

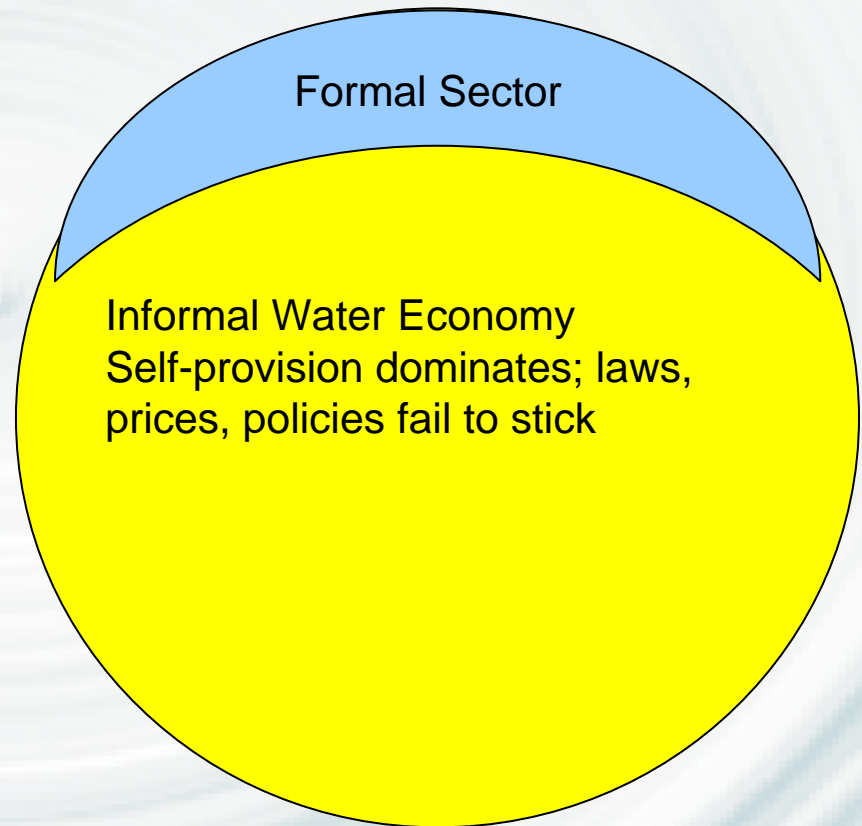
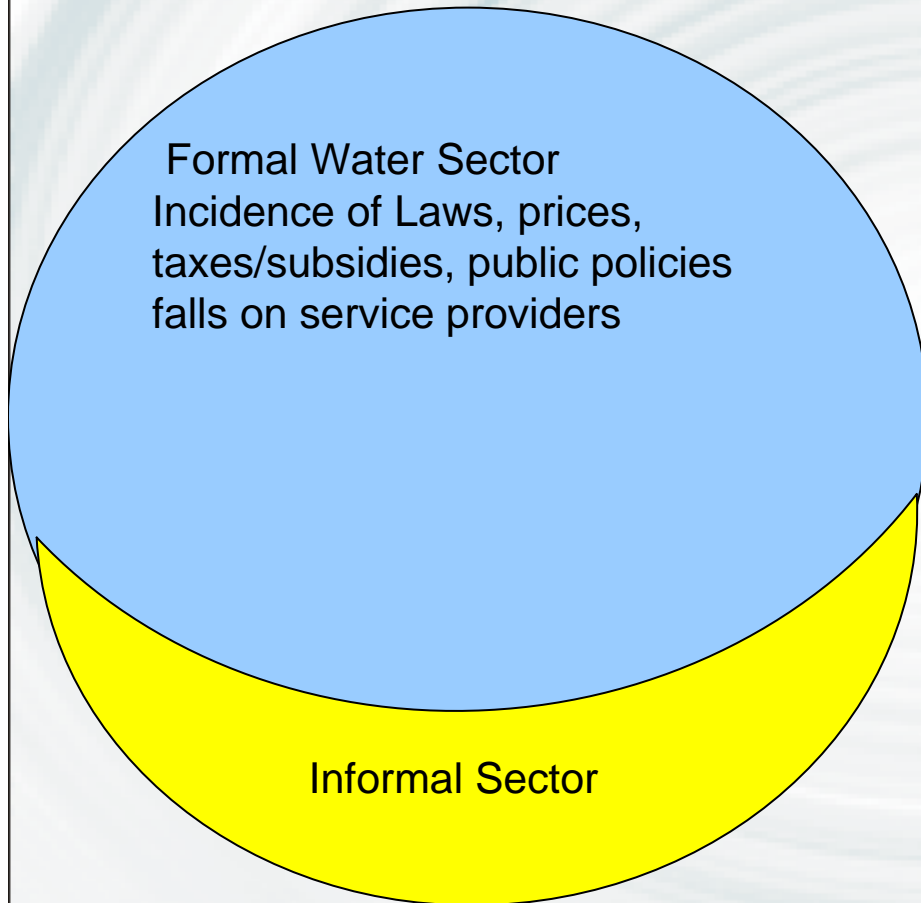
Dynamic of Informal versus Formal Water Economics: The Example of India

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Structure of water economies of rich and poor countries

Rich country's Water Economy

Poor Country's Water Economy



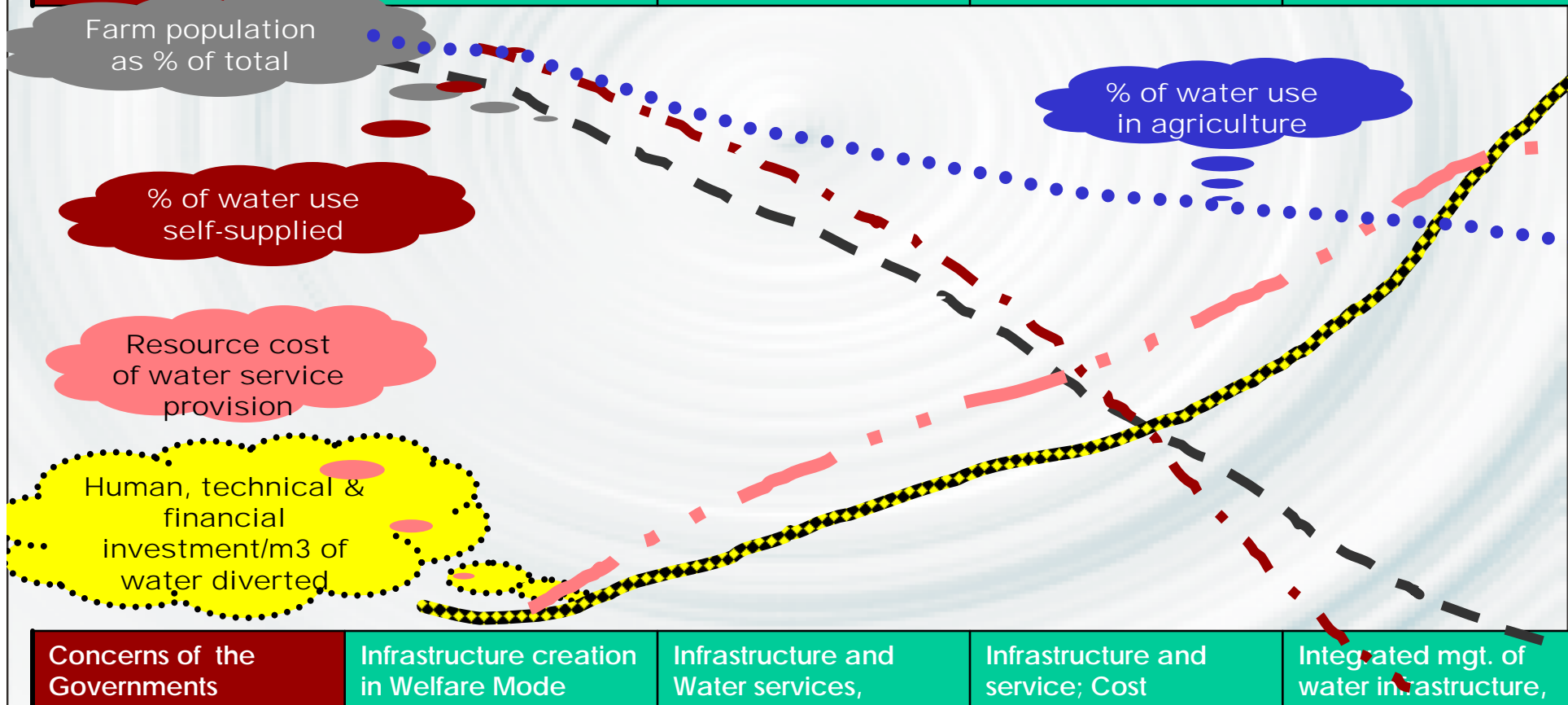
This transformation is driven by the 'iron laws' of economic development of nations.

Informal

Formal

Self-supply predominates	service providers dominate
Vast numbers of tiny, primary Water diverters from nature	very few, but large primary diverters of water from rivers, lakes
Water institutions are local, fragmented, informal	water institutions are few, formal, legal bodies
Intermediation in water services Low or absent	Very high degree of intermediation in water provision
Water is scarce but free..	Water is aplenty but it costs money..
Water is everybody's Business	Water is the business of an organized industry.

Stages of formalization	Stage I: Completely informal	Stage II: Highly informal	Stage III: Formalizing	Stage IV: Highly formal water industry
% of users in the formal sector	<5%	5-35%	35-75%	75-95%
Examples	Sub-Saharan Africa	South Asia	Mexico, Thailand, Eastern China	Europe, North America, Japan
Dominant mode of water service provision	Self-supply & mutual help institutions	Self-supply dominates; partial public provision	Private-public provisioning; service improvement	Modern water industry; self-supply disappears





	Reverse Osmosis plants in North Gujarat's cottage industry	Tube well companies of North Gujarat and Gujarat's Public Tube well transfer program	Irrigation institutions unfolding in the Narmada command and Upper Krishna basin	Decentralized groundwater recharge movement of Saurashtra
Scale of the institution	Around 300 plants in Gujarat	Some 8-10 thousand companies in North Gujarat	Several thousand new pumps installed/year	300,000 recharge wells; 50,000 check dams
Economic contribution	Operate water treatment capacity to provide fluoride-free water	Create irrigation potential where individual farmers would be unable to do.	Private investment in water distribution infrastructure; expansion of Narmada irrigation	Improved greatly security of kharif crops, and chance of a rabi crop
<i>Raison de tre</i>	To profit from serving emerging demand for fluoride-free water by investing in and maintaining RO plant	To pool capital and share risks of tube well failure in creating an irrigation source in over-exploited aquifer	To profit by distributing Narmada water by lifting water from canals and transporting it by rubber pipe to user fields	Improve water availability in wells for life-saving irrigation when monsoon makes early withdrawal
Mode of emergence	<i>Spontaneous</i>	<i>Spontaneous</i>	<i>Spontaneous</i>	<i>Spontaneous with community support</i>
Strategy of reducing transaction	Cultivating annual customers	Vesting management roles into members with largest share in command area	Avoid making of sub-minors and field channels, reduce seepage, overcome topography	NGOs and Hindu religious sects reduced transaction costs of co-operative action
Incentive structure	Pay-off concentration	Pay-off concentration	Pay-off concentration	Self-interest blended with missionary zeal
Outlook of the 'establishment'	Negative	Negative	Negative/neutral	Initially skeptical; but then, piggybacked
Preferred alternative in IE	Community RO plants	Idealized Water User Associations	Idealized Water User Associations	Narmada project; scientific recharge

Figure 12 Matrix of Perceived Pay-offs and Transaction Costs

