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Experimental Climate Monitoring and Prediction for the Maldives –June 2013

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

21 June 2013

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PACIFIC SEAS STATE

May 16, 2013

During March through May the observed ENSO conditions remained neutral. Most of the ENSO prediction models indicate a continuation of neutral ENSO into northern autumn. However, a few models, mainly but not exclusively statistical models, call for cooling toward borderline or weak La Nina˜ conditions during the coming northern summer season into the latter part of 2013.

(Text Courtesy IRI)

INDIAN OCEAN STATE

May 22, 2013

The positive anomaly observed during the past couple of months has cooled towards a negative 0.5°C anomaly.

Highlights[2]

The rainfall deficit over the Northern and Central Islands continues to be in excess of 20% during the last 365 days. Recent rainfall events have mitigated this deficit slightly. In Southern islands, a surplus cumulative rainfall compared to the average of last 8 years was observesd for the first time in this year. Highest observed rainfall for this year was observed during April/ May. In Southern Maldives this amount is the highest observed rainfall in these regions in the past 5 years. Seas around Maldives have also cooled down. A negatively anomalous sea surface temperature is observed instead of the positive anomaly which has persisted during the last couple of months.

Summary[2]

CLIMATOLOGY

Monthly Climatology: The climatology refers to the average conditions experienced historically for a given month. Usually the climatology is a good guide to what one may expect in a given month absent other information. The historical average rainfall for the Northern islands is high in July (200-250 mm), higher in August (250- 300 mm) and drops in September & October (100- 200 mm). In the Central islands rainfall is usually moderate (150- 200 mm) during the August – October period. Heavy rainfall is typical for the Southern islands during these four months. The winds over the Northern & Central islands are usually westerly (from West to East) and wind speeds are expected to be high. For Southern islands, low wind speeds are expected for July and August but stronger westerly winds in September and October. A Negative Indian Ocean Dipole and La Nina are emerging (although may die out too) and this usually leads to slightly increases in rainfall over the next 3 months followed by stronger declines from September to Dececember.

MONITORING

Weekly Monitoring: During 14th- 19th May all of Maldives received rainfall. On the 14th rainfall upto 50 mm was observed in Maldives. On the next day less rainfall was observed over Maldives. During the next 4 days high rainfall was observed in Northern islands while the rest of islands received slight rainfall.

Monthly and Seasonal Monitoring: Highest recorded rainfall for this year was reported in Maldives during April/ May. This amount of rainfall for Southern islands is the highest recorded rainfall during the last 5 years in this region. This has helped to reduce the cumulative rainfall deficit in Northern and Central islands and to have surplus cumulative rainfall in Southern islands.

Sea Surface Temperatures and ENSO state: The sea surfaces around Maldives have cooled significantly – the rest of the Indian Ocean shows neutral conditions except that there is a strong warm anomaly in the western Indian Ocean near Sumatra – thus there is an emerging Negative Indian Ocean Dipole. The Pacific Ocean surfaces show a tendency to La Nina but it was not emerged fully as yet. A negative IOD and La Nina usually leads to slightly increases in rainfall over the next 3 months followed by stronger declines from September to Dececember.

PREDICTIONS

Weekly Rainfall Forecast: Extreme rainfall events are not expected during 21st -26th of May.

Seasonal Rainfall and Temperature Prediction: As per IRI Multi Model Probability Forecast for June to August 2013 rainfall shall remain climatological while temperature this season shall be 40- 50% above normal.

Inside this Issue

[1] International Research Institute for Climate and Society.
[2] These interpretations of climatic conditions are an experimental product. Please consult with the Maldives Meteorological Services for advice on interpretation.

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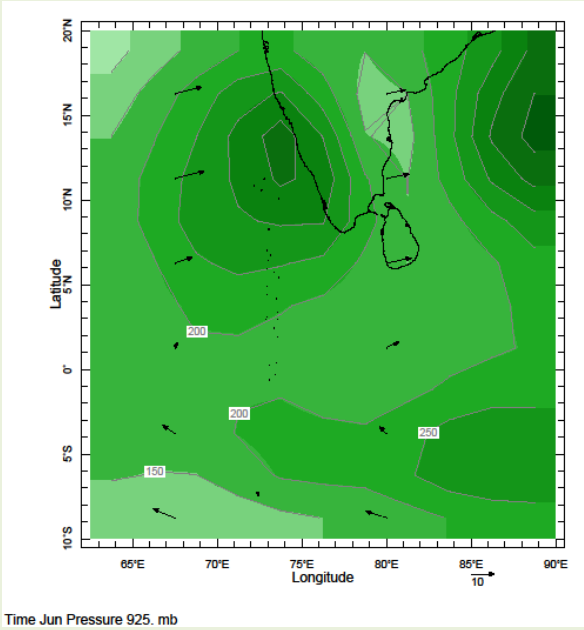
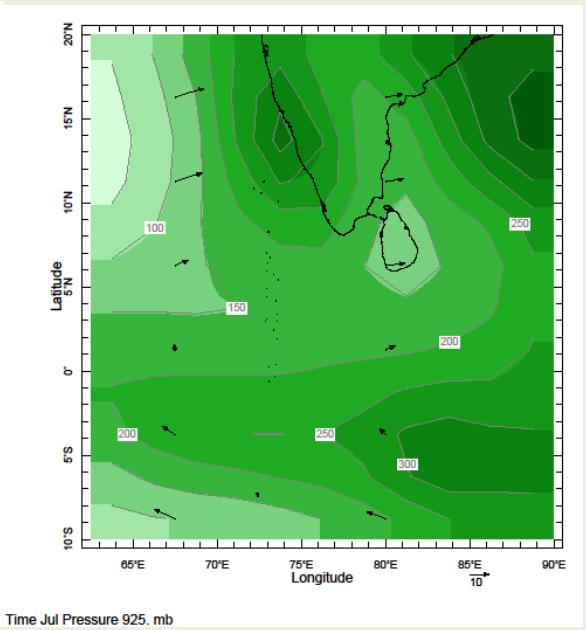
1). Monthly Climatology (CAMS-OPI):

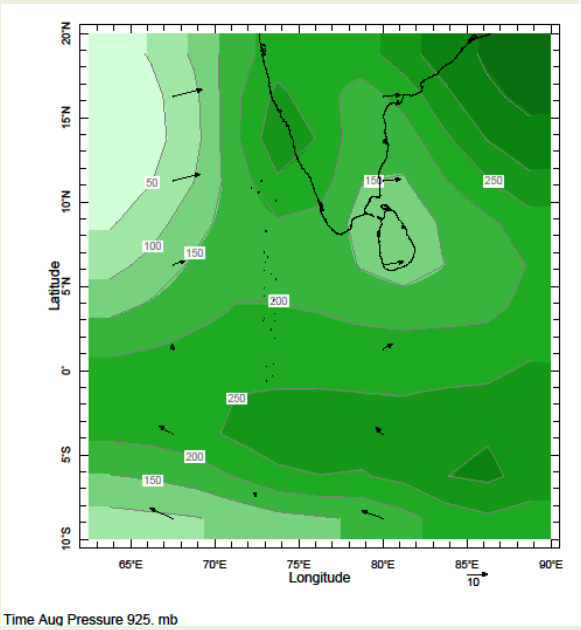
a) Rainfall**: Maps*: ***May, June, July, August (Left-Right)



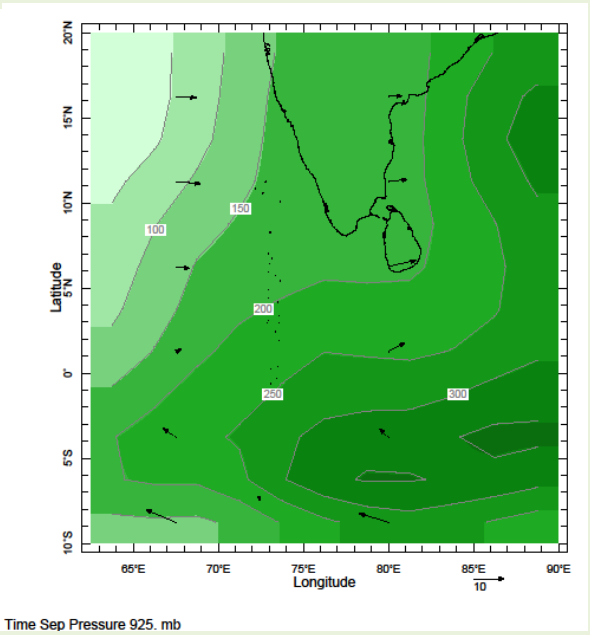
June



July



August



September

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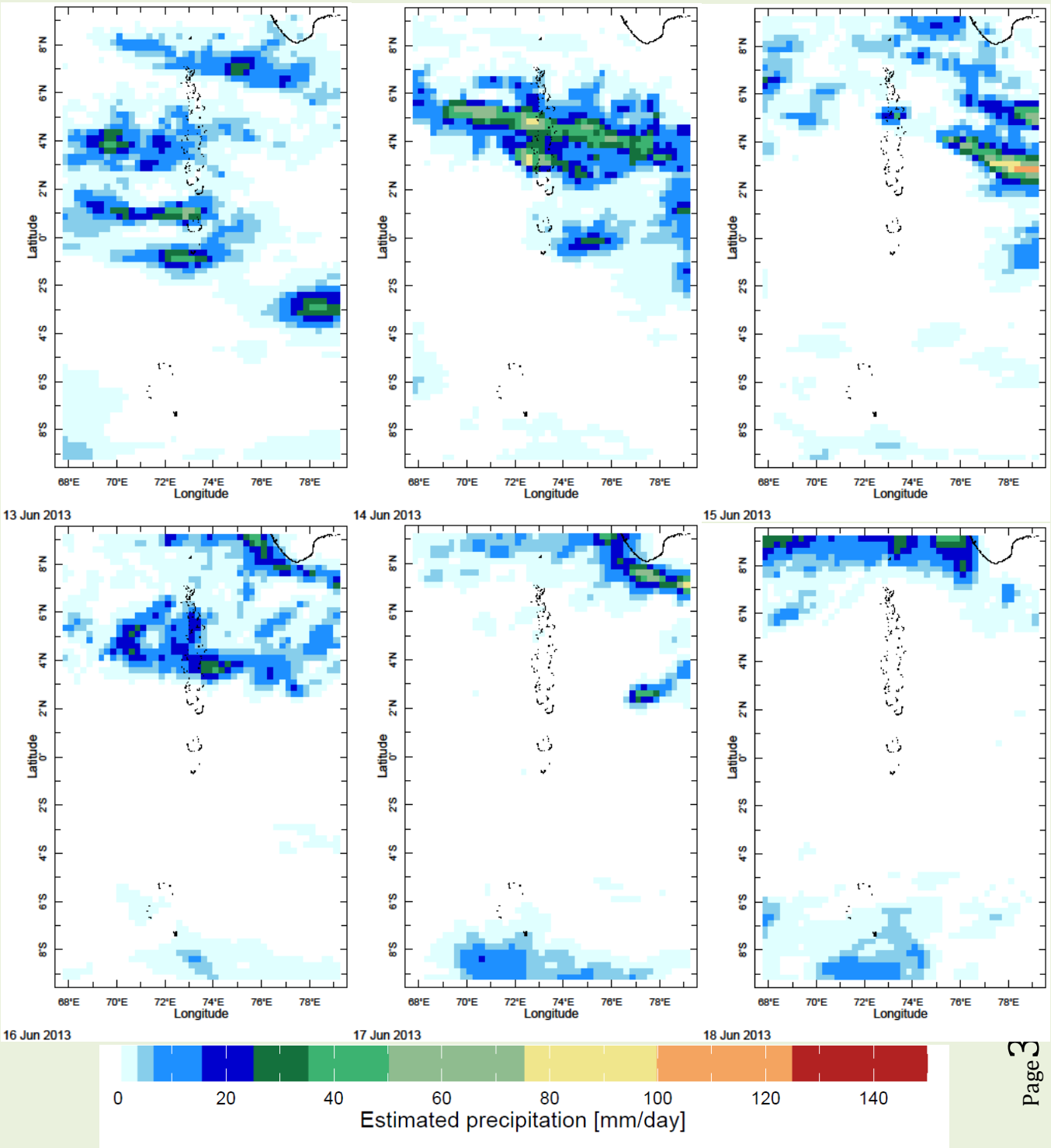
2) Rainfall Monitoring

a) Daily Satellite Derived Rainfall Estimate Maps: *14th- 19th May, 2013 (Left-Right, Top-Bottom)*



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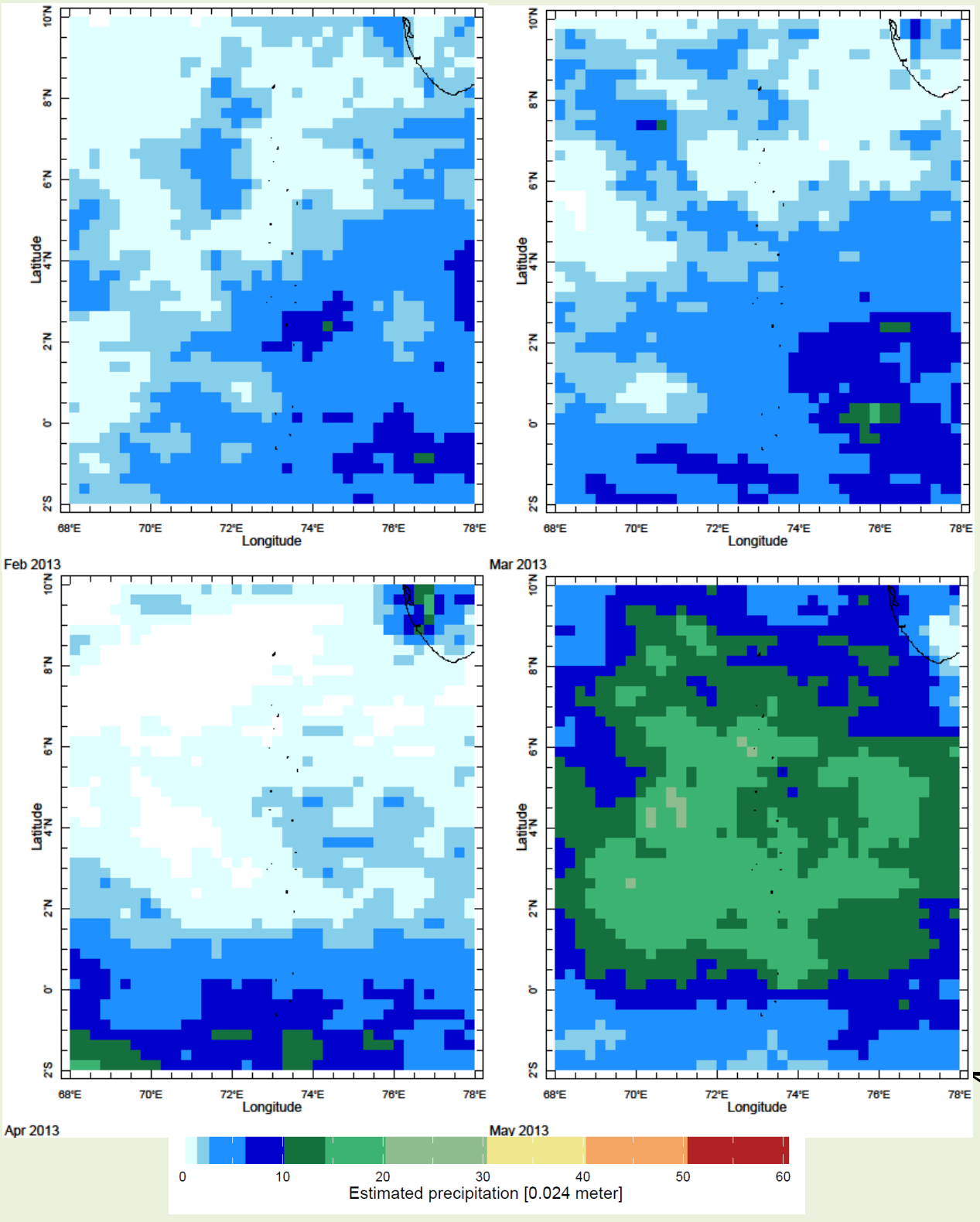
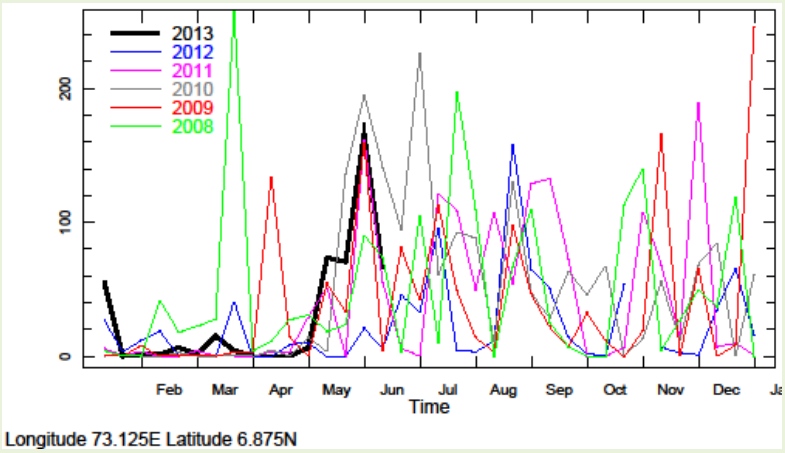
b) Monthly Rainfall **(January- April 2013),** ***Derived from Satellite Rainfall Estimates***



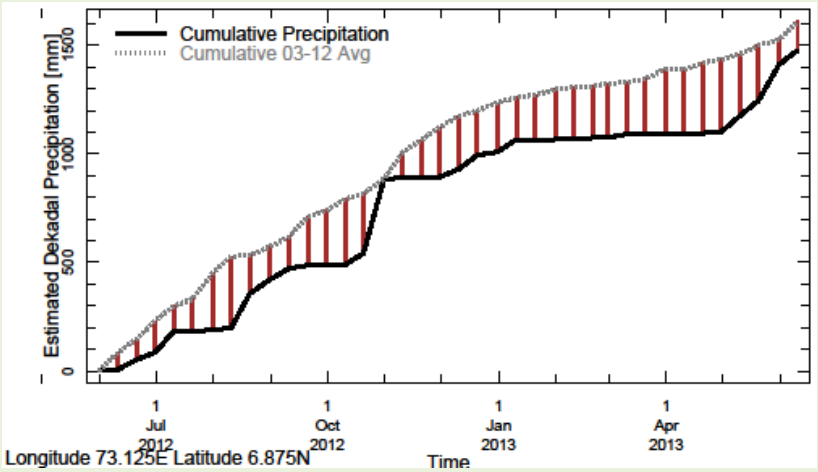
c) Seasonal to Annual Rainfall Monitoring

i) For Northern Maldives

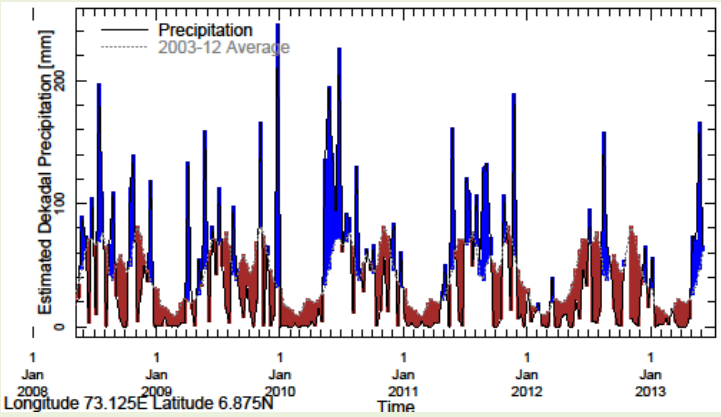
1) Rainfall in 2013 (black) compared to rainfall in previous 5 years



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

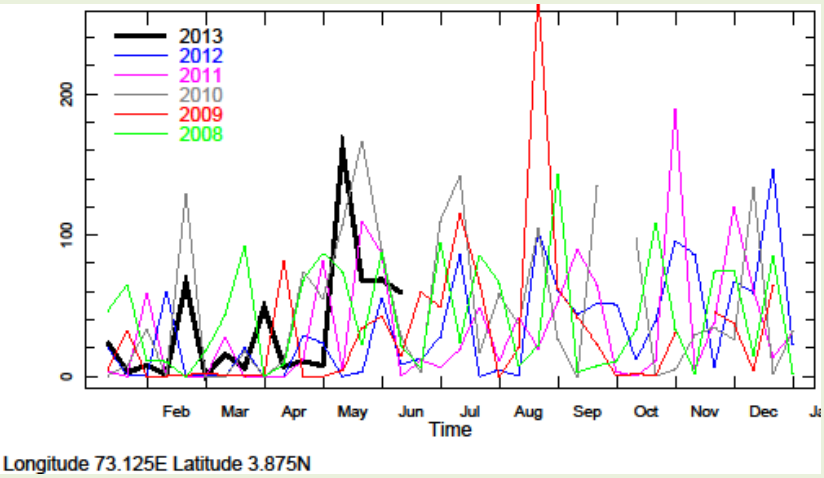


3) Rainfall for the past 5 years with above-average (compared to the last 8 years) hatched in blue and below normal in brown.



ii) For Central Maldives

1) Rainfall in 2013 (black) compared to rainfall in previous 5 years



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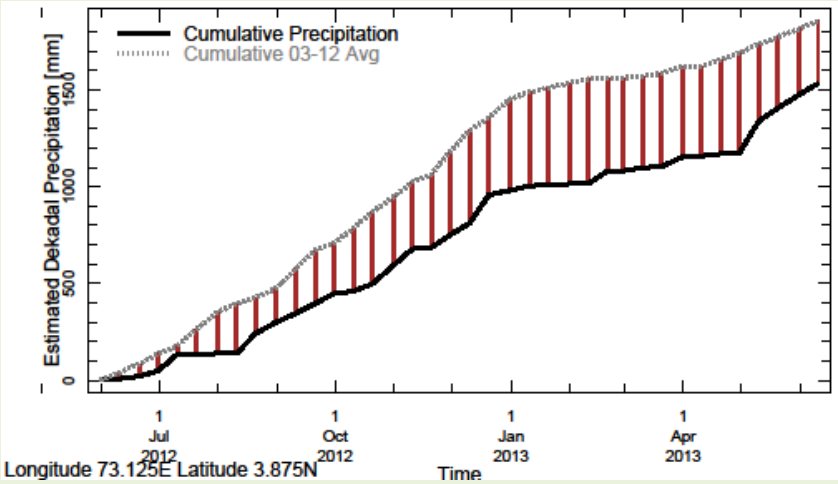
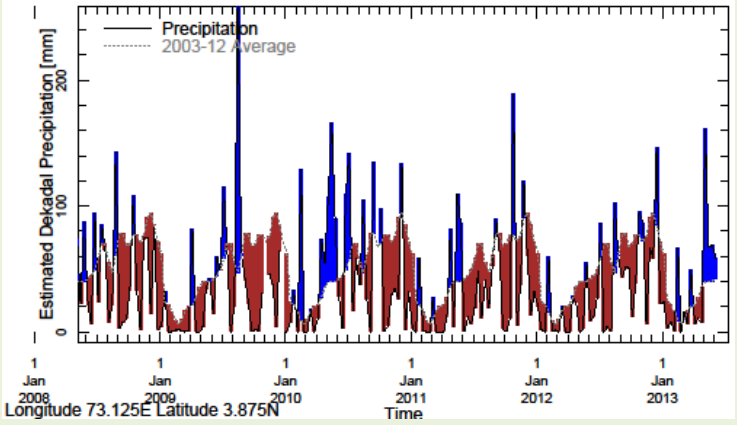
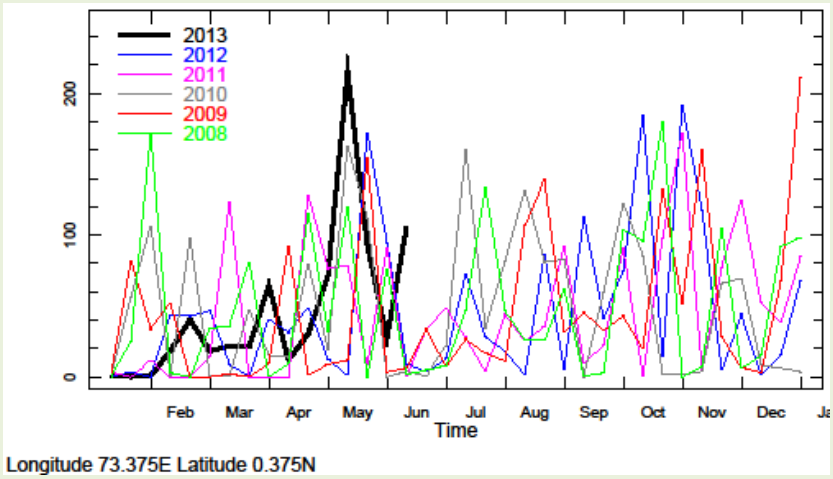


3) Rainfall for the past 5 years with above-average (compared to the last 8 years) hatched in blue and below normal in brown.

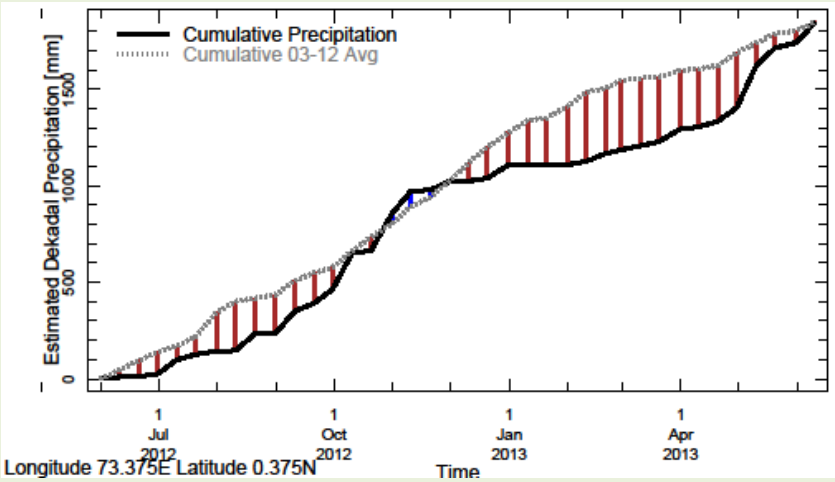


iii) For Southern Maldives

1) Rainfall in 2013 (black) compared to rainfall in previous 5 years



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



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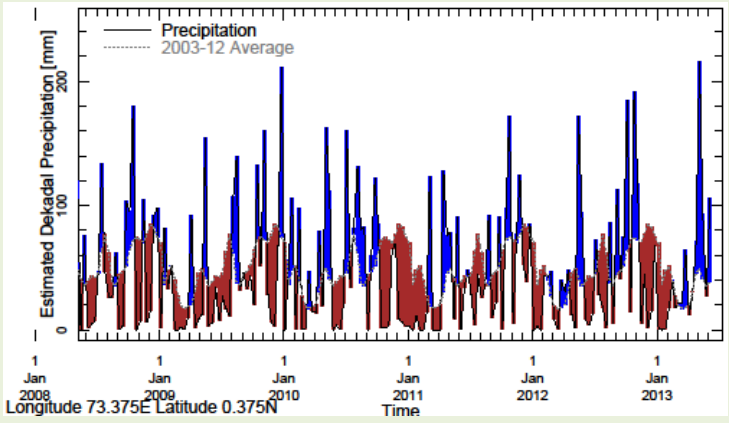
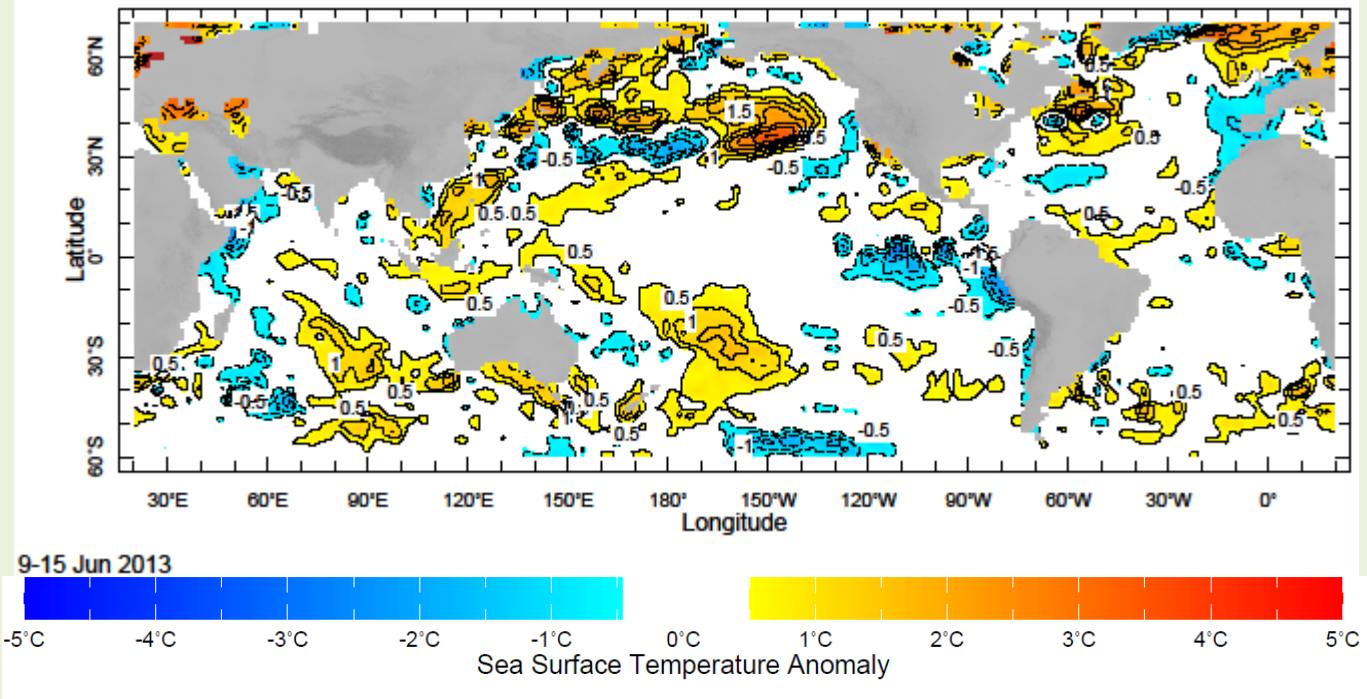


d) Weekly Average SST Anomalies (^{0}C), 12th -18th May, 2013

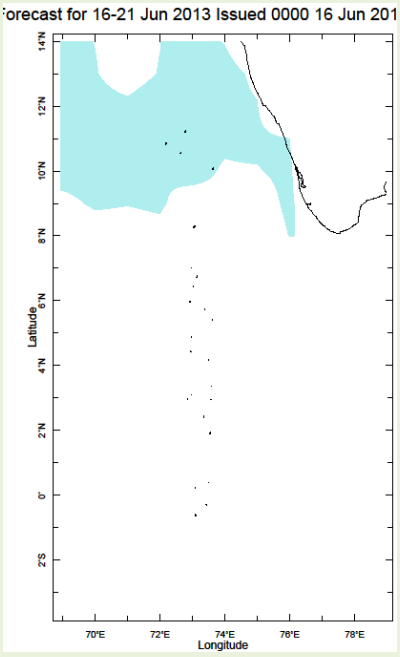


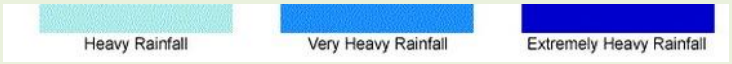
Data Source: NCEP, Environmental Monitoring Center

Base Period of Climatology: 1971- 2000

3). Predictions

a) Weekly Precipitation Forecast for 21st – 26th May, 2013: Issued 21st May, 2013





b) Seasonal Rainfall and Temperature Predictions from IRI