P2-b
The Community and Groundwater

Communal systems

- A rich tradition and variety of practices across the world (and especially in the Arab World!)
  - Communal irrigation systems: *springs, oases, qanat/khettara/aflaj, spate irrigation.*
- A variety of local contexts: rules are implemented locally and vary according to context
- Community systems can avoid conflicts



Reasons for community management

- Ensure fair access to a limited collective resource
- Establish rules to manage, share and allocate
  (e.g. Yemen, Bolivia, Algeria, Oman, India, Tunisia,…)
- Share investment and co-financing of infrastructure
  (e.g. Bolivia, India, Yemen, Egypt)
- Inherited (collectively from the state (transferred), or from a family member)
  (Algeria, India)



Benefits of community management

- Avoid conflict around limited resource – reduction of conflict as sanctions imposed and respected by the community
  (e.g. Yemen, Botswana, Bolivia, Spain)
- Representation of sub-social groups
  (e.g. Bolivia, Jordan, Mexico, Morocco)
- Respect of local rules, user rights, and traditions and community support/bonding
  (e.g. pervasive, Texas, Chile)
- Sustain and make use of local knowledge
  (India, Yemen, Botswana)



Basic components of community groundwater management

- Community management can be set up to share a structure (e.g. a well) or to commonly manage the resource
- Users are in general few
- Rules (community rules and management rules)
  including definition of right-holders
  + enforcement (violations are punished or user exits community)
- Conflict resolution
- Delegation of authority (e.g. to assembly, board)



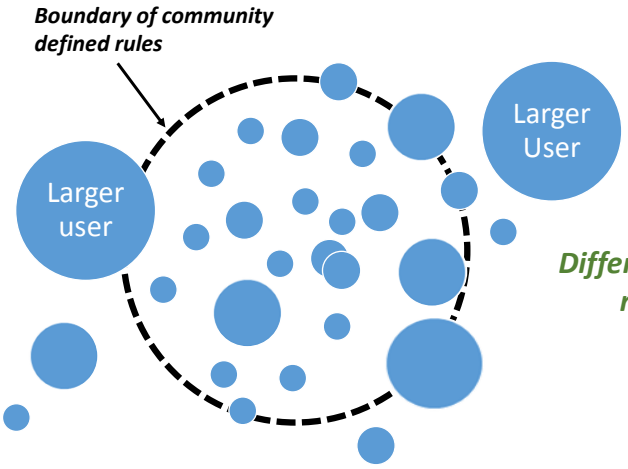
Community management and types of associations

As a social cooperative

Transferred from the State to community

As a financial association
(limited to investment for infrastructure)

Family inherited



Different types of users and multiple arrangements within the community

From 'User Anarchy' → To an organized community of users

Example 1:Community wells in Cochabamba, Bolivia

- 5 Well cooperatives set up since the 1970s to fund and manage groundwater wells for irrigation (between 20-70 members)
- Membership fees give access to groundwater (Allocated per hour to users)
- Pump operation rotates every week amongst the community
- Informal loans for poor farmers to pay entry fees ensure access to groundwater
- The general assembly appoints the board and sanctions are decided monthly (decided or new ones created on a case by case basis)
- Cooperatives can also provide additional services (facilities, financial services)

Example 2: Family-shared wells in Andhra Pradesh, India

- Inherited ownership, shared amongst family members or neighbours (max 8 members)
- Access to well/water linked to portion of land ownership
- Pumps can be owned individually (richer farmers) or also collectively with shared use/maintenance
- Well maintenance is ensured collectively (e.g. silt removal)
- Family connections and more equality among users (land access) ensure successful expansion activities (e.g. well deepening)
- Main enforcement devices are peer-pressure, shame, and bad reputation

Risks for community management

- **Risk of fractured community (individuals with different interests and stakes)**
- **Variability of the resource (which can change, naturally or by humans), challenging the rules**
- **Private wells can undermine communal or traditional systems**
- **Conflicts not always can be avoided**
  - **Vested interests can drive conflict**
  - **Erosion of traditional structures/rules/leader figures**
- **Elites can co-opt process and the organization can be captured politics**
- **Users can adopt 'exit strategy'**
  (exit the community = 'free-rider', or the system – no more pumping) depending on their access to resources (social, capital, political)

Example 3: The limits of community groundwater management in Yemen

- Corruption of political elites using local leaders for political gains erodes their traditional role and social cohesion
- Conflict between communities and outsiders (e.g. large landowners), amplified by inequality of access to resources (financial, political)
- International funds aiming to support users and projects can destabilize traditional structures

Conclusions/Observations

- **Hard to find** examples of sustainable community management
  - If these are to be found, they normally happen at a local scale
- **Rules** can appear and be enforced but need the right combination of factors and community components to work
  - Access to a not-too-fluctuating resource
  - Social, economic capital
  - Cohesive and homogenous communities, small scale
  - Inherited traditions
- **Ideology of community management** has been strong with donors and the state
  - Community management raises expectations with donors but it is not the panacea or silver bullet
  - Need to revisit success-stories and not fall into generalizations
- **Risks** are often undermining effectivity and the sustainability of community management

Thank you