Approaches to Overcoming the Barriers to the Use of Climate Information

Many different contexts for analyzing how to go from knowledge (innovations, technology, information, science) to practice (action, products, applications, use)

1. Analysis by the Diffusion of Innovation

2. The User’s Decision

3. Models of Diffusion or Technology Transfer

4. The Boundary between Information and User

5. Overcoming the Barriers
1. Analysis by the Diffusion of Innovation

a. Properties of the Innovation

   Relative Advantage
   Observability
   Fit or Compatibility
   Complexity
   Trialability

b. Communicating the Innovation

   Homophily
   Mental Models Approach to Communication
   Bricolage

c. The Decision to Adopt

   Can be aided by working on the innovation and/or the communication
2. The User’s Decision

a. Personal Decisions

Distorted by biases and rationalizations (bounded rationality)

b. Organizational Decisions

TWO Responsibilities: Problem Solving AND Mediating Interests (Problems and Politics)

c. Models of Organizational Decision Making

Incremental Decision Making
Garbage Can Model (Temporal Constraints)
Dual Rationality Model

Net result: Organizations make small decisions
Good organizations tend not to accept disruptive innovations (“the innovator’s dilemma”)
3. Models of Diffusion or Technology Transfer

a. Appropriability Model ("Loading Dock Model")

   The innovation sells itself

b. Dissemination Model

   Pushed by intermediaries to increase the communication to the user ("Decision Support")

c. Knowledge Utilization Model

   Shifts focus to the user – requires demonstrating innovation to the user ("Decision Support + Successful Evaluation=Demonstration")

d. Contextual Adaptation Model

   The user has mental models and lives in a culture that defines how information is perceived and assimilated. New information enters the consciousness of individuals or organizations as bricolage. The only way to bridge the gap is by mutual production of knowledge.
4. The Boundary Between Information and the User

The underlying assumption of the first three models is that information is objective and complete and flows to the user. The last model invites looking more at the user and trying to understand the community of users by working with them.

Another way of looking at the models is how the boundary between the communities of producers and consumers of information can be bridged.

a. Force
   Problems arise in implementation of decisions

b. No bridge needed—information readily accepted (appropriability model)

c. Decision Support (dissemination, utilization model)

d. Co-Production of Knowledge (contextual adaptation model)

e. Boundary organizations (all models)
5. Overcoming the Barriers

Can concentrate on the information itself, the communication process, or the user.

a. The Information Itself

- Increase the skill of the forecasts (or other info)
- Increase the accessibility of the forecasts
- Provide other accessory climate information
- Provide linking information so that the information can be translated into resource information
- Contract the time scale to make the information more observable and trialable by constructing simulation games (expensive)

b. Dissemination

Salience, Credibility, Legitimacy
c. The User

Get to really know the user and the way the user looks at things and decide on actions mutually
References:


http://www7.nationalacademies.org/sustainabilityroundtable/Decision_Support_Workshop_Background_Reading.html


NIDA, : Reviewing the Behavioral Science Knowledge Base on Technology Transfer
NIDA Research Monograph, Number 155. Available at :