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## SECTION 8: Take Home Message

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## Take Home Message

One of the keys to water sustainability is the addition of recycled water—with the understanding that the resource is limited and that we use it to leverage other resources, voiced **Richard Katz**, chair of the California's Recycled Water Task Force. How do we do a better job of introducing recycled water into the mainstream—with public acceptance and understanding?

The public must believe that the process, from wastewater treatment to food safety, is not compromised. By 2020, 20 percent of the water budget in California needs to come from desalinated and/or recycled water. We need to get the message out, be completely transparent, and engage local stakeholder participation, understand local needs and desires, and be consistent. Short, catchy phrases such as “showers to flowers” might be useful to help educate the public and state legislators.

Several important themes emerged during the breakout sessions of the Agricultural Water Reuse Conference. Each session discussed the need for improving public education of recycled water in agriculture. The potential benefits and perceived risks to society should be properly evaluated and clearly understood so that farmers, retailers, consumers, and politicians will support and accept the practice of water reuse. There is a need for additional research and a compilation of existing data to be made available to the industry and the public. Once the research, data, and facts are organized, improved outreach is vital to the overall acceptance of recycled water in agriculture. USDA and other government agencies can take an important step by helping to set standards, develop certification, and improve communications about the use of recycled water. The following recommendations contain consistent themes that emerged from all of the breakout sessions.

## Recommendation 1: Improve Education and Outreach of Recycled Water

Improvements in education and outreach are essential to achieve a wider acceptance and use of recycled water around the country. Public misunderstanding and fears are based on a lack of understanding and effective outreach in the use of recycled water—the public needs to understand the science.

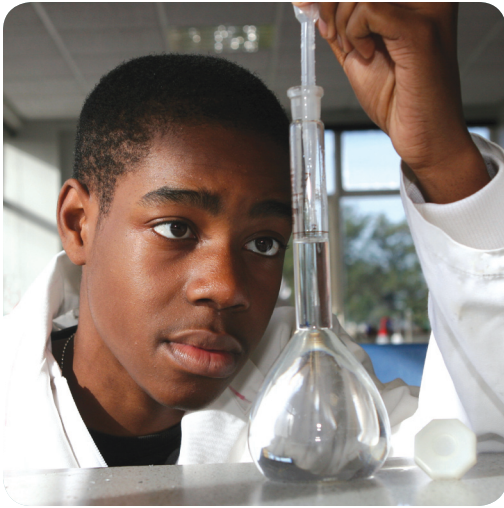
Without appropriate outreach and education, the public will continue to view recycled water as a waste, not as a resource. Misconceptions and wrong public branding of recycled water can change through better coordination of the media message, enhanced educational programs for public officials, schools, and consumers. Improved communications between politicians, scientists, engineers, planners, consumers, and farmers regarding updates and research will enhance public acceptance. Working with the media will help get the message out to the community. The need to use recycled water and its benefits to the environment and climate will reach more people and have a greater impact. Outreach through more focused activities and proper use of the media will help build trust and confidence and get the science-based message out to the public.

### Actionable Strategies:

- Help fund education and outreach to growers, wholesalers/retailers, and consumers that facilitates the exploration of water reuse possibilities.
- Promote water reuse education at both ends of the spectrum—fund the development of programming for K-12/higher education and regulators, legislators, and other key officials emphasizing public perception issues.
- Fund the creation of an informational DVD to relate the recycled water story—e.g., “not all wastewater is waste.”
- Support funding for extension faculty with appointments in recycled water as part of the solution to water availability problems.
- Assist extension in partnership with farmers, to channel the recycled water message through the appropriate media outlets (e.g., blog, iPod, game, etc.).
- Study the additional costs to farmers, financial or real, in transition to irrigation with wastewater (e.g., salination).
- Study the elements that comprise approaches to wastewater pricing for use in irrigation (e.g., conveyance and treatment).
- Do social benefits exceed the social cost (The Compensation (Kaldor-Hicks) Principle)?
- Assist extension and others to establish state and local water reuse advisory groups that would share success stories, identify issues (e.g., salinity), and inform decision-makers.



## Recommendation 2: Conduct Additional Research and Coordinate Existing Data



Although research on water reuse in agriculture has been done over the years, new research is needed to identify gaps in data such as salt tolerances of plants, new or unknown threats, best management practices for production and processing, and identifying the right water for certain crops. Additional funding should be dedicated to meet these research needs.

A large amount of data exists but there is no coordination of this data. A clearinghouse should be established to make the data accessible to stakeholders. Salt build-up needs to be better understood. Research in ways to improve salinity management will help to address crop and environmental needs. More in-depth research on the plant tolerances, base standards, and a clearer understanding of pathogens in both soil and water should be adequately researched. This information should be accessible to, and easily understood by, farmers and consumers.

### Actionable Strategies:

- Promote a comprehensive review of research into the use of recycled water by the National Academy of Sciences.
- Help to prioritize water reuse at the national level by promoting collaboration among federal water agencies.
- Assist with the creation of a comprehensive database with information about recycled water as part of the total water volume used for irrigation. This database must be summarized, independently reviewed, and available to inform policy.
- Identify and utilize existing information concerning issues with recycled water from experienced nations.
- Fund efforts to address critical issues surrounding recycled water, such as salinity tolerance in plants and associated plant-based remediation through discovery and integrated research.
- Provide funding for programs and projects that focus on two principal methods for reducing drainage salination problems. They are: reducing the amount of irrigation water applied to crops and reusing the applied water on subsequent, more salt-tolerant crops.
- Identify the barriers to recycled water use, e.g., issues of recycled water distribution and the logistics of constructing water treatment plants near a customer base.

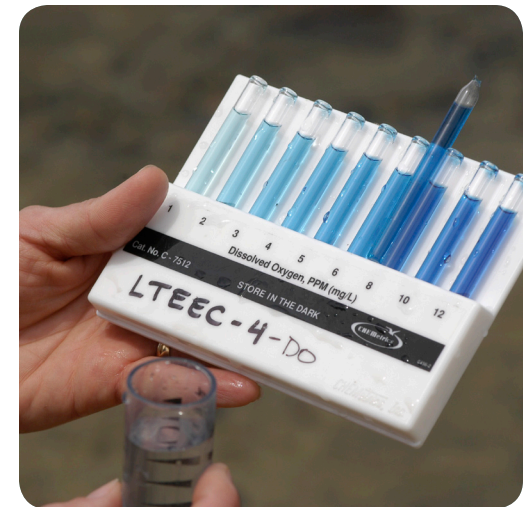
## Recommendation 3: Set Standards and Developing a Certification Program

Currently, there are no national standards for any source of irrigation water—farmers are sometimes concerned about potential pathogen spikes in non-recycled surface water.

In order to improve the quality and find the best use of recycled water, there needs to be national standards in place and an improved monitoring system. Operation and monitoring standards can help to assure the quality control of recycled water. A good starting place would be to conduct a survey of existing state standards and then develop national standards that address both crop and environmental needs.

### Actionable Strategies:

- Identify what the wastewater volume contains—concentrations of chemicals, which may be hazardous to agricultural yields and to conservation of soils. Wastewater may cause groundwater contamination by chlorides, nitrates, sodium, boron, and other contaminants. Farmers feel that recycled water is an asset—but they are not always sure what blend they are receiving.
- Fund the identification and research the critical indicators towards establishing national standards, based on existing state and local standards, that insure the use of recycled water with appropriate crops, worker and consumer safety, and soil and water quality.
- Promote federal collaboration among the water agencies to work towards the development of a beneficial use policy.
- Based on existing state and local standards, fund efforts to identify an appropriate suite of best management practices associated with food production and processing to prevent contamination.
- The only existing regulations with respect to wastewater quality are public health oriented, and even these are not properly observed. Coordinate research to provide the scientific underpinning to national wastewater quality standards for agriculture.



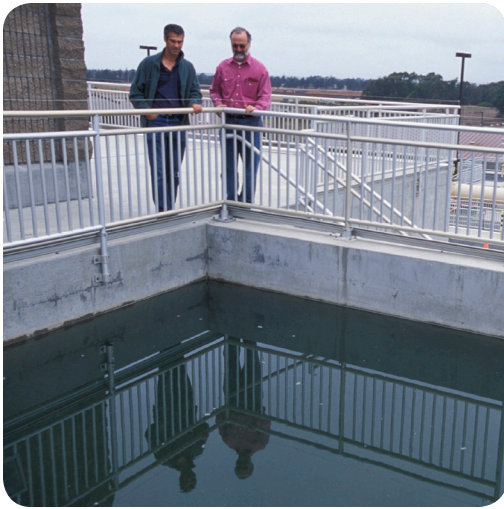
## Recommendation 4: Improve the Role for USDA and Other Government Agencies

USDA has a unique opportunity to take the lead in coordinating with other government agencies in terms of conducting more research, starting an outreach committee, and developing curriculum and 4–H programs. Through dialogue and better communication between government agencies and stakeholders, USDA can help lead the efforts on building a unified message.

Along with EPA and the Department of Energy, USDA can help standardize the language and develop certification for water reuse. The actions of government agencies should be transparent so that confidence and trust can be built. USDA and other government agencies can work to change this perception. Mandatory programs and regulation of irrigation waters will provide consistency throughout the states. Setting standards for croplands under cultivation to protect them from any contamination will reduce risks and improve the acceptance of recycled water. USDA should provide endorsement of recycled water and make it the best available water source for irrigation.

### Actionable Strategies:

- Take the lead to promote water management with recycled water as a critical component, which transcends political and social boundaries—connecting urban, rural, environmental, and agricultural uses at the watershed scale.
- Efficiencies gained through the use of recycled water might translate into greater ecosystem services (e.g., instream flows) within a watershed. Ecosystem services are quickly becoming the currency as to how some agencies measure the outcomes of their efforts.
- Coordinating the use of recycled water could expand flexibility in decisionmaking, and provide greater incentives for use through water marketing.
- Rigorously organized and coordinated follow up and control of water with proper quality sampling is required, regarding the chain commencing with fresh water supply to households and industrial plants, as ending with the use of wastewater in irrigation.
- Cooperatively funding the research to underpin the certification of green technology in farming and food production.







DISCUSSION AT DAY TWO OF THE SANTA ROSA AGRICULTURAL WATER REUSE CONFERENCE, OCTOBER 30, 2006



## Recommended Citation

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