

North Central Region Water Network Seed Grant Reporting Template

Title: Capacity Building Workshop for Irrigation Professionals in the North Central Region. Completed 2015

Abstract: The states that participated in the Irrigation Capacity Building workshop represent about 25% of the total irrigated farm and ranch land in the US, and each of these states has its own concerns about the quantity and quality of water related to crop irrigation. Our goal has been to continue to look for ways to help farmers and ranchers make data driven decisions about how and when to use water for irrigation, and also to promote practices that preserve and protect water resources. In June of 2015, a group of researchers, extension faculty, and soil and water conservation staff met in Clay Center and Lincoln Nebraska to share irrigation water management success stories, view cutting edge irrigation research, discuss opportunities for inter-state collaboration, and ultimately submit a joint research proposal to USDA NIFA-AFRI that quantified the water quality impacts of implanting sensor based irrigation water management.

Purpose or Need:

The North Central region of the US ranges drastically in climate from arid in western Nebraska to humid in eastern Michigan. Despite these climatic differences, the need for supplemental irrigation water is shared due to drastic changes in soil water hold capacity. As a result, the need for supplemental irrigation raises many questions about the sustainability of water supplies, and how major water users like farmers and irrigators can implement research based practices to conserve water for future use and to prevent the degradation of water from leaching of nitrate nitrogen. All of the states in the north central region have some shared localized water concern, but more eastern states have not had the same support for irrigation research as a western state like Nebraska. Thus, there was significant interest among extension and SWCD staff in learning more about the applied irrigation research that is conducted in Nebraska. This knowledge can then be extended to farmers and stakeholders in more northern and eastern states that have fewer pervasive water concerns.

Describe your Goals of the Project:

- Use a train the trainer model to disseminate best management practices for irrigation across 6 states of the North Central region to increase multistate connectivity among university professionals and partners.
- A subgroup of the workshop participants collaborated to explore potential grant opportunities to sustain irrigation best management practices across the North Central region. Specifically, we wanted to look at how we produce measurable water quality results from implementing sensor based irrigation water management. Suat Irmak pioneered an extension network built on this principle in Nebraska.

Methods and Activities:

Since the inception of the grant, the Core Project team leaders (below) have met several times over teleconference to plan a regional meeting and workshop that was held June 9-11th.

Core Project Team Leaders	
Jade Mitchell	MSU Extension
Steve Miller	MSU Extension
Dean Steele	NDSU
Chris Hay	SDSU Extension
Thomas Scherer	NDSU Extension
Suat Irmak	UNL Extension
Joshua Stamper	UMN Extension

Capacity Building Workshop Participants	
Name	Organization
Jade Mitchell	Michigan State
Monica day	Michigan State
Steve Miller	Michigan State
Todd Whitney	UNL Extension
Bill Bronder	Sherburne MN SWCD
Katie Husman	UNL Extension
Gary Zoubek	UNL Extension
Lyndon Kelley	MSU/Purdue Extension
Brad Rathje	Nebraska
Jenny Rees	UNL Extension
Chuck Burr	UNL Extension
Rebecca Power	UW-Madison
Aaron Nygren	UNL Extension
Travis Janson	Benton MN SWCD
Wade Salo	East Otter Tail MN SWCD
Darren Newville	East Otter Tail MN SWCD
Dean Steele	NDSU
Chris Hay	SDSU Extension
Thomas Scherer	NDSU Extension
Neith Little	UMN Extension
Katie Winkelman	Stearns MN SWCD
Suat Irmak	UNL Extension
Joshua Stamper	UMN Extension
Troy Ingram	UNL Extension
Ali Mohammed	UNL Graduate Student

The leadership group decided on topic areas to discuss, and initiated the grant application process by submitting a letter of intent for the USDA NIFA-AFRI Water for Ag Challenge area. This application was classified as an integrated project that incorporates research, education and extension. Suat Irmak served as the PI.

On June 9th a larger group met (listed above with two participants identifying as African American) in Clay Center, NE to learn about the irrigation and related research activities that have been conducted in Nebraska. Workshop participants (that were solicited by the Team Leaders as having significant influence among local irrigated producers) had multiple opportunities to interact and discuss strategies for improving the adoption of sensor based irrigation water management. Each state gave an overview of major irrigation water issues within their state (quality, quantity, localized concerns, interstate compacts, etc), and talked about current state strategies to address groundwater contamination and sustainability of ground and surface water use for irrigation. Then we covered multiple several areas of science surrounding water balances and sensor technology, and in the afternoon we had multi-state research updates. Finally in the afternoon, the group did a field tour of the irrigation research facilities at Clay Center research station.

The group reconvened the next day in Lincoln, NE to discuss emerging issues surround water quality related to irrigation, and to continue to revise the USDA AFRI-NIFA Water for Agriculture grant application.

Outcomes:

Goal 1: In participant surveys after the capacity building workshop, 86% of participants felt that they had increased their understanding of how to utilize soil moisture sensors in their education/extension/outreach programs. Most participants said that they were very likely to promote the use of soil moisture sensors as an irrigation water management tools in their home area. Participants also indicated that they saw significant value in getting together to collaborate with peers.

Goal 3: The USDA NIFA-AFRI application, entitled Quantification of Regional Impact(s) of Technology Implementation in Water Quantity and Quality Management by Expansion of the Nebraska Agricultural Water Management Network (NAWMN) in the North Central Region through Multi-State Integrated Research and Extension/Outreach was successfully submitted to NIFA-AFRI by Suat Irmak on July 8th (see attached PDF of application) Unfortunately, the proposal was not selected for funding. In the summary from the scoring panel, comments were very positive about the extension and information transfer potential. However, the panel has misgivings about how the project would function across all the different states, and if the results from so many different locations could be compared with statistical rigor. The panel also seemed very concerned about the lack of a behavioral science component despite having significant risk assessment components. There was mixed interest from North Central survey participants about pursuing future research opportunities.

Extension Match/ Contribution	Partner Match/ Contribution	New leveraged funding*
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Personnel (salaries, wages, fringe for leaders, support staff, students)

Recipient organization or other subcontracted institutions
 Those employed elsewhere- consultant/stipend/services

Materials and Supplies (anything from educational to field research supplies)

Travel

Publications/Printing (an article in a scientific or technical journal or other type of field/program related publication or for commercial printing of brochures and program materials)

Other: non-personnel stipends or services, communications, meetings, speakers, equipment, etc.

\$ 11,640	\$ 5040	\$
\$	\$	\$
\$	\$	\$
\$	\$	\$
\$	\$	\$
\$	\$	\$

TOTAL	\$ 11640	\$ 5040	\$
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Deliverables: See attached for AFRI-NIFA grant application and survey results.



