



## ***Lessons Learned in SAHRA's Decision Support Experience***



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SAHRA – NSF STC

## **SAHRA's challenge:**

“Enabling the future through state of the art science recognizable as related to stakeholder needs but not acting as consultants”

### **Purpose:**

Draws lessons on science for decision support from SAHRA's experiences

### **Approach:**

- (1) Review of documents
- (2) Interviews

### **Assessment:**

- (1) Comparison with SAHRA's mission, goals and performance assessment criteria
- (2) Comparison with other models for production of decision support
- (3) Analysis of how problems were identified and resolved



## **Lessons:**

Multiple discrete “lessons” on a range of topics organized into categories

**FUNDING** drives the enterprise.

**COMMUNICATION** takes work.

**TEAMWORK**—no one can do everything.

**TRUST** is essential.

**PEOPLE** make a difference.

**SURPRISE** happens.

**EVOLUTION** means everyone changes.





## **Recommendations on**

- (1) Developing research agendas for real world decisions
- (2) Communicating across the research-decision maker boundary
- (3) Life cycle of decision support partnerships
- (4) Organizational needs



## Developing research agendas for real world decisions

“Framing fundamental questions to be useful in the management context”

### Communication

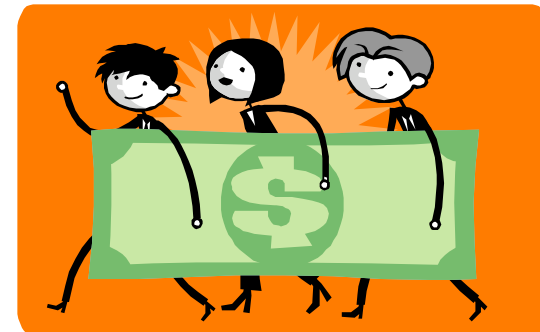
Decision relevant research agendas are developed through collaboration with decision makers.

### Funding

NSF funding biases the research agenda toward “cutting edge science.”

Stakeholders tend to tip the balance toward immediate, short-term pay-offs.

A new framework for research funding is needed to support a collaborative research agenda.





## **Evolution**

A natural evolution of decision supporting research moves from exploring phenomena toward solving problems.

Nesting problem-focused projects within research programs that explore phenomena produces co-evolving partnerships.

Evolving networks of linkages suggest new ways of answering questions.



## Communicating across the researcher decision maker boundary



### **Teamwork**

Incorporating people with “translation” or “interpreter” skills into project teams will help avoid problems and enhance the usability of decision support products.

### **Trust**

Trust is an essential component of communication; without it, expect resistance to research results.

Working through differences that create misunderstandings and mistrust takes time and effort.

Miscommunication among scientists can cause misunderstanding among stakeholders and lead to a breakdown in trust.



## Communication

Structuring communication so that most project interactions occur between people with similar technical understanding can reduce problems. Products that involve significant decision maker investment, usually must meet a high level of tailoring, usability and timeliness. Demonstration is a particularly effective form of communication.

## People

The people who are most involved in the process tend to have the best calibrated expectations.

Consistent communication can reduce the likelihood that people will cherry-pick results that suit



## The life cycle of decision support partnerships

### Evolution

Co-production of knowledge can produce major institutional changes among stakeholders: new ways of doing business are made possible by new information. The long-term nature of relationships means “products” are not “ends” in themselves.

### Surprise

New research may get ahead of decision makers—they may not understand its implications or they may be surprised by implications contrary to expectations and



The closer the research activity is to an important decision, the more critically it is scrutinized by potential losers.





## **Trust**

The usefulness and usability of research is linked with the readiness of the parties involved to relinquish control.

A transparent process can help develop and maintain trust.

## **Teamwork**

The expertise needed at progressive stages of a project is likely to change.

## **Funding**

Long-term funding is needed to support the development of long-term relationships.



# Organizational needs

## Teamwork

The organization encourage and enable collaborations, especially incorporating communication and “boundary spanning” Organizational governance should be transparent and inclusive; this requires time and effort on the part of everyone in the organization.


expertise.



## People

Organizational leadership in institutional relationships capable of weathering changes. Leadership should provide the judgment to achieve a balance between the demands of decision makers and the requirements of good science.





## **Trust**

Maintaining a reputation for objective, high quality work is a responsibility of the organization.

## **Surprise**

Standard procedures should include monitoring decision contexts to guard against nasty surprises and to respond to surprising opportunities.

The organization should provide flexibility to reallocate resources in response to su



## **Funding**

The organization should insulate researchers at key points from the traditional hustle for funds.

The organization should structure incentives, including allocation of funds, to reinforce strategies that improve decision support capabilities.

