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RESOURCE

Market mechanisms and the efficient allocation ofsurface water resources in southern Alberta

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Author(s)
Robert C. Mahana Theodore M. Horbulykb John G. Rowsec

Description / Abstract

Population growth and economic expansion increasingly are stressing water resources in southern Alberta, Canada. Adopting market mechanisms may improve water use efficiency. Utilizing a novel network model ofan entire river basin, we quantify the short-run efficiency gains (over one growing season) from reallocating surface water. Employing a standard welfare maximizing objective, and observing essential institutional and hydrologic structures, we find the relative efficiency gains from introducing market pricing to be under 3% for a year of surplus water flows, about 6% for a mean flow year, and more than 15% for a drought flow year. Although such gains exclude the costs of the current water allocation policy, as well as those ofmoving to market pricing, results tend to support the present cautious approach by the Alberta government to modify the mechanisms for allocating surface water.

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