Water Governance in Irrigated Areas: Old Problems and Innovative Solutions

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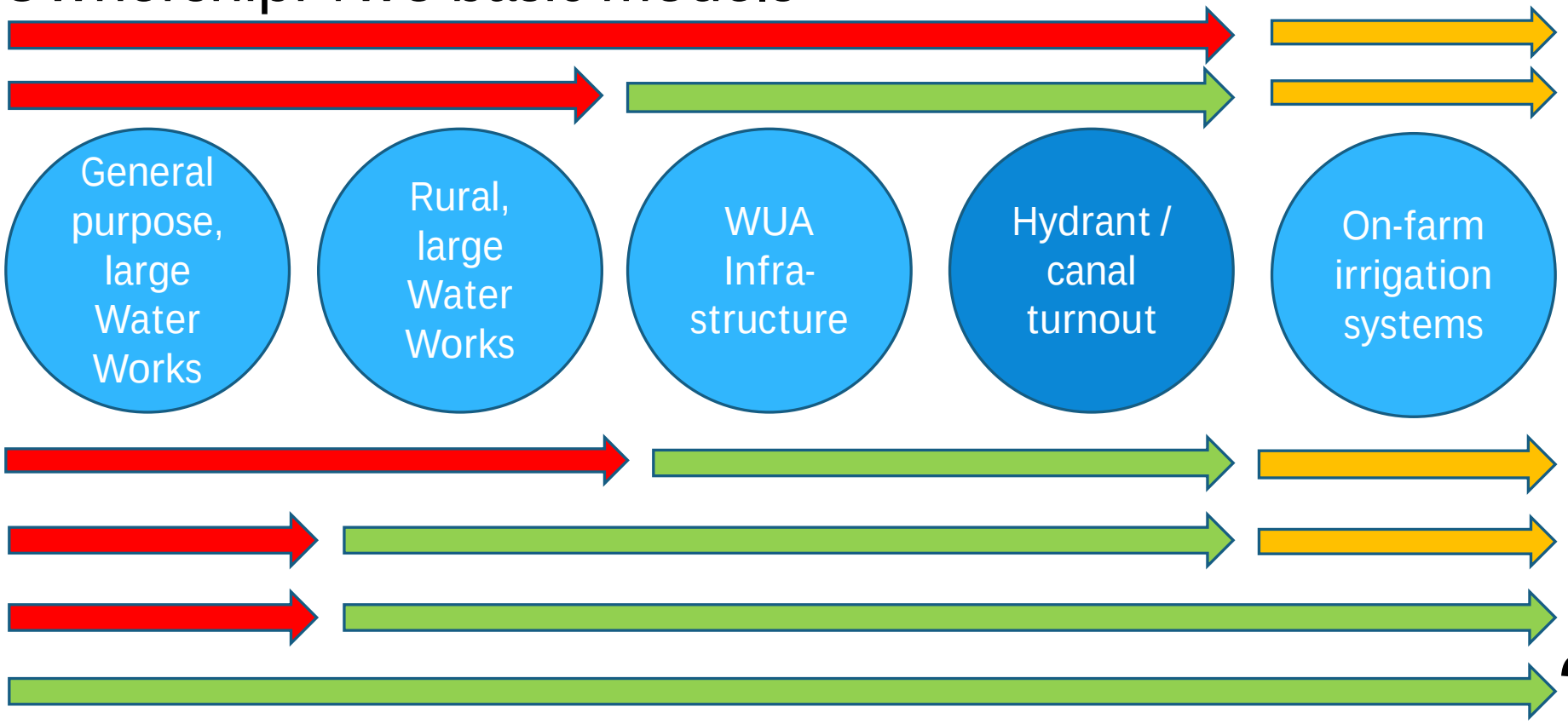
Irrigation Infrastructure:
Models for ownership and management

Public **Collective** **Private**

Ownership: Two basic models

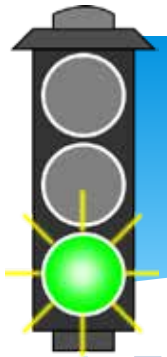


Management: different models, collective role expanding

A Case study approach to the role of WUAs and IAs

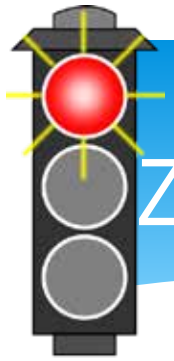
Study case:
Ghor Kabed Pump Station 91, Jordan

* Features:
  * Cooperative
  * 10534 ha, 254 farm units, Horticulture, profitable
  * Transfer in 2010: water distribution + maintenance
  * Old pressurized irrigation system
* Positive aspects:
  * 60% of farmers are satisfied with the services
  * Good management in general
* Negative aspects:
  * Less than 50 % of farmers are members of the cooperative
  * Cooperative not authorized to collect water fees
  * Most O&M costs covered by the JVA
  * Little autonomy
* **Sustainable?**
  * Cooperative operation: limited participation



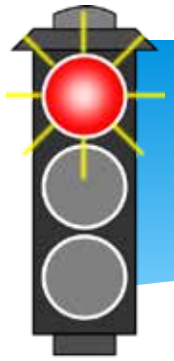
Study case:
Kula Municipality, Manisa Province, Turkey

* Features:
  * Municipality; (no farmers' organization)
  * Less than 100 ha; Average farm size 0.5 ha
  * Horticulture, profitable
  * New pressurized network in peri-urban area
* Positive aspects:
  * Good water distribution by technicians hired by the Municipality
  * Only personnel costs charged to farmers
  * Good interaction among water providers and farmers
* Negative aspects:
  * Municipality bears all the construction and maintenance costs
  * Municipalities report to the Ministry of Interior: different administrative laws and controls apply
* **Sustainable public operation: good service and interaction**



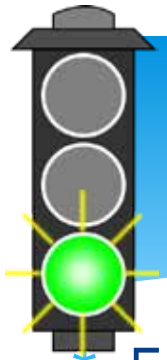
Study case:
Zemo Samgori Irrigation System, Georgia

* Features:
  * 30,000 ha under rehabilitation
  * Years of abandonment and migration to the nearby capital city
  * Aged society, with little interest for irrigation
* Positive aspects:
  * ?
* Negative aspects:
  * Irrigation today in less than 10% of the area
  * All attempts to constitute WUAs have failed
  * Public Irrigation Agency:
    * Low training and little knowledge of local problems
    * Bureaucratic approach: heavy, slow functioning
* **Unsustainable**
  * Lack of a profitable agricultural model
  * Typical case of Public Administration failure leading to PIM/IMT



Study case:
Small WUAs in Fergana Valley, Kyrgyzstan

* Features
  * Very small, traditional WUAs
  * Abundant water / Aged farmers
* Positive aspects
  * USAID project on WUA development with training programme.
  * Farmers and Agency officers are aware of the theory… but have no interest on the practice
* Negative aspects
  * Poor water management, poor infrastructure maintenance, poor water service
  * Abandonment of irrigation practice, Emigration to nearby cities
  * No perspectives for a modern, profitable farming system
  * Lack of confidence on WUAs
* **Unsustainable**
  * No model for profitable irrigated agriculture
  * Abundant water may be creating a water management problem



Study case:
Roxo-Sado WUA, Alqueva project, Portugal

* Features
  * The project involves 110,000 ha of new irrigated land in Alentejo
  * Main canal supplies water to WUAs and large farms
  * Crops: 50% olive, 25% cereals, 25% horticulture
* Positive aspects
  * EDIA, public company, is the IA (similar to a Ministry)
  * Well-trained directive and technical personnel
  * Design, tendering, supervision and management of all infrastructure
  * WUAs have quickly organized and federated
* Some Negative aspects
  * Inherited from public initiatives:
    * Lack of optimization
    * Huge investments
    * Over dimensioned infrastructure
* **Sustainable**
  * The IA performs rather well from the public sector

Study case: WUAs of the 2nd Region, Antofagasta, Chile

* Features
  * Very small, participative WUAs
  * Never-ending, uncoupled water rights… active water market
  * WUAs similar to the Spanish model
* Social aspects
  * Farmers have very good knowledge, fruit export oriented
* Positive aspects
  * Reasonably organized, maintain and improve infrastructure
  * Integrate mining companies (largest water right holders in the area)
* Some Negative aspects
  * Need to improve WUAs : statutes, water management, organization
  * Lack of a higher instance (effective IA) guiding and organizing
  * In areas the IA sold water rights in excess of availability by 3 times
* **Sustainable?**
  * Risk of Water bankruptcy

Study case: Private participation (PPP) in Spain

* Features
  * Applicable to developed areas
  * Large presence of multinational urban water utility companies
  * Two 50,000 ha projects on-going, with large organizational differences
* Positive aspects:
  * The participative structure remains in the hands of farmers
  * The technical body is (recently) supplied by a company
* Negative aspects:
  * Problem: large costs that the public system cannot afford
  * Companies carry more overheads and taxes… it could work if WUA personnel was inefficient
  * Expansion limited by the low cost of WUA management operations
* **Sustainability?**
  * Political interference can be a key negative factor
  * Large differences in the degree of success… early to tell!
  * In the long run, convergence with urban water seems to be the goal!

Summarizing

* The **private** level
  * Must be effective: profit (of some kind: appreciation)
* The "**collective**" level:
  * **Cooperatives** for irrigation need to be mandatory
  * **Municipalities** suitable for small areas; have financial strength
  * **Small WUAs** are very sensitive to local factors: agricultural profit, commitment, operating costs, farmers' knowledge…
  * **Regular WUAs** can work very well under profitability, maturity and technical skills
* The "**Public**" level, including the **Irrigation Agency**:
  * Public: typical negative examples. Positive ones can be found!
  * Public company: Good examples identified. Negative ones can be found!
  * PPP: can be interesting in mature, developed areas. Higher costs, higher efficiency?

Opinions on WUAs and IAs: probably as good as yours!

(Symbol Ù indicates discrepancies between authors)

Role and responsibility of WUAs

* Rights and duties of WUA members? Equitable? Proportional?
  * In a development context, this is very site specific (customs)
  * Some proportionality to land tenure is required
  * Need to define this in the WUA rules and regulations
  * Need to state the WUA Water rights in the transfer agreement
* When to start construction: before or after WUA creation?
  * First WUAs, to facilitate their early involvement
  * Construction in response to the needs expressed by WUA

Role and responsibility of WUAs

* At the time of transfer: small or large WUAs? Ù
  * Depends on the context:
    * Development: small is better. Size measured in terms of households
    * Developed: the larger the better, to keep costs low
  * The key is technical staff: minimum size must permit to hire personnel
    * At least, 200-300 ha are required in development
    * Small WUAs may work if hydraulically simple and focused

Role and responsibility of WUAs

* What type of WUA governance?
  * General assembly + executive body + technical personnel
  * Need for authority with farmers, particularly at the beginning
  * Qualified technical staff (operation, maintenance and accounting)
  * Board members are not paid: unsustainable and niche for corruption
* Financial management: how to collect fees?
  * Valuing farming and water service
  * Not paying is an indicator of misconception or underperformance
  * Partially pay the WUA before irrigation; apply penalties

Role and responsibility of IAs

* Which tasks for Irrigation Agencies (IAs)?
  * Primarily ensure water supply; gradually withdraw
  * IA to Oversight WUAs regarding finances, equity in access, subsidiarity, legal issues responsibility…
  * IA to retain rehabilitation and improvement
  * After 5 yrs. (pressurized/profitable) to 15 yrs. (surface/subsistence), transfer can start
* Which IA financial management?
  * Economic self-sufficiency of the IA will not be attained
  * IAs typically do more than irrigation, but can only recover irrigation-related costs
  * PIM is not the solution for zero-cost IA operation (at least not in the short term)… this applies to virtually all public services

Role and responsibility of IAs

* Which technical profiles for an IA? Ù
  * Particularly, engineers, agronomists and economists.
  * Sociologists and environmentalists for conception and follow-up.
  * In all cases: practical life-long training (peer-to-peer), experience sharing
  * IA models:
    * Do the complete project cycle (needing a large engineering staff)
    * Supervise contractors (specialize on supervisory role)
* Will IA personnel support transfer if it endangers its jobs? Ù
  * Transfer rarely decreases the need for technical personnel
  * IA personnel needs to perceive mutually beneficial relation with WUA
  * Changes are often slow, and there is time to manage staff

Role and responsibility of IAs

* How to ensure success? There is not much new:
  * Early engagement of stakeholders
  * Planning for economic success of the farming operation is equally important.
  * Good engineering practice is critical, for farmers are not ready to see investments fail… they will lose attachment to the project
    * Seek technical success
    * Seek economic efficiency

    … Ways to spread good practice to the locals
  * The irrigation projects must be the answer to the social requirements

Concluding Remarks and open questions

Take home messages

* **WUAs are neither the problem nor the solution**, but part of a successful model based on the **maturity** of participants (medium and long term)
* **Farming success** is required for irrigation success
* **PIM / transfer / WUA success assessment**:
  * Key role of governmental policies (indicators required!)
  * Can override the interest and capacities of the WUAs.
  * Monitoring and Evaluation programmes should be established at IA and local level (WUAs)
* **Peer-to-peer training** for professional farmers, technical bodies and managerial bodies. Extend this to farmers' irrigation management
* **IA must be fully operational for at least 5-15 years!**

Thanks!