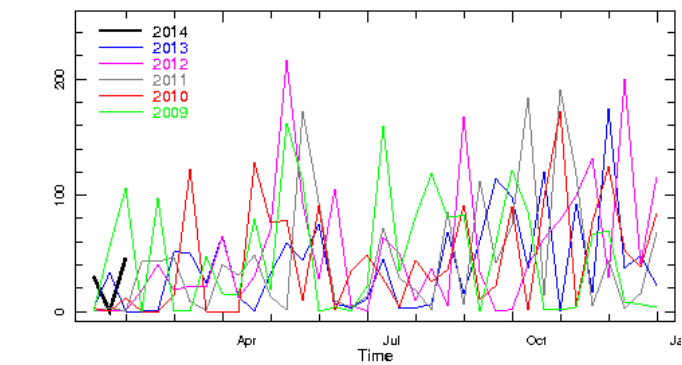


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

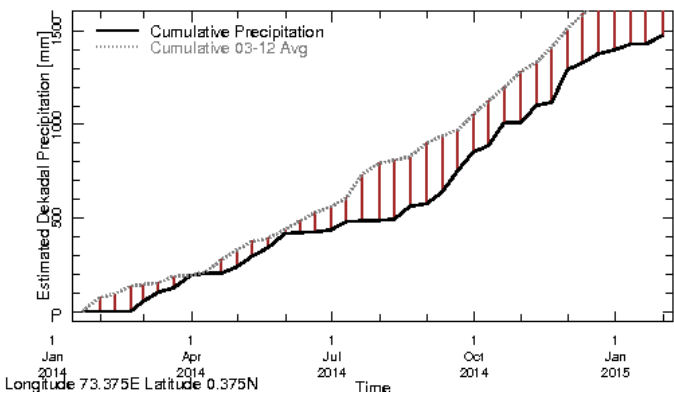


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average rainfall hatched in brown

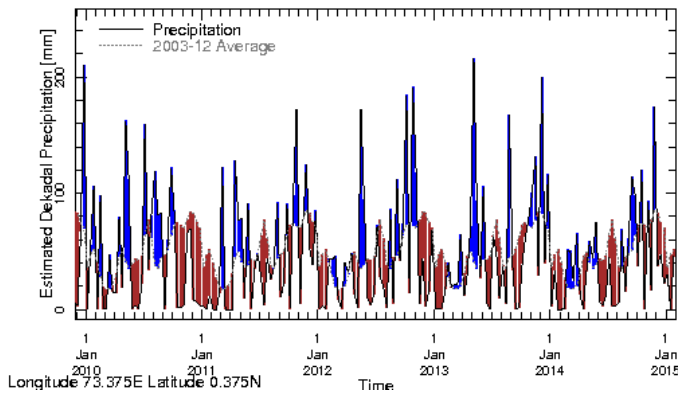
Southern Maldives:



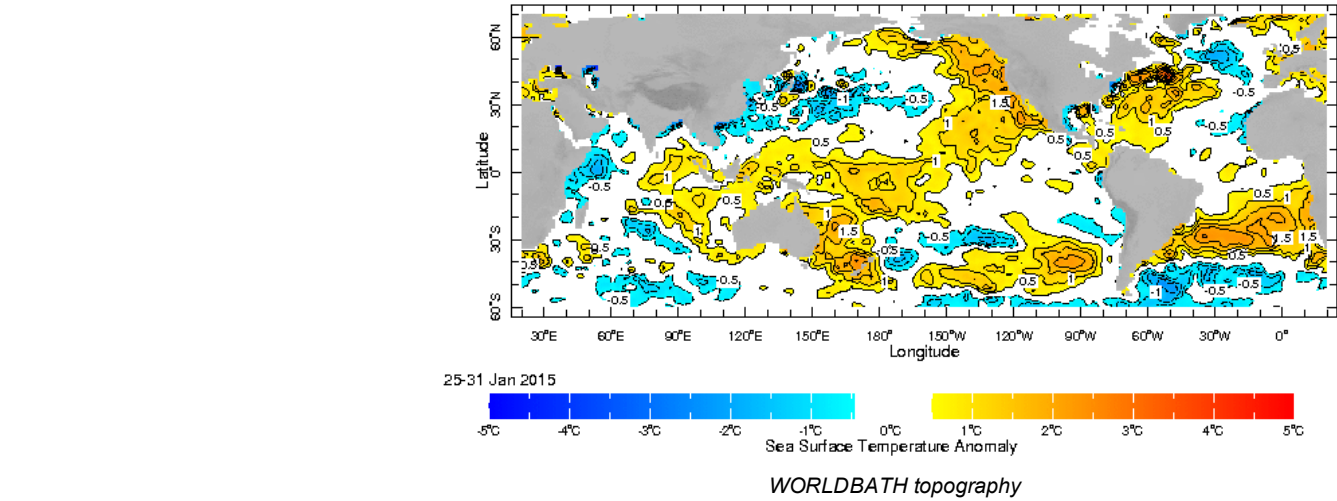
Rainfall in the current year (black) compared to rainfall in previous 5 years



Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.



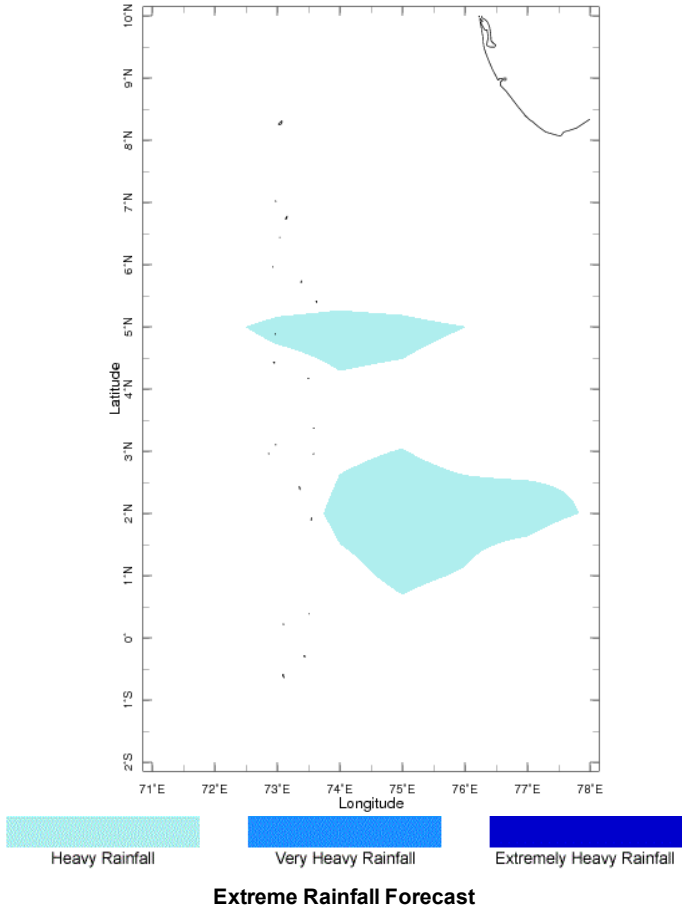
Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average rainfall hatched in brown



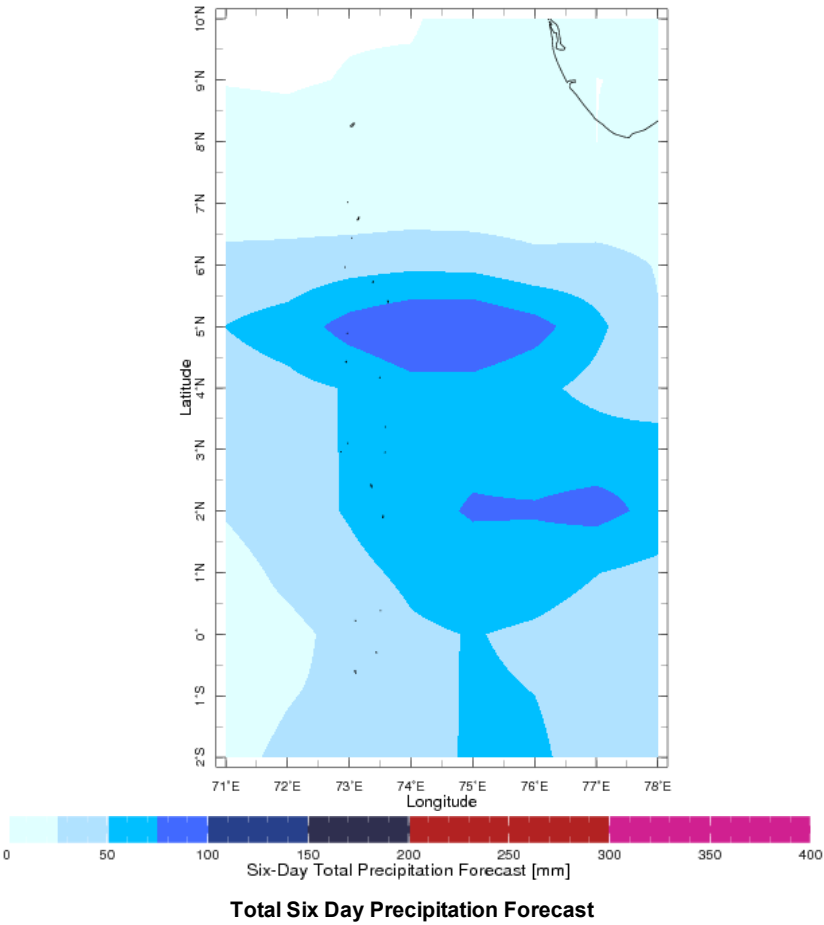
Weekly Rainfall Forecast

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 4-9 Feb 2015 Issued 0000 4 Feb 2015



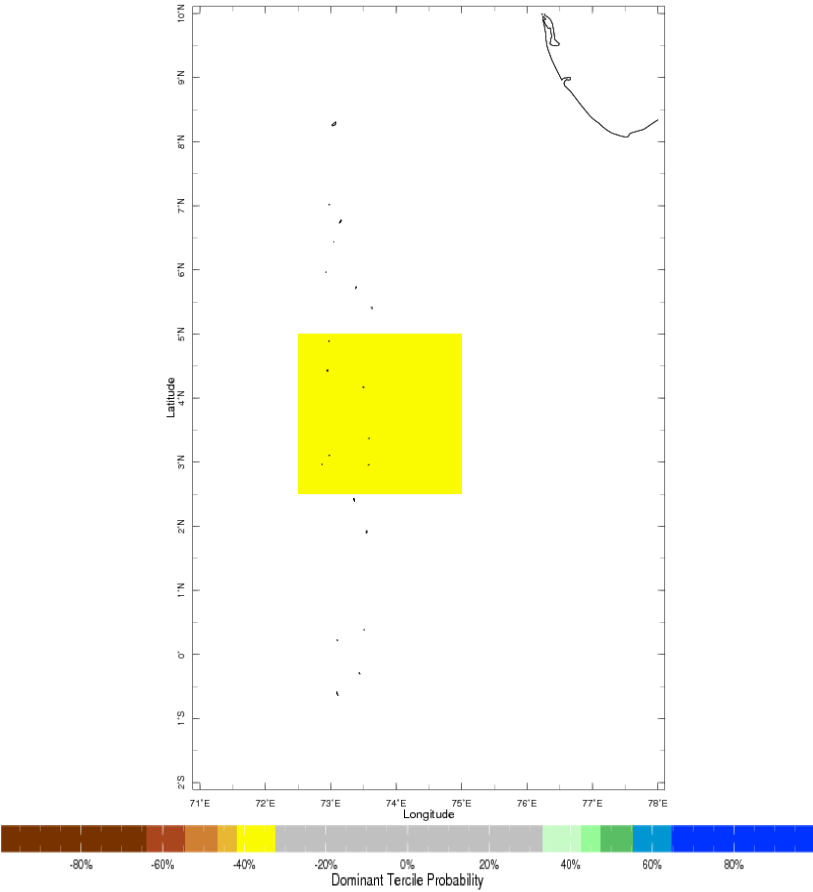
Forecast for 4-9 Feb 2015 Issued 0000 4 Feb 2015



Seasonal Rainfall and Temperature Forecast

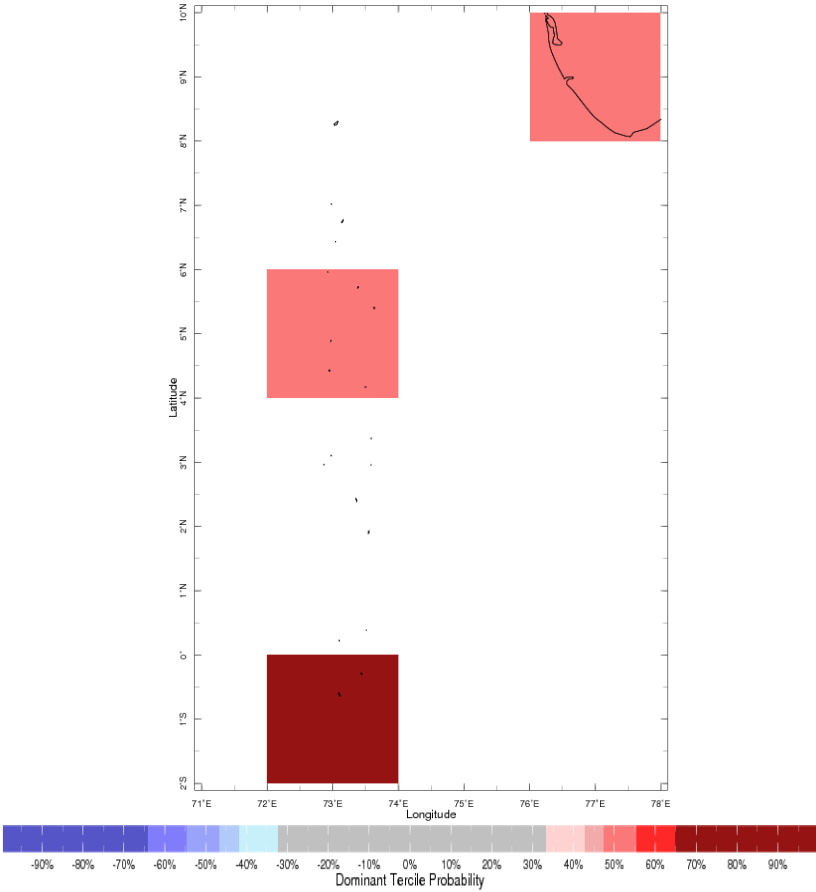
Following is the latest seasonal precipitation and temperature prediction for the next 3 months by the IRI. The color shading indicates the probability of the most dominant tercile -- that is, the tercile having the highest forecast probability. The color bar alongside the map defines these dominant 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 2015 IRI Seasonal Precipitation Forecast issued Jan 2015



Precipitation Forecast

Feb-Apr 2015 IRI Seasonal Temperature Forecast issued Jan 2015



Temperature Forecast

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