

Financial Structuring of Water Projects

Week 7: Water Economics and Financing

Day 5: Water Financing

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Expo Zaragoza



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Outline of the presentation

- Private sector participation in service delivery in developing countries
- A conceptual model for the design of financial structures
- Closing remarks

Is there a role for the private sector?

- More than 250 contracts have been awarded to private operators since 1990. 85% were still active at the end of 2007 and only 8% terminated early
- Population served is only 4% but has gone from 96 million in 2006 to 160 million at end of 2007
- Of the 67 countries that introduced PPPs at least 44 still have private operators, but 23 reverted to public management
- 90% of the growth since 2001 covered by private operators from developing countries

PPPs in developing countries

- But many projects have failed by over-estimating local conditions or designing inadequate financial structures
- Over 40% have been renegotiated, over an average of 2.2 years
- Many of these failures and renegotiations are due to political and economic changes.
- **But the use of inadequate service delivery modalities and financial structures contributed to the problems**

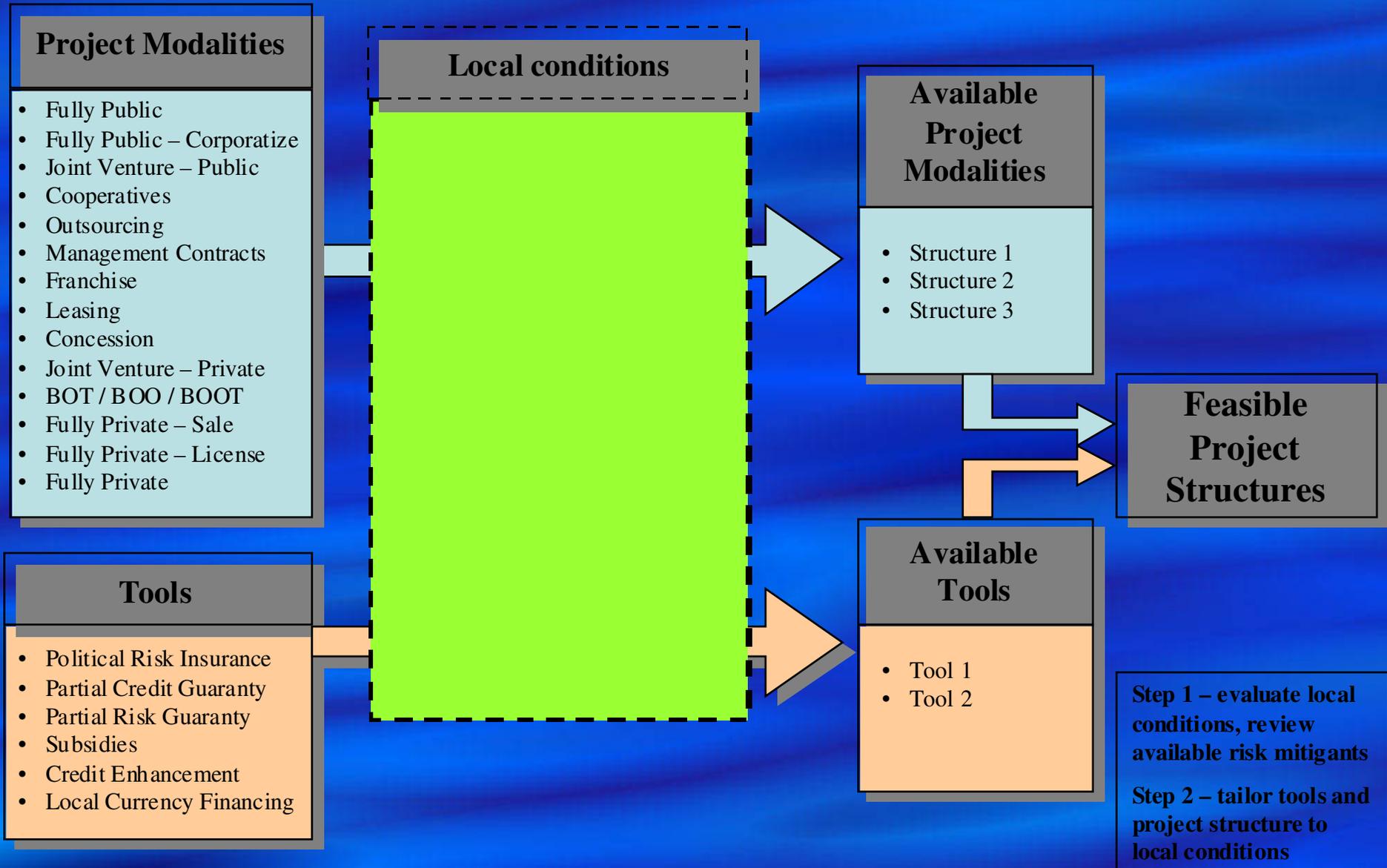
Plain vanilla vs. local flavors

- There was a tendency to imitate models from developed countries with:
 - No political risk, transparency, institutional capacity to negotiate and manage, fiscal capacity, rule of law, reliable judicial system, political stability,.....you name it! Plain vanilla
- Local flavors: The right structure has the potential of attracting investment
- We propose a methodology to reduce chances of failure and to increase the number of bankable projects

PPPs in developing countries

- Do these ideal conditions prevail in developing countries?
 - Financial markets are underdeveloped
 - Institutions are weak
 - Volatility in fiscal situation
 - Political and economic instability
- Can a structure be designed?
-with or without the private sector!

A Conceptual Model



Local Conditions Affecting Project Design



Legal Framework

- Definition and protection of private investment and property rights
- Existence, quality and comprehensiveness of sector laws and their enforcement
- Existence, quality and comprehensiveness of sector policies and their execution
- Available dispute resolution mechanisms
- Capacity of the judicial system to process issues in a timely fashion, rigor, fairness and capability to enforce private sector rights
- Quality of contractual relationships

Political Risk

- Possibility of losses arising from investments caused by changes in a country's political structure or policies, such as tax laws, tariffs, expropriation of assets, restriction in repatriation of profits, etc...
- Includes outright expropriation or activities by the government that over time have the effect of reducing the financial viability of the project (partial expropriation).
- Restrictions on currency transfers and convertibility, and damage resulting from war or civil strife

Fiscal Space

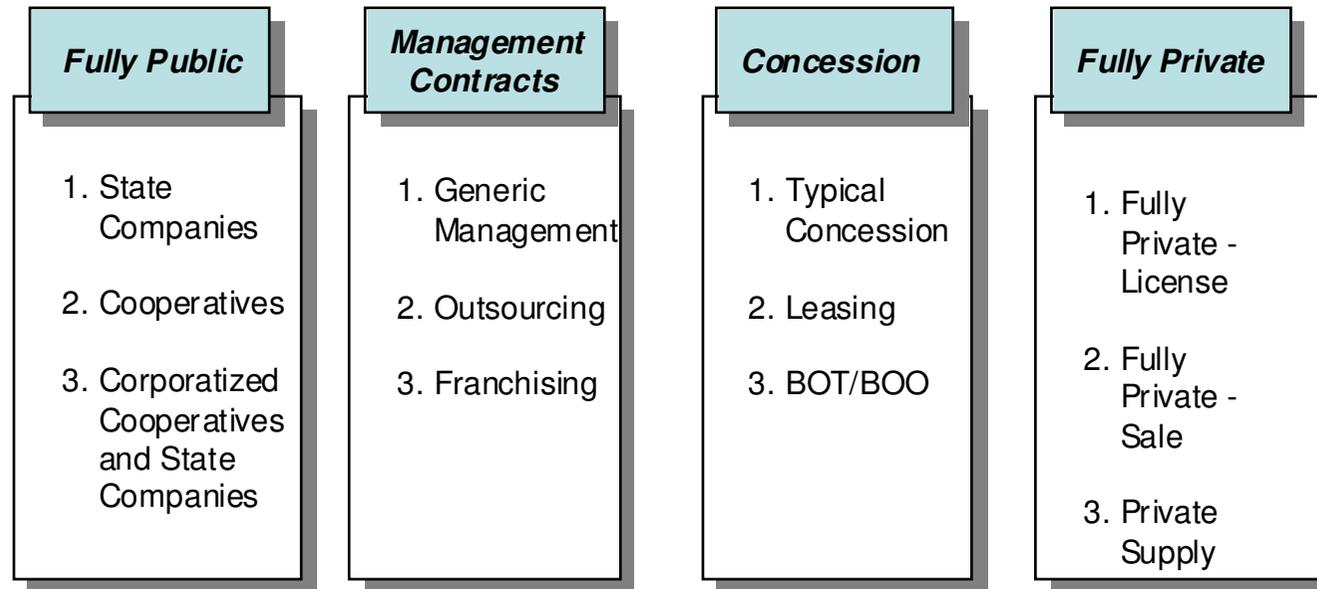
- Extent to which a government can provide resources to a project without adversely affecting its financial position.
- Capacity of the national, sub-national or local government to commit the cash flow to support a project.
- Sources of funds for specific programs and, depending on the level of decentralization of a country, can involve multiple government entities and/or government branches.
- Financial relationships between central and local governments and the extent, reliability and capacity to allocate fiscal transfers.

Institutional Capacity

- Existence of a regulator or regulatory function
- Quality of the regulatory framework and the level of organizational development of the sector to deal with the regulatory framework requirements
- Level and quality of capacity of the sector authorities and participants to deal with the issues of the industry (planning and technical capacities, public health awareness, governance and administrative skills, ability to provide advice to small firms, training, etc)
- Level of corruption in the institutions.

Modalities that can be used to implement projects

Public to private continuum



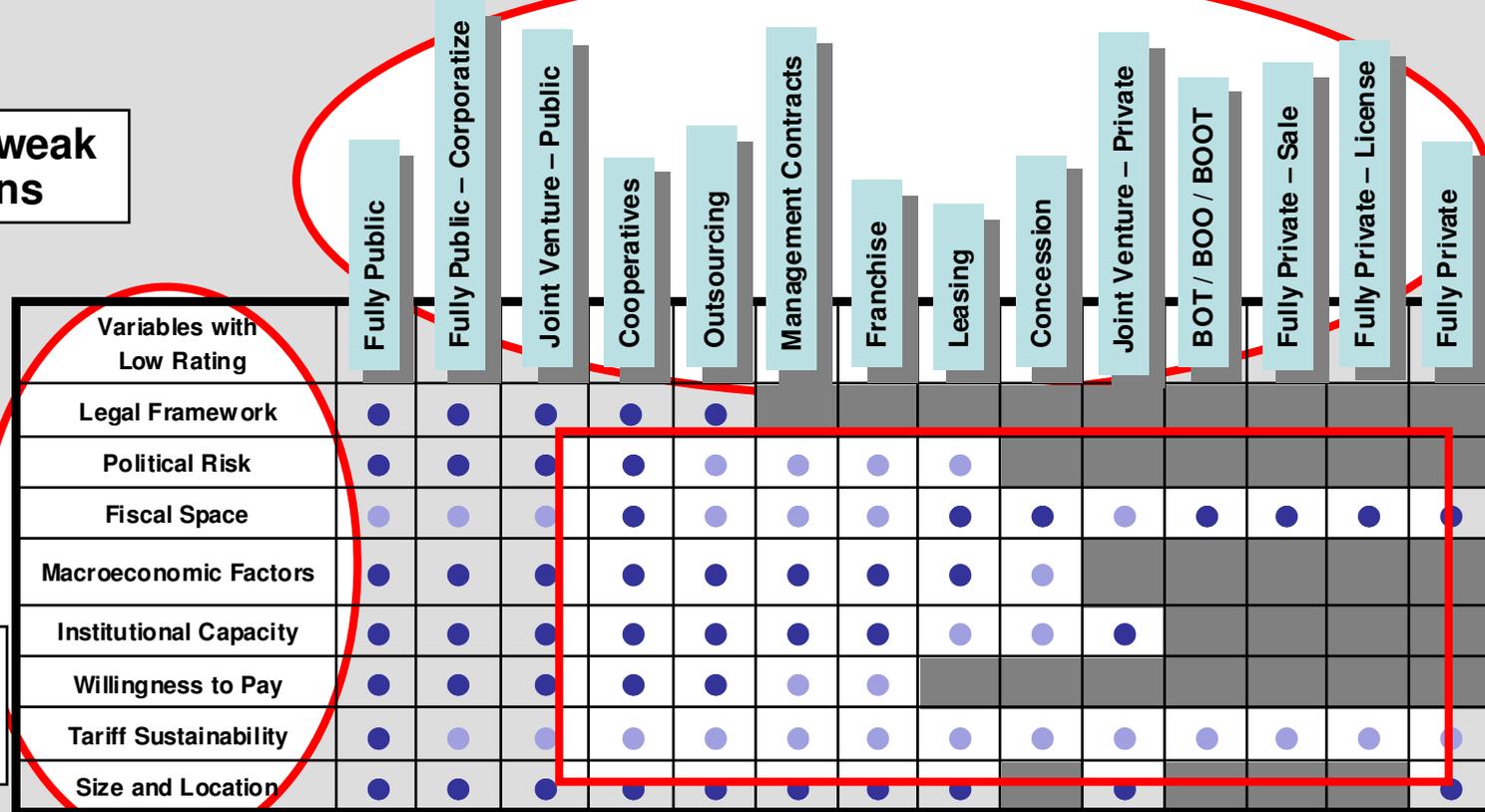
Risk mitigation tools (not exhaustive)

- Political risk insurance (many flavors)
- Partial credit guarantees
- Partial risk guarantees
 - Foreign exchange, policy, market,
- Subsidies
- Credit enhancements
- Local currency financing
- Escrow accounts, off-take contracts....
- Contingent credit facilities

Project Feasibility Map – Analytical Process

B. Evaluate which modalities may work

A. Determine weak local conditions



C. Assess which tools may apply

- Available Modalities
- Non-Feasible Modalities
- Tool-Enabled Modalities

D. Combine tools and modalities to determine potentially viable project structures

Rating Variables with Indicators

Variable	Indicator(s)	Minimum Level Required (a)	Local Conditions (b)	Rating or Perception of Local Conditions (a) > (b) = low AND (a) < (b) = high
Legal Framework				
Political Risk				
Fiscal Space				
Macroeconomic Factors				
Institutional Capacity				
Willingness to Pay				
Tariff Sustainability				
Size and Location				

Viability of PPP Modalities Under Weak Local Conditions

Variables with Low Rating	Fully Public	Fully Public – Corporatize	Joint Venture – Public	Cooperatives	Outsourcing	Management Contracts	Franchise	Leasing	Concession	Joint Venture – Private	BOT / BOO / BOOT	Fully Private – Sale	Fully Private – License	Fully Private
Legal Framework	●	●	●	●	●									
Political Risk	●	●	●	●										
Fiscal Space				●				●	●		●	●	●	●
Macroeconomic Factors	●	●	●	●	●	●	●	●						
Institutional Capacity	●	●	●	●	●	●	●			●				
Willingness to Pay	●	●	●	●	●									
Tariff Sustainability	●													
Size and Location	●	●	●	●	●	●	●	●		●				●

● Modality Potentially Viable

■ Modality Not Likely Viable

Application of Project Enhancement Tools

Variables with Low rating	Project Tools Available											
Legal Framework											●	
Political Risk	●				●							
Fiscal Space		●					●	●	●			
Macroeconomic Factors		●			●					●		
Institutional Capacity				●							●	
Willingness to Pay						●	●					
Tariff Sustainability			●			●	●	●				●
Size and Location						●						

- Political Risk
- Partial Credit Guarantee
- PRG – Market Risk
- PRG – Exchange Liquidity
- PRG – Regulatory Risk
- Subsidies
- Cross-Subsidies
- Output Based Aid
- Credit Enhancement
- Local Currency Financing
- Arbitration Rules
- Off-taking

● Project Tools Available

Project Feasibility Map Resulting from Two Step Analysis

Variables with low Rating	Fully public	Fully public - Corporatize	Cooperatives	Outsourcing	Management Contracts	Franchise	Leasing	Concession	BOT-BOO-BOT	Fully private - sale	Fully private - License	Fully private
Legal Framework	●	●	●	●	■	■	■	■	■	■	■	■
Political Risk	●	●	●	●	●	●	●	■	■	■	■	■
Fiscal Space	●	●	●	●	●	●	●	●	●	●	●	●
Macroeconomics Factors	●	●	●	●	●	●	●	●	■	■	■	■
Institutional Capacity	●	●	●	●	●	●	●	●	■	■	■	■
Willingness to pay	●	●	●	●	●	●	■	■	■	■	■	■
Tariff sustainability	●	●	●	●	●	●	●	●	●	●	●	●
Size and Location	●	●	●	●	●	●	●	■	■	■	■	●

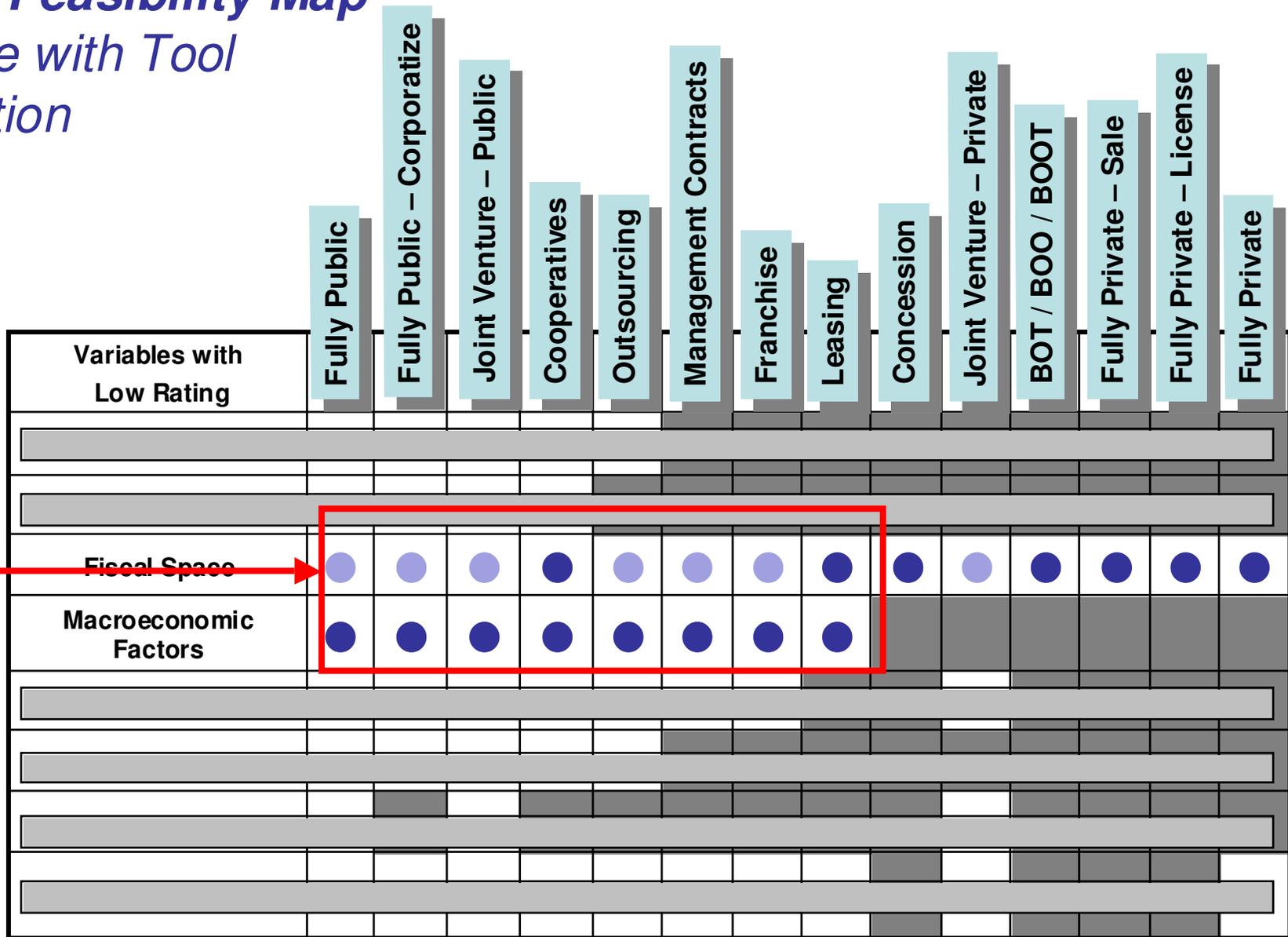
↑ Suggested feasible structures

● Available Structures
■ Non-Feasible Structures
● Tool-Enabled Structures

Note that feasible structures are only considered when a full column of circles exists.

Project Feasibility Map

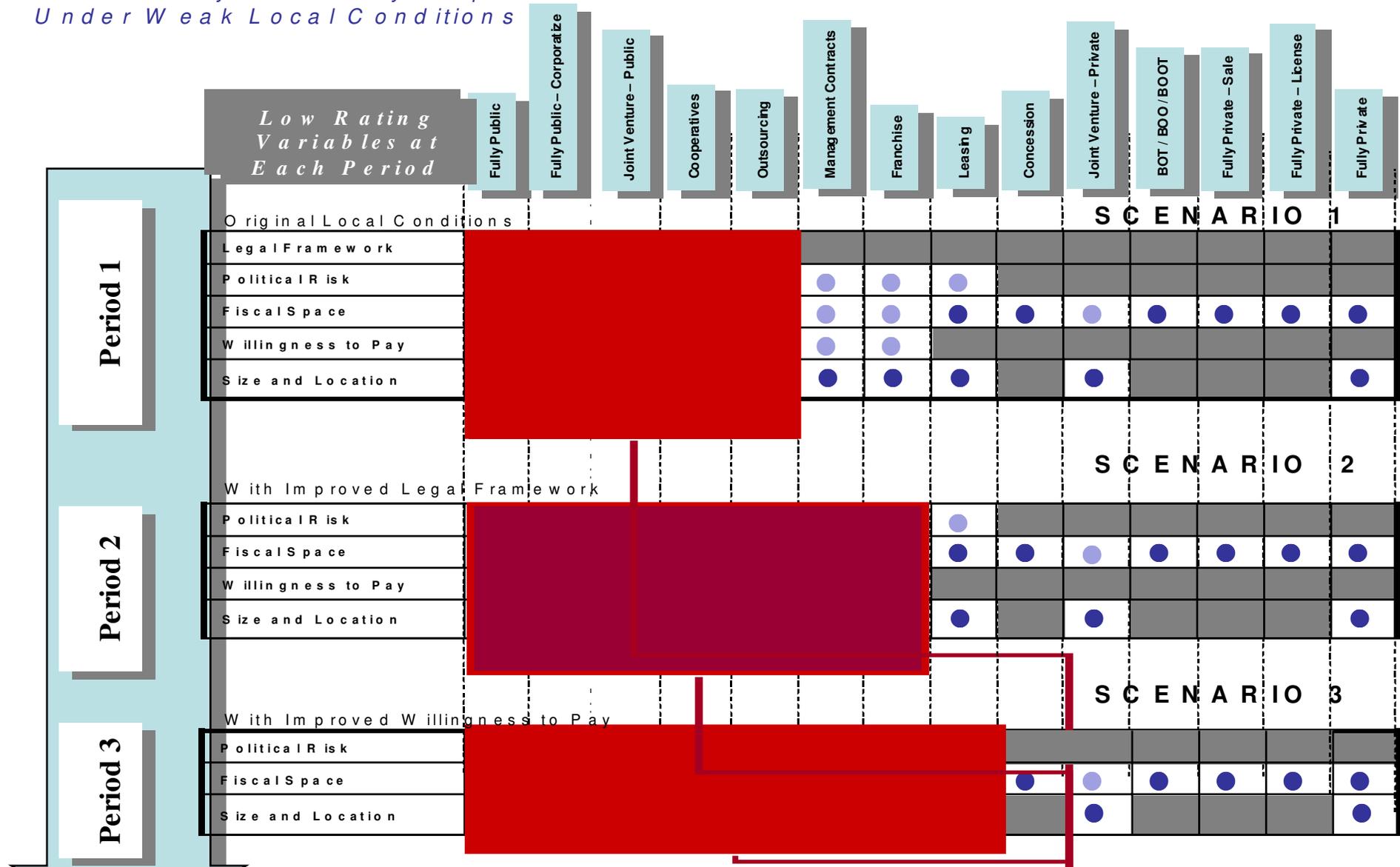
Example with Tool Application



Expanded range of potentially feasible project structures to choose from

- Available Modalities
- Non-Feasible Modalities
- Tool-Enabled Modalities

*Evolutionary Feasibility Map
Under Weak Local Conditions*



Potentially Feasible Project Modalities in Each Period

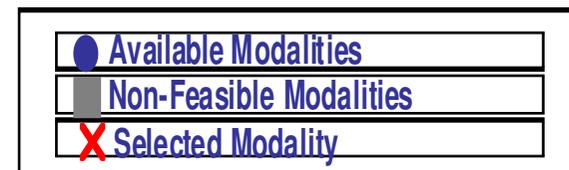
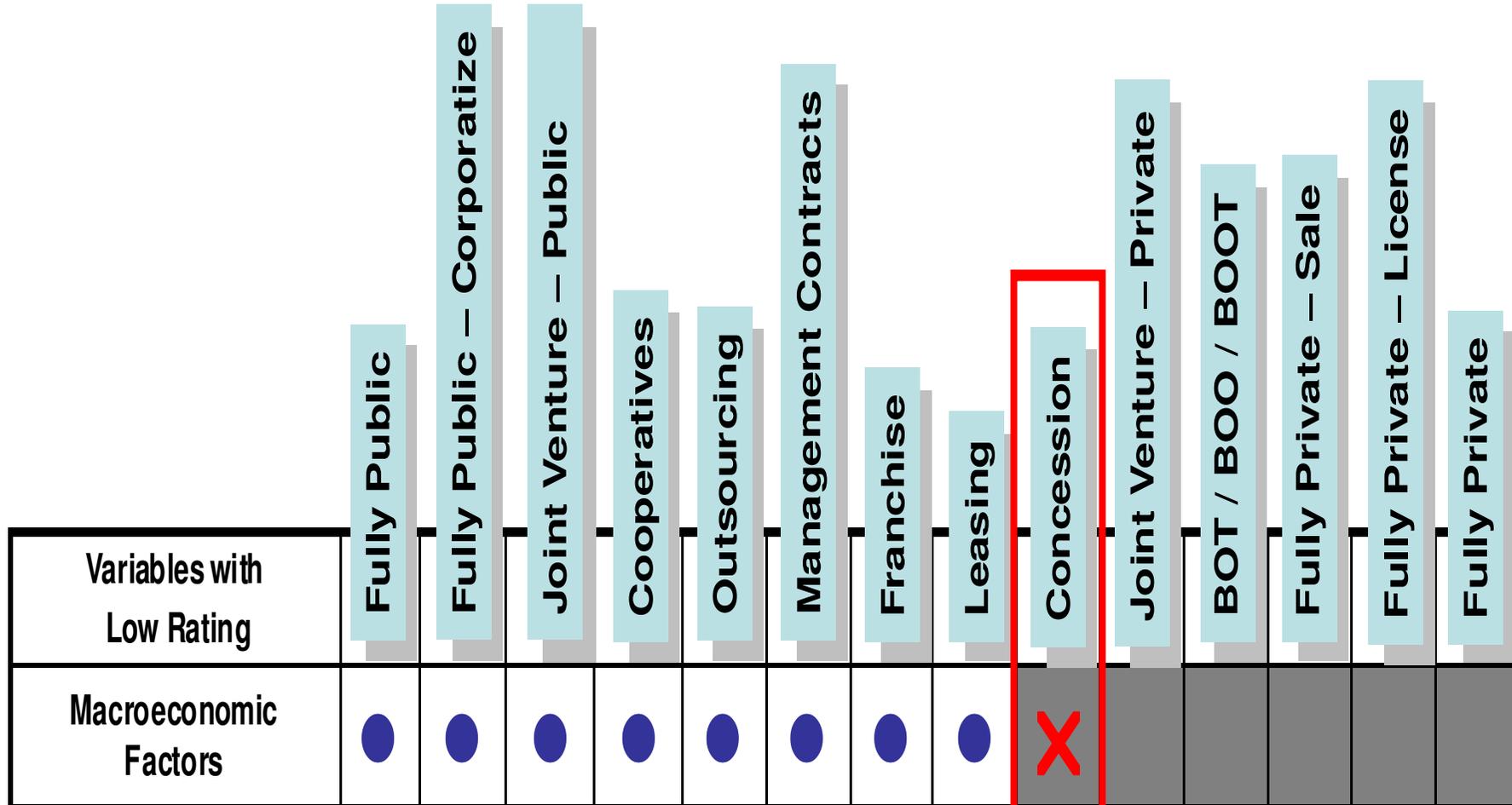
* Refer to Figure 10 for the specific tools corresponding to the local conditions identified.

*Case Study – Aguas
Argentinas
Pre-2002 Crisis*

Variables with Low Rating	Fully Public	Fully Public – Corporatize	Joint Venture – Public	Cooperatives	Outsourcing	Management Contracts	Franchise	Leasing	Concession	Joint Venture – Private	BOT / BOO / BOOT	Fully Private – Sale	Fully Private – License	Fully Private
Institutional Capacity	●	●	●	●	●	●	●	■	✗	●	■	■	■	■
Willingness to Pay	●	●	●	●	●	●	●	●	●	■	■	■	■	■
Tariff Sustainability	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● Available Modalities
■ Non-feasible Modalities
● Project Tool Used: Cross-Subsidies

Case Study – Aguas Argentinas
Post-2002 Crisis



Closing remarks

- Structures can enhance the long term viability of projects
- Under prevailing conditions in developing countries, structures are a lot more complex
- Must be adapted to prevailing conditions and must withstand change (dynamic analysis)
- Right structures can increase the number of bankable projects, attract investments and reduce backlash from failures

Closing remarks

- What was presented is just a model, not a panacea, not a mechanical tool, not a substitute for lack of judgment
- Due diligence and proper judgment, particularly in the assessment of the long term local conditions, are the key
- Rewards will go to good judgments

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