

Report as of 2006 for 2005ND86G: “Assessing the Effectiveness of Local Water Institutions in Water Management”

Publications

- Conference Proceedings:
 - Hearne R., 2006, "Water Quality Monitoring Among Local Agencies in the Red River Basin", 2006 National Water Quality Monitoring Conference. San José CA. May 9.
 - Kritsky, C. C. and Robert Hearne, 2007, "Characteristics of Effective Local Water Management Organizations in the Red River Basin", Third International Water Conference, International Water Institute, Grand Forks, March 13-15.
 - Hearne R., 2006, "Criteria and Indicators for Effective Water Management Institutions", Red River Basin Conference Winnipeg, Manitoba, January 12.
 - Hearne R., 2006, "Interbasin Transfer to Reduce Flooding: The Case of Devils Lake, North Dakota", University Council on Water Resources Conference. Santa Fe, NM. July 18.
- •Other Publications:
 - Hearne R. 2005. "A Review of Water Management Institutions in The Red River of the North Basin." Paper presented at the W-1190, Western Water Multistate Research Project Meeting. Las Cruces, NM. October 17-19, 2005.
- Articles in Refereed Scientific Journals:
 - Hearne R. 2005. "Evolving Water Management Institutions In The Red River Basin." Under Review Environmental Management

Report Follows

ASSESSING THE EFFECTIVENESS OF LOCAL WATER INSTITUTIONS IN WATER MANAGEMENT

Project Description

There are a variety of formal and informal local institutions that are involved with water resources management in rural areas. These governmental and non-governmental institutions have different objectives, different legal statuses, and different affiliations with state and local governments. Research is needed to assess the roles and effectiveness of local water institutions. As new initiatives to improve water quality are being proposed, it is important to assess the capacity of existing institutions to meet new and evolving needs. The objective of this research is to improve local management of water resources by providing policy makers and agencies with an improved understanding of the characteristics of successful local institutions. This research will focus on the Red River of the North basin in Minnesota and North Dakota although some assessment of Manitoba institutions will also be included. The basin is fairly homogeneous in terms of land use and geographic features, but features three completely different sets of water law, which makes it an excellent case study of institutions. The overall objective of this research is to strengthen local water management institutions so that they may better meet evolving local and basin wide needs, especially the maintenance of water quality. Specific objectives of the research include: 1) Develop a set of objective and subjective criteria and indicators to evaluate local water management institutions; 2) Provide a review of the different governmental and nongovernmental institutions in the basin, classify their goals, activities and chartered purposes, and identify overlaps and functions that are not being addressed; 3) Identify and evaluate the characteristics of local water institutions that have a demonstrated capability to meet local goals and wider goals of the greater river basin; 4) Assess the use of: scientific and technical information; extension education and training programs; and other support provided by governmental and non-governmental agencies; 5) Analyze institutions and agencies likely behavior in a decision-making situation and further develop decision-making support tools; 6) Identify the characteristics of institutions that successfully evolve to meet new challenges; 7) Analyze preferences of a sample of residents and stakeholders toward watershed management issues and the types of institutions that they trust; and 8) Disseminate results to various forums including local workshops and scientific journals. Objective and subjective criteria and indicators for local water institutions will be refined for local circumstances by interviewing and surveying assorted State and Federal agencies who work on water management issues. A survey of local water institutions will be used to: identify goals, activities, and accomplishments; assess their understanding and use of technical information and extension training; and provide an understanding of how these institutions have evolved to meet changing needs. This survey will be supported by another survey of local leaders, county commissioners, and mayors. The Legal-Institutional Analysis Model will be used to assess negotiation strategies. A number of choice experiments and a stated preference technique that can estimate the non-market value for environmental goods and services, will be used to analyze residents and leaders preferences towards water management programs and institutional frameworks.

Benefits of the Research

By identifying the attributes of local institutions that effectively achieve their own goals and/or further goals of water quality maintenance, this research will: 1) ascertain whether existing institutional frameworks should be adapted to meet evolving needs or new institutions should be developed to address emerging issues such as water quality monitoring and enforcement; 2) support local institutions by identifying key characteristics that facilitate effectiveness; 3) assess the benefits and costs associated with having water resource institutions defined along county lines as opposed to watershed lines; 4) support the development of extension and education programs that strengthen local institutions by specifically addressing key characteristics of effectiveness; and 5) help policy makers in the design strategies to monitor and enforce nonpoint source pollution abatement initiatives. Based upon this research and subsequent reviews and comments, recommendations will be made to political leaders and lawmakers, agency officials, and local stakeholders.

This project will collaborate with the North Dakota State University's (NDSU) M.S. programs in Agribusiness and Applied Economics, and Natural Resources Management and is expected to support at least two M.S. students. It should produce at least two M.S. theses, a number of extension reports, at least two peer-reviewed scientific journal articles, and at least one workshop to present results to regional and local water management leaders.

Planned First and Second-Year Goals

During the first year period of September 2005 – August 2006 planned goals were to:

- 1) Develop a set of objective and subjective criteria and indicators to evaluate the effectiveness of local water management institutions;
- 2) Review the different governmental and nongovernmental institutions in the basin, classify their current goals and activities as well as their chartered purposes, and identify overlaps as well as functions that are not being addressed; and
- 3) Identify and evaluate the characteristics of local water institutions that have a demonstrated capability to meet local goals and wider goals of the greater river basin, including water quality monitoring and participation in the establishing TMDLs.

During the period of September 2006- August 2007 planned goals included:

- 4) Assess the use of: 1) scientific and technical information provided by USGS and other agencies; 2) extension education and training programs; and 3) other support provided by governmental and non-governmental agencies and organizations;
- 5) Analyze institutions' and agencies' likely behavior in a decision-making situation, such as watershed and basin planning, or conflict resolution and further develop decision-making support tools;
- 6) Identify the characteristics of institutions that successfully evolve to meet new challenges; and

- 7) Analyze preferences of a sample of residents and stakeholders toward watershed management issues and the types of institutions they trust.

Progress towards Goals

A review of water management organizations and institutions has been conducted.

A set of criteria and indicators for effective public water management organizations was developed and used to develop a survey instrument in 2006. A survey of organization managers and board members was conducted in December 2006 – January 2007. Survey data is currently being analyzed. This analysis will: i) identify and evaluate the characteristics of local water institutions that have a demonstrated capability to meet local goals and wider goals of the greater river basin; ii) assess the use of scientific and technical information, extension education and training programs, and other support provided by governmental and non-governmental agencies and organizations; and iii) identify the characteristics of institutions that successfully evolve to meet new challenges. A MS thesis from this work will be presented and defended in June or July 2007.

An analysis of institutions' and agencies' likely behavior in a decision-making situation has not been conducted. This objective was to have been completed with the support of USGS personnel from Ft. Collins Research center. However, given that grant funds can not be used for USGS travel, we have not been able to complete this task. Currently there are no plans to complete this activity.

A second survey of informed stakeholders will be conducted in late 2007. Currently the population to be sampled is being identified and initial consultations to support the development of the survey instrument are being conducted.

A further analysis of measures of "effectiveness" is being initiated. The results of this analysis should be used with the data on organizational activities and attributes.