Auxiliary Information for Manuscript:

Elusive drought: Uncertainty in observations and short- and long-term CMIP5 drought projections

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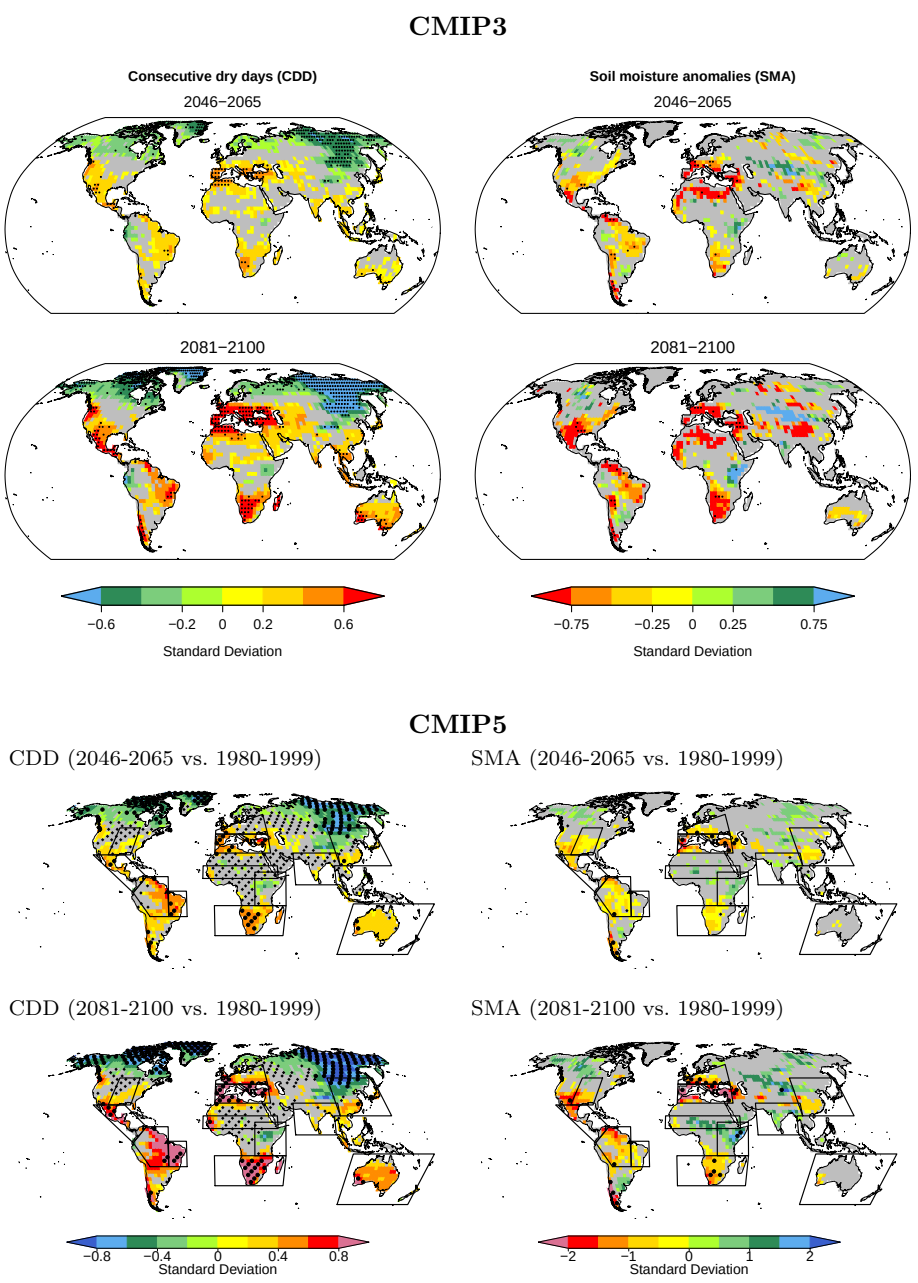

Figure S1: Changing drought projections in CMIP3 and CMIP5.
CMIP3 panels (see Orlowsky and Seneviratne, 2012, for details): Adapted from Fig. SPM5.1 of the SREX Summary for Policymakers (IPCC, 2012), the maps display multi-GCM averages of multi-year average changes

between present-day (1980-1999) and two future periods (2046-2065 and 2081-2100) in units of standard deviations. Future periods are simulated assuming the SRES-A2 emission scenario (Nakicenovic and Swart, 2001). Left: Changes in the annual maximum lengths of Consecutive Dry Days (CDD, meteorological drought); Right: Changes in average Soil Moisture Anomalies (SMA, agricultural drought). Color shading indicates at least 66% of the GCMs agreeing on the sign of change, additional stippling (black dots) indicates 90% agreement. Gray shading indicates GCM agreement on the sign below 66%. Contributing GCMs are listed in Tab. S1.

CMIP5 panels: the respective analyses from the CMIP5 ensemble. Colors and shading and color stippling like in the top maps. Stippled gray shading (black diamonds) indicates consistent small changes (at least 66% of the GCMs display changes smaller than half a standard deviation).

Table S1: Climate research centers contributing to the IPCC AR4, their Global Climate Models (GCMs) from the IPCC AR4 ensemble (CMIP3), their horizontal resolution and the drought indicators calculated from them.

Institution	Model	Resolution	Indicators
Bjerknes Centre for Climate Research	BCCR-BCM2.0	T63	CDD
Canadian Centre for Climate Modeling and Analysis	CGCM3.1-T47	T47	CDD
Météo-France/Centre National de Recherches Météorologiques	CNRM-CM3	T63	CDD
CSIRO Atmospheric Research	CSIRO Mk3.0	T63	CDD
CSIRO Atmospheric Research	CSIRO Mk3.5	T63	CDD
NOAA/Geophysical Fluid Dynamics Laboratory	GFDL-CM2.0	144×90	CDD, SMA
NOAA/Geophysical Fluid Dynamics Laboratory	GFDL-CM2.1	144×90	CDD, SMA
NASA Goddard Institute for Space Studies	GISS-ER	72×46	CDD, SMA
Instituto Nazionale di Geofisica e Vulcanologia	INGV-ECHAM4	320×160	CDD, SMA
Institute for Numerical Mathematics	INM-CM3.0	72×45	CDD, SMA
Institute Pierre Simon Laplace	IPSL-CM4	96×72	CDD, SMA
Center for Climate System Research (University of Tokyo)	MIROC3.2-medres	T42	CDD, SMA
Meteorological Institute of the University of Bonn	ECHO-G	T30	CDD, SMA
Max Planck Institute for Meteorology	ECHAM5/MPI-OM	T63	CDD, SMA
Meteorological Research Institute	MRI-CGCM2.3.2	T42	CDD, SMA
National Center for Atmospheric Research	CCSM3	T85	CDD, SMA
National Center for Atmospheric Research	PCM	T42	CDD, SMA
Hadley Centre for Climate Prediction and Research, Met Office	UKMO-HadCM3	T63	SMA
Hadley Centre for Climate Prediction and Research, Met Office	UKMO-HadGEM1	T63	SMA

References

IPCC: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change, [Field, C.B. and V. Barros and T.F. Stocker and D. Qin and D.J. Dokken and K.L. Ebi and M.D. Mastrandrea and K.J. Mach and G.-K. Plattner and S.K. Allen and M. Tignor and P.M. Midgley (eds.)] Cambridge University Press, Cambridge, UK, and New York, NY, USA, 2012.

Nakicenovic, N. and Swart, R.: IPCC Special Report on Emissions Scenarios, Cambridge University Press, Cambridge, UK, 2001.

Orlowsky, B. and Seneviratne, S. I.: Global changes in extreme events: Regional and seasonal dimension, Clim. Change, 110, 669–696, 2012.