

Water security and management under climate change

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Abstract:

Adapting to climate change has become a major focus of local policy makers and development practitioners. Sound decisions for adapting to eco-hydrological impacts rely on profound simulation modeling, but the coarse-resolution outputs of global climate models (GCMs) are unsuitable for driving impact models, which usually require finer resolution projections at both spatial and temporal scales. Effective downscaling of GCMs projections is thus required, but it is practically difficult due to the lack of computational resources and/or long-term reference data. Such difficulty has become a major barrier preventing informed climate change adaptation planning at regional scales. To address this challenge, a web-based and user-friendly public data portal with integration of advanced geographic information system (GIS) technology, named Climate Change Data Portal (CCDP, <http://ccdp.network>), has been established to allow intuitive and open access to high-resolution regional climate scenarios. CCDP offers functions of visual representation through geospatial maps and data downloading for a variety of climate variables (e.g., temperature, precipitation, relative humidity, solar radiation, and wind) at multiple temporal resolutions (i.e., annual, seasonal, monthly, daily, and hourly). The vast amount of information this portal encompasses can provide a crucial basis for assessing impacts of climate change on eco-hydrological systems and for supporting decisions water management under climate change.