2 FEBRUARY 2024

CLIMATE MONITORING AND PREDICTION FOR SRI LANKA

HIGHLIGHTS

Rainfall Prediction

- *High likelihood of very heavy rainfall (> 100 mm) is predicted for Eastern province, fairly heavy rainfall (50 - 100 mm) is predicted for Uva, Central provinces and less rainfall (≤ 35 mm) is predicted for the rest during 31 Jan - 6 Feb.*

Monitored Rainfalls

- *Rainfall on 28 reached peak (86.5 mm) at Kurundu Oya (CP).*
- *During the last week, average daily rainfall was 2.8 mm and hydro catchment was 6.1 mm.*

Monitored & Predicted Wind

- *Winds at 850mb (1.5 km) were north easterly from 22 - 28 Jan reaching up to 10 m/s.*
- *Winds at 850mb (1.5 km) are predicted north easterly from 1 - 7 Feb reaching up to 6 m/s.*

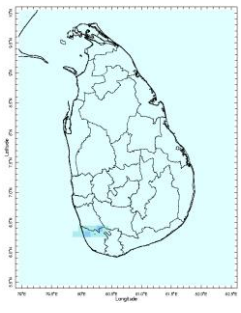
Monitored Sea & Land Temp

- *Sea surface temperature around Sri Lanka was 0.5 - 1.0°C above normal.*
- *Strong EL Nino and positive indian ocean dipole patterns sustained.*
- *Maximum daily temperature was in Ratnapura (35.1°C), and Ratmalana (34.1°C).*

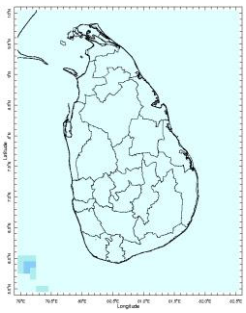
Monitoring

Rainfall

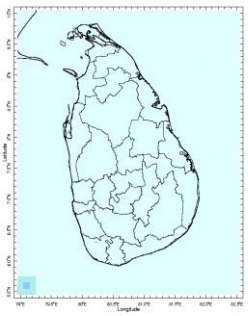
Daily Estimates for Rainfall from 22nd January - 29th January 2024



22 January



23 January



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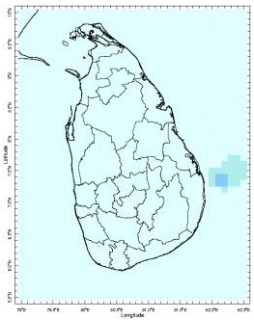
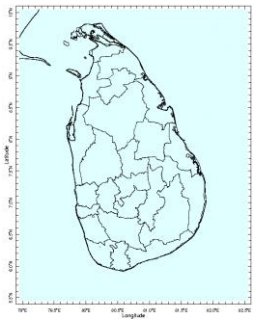
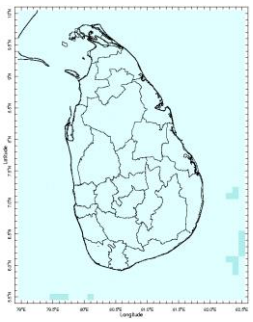


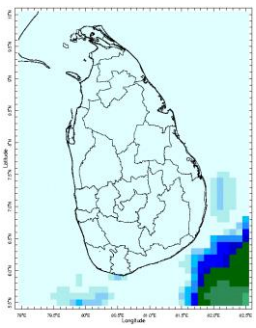
25 January



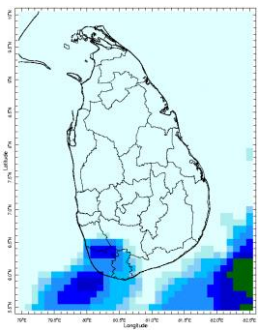
26 January



27 January



28 January



29 January

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Ocean State *(Text Courtesy IRI)*

Pacific sea state: January 29, 2024

The SST Anomalies for the NINO3.4 region shows a +1.7 ^{o}C on the week ending 29th Jan - thus a strong El Nino is sustained. Consensus of models predict a continuation of the El Niño event until May 2024 before weakening thereafter.

Indian Ocean State

Sea surface temperature around Sri Lanka was 0.5℃ above normal to the country in 9th - 15th January 2024. A positive Dipole Mode has set in across the Indian Ocean since 8th of June.

Predictions

Rainfall

7 Day prediction: NCEP GFS models

From 31st January - 6th February:

Total rainfall by Provinces:

Rainfall (mm)	Provinces
115	Eastern
65	Uva
55	Central
35	Southern, Northern, North Central
25	Sabaragamuwa, North Western
≤ 15	Western

MJO based OLR predictions

For the next 15 days:

MJO shall moderately suppress the rainfall during 31st January - 4th February, near normal the rainfall during 5th - 9th February, and moderately enhance the rainfall during 10th - 14th February for Sri Lanka.

Interpretation

Monitoring

Rainfall: During the last two weeks, there had been fairly heavy rainfall over the following areas: Kurundu Oya, Poddiwela.

Daily Average Rainfall in the Met stations for previous week of (24th January - 31st January) = 2.8 mm
Maximum Daily Rainfall: 41.4 mm & Minimum Daily Rainfall: 0.0 mm.

Region	Average rainfall for last 8 days (mm)	Average temperature for last 8 days (℃)	
		Maximum	Minimum
Northern plains	1.6	30.6	23.6
Eastern hills	5.6	24.6	17.0
Eastern plains	3.8	30.4	23.5
Western hills	6.7	28.3	17.7

Western plains	0.8	32.3	23.9
Southern plains	0.1	32.0	23.7

Region	Average rainfall for last 8 days (mm)	Daily maximum rainfall for last 8 days (mm)	Daily minimum rainfall for last 8 days (mm)
Hydro catchment	6.1	125.0	0.0

Wind: North easterly winds prevailed in the sea area and around the island last week.

Temperatures: The temperature anomalies were above normal for some parts of the Central, Western, Southern, Northern, Sabaragamuwa, and North Western provinces of the country driven by the warm SST's.

Predictions

Rainfall: During the next week (31th January - 6th February), heavy rainfall is predicted for the Eastern province, fairly heavy rainfall is predicted for the Uva and Central provinces, and less rainfall is predicted for rest of the country.

Temperatures: The temperature will remain above normal for some parts of the North Western, North Central provinces during 1st - 7th February.

Teleconnections: A positive Dipole Mode has set in across the Indian Ocean since 8th of June.

MJO shall moderately suppress the rainfall during 31st January - 4th February, near normal the rainfall during 5th - 9th February, and moderately enhance the rainfall during 10th - 14th February for Sri Lanka.

Seasonal Precipitation: The precipitation forecast for the February-March-April, 2024 season shows near normal precipitation.

Terminology for Rainfall Ranges

	Rainfall
Light Showers	Less than 12.5 mm
Light to Moderate	Between 12.5 mm and 25 mm
Moderate	Between 25 mm and 50 mm
Fairly Heavy	Between 50 mm and 100 mm
Heavy	Between 100 mm and 150 mm
Very Heavy	More than 150 mm

Tropical Climate Guarantee, Federation of Environment, Climate and Technology, Columbia University Water Center, [1] International Research Institute for Climate and Society, Earth Institute at Columbia University, New York.

Federation for Environment, Climate & Technology

FEDERATION FOR ENVIRONMENT, CLIMATE AND TECHNOLOGY

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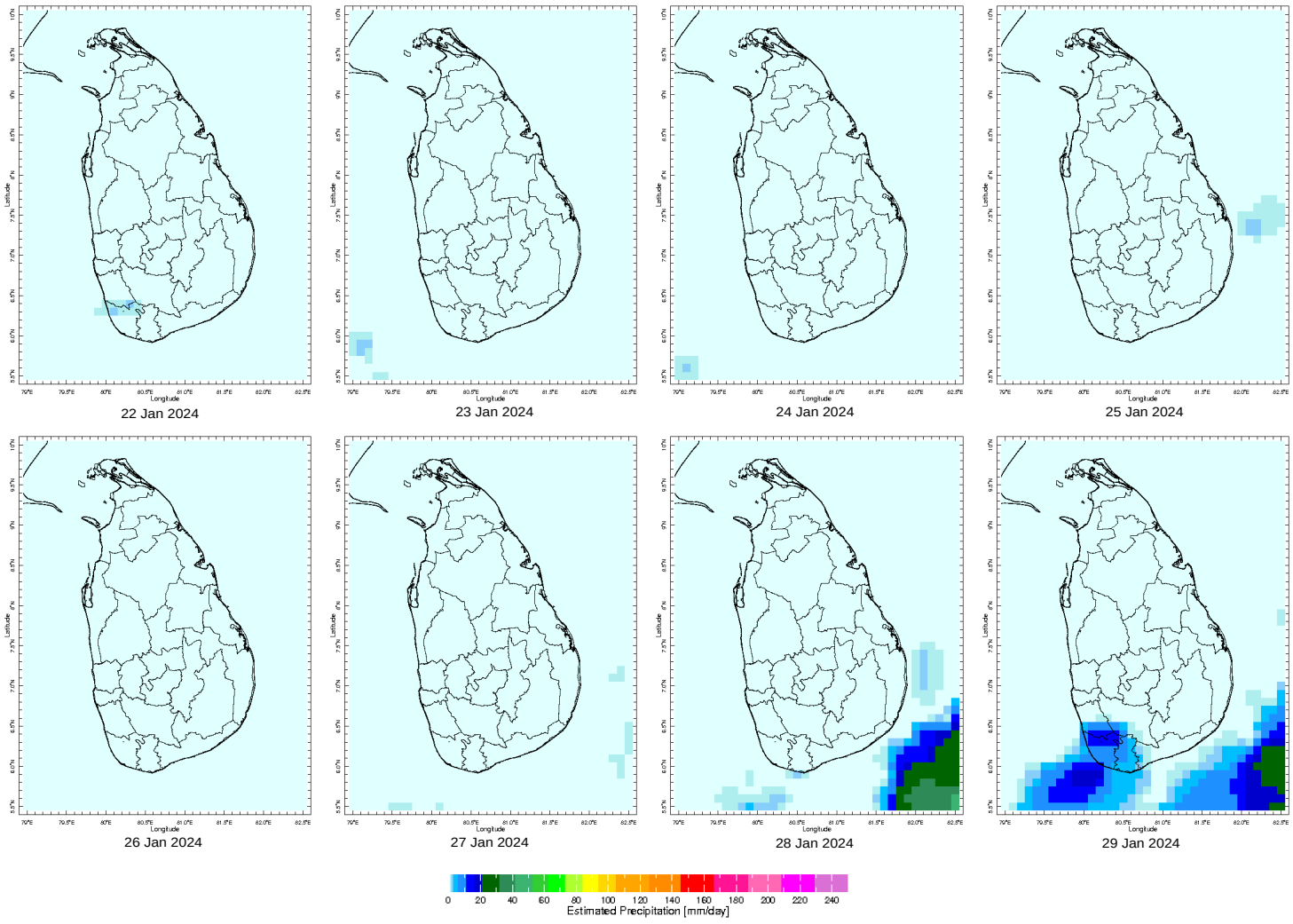
Weekly Climate Bulletin for Sri Lanka

Inside This Issue

MONITORING

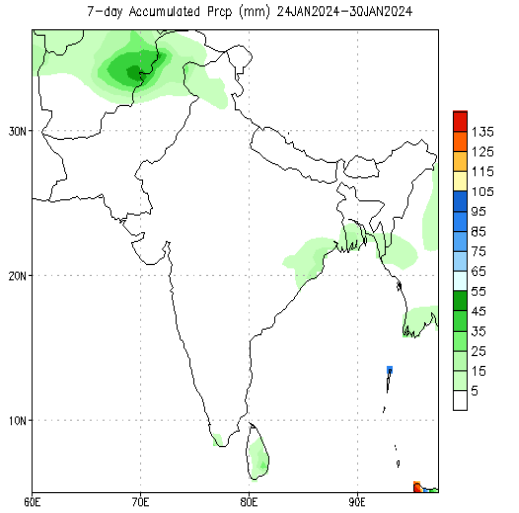
Daily Rainfall Monitoring

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

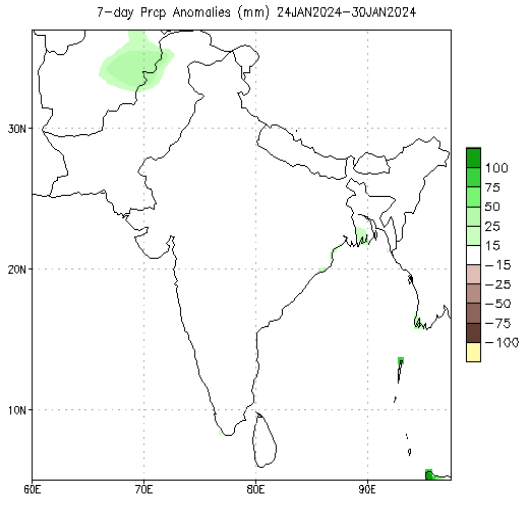


Weekly Rainfall Monitoring

The following figures show the total satellite observed rainfall in the last week in Sri Lanka. The figure in the left is the total 7-day rainfall from NOAA Climate Prediction Center (CPC) Unified Precipitation Analysis and the figure in the right is the total 7-day rainfall from CPC RFE 2.0 Satellite Rainfall Estimates. The bottom two figures are the respective anomalies.



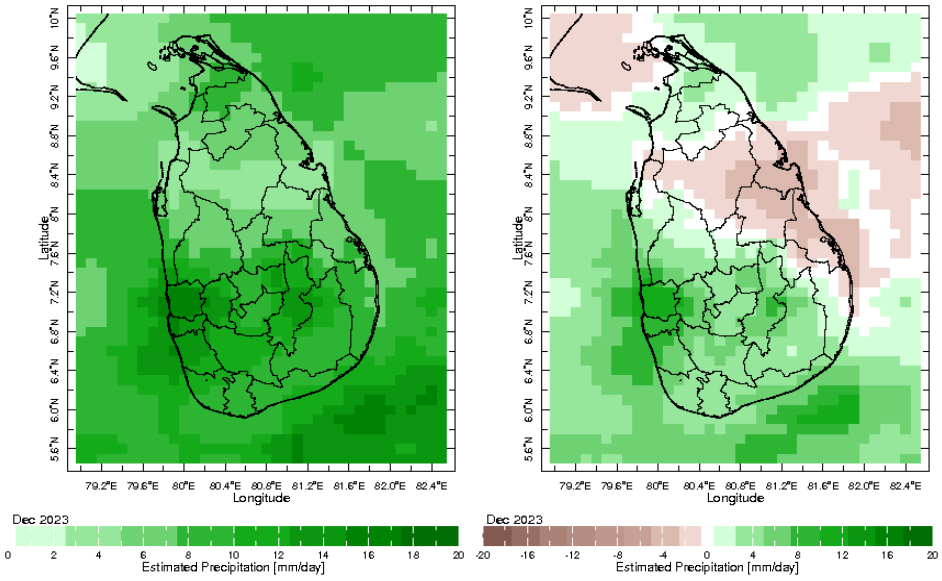
Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis



Data Source: CPC Unified (gauge-based & 0.5x0.5 deg resolution) Precipitation Analysis Climatology (1991-2020)

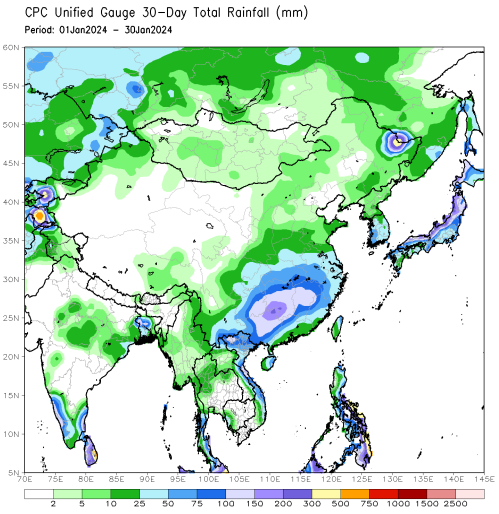
Monthly Rainfall Monitoring

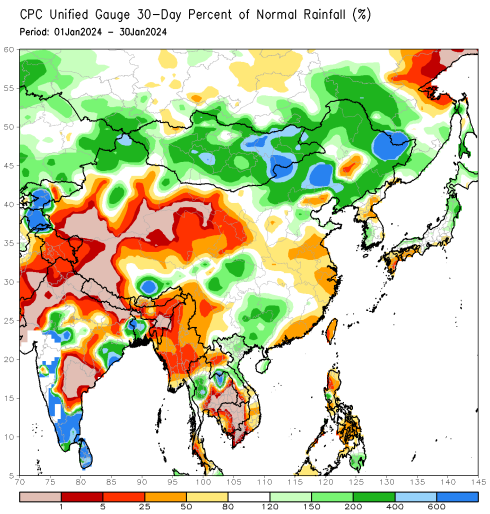
The figure in the left shows the average observed rainfall in the previous month. The rainfall anomaly in the previous month is shown in the figure to the right. The brown color in the anomaly figure shows places which received less rainfall than the historical average while the green color shows places with above average rainfall. Darker shades show higher magnitudes in rainfall



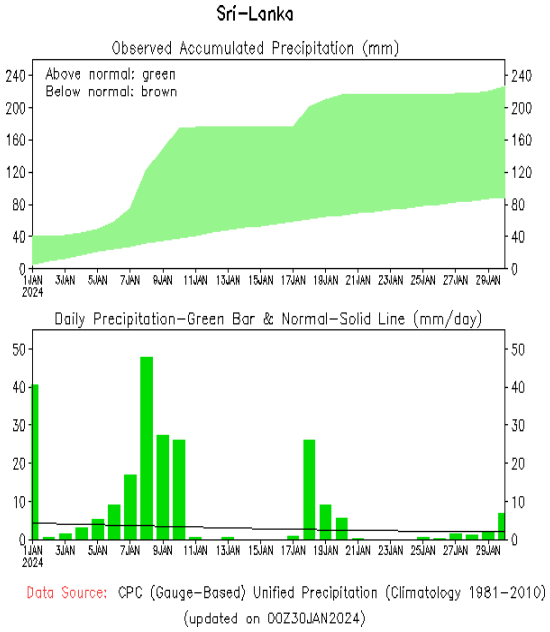
A
Monthly verage **Monthly Anomaly**

The figure in the top-left shows the total rainfall in the past 30 days from CPC Unified Precipitation Analysis while the figure in the top-right shows the total rainfall for the same period from RFE 2.0 Satellite Rainfall Estimates. The bottom two figures show the percentage of rainfall received in the past 30 days compared to normal rainfall in this period.

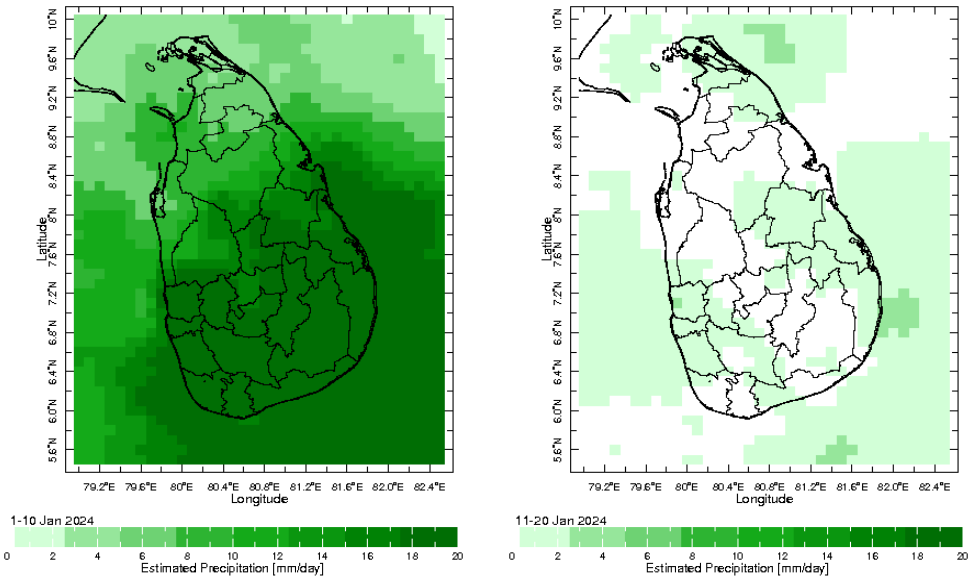




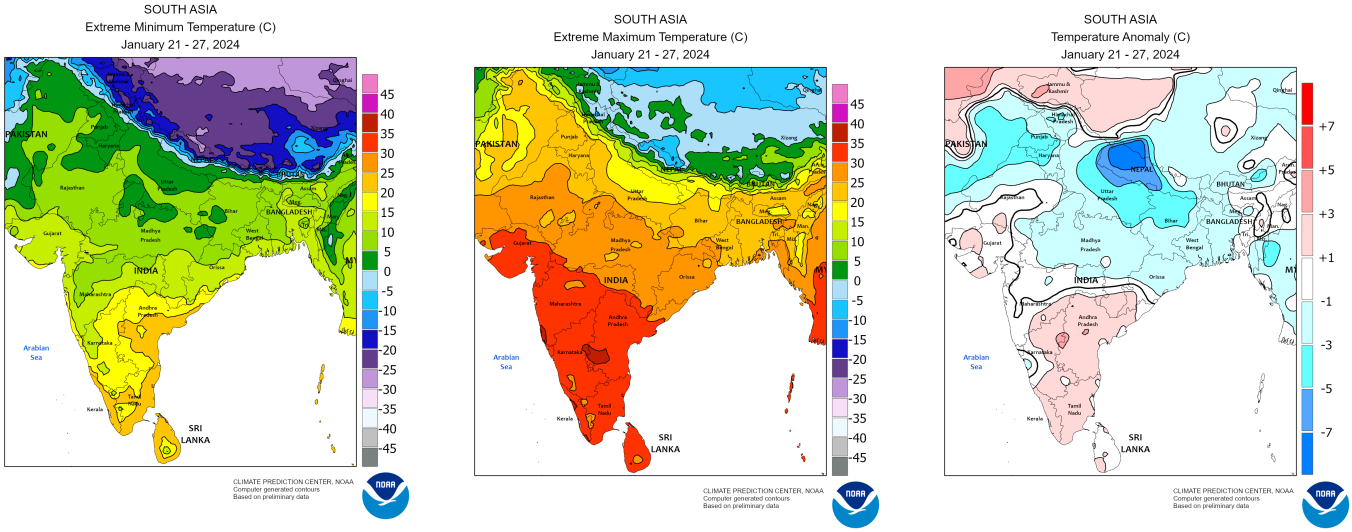
The following figure shows the observed accumulated rainfall (top) and daily observed rainfall (bottom) in Sri Lanka in the last 30 days.



Dekadal (10 Day) Satellite Derived Rainfall Estimates

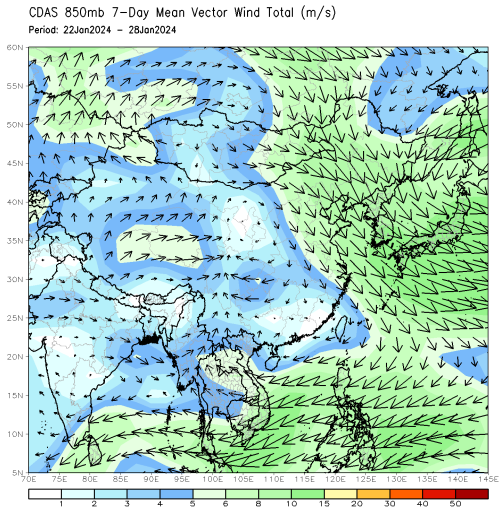


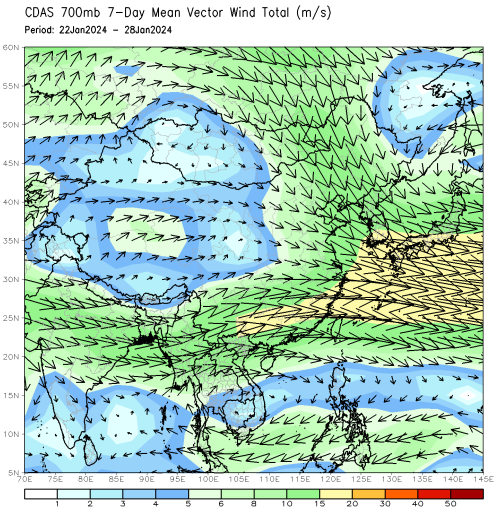
Weekly Temperature Monitoring



Weekly Wind Monitoring

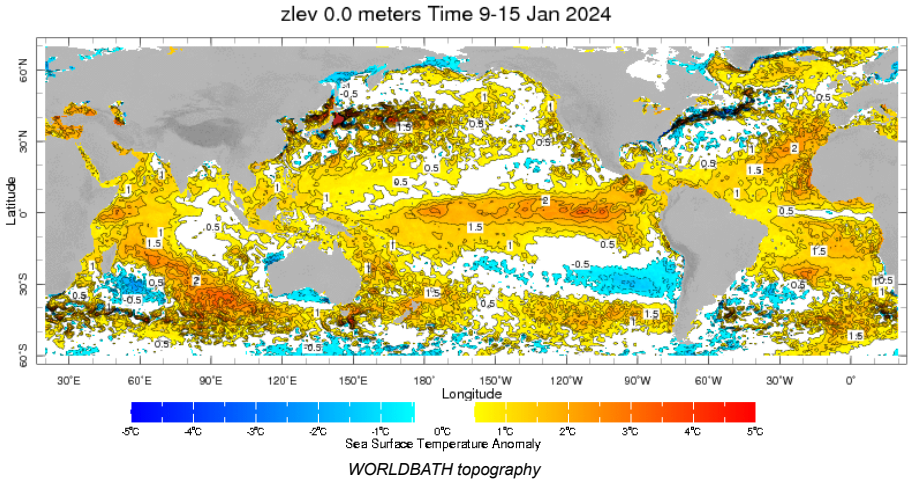
The following figures show the mean vector wind total of the past 7 days near Sri Lanka at two levels. The figure on the left shows 850 mb (~1500 m) level and the figure on the right shows 700 mb (~3000 m) level.



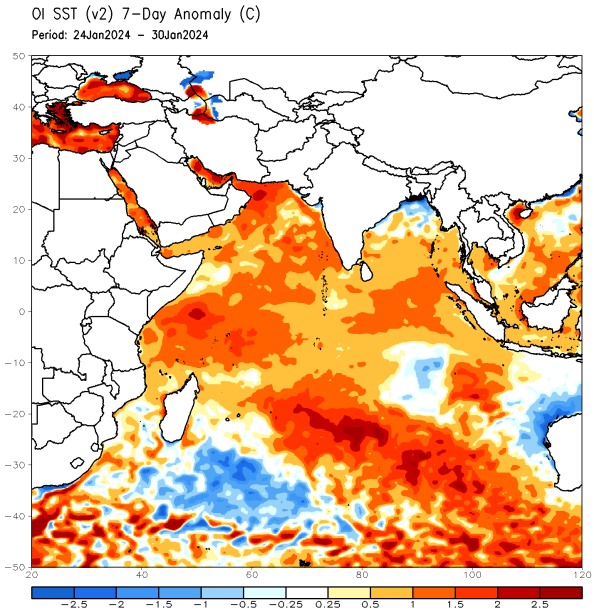


Weekly Average SST Anomalies

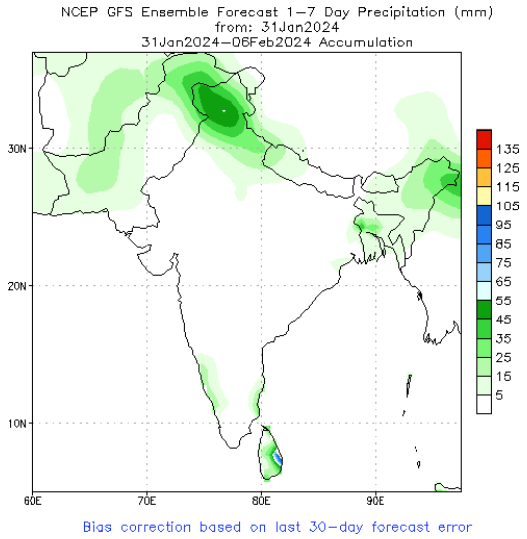
Weekly average Sea Surface Temperature (SST) anomaly in the world from NOAA NCEP

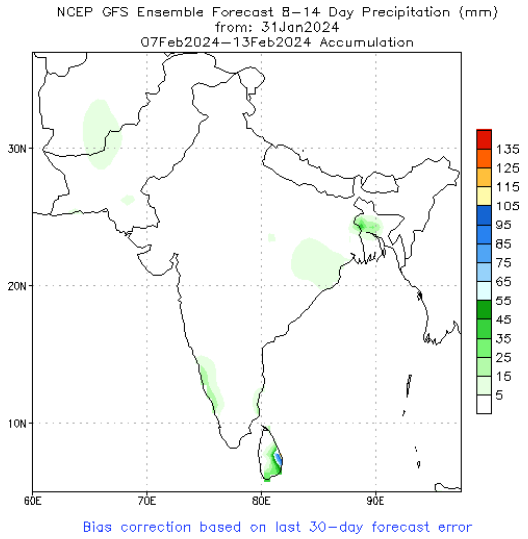


Optimum Interpolated Sea Surface Temperature Anomaly in the Indian Ocean from NOAA CPC

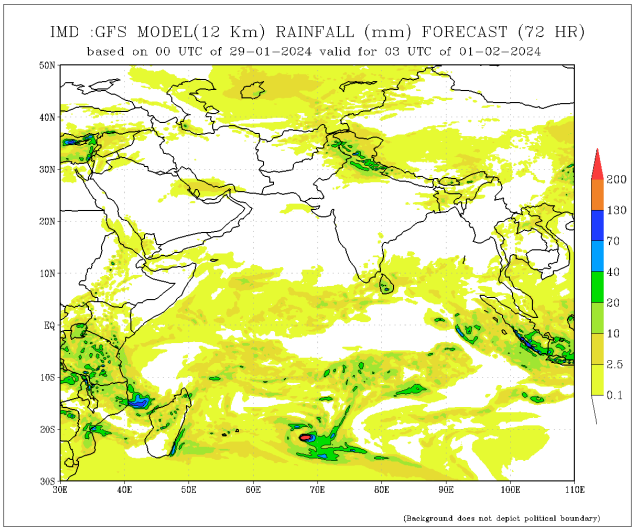


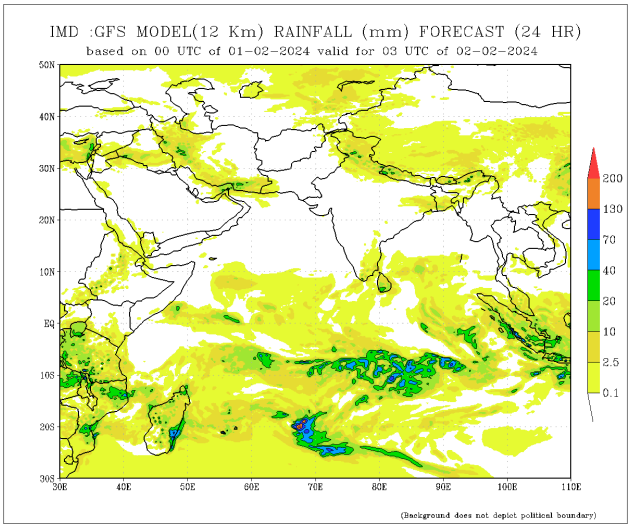
NCEP GFS 1- 14 Day prediction

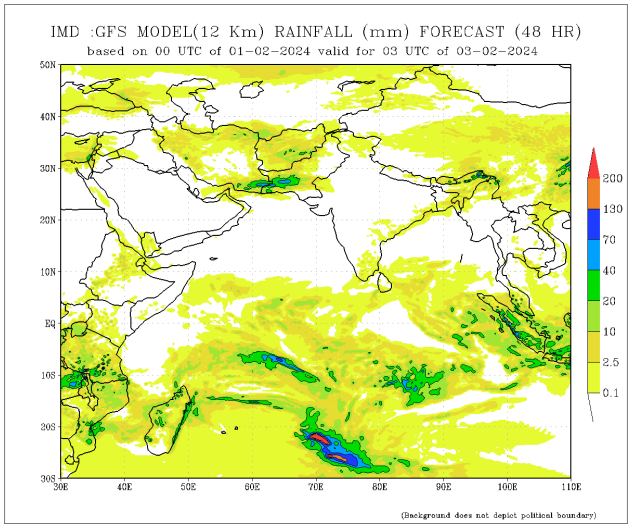


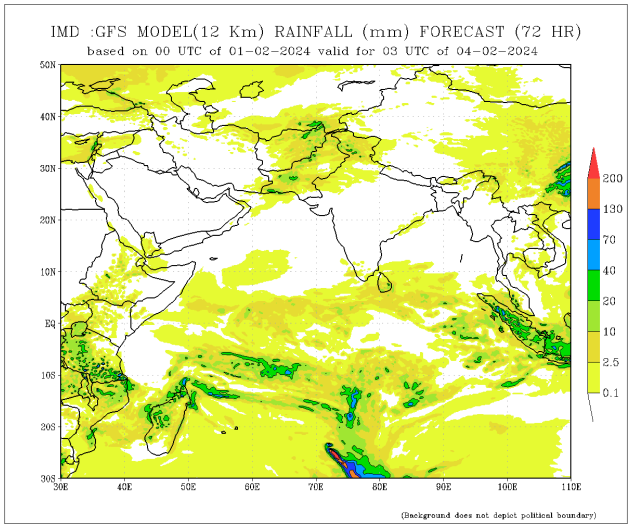


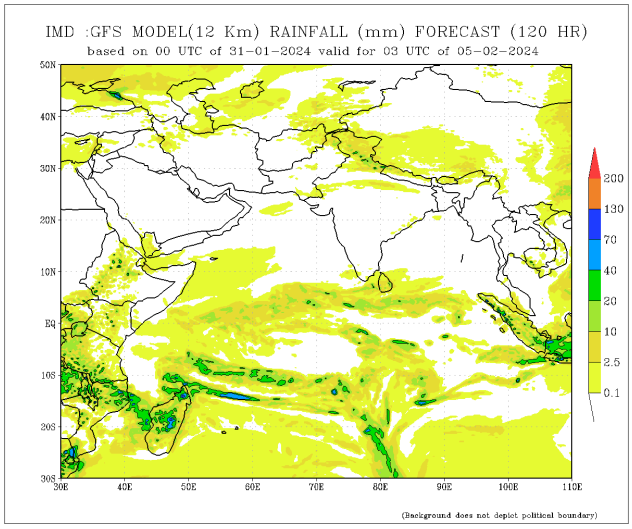
IMD GFS (T574) Model Rainfall Forecast from RMSC New Delhi, India

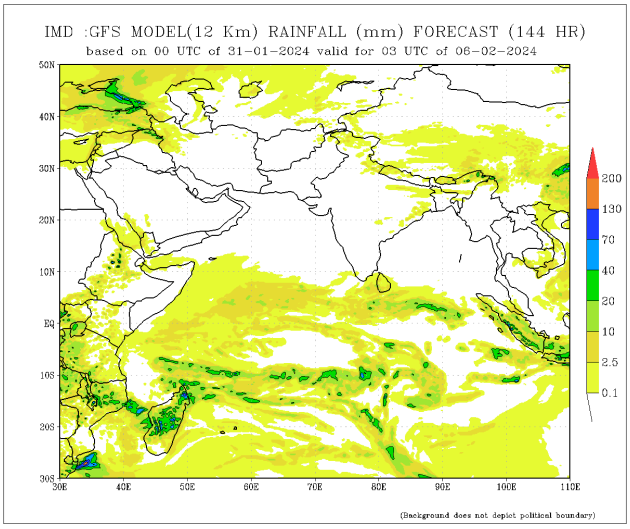


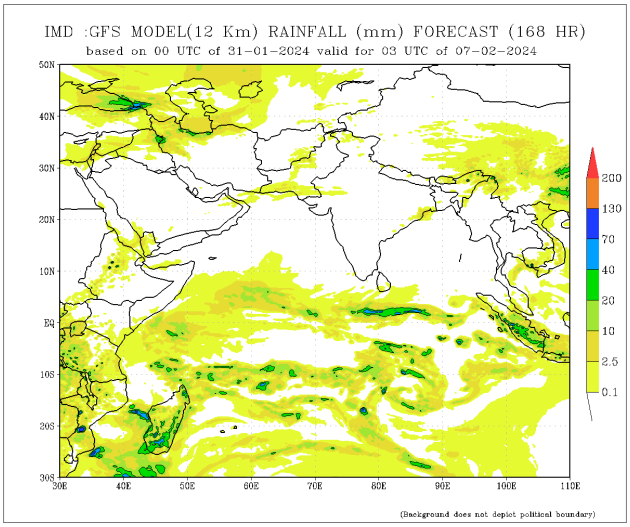






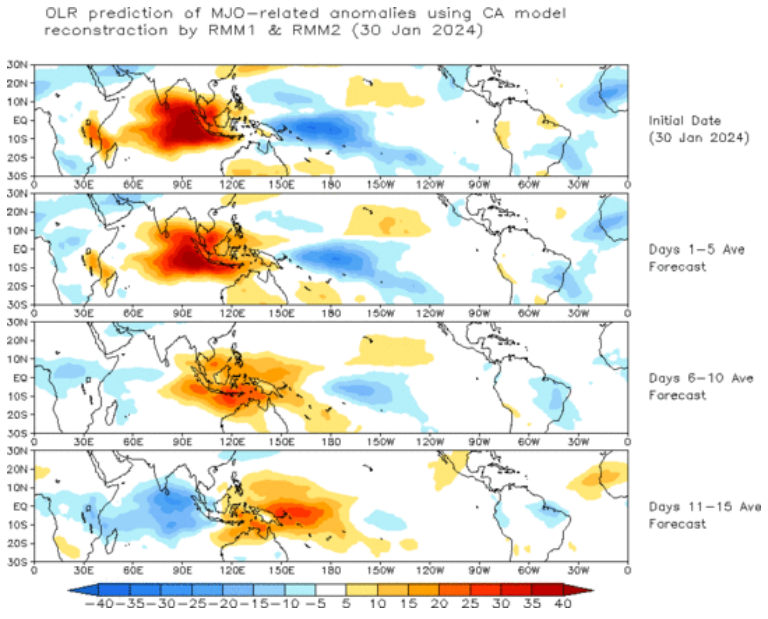






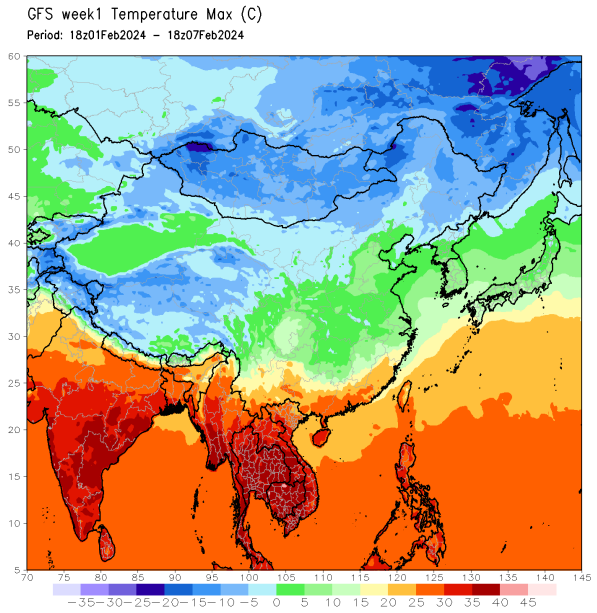
Madden Julian Oscillation (MJO) related Outgoing Longwave Radiation (OLR) Forecast

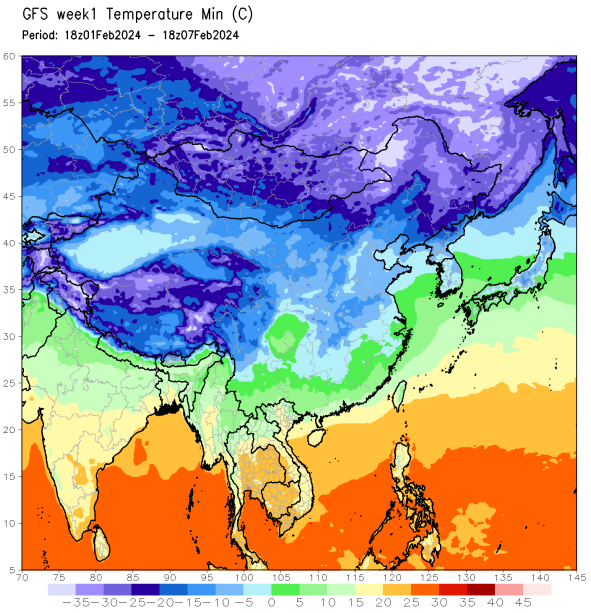
The Outgoing Longwave Radiation (OLR) is a proxy for rainfall. This can be used to identify convective rain clouds based on the MJO phase. Violet and Blue shading indicates enhanced tropical weather and Orange shading indicates suppressed conditions. The following figure shows the forecasts of MJO associated anomolous OLR for the next 15 days from the Constructed Analogue (CA) model forecasts.



Weekly Temperature Forecast

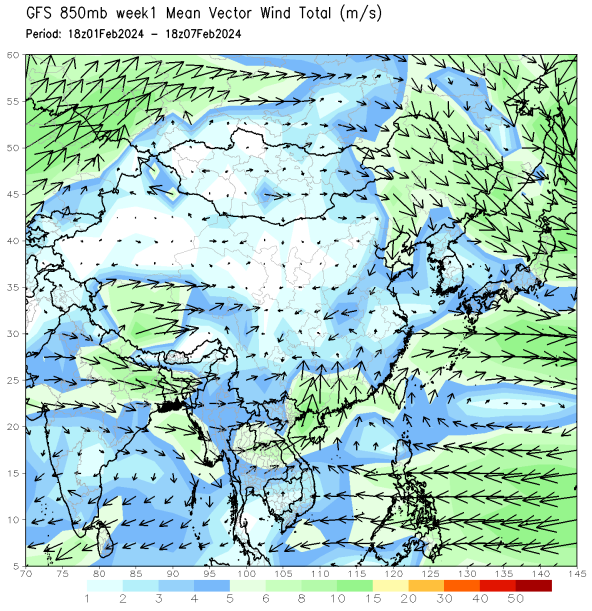
Weekly Minimum and Maximum Temperature prediction from the GFS model (from NOAA CPC)

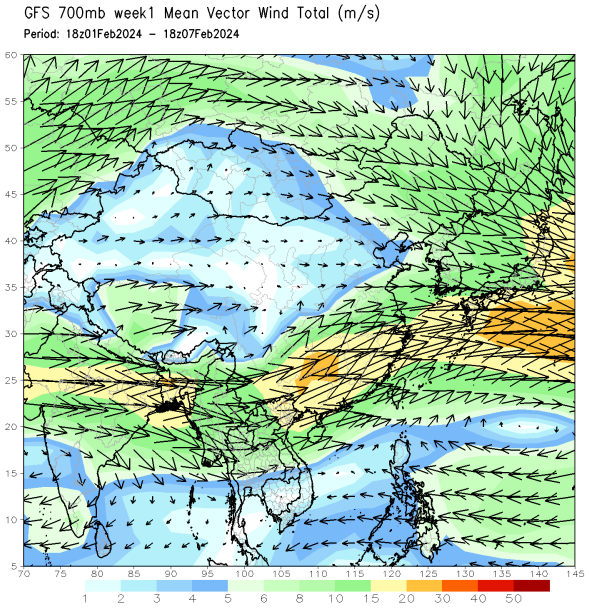




Weekly Wind Forecast

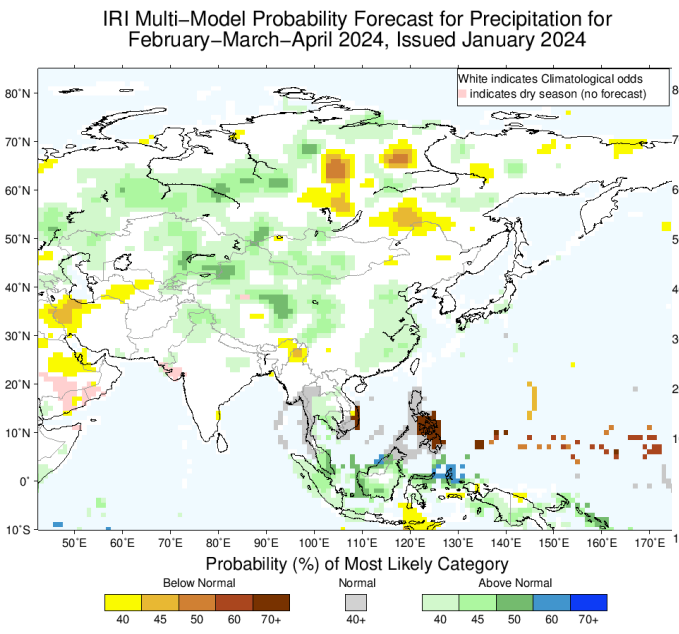
Weekly mean vector wind total prediction from the GFS model at 850 mb (left) and 700 mb (right) levels. (from NOAA CPC)



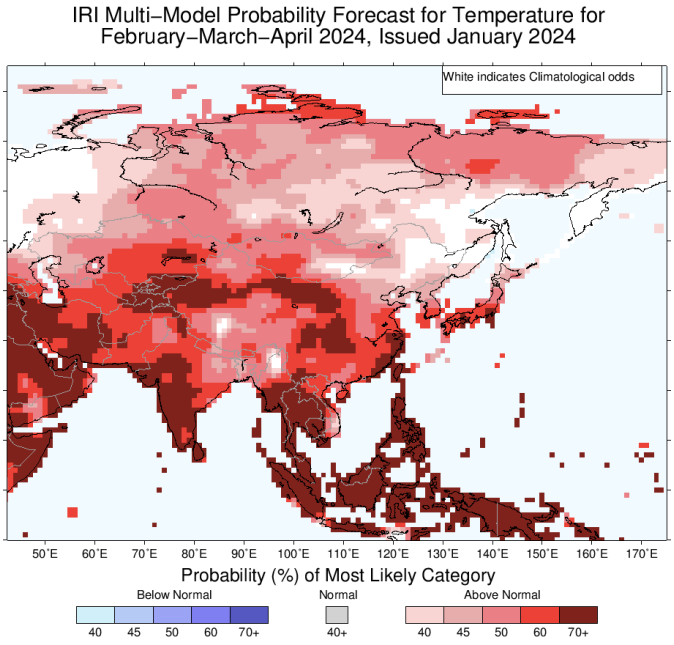


Seasonal Rainfall and Temperature Forecast

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

About Us

FECT is a federation of 7 organizations registered in four countries which works in countries across the Indian Ocean Islands and its littoral. Over the last 20years, we have had operations in Africa, South Asia,South-East Asia but now it is mostly in the IndianOcean Islands.

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