Building Interdisciplinary Teams

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The RAM Group

- Entirely emergent
- Expertise: anthropology, mathematics, psychology, geography, biology, computer science, and indigenous studies.
- Demographics: 8 countries and 3 tribes represented, diverse socioeconomic roots, very different personalities, religious beliefs and worldviews.
- Projects range from extreme regions agriculture to human-wildlife conflicts to modeling the collapse of social systems.
- Solidarity and porosity.

Why Interdisciplinary?

- Solve problems
- Adapt
- Grow
- Innovate
- Improve
- Engage

Components

- K-12
- Scholars and Practitioners
- Public
- Policy Makers

Scholars and Practitioners

- Grand challenges in sustainability won't be met with the thinking that created them;
- Diverse worldviews engage problems from different angles; need generates innovation; cultural richness breeds creativity.
- We start as explorers and we're turned into specialists, which sometimes results in narrowness.

How Does Diversity Strengthen Sustainability Research?

- **Environment/Societal System:** More accurately identify partnerships and leverage points for solutions in multiple socioeconomic and cultural systems;
- **Knowledge System:** Move away from a single (western science) knowledge system;
- **Social/Economic/Technological System:** Accelerate implementation by better understanding appropriate applications;
- **Communication/ Social/ Technological System:** Improve dissemination and diffusion of innovation

How?

- Expertise is essential but only a small part.
- Trust, communication, trade-offs, curiousity and fierce dedication.
- Finding people is not easy: standard model is that a relatively low diversity group does research for a highly diverse one.
- Grand challenge in sustainability research is to generate more practicing scholars (i.e., Ph.D.'s) who are under-represented.

What Works?

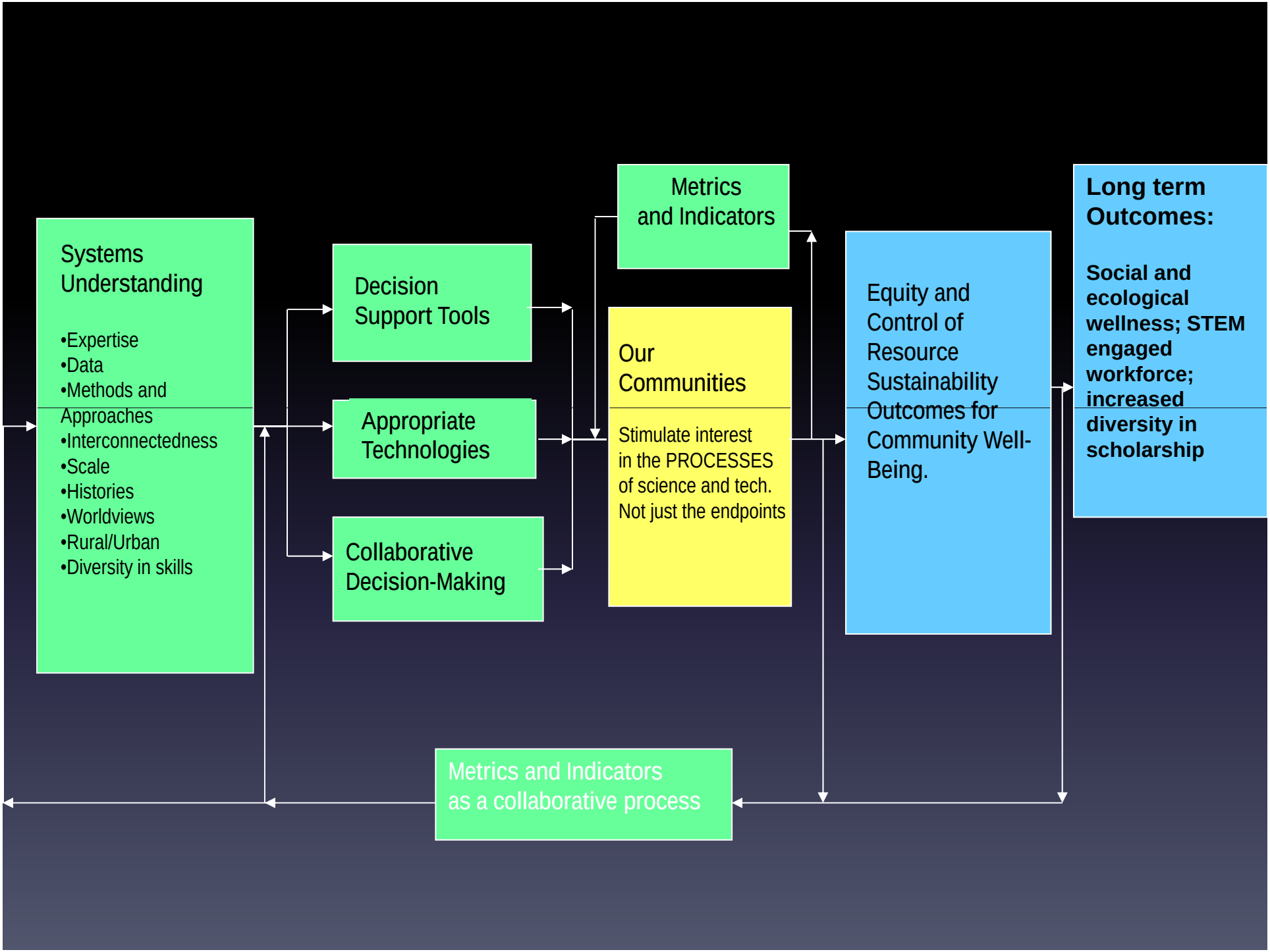
- Highly motivated individuals!
- Formation of an identity where inquiry is a part of oneself, not a job or pursuit.
- Peer support (and pressure) for success.
- Warmth, acceptance, comfort and strength→decreases inhibitions, increases freedom to err and learn.
- Expectation is of excellence with failure as part of the process.

Greeting the Elephant

- We will not address sustainability nor will we engage the challenge with the current diversity in S & P;
- Who's "fault"? Institutions are willing, NSF has invested resources and opened doors.
- Pool is small; why?

Our Approach

- To develop a STEM workforce: partner with communities to "do" science as use-inspired inquiry.


Systems Understanding
•Expertise
•Data
•Methods and Approaches
•Interconnectedness
•Scale
•Histories
•Worldviews
•Rural/Urban
•Diversity in skills
Decision Support Tools
Appropriate Technologies
Collaborative Decision-Making
Metrics and Indicators
Our Communities
Stimulate interest in the PROCESSES of science and tech. Not just the endpoints
Equity and Control of Resource Sustainability Outcomes for Community Well-Being.
Long term Outcomes:
Social and ecological wellness; STEM engaged workforce; increased diversity in scholarship
Metrics and Indicators as a collaborative process

The Mosaic Workforce

- K-12 is one route to workforce development;
- Attracting individuals at different life stages also presents opportunities;
- One way to develop a STEM workforce is to partner with communities in the process of science.