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NEXUS Gains



Groundwater Governance: Knowledge, Motivation, and Agency

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Nexus Gains Webinar

Crafting Combinations to Govern Groundwater: Knowledge,
Motivation, and Agency

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Why Groundwater Governance?

- Challenges:
 - Classic common pool resource (subtractable, exclusion difficult)
 - Invisible, fugitive resource
- Many tools exist, but few examples of success (Molle and Closas IWMI studies)
- Need for governance (institutions) to coordinate across actors
 - At local level
 - Across higher levels/sectors
- “Wicked problems”
 - No agreement on what the problems are
 - Beyond complex, tradeoffs
 - Incomplete, contradictory, changing, resistant to resolution
 - “No stopping rule”—no perfect end point



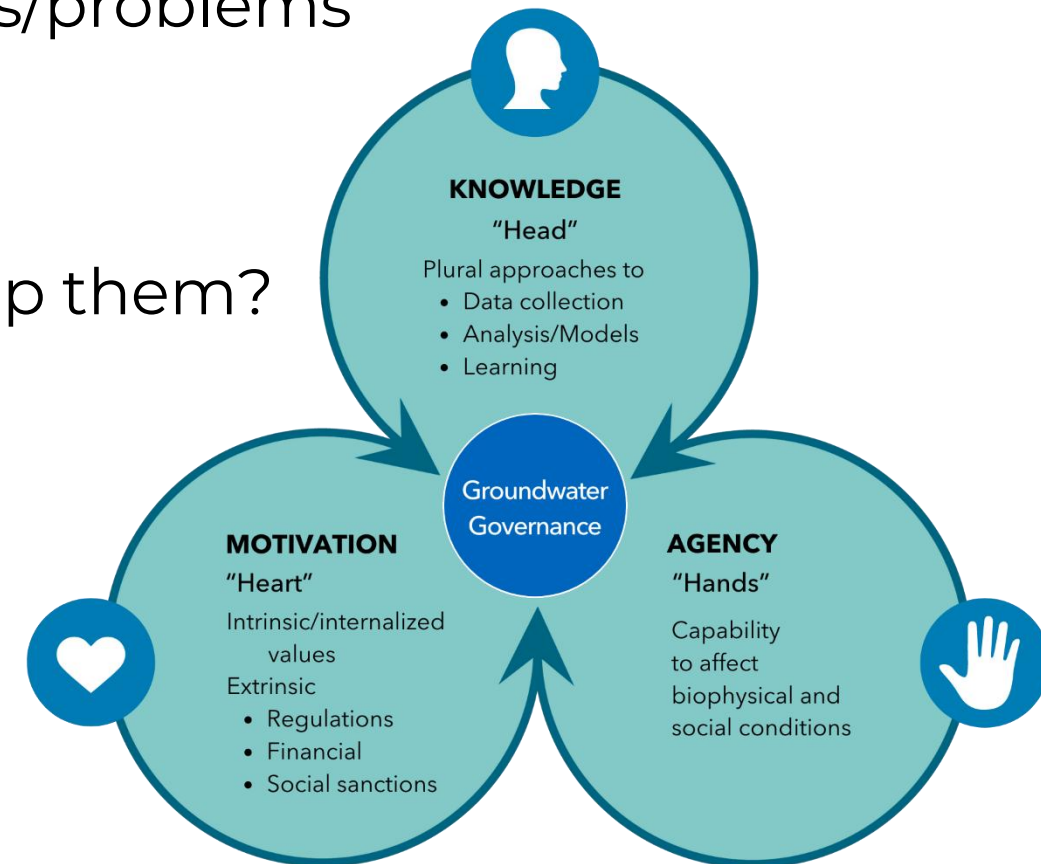
Knowledge, Motivation, Agency approach

Instead of starting with the tools, start with identifying the **key actors**

Consider what they need

- **Knowledge** of groundwater conditions/problems
- **Motivation** to address problems
- **Agency**/mechanisms to act

What combination of tools can help equip them?



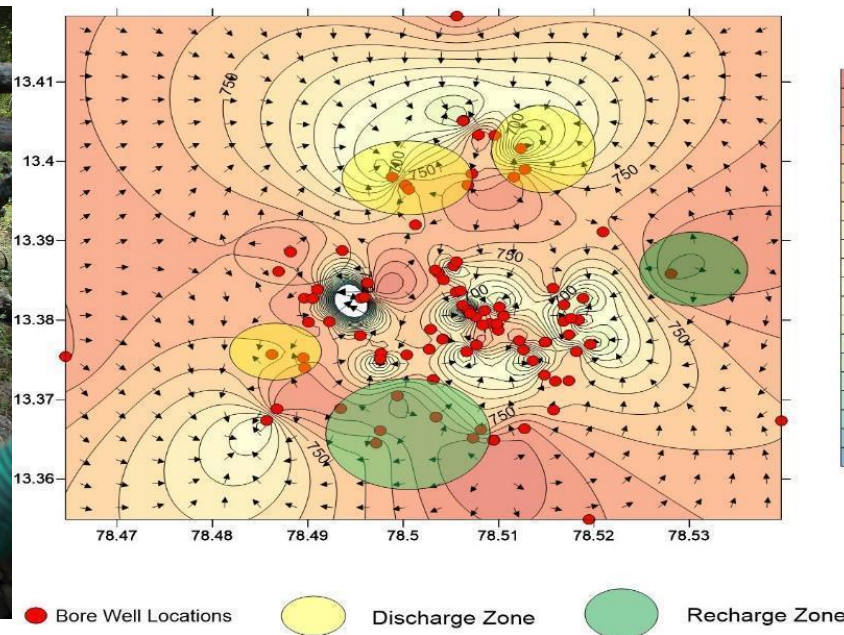
Knowledge

Knowledge: “the ability to use information strategically to achieve one's objectives” (Logan 2012)

Shapes how people understand their situation (mental models)

Data (raw facts)+ organization, contextualization → **Information**

Information + analysis, interpretation, models + sharing with key actors → **Knowledge**



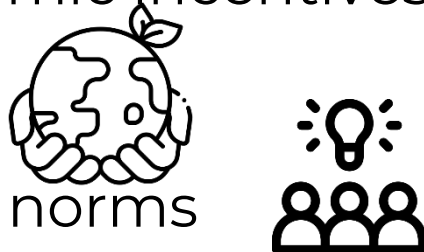
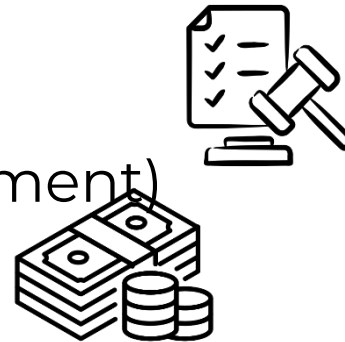
Motivation

Motivation: desire to act in service of a goal

Applies to communities, government, other actors

Types of motivation

- External
 - Regulation (fear of punishment)
 - Economic incentives
- Internal
 - Care
 - Other norms



Most policies and “incentives” focus on external motivations

- Concerns with crowding out internal motivations

How to appeal to/strengthen internal motivations (moral incentives)?

Icons from www.flaticon.com/free-icons/law; www.flaticon.com/free-icons/wealth;
www.flaticon.com/free-icons/eco-world; www.flaticon.com/free-icons/idea

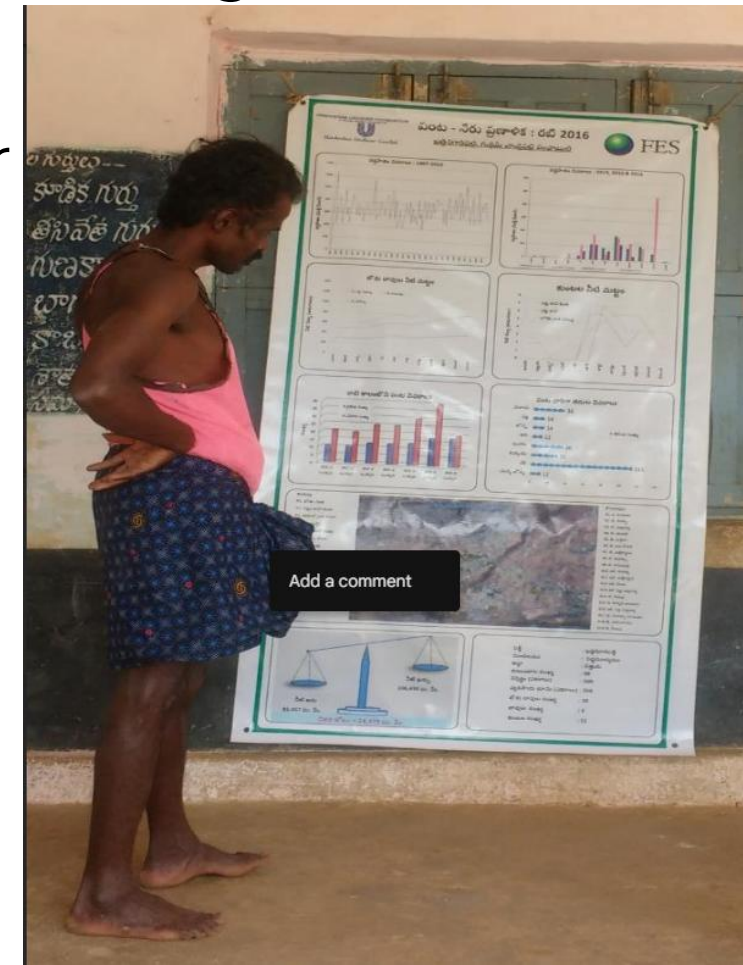
Agency/Mechanisms for Action

Agency: being able to act to produce desired outcomes;
action to shape biophysical and social conditions, including
influencing the conduct of others

If people want to do something about groundwater
problems, what can they do?

Coordinated action required; hence agency is
relational

Power relations and structures can constrain
agency



“Toolbox” for groundwater governance

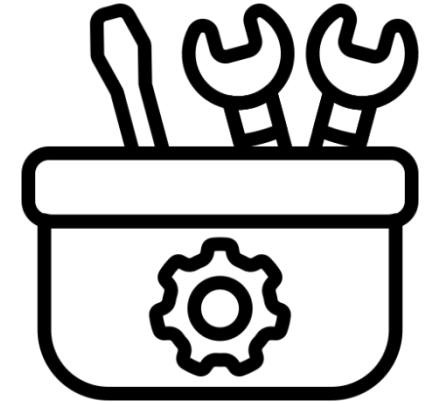
Start with the **key actors** and what they need

Contextualize/adapt tools

Combine tools

One tool can contribute to more than one category, e.g.

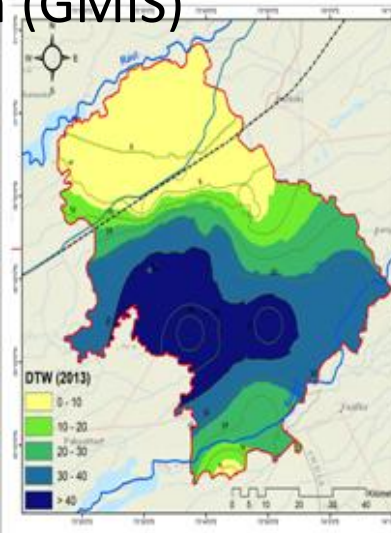
- Experiential learning games → Knowledge and Motivation
- Crop water budgeting → Knowledge and Agency
- Multistakeholder platforms → Motivation and Agency



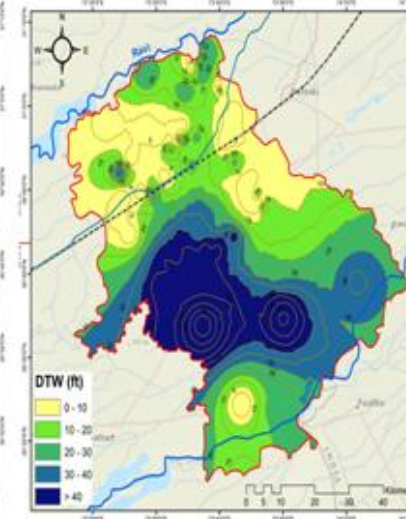
Icon from <https://www.flaticon.com/free-icons/toolbox> created by zafdesign

Sample application in Pakistan

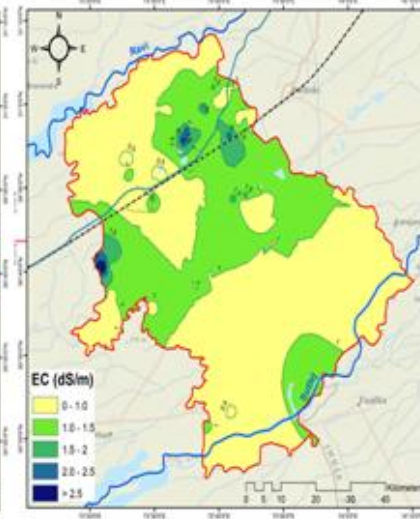
- Key actors:
 - Water users (farmers, municipal, industry)
 - Government agencies: Irrigation Department, Environmental Protection, municipalities, (Health?)
 - Private sector (sugarcane millers)
- Groundwater Management Information System (GMIS)
 - Data, Information, leading to Knowledge
 - Contribute to Motivation?
 - Show environmental, livelihood effects
 - Health effects?
- Agency (mechanisms to act)
 - Possibilities for conjunctive use w/ surface
 - Limits on individual, local agency
 - Multistakeholder platforms to coordinate



Depth to water table (2013)



Depth to water table (2020)



Groundwater Quality (EC)

Resources

Special issue: **Crafting combinations to govern groundwater:**

<https://thecommonsjournal.org/collections/governgroundwater>

Meinzen-Dick, R. and B.R. Bruns. (2024). Crafting Combinations to Govern Groundwater: Knowledge, Motivation, and Agency. *International Journal of the Commons* 18(1):585–600.

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Molle, F., and A. Closas. 2016. “Groundwater Governance: A Synthesis.” Project Report 6. Groundwater Governance in the Arab World–Taking Stock and Addressing the Challenges. Sri Lanka: International Water Management Institute.

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