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The impracticality of defining drought

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Drought is one of the most deadly and damaging of natural hazards. More than one hundred drought indices have been described in the literature to date, yet a general definition remains elusive. Various indices have been developed to quantify particular drought impacts, be they meteorological, hydrological, agricultural or socio-economic. The plethora of indices brings into question the feasibility of defining drought in quantitative terms outside of specific impacts. We consider drought in its most basic form (as a feature of local water balance) and demonstrate that whilst a general mathematical description is possible, it remains impractical for real world applications. Our definition provides a framework for the analysis of traditional drought indices. We show that several commonly used drought indices bear little relation to the practical notion of a water shortage.