Participatory Research on the Tohono O’odham Nation

Researchers, managers and local people building capacity for sustainable resource management

Jennifer S. Arnold & Douglas P. Saunders

with thanks to Maria Fernandez-Gimenez, John Hays Jr., the Sif Oidak Livestock Association & the Tohono O’odham Curriculum Advisory Committee
Presentation Outline

I. What is participatory research?
II. Intro to Tohono O’odham rangelands
III. Participatory research projects on TON
IV. Discussion
   - Core themes of participatory research
   - Benefits and Challenges
V. Conclusion—Is this a new role for researchers?
Theory of Participatory Research

Continuum

**Functional Participation**
- Aims to increase quality and validity of research
- Researcher defines goals and methods
- Participants assist in data collection and/or interpretation

**Empowering Participation**
- Aims to build the capacity of participants
- Participants help define research goals & methods
- Researcher facilitates exchange of knowledge

Johnson et al. 2001
Knowledge Systems

• Knowledge includes technical know-how, beliefs, values, perceptions, behaviors, and social norms (Berkes 1999)

• Indigenous vs. scientific knowledge (Agrawal 1995)

• Knowledge is dynamic & influenced by different ways of knowing (Nakata 2002)

• Exchange of knowledge is a power-sharing process
Strategies to include local knowledge in the research process

• Documenting and recording local knowledge
  – Interviews, mapping, participant observation, etc.

• Eliciting local knowledge through participation
  – Partnering with co-researchers

→ Individuals contribute not just scientific or local knowledge, but a combination based on life history, experiences and culture
Theory of Participatory Research

Empowering Participation Model

• Action & research goals are paired to address locally relevant issues (Hall 2001)

• Methods flexible to include many perspectives, evolve through participation (Lincoln 1995)

• Validity strongly dependent on diversity & quality of participation (Reason & Bradbury 2001)

• Catalytic validity related to local application of research & enduring effects (Lather 1986)
Tohono O’odham Nation

Santa Rosa Mountain courtesy of John Hays Jr.
Tohono O’Odham Nation

11 tribal districts and 60+ villages

2.8 million acres (1.12 million ha) of the Sonoran Desert rangelands
History of Livestock on the Tohono O’Odham Nation

Influences

• Jesuit Missionaries 1697, Introduced cattle and horses.

• 1822 to 1850 Apache wars began, missionaries abandoned area. Cattle ran wild.

• 1860’s Apache wars ended, cattle again became important. Anglo and Mexican ranchers ran cattle on traditional O’Odham lands. O’Odham vaqueros worked on ranches
Influences Continued

• 1911 Tohono O’Odham (Papago) Reservation established. 2,855,874 acres set aside for O’Odham use.

• 1920 Bureau of Indian Affairs’ guidelines limited 100 head of cattle to families. O’Odhams resisted.

• 1934 Establishment of Indian Organization Act. Tribal Government was formed.

• 1937 Tribal Government established 11 Grazing districts, all communally based.

• 1937 to Present mistrust of outside entities when ideas of Range Management are presented.
Home ranges and invisible boundaries
Snow on desert courtesy of John Hays Jr.

Winter vs. Summer Rainfall

Mean annual precipitation for cool and warm seasons, Casa Grande, AZ

Precipitation (mm)

Years (1948-1989)

- Warm season
- Cool season

J. Hays Jr.
Rainfall unpredictable, sporadic
Participatory Research on the TON

Tribal Herd Round-Up courtesy of Amos Stevens
Sif Oidak Participatory Planning Project

planning meetings

field trips
“My goal is to cover 2.8 million acres with grass and we’re gonna get there.”
- Head of Natural Resources Department, Bureau of Indian Affairs. 1992
Grazing Ecology Study

• Compared grass density at different distances from water (belt transects)

• Findings:
  – 70% perennial grasses found in drainages
  – Grass density dependent more on climate than grazing pressure

• Unrealistic to manage for perennial grasses

• Management should focus on palatable shrubs

• Information used in the Sif Oidak Plan
Education

- Workshops & capacity building
- Formal degree program at TO community college

→ Funding for a participatory rangeland curriculum tailored to incorporate local ecology and local knowledge
Rangeland curriculum project

To plan, implement & evaluate curriculum as a series of 8 one-day workshops

Curriculum Advisory Committee

To guide research design & participate in data collection and interpretation
We questioned the superiority of scientific management strategies over O’odham *himdag* which emphasizes cooperation.
Qualitative Methods

- Recorded and analyzed discussions in meetings & workshops

- Collected comments from public presentations

- Used a grounded theory approach (Charmaz 2000) to understand
  - Knowledge exchange
  - Impact of participation on social capital
Knowledge exchange

We traced the contributions of O’odham and scientific knowledge in the curriculum to understand the connection of both to locally sustainable management.
Social Capital Analysis

→ Social capital framework (Woolcock 1998)

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- Current levels associated with rangeland management
- Changes due to participatory project

→ Findings pointed to the value of the participatory process as critical to sustainable management
Discussion:
Core Themes of Participatory Research
Building relationships
“I’ve never heard about this research before, and I don’t agree with it…. The curriculum part is fine, but you can’t use mirga:n [white American] theories to explain O’odham ways.”

--O’odham rancher
Creating a culture of openness and critical reflection

Some Advisory Committee goals:

• “To reach the community level, local leaders, and those who can influence change”

• “To examine long-held attitudes and assumptions about management”

• “To incorporate values of cooperation and community, especially as it is important for effective management”
“Some of the older books [from] the [anthropologists] that came out here [were based on] one man’s interpretation of what this one individual said to him. A lot of it was good, but at the same time, a lot of it didn’t sound right. But with this project here, you’ve got all these groups of people that actually worked together on this thing, so it’s not just one individual interpretation.”

--O’odham rancher
Sharing and building knowledge throughout a project
Benefits & Challenges of Participatory Research

Benefits:
- Provides in-depth understanding
- Recognizes different knowledge systems
- Empowers participants in research & action goals
- May be necessary due to sovereignty issues

Challenges:
- High costs in time and energy
- Process sensitive to local politics
- Need local leadership & shared goals
- Not always appropriate depending on research goals
# Benefits & Challenges of Participatory Research from a community perspective

**Benefits:**
- Participants may learn ideas from neighbors
- Sensitive issues are discussed in native language
- Tribal leadership will be informed through participants
- Participants can claim ownership of outcomes

**Challenges:**
- Sensitive discussions do not reach researchers
- Educated participants will respect senior decisions
- Tribal government will not follow through with participants' wishes
- Who will take the lead?
Discussion

Why don’t we see more PR in the literature?

• Grey area between participatory projects and participatory research

• Many researchers use “participatory methods,” but do not include in publications

• Scientists underestimate the potential of local people and their knowledge

• Need a paradigm shift from “objective” researcher to research-facilitator
Discussion

“How do you control for bias in your study?”

- Educate the community about science & the research process

- Different approach for natural science vs. qualitative social science

- Natural Science:
  - Work with communities to understand statistical research design
  - Develop protocols that address community-driven research questions & invite interpretation
Discussion

“How do you control for bias in your study?”

• Qualitative Social Science:
  - “Bias” as “Positionality” which is the unique personal and intellectual contributions of every participant, challenged alongside data interpretations
  - Validity of findings directly tied to who participates and how
  - Catalytic validity demonstrates knowledge tested in real world situations
Catalytic Validity
Enduring Effects Beyond the Research Project

- Increased range management planning
- Tohono O’odham Community College’s Agriculture & Natural Resources Program
- Livestock Owners’ Summits
- Continued collaboration with University of Arizona
A New Role for Researchers?

Partnering with local people can expand the bounds of research and increase local relevancy to affect policy and practice.
# Acknowledgements

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