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Infrastructure Systems: A Methodology for Institutional and Political Design

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Presentation Outline:

1. Institutional and Political Design: Application to Infrastructure Systems
2. Defining the Problem
3. Identifying Possibilities and Options
4. Characterizing Options
5. Developing Alternatives
6. Evaluating Alternatives
7. Formulating Recommendations and Implementation Strategies
8. Conducting Sensitivity and Contingency Analysis
9. Preparing Implementation and Monitoring Plans
10. F Measurement System



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1. Institutional and Political Design: Application to Infrastructure Systems

- Advocates Systematic, Prescriptive Approach to Problem Solving
- Recognizes Critical Role of Institutions and Political Setting
- Focuses Time on Developing Solutions as well as Defining Problems
- Goes Beyond Cost-Benefit Analysis
- Brings Transparent Reasoning to Decision-making

Output: Well-Reasoned Recommendations and Institutional and Programmatic Designs



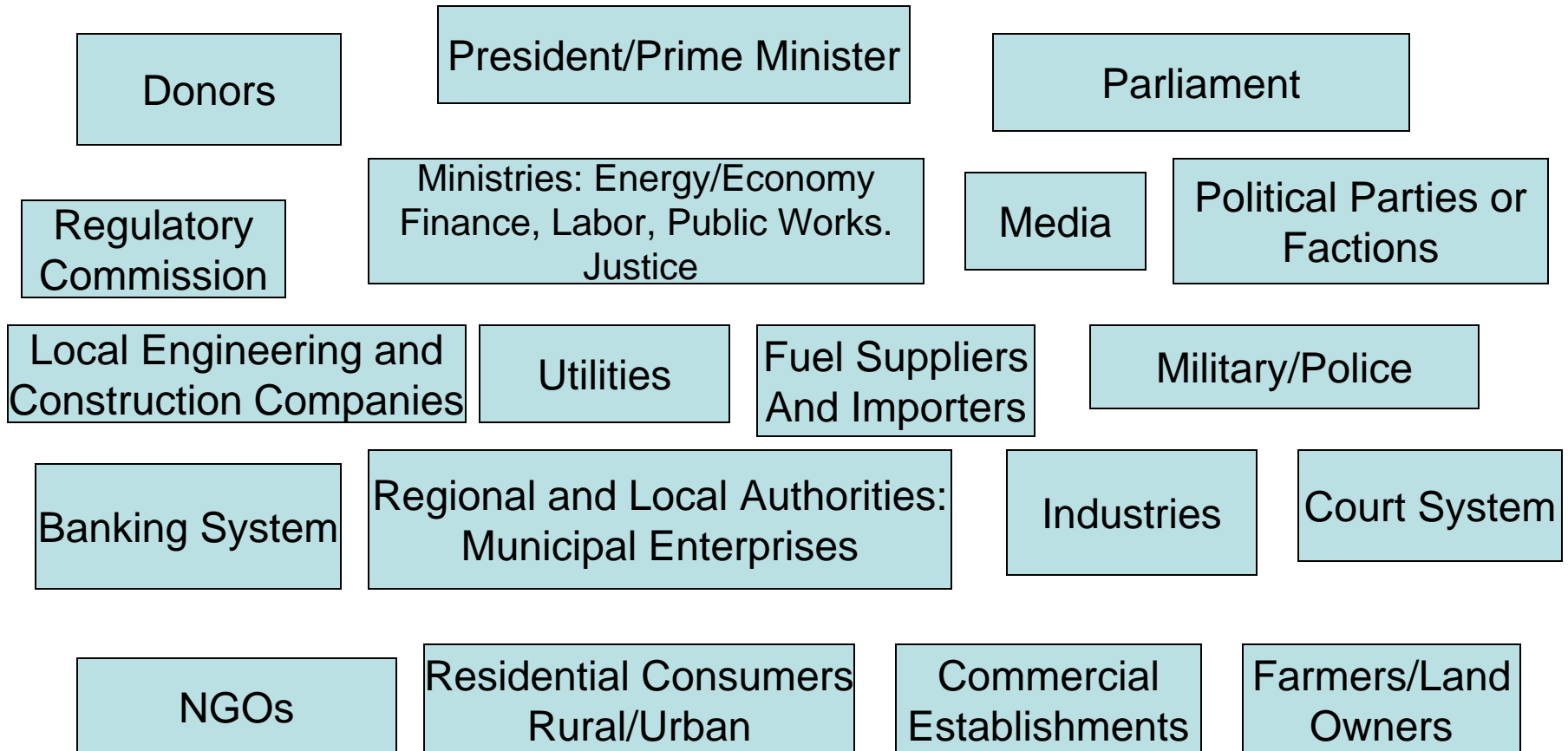
2. Defining the Problem

- Perspectives: Actor and Structural Orientations
- Political Mapping
- Key Parameters and Variables
- Current State
- Goal State
- Drift State
- Key Obstacles

Output: Problem Definition is Variation Between Goal State and Drift State and Clear Statement of Key Obstacles to Reach Goal State

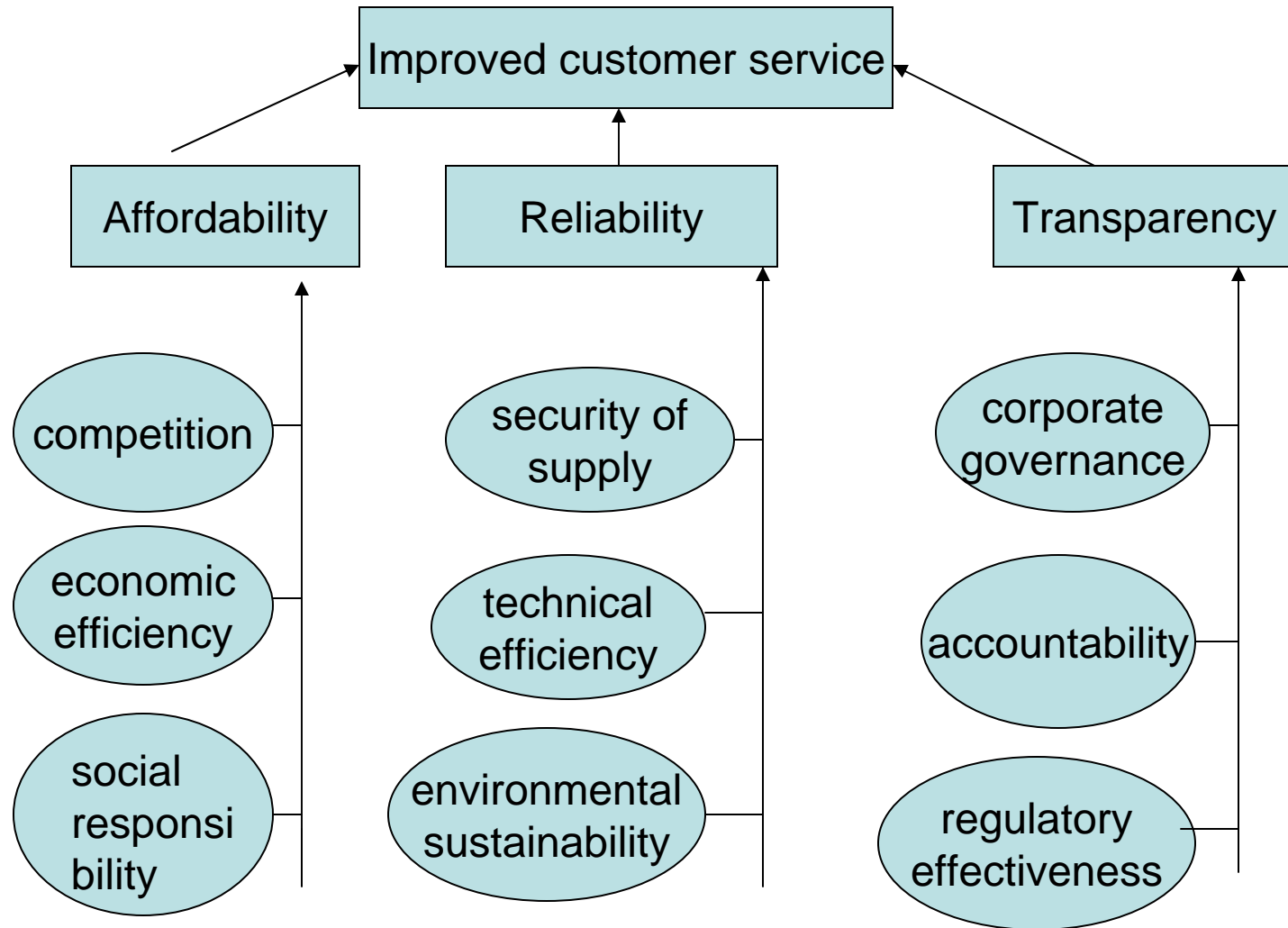


Diagnosis: Political Mapping





Electric System Framework





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Illustrative Problem 1: Electricity

- Goal State: a reliable, affordable and transparent utility system in country X ?
- Current State: high non-payments (30% collections) and losses, financial drain on government, poor accounting, corruption, weak management, load shedding, no effective regulator, etc.
- Drift State: utility has little chance of more than incremental progress given environment.
- Key Actors: PM, Minister of Economy, Utility Managers, Municipal Leaders, Parliamentary Officials
- Structural Issues: Highly centralized political structure with direct Ministerial control. Integrated utility framework . No major political opposition.



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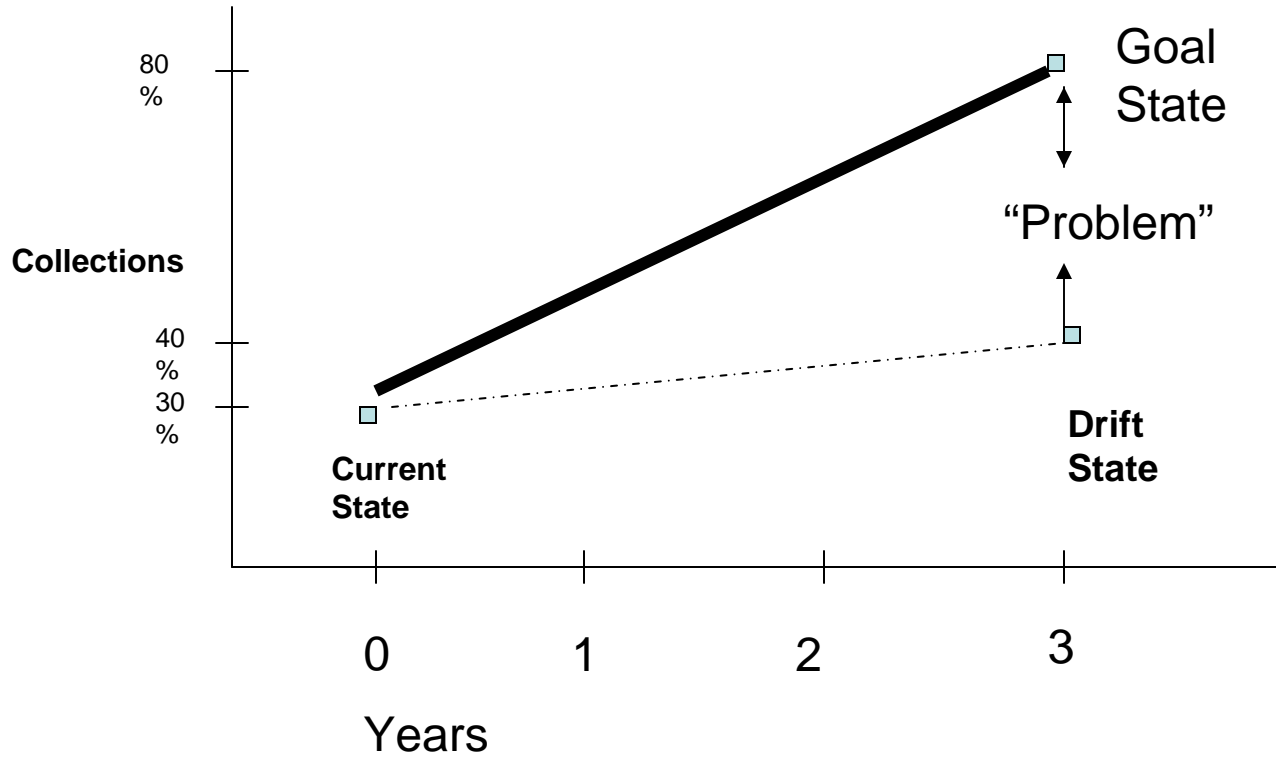
Illustrative Problem 2: Water

- **Goal State:** Provide safe, regularized, and reliable water services in country Y.
- **Current State:** 23 municipal water systems exhibit poor water quality and erratic service; absence of valves and meters; direct sewage discharge to rivers; inadequate funding for operating costs and no preventive or capital maintenance; large debts and inadequate tariffs, billing and collection systems; no water regulator and uniform standards; 38% of customers “poor”; weak management and limited trained technical employees; low access in some communities.
- **Drift State:** Continued deterioration of the systems – de-capitalization
- **Key Actors:** Ministries of Environment; Labor and Health; Finance; Economic Development; WSS companies; Local Governments (city, town, village); Enterprise Management Agency
- **Structural Issues:** Fragmentation and uneconomic size of many local systems; weak central role in regulation, standards and economic enforcement



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Illustrative Problem 1: Graphical Presentation of Problem





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3. Identifying Possibilities and Options

- Describing Potential Actions or Choices Between and Among Actions
- Past Experience
- Programs of Other Donors
- What are necessary and sufficient conditions to overcome obstacles

Output: List and Brief Description of Institutional and Political Design Options



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Illustrative Problem 1: Program and Institutional Design Options

- Develop New Legal framework
- Create Regulatory Agency and Reform Tariffs
- Restructure/Un-bundle Utility
- Commercialize- Metering, Billing, Collection Improvement
- Design new Market Framework and Develop Rules and Codes
- Develop Social Safety Net and Low Income Assistance Program
- Bring in foreign Management Contractor
- Secure foreign loans for utility
- Privatize to strategic foreign or regional investors
- Offer utility to foreign or local companies under concession arrangement
- Contract TA team to assist utility management
- Buy and install metering and other equipment to reduce losses
- Develop utility training program for management
- Carry out pilot demonstration program for loss reduction
- Establish regional network to disseminate results of successful utility reforms



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Illustration 2: Water System Options

- Develop National WSS law
- Create Water Regulator
- Consolidate local water service providers
- Develop standards and licenses
- Establish water testing laboratories
- Establish tariffs appropriate to standards
- Change tax laws – VAT on billed not collected
- Implement several management contracts
- Implement social safety net systems
- Immediate works investments
- IFI loans to Government and management by Ministry of Finance
- Conduct commercialization demonstration project



4. Characterizing Options

- Need for Clear Description to be able to Evaluate
- Description should include factors other than just anticipated outcomes or results
- They should normally include standard feasibility considerations: political, economic, financial, technical, and environment and social
- Different scales and indicators of measurement are possible

Output: Options are adequately described against key characteristics that define nature as well as feasibility and expected results or outcomes



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Illustrative Problem 1: Characterization of Options

Options/ Character istics	Cost	Effective- ness	Political Feasibil- ity	Risk	Environ- mental Impact	Other Donor work	Congress -ional Interest
Managem ent Contract		3		H	Major	Signifi- cant	Strong
Concessi on	\$	4		M	Minor	Limited	Weak
Strategic Privatizati on		5		L	Minimal	Duplica- tive	Ear-mark
Portfolio Privatizati on		2			None		
TA Team		2					
Managem ent Training		2					
Equipme nt Rehab							



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Illustrative Problem 2: Characterization of Options

Options/Characteristics	Health impacts	Resistance from Local Gov	Cost	Donor Co-operation Potential	Water for Poor Act Funding	Parliamentary support	Gov revenue potential
Prepare new Law							
Develop Water Regulatory Agency							
Management Contracts							
Concessions							
Capitalize special fund for rehab							
Consolidate local water systems							
Commercialization demo							



5. Developing Alternatives

- Problem Solution and Goal State Achievement may require multiple courses of action
- Key question is what choices are ***necessary*** to make
- What are these design alternatives and is the rationale for the decision among the alternatives clearly presented?

Output: Decision among alternatives is carefully displayed along with the basis for this formulation.



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Illustrative Problem 1: Combining Options into Alternatives

Alternative Program #1: (Georgia Model)

- Management contract plus some equipment/rehab

Alternative Program #2: (Kosovo Model)

- TA Team plus policy, legal and regulatory assistance

Alternative Program #3: (Albania Model)

- Strategic Privatization plus legal, regulatory and market development assistance



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Illustrative Problem 2: Combining Options into Alternatives

- Alternative #1: Institutional and Regulatory Only
- Alternative #2: Management Contract (3-5 years)
- Alternative #3: Demonstration TA and Equipment Program



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6. Evaluating Alternatives

- Decision Based on Comparative Analysis
- Should consider Implementation Issues as well as Costs and Benefits
- Environmental Considerations (e.g. Fatal Fault considerations) may be critical factors.
- Responsible Party(ies) and Capacity to Manage and Implement Needs to be Well-Defined

Output: Preliminary Judgment on Preferred Alternative and key Assumptions Underlying Choice are Presented.



7. Formulating Recommendations and Implementation Strategies

- Recommendations to Authorities can be presented in different formats: non-conditional, conditional, contextual
- Presentation may be accompanied by implementation strategy defining how, when and with what resources and over what timeframe will certain actions and decisions be made

Output: Action Recommendations and Some sense of Implementation Approach



8. Conducting Sensitivity and Contingency Analysis

- Need to critically consider the key assumptions underlying decision
- Defines the risks involved if the assumptions are in error
- Considers what contingencies might arise and how these might affect the recommended course of action
- Possible mitigating or emergency response measures are presented
- What insurance coverage or self-insurance options are available or possible

Output: Considers strength and persuasiveness of the assumptions /arguments and what are possible ways things can go wrong and how they might be addressed



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Illustrative Problem 1: Sensitivity and Contingency Analysis

Preliminary Recommendation: Alternative #3 – Strategic Privatization and Regulatory/Market Assistance

Key Assumptions: e.g. prospects for interest by strategic investor; political will may affect viability of recommended Alternative

Risks: Time and money spent on process that is abortive

Contingencies: Political developments that require new elections – would delay the process and may create more or less favorable environment for strategic privatization

Mitigating Measures: Pre-Privatization Loan to Enhance Attractiveness for investors and provide incentives for reform

Insurance Approaches: Establish High Level Multi-Donor Task Force to Maintain Momentum and Political Will and address any problems



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Illustrative Problem 2: Sensitivity and Contingency

Preliminary Recommendation: Alternative #2 – Management Contract

Key Assumptions: National Government political will to carry out legal and regulatory reforms; other donors will support this function; local officials will allow improved metering, billing and collections by management contractor; government will supply funds for low cost repairs and meters.

Risks: Corruption in services companies and local officials is more intractable than estimated; management team selected is not aggressive and willing to take risks.

Contingencies: Government or regulators put restrictions on management contractor (taxes, asset stripping, environmental); major system failures (e.g. pumps) that cause outage or severe interruption in service.

Mitigating Measures: Build in decision points in management contract agreement with government and substantial incentives for performance

Insurance Approaches: Establish contingency fund or line of credit for outages and major repairs.



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9. Preparing Implementation and Monitoring Plans

- Task Descriptions
- Budget Allocations
- Reporting
- Developing Local Project Management Capacity
- Measuring Results



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10.F Indicator System (4.1 Modern Energy Services)

DO THESE REALLY CAPTURE WHAT WE ARE DOING?

- Number of People who have increased access to modern energy services as result of USG assistance
- Reduction in Utility Technical Losses
- Reduction in Utility Commercial Losses
- Capacity constructed or rehabilitated
- Energy Saved as result of USG assistance
- Number of People trained in policy and regulatory practices
- Number of People Trained in Energy Technical Fields
- Is there legal separation of generation, transmission and distribution utilities
- Number of energy enterprises with improved business operation
- Total public and private dollars leveraged by USG for energy infrastructure projects
- Number of energy companies prepared and offered for privatization