Water for Agriculture Challenge Area Stakeholder Input

On July 16, 2013, NIFA held a live, web-based stakeholder listening session in which stakeholders were able to comment both orally and via online chat on the new water challenge area. More than one hundred-fifty respondents participated Stakeholders provided additional comments via email over the 2 weeks following the live web-based session. NIFA received approximately 45 oral and written responses, representing approximately 30 universities, 6 professional organizations, 4 public interest groups, 1 industry association, and several individuals, collectively representing over 700 individual stakeholders and 15 businesses. NIFA used topic modeling and expert analysis to summarize the stakeholder input.

Overall, respondents were very supportive of the idea of a new challenge area, on the topics of water security, water quality and quantity, water use efficiency, water application and consumption, in an integrated (Research, Extension, and Education) approach. In general, comments advocated a holistic approach (including multi-disciplinary and interdisciplinary, as well as regional and cross-sectoral partnerships and collaborations) with the goal of sustainable, water resilient agriculture and a mix of small and large grants both short- and long-term. There was also support for projects that include smaller scale—such as small watersheds—and linking producer to practitioner levels. Several stakeholders supported incorporation of evaluation criteria and development of key performance and sustainability indicators to ensure the quality of the program. Some specific topics and concepts were brought up that stakeholders felt had not received sufficient attention in the past, including:

- Incorporate social, economic, and behavioral sciences and link these to physical and biological sciences, especially with regard to practical solutions, feedbacks, incentives and barriers to change, and risk management.
- Consider major water sources, such as the Mississippi, Great Lakes, and Ogallala, as well as location and conditions of important headwaters for major systems.
- Link water to climate variability effects (such as alterations to precipitation distribution, soil moisture, flooding potential and intensity and drought potential and intensity) , land use (bioenergy crops, urbanization), and energy (e.g., hydropower, biofuel plants, standard energy cooling).
- Consider linkages to policy, regulatory frameworks, and urban-to-rural water linkages, water transport, and water purification (including sea water and water reuse).
- Incorporate the concept of water quality- and hydrologically-sensitive areas where there are close and strong two-way connections between producers, sources and users, urban and rural areas.
- Link to livestock, fish and wildlife, food safety, and ecosystem health and services (including riparian buffers, wetlands, forests).
- Emphasize fulfilling crop and livestock needs, beyond simply focusing on quantity and availability.
- Incorporate a large suite of water quality issues and innovative solutions to problems of chemicals of environmental concern, nutrients (management systems, hypoxia, bioavailability) and carbon, pathogens, and thermal pollution.
- Address problems and indirect/unintended consequences of water reuse related to water quality and aquifer/groundwater recharge.

- Include groundwater as well as surface water issues.
- Include erosion and sedimentation issues —recovery from these events as well as planning for and reacting to them.
- Address the demand and need for developing water resource management and restoration, particularly soil and water education programs in tribal areas.
- Encourage use of tools and resources, such as modeling and model integration, improvement and validation; remote sensing and Geographic Information Systems (GIS); molecular-based hydrology (genomics, proteomics, isotopic probing and signatures); and methods for predicting water demand based on projections of land use, rising temperatures, and changing climate patterns.
- Include projects to synthesize existing data and research results, and going beyond Coordinated Agricultural Projects (CAP) to networks such as the USDA Regional Climate Hubs or networks of CAPs with open access databases that include complete metadata and curation.