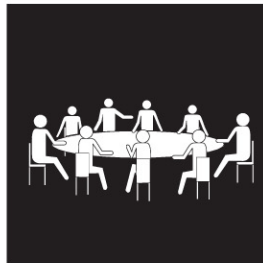


Handling Scientific and Technical Information in Contentious Public Issues:

A Public Issues Education Approach

Background material, Discussion points, Handouts, Visuals



Objectives

You will learn to...

- Identify the various roles of Extension educators in resolving public issues wherein scientific and technical information are key components.
- Recognize the difference between data conflicts and substantive conflicts in public issues.

Objectives

You will learn to...

- Apply appropriate methods for integrating science and technical information into collaborative processes.
- Use tools and techniques to:
 - Manage warring information sources or contested science, including distrust in the science from your own institution.
 - Manage scientific and technical uncertainty, including lack of good data.
 - Deal with issues that involve power imbalances, such as environmental justice issues.

Traditional Roles in Public Issues Education

- Creating materials
- Presenting the policy options
- Providing alternatives and consequences
- Remaining objective and neutral



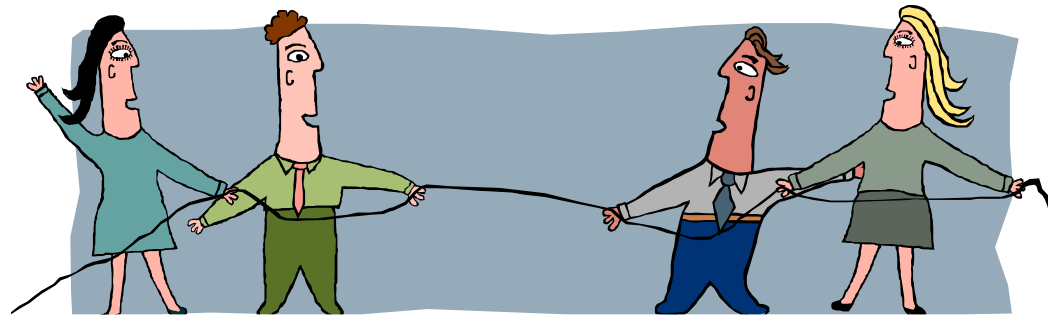
The scope of your work has increased.

- You have more opportunities to work directly with citizens and agencies to identify and resolve issues.
- Many issues are complex, contentious, and potentially divisive.
- Many issues are “data intensive.”
- Science itself can be at the center of the controversy.



Information Controversies

- Information is often disseminated by warring experts.
- People can mistrust the source of the data.
- Equal access to data can become a focus of the debate.



Are you clear about how to work in situations where information is the focus of the debate?

If you are not, your efforts can be compromised.

Source of Materials

*Managing Scientific and Technical Information
in Environmental Cases: Principles and
Practices for Mediators and Facilitators.*

RESOLVE, Inc.

U.S. Institute for Environmental Conflict Resolution

Western Justice Center

www.ecr.gov

Process Designer

Trainer/Educator

Roles of the Extension Educator

Facilitator

Collaborator
Mentor

Convenor
Coordinator

Program Developer

Evaluator

Mediator

Public Relations/Media Relations

Organizer

Diplomat

Listener

Technical Expert

Connector/Bridger
Networker

Data Collector

Transitioner

Process Supporter

Sponsor/Host

Process Observer

Coach/Advisor

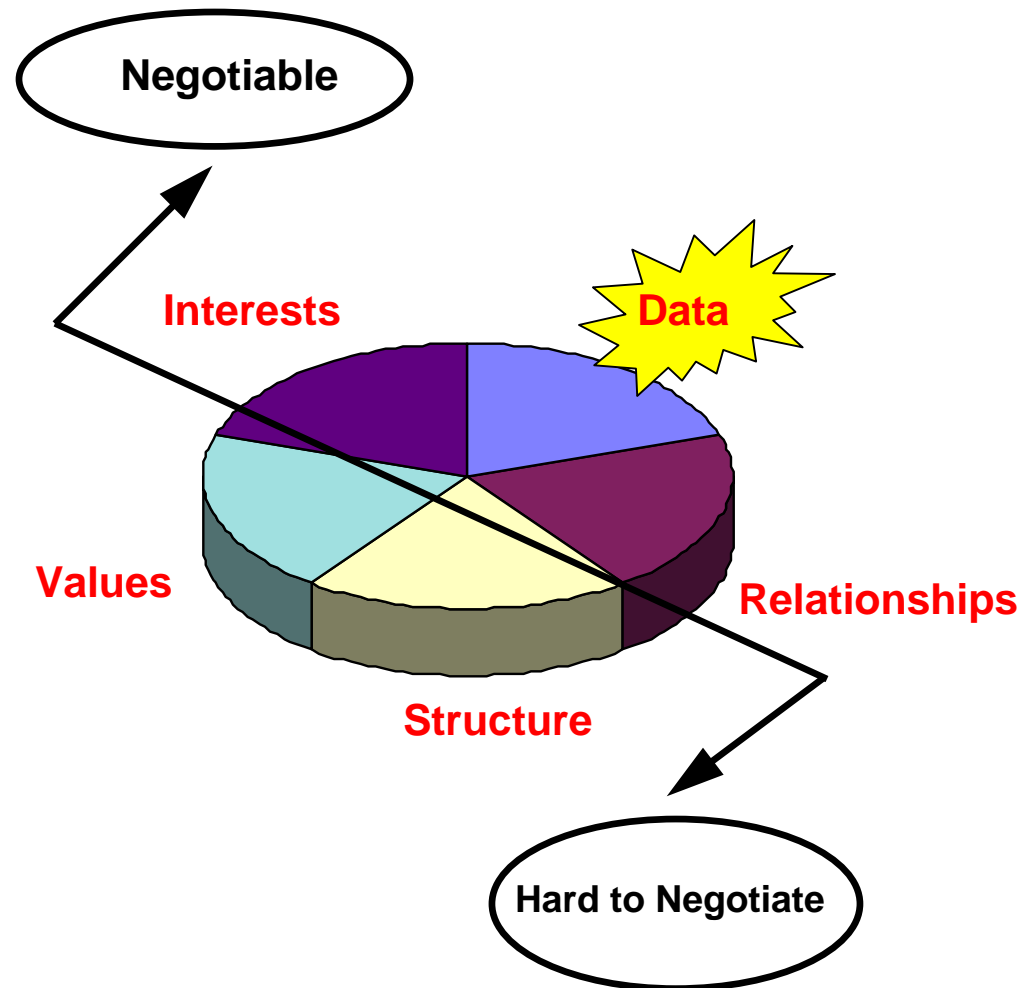
Catalyst

Information Provider/Resource Provider/Translator (of research)

Sources of Conflict

Working with Scientific and Technical
Information in Contentious Public Issues

Sources of Conflict



Data Conflicts

- Lack of information
- Misinformation
- Distrust of the information, the sources, or both
- Different views on what is important
- Different interpretations of data
- Different assessment procedures

“Rockslides”

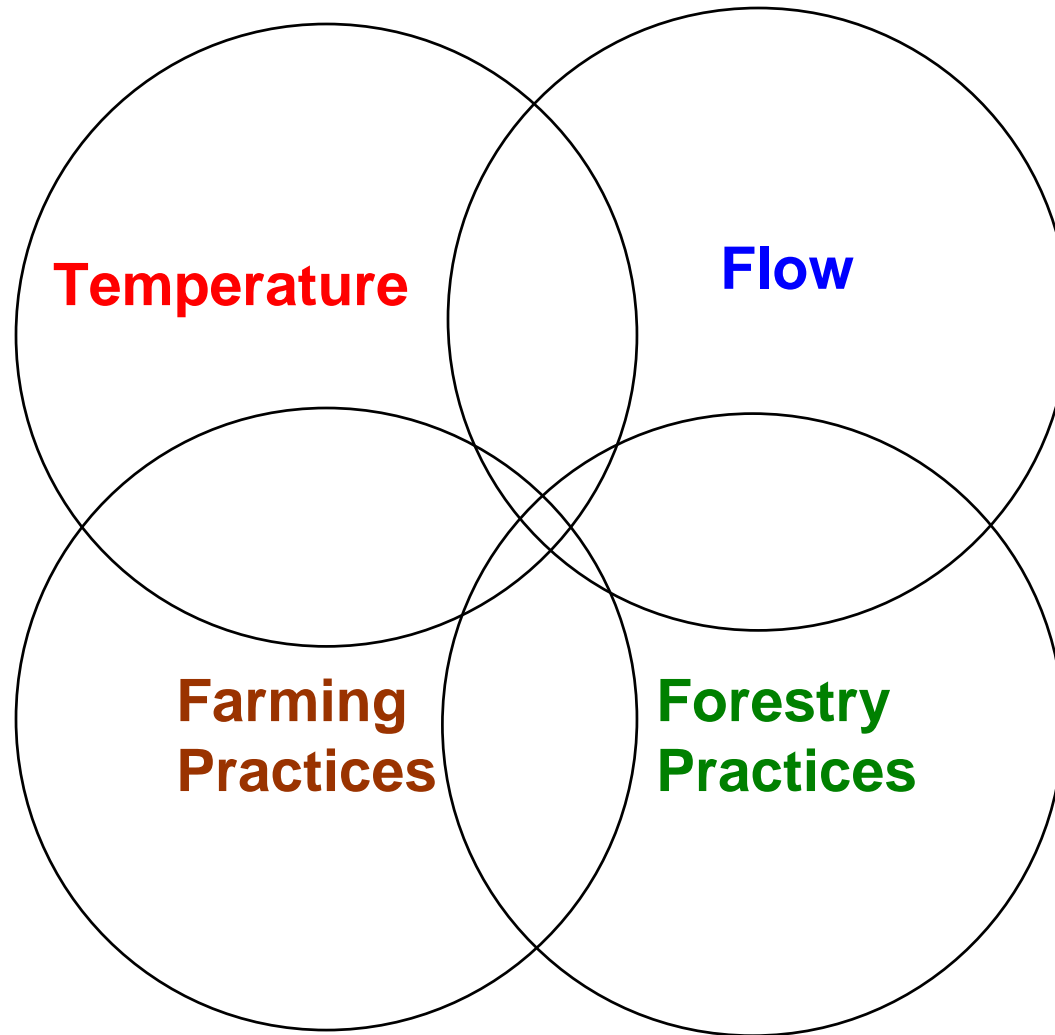
Key Concepts and Principles

Working with Scientific and Technical
Information in Contentious Public Issues

On the Nature of Knowledge

- Scientific research rarely provides definitive, unequivocal answers. All information is subject to questions of validity, accuracy, authenticity, and reliability.
- We can examine and debate information, but not always test. Subjective awareness, including intuition and hunches, often plays a role.
- Complex public issues often deal with systems. The whole is different than the sum of its parts.

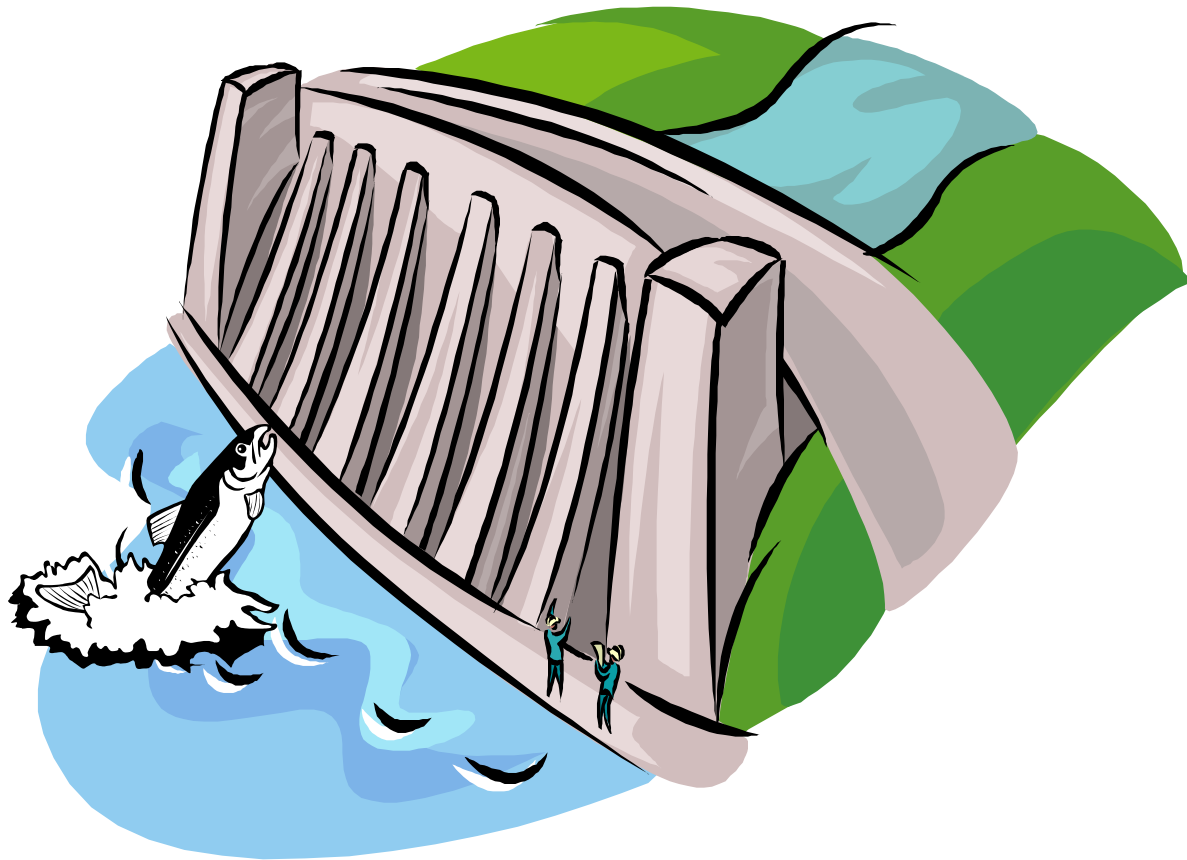
Salmon Habitat



On Uncertainty

- Biological and social uncertainties are facts of life. We will never know everything we need to make perfect decisions and predict all their impacts.
- Uncertainties arise from:
 - Insufficient measurements or observations.
 - Conflicting measurements.
 - Competing or fragmentary theoretical frameworks.
- Most decisions have unintended consequences, not merely calculated risks, side-effects, or trade-offs.

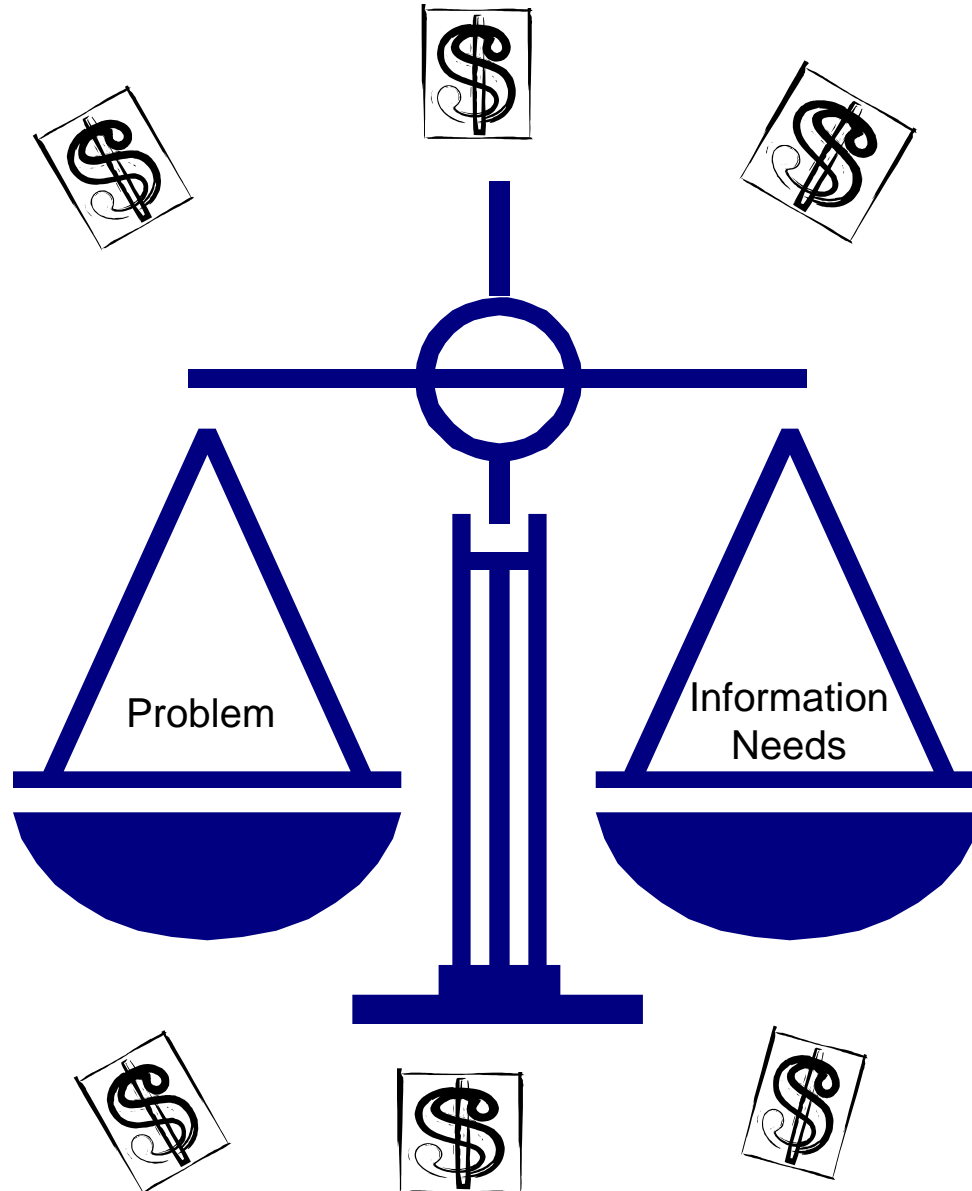
Should We Breach Dams for Salmon?



On Research and Information Gathering

- Stakeholders often face a need or desire for more information than is available. However, too much data can be overwhelming.
- Credible information commissioned or produced by some parties may be distrusted by others.
- The presumption that people implicitly trust scientists is not necessarily true.
- Information and research cost money, usually a lot of money.

Too Much, Too Little



On Modeling

- The promise of modeling may seduce stakeholders into believing models are infallible.
- Models may appear to be in opposition, when in fact they are designed with different assumptions. They are not comparable.

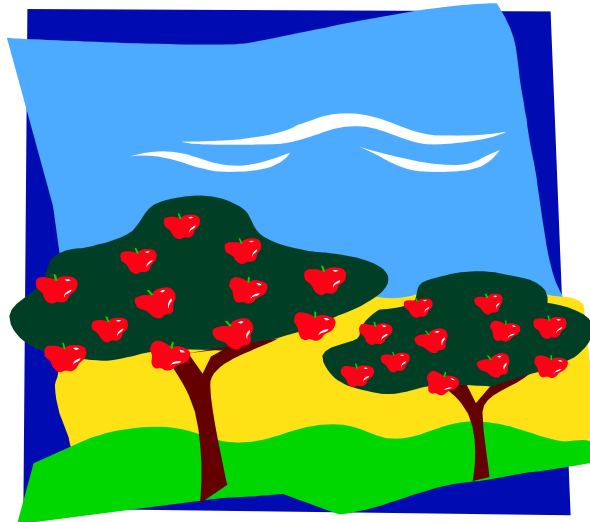
Watch What You Compare

Sunlight + Photosynthesis + Water + DNA =

Red Delicious

Sunlight + Photosynthesis + Water + DNA =

Macintosh



They are both apples, but they differ in taste, color, and shape.

On Stakeholders, Experts, and Other Third Parties

■ ON SCIENTISTS

- Uncertainty and division exist even among scientists, but disagreements may be less intense than you think.
- Scientists with a stake in the issue may not be sufficiently impartial.

■ ON STAKEHOLDERS

- Some are unable or unwilling to do their homework.
- People's tolerance for complexity and ambiguity varies.

■ ON ALL OF US

- Life experiences influence our view of the issues.

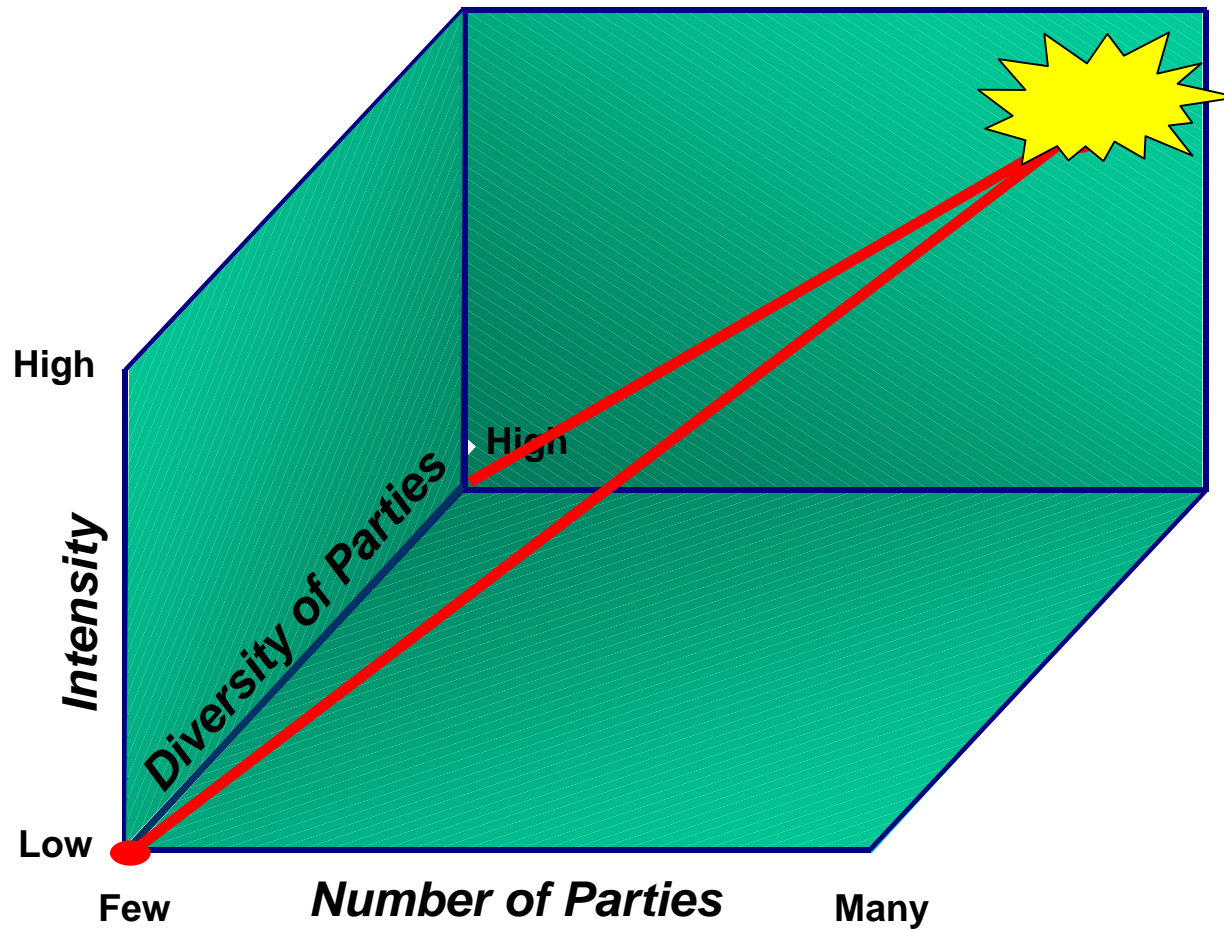
Life Experiences Influence Our Perceptions



On Information and Conflict

- Politics and underlying values often affect political decisions, even when a profusion of scientific information is available.
- Information that is usable by all stakeholders requires trust in the information and the methods by which it is produced.
- Scientific and technical complexity can escalate conflict, alarming and overwhelming people with too many counter-ideas or unclear options.

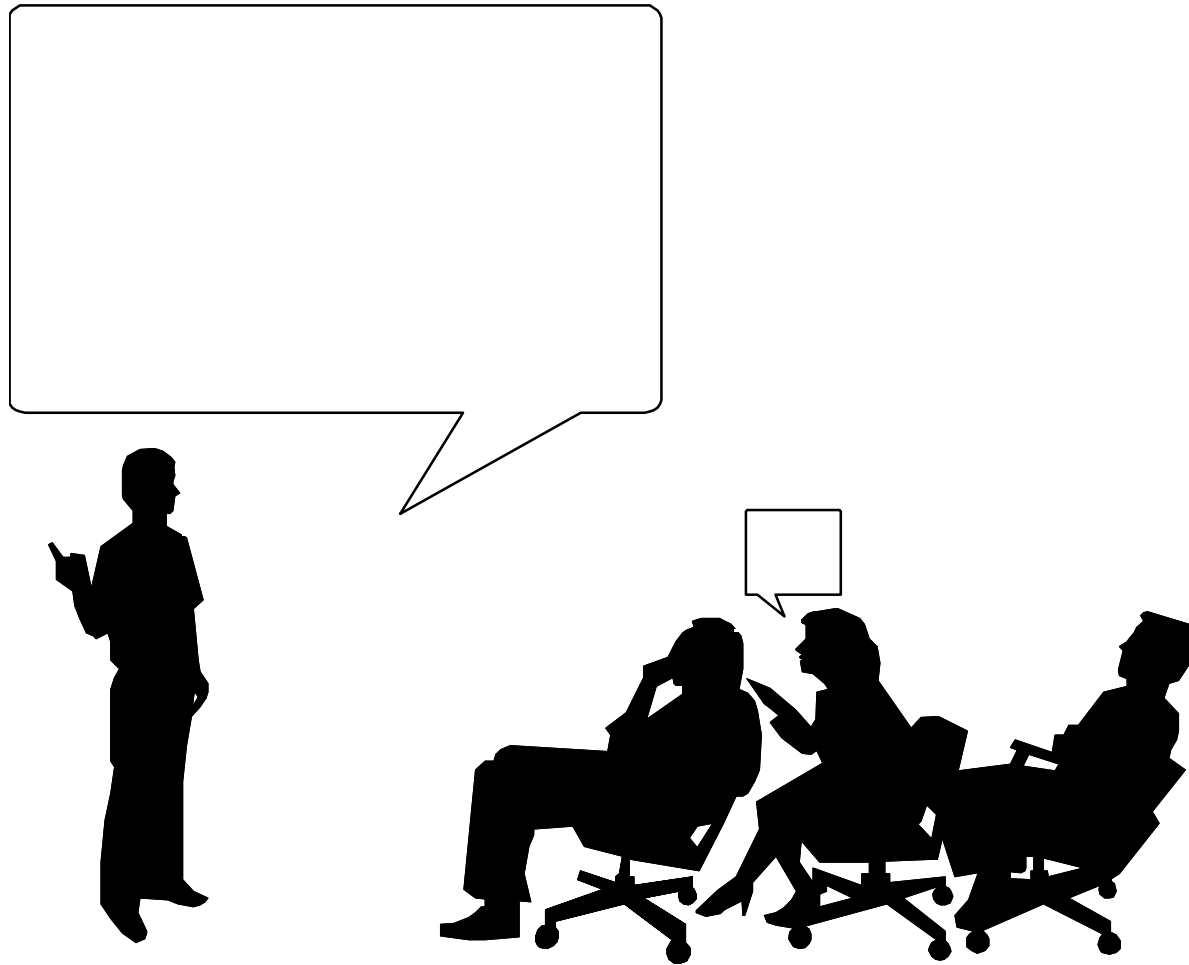
Complexity Can Escalate the Conflict



On the Educator's Role

- We tend to think in terms of agreements, solutions, and decisions. In many complex problems, it may not be possible for stakeholders to find a solution.
- The educator's biases can infiltrate the process -- for example, when framing the issue.

Maintaining Neutrality



Tools and Techniques

Working with Scientific and Technical
Information in Contentious Public Issues

Introduction

- The setting we work in can be chaotic. Our focus should be to help people proceed thoughtfully through a decision-making process.
- Group process strategies should be considered more as “rules of thumb” rather than hard and fast techniques.
- Guidelines are not applicable to every case.
- Multiple discussions of the legal, social, economic, and technical issues are often required.

Tools and Techniques: When

- Assessing an issue
- Designing a process
- Defining the problem
- Working with experts
- Negotiating and problem-solving
- Making and implementing agreements

Substantive Knowledge and the Educator

- Get immersed in the issues and language of the topic.
- Use self-restraint if you have expertise in the area.
- Prepare to manage different kinds of expertise.

Assessing the Issue

- Identify key players; consider their level of scientific and technical sophistication.
- Identify and assess the issues:
 - Potential information needs and data conflicts
 - Kinds of data the parties are relying on
 - Sources of information
 - Potential impacts, risks, precautions, and benefits that are likely to emerge

Assessing the Issue

Question assumptions that science-related issues are actually at the core of the controversy. A narrow scientific focus may miss or distort the issues or process.

Designing the Process

- Design a process strategy that anticipates and intentionally incorporates the scientific and technical issues.
- Timing is critical. Pace the data gathering and flow so information is available when needed.
- Ensure the proper level of confidentiality through documents, contracts, or ground rules.

Designing the Process

- Develop a process that allows the stakeholders as a group to:
 - Define the information they need.
 - Decide where they will get it.
 - Decide what they will do with it.
 - Determine how it will be incorporated in their decision-making process.

Designing the Process

- Examples of information and learning strategies:
 - Technical study team appointed by parties
 - Science summit
 - Moderated panel discussion
 - Poster sessions
 - Jointly created background papers
 - Facilitated “fish bowl” science discussion
 - Session where experts are invited to draft proposed language for a negotiating document

Defining the Problem

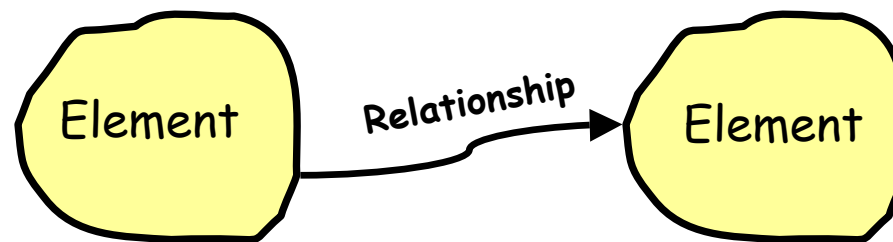
- Generate multiple descriptions of the scientific and technical problems as opposed to an inflexible, single-problem definition.
- Jointly agree on studies to be undertaken and methods to produce and analyze them.

Defining the Problem: Situation Mapping

- A situation map is a visualization tool.
- It “maps” the elements and relationships of a situation.
- It helps participants understand the situation and begin to identify information needs.

Situation Mapping

- Begin with a *map chassis* -- a core fragment to get people thinking and involved.
- *Elements* are parties, issues, and activities – nouns.
- *Relationships* are verbs on lines that connect elements.



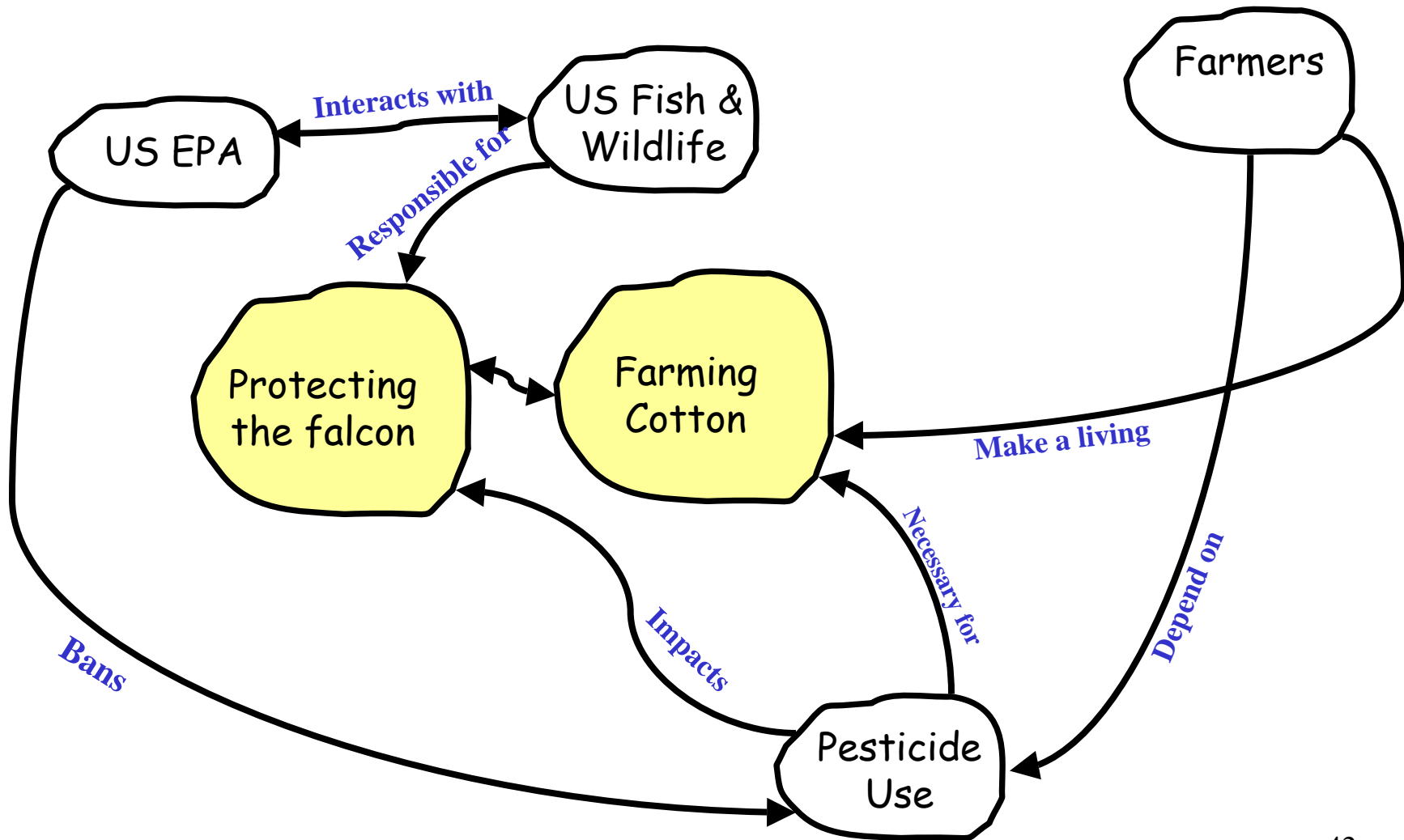
Situation Mapping: Prompting Questions

- Involve participants in revising the map by asking prompting questions
 - What are the central issues in the situation?
 - Who are the key stakeholders in this situation? How do they interact?
 - What actions, behaviors, or practices should be included?
 - What connects with what? In which way or direction?

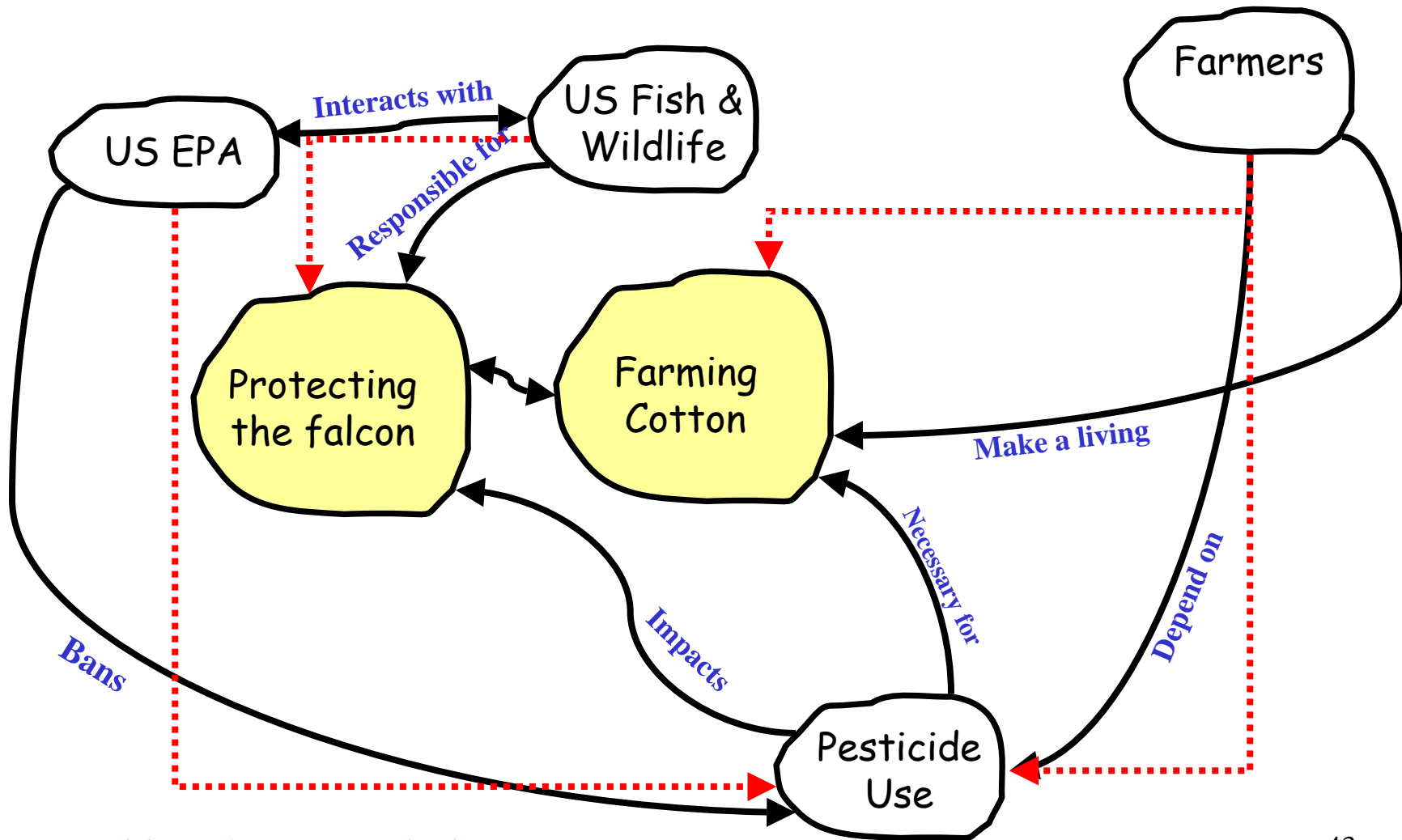
Situation Mapping

- Situation mapping is creative, not evaluative.
 - Ideas should be generated, not critiqued
- Situation maps can be either a single worldview, or a shared worldview.
- Strive for dynamic complexity, not detail complexity.
 - It is more important to understand the dynamics that give rise to the situation than to depict the details that constitute it.

Situation Map: The Cotton-Pesticide-Falcon Issue



Situation Map: The Cotton-Pesticide-Falcon Issue

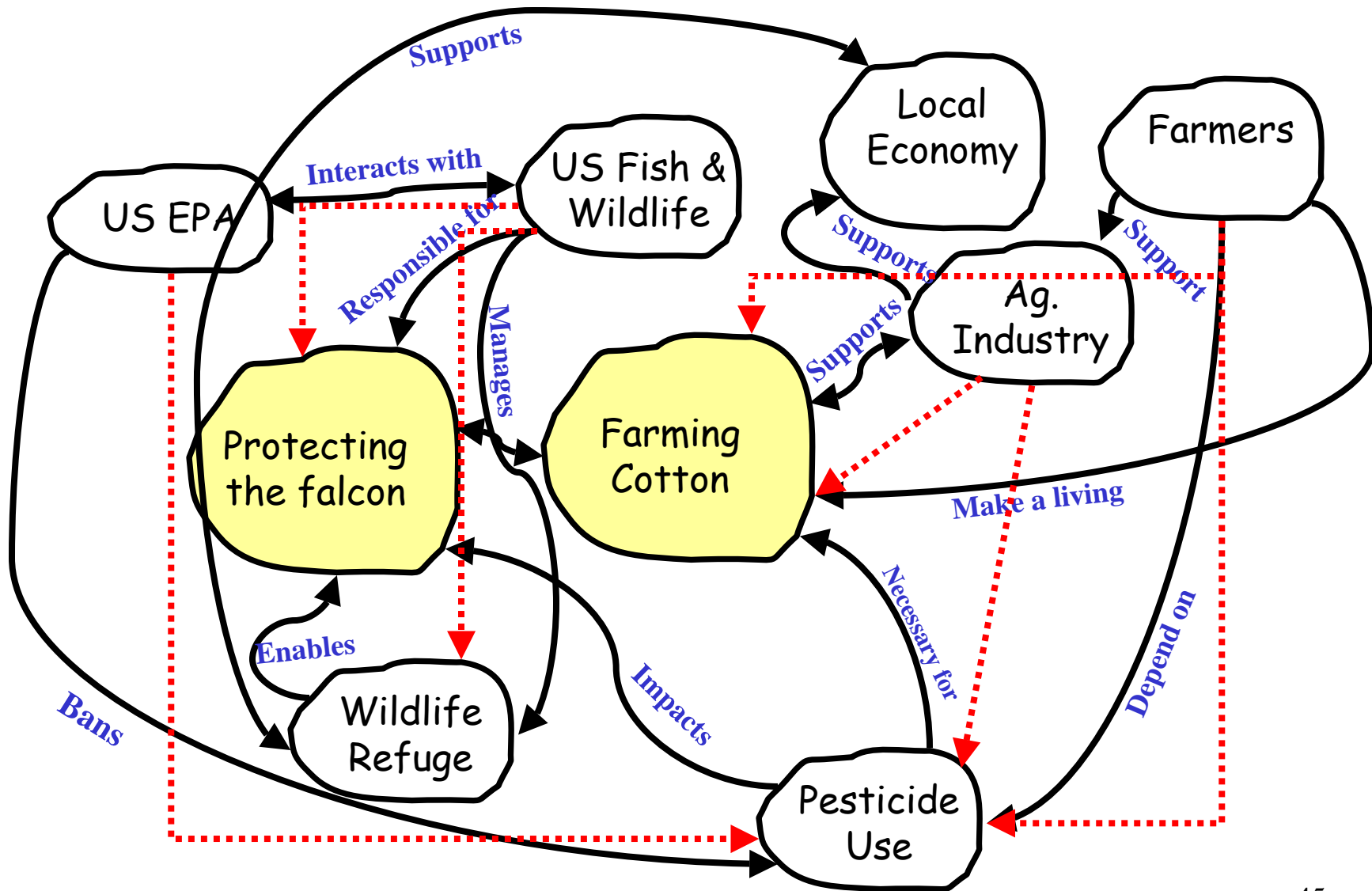


Add "information linkages."

Situation Mapping: Focusing on Data

- Draw information linkages – who has data about what?
- For each “human” element (person, organization):
 - Who has data?
 - Is the information viewed as credible by all?
- For each “nonhuman” element:
 - Is the information complete? What additional information is needed?
- For each relationship:
 - How much information is needed to understand interactions between elements? How complete does it need to be?
- Identify information deficiencies.
- Establish priorities for collecting information.

Situation Map: The Cotton-Pesticide-Falcon Issue



Working with Experts and Information

- Keep the scientists on target with what is relative to the group.
- Have scientists explicitly discuss the assumptions behind their data.
- Encourage scientists to use plain language and good visuals.
- Ask experts to state their understanding of the pertinent risks, benefits, and cautions.

Working with Experts: Focused Discussion Method

■ Level 1 – Clarification

- “Are there any questions about points of fact or clarification?”

■ Level 2 – Reflection

- “How do you feel about what you just heard?”

■ Level 3 – Interpretation

- “How does the information just presented affect the issues at hand?”

■ Level 4 – Action

- “Based on what you just heard, what needs to happen?”

Negotiating and Problem-solving

- Frame the discussion on how the stakeholders as a group can find a livable solution.
- The greater the uncertainty, the more adaptive the resulting solution should be.
- Explore the best and worst alternatives to a negotiated agreement to understand how each party proposes to handle scientific uncertainties if there is no agreement.

Making and Implementing Agreements

- Help parties understand when they have enough agreement on technical issues to go ahead and negotiate solutions.
- When agreements are based on key scientific assumptions, make those assumptions as explicit as possible.
- Try to help craft an agreement that allows for change, so if the stakeholders are wrong about the science, they can revisit and renegotiate the issues.