

Prospects for adaptation: building flexibility in irrigation institutions – SE Asia



Jacob Burke
Land and Water Division, FAO



Overview

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2. Hydrological futures – assets at risk
3. Institutional trajectories – institutions (organisations + rules) at risk
4. What will shape institutions in the future?
5. Degrees of freedom
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7. Investment targets

Background

- SE Asia – in developed basins intensification will need higher water productivity. Agriculture responsible for 775 km³/yr withdrawals (South Asia = 820 : Global = 2,675)
- Deltas under pressure & groundwater will need to be factored in.
- Some limited room for further expansion, but where and how?
- Irrigation management lagging – modernization of institutions as a much an issue as modernization of irrigation schemes.
- High opportunity cost of rehabilitation and re-engineering to get desired levels of flexibility.
- Assessing irrigation assets at risk - how resilient is the infrastructure... and how resilient the institutions?
- Basin planning/negotiation processes now more pluralistic than 'integrated' but general disconnect between water resource management and agriculture sector.

Hydrological Futures

- Natural resource scarcity – forcing intensification and increased water productivity on existing irrigation assets
- Constructed scarcity - storage maximized to cope with extreme events, but smart management required to optimize actual operation.
- Climate is a resource, but range of hydrological uncertainty under cc could paralyse institutional evolution – chasing millimeters or bracing for the big one?
- Who takes the production risk – and how?
 - producer risk transfer – indexed crop insurance
 - operator risk – commercial insurance?
 - government safety nets and sovereign debt

Institutional Trajectories

- Institutional environment and arrangements for irrigation may also be uncertain - easy to deflate institutions, difficult to re-build.
- Certain models of financial risk management (IMT/PIM) have had a patchy record.

..but what is known?

- decentralization a political reality
- informal private sector vibrant
- agri-business models/operators crowding out smallholders?
- contradictory policies - food security, urban, industry and environment unlikely to be aligned
- Mixed pluralistic arrangements of users, operators and regulators forcing 'polycentric' decision making.
- Utility models only partially tested in irrigation.

What will shape institutions in the future?

- Known economic pressures: demand for staples will persist, but changing diets = changing markets and higher input costs (just energy?). Irrigation to produce what?
- Rates of rural-urban transition - natural resource re-allocation or just labour release?
- Constructed irrigation assets will still need O+M – but constructed scarcity will also need to be allocated.
- Multiple functions and multiple uses of assets – evidence of conjunctive management?
- Requirements for environmental compliance + food safety standards – how will this shape agricultural land use and water management?

Degrees of Freedom

- Assessing irrigation institutions at risk. How resilient are organizations and rules?
- Failure to cope with extreme events may bring about reversals of otherwise progressive institutional trends.
- Autonomous or planned adaptation? Encouragement of informal adaptation can bring in flexibility in times of drought, but public interest in flood protection needs planning.
- Institutional tests of resilience
 - ability to remove constraints
 - ability to scale practice across irrigation systems & natural resource units
 - capacity development – engineers and/or social entrepreneurs?
 - ability to track performance – economic, social and environmental

Building Flexibility

- Regional market connections to spread production risk but beware of unintended consequences.
- Basin level - if not 'integration' then more effective institutional collaboration to spread risk - farmer interests can be linked to basin planning and operation.
- Scheme level - review basic competencies and professionalism in delivering services – and assess adaptability.
- Information push to water users – an agronomic package.
- Less about overcoming institutional rigidity, more about making institutional assets work – formal and 'informal'.

Targets for adaptation investment

- Operation and maintenance: existing assets still essential but adaptation likely to be knowledge rich, not technology driven.
- Scale: institutional domains very different for flood and drought management so define boundaries carefully
- Phasing and investment horizon: formal rules can be changed overnight...informal ones take longer. Rushed transformations can be counter-productive and build more rigidity.
- Neglected areas:
 - information flows between users, operators and regulators
 - engagement with multi-objective planning - outreach and inter-sector collaboration, smarter use of remote sensing tools
 - discipline mix – capacities to do what?
 - monitoring of investment performance and structural evolution of the sub-sector

Flexible hardware = flexible institutions?



Bang Pakong basin, Thailand