CLIMATE CHANGE IMPLICATIONS FOR WATER AND FOOD IN THE LIMPOPO RIVER BASIN

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ABSTRACT

Agricultural water use in the developing world is expected to face serious water scarcity from the combined effects of climate change and intensified competition for water from other sectors. This is especially true for developing countries with arid climates, lagging water infrastructure development, and rapidly increasing populations. We assess the impacts of climate change on the hydrological and water resource systems of the Limpopo River Basin with a semidistributed hydrological model and the water simulation module of IMPACT. We also evaluate the effect of changes in water supply on food supply, demand, and food security in the basin. Assessing hydrological impacts of climate change is crucial given that expansion of irrigated areas has been postulated as a key adaptation strategy for Sub-Saharan Africa.