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Experimental Climate Monitoring and Prediction for the Maldives – October 2015

Prepared by Staff from Foundation for Environment, Climate and Technology, Sri Lanka and USA, Maldives Meteorological Service, and Columbia University
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21 October 2015

PACIFIC SEAS STATE

October 15, 2015

During late September through mid-October 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 October-December 2015 season in progress. Some slightly further strengthening is possible into later fall, with the event slowly weakening during spring 2016.

(Text Courtesy IRI)

INDIAN OCEAN STATE

Oct 14, 2014

~2 C^0 Warmer than usual Sea surface temperature was observed around Maldives. This is the warmest SST observed recently.

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Highlights

High rainfall during September throughout the country decreased the rainfall deficit. The rainfall deficit in the country has come down to less than 10% of expected average. An increasing trend in rainfall can be seen in the past couple of months. Extreme rainfall is expected throughout the country during the next couple of days. Seasonal rainfall prediction models predict a continuation of above average rainfall during the next 2 months. The sea surface temperature around the Maldives is unusually warm. The Indian Ocean Dipole continues to be active.

Summary

CLIMATOLOGY

Monthly Climatology: In October Northern and central islands usually receive up to 200 mm rainfall while southern islands usually receive up to 250 mm. In November similar rainfall is typically observed throughout the country which shall be up to 200 mm but in December there is a variation in rainfall from north to south. Rainfall is typically up to 150 mm in Northern islands and increase towards the south with central islands usually receiving up to 200 mm and southern islands usually receiving up to 250 mm. Normally there are strong easterly winds throughout the country in October and in southern islands in November. In December there usually is south westerly wind.

MONITORING

Weekly Rainfall Monitoring: On the 4th October up to 20 mm rainfall was observed in central islands. Thereafter the entire country was mostly dry until the 7th. Northern and central islands received up to 40 mm rainfall on the 8th and on the 9th up to 50 mm rainfall was observed in northernmost islands. On the 10th Islands near Gan received heavy rainfall (up to 80 mm) while the rest of the country was relatively dry. Once again low rainfall was observed throughout the country on the 11th. Up to 30 mm rainfall was observed on 12th and 13th. Heavy rainfall up to 100 mm was observed in southern and central islands on the 14th while up to 140 mm rainfall was observed in the eastern sea. Thereafter until the 17th there was only light rainfall. Then on the 18th southernmost islands received up to 50 mm rainfall

Monthly and Seasonal Rainfall Monitoring: In September 2015 the entire country received above average rainfall. Felidhe, Vattaru and Mulak atolls received very high rainfall. Northern and central islands received highest observed rainfall this year during September and southern islands also received relatively high rainfall. The rainfall deficit throughout the country has reduced to less than 10% because of the heavy rain.

PREDICTIONS

Weekly Rainfall Forecast: According to NOAA CFS models, extremely heavy rainfall is expected in the southern region of the country during 20th - 25th October. Central and northern islands too shall receive heavy rainfall during this period.

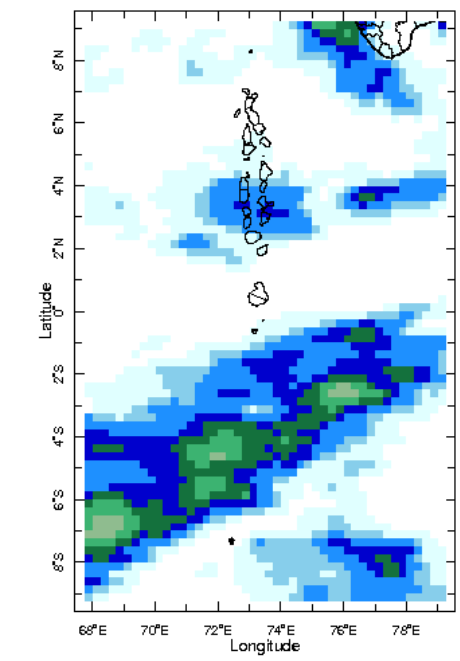
Seasonal Rainfall and Temperature Prediction: As per IRI Multi Model Probability Forecast for November 2015 to January 2016, there is 80% probability for total 3 month precipitation shall be above average in central. During an El Nino higher rainfall is usual during October- December Season in northern and central islands. But during January-March it is dry during an El Nino. The 3 month average temperature has a 70- 80% likelihood to be in the above-normal tercile during these 3 months.

Inside this Issue

www.climate.lk

Daily Rainfall Monitoring

The following figures show the observed rainfall in the last 15 days in Maldives.



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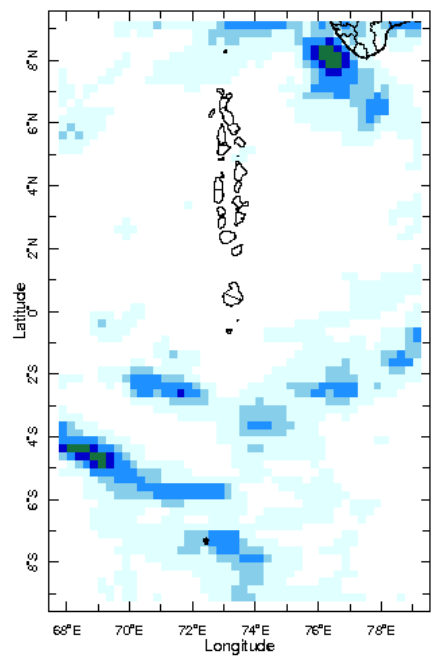

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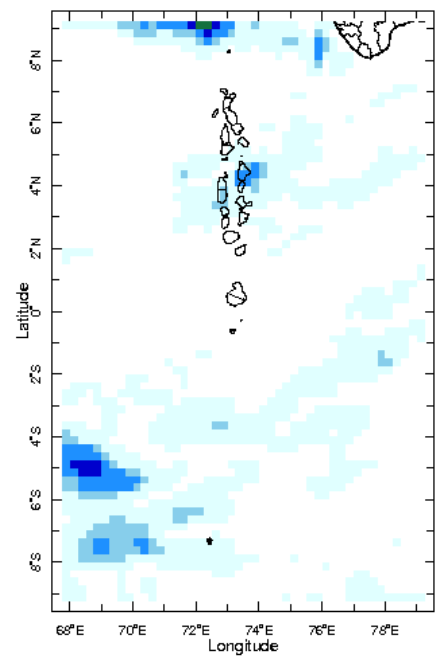

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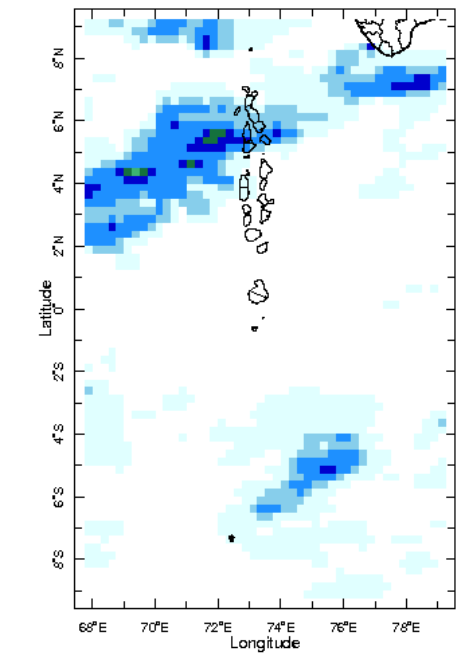

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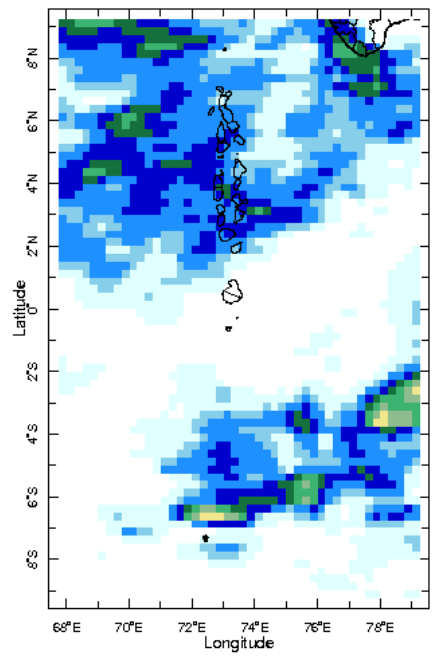

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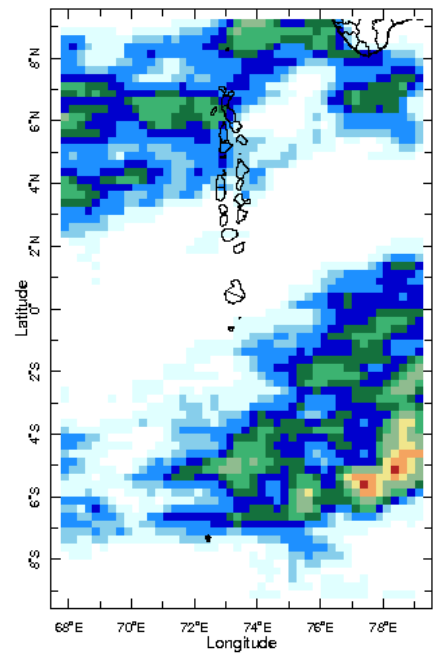

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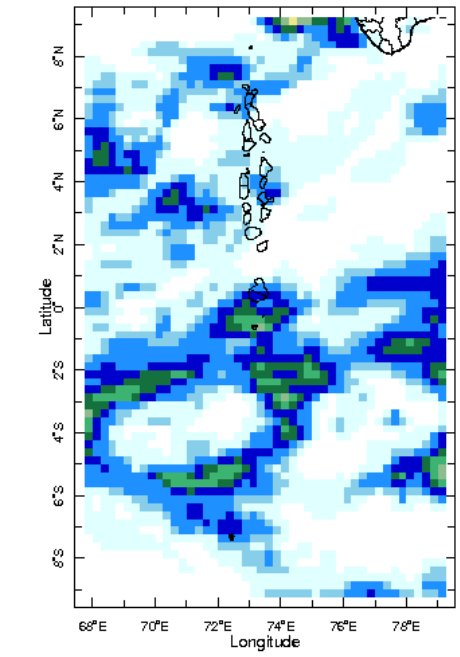

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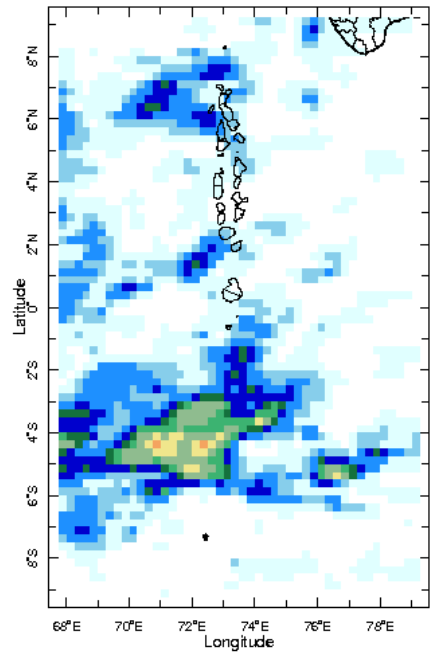

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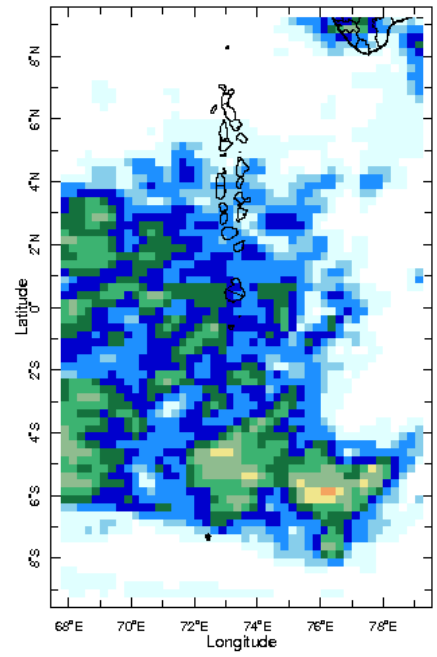

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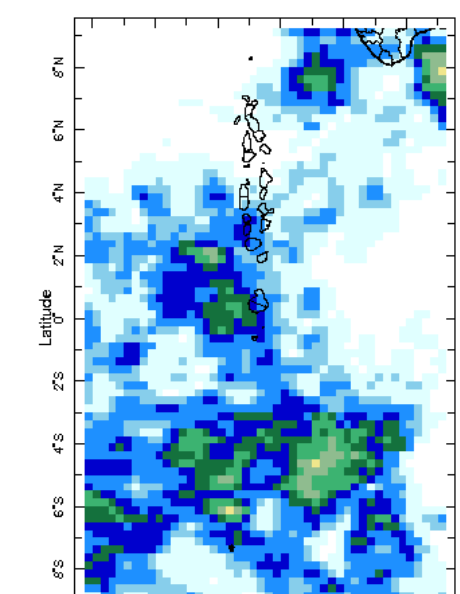

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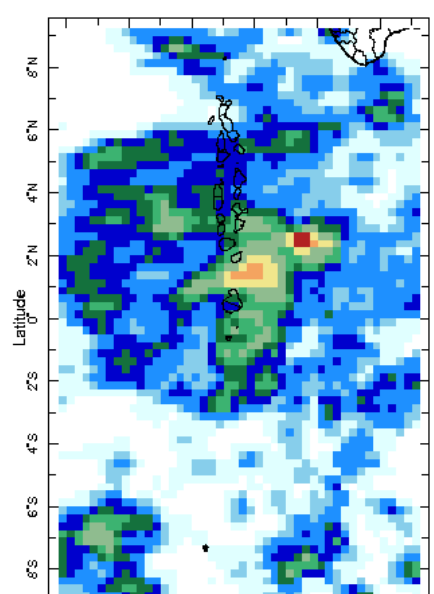

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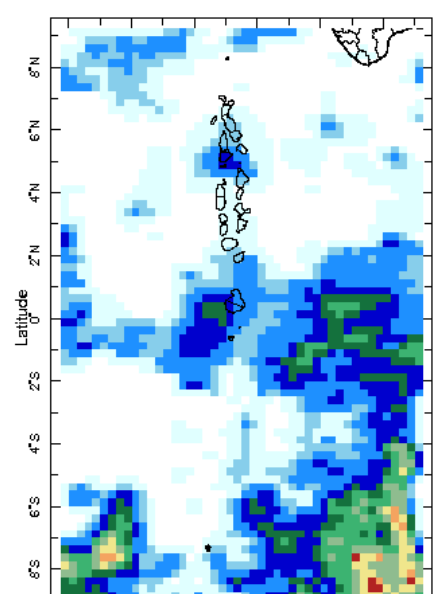

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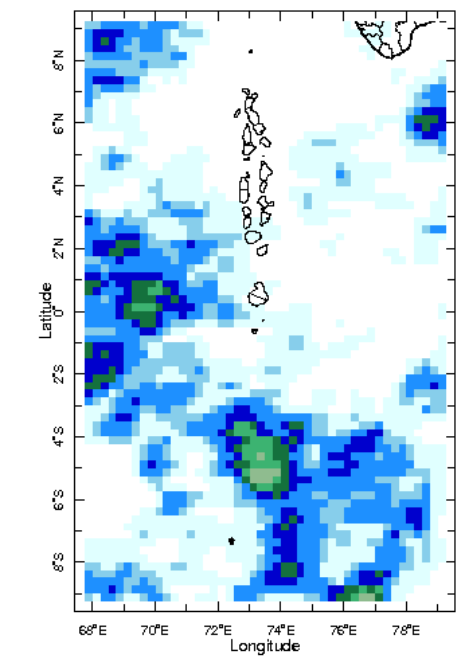

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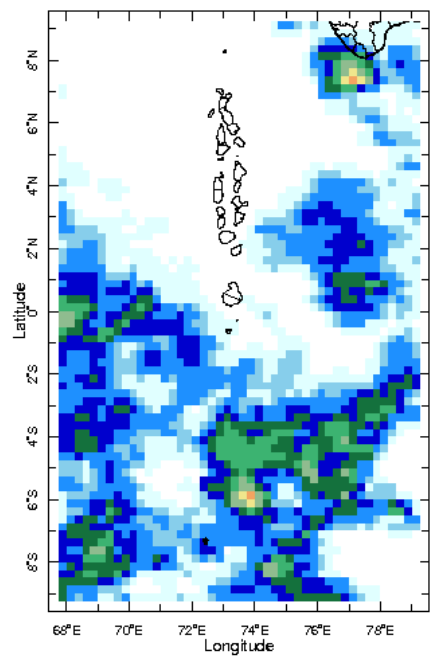

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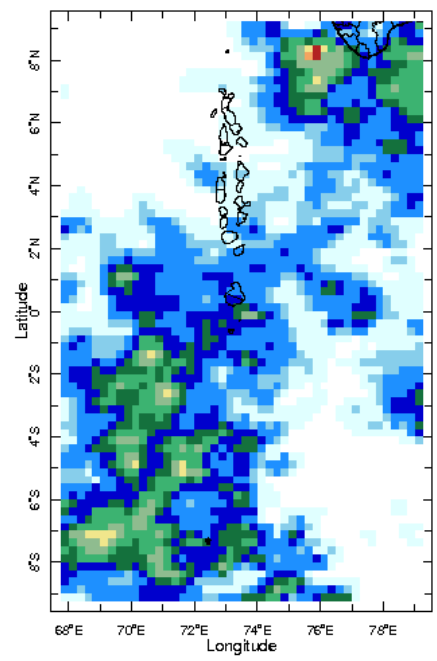

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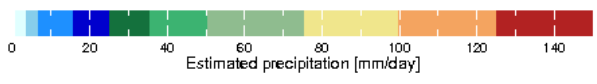
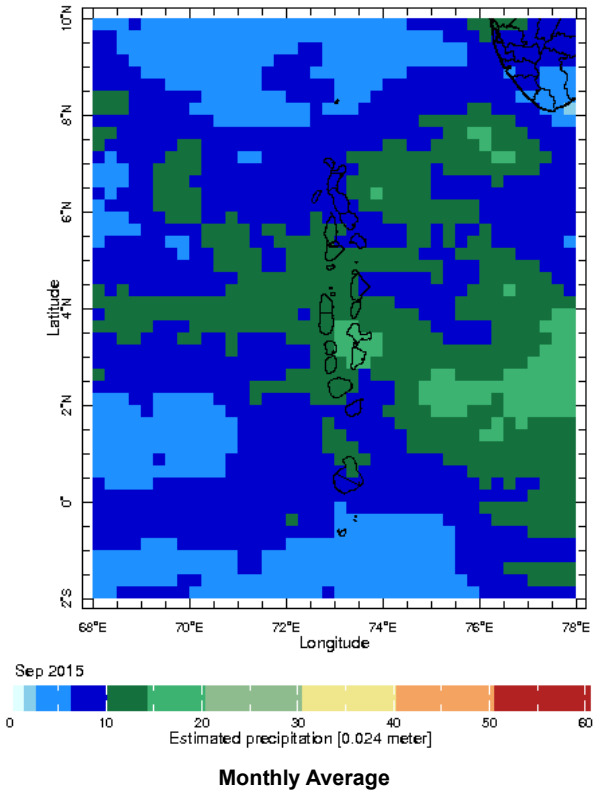
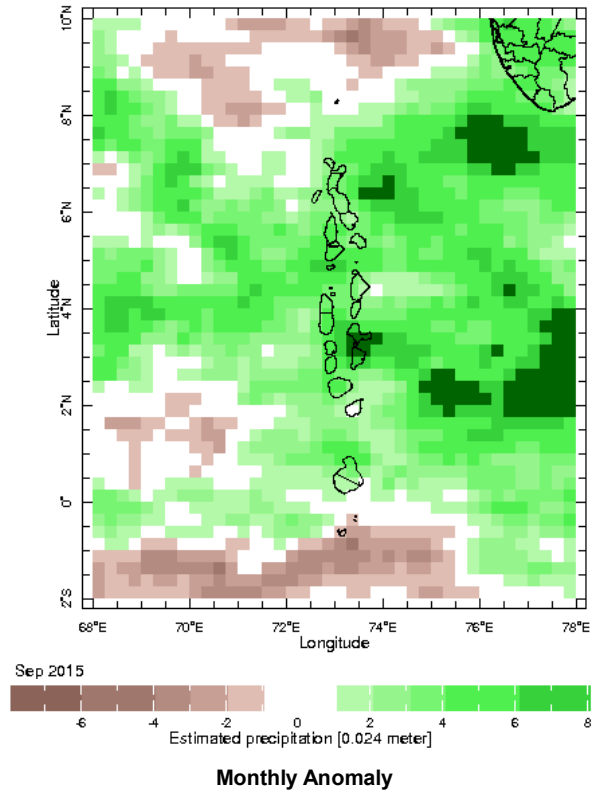


Monthly Rainfall Monitoring

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



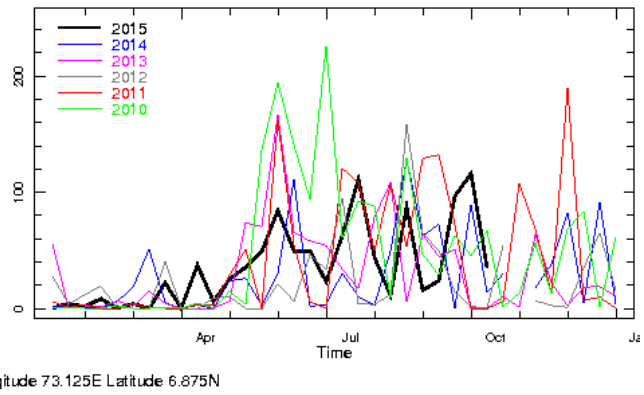
Monthly Average



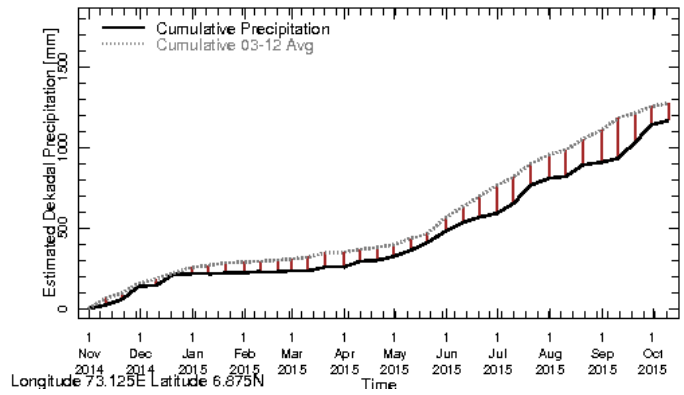
Monthly Anomaly

Monthly and Seasonal Monitoring

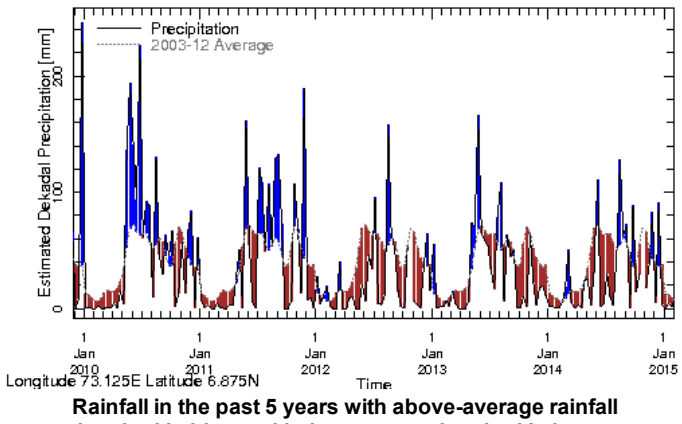
Northern Maldives:



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

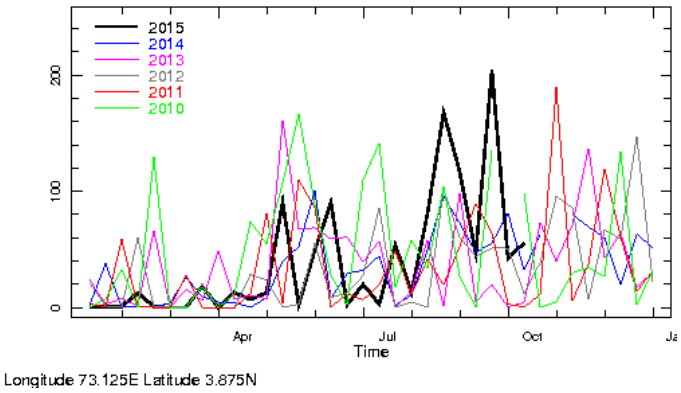


Rainfall of past 365 days (black) compared to average rainfall in previous 8 years.

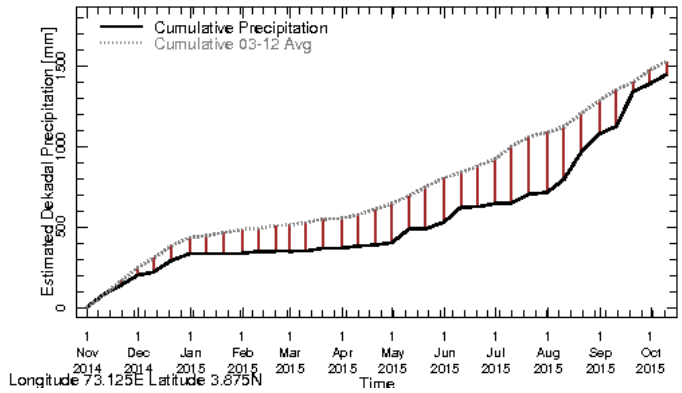


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

Central Maldives:



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



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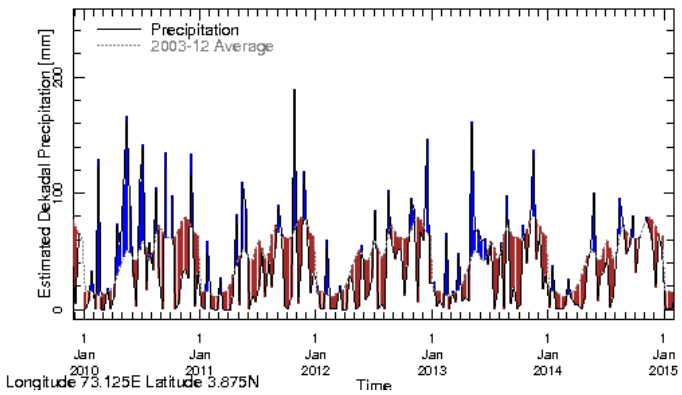
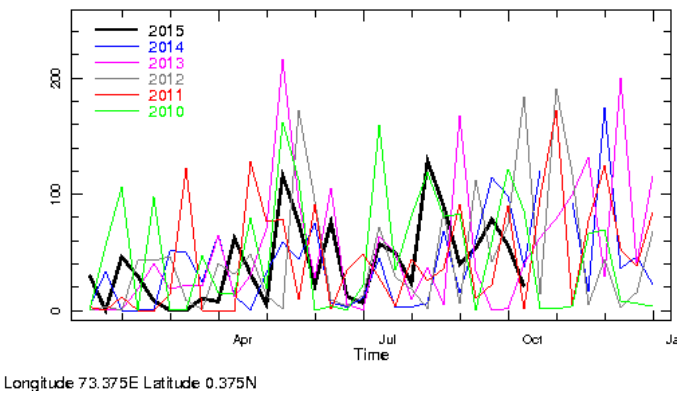
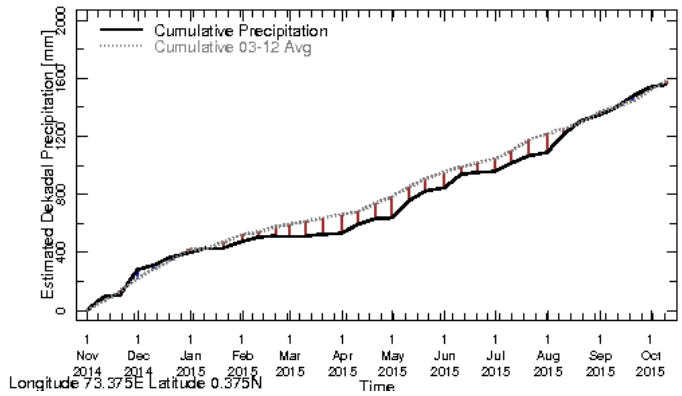


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

Southern Maldives:



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



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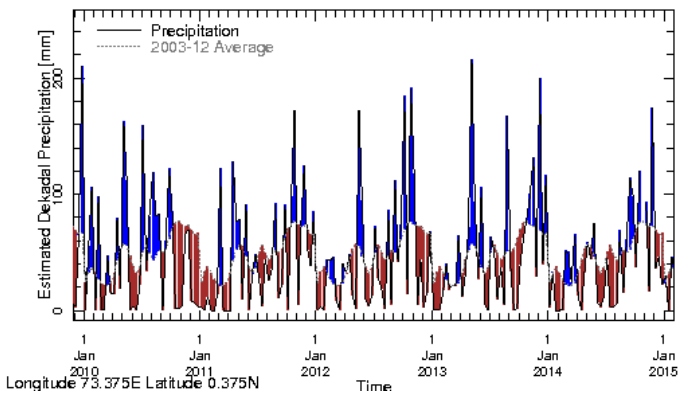
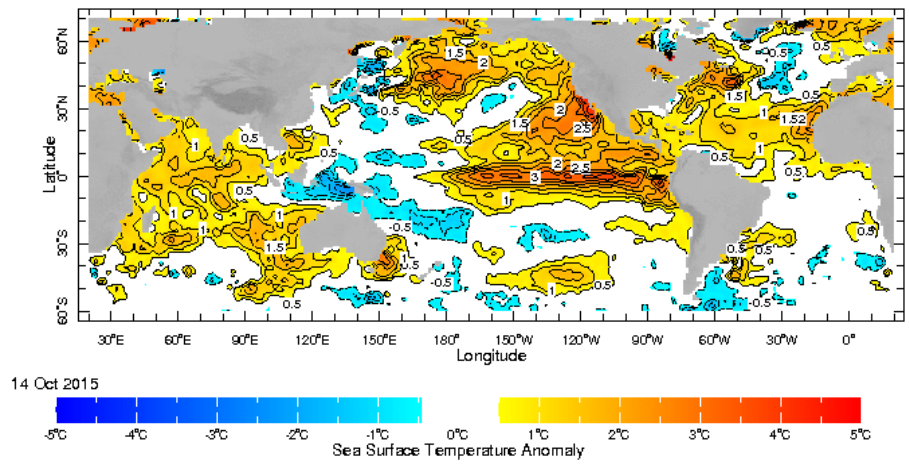


Rainfall in the past 5 years with above-average rainfall hatched in blue and below-average hatched in brown

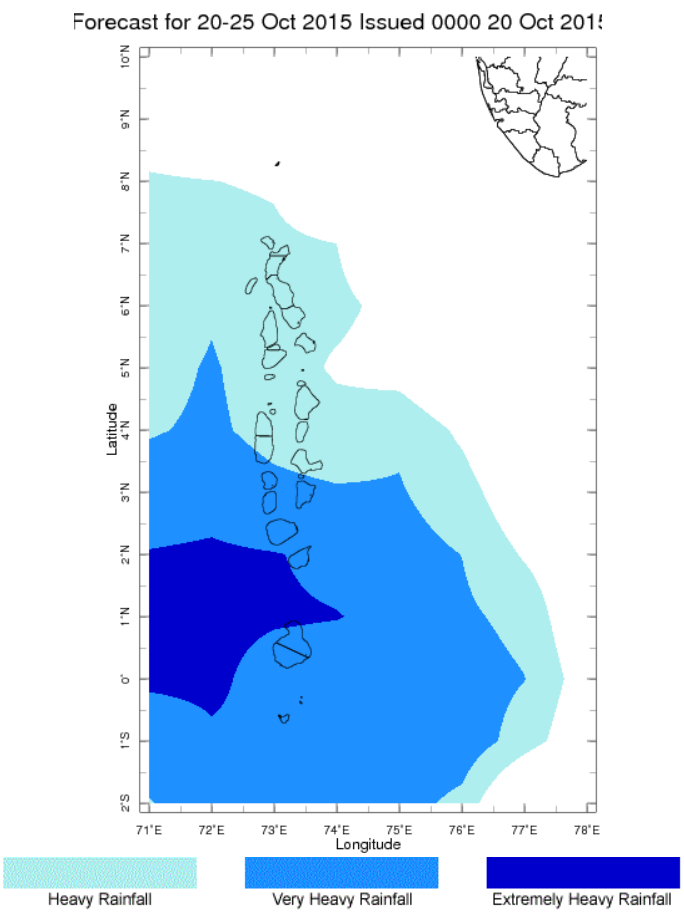
Ocean Surface Monitoring



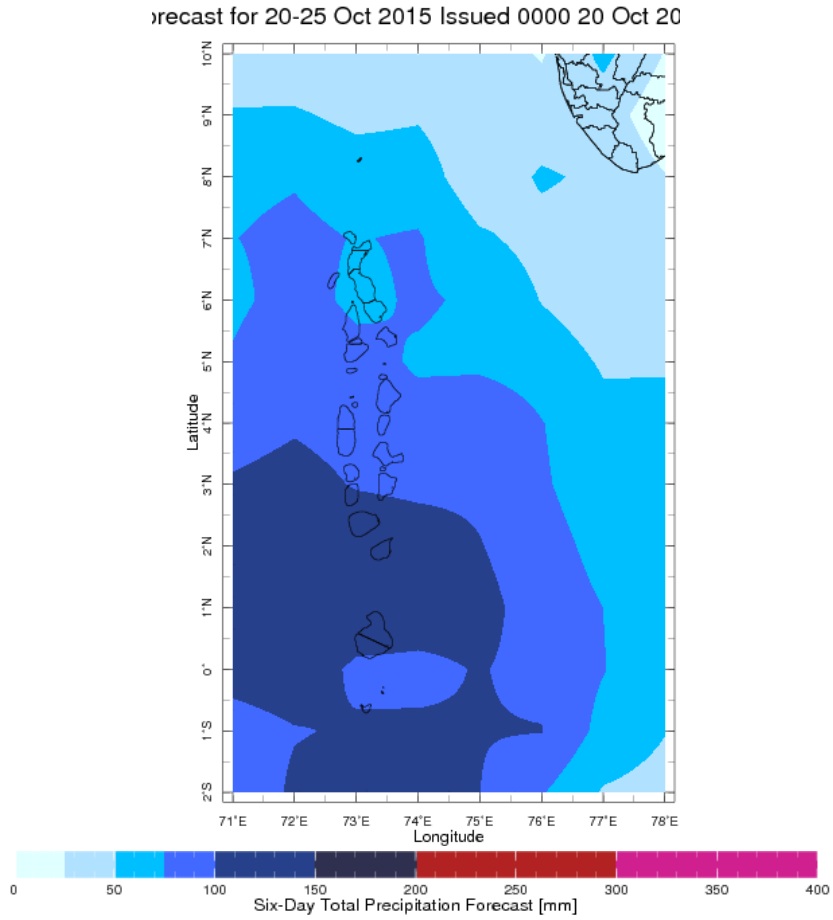
WORLDBATH topography

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.



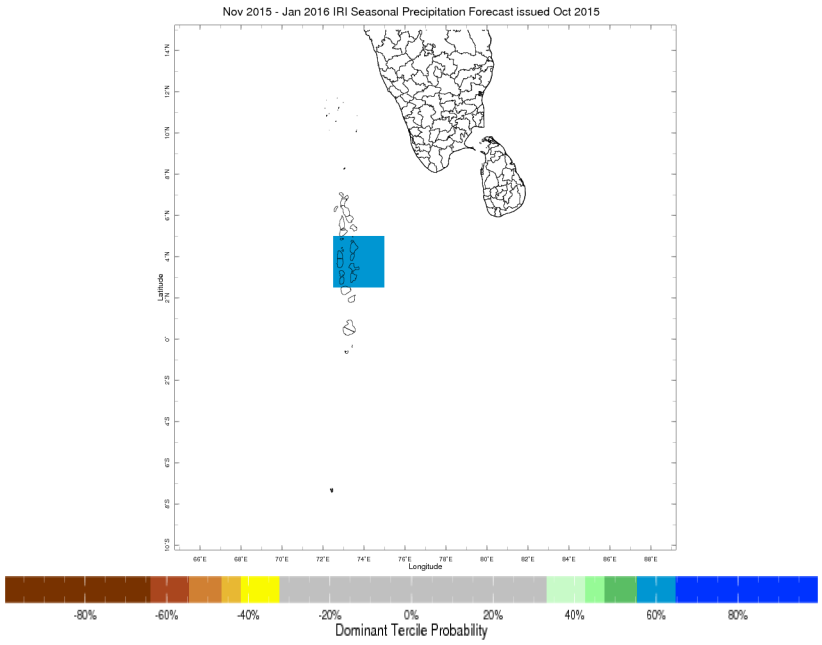
Extreme Rainfall Forecast



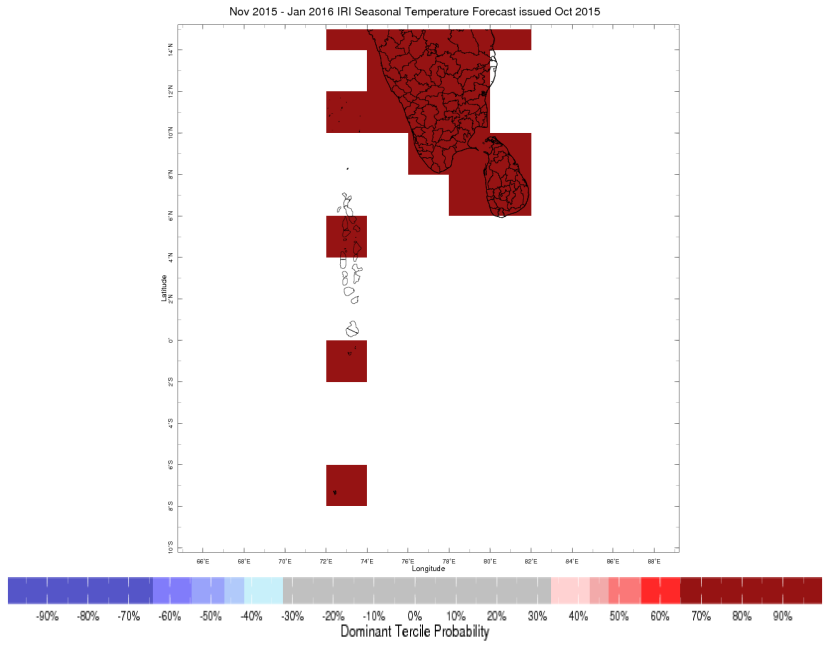
Total Six Day Precipitation Forecast

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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