



Drought Vulnerability at Continental Scale: a Multi-dimensional Framework

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Drought vulnerability is a complex concept that reveals the susceptibility of a system to the adverse impacts of drought and also determines the capacity to cope with drought, and. Here we present a multi-dimensional modeling framework to investigate drought vulnerability across the African continent. A composite Drought Vulnerability Index (DVI) for 46 African countries is calculated based on a comprehensive data collected in six categories including economy, energy and infrastructure, health, land use, society, and water resources. Regression models are fitted to the historical timeseries of DVI for each country, and they are projected for the period of 2020-2100 to provide a probable DVI projection based on its historical variations and trends. The DVI projections demonstrate that the disparity among low and high vulnerable countries will grow in future, with most of the northern and southern African countries becoming less vulnerable and the majority of central African countries experiencing exacerbated drought vulnerability. Our results conform to previous assessments, and we show that the projected DVIs can be utilized for risk analysis and adaptation planning purposes.