

Allocating environmental water and impact on basin unemployment: Role of a diversified economy

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Water diversion for environmental purposes threatens many agricultural communities. This paper focuses on the water-agriculture-environment nexus in the Murrumbidgee River Basin, Australia, and attempts to explain how reduced water allocation to agriculture aimed at protecting the environment in turn impacted the wider economy and the community. Predictably reduced water allocation saw declines in agriculture production and employment. Despite this, paradoxically, the basin unemployment rate declined and basin median household income increased. To understand and interpret this, we first analyze available labour, economic and hydrology data, and then develop a simple dynamic model to interpret the observed pattern of basin employment and unemployment. Data analysis revealed the likely causes behind the paradox as (a) out-migration of people from the basin, and (b) absorption of the labour force in the fast growing non-agricultural sectors of the diversified basin economy. The model simulations reinforced this interpretation. Further model simulations under alternative realities of out-migration and sectoral transformation indicated that basins embedded in faster growing national economies, and are more diversified to begin with, are likely to be more conducive to agriculture sector reform (e.g., reduced water allocation) and environmental regeneration. This is a sobering message for other regions experiencing environmental degradation due to extensive agricultural development.

Keywords: socio-hydrology, employment, water management, water-food-environment nexus, sectoral transformation