Malaria forecasting in Uganda using S2S and seasonal forecasts

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As monthly and seasonal dynamical prediction systems have improved their skill in the tropics over recent years, there is now the potential to use these forecasts to drive dynamical malaria modelling systems to provide early warnings in epidemic and meso-endemic regions. To this end, we outline a new pilot malaria early warning system. It uses the monthly ensemble prediction system (EPS) of ECMWF for month 1, combined with seasonal (system 4) forecast for months 2-4. The resulting temperature and rainfall forecasts for Africa are then used to drive the dynamical malaria model VECTRI. The malaria model is initialized using analysis-driven runs to account for weather anomalies prior to the forecast start that impact vector density and, indirectly, prevalence in the host population. We will show the results of the initial evaluation of this system which demonstrates skill in predicting case anomalies in some regions up to 3 to 4 months ahead in Uganda.