International Water Management Institute

Governance as a Triple Loop Learning Process– Tool to Realize Conjunctive Water Management

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Theoretical Perspective

what IS water governance?

(and what is water management?)

Setting objectives

Meeting objectives

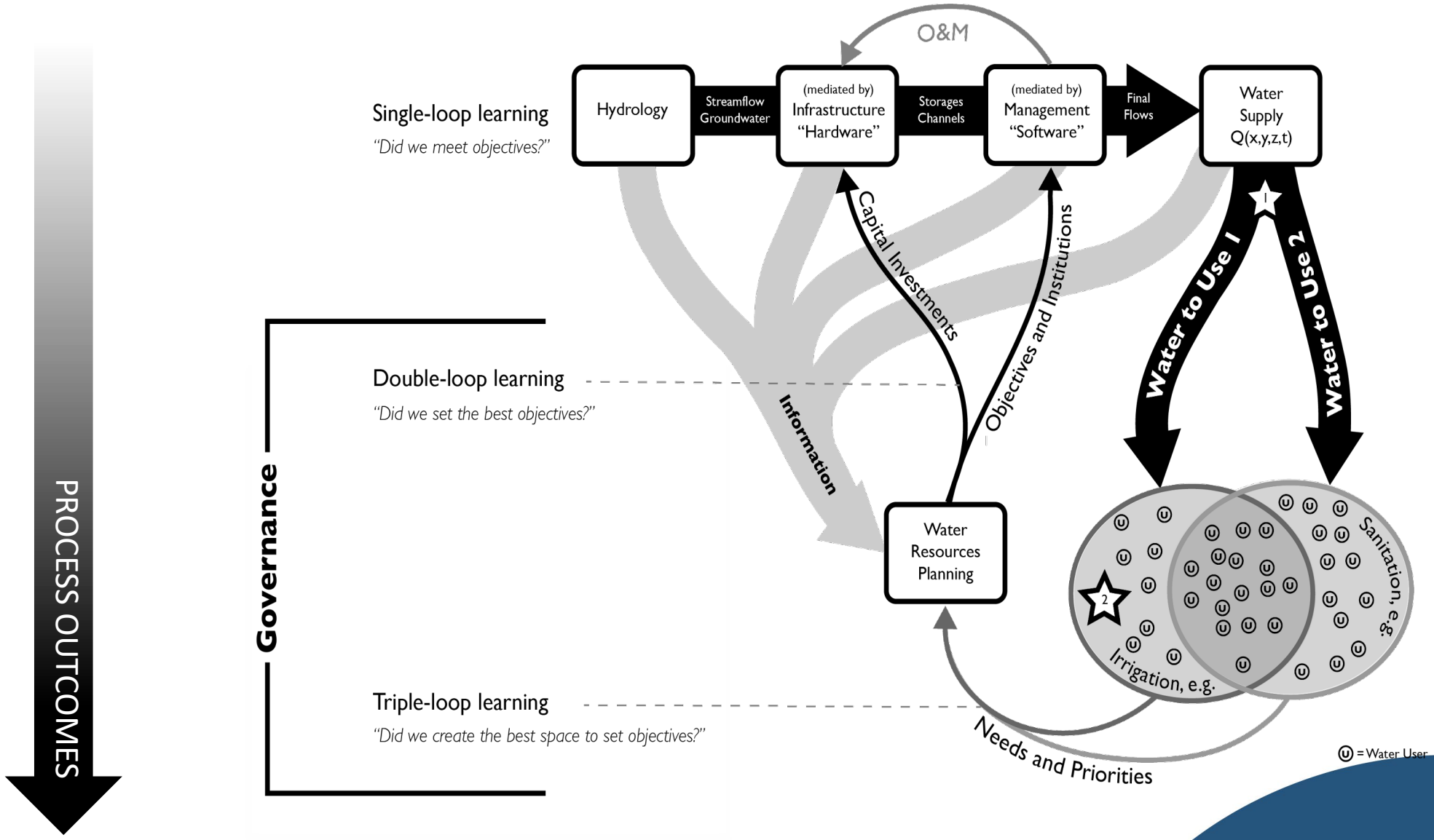
Good governance is about setting objectives

It is also about creating fair, legitimate spaces for objectives to be set

Good management is then about meeting those objectives once set

to put this in context for water infrastructure systems

Governance as a triple loop learning process



(Bell et al., 2022)

Issues of Conjunctive Water Management often overlooked

- Multiple Users of Water
- Multiple Uses of Water
- Who takes priority?
- What is the right mix of surface water and groundwater?
- Issues of sustainability of the natural resource?
- At what scale do we govern?

We hope to answer these questions in the following slides

Scaling up water governance

Large systems aren't just bigger versions of small systems

Water supplies are segmented, users are less connected, flows cross boundaries

At what scales do we try to bound water issues?

Administrative units

- International
- Federal
- State
- District
- …
- Municipal

Physical boundaries

- Basin?
- Irrigation command?

Something in between

- Water districts?
- Problemsheds?

Scaling up water governance - IWRM

Integrated Water Resources Management (IWRM) is the modern flagship paradigm for meeting water challenges across diverse uses and users

IWRM looks different in its applications across the world, but commonly includes:

- River basins as resource and user boundaries
- Participatory processes for rules, monitoring, and adapting
- An emphasis on prices to communicate scarcity

BUT (as there will always be critics):

- Sometimes good outcomes are due to what lies underneath IWRM
- Sometimes basins aren't the right place, and participation isn't better
- Sometimes imposing an institutional structure misses the point of **what governance is**

CPR Theory and Water Governance

Much of our understanding of how to govern shared resources

(and how to make it work at larger scales)

comes from Common Property Resource (CPR) theory, begun by Elinor Ostrom (2009 Nobel Prize):

- Clearly defined resource boundaries and users
- Rights to organize, join, and tailor local rules
- Ability to enforce rules and resolve conflicts
- Compatibility with processes at other scales

These needs are shared as we scale up from local to larger scales

Some of these needs are difficult to meet in large irrigation systems like the IBIS

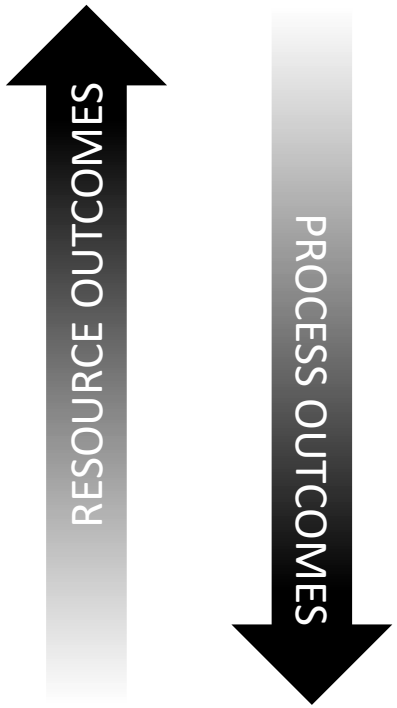
(and help explain the challenges of efforts in PIM)

Abiana (Irrigation water fee) as governance, abiana as management

Recall our distinction between governance and management:

Meeting objectives, vs setting objectives

What does that mean for abiana?



Assessing and collecting abiana

Adjusting abiana rates

Reconsidering what abiana should cover

Re-allocating collected abiana

Considering area vs. volumetric rates

Considering water market development

Considering pricing as a signal

From watersheds to Problemsheds

Problemsheds: "large enough to encompass the issues but small enough to make implementation feasible" (Mollinga et. al., 2007)

Mollinga (2020) further emphasizes the context specificity of water problems, and the importance within the problemshed approach of building a locally specific governance arrangement from the problem at hand, rather than seeking the "law-like, universally valid" approaches for which IWRM has been criticized.

Problemshed approach would represent a demand-centric contrast to the supply driven thinking that places hydraulic structures within a command area as central to governance.

Let's understand through an Example

Case of Khanpur Dam – A Governance issue

The Problem:

a. Too many stakeholders
b. No decision space for setting the objectives
c. No transparency in decision making
d. Stakeholder participation in decision making absent
e. Water shortages in the dam
f. No independent flow monitoring system installed at various stakeholder delivery points
g. Issues of surface water and groundwater availability

Table 2: ECNEC apportionment of the water resource from Khanpur Dam/Reservoir

		Discharge (MGD)	Volume (ac-ft/yr)
a.	Municipal/Industries		
i.	Rawalpindi Town/Cantt	69.92	94,064
ii.	Capital Development Authority CDA	33.27	44,752
iii.	Heavy Industries Taxila (HIT)	1.07	1,445
iv.	University of Engineering Taxila	1.07	1,445
v.	FECTO Cement Industries	1.17	1,580
vi.	Project Monitoring organization (PMO)	0.54	723
	Sub-Total(A)	107.05	144,009
b.	Irrigation		
i.	Khyber Pakhtunkhwa	42.10	56,634
ii.	Punjab	36.69	49,357
	Sub Total (B)	78.79	105,991
	Grand-total (a+b)	185.84	250,000

Proposed Solution (problemshed approach)

- Constitute a Khanpur Water Governance Board with representation from all stakeholders to deal with surface and groundwater availability
- KP Government to enact legislation for establishment of the board
- KP Irrigation Deptt to take over O&M of the Dam from WAPDA
- A third party flow monitoring system to be put in place
- Government of KP to ring-fence all revenue received from the stakeholders of Khanpur
- Prospects of improvement of socio-economic conditions of all stakeholders involved

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Thank You

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