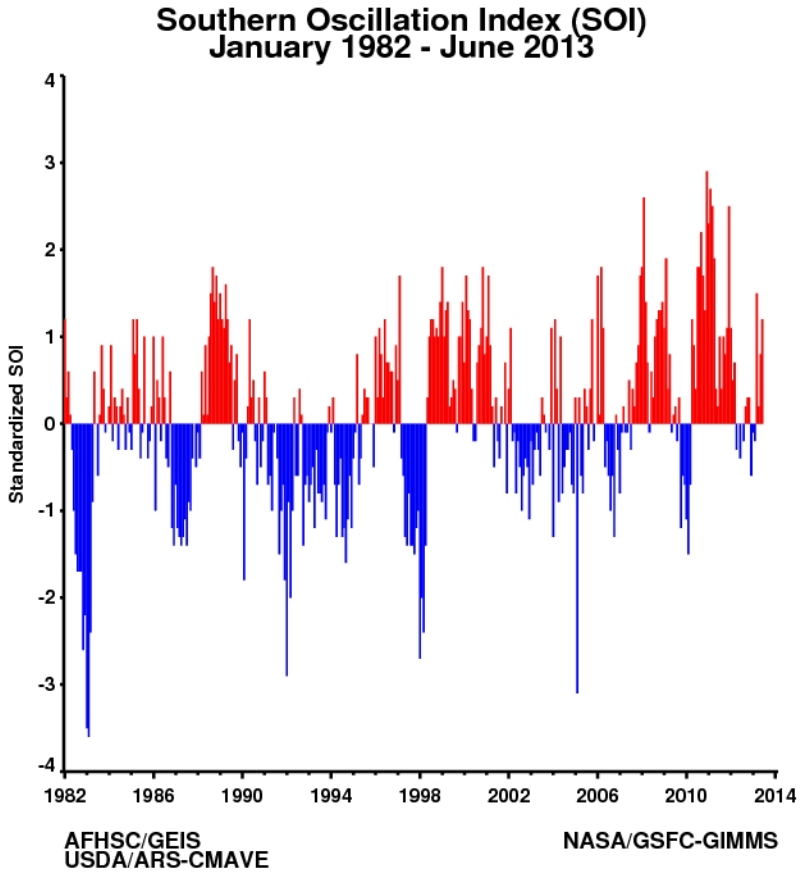
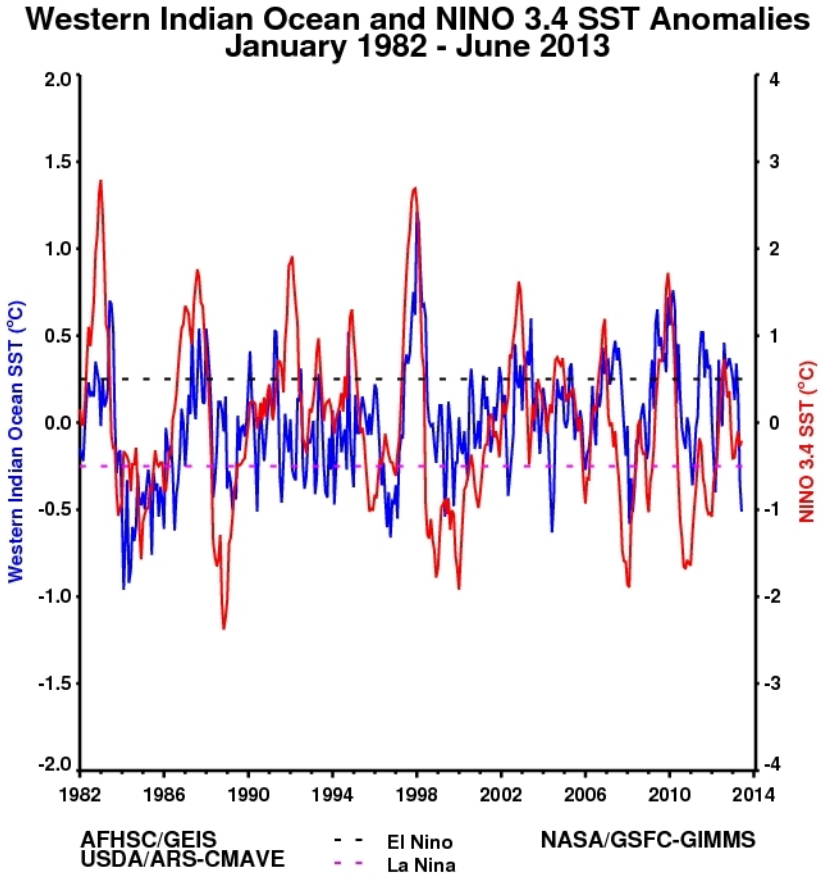
This section of the report will provide a rolling three month update on a monthly basis of the state of the climatic and ecological indicators used in monitoring areas at risk to RVF activity. These indicators include, global SST anomalies patterns, Equatorial Western Indian Ocean (WIO) and Eastern Pacific Ocean (EPO: NINO 3.4) SST anomalies, Southern Oscillation Index (SOI) and Outgoing Longwave Radiation (OLR) anomalies, Rainfall and anomalies, Normalized Difference Vegetation index anomalies and RVF risk map for Africa and the Arabian Peninsula.

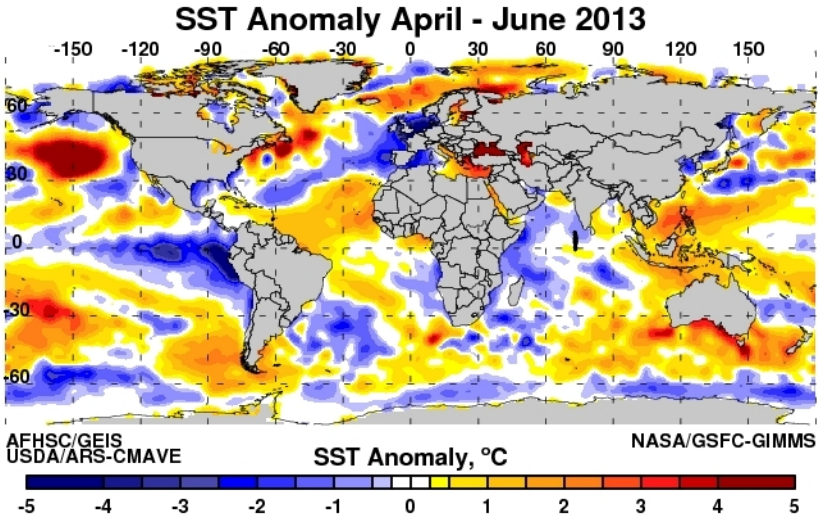
June 2013

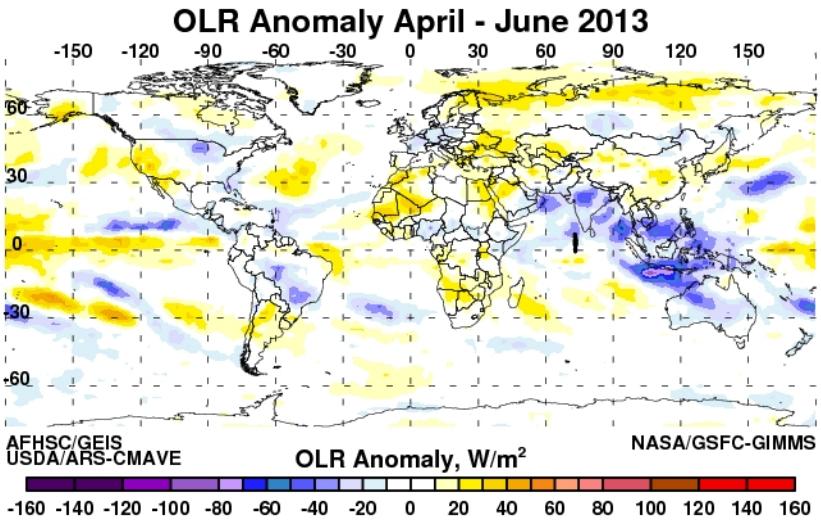
1. SOI and SST Indices



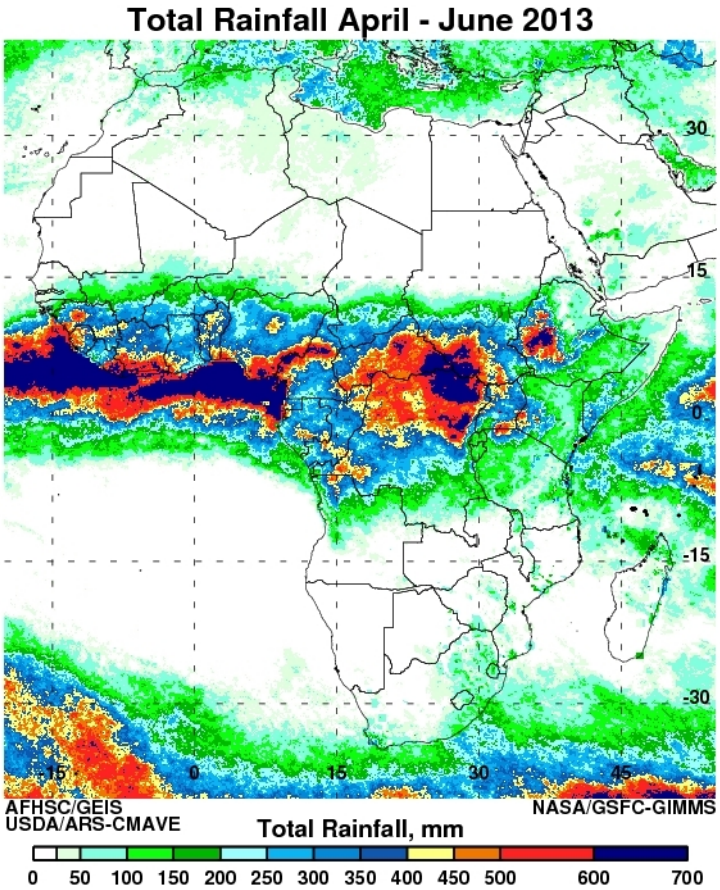


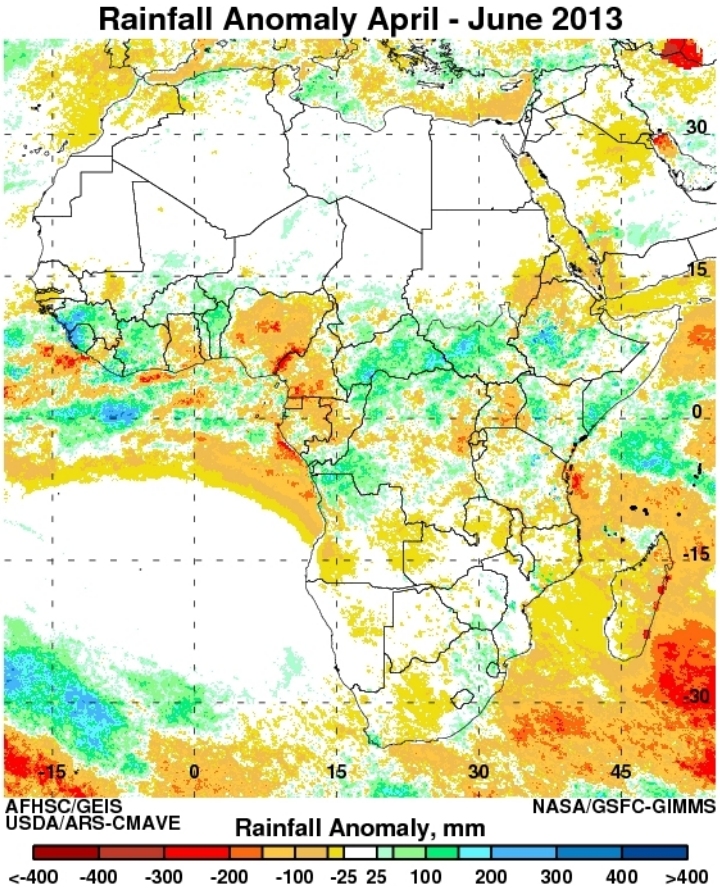
The SOI index shows near normal conditions with an index value of 0.6 in June. This has been a pattern that was exhibited by the SOI since the beginning of the year. The SST anomalies in the **NINO3.4 SST** region are slightly below average at -0.5°C. **WIO SST** anomalies also collapsed in June with a dramatic decrease to negative values at -1.0°C perhaps indicating a basin wide cooling in the WIO region as the season changes. All the atmospheric and oceanic indicators are in convergence with persistence of neutral ENSO conditions, however due to the recent emergence of negative SST anomalies in the eastern Pacific, a number of models (mainly statistical) predict weak La Niña conditions (Niño-3.4 less than -0.5°C). The latest statistical and coupled model forecasts indicates larger chances for La Niña relative to El Niño, but there still remains close to a 60% or greater chance of ENSO-neutral through the Northern Hemisphere summer 2013.





The eastern equatorial Pacific Ocean shows enhance below normal SST in the region from 90°W to 160°W during the April – June period. The spread of SST shows a pattern that is typical of ENSO-cold conditions. In contrast the entire western equatorial Pacific shows the persistence of above normal SST (0.5°C to 2.0°C). The western equatorial Indian Ocean is now dominated by negative SST anomalies especially off the East African coast. Other regions of significant anomalies include the southern Atlantic off Argentina, south Atlantic and south Indian Ocean off the southern Africa landmass and north Pacific which show significant negative anomalies on the order of -1.0°C to -2.0 °C. Outgoing Longwave Radiation (OLR) anomalies are used here as a proxy for tropical deep convection (rainfall). Reduced convection is shown in yellow to light brown and brown shades and increased/intense convection is shown by shades of blue. Some impacts from the SST anomaly patterns can be observed in the pattern of tropical convective activity illustrated by the OLR departure patterns here. During April – June, enhanced drier-than-average conditions continue to be observed over western US, southern Africa and western Sahel which show significant positive OLR anomalies. Enhanced convective activity continues to be prevalent over Southeast Asia. These patterns of depressed and enhanced convective activity coincide well with the pattern of SST departures. Monthly and weekly anomalies can be found here. Rainfall and associated anomalies (below) for Africa show above normal rainfall over concentrated over the equatorial belt. Significant rainfall anomalies have occurred in the RVF endemic regions of East Africa particularly Kenya and Somalia cumulatively ~ 200mm over the last three months (April – June).





Cumulative NDVI anomalies for Africa for April – June 2013 show positive NDVI anomalies over East Africa especial Kenya, Somalia and southeastern Ethiopia in response to the above normal rainfall from over the last three months. The patterns of positive NDVI anomalies are in agreement with the above normal rainfall and negative OLR departures over the last three months. The RVF risk map below was derived from thresholding NDVI anomaly data to detect areas persistent of above normal NDVI. Such periods of

widespread and prolonged heavy rainfall lead to flooding of *dambos* and anomalous green up in vegetation. This creates ideal ecological conditions for the emergence RVF vectors. For the period April – June 2013 the RVF persistence model identifies isolated areas in northern and eastern Kenya, Somalia and northern Tanzania where ecological conditions would support the emergence of RVF vectors. However, the colder temperatures at this time would inhibit increase and survival of RVF mosquito vectors.

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