Social Indicators for Nonpoint Source Projects

Building Capacity for Sustainable Watershed Management in Illinois

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Content based on materials developed in conjunction with Ken Genskow and Rebecca Power

Social Indicators for NPS Project Overview

- Develop a system for collecting and using social data to evaluate NPS management efforts in Great Lakes Region/Region 5
- Partnership with USEPA, state water quality agencies, and land grant universities
- Provide assistance & support to state programs and NPS projects
- Complement existing “administrative” and “environmental” indicators

Three Types of Indicators

- Environmental
  - Pesticide levels, pH, E. coli
- Administrative
  - Bean counting!
  - Number of plans written, number of newsletters distributed
- Social

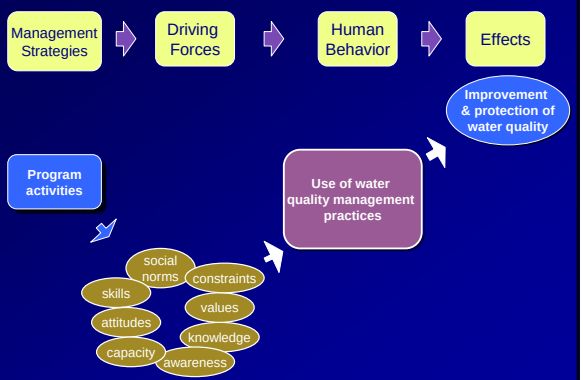
Management Response

Options:

- Regulate
- Persuade
  - Outreach and education
  - Financial Support
  - Technical Support

HD.gov

Conceptual Model



Overview of Social Indicators System

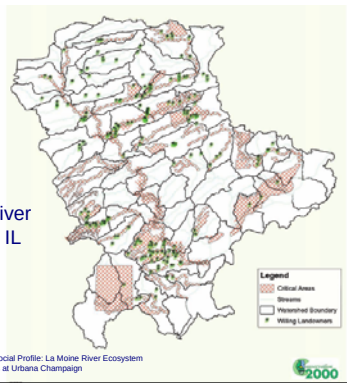
- Core indicators, supplemental indicators, and background/contextual factors
- All indicators measure change
- Scale is project level
- Currently focusing only on 319 projects
- Critical areas
- Target audiences

Targeting

- Focus efforts on area of greatest impact
  - Specific audience
  - Specific geographic area
- Some behaviors in some places can have a disproportionate impact on water quality

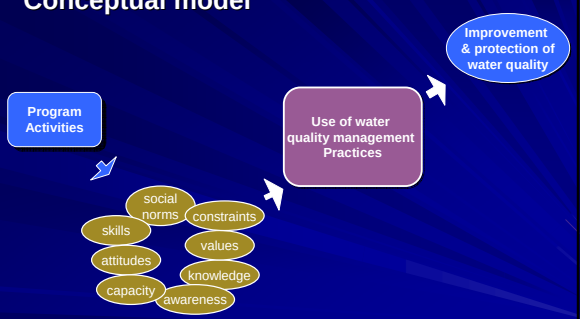
Targeting Critical Areas

La Moine River Watershed, IL

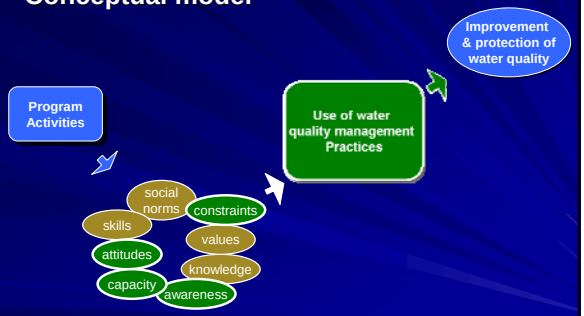


Source: McDermaid, K. 2005. Social Profile: La Moine River Ecosystem Partnership. University of Illinois at Urbana Champaign

Conceptual model



Conceptual model



Awareness

- Awareness of consequences of pollutants to water quality
- Awareness of pollutant types impairing water quality
- Awareness of pollutant sources impairing water quality
- Awareness of appropriate practices to improve water quality

Awareness of Consequences of Pollutants to Water Quality

Poor water quality can lead to a variety of consequences for communities. In your opinion, *how much of a problem are the following issues in your area?*	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Don't know
a. Contaminated drinking water	☐	☐	☐	☐	☐
b. Contaminated fish	☐	☐	☐	☐	☐
c. High drinking water treatment costs	☐	☐	☐	☐	☐
d. Reduced beauty of lakes or streams	☐	☐	☐	☐	☐
e. Reduced opportunities for water recreation	☐	☐	☐	☐	☐

Awareness of Pollutant Types Impairing Water Quality

Below is a list of water pollutants and conditions that are generally present in water bodies to some extent. In your opinion, *how much of a problem are the following pollutants in your area*?

	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Don't Know
a. Sediment in rivers and streams	☐	☐	☐	☐	☐
b. Nitrogen in rivers and streams	☐	☐	☐	☐	☐
c. Nitrates in rivers and streams	☐	☐	☐	☐	☐
d. Phosphorus in rivers and streams	☐	☐	☐	☐	☐
e. Heavy metals in rivers and streams	☐	☐	☐	☐	☐
f. Algae in rivers and streams	☐	☐	☐	☐	☐

Awareness of Pollutant Sources Impairing Water Quality

The items listed below are sources of water quality pollution across the country. In your opinion, *how much of a problem are the following sources in your area*?

	Not a Problem	Slight Problem	Moderate Problem	Severe Problem	Don't Know
a. Discharges from industry into rivers and streams.	☐	☐	☐	☐	☐
b. Discharges from sewage treatment plants.	☐	☐	☐	☐	☐
c. Drainage from mines.	☐	☐	☐	☐	☐
d. Soil erosion from construction sites.	☐	☐	☐	☐	☐
e. Soil erosion from farm fields.	☐	☐	☐	☐	☐
f. Soil erosion from shorelines and/or stream banks.	☐	☐	☐	☐	☐

Awareness of Appropriate Practices to Improve Water Quality

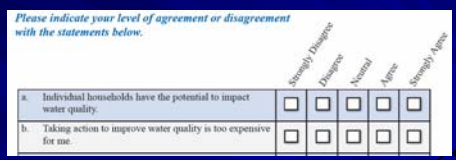
The practices below have the potential to improve water quality in your area. *Please indicate which statement most accurately describes your level of experience with each practice. Be sure to answer part "A" and part "B" for this set of practices.*

Please answer Section A and B for all practices	A. Please indicate which statement most accurately describes your level of experience with each practice. →						
	Does not apply	I've never heard of it	I've heard of it, but I'm not very familiar with it	I am familiar with it, but I've never done it	I have tried it, but I no longer do it	I currently use it	
a. Using grass waterways	☐	☐	☐	☐	☐	☐	
b. Managing tile drainage to control the flow of nutrients	☐	☐	☐	☐	☐	☐	
c. Using no-tillage farm practices	☐	☐	☐	☐	☐	☐	
d. Using reduced tillage farm practices	☐	☐	☐	☐	☐	☐	
e. Using Integrated Pest Management (IPM)	☐	☐	☐	☐	☐	☐	

Attitudes

- General water-quality-related attitudes
- Willingness to take action to improve water quality

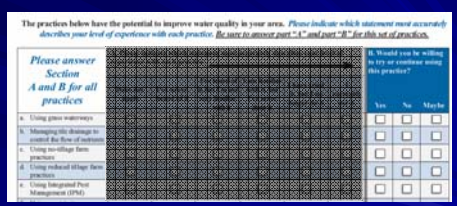
General Water-Quality Related Attitudes



Please indicate your level of agreement or disagreement with the statements below.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Individual households have the potential to impact water quality.	☐	☐	☐	☐	☐
b. Taking action to improve water quality is too expensive for me.	☐	☐	☐	☐	☐

Willingness to Take Action to Improve Water Quality

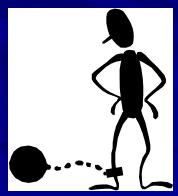


The practices below have the potential to improve water quality in your area. *Please indicate which statement most accurately describes your level of experience with each practice. Be sure to answer part "A" and part "B" for this set of practices.*

Please answer Section A and B for all practices		B. Would you be willing to try or continue using this practice? Yes	No	Maybe
a. Using grass waterways		☐	☐	☐
b. Managing tile drainage to control the flow of nutrients		☐	☐	☐
c. Using no-tillage farm practices		☐	☐	☐
d. Using reduced tillage farm practices		☐	☐	☐
e. Using Integrated Pest Management (IPM)		☐	☐	☐

Constraints

- Constraints to behavior change



Constraints to Behavior Change

- Constructs:
  - Economics / profitability
  - Financial incentives
  - Independence / own ideas
  - Environmental considerations
  - Status quo / traditional
  - Assistance incentives
  - Caution about government programs
  - Peer / norms considerations

Constraints to Behavior Change

When you make decisions about new management practices for your farm operations, *how important is each of the following?*

		Not at all important	Somewhat important	Undecided	Important	Very important
a.	Personal out-of-pocket expense	☐	☐	☐	☐	☐
b.	My own views about effective farming or land management methods	☐	☐	☐	☐	☐
c.	How easily a new practice fits with my current farming methods	☐	☐	☐	☐	☐
d.	The need to learn new skills or methods	☐	☐	☐	☐	☐
e.	Lack of government funds for cost share	☐	☐	☐	☐	☐
f.	Too much time required for implementation	☐	☐	☐	☐	☐
g.	Not having the equipment that I need	☐	☐	☐	☐	☐

Capacity

Grant recipient

- Resources leveraged by grant recipient

For target audience

- Funding available to support NPS practices in critical areas
- Technical support available for NPS practices in critical areas
- Ability to monitor practices in critical areas

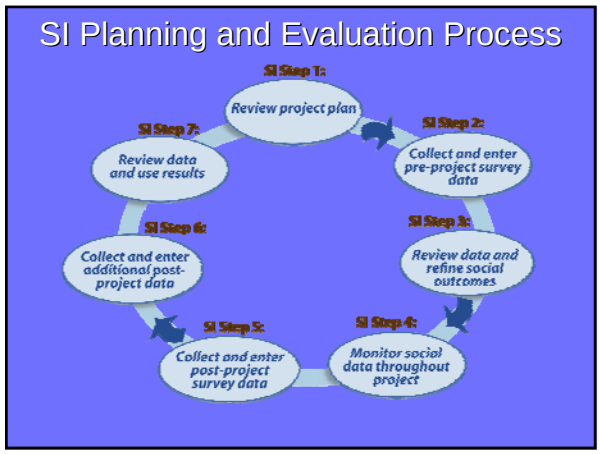
Behavior

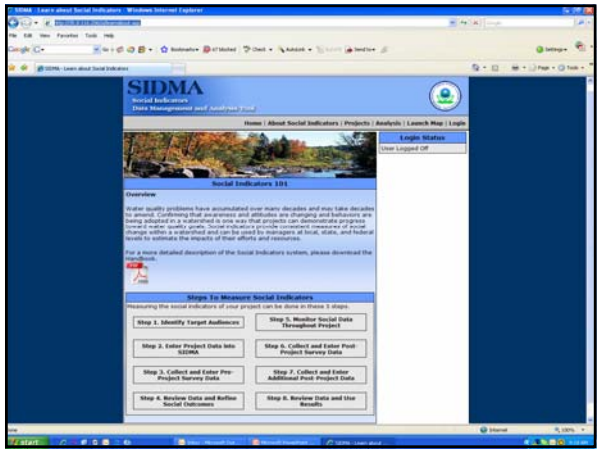
- Percentage of critical area receiving treatment
- Percentage of target audience implementing practices in critical areas
- Ordinances in place that will reduce NPS stressors

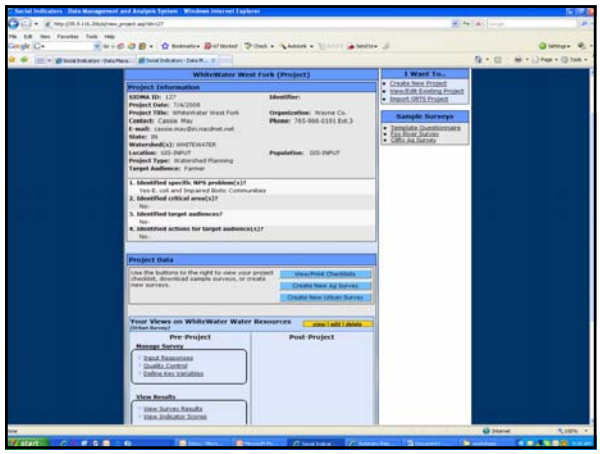
Percentage of Target Audience Implementing Practices in Critical Areas

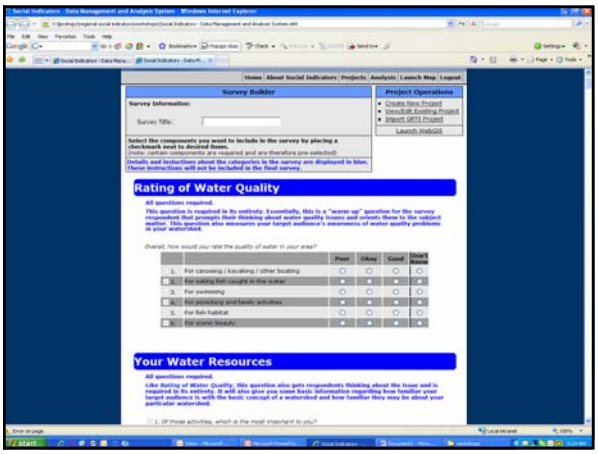
The practices below have the potential to improve water quality in your area. *Please indicate which statement most accurately describes your level of experience with each practice. Be sure to answer part "A" and part "B" for this set of practices.*

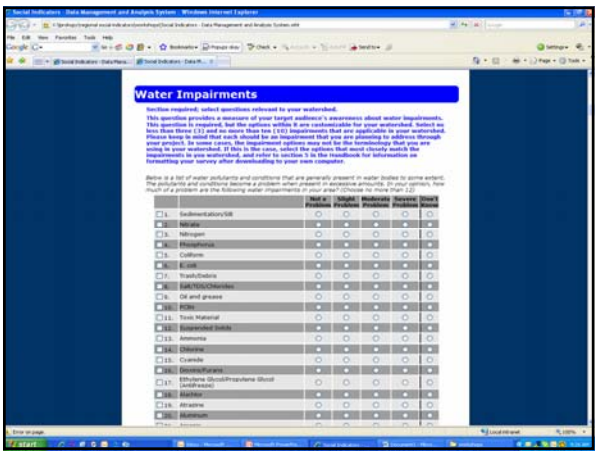
Please answer Section A and B for all practices	A. Please indicate which statement most accurately describes your level of experience with each practice. → Does not apply	I've never heard of it	I've heard of it, but I'm not very familiar with it	I am familiar with it, but I've never done it	I have tried it, but I no longer do it	I currently use it
a. Using grass waterways	☐	☐	☐	☐	☐	☐
b. Managing tile drainage to control the flow of nutrients	☐	☐	☐	☐	☐	☐
c. Using no-tillage farm practices	☐	☐	☐	☐	☐	☐
d. Using reduced tillage farm practices	☐	☐	☐	☐	☐	☐
e. Using Integrated Pest Management (IPM)	☐	☐	☐	☐	☐	☐

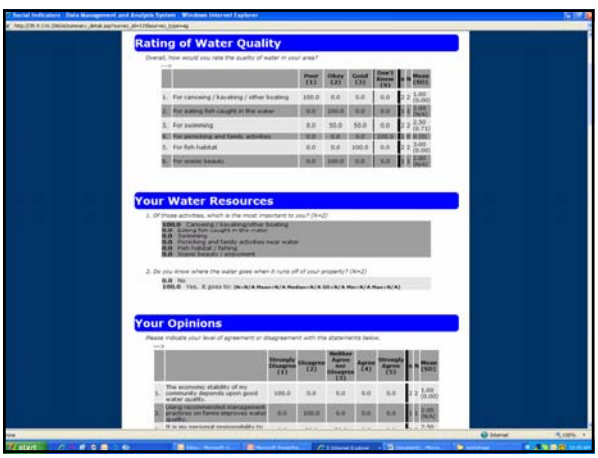

SI Planning and Evaluation Process
SI Step 1:
Review project plan
SI Step 2:
Collect and enter pre-project survey data
SI Step 3:
Review data and refine social outcomes
SI Step 4:
Monitor social data throughout project
SI Step 5:
Collect and enter post-project survey data
SI Step 6:
Collect and enter additional post-project data
SI Step 7:
Review data and use results

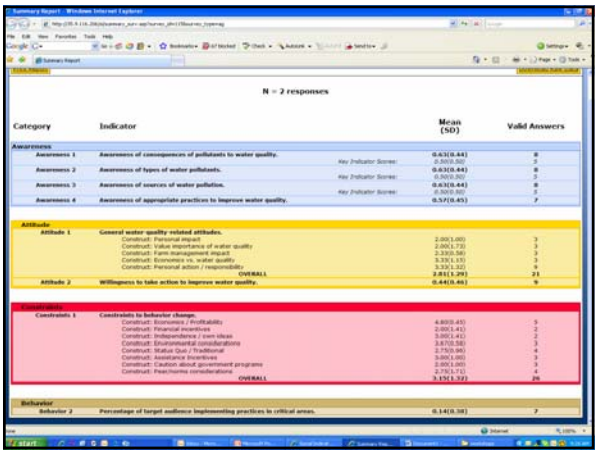

SIDMA
Social Indicators
Data Management and Analysis Tool
Social Indicators 101
Steps To Measure Social Indicators


WhiteWater West Fork (Project)
Project Information
Project Data
Your Views on WhiteWater Water Resources
Pre-Project
Post-Project


Survey Builder
Project Operations
Rating of Water Quality
Your Water Resources


Water Impairments


Rating of Water Quality
Your Water Resources
Your Opinions



N = 2 responses

Category	Indicator	Mean (SD)	Valid Answers
Awareness			
Awareness 1	Awareness of consequences of pollutants to water quality.	0.63(0.44)	8
Awareness 2	Awareness of types of water pollutants.	0.63(0.44)	8
Awareness 3	Awareness of sources of water pollution.	0.63(0.44)	8
Awareness 4	Awareness of appropriate practices to improve water quality.	0.57(0.45)	7
Attitude			
Attitude 1	General water quality related attitudes.		
	Construct: Personal impact	2.00(1.00)	3
	Construct: Value importance of water quality	2.00(1.73)	3
	Construct: Farm management impact	2.33(0.58)	3
	Construct: Economics vs. water quality	3.33(1.15)	3
	Construct: Personal action / responsibility	3.33(1.32)	9
	OVERALL	2.81(1.29)	21
Attitude 2	Willingness to take action to improve water quality.	0.44(0.46)	9
Constraints			
Constraints 1	Constraints to behavior change.		
	Construct: Economics / Profitability	4.80(0.45)	5
	Construct: Financial incentives	2.00(1.41)	2
	Construct: Independence / own ideas	3.00(1.41)	2
	Construct: Environmental considerations	3.67(0.58)	3
	Construct: Status Quo / Traditional	2.75(0.96)	4
	Construct: Assistance Incentives	3.00(1.00)	3
	Construct: Caution about government programs	2.00(1.00)	3
	Construct: Peer/norms considerations	2.75(1.71)	4
	OVERALL	3.15(1.32)	26
Behavior			
Behavior 2	Percentage of target audience implementing practices in critical areas.	0.14(0.38)	7

State and Regional Level

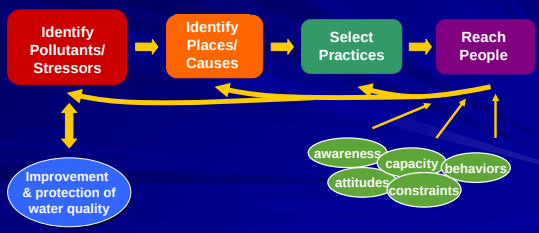
- Data can be summarized into impact reports
- Data can be compared across projects to see what worked and why

Using Social Indicators

- Clearly define environmental problems and the decision-makers ultimately responsible for solving them
- Clearly define linkages between environmental and social outcomes

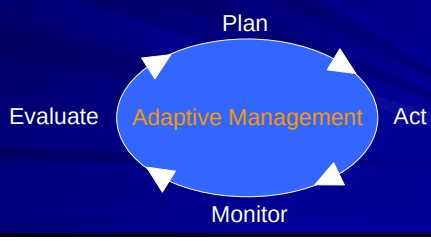
Using Social Indicators

- Identify social outcomes that will achieve project and watershed goals



Using Social Indicators

- Monitor impacts of outreach activities
- Feed evaluation data back into decision-making processes



Social Indicators Team

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Acknowledgements

- USEPA Region 5
- Illinois Environmental Protection Agency
- Indiana Department of Environmental Management
- Michigan Department of Environmental Quality
- Minnesota Pollution Control Agency
- Ohio Environmental Protection Agency
- Wisconsin Department of Natural Resources
- Great Lakes Regional Water Program
- Land Grant Universities in USEPA Region 5