

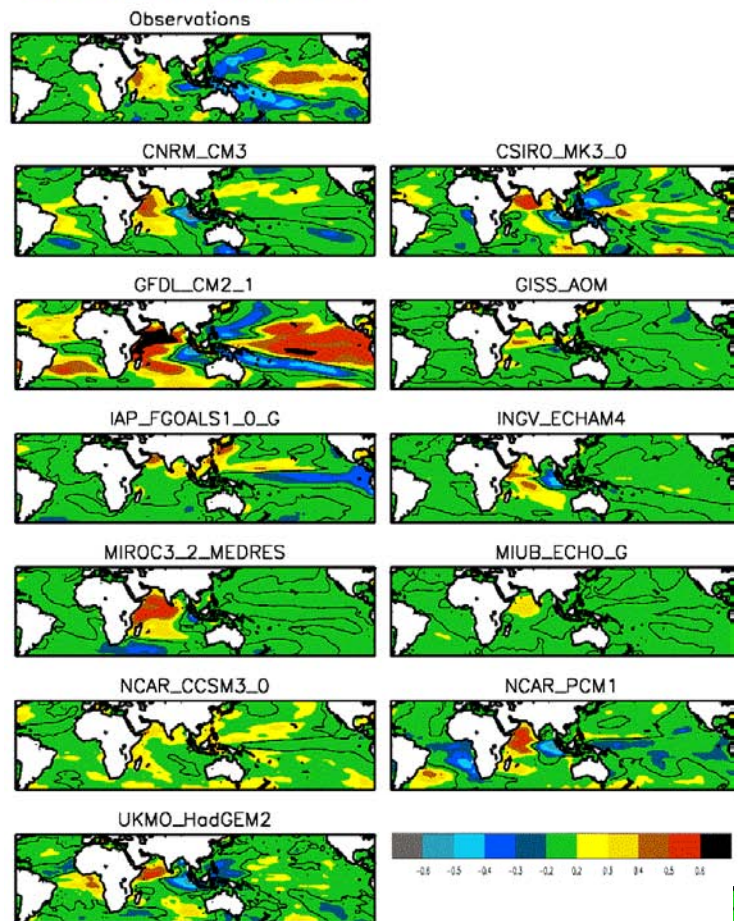
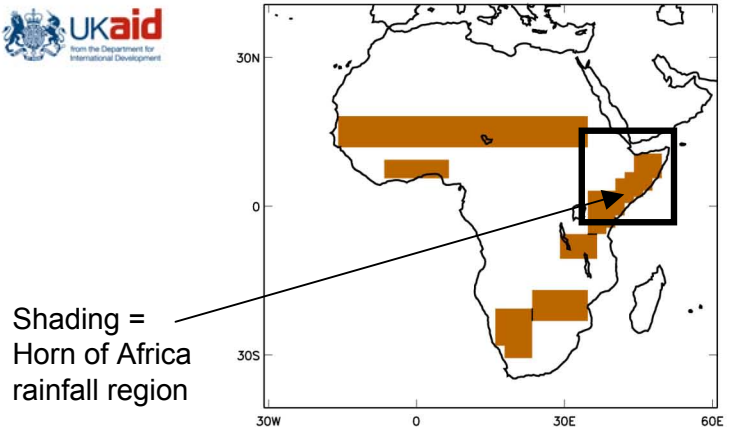
How well are processes driving African rainfall represented in current climate models?

Answers to this question are essential for **a)** informing our confidence in climate predictions for Africa, and **b)** identifying model weaknesses over Africa to be prioritised for improvement.

The CSRP is undertaking important performance ‘benchmarking’ for Africa, that is driving model improvements. As an example, the figures on the right show observed and modelled correlations of global sea surface temperature (SST) with October-December rainfall over the Horn of Africa area – which has recently experienced severe drought. Observed correlations (top) show the well known ‘teleconnection’ links between Horn of Africa rainfall and variability in the surface temperature of tropical Pacific and Indian Oceans.

None of the ocean-atmosphere models used in the IPCC’s 4th Assessment Report fully reproduced these connections in long simulations and important ‘teleconnection’ effects are missing in these models at present. In contrast, seasonal predictions – which are of shorter range than these long climate simulations - generally have a much better representation of key teleconnections.

Further CSRP research is in progress to uncover the reasons for the poor model teleconnections for this and other parts of Africa to provide a basis for improved climate modelling for Africa.



Ocean temperature patterns driving Horn of Africa rainfall