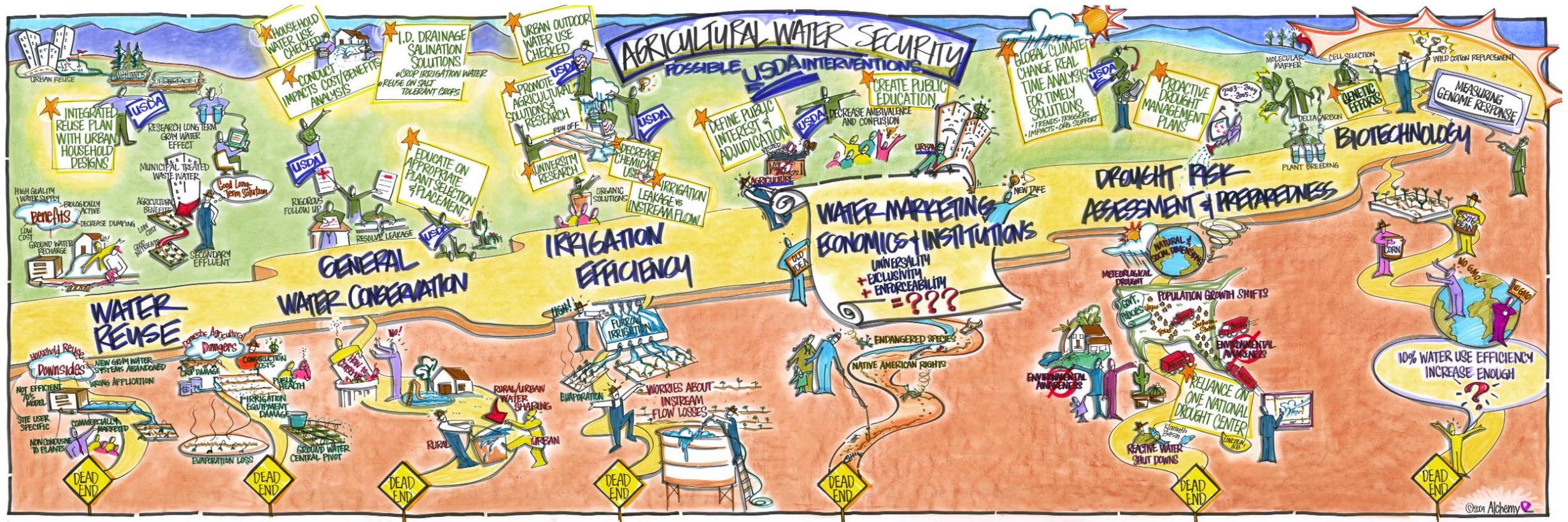


Patti Dobrowolski, Alchemy Consulting LLC

USDA Agricultural Water Security Issues Map: Critical issues in water distribution, allocation, and supply related to Agricultural Water Security across the United States.



Patti Dobrowolski, Alchemy Consulting LLC

USDA Agricultural Water Security Interventions Map: Potential U.S. Department of Agriculture activities to solve water problems above the six-theme road with less-sustainable activities (potential dead ends) below.

Irrigation Efficiency and Management

BOLD STEP 1

USDA should find a solution to the “brain drain”

This breakout group suggested that solving the “Brain Drain” was a critical bold step needed to address water quantity issues. Universities are training fewer young scientists in irrigation engineering and management. Water issues are increasing in importance but, at the same time, the number of graduates specializing in irrigation is declining. Possible partners include USDA, commodity groups, Irrigation Association Education Foundations, universities and colleges, K-12 institutions, professional societies, and the entire Federal Government.

BOLD STEP 2

Develop a national policy on open land to improve land planning

The group also indicated that there is a need for a National Policy on Open Land. Overall, there is a need for improved land planning. Uncontrolled development is placing considerable stress on already heavily used water systems. Efforts are needed to improve land development strategies to include water resources planning. Partners might include commodity groups, land use planners, conservation districts, realtors, environmental groups, universities and utilities.

BOLD STEP 3

Water supply and land development must be considered together

Another bold step considered by this group was that water supply and land development have to be considered simultaneously. Urban and suburban areas cannot continue to grow without consideration of the water needed to support the diversity of activities in these areas. Possible partners include realtors, developers, and builders.

BOLD STEP 4

Optimize water use among agriculture, urban, and environmental sectors

Finally, this group suggested that there is a need for a paradigm shift where water use is optimized in the agricultural, urban, and environmental sectors. A holistic or integrated approach to water management is needed to insure that water use matches societal needs. Possible partners might be waterfowl hunters, water suppliers, public agricultural and environmental sectors—essentially everyone.

Drought Risk Assessment and Preparedness

BOLD STEP 1

USDA should capitalize on existing leadership with NIDIS, INDC, and NDPA

The Drought Risk Assessment and Preparedness breakout group recommended that USDA should capitalize on the leadership already in place on the National Integrated Drought Information System (NIDIS), the Interim National Drought Council, and the National Drought Preparedness Act. Substantial momentum exists around these initiatives to address drought and water supply. USDA-REE should build upon activities already in place and moving forward.

BOLD STEP 2

USDA should organize internally around water security issues

A second bold step involved USDA organizing internally around water security issues to enable, foster, and prioritize research, education, extension, and economic activity. Bringing together a wide array of water resource interests across the Department should lead to improved coordination, streamlined management, and more effective programs.

BOLD STEP 3

USDA should strategically invest in information systems

A final bold step identified by this group involved USDA strategically investing in information systems that foster behavior changes and that lessen our vulnerability to water shortage. Decision support systems (DSS) and the data required to implement DSS are needed to assist farmers, ranchers, community leaders, and homeowners with planning for and responding to water shortage and drought. USDA should invest in the systems and data necessary to best prepare for water shortages.

General Water Conservation and Management

BOLD STEP 1

USDA should develop nationwide integrated watershed data and information resources

This breakout group suggested that USDA should promote development of nationwide, integrated watershed data and information resources. The data should be in a format useful for understanding, evaluating, and targeting effective decision making on water conservation and management. Possible partners include National Science Foundation (NSF), Water Resources Research Institutes, state and local agencies.

BOLD STEP 2

Coordinate Federal agencies at the watershed level in an interdisciplinary manner

A second bold step identified by the General Water Conservation and Management breakout group was that Federal Agencies should be coordinated nationwide in an interdisciplinary manner at the watershed level. They recommended shifting the management level of Federal Agencies from states to watersheds. This shift in focus emphasizes water resources available within a basin rather than focusing on state-level issues. Partners include USDA, USGS, EPA, DOE, BOR, BLM, USACE, and Fish & Wildlife Service.

BOLD STEP 3

Develop integrated information and improved technology on impacts of water conservation

The final bold step identified was to develop integrated information and improved technology on the impact of water conservation policies and practices at the watershed scale (e.g., water quantity, quality, ecosystem health, and communities). This recommendation emphasized addressing diverse issues of quantity, quality, etc., simultaneously within watersheds.

Rural/Urban Water Reuse

BOLD STEP 1

USDA should reorient itself towards broad water management

The Rural/Urban Water Reuse breakout group recommended that USDA reorient itself toward comprehensive water resource management that routinely considers sustainability, quality of life, food safety, and the environment. This step involves bringing together many of the disparate program efforts currently ongoing in USDA.

Another suggestion from this group was to promote scientifically-based decision making. Decision making and policies currently in place are not always based on science. It is imperative that decisions regarding the use, reuse, management, and distribution of water resources be based on sound science.

BOLD STEP 2

Create a new water quantity initiative in REE

The group recommended creating a Water Quantity Initiative in the REE Mission Area. There is considerable need for the development of appropriate science, education, and economics information. However, funding for these activities is limited. Possible partners for this effort include NOAA, Bureau of Reclamation, USGS, NASULGC, USDA, and EPA.

BOLD STEP 3

Create a new initiative to educate youth and secondary education about water issues

The final suggestion from this group involved creating an education initiative on water resource issues for youth and secondary education. The next generation of scientists and educators will face more daunting challenges than what we face today. It is critical to invest now in the education of future water resources professionals. Partners include NASA, 4-H, Ag in the Classroom, NSTA, and USGS Education.

Water Marketing, Distribution, and Allocation

BOLD STEP 1

USDA should produce and improve universally useable water economic data

Participants recommended that the REE Mission Area should prioritize getting data in a usable form to the data users (i.e., state and local agencies, decision-makers, researchers, etc.). This step involves coordination of data collection over a variety of agencies and insuring that data quality and confidentiality are maintained across data sources.

BOLD STEP 2

USDA should take the lead to understand stakeholder opinions about water users

The group suggested that the REE Mission Area take the lead on investigating the perceptions that stakeholders have of water users. Conflicts over water management often are based on perceptions rather than facts—understanding these perceptions might help to alleviate these conflicts.

BOLD STEP 3

USDA REE should actively remove the barriers that prevent water markets

A final recommendation from the group was that the REE Mission Area actively engage in removing the barriers that prevent the development of water markets with the goal of efficient allocation of water. Promoting efficient allocation of water resources through sound science and education could reduce the difficulties imposed on developing water markets.

Biotechnology

BOLD STEP 1

USDA should lead the charge to create awareness and concern about water issues

USDA should take the lead to create awareness and concern about “water problems” and identify problem causes (e.g., urban, agriculture, commercial, environmental, and recreation).

BOLD STEP 2

USDA should develop an integrated research and development program for water security—with funding

Participants recommended that USDA develop an integrated research and development program with adequate funding to address the problem.

PHOTO BY AMANDA ROHDE

USDA Agricultural Water Security Bold Steps: Detailed explanations of proposed bold steps for USDA with suggestions for partners