

# CHANGES IN WATER ALLOCATION MECHANISMS FOR CALIFORNIA AGRICULTURE

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*Existing institutions allocating water in California reflect prior appropriation water rights established when water was abundant. These allocation rules queue users and do not encourage water conservation. Increased water scarcity and growing valuation of water's environmental benefits are inducing a transition to water allocation mechanisms that increase water efficiency in agriculture. Transferable rights systems will lead to market-like water allocation, induce farmers to adopt water conservation technology, and may not face strong objection from senior water rights holders. One must weigh the efficiency gains associated with transition from water rights to water markets against the transaction costs associated with installing facilities that enable water exchange and trading.*

*Transition to water markets may preserve the agricultural sector's well-being while allowing the transfer of some water outside of agriculture—in particular, for environmental benefit. The cost of policies proposed to reduce agricultural water supply while encouraging water trading are inversely related to the extent of trading allowed. The more farmers trade water, the less costly reducing water supply is to agriculture. Policies reducing water supply to Central Valley Project contractors and allowing trading only among these contractors are much more expensive than are policies encouraging trading among all agricultural water users in California.*

## I. INTRODUCTION

The increasing difficulty (and cost) of expanding water resources and increasing urban and environmental demand for water are inducing changes in California's

water policies. Agriculture accounts for 75 percent of all water used in the state. Farmers use traditional irrigation technologies and apply much of this water to lands with relatively low-value crops, such as pasture and alfalfa. The challenge is to design viable and effective reforms that will divert water from agriculture to alternative uses. This paper explains existing patterns of California water use and evaluates the alternative reform mechanisms' potential to divert water away from agricultural to nonagricultural uses.

The paper describes California's existing water allocation mechanisms and develops a theoretical argument identifying

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### Abbreviations

CVP: Central Valley Project  
ET: Evapotranspiration  
SWP: State Water Project





















