Meteorological drought on global land likely to intensify in the future

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Drought can cause severe effects on regional agriculture, water resources, and the ecological environment. Reliable prediction of future drought changes is important under global warming.

A new study led by researchers from the Xinjiang Institute of Ecology and Geography (XIEG) of the Chinese Academy of Sciences has revealed that the meteorological drought on global land is likely to intensify in the future. Their study was published in *Remote Sensing* on Nov. 2.

The researchers analyzed the duration, frequency, and intensity of drought events in the Asian drylands based on nine climate models of the Coupled Model Intercomparison Project Phase 6 (CMIP6). The results showed that under different shared socio-economic pathways, the global terrestrial future was likely to show an increasing trend of drought, with the proportion of drought increasing in the three pathways of SSP126, SSP245 and SSP585 being 36.2%, 53.3% and 68.3%, respectively.

Moreover, the researchers found that future droughts will become less frequent but longer in duration and more intense, and the drought durations of future periods of 2021–2060 and 2061–2100 are 10.8 months and 13.4 months, respectively, while that of the historical period of 1960–2000 was 6.6 months.

Their other study, published in *Environmental Research Letters*, showed that under the SSP585 scenario, regions that are already arid may become universally drought-stricken by the late 21st century. The most severe aridification trends may occur in the arid regions of Australia, Middle East, South Africa, Amazon basin, North Africa, Europe and Central Asia. Additionally, Europe and the Amazon River Basin are also facing the threat of future drought.

More information: Hongwei Li et al, Projected Meteorological Drought over Asian Drylands under Different CMIP6 Scenarios, *Remote Sensing* (2021). DOI: 10.3390/rs13214409

Hongwei Li et al, Drylands face potential threat of robust drought in the

CMIP6 SSPs scenarios, *Environmental Research Letters* (2021). DOI: 10.1088/1748-9326/ac2bce

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