

ECONOMIC IMPACTS OF IRRIGATION WATER CUTS IN THE SACRAMENTO VALLEY

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Water is important. Abundant water in the Sacramento Valley has long contributed to agriculture, the economy, the environment, recreation and more. This report focuses on only part of the contribution of water to the Sacramento Valley. We examine quantitatively how changes in the availability of irrigation water may be expected to affect agriculture and thereby the general economy of the Sacramento Valley.

The study concentrates on eight counties: Tehema, Glenn, Butte, Colusa, Yuba, Sutter, Yolo, and Sacramento. Each of these counties has large agricultural industries and, except for Sacramento and Yolo Counties, farming itself is a dominant contributor to the local economy. The importance of agriculture as a primary industry in this region underscores the importance of irrigation water supply.

The study examines crop acreage and other agricultural responses under four alternative scenarios of reduced supply of irrigation water from surface sources. These correspond to two alternative base situations from which cuts are made and, under each base situation, two alternative responses of ground water pumping to the surface water reductions. A detailed economic model is used to quantify how reducing the supply of irrigation water reduces farming activities and lowers farm revenue. In response to less available and probably more costly water, farmers alter their operations in two general ways: 1) attempting to substitute away from intensive water use by using alternative technologies or otherwise reducing water use per acre, and 2) reducing the number of acres planted or switching to less water intensive crops. The combination of actions farmers take in response to a reduction in water supply depends on agronomic and weather conditions, suitability of alternative crops, and the magnitude of the water constraints, among other factors. Our model bases the projected responses on how farmers in the region have responded in the past to changes in economic incentive and constraints. The impacts of a potential surface water reduction on agriculture in the Sacramento Valley are reported by crop and sub-region.

This report has documented quantitatively the economic importance of irrigation water in the Sacramento Valley. Even with a model that allows substantial adjustments by farmers to changes in water availability, we project significant farm revenue losses. In areas where agriculture is a major share of the economy, which include all the rural counties of the Sacramento Valley, these farm revenue losses translate into significant losses of county income and employment.

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