Simulation of water supply and water demand in the valley of Seybouse (East Algeria)

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ABSTRACT
The Seybouse river basin is subject to extreme and increasing water scarcity. Management of water resources in the basin is closely intertwined with use conflicts in the region. A fast growing population and expanding agricultural and industrial sectors create demands for new water resources. In this research, a microcomputer model, the water evaluation and planning system (WEAP), has been developed for simulating current water balances and evaluating water management strategies in the Annaba region. WEAP treats water demand and supply issues in a comprehensive and integrated fashion. The scenario approach allows flexible representation of the consequences of alternative development patterns and supply dynamics. This research then describes four alternative water supply scenarios for the Seybouse valley: increased use of treated wastewater in irrigation, climate change, and two combined scenarios—climate change with increasing reuse and altered patterns of agriculture to compute the impact on the demand supply gap by the year 2050.

Keywords: Seybouse valley; Water evaluation and planning system; Climate change

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