The Iowa/Cedar River Basin in Iowa: Capacity Building for Integrated Water Resources Management through Ecosystem Services Evaluations and Collaborative Modeling

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The 2008 Flood was a catalyst for cooperative action

Integrated Water Resources Management — All life depends on water

Biodiversity is a watershed stakeholder!
The Lower Cedar Valley is Iowa's most ecologically diverse landscape—home to globally rare plant communities and unique landscapes. Extreme flood events are a threat that cannot be abated with traditional strategies such as "Land Protection" and Stewardship

The Iowa/Cedar River Basin is 10% of the 196,000 acre project area is protected. According to the second half of the 20th century, Iowa's land use has been predominantly agricultural since early 1900s, but there has been an increase in annual row cropping over the second half of the 20th century.

The "Who" - Interagency Team and Cedar River Coalition

SCIENCE
Hydrologic processes, modeling

BASIN COORDINATION CENTER
Website, decision support technology, basin coordination

LOCAL, ON THE GROUND ACTION
Applied research, local ordinances, local watershed action groups

POLICY
State, Federal,

The team is creating a process by which all stakeholders (science, policy, and local) have input on the social, economic and environmental trade-offs involved with various future desired scenarios of the entire basin.

Implementation example: Middle Cedar Watershed Ecosystem Services Valuation Study (Earth Economics and American Rivers With Support from the McKnight Foundation):

The cost of insufficient flood protection is enormous—damage estimates following 2008 Flood was $10 Billion in Iowa alone! What are the economic trade-off’s of investment in perennial cover (flood and H2O quality) vs. increased agricultural productivity?

Primary goals and deliverables are:
- Identify natural assets currently contributing to flood protection; value these assets in dollars via benefits-transfer approach.
- Document the regional economic impact of the Middle Cedar’s ecosystem services, with an agricultural emphasis
- Provide financial justification for pursuing watershed scale flood protection that uses both built and natural capital
- Conduct two workshops aimed at stakeholders, and decision-makers to explore practical applications of the work in the Middle Cedar

Implementation Example: Stakeholder engagement through Shared Vision Planning (SVP) in Indian Creek Watershed

The IWRM approach requires movement between the silos of water resources management to implement local action, informed by science and supported by state and federal policy. In the face of increasing global population and climate change, conflicts around water resources are becoming increasingly common. Understanding the trade-off's associated with differing uses is critical to a sustainable water use, both appropriate water quantity and good water quality.

SVP is the intersection of traditional planning, collaboration and modeling the system. Rather than involving the public via public meetings at the beginning and end of planning, we intend to bring a committed stakeholder group through a conceptual modeling process where the trade-off’s of various “future conditions” can be analyzed and discussed.

The Interagency Team has received funding through the COE’s “Response to Climate Change Program” to implement SVP in the Indian Creek Sub-Watershed. Results will be incorporated into ongoing hydraulics modeling and decision support tool creation. The Team is exploring using results of SVP—the desired future scenarios—as a springboard for discussion around the entire basin.

Definition and measures of success...

IWRM and SVP does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits using a wide participation of the stakeholders and scientists in a collaborative decision-making process using the best available science and economic information.

Its true measure is in how successful it is in helping to meet environmental, social, and economic goals; to increase scientific knowledge; and to reduce tensions among stakeholders.

5 year milestones:

• Novel partnerships formed around high-priority projects
• Thriving basin coordination center
• Coordinated science from Universities, Flood Center, Agencies
• Public venue for the continued conversation about watershed management
• Sustained participation in Interagency Team
• Education—improved watershed awareness
• Novel partnerships formed around high-priority projects

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