

Localized models for extreme weather early warning system derived from coupled SSTs and seasonal rainfall for Zimbabwe

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The Sea Surface Temperatures (SSTs) in the Pacific Ocean (off the Peruvian Coast) have a strong bearing on rainfall patterns over southern Africa. The phenomenon usually dictates the occurrence of weather conditions such as droughts and floods in the region, and the El Niño Southern Oscillation (ENSO) events are generally used in seasonal forecasts. However, a further investigation into the influence of SSTs on southern African rainfall was essential for the development of a better seasonal forecasting system models. The study demonstrated that the strength of the SST- seasonal rainfall correlations varied significantly from one site to the other. The marked spatial variation in the strength of correlations revealed that the traditional and general use of ENSO events might not be the best tool in seasonal forecasts for some areas in Zimbabwe. From the best SST indicators, site-specific models were developed. These models can be integrated into a national early warning system. Similar models can be built over most parts of southern Africa to improve regional preparedness to disastrous meteorological events.