



## Climate change hot-spots

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A Regional Climate Change Index (RCCI) is developed based on regional mean precipitation change, mean surface air temperature change, and change in precipitation and surface air temperature interannual variability. The RCCI defines the regional climate response to global climate change and it is thus a measure that can help to identify climate change Hot-Spots, i.e. regions that are particularly sensitive, and possibly vulnerable, to global climate change. The RCCI is calculated for 26 land regions of the World from an unprecedented set of transient climate change simulations performed with 20 coupled global climate models for three IPCC emission scenarios (A1B, A2, B1). From the RCCI analysis the Mediterranean and North Eastern European regions emerge as the most prominent climate change Hot-Spots, followed by high latitude northern hemisphere regions and by Central America, which emerges as the most prominent climate change Hot-Spot in the tropics. The most prominent Hot-Spot in Africa is the Southern Equatorial Africa region, followed by West Africa, while Eastern North America is the prominent Hot-Spot over the continental U.S. The RCCI is low over the South America continent, indicating that other environmental changes (e.g. land-use change) may be more important than greenhouse gases for local climate change. Different factors over different regions contribute to defining the magnitude of the RCCI.