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climate physical
assessment and risk
ranking platform

Reconnaissance Drought Index (RDI)

The Reconnaissance Drought Index (RDI) (Tsakiris and Vangelis, 2005; Tsakiris et al., 2007b) can be characterized as a general meteorological index for drought assessment. The RDI can be expressed with three forms: the initial value α_k , the normalized RDI (RDIn) and the standardized RDI (RDIs). In Climate Insights, we will focus on α_k and RDIs.

The Reconnaissance Drought Index (RDI) was developed to approach the water deficit in a more accurate way, as a sort of balance between input and output in a water system. It is based both on cumulative precipitation (P) and potential evapotranspiration (PET), which are one measured (P) and one calculated (PET) determinant. Positive values of RDIs indicate wet periods, while negative values indicate dry periods compared with the normal conditions of the area. The table below shows the classification of RDI.

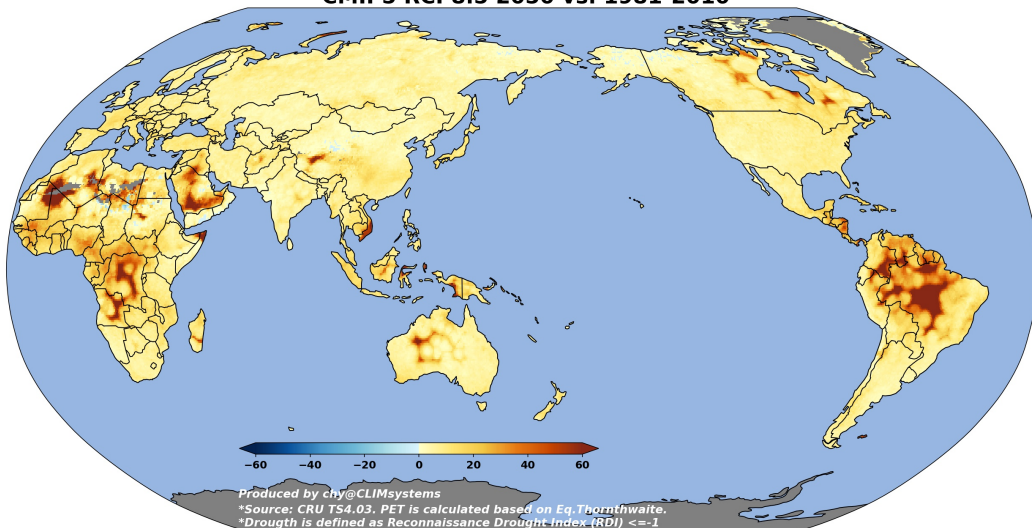
Values for RDI_{α}	Description of State
-0.5 to -1.0	Mild
-1.0 to -1.5	Moderate
-1.5 to -2.0	Severe
<-2.0	Extreme

A comparison of RDIs-based drought probabilities for 1-, 3-, 6, 12-month scales is presented in the following figures for the period of 2050 under CMIP5 RCP8.5. The period of 1981-2010 is used as the baseline or reference period.

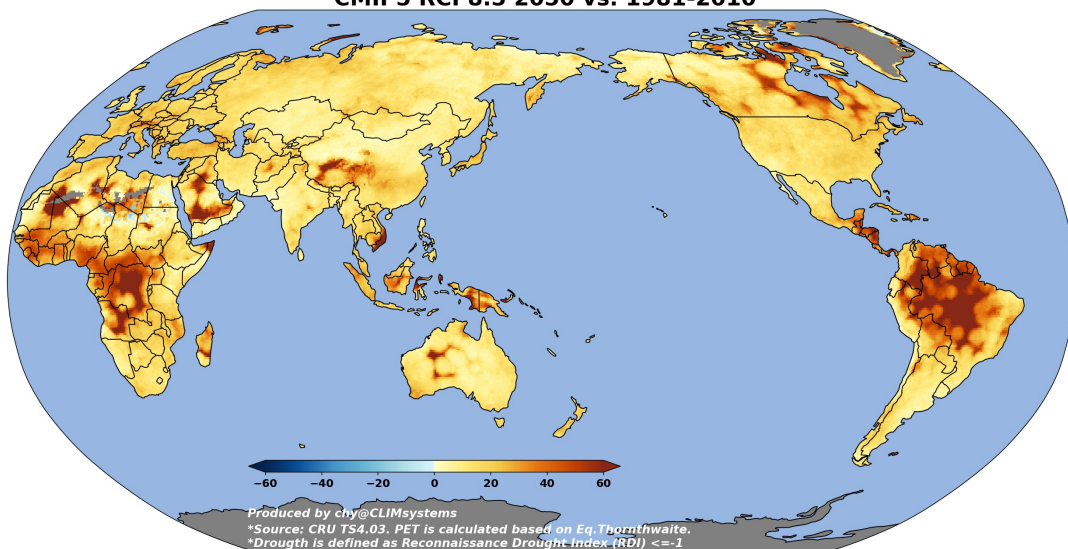


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**Probability Anomalies of RDI-1 Droughts
CMIP5 RCP8.5 2050 vs. 1981-2010**



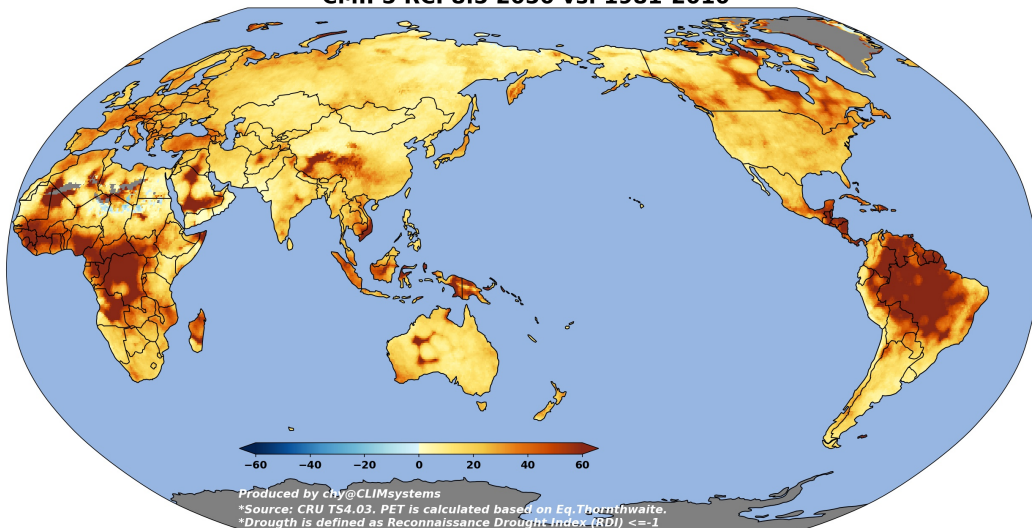
**Probability Anomalies of RDI-3 Droughts
CMIP5 RCP8.5 2050 vs. 1981-2010**





Reconnaissance Drought Index (RDI)

**Probability Anomalies of RDI-6 Droughts
CMIP5 RCP8.5 2050 vs. 1981-2010**



**Probability Anomalies of RDI-12 Droughts
CMIP5 RCP8.5 2050 vs. 1981-2010**

