What works? The social science of real-world decision making

New Partners for Smart Growth

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Unpacking decisions

Problem + Information = Solution?

A disconnect in the science of decisions

Prescriptive	Descriptive
How we should make decisions	How we actually make decisions

For example:

More information is better…	… but we use shortcuts and emotions to process it.

Topics:

1. Frameworks for public decision making
2. Avoiding behavioral traps through Structured Decision Making
3. Role of values and conflict

Frameworks for public decision making

- Project planning/site selection – expert driven with public comment
- Urban planning – expert led with public input
- Structured Decision Making – deliberations with stakeholders
- Collaborative Problem Solving – negotiation with multi-stakeholder partnerships

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- Policy windows – the politics of policy change

Fig. 1. **Theorical framework for the transformation of knowledge to policy actions**

Policy Windows

- Role of knowledge and information (Ashford et al. 2006):
  - focusing attention on issues to get them on the policy agenda (agenda-setting)
  - creating or strengthening coalitions that sustain attention around an issue (coalition building)
  - Increasing knowledge of policy makers (policy learning)

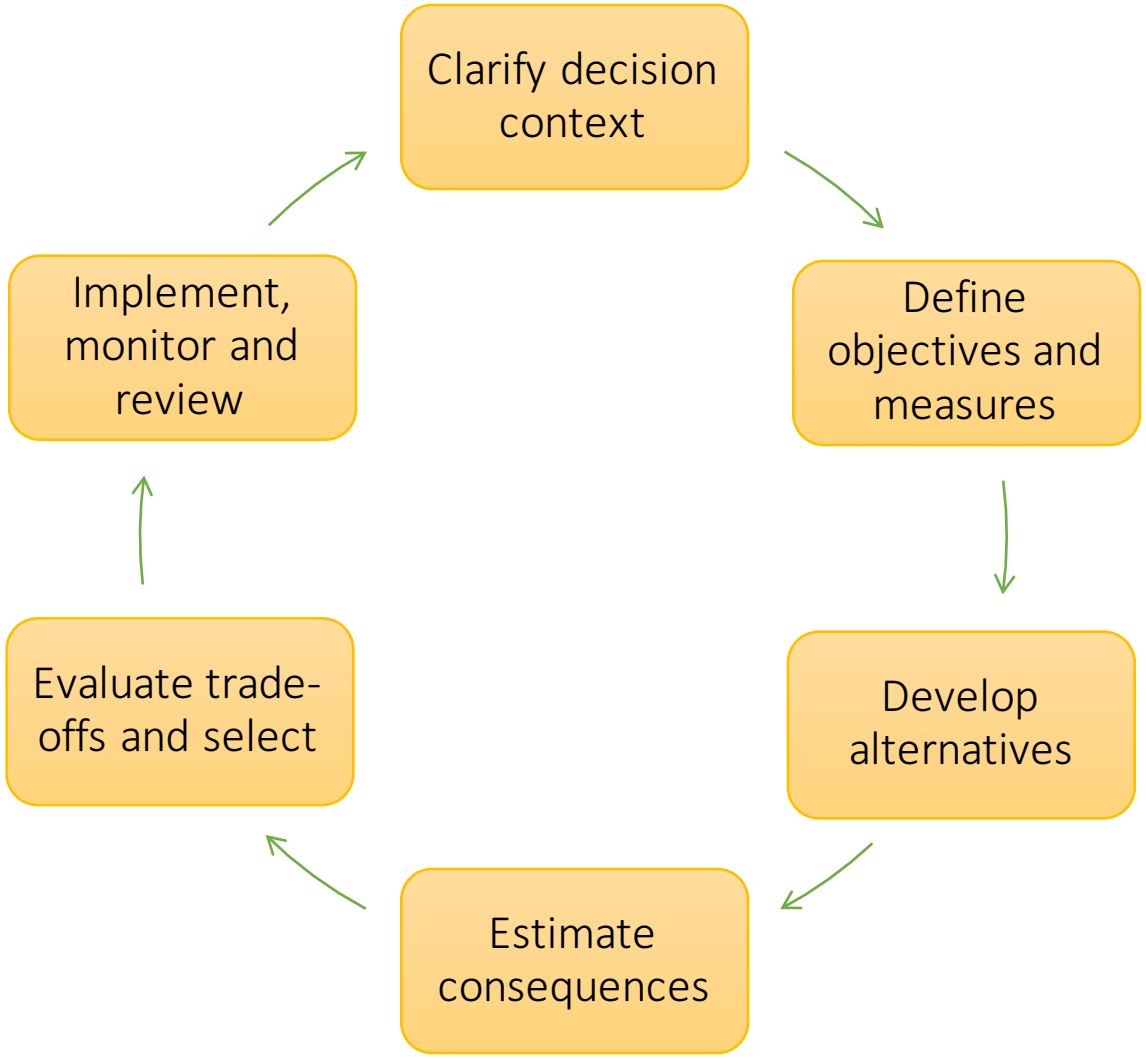
- Technical or scientific facts must be translated into political or social facts in order to generate wide support for policy changes (Porter and Hicks 1995).

Participatory processes

- E.g. Collaborative Problem Solving, participatory planning, SDM
- Advantages
  - Legitimacy
  - Equity
  - Transparency
  - Leverages diversity of knowledge
- Pitfalls
  - Psychological traps
  - Exclusion
  - Intensity of resources
  - Special agendas
  - Lack of expertise

Structured Decision Making

- The collaborative and facilitated application of multiple objective decision making and group deliberation methods to environmental management and public policy problems. (Gregory et al. 2012)



1. Clarify the decision context

- What is the decision to be made?
- Who will be affected by the decision?
- By whom and when?
- What is the range of alternatives and objectives that can be considered?
- What kinds of analytical tools will be needed?
- What level of consultation is appropriate?

Example: Improve fishery management for the Cultus Lake Sockeye salmon

2. Define Objectives and Measures

- What matters?
- What do you want to achieve?
- How would you measure it?

Examples:

Environment, economy

Sockeye conservation
Minimize costs
Maximize jobs

Population size, probability of extinction
Total costs
Number of jobs created

3. Develop alternatives

- What are some possible solutions to the problem?

End objective	Means objective	Alternatives
Sockeye conservation	Increase population size	Breed in captivity
	Conserve habitat	Limit commercial development
	Improve habitat	Restore river
Maximize economic benefit	Create jobs	Promote sport fishing

4. Estimate consequences

- What is the impact of each alternative on the objectives?

	Performance measure	Alternative 1 Commercial	Alternative 2 Spread the Pain
Objective 1 Sockeye conservation	Population size	47.7	28.7
Objective 2 Minimize costs	Total costs	588	328
Objective 3 Maximize jobs	Total FTE's	4.1	2.5

5. Evaluate trade-offs and select alternative

- What alternative provides an acceptable balance across objectives?
- Process:
  1. Rank alternatives individually first to avoid being influenced by the group.
  2. Create a score for each alternative by assigning weights, based on values, to each performance measure, and then compare scores.
  3. Present results to the group for discussion.

- The decision is not made by a formula, but the analytical process improves thinking and communications about concerns and trade-offs.

Weighting

- Assign a weight to each performance measure

Performance measure	Weight	Alternative 1 Score	Alternative 2 **Score**
Population size	**50%**	1.5	1
Total costs	**-40%**	-1.2	-0.8
Total FTE's	**10%**	0.3	0.2
Total Score	**100%**	0.6	0.4

5. Evaluate trade-offs and select alternative

- Avoid unnecessary trade-offs by iteratively developing high-quality alternatives that find win-wins wherever possible.
- Expose unavoidable trade-offs and promote constructive deliberation about them.
- Make trade-offs explicit and transparent, informed by a good understanding of consequences and their significance
- Create a basis for communicating the rationale for a decision to a broader public.

The only “bad” trade-offs are the ones we make unknowingly or without fully appreciating their implications.

6. Implement, monitor, review

- Who will be responsible for tracking the performance measures for the objectives?
- How and when will they be reported?
- What will trigger review of solutions?

Avoiding behavioral pitfalls of decision making

- Some individual limitations
  - Shortcuts and “rules of thumb”
    - Satisficing
    - Ignoring gaps in knowledge
  - Emotions
    - Positive emotions encourage creativity
    - Negative emotions encourage analytical thinking
  - Framing bias
    - Framing bias is reduced when people use elaborated forms of thinking to develop more complex and balanced decision frames.
- Group dynamics
  - Pressure to conform - consensus
  - Common knowledge
  - Techniques like Devil’s Advocacy, Delphi process, and Guided Decision Support Systems provide structure to minimize these pitfalls.

The role of values in SDM

- Identifying objectives/Construction of preferences
  - Lays out what outcomes matter
  - People construct preferences for a given situation based on values or worldviews
- Weighting alternatives
  - Makes explicit what values underlie the selection of a course of action
- Examples of values questions in decision making:
  - What things should be considered?
  - What is their relative importance?
  - What trade-offs are acceptable?
  - How acceptable are alternatives that have a small but non-zero probability of an extreme outcome?
  - What is the relative importance of immediate versus longer term benefits?

Understanding Local Opposition

- Interests depend on proximity to LULU
  - Local opposition – costs are perceived as high by those directly impacted
  - Outside opposition – represent broader interests related to economic, social, political issues
  - Support – dispersed benefits means harder to connect with supporters
- Perceptions impact responses
  - Presence, nature, and distribution of impacts and benefits
  - Fairness of the process
  - Mistrust of experts
    - The Public seeks "zero risk," whereas experts recognize the technical limitations and highly prohibitive cost of achieving this ideal
    - Disagreements among experts confuses public and increases adversarial debate

Dealing with Local Opposition

- Compensation – but can add to mistrust
- Communicating about impacts
  - Must address all types of perceived risks, e.g. health, economic
  - Solid translation between scientific information and risks
  - Transparency of information
  - Empower risk bearers, e.g. citizen science, community advisory boards, good neighbor agreements
  - Make it local - this fixes a problem for my neighbors/ people I care about most.
  - Communicate through trustworthy sources.
- Consensus building
  - Negotiation perceived as fairest siting mechanism
  - Affected stakeholders will only believe that the proposed facility is appropriate if:
    1. the facility addresses a pressing societal need,
    2. there appears to be no better solution to the problem,
    3. all “reasonable” risk-reduction measures have been taken, and
    4. the decision of where to build the facility was a fair one.

Dealing with Local Opposition (continued)

- Is NIMBYism a reaction to an attempt to sell a decision already made?

- Institutional change
  - Promote consistency and certainty during siting process
  - Require sufficient analysis of potential impacts and need for proposed LULU
  - Address the source of the problem, e.g. reduce waste
  - Formally consider citizen concerns as experts on values

IAP2'S PUBLIC PARTICIPATION SPECTRUM

The IAP2 Federation has developed the Spectrum to help groups define the public's role in any public participation process. The IAP2 Spectrum is quickly becoming an international standard.

INCREASING IMPACT ON THE DECISION

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision. We will seek your feedback on drafts and proposals.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will work together with you to formulate solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

Fig. 1. **Theorical framework for the transformation of knowledge to policy actions**

What is success?

- A decision has been made considering all factors
- The decision reflects desired outcomes, e.g. protecting health or the environment
- Stakeholders are satisfied or willing to live with the outcome
- Social capital has been increased
- The decision leads to action

Resources

- EPA DASEES
- Robin Gregory et al., 2012, *Structured Decision Making: A Practical Guide to Environmental Management Choices*
- Simon French et al., 2009, Decision Behavior, Analysis and Support
- Joseph Arvai et al. 2012, Decision-making for Sustainability
- Schively, Carissa. 2007. “Understanding the NIMBY and LULU Phenomena: Reassessing Our Knowledge Base and Informing Future Research.” Journal of Planning Literature.