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Commentary: Widely publicized water-conservation report drew incorrect conclusions

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In September 2008, the Pacific Institute, a nonpartisan research institute, released a report entitled "More with Less: Agricultural Water Conservation and Efficiency in California—A Special Focus on the Delta," authored by Heather Cooley, Juliet Christian-Smith and Peter H. Gleick. This report received much publicity due to its content.

The Pacific Institute paper contained many suggestions regarding changes to public policies and law. However, the report also made assertions regarding potential water conservation by agriculture. This conservation would purportedly come from one or more of four "scenarios," including "Smart Irrigation Scheduling" (potentially 3.45 million acre-feet/year conserved); "Modest Crop Shifting" (potentially 1.23 MAF conserved); "Advanced Irrigation Management" (potentially 1.2 MAF conserved); and "Efficient Irrigation Technology" (potentially 0.6 MAF conserved).

It is our opinion that the Pacific Institute paper directly draws incorrect conclusions, or infers incorrect conclusions, based on significant errors in its underlying assumptions. The importance of finding solutions to California's water problems is so great that we would be remiss if we had not expressed our reservations in a commentary. The main points that we addressed are:

1. This Is Not New: On the Pacific Institute Web site, this report is described by Dr. Gleick as a "comprehensive analysis...that fills an important gap." To us, most of the suggestions for policy and legal changes, as well as the ideas within the four "scenarios," do not represent new ideas. This report is not a comprehensive analysis of agricultural water use and it fills no gap. As a means of prompting more discussion it only states the obvious, as we note past and current efforts such as the Bay-Delta Advisory Committee, Cal-Fed and Delta Vision.

2. Fatal Flaws in The Analyses of the Four Water Conservation "Scenarios": There are several very declarative statements in the Pacific Institute paper. For example, the Executive Summary states, "...Our central findings show that improving agricultural water-use efficiency through careful planning; adopting existing, cost-effective technologies and management practices; and implementing feasible policy changes can maintain a strong agricultural sector in California while reducing pressures on the Delta." Secondly, the opening paragraph in the Results section declares, "Each scenario identifies substantial potential to improve the efficiency of agricultural water use in regions supplied by the Sacramento-San Joaquin Delta."

However, the report also makes statements such as, "We note that a more detailed economic assessment is needed to capture the social, economic and environmental benefits and costs of these improvements" and, "Future assessments should evaluate how shifting crop type affects the net production value." Without such assessments, conclusions drawn by the Pacific Institute paper are difficult to support.

Most importantly, the fatal flaw of the Pacific Institute paper is that the conclusions assume that on-farm water savings can be directly translated into equivalent basin-wide savings. Such an assumption is incorrect. You simply cannot apply an estimate of on-farm water savings to an entire basin to estimate net transferable water conservation. We note that the Pacific Institute paper implicitly agrees with this argument, but then goes on to ignore the basin-wide concept completely.

We are not the first to identify this issue. In 1982, one of the conclusions in the executive summary of "Agricultural Water Conservation in California, with Emphasis on the San Joaquin Valley," authored by David Davenport and Robert Hagen (UC Davis) was the same.

Please do not make the mistake of thinking that we oppose improved on-farm water management or oppose changes to public policy or law. We have worked all of our respective careers on-farm, in industry and in education to improve agricultural water management. We recognize the negative impacts on in-stream water quality and flow volumes that may result from poor on-farm management. We recognize the link between energy use and water use. The issues of soil salinization and sometimes toxic drainage flows are well-known. We are willing to work with all stakeholders to solve these problems.

But improving on-farm irrigation efficiency, by itself, will not result in anywhere close to the basin (also known as "transferable" or "conservable") savings that are implied in the paper. The bottom line is, we just do not have enough water to satisfy all

current demands. And we do not believe that on-farm conservation in the Sacramento and San Joaquin valleys, as proposed by the authors of the Pacific Institute paper, is going to solve the problem.

The complete version of our commentary may be found at www.californiawater.org and www.itrc.org. The Pacific Institute paper can be found at www.pacinst.org.

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