



**Legal, Institutional, and Regulatory Reform of the
Water/Wastewater Sector in Egypt Project**

Volume IV: Capacity-Building for Implementing Agency Officials

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CHEMONICS
CONSULTANTS



CHEMONICS EGYPT
Private Sector and Infrastructure

IP3 THE INSTITUTE FOR
PUBLIC-PRIVATE PARTNERSHIPS

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SECTION I

Restructuring Strategies Workshop

Legal and Regulatory Development of the Egyptian Water and Wastewater
Sector Project
Chemonics International, Inc. and The Institute for Public-Private Partnerships

FORWARD Project
Development Alternatives International

United States Agency for International Development

Legal And Regulatory Reform For The Water/Wastewater Sector

Restructuring Strategies Workshop

July 28-29, 1998
Alexandria, Egypt

Workshop Invited Participants

Steering Committee Members

1.	Eng. Mahmoud. El Samagawi	Chairman, NOPWASD (<i>Committee Chairman</i>)
2.	Eng. Ahmed El Garbaly	Head, Housing and Utilities Sector, MHUNC
3.	Eng. Hussein Hosny	Chairman, CWO
4.	Eng. Magd El Din Ibrahim	First Undersecretary, MHUNC
5.	Eng. Fathy Qozman	Chairman, Central Agency for New Communities
6.	Eng. Adel El Toweiry	Chairman, GOGCWS
7.	Eng. Hassan El Shafie	Head of the Alexandria Water General Authority
8.	Eng. Mohamed El Sayed Youssef	Chairman, CGOSD
9.	Eng. Hassan El Hakaa	Chairman, AGOSD
10.	Mr. Gamal Mohamed Ahmed	First Undersecretary of the Ministry of Planning
11.	Eng. Attia Ali Sherif	Head of the Local Administration Organization Dept. CAO A
12.	Mr. El Shafei El Dakroury	Sector Head for Technical Follow Up and Coordinator , New Communities Authority
13.	Mrs. Nagwa Abdel Moneim	General Manager for Organization, Housing and Local Administration Sector
14.	Mr. Mohamed Ahmed Hamad	Chairman, Sharqiya W/WW Authority
15.	Eng. Gamal Fahmy Moussa	Chairman, Beni Suf W/WW Authority
16.	Eng. Ahmed Samir El Beblawy	Chairman, Minya W/WW Authority
17.	Eng. Mohamed Mubarak	Chairman, Aswan W/WW Authority
18.	Eng. Mohamed S. Abd Rabou	Chairman, Gharbiya W/WW Authority
19.	Eng. Ahmed Shehab	Chairman, Daqahliya W/WW Authority
20.	Eng. Assad Salama Attyia	Chairman, Fayoum W/WW Authority
21.	Eng. Mohamed Mansour	Chairman, Beheira Water Company
22.	Eng. Abdel Moneim Zagloul	Chairman, Kafr el-Sheikh W/WW Company
23.	Eng. Ahmed Kadry	Chairman, Damietta Water Company
24.	Eng. Moustafa Sharaf	First Undersecretary, MHUNC, and Deputy Chairman of NOPWASD

Technical Secretariat Committee Members

25.	Eng. Aliya El Gibaly	MHUNC Undersecretary, Utilities Supervisor (<i>Committee Chairperson</i>)
26.	Eng. Samira Necola	General Manager of Research and Studies, NOPWASD

27.	Eng. Magda Abdel Moula	General Manager, Utilities Dept., MHUNC
28.	Eng. Zeinab N. Monier	General Manager, Technical Office, CWO
29.	Eng. Said Abou el Aila	CGOSD
30.	Eng. Adel Sobeih	Supervisor of the Technical Office, NOPWASD
31.	Acct. Talat Kandil	General Manager of Organization and Administration, NOPWASD
32.	Mr. Mohamed Sheta	First Undersecretary, Ministry of Local Administration
33.	Mr. Osama Ismail Abdel Rahman	Manager of Monitoring, NOPWASD

USAID

34.	Mr. Mark Silverman	Associate Director, USAID Egypt
35.	Mr. Peter Argo	Chief, W/WW Division, USAID Egypt
36.	Mr. Timothy Alexander	Egypt Utilities Management Team Leader, W/WW Division, USAID Egypt
37.	Mr. Glenn Whaley	Chief, Institutional Branch, W/WW Division, USAID Egypt
38.	Mr. Mohamed el Alfy	FORWARD Project Officer
39.	Mr. Moenes Edward Youannis	LIR Project Officer
40.	Mr. Mamdouh Raslan	Secondary Cities Project Officer
41.	Mr. Adel Halim	Middle Egypt Utilities Project Officer

FORWARD

42.	Mr. Maher Khalifa	FORWARD Advisor
43.	Dr. John Murray	FORWARD Advisor
44.	Dr. Chris Moore	FORWARD Advisor

LIR Project

45.	Mr. Matthew Hensley	Chief of Party
46.	Mr. Ghassan Nakad	Infrastructure Finance Advisor
47.	Mr. Anthony Stellato	Institutional Development Specialist
48.	Dr. Phillip Cook	Utilities Specialist
49.	Dr. Hani Sarie El Din	Project Advisor
50.	Ms. Neda Nahas	Project Coordinator

51.	Dr. Ahmed Gaber	Project Advisor
52.	Eng. Mohamed Ashmawi	Project Advisor
53.	Dr. Naim Attiya	Legal Advisor
54.	Mrs. Manal Mortagy	Project Assistant
55.	Mrs. Suzanne Abou el Farag	Interpreter
56.	Ms. Fatma Hindawy	Interpreter

LEGAL AND REGULATORY REFORM FOR THE WATER/WASTEWATER SECTOR
RESTRUCTURING STRATEGIES WORKSHOP AGENDA

First Day: 28 July 1998

OPENING REMARKS	Eng. Mahmoud El Sarnagawi Mr. Mark Silverman	9:00-9:10
WORKSHOP PURPOSE & AGENDA - Workshop Objectives - Participating Agencies - Workshop Agenda	Eng. Mohamed Ashmawi	9:10-9:30
NOPWASD INITIATIVE	Eng. Mahmoud El Sarnagawi	9:30-10:00
USAID Sector Support - Past Assistance & Vision for the future - Legal & Regulatory Reform for the WWW Sector - Consensus Building Approach to Sector Reform	Mr. Moenes Youannis Mr. Mohamed Ashmawi Mr. Maher Khalifa	10:00-10:45
RESTRUCTURING THE WATER/ WASTEWATER SECTOR	Dr. Ahmed Gaber	10:45-11:30
Break		11:30-12:00
STAKEHOLDERS PERSPECTIVES	Mr. Maher Khalifa	12:00-12:30
REGULATORY FRAMEWORK	Panel Chair: Eng. Mahmoud El Sarnagawi Presenter/Moderator: Dr. Ahmed Gaber Panel: Dr. Mohamed Sheta, Eng. Hassan Hakaa, Mr. Maher Khalifa	12:30-14:00
Lunch		14:00

INSTITUTIONAL DEVELOPMENT OF THE WATER/WASTEWATER SECTOR

RESTRUCTURING STRATEGIES WORKSHOP

Second Day: 29 July 1998

PERFORMANCE STANDARDS	Panel Chair: Eng. Mahmoud El Samagawi Presenter/Moderator: Dr. Ahmed Gaber Panel: Eng. Hassan El Shafei, Eng. Mohamed El Said Yousef Eng. Hussein Hosny	9:00-10:00
COST RECOVERY & SERVICE PRICING	Panel Chair: Eng. Mahmoud El Samagawi Presenter/Moderator: Eng. Mohamed Ashmawi Panel: Eng. Fathy Kozman, Eng. Mostafa Sharaf, Mr. Gamal Mohamed Ahmed, Mr. Maher Khalifa	10:00-11:00
Break		11:00-11:30
UTILITY FINANCING	Panel Chair: Eng. Mahmoud El Samagawi Presenter/Moderator: Dr. Hani Sarie El Din Panel: Eng. Alia El Gebaly, Mr. Mahmoud Mansour, Eng. Assad Safamah	11:30-13:00
Break		13:00-13:15
LIR WORK PLAN	Eng. Mohamed Ashmawi	13:15-13:30
FORWARD WORK PLAN	Mr. Maher Khalifa	13:30-13:45
NEXT STEPS & CLOSING REMARKS	Eng. Mahmoud El Samagawy	13:45-14:30
Lunch		14:30

Workshop Objectives

- Present objectives of the Project for Legal and Regulatory Reform for the Water and Wastewater Sector, and Consensus Building Activities
- Discuss best practices in regulatory frameworks
- Obtain GOE feedback on best practices to shape the reform agenda & consultant work plans

NOPWASD INITIATIVE

Sector Problems Institutional Problems

- Multiple sources of authority, weak coordination
- Operating deficits, low tariffs
- Inappropriate management systems
- Low levels of employee motivation

2

Sector Problems Technical Problems

- High levels of distribution losses
- Deterioration of water production facilities
- Lack of rehabilitation and upgrading plan
- Lack of networks information and development plans
- Human resources shortcomings
- Insufficient budgets for O&M training

3

Institutional Recommendations/1 Establish a high council, responsible for:

- Drafting general policies and setting plans, priorities and program for the whole sector
- Evaluating performance, supervising, and monitoring
- Attracting private sector investment
- Setting plans to avoid defects and to solve problems that projects may encounter during implementation

4

Institutional Recommendations/1 (cont.)

- Coordinating with concerned utilities and ministries.
- Supporting the social policies and goals of the government.
- Preparing general training policies for technical and administrative development in the water and wastewater sector.
- Coordinating with the donors and distributing grants and loans among governorates.

5

Institutional Recommendations/2 Reorganize Sector Agencies

- Reconstitute NOPWASD with the authority to:
 - Implement the policies approved by the high council.
 - Prepare regulations and laws to control authorities in the governorate.
 - Adopt a private sector participation policy.
 - Work with the High Council to attract private sector investment to finance water and wastewater projects.

6

**Institutional
Recommendations/2(cont.)
Reorganize Sector Agencies**

- Supervise projects assigned to it by the High council.
- Implement administrative and technical training policies.
- Reconstitute autonomous local O&M utilities, responsible to NOPWASD

7

**Institutional Recommendations/3
Revise Water Pricing Policy**

Objective:

- Sector financial autonomy
- Keep up with rising costs
- Cover debts service
- Recover larger parts of wastewater coast
- Encourage water conservation
- accommodate lifeline consumption by low-income users

8

Institutional
Recommendations/3(cont.)
Revise Water Pricing Policy

Strategies:

- Develop a uniform sectoral accounting system
- Reduce costs and adjust prices
- Decentralized tariff setting
- Implement equitable but organized billing and collection policies
- Phased subsidy elimination

9

Institutional Recommendations/4
Private Sector Participation

Strategies:

- Amend laws as necessary to reduce risks for investors
- Review other-country experiences

Options:

- Service contracting
- Management contracting
- Lease
- Concession
- BOOT
- Reverse BOOT
- Divestiture

10

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		Technical Recommendations	
		WATER	WATESWATER
URGENT		<ul style="list-style-type: none"> • Network rehabilitation & leak detection LE 0.7 bn • Groundwater station rehabilitation & upgrading LE 0.175 bn • Rehabilitation of 146 WTPs LE 0.45 bn • Upgrading 275 WTPs LE 1.0 bn 	<ul style="list-style-type: none"> • Network rehabilitation Leakage reduction LE 0.8 bn • Rehabilitation of 24 WWTPs LE 0.13 bn • Upgrading of 22 WWTPs LE 0.27 bn
	LESS URGENT	<ul style="list-style-type: none"> • Network rehabilitation LE 1.3 bn • Develop improved technologies • Increase public awareness 	<ul style="list-style-type: none"> • Network rehabilitation LE 1.6 bn • Develop improved technologies

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General Recommendations	
<p>Most Urgent:</p> <ul style="list-style-type: none"> • Priority rehabilitation projects • Training in O & M 	
<p>Urgent:</p> <ul style="list-style-type: none"> • Long-range networks development planning • Data collection & mapping • Financial Planning • National plan to situate electricity networks for plant location • Incorporation of w/ww materials standards into Egyptian uniform standards code • Study possibilities for wastewater reuse & sludge application • Special planning for w/ww self-sufficiency & conservation in new communities 	

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RESTRUCTURING THE WATER/ WASTEWATER SECTOR

1

Operational Shortcomings Are The Result Of The Current Institutional Framework

Utility Operations Shortcomings

- inadequate maintenance
- high distribution losses
- weak customer service
- inappropriate design & construction
- poor operating ratios
- weak collection efficiency

Institutional Sources of Operational Shortcomings

- insufficient internal recovery of operating & capital costs
- weak customer orientation
- low levels of staff skill & motivation
- weak information & accounting systems
- lack of accountability
- inappropriate management systems
- tendency to set tariffs on non-economic criteria

2

An Effective Framework Provides Incentives For Performance Improvement

Incentives include:

- authority to retain & allocate revenues above the requirements of O & M, depreciation, and debt service
- personnel policies that reward initiative, diligence, & competence
- accountability to customers for providing quality & value
- recognition of the health, environmental, & development value of utility services & organizations
- opportunity to achieve reasonable profits

3

Sector Reform Objectives/1

- Create efficient framework of institutions allowing:
 - service provision to all at reasonable cost
 - adequate O&M
 - expansion of services to un-served areas
- Obtain increased efficiencies and attract investment finance
- Improve resource generation capacity for O&M, rehabilitation, and expansion
- Provide incentives for efficient water use

4

Sector Reform Objectives/2

- Improve cost efficiency and technical quality of projects
- Create a transparent system of providing finance driven by demand of utilities
- Provide adequate incentives for efficient O&M, financial viability, and appropriate projects
- Create conditions for human resource development
- Promote a support industry for sector utilities

5

Stakeholders in Utilities

Public

- served customers
 - un-served population
 - commercial users
- coverage
 - quality of service
 - reliability
 - affordability

Government

- health
- water conservation
- environmental protection
- economic development
- sustainability of public investments
- lowering/controlling budget deficits

Investors

- reasonable return on investment commensurate with risk

Contractors

- business opportunities, profits

An effective institutional framework reconciles these interests to maximize social benefit

6

The Utility Sectors Have Monopoly Characteristics

Problem

- Customers do not have a choice of suppliers
- Private sector often provides greater efficiencies

Solution

- Regulation as a substitute for market forces

7

Parameters For Reform

- Nationwide
- Comprehensive
- Long-term

8

Strategic Elements For Sector Reform

- Regulatory Framework
- Standards, accountability, & benchmarking
- Cost recovery & service pricing
- Utility financing mechanisms

9

Regulatory Framework

What is it?

1. Policies, procedures, & systems applied to producers of goods & services with monopoly characteristics
2. A government function, but exercised in a quasi-independent manner
3. A fair process for periodic adjustment of tariffs

Why have it?

1. To protect customers
2. To assure both investors & consumers of fair & impartial treatment
3. To compensate providers for cost increases beyond their control or for new capital investment

10

Standards And Benchmarks

What are they?

- Requirements set by a recognized authority to govern design , construction, materials, operations, maintenance, customer service, accounting practices, personnel affairs, etc.
- Standards can apply to inputs, processes, or outputs
- Meaningless without enforcement

Why have them?

- To assure quality
- To hold service providers accountable
- To facilitate comparison of levels & costs of service by different providers in an industry

11

Cost Recovery And Service Pricing

What are they?

1. Means of financing the delivery & expansion of public goods & services
2. Means of allocating costs among users

Why have them?

- 1a. To sustain the supply of goods & services
- 1b. To provide a surplus for replacement
- 1c. To provide a reasonable return on investment expansion
- 1d. To represent the value of a good or service
2. To recover costs in an efficient & equitable manner

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Utility Financing

<p><u>What is it?</u></p> <ul style="list-style-type: none"> • Means of providing capital for rehabilitation, upgrading, & expansion • Methods include: <ul style="list-style-type: none"> - Internal generation (cash flow) - Grants - Loans - Private investment 	<p><u>Why have it?</u></p> <ul style="list-style-type: none"> • To expand service or achieve increased efficiencies • A mixed set of financing instruments <ul style="list-style-type: none"> - responds to a wide range of utility market situations - relieves the state budget of a portion of capital investment requirements, enabling state funds to be targeted more effectively to the most needy areas
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Adjusting Roles

from
Central Government As Provider
To Central Government As:

<p><u>Promoter</u></p> <ul style="list-style-type: none"> • Setting objectives & strategies • Setting & enforcing standards • Training • Intergovernmental coordination • Legal advisory services • Financial engineering services • Promoting & facilitating PSP transactions 	<p><u>Regulatory Body</u></p> <ul style="list-style-type: none"> • Minimizing political interference in tariff setting • Protecting customer interest • Maximizing competition • Promoting the public good
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Key Process Decisions

- What?
- Why?
- How?
- Who?
- When?

15

Regulatory Framework

Fundamentals and Regulatory Roles

1

Defining Regulation

- Regulation is a tool used by governments to protect consumers from “Monopoly Pricing” while simultaneously encouraging investors to risk capital in water sector investments
- Regulation is used to enforce standards in quality and performance
- Regulation is used to control unreasonable prices and to limit unsustainable subsidies
- Regulation can be applied by governments at all levels: National, Governorate, and municipal
- Economic regulation refers to setting and adjusting tariffs
- Other forms of regulation include quality, performance, health and safety

2

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Why Regulate?

- Markets seek profits/Monopolies can abuse
- Often there are too few producers
- One producer may be dominant in size
- The costs to consumers of switching producers is too high and inefficient
- Information is inaccurate or incomplete
- Monopolies can increase profit by raising prices or lowering quality: consumers lose

3

Rationale for Regulation of Water Service Providers

- In competitive markets, regulation is not required, the public has choice
- In natural monopolies, prices should be regulated and based on cost of service and risk/reward ratios
- Well designed regulation promotes competitive utility management and encourages efficiency
- Regulation allows for consumer representation
- Regulation provides investors with confidence that large capital investments will yield reasonable returns and that tariffs will be transparently set and adjusted

4

Requirements for Successful Regulation

- Regulation requires accurate and reliable information
- In the absence of competition, regulators must determine both the costs of producing water and the "fairness" of its price
- By introducing competition "for the market", regulators can use "auctions" to promote price efficiency and improve value
- Regulatory procedures must be transparent in order to be effective

5

Characteristics Common to All Regulators

- Clear enabling provisions and authority
- Clearly defined areas which the regulator must implement
- Clearly defined matters over which the regulator must preside
- Technical expertise to support regulations and decisions
- Authority to make decisions and to enforce rules (regulations), laws, and its orders

6

Examples

- Egypt--Ministry of Health has the authority to set and enforce water quality standards and to make decisions and to enforce its rules, the law and its orders.
- United Kingdom--Ofwat (the Office of Water) has the authority to set economic and consumer service standards, to set prices, and to enforce its regulations, the law and its orders.

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A Regulatory Framework for the Water Sector in Egypt Would:

- Promote cost recovery and commercial tariffs
- Compel performance "benchmarking"
- Improve operations and maintenance and reward competitive utility management
- Foster financial management and customer relations
- Reduce financial drain and leverage resources
- Encourage private investment in the sector

8

Essential Elements of a Regulatory Framework for Water

- Clear institutional roles and responsibilities
- Specific authority to approve investments
- Streamlined process for approvals/permits
- Harmonized legislation and procedures
- Standardized tender and award procedures
- Independent and transparent tariff setting
- Removal of barriers to entry and exit
- Anti-monopoly and dispute resolution

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Fundamentals

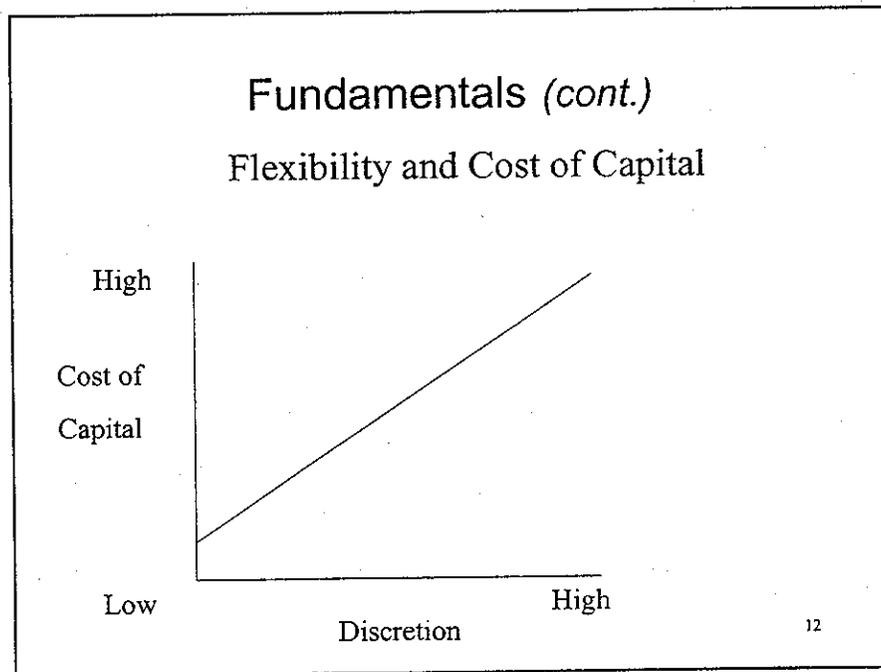
- Political economy of utility regulation
 - Tariffs tend to be political
 - Consumers = voters
 - Strong short-term pressures to hold below costs (unsustainable)
 - Investments are large and immobile, with long pay-back periods
 - Investors require credible commitments about tariffs and other rules of the game
 - Risk of government renegeing on commitments raises the cost of capital
 - Risks are perceived as being greater in emerging markets
 - Compare opportunity costs, i.e. investing in water vs. blue chip stocks--US Dow Jones 1998, up 40%, Indonesia water, down 20%

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Fundamentals (cont.)

- **Certainty vs. Flexibility**
 - Very specific, detailed rules that cannot be changed unilaterally
 - Certainty will lower cost of capital, BUT
 - Difficult to adapt to changing circumstances, and
 - Difficult to provide incentives for efficiency
 - More flexible approaches
 - Easier to adapt to changing circumstances, and
 - Easier to provide incentives for efficiency, BUT
 - Uncertainty and potential for misuse can increase cost of capital, especially in countries just beginning to develop

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Fundamentals (cont.)

- Regulatory system design
 - 1. Balance between rigidity and flexibility
 - Implementing instrument: How easily can the government unilaterally change the rules?
 - Normal contracts: Both parties must agree
 - "Special" contracts: Special rules on adjustments
 - Laws: Executive plus legislative
 - Decrees/subordinate legislation: Executive only
 - Specification of rule: How much room is there for flexible interpretation/application of rule?
 - General, e.g. "fair rate of return" vs highly specified, e.g. 12.25%
 - Impossible to eliminate discretion
 - 2. Mechanism for safeguarding exercise of discretion
 - Substantive restraints
 - Procedural restraints
 - Nature of decision maker

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What is independence?

- Staying at arm's length from regulated firms and other interests so as to ensure there is no conflict of interest.
- Staying at arms length from the political process in order to reduce the risk that discretion will be misused to advance short term political goals and to provide stability during regime changes.
- Regulators and their staff need to be exempt from restrictive civil service salary rules and need to have access to ear-marked funding so as to foster the required technical skills.

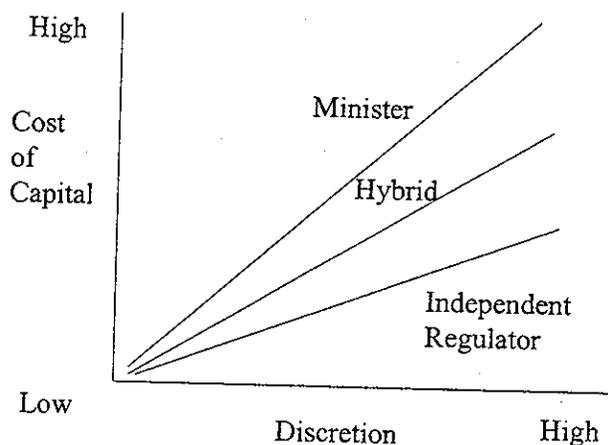
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Importance the Regulator's Independence

- Attract investors at lowest possible cost of capital
- Take politics out of price setting
- Surrogate for competition in order to get least cost services
- Provide credibility vis-à-vis the consumer
- Set standards that are technically sufficient
- Unbiased, even-handed decisions and enforcement

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Independence and Cost of Capital



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How to Achieve Independence?

- A clear mandate excluding Ministerial direction established in law.
- Appointed on basis of professional criteria with restrictions on conflicting interests, often involving Executive and Legislative.
- Protected from arbitrary removal during fixed terms, not co-extensive with the Government.
- Fixed salaries.
- Ear-marked funding.
- Independent minded appointees.
- Skillful strategic management.

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Degrees of Independence

- Full autonomy with decision authority with appeal to the Courts
 - e.g. US, UK, Australia, Bolivia, Mexico
- Full autonomy with decision authority, but appeal to the Minister
 - e.g. Argentina
- Full autonomy, but recommended to the Minister
 - e.g. Hungary, Jamaica
- Semi-autonomous (Ministers on the Board)
 - e.g. Chile, Columbia
- Ministerial decision making

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Independence and Accountability

- Accountability
 - What can go wrong?
 - “capture” by political authorities, industry or other interests
 - examples: undue influence, corruption,
 - Mistakes
 - Inefficiency
 - Promotion of regulator’s own interests
 - e.g. conflict of interest (real or apparent)
 - Extremely difficult to balance independence with accountability

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Independence and Accountability

- Common Accountability Devices
 - removal for proven misconduct or incapacity
 - rigorous transparency requirements, including reasons for decisions
 - restrictions on conflicts of interest
 - Effective appeal process
 - budgets scrutinized by the Legislature
 - efficiency scrutinized by independent auditors or other public watchdogs

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Role vis-à-vis Ministry

- Where to draw the line?
 - Give regulator carefully defined role in key issues of regulation
 - Avoid involving the regulator in non-core tasks that are highly political, *i.e.* public finance, sector restructuring, subsidies, investment planning and privatization approvals
 - Over time, regulators tend to be given greater authority
 - develop superior expertise to Ministry
 - develop trust and confidence of stakeholders

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Role vis-à-vis Ministry

- Role of the Economic Regulator
 - Grant licenses using technical criteria
 - Administer pricing and other rules
 - Determine detailed economic standards
 - Settle disputes between operators and between operators and consumers
 - Monitor compliance with rules
 - Impose penalties for non-compliance
 - Provide advice on other matters
 - Monitor economic and financial operations

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Role of the Sector Ministry

- Role of the Ministry
 - Maintain legal framework
 - advice on amendments, decrees, appointments
 - Sector planning and policy
 - includes design and award of private concessions, procurement, and development of public projects
 - Sectoral tax and subsidy issues
 - Inter-governmental negotiations
 - Provide indirect guarantees and investment incentives

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Role of Central Agencies

- Role of NOPWASD
 - engineering and project design
 - project negotiating and contracting
 - managing project financing
 - setting technical standards and criteria
 - operator and management training
 - monitoring technical aspects of service
 - advice on other matters

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Examples of Regulatory Frameworks

UK model	Single decision maker (Czar or Czarina)
U.S. models	Multi-member body
Argentina	Decision maker, but appeal to Minister
Jamaica	Recommends decision to Minister
Other	All decisions made by Minister

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Decision Making Structures: Czar vs. Commission

- Efficiency and Speed = Czar
- Accountability = Czar
- Resources Required = Czar
- Predictability = Czar
- Dedicated Focus = Commission
- Avoid "capture" = Commission
- Representative Views = Commission
- Independence = Commission
- Capacity Building = Commission

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U.S. Regulatory Framework

- State regulatory commissions (3 to 7 members)
- Responsible for all economic regulation, including rate setting, prudence review, territorial certificates, monitoring, rule making, enforcement, cost review, and financial and managerial auditing as well as deciding disputes between utilities and utilities and customers
- Consults with other regulators of quality and resources
- Commissioners are appointed or elected, serve for specified terms, and are removed only for cause
- Decisions are final with a right to appeal to the appellate Court
- Primarily use rate base/rate of return regulation, although some alternate methodologies are used in some states
- High investor confidence/capital is available to well run utilities
- Rates provide full cost recovery for prudently incurred costs and expenses, plus the opportunity to earn a reasonable return on investment.

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United Kingdom Regulatory Framework

- The Director General of the Office of Water Services
- Responsible for setting price caps, providing incentives, monitoring financial and managerial functions, settling disputes, protecting the consumer, setting performance standards, promoting economy and efficiency, enforcing standards and license conditions, and facilitating competition. Not responsible for granting licenses, setting the legal structure for the industry, water quality or controlling profits.
- Director General is appointed for a fixed term by the Secretaries of State, subject only to dismissal for cause or incapacity
- Decisions are final subject to appeals to the High Court
- Price caps are set every 5 years and only the performance is regulated. Profits come from achieved efficiencies. Costs are recovered within the price cap.
- Failure to meet specific performance standards requires the firm to pay penalties to the affected consumer

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Argentine Regulatory Framework

- Conceived as part of the Buenos Aires Water Concession
- New Regulatory Law and Body (ETOSS) created in 1992
- Regulatory Body independent of the Water Ministry with a representative commission from various Ministries and the labor union
- ETOSS staff include former employees of Buenos Aires Water Utility
- ETOSS is financed by a 2.7% surcharge on sales of concessionaire
- ETOSS commissioners serve a six year term with one term renewable
- ETOSS monitors the concessionaire, enforces compliance, and levies fines
- Tariffs can be renegotiated when certain events in the contract occur, i.e. inflation
- Now Governorates have their own regulatory bodies (seven concessions granted since 1992)
- Governorates coordinate with ETOSS to ensure regulatory conformity, including self financing schemes
- Results: Lower tariffs, higher quality, increased investment

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Regulatory Institutional Options: The Case of Malaysia

- Legislation gives 13 States authority
- Six States have “unbundled” services
- Regulation and monitoring occurs at the state level with standards set at the national level
- Tariffs are set by contract but approved by Ministry
- Ministry of Public Works provides technical specifications, support and indicators
- Results: Impressive new investment, competitive tariffs, limited enforcement capacity and transparency

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Regulatory Options: South Africa Water Sector

- Municipalities have jurisdiction for service provision
- Ministry of Water Resources provides overall policy, planning, and coordination
- Regulation by Contract used for private water concessions/management contracts
- Contract monitors are hired and financed through a charge to the concessionaire (2%)
- Ministry assists municipals to adhere to regulatory procedures and framework
- Tariff established through bidding and adjusted based on pre-agreed formula
- Results: Over \$200 Million new investment, commercial tariffs introduced but "free riders" eliminated, regulatory functions decentralized and self-financing achieved

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Forms of Regulation Issues for Governments to Decide

1. Independence from Government?
2. Separation of quality and economic regulation?
3. Federal vs provincial or local regulators?
4. Profit vs price control and frequency of price reviews?
5. Monitoring inputs vs outputs?
6. Affordable quality standards?
7. Appeal rights from decisions of regulator?
8. Primary vs secondary legislation?
9. Degree of discretion for the regulator?
10. Commodity vs public service charging scheme?

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Regulatory Precedents in Egypt

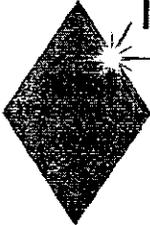
- Regulatory framework for energy sector
- Sector traditionally characterized by under-investment, limited capacity, and operating inefficiencies
- New law #100 passed in 1996 allowing PSP in establishing, financing, and operating power generation facilities
- Ministerial decree issued establishing the Energy Regulatory Board under the Egyptian Electricity Authority
- Energy Regulatory Board chaired by Chairman of EEA

33

Regulation in Egypt: Energy

- Sidi Kreir pilot project launched in 1996 to test the regulatory framework: \$450 Million, 650 MW BOOT
- Standardized bid and tender documents prepared with regulatory issues built into model contract
- Over 53 bids submitted with five international consortia short-listed
- Winning bidder offered 3.2 cents per KW/hour, 50+ percent less than World Bank projected
- From the investors perspective, the presence of a regulatory framework increased competition and reduced the price/risk of the project
- Successful framework has led to a pipeline of over 15 new PSP projects valued at over \$5 billion

34



Setting Quality Standards and
Measuring Performance

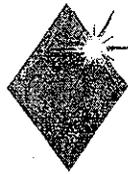
Quality Assurance in Utility
Management

1



Restructure Weak Areas of the
Sector to Assure Quality Utility
Operations Operational
Performance Standards Setting
Provide Incentives to High
Performers and Sanction to
Underperformers

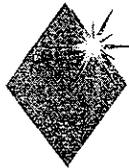
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Performance Benchmark Examples

- ◆ Liters per capita
- ◆ % of population served
- ◆ Water quality
- ◆ Hours of interrupted service per customer per year
- ◆ Revenue per cm sold
- ◆ # of new customers
- ◆ % of unaccounted for water
- ◆ % of water billed
- ◆ % of billings collected
- ◆ Production per employee
- ◆ % of time equipment is useable
- ◆ Av time to respond to a request for service
- ◆ % of meters read
- ◆ % of investment target reached

3



How Standards Work

- ◆ **Regulator or Technical Group** sets standards
- ◆ **Utility** decides how best to comply
- ◆ **Utility** collects measures and reports
- ◆ **Regulator** audits for accuracy of reporting and determines if there has been a violation
- ◆ **Utility** decides on corrective action when violations occur
- ◆ **Regulator** reviews and enforces the corrective action

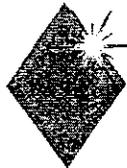
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Standards Might be Used in

- ◆ Facilities and equipment maintenance
- ◆ Administrative, financial and operational process performance (treatment, collections, leak detection, etc...)
- ◆ Response to customer complaints
- ◆ Power factor correction
- ◆ Benchmark measurement and reporting
- ◆ Metering
- ◆ Financial performance
- ◆ Contract compliance

5



What Does It Take to Make Standards Work?

- ◆ Basing standards on comparable processes
- ◆ Standardized charts of accounts and rules
- ◆ Regular, reliable performance measurement and reporting
- ◆ Follow-up audits
- ◆ Corrective action when standards are not maintained
- ◆ Incentives and penalties based on performance
- ◆ Regulatory levers

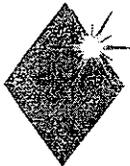
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Standards Development and Administration Would Require the Regulatory Body to Acquire Skills in

- ◆ Technical areas such as maintenance, utility operations, management, and financial management
- ◆ Defining and setting standards
- ◆ Setting appropriate measures
- ◆ Monitoring and auditing
- ◆ Review of corrective action plans and enforcement
- ◆ Information processing
- ◆ Contract monitoring

7



Effective Enforcement Requires

- ◆ **utility** measurement and reporting of their performance against the standard
- ◆ **utility** identification of the causes of failure to meet standards
- ◆ **utility** planning and execution of corrective action
- ◆ **regulator** monitoring and auditing of reports
- ◆ **regulator** review of corrective actions

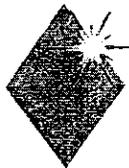
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An Argument for Competitive Utility Management

- ◆ The initial contract between the government and the private company would include
 - tying financial, customer service, and operational performance standards to the company's rate of return
 - requiring the company to make regular reports on these which would be audited and reviewed by the regulator

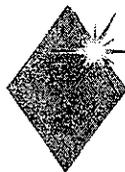
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To Make Standards Work the Central Government Needs to Take on New Roles to

- ◆ raise the overall levels of utility personnel professional training by providing
 - technical assistance in problem identification and corrective action planning
 - training and resources to help utilities carry out corrective actions
- ◆ promote technology transfer perhaps through strengthening existing water and wastewater professional associations

10



Enforcement Means Having the Regulator Provide or Facilitate

- ◆ predictable incentives for successful operation within standards such as
 - material rewards for successful management (and owners, if private)
 - rewards should be targeted to those whose performance excelled
- ◆ authority to impose predictable sanctions for failure to maintain standards or to correct problems once identified

11

Cost Recovery and Eliminating Pricing Inefficiencies

1

Cost Recovery (definition)

- Full cost recovery is a Process for recapturing:
 - capital investment costs (through depreciation)
 - O&M expenditures
 - other direct and indirect cost of production and delivery of services
 - debt amortization and service costs
 - reasonable return on investment (in the case private utilities)

2

Cost Recovery (purpose)

- Ensures that a utility has adequate funds to cover present costs and replacement needs
- Provides incentives for cost reduction because a portion of savings become profit (in the case of the private sector)
- Identifies and records all cost details and uses that information for regular rate review and rate setting

3

Barriers to Determining Costs

- Problems with current cost data
- Recording and identifying costs
- Revenue collection problems as a cost

4

Inefficiencies in Determining Cost

- Understatement of cost (deferred maintenance)
- Unnecessary high cost due to operational inefficiencies (water loss)
- False exclusion of cost (failure to include debt service or depreciation)
- Hidden costs (lack of authority over personnel or over other aspects of operations)
- Uncollected accounts

5

Cost Identification and Recording

- Separate enterprise accounts
- Linking cost to:
 - Activities within the organization
 - Departments and units
 - Customer class
 - Service areas

6

Revenue Collection

- Revenue due, but uncollected is an unnecessary cost both to the subsidizer and to other customers
- Subsidies are often much higher than necessary to make up for uncollected revenues and if never collected, they become a part of the need for higher rates

7

Price Setting Methodologies

- Rate Base/Rate of Return
 - Allows recovery of all *prudently* incurred costs, including depreciation and cost of debt, plus a reasonable rate of return on equity (profit)
- Performance based
 - permits billing at a set unit price cap as long as performance standards are met
 - profit and cost recovery will vary depending on achieved efficiencies
 - may include incentives for high level performance

8

Use of Cost Data in Pricing

- Allocation of cost among customer classes
- Determining the Rate Base
 - Prudence (including only necessary, competitively priced expenses)
 - Excluding unauthorized costs
- Setting and a locating the state subsidy

9

Cost of Service Studies

- Studies are undertaken allocate costs to customer classes, not to determine total cost
- Studies also help utilities identify financial benchmarks and opportunities to test the private market

10

Use of Cost of Service Studies in Setting Subsidies

- Efficient subsidies should be:
 - targeted
 - have means tests, and
 - have sunset strategies (declining subsidies can be build into private transactions or agreements between the utility and the state)
- Rates are set at full cost recovery and subsidies are paid to the needy
- When a utility is subsidized, well off customers benefit

11

Possible Central Government Roles in Cost Recovery Reform

- Specifying sector requirements for cost information in operational decisions to the Ministry of Finance
- Providing technical assistance in:
 - performing cost studies in all areas related to engineering and project design
 - managing project finance
- Setting technical standards
- Operator and management training
- Monitoring technical aspects of service

12

Rate Setting in Rate Base / Rate of Return Regulation/1

- Determine historic or projected O&M expenses
- Determine the original cost of the utility's plant in service (plant being used in providing service to the customers)
- Adjust the plant in service to determine the rate base by removing accumulated depreciation and determining the percentage of the plant in service
- Analyze the capital structure (equity, debt and operating capital), the weighted average cost of capital, and the percent of plant in service that is equity (owned by the utility), which will set the return on equity

13

Rate Setting in Rate Base / Rate of Return Regulation/2

- Calculate the allowed overall Rate of Return
- Determine the total revenue requirement of the utility to pay its O & M costs, service its debts, and earn the allowed Rate of Return
- Decide on a rate structure and design, then allocate fixed and variable costs between a base facilities charge and a consumption charge for each customer class and size of service
- Issue an order describing all of these determinations and the reasons for them and establish the new rates

14

Performance Based Price Setting/1

- Establish specific performance standards that must be met to avoid penalties or loss of license to operate
- Establish efficiency targets for the company to meet
- Determine the best available cost of capital
- Use these standards, targets and costs to determine the revenue that the company needs, allowing for a reasonable profit, to provide service
- Set a limit or price cap that the firm may charge to its customers for the next period

15

Performance Based Price Setting/2

- Set annual increases to the price caps to reflect what the company needs to finance the provision of services and allow for certain adjustments between reviews
- Monitor to ensure that all performance standards are being met, and if they are not, impose penalties
- Allow the utility to manage its own operation and to find its own efficiencies and do not control profits between major price cap reviews
- Incorporate achieved efficiencies in that next major price cap review to share the rewards with the shareholders and the customers

16

55

Water Utility Financing

Requirements and Options

1

Requirements

Financial management systems at the utility level including:

- A standardized, commercial accounting system and a single chart of accounts
- Unified cost accounting system
- Budgeting system tied to accounts
- Reliable, audited financial reports
- Incentives for reduced subsidy use
- Full cost recovery and revenue retention
- Regular cost of service and rate review by independent regulatory body

2

Financing Options

- Continued subsidies from GOE budget (BAB I & II for O&M costs, BAB III for capital investments)
- Self-financing through internally generated funds (see cost recovery presentation)
- Debt financing
- Private sector participation through management contracts, BOT/BOO and similar schemes, leases and concessions

3

Potential Sources of Debt Financing

- GOE institutions (e.g., the National Investment Bank)
- Multilateral development agencies (IBRD, AfDB, Arab Bank for Economic Development, etc.)
- Construction companies and equipment vendors
- Commercial banks
- Bonds and other instruments via financial markets

In addition to previously noted requirements, debt financing necessitates proven credit worthiness, ability to service debt, and possibly sovereign or other guarantees

4

Private Sector Participation in Service Provision

- Service contracts
- Management contracts
- Asset leases
- Concessions
- BOT schemes
- Divestiture and BOO schemes

In addition to previously noted requirements, PSP necessitates the update/development of new legislation and regulatory changes to remove constraints and facilitate such financing approaches

5

Role of Central Government Agencies in Facilitating Infrastructure Financing

- Assist, as needed, in the preparation of strategic plans
- Technical support and specifications on PSP pipeline
- Prepares or directs the preparation of cost/benefit analyses, technical and financial feasibility studies
- Represents the interest of local utilities before the central government
- Advises local utilities prior to and during negotiations with potential creditors and private sector investors

Eventually, central government agencies should evolve to become a source of technical assistance in legal/contractual, technical and financial matters

6

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8

Legal and Regulatory Constraints to Utility Finance Options

- Unclear if commercial service providers can sell water and collect fees from users
- Legal recourse for non-payment must be enforced
- Unclear policy on the use of direct and indirect financial guarantees to improve project "bankability"
- Project revenues cannot be "ring-fenced" and utilities cannot keep own source revenues

9

Constraints to Utility Finance

- Utilities unable to issue debt and security instruments
- Utilities unable to secure independent ratings and undertake independent financial obligations
- New and comprehensive concession law for water sector required
- Regulatory body(ies) required to reduce risk

10

Determinants of Financing Options

Financing Option	Utility Characteristics	Cost Recovery	Revenue Stream	Financial Analysis	High Rate of Return	Financial Guarantees by Gov't	Credit Worthiness
1. Subsidies	High Social Value / Low Financial Viability	NO	NO	NO	NO	NO	NO
2. Self-Financing	High Social Value / Sufficient Cost Recovery	YES	???	???	???	???	Not Applicable
3. Market-Based Finance	High Social Value / Ability to Service Debt	YES	YES	YES	???	Maybe	YES
4. Project Finance (PSP)	High Social Value / High Financial Viability	YES	YES	YES	YES	Maybe	Applicable to Project Only

LIR PROJECT WORK PLAN

(JUNE 1998 – DECEMBER 1999)

ANALYSES OF CONSTRAINTS & BEST PRACTICES	CONSENSUS- BUILDING WORKSHOPS & CONFERENCES
<ul style="list-style-type: none"> • Assessment of institutional constraints to competitive utility management • Constraints & opportunities for private sector participation • Best practice case studies • Policies for private sector participation • Regulatory options analysis & design • Stakeholder impact analyses 	<ul style="list-style-type: none"> • Conference & workshop on competitive utility management practices • Conference & workshop on private sector participation strategy • Conference & workshop on regulation techniques • International study tours on regulatory reform

6/98

ACTION PLANS

2/99

TRAINING FOR IMPLEMENTATION	REGULATORY FRAMEWORK DESIGN & IMPLEMENTATION
<ul style="list-style-type: none"> • Regulatory structures • Tools for financial regulation • Establishing regulatory body • Tendering PSP contracts • Negotiating PSP contracts • PSP project financial analysis • International study tour 	<ul style="list-style-type: none"> • Draft laws & decrees • Regulatory body(ies) • Pilot PSP project pipeline • Strategy for transaction support

12/99

SECTION II

Steering Committee Meeting

Steering Committee Meeting

August 31, 1998

**Held at the General Diwan of
the Ministry of Housing,
Utilities, and New
Communities**

**Chaired By:
Eng. Mahmoud El Sarnagawy**

AGENDA

1. Overview and Objectives

2. Proposed Institutional Framework for Sectoral Reform

- Overall institutional framework and relationship
- Role and responsibility of the Regulatory Body
- Regulatory framework for publicly-funded projects
- Regulatory framework for privately-funded projects
- Private sector participation and the regulatory framework: approvals, authorities, & strategies
- Proposed water infrastructure finance facility (WIFF)

3. Regulatory Body for the Water Sector: Design Objectives and Considerations

- Proposed structure, siting, and composition
- Recommended degrees of independence, discretion, authority, and regional presence

4. Private Sector Participation (PSP) Strategy

- Rationale, goals, and objectives
- Designation of a PSP unit: Project life cycle functions to sustain deal flow

5. Local Utility Reform Goals and Actions

- Strategy for transforming utilities into viable enterprises
- Criteria for advancement to autonomous utilities
- Sequencing the transition to competitive utilities
- Types of incentives available to the Regulatory Body to accelerate transition

6. Recommended Next Steps for Working Groups

- Legislative Working Group: review draft PSP law by Sept. 15
- Legal and Regulatory Working Group: review regulatory design/ recommendations by Sept. 15
- Private participation Working Group: review PSP strategy and institutional options by Sept. 15

7. Future Actions for Working Groups

- Legislative Working Group: review draft law on regulatory framework
- Legal and Regulatory Working Group: review transition strategy and develop corporatization law
- Private Participation Working Group: refine PSP strategy, guidelines, and implementation plan

**PROPOSED INSTITUTIONAL/REGULATORY FRAMEWORK
FOR THE WATER/WASTEWATER SECTOR IN EGYPT**

Framework Design Objectives

- Reduce institutional overlap in the sector
- Clarify roles of existing and new bodies
- Create independent economic regulator
- Institutionalize PSP policy and authority
- Rationalize capital financing process and increase due diligence and viability
- Reduce disincentives to efficient utility management and market-based finance

Features of the Recommended Regulatory Framework

- Creates the Egyptian Water Regulatory Board (EWRB) as economic regulator
- Establishes an interministerial council for water policy chaired by the MHPU
- Establishes a Technical Unit for Private Sector Participation under the council
- Recommends the establishment of the Water Infrastructure Finance Facility (WIFF) to mobilize finance in the sector

Key Features of the Framework (Continued)

- Recommends transforming NOPWASD into the New Projects Authority (NPA) an agency responsible for technical oversight and support
- Recommends the establishment of NPA representative offices at the District level
- Recommends the establishment of EWRB at the district
- Local utilities transition to autonomy by meeting performance benchmarks

Key Features of Capital Investment Approval Process

- Local utilities receive assistance from national agencies to develop 5 year capital investment plans
- WIIF provides financial due diligence in evaluating publicly and privately financed projects
- MOP and MHPU approve capital investment plans with the endorsement of EWRB
- PSP capital investment projects are submitted to the PSP unit in the MHPU and WIIF for evaluation and approval

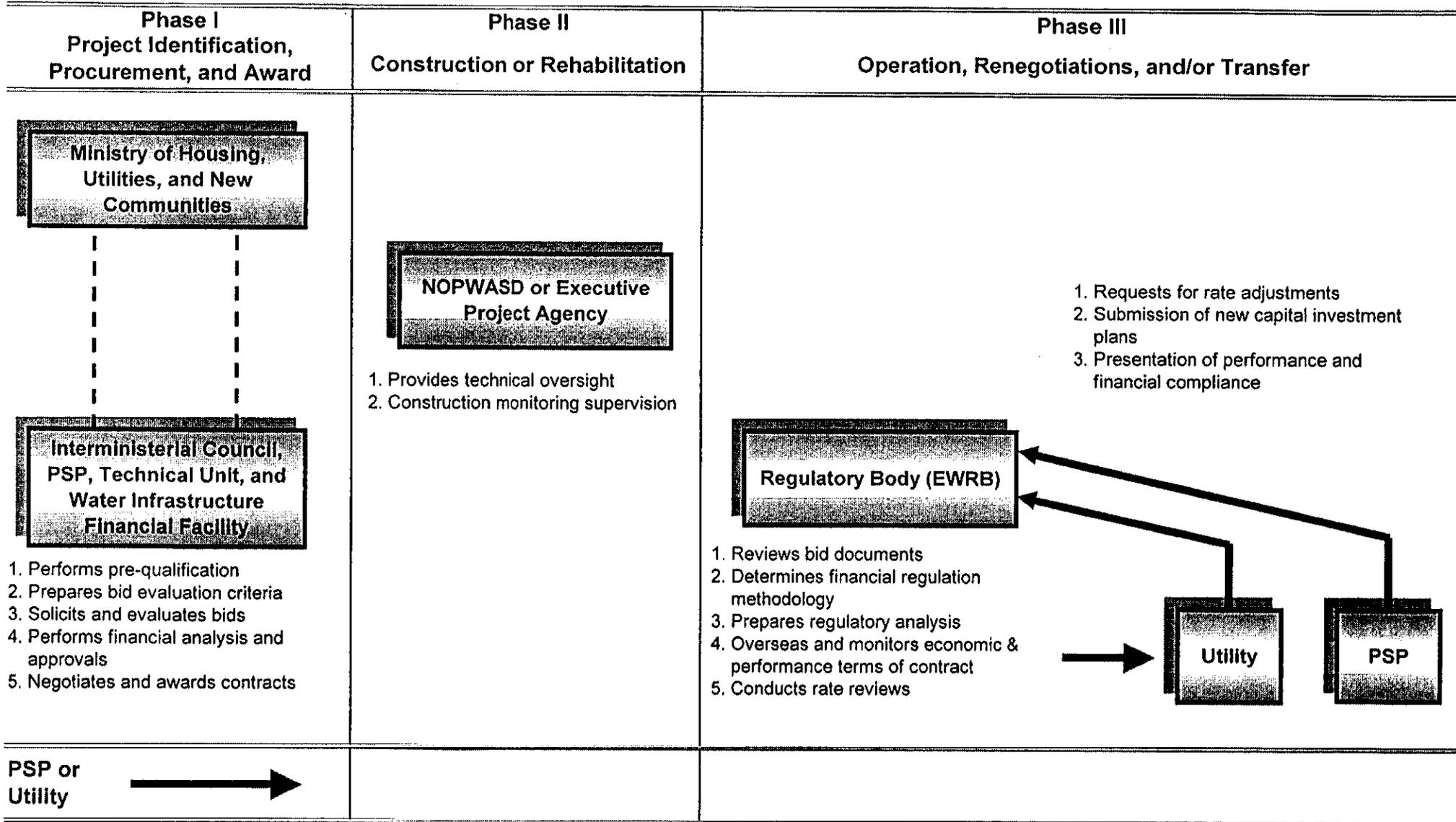
Features of Proposed Regulatory Body Structure

- EWRB would set tariffs and evaluate tariff adjustment requests
- EWRB would enforce sanctions on price, performance, and quality
- EWRB would have seven Commissioners
- Chairman would be Minister of MHPU
- Governorates would be represented on Board
- "Professionals" would be appointed by the Prime Minister for staggered terms

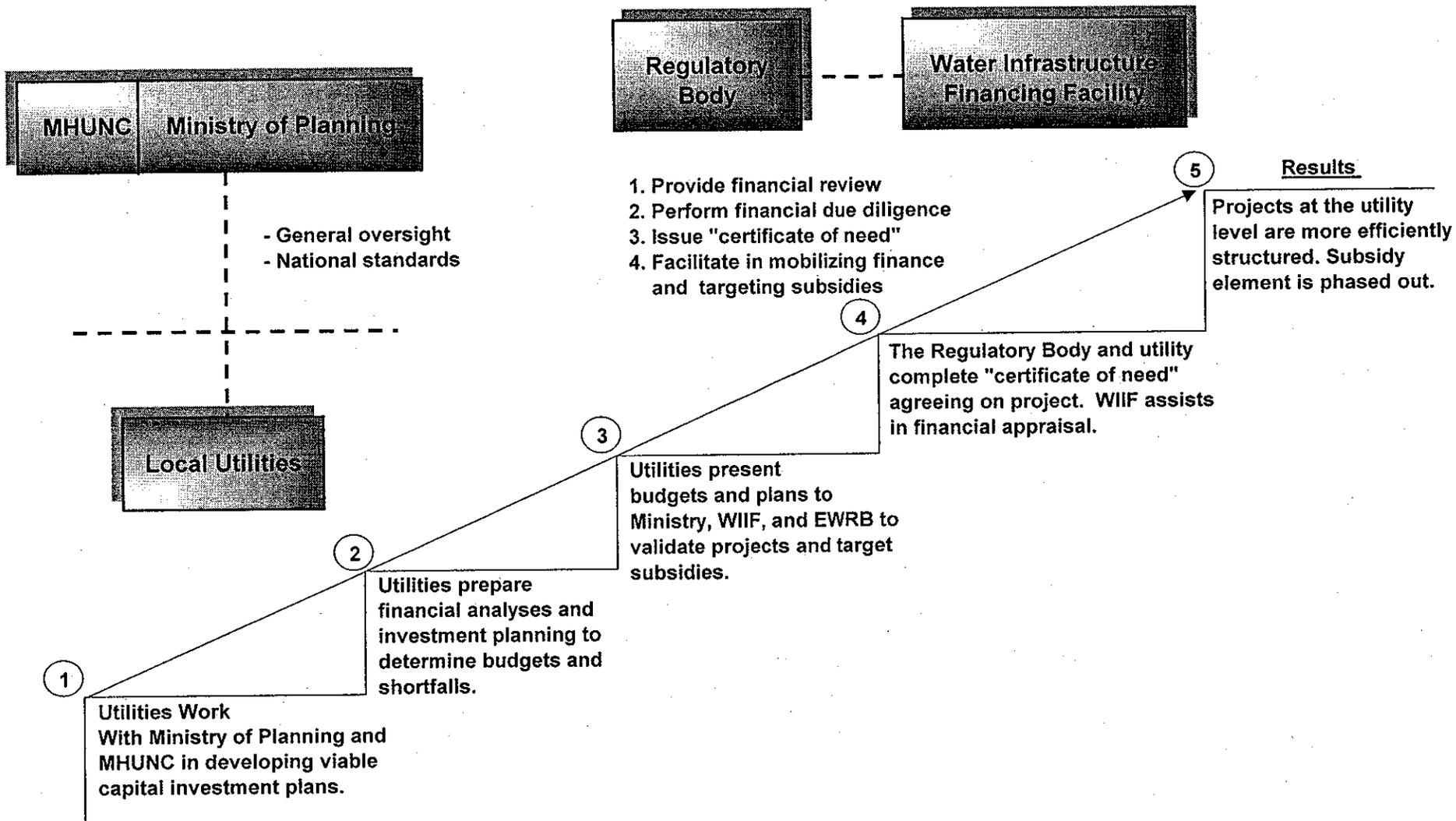
Regulatory Body Design Issues for Working Group to Consider

- How much independence? Full or partial?
- How much discretion will EWRB have?
- Should there be appeal to the Minister or Judicial system?
- Board members? Terms? Conditions?
- Specific functions, relationships, staff requirements, action plan, etc.

Recommended Process for Approval of Capital Investment Projects (Private Finance)



Steps to Effective Capital Investment: Approvals and Process (Public Funds)



Recommended Roles and Responsibilities of the New NOPWASD or Executive Authority for Water Projects

NOPWASD/ Executive Agency

New Roles/Responsibilities

1. Review five-year plans/participate in joint planning
2. Assist in identifying and targeting subsidy plans
3. Prioritize capital investment and improvement projects
4. Receive and disburse public funds for capital projects (in association with WIFF and if recommended by regulator)
5. Assist in technical aspects/review of procurement
6. Provide construction management services
7. Provide construction supervision services
8. Provide technical training and support

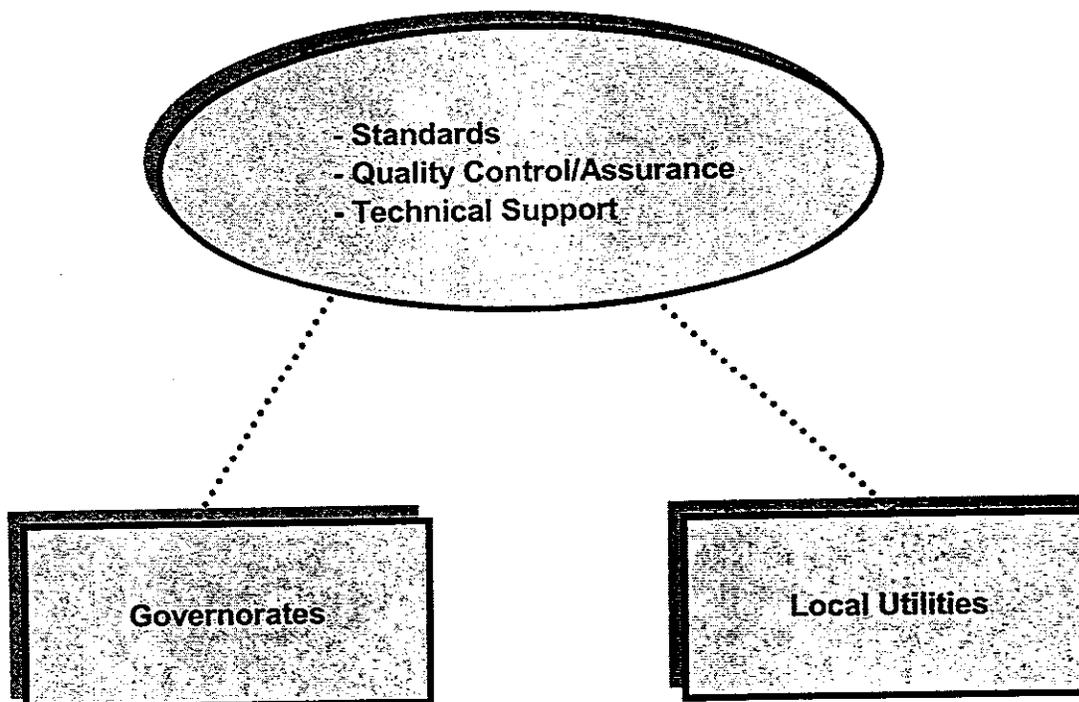
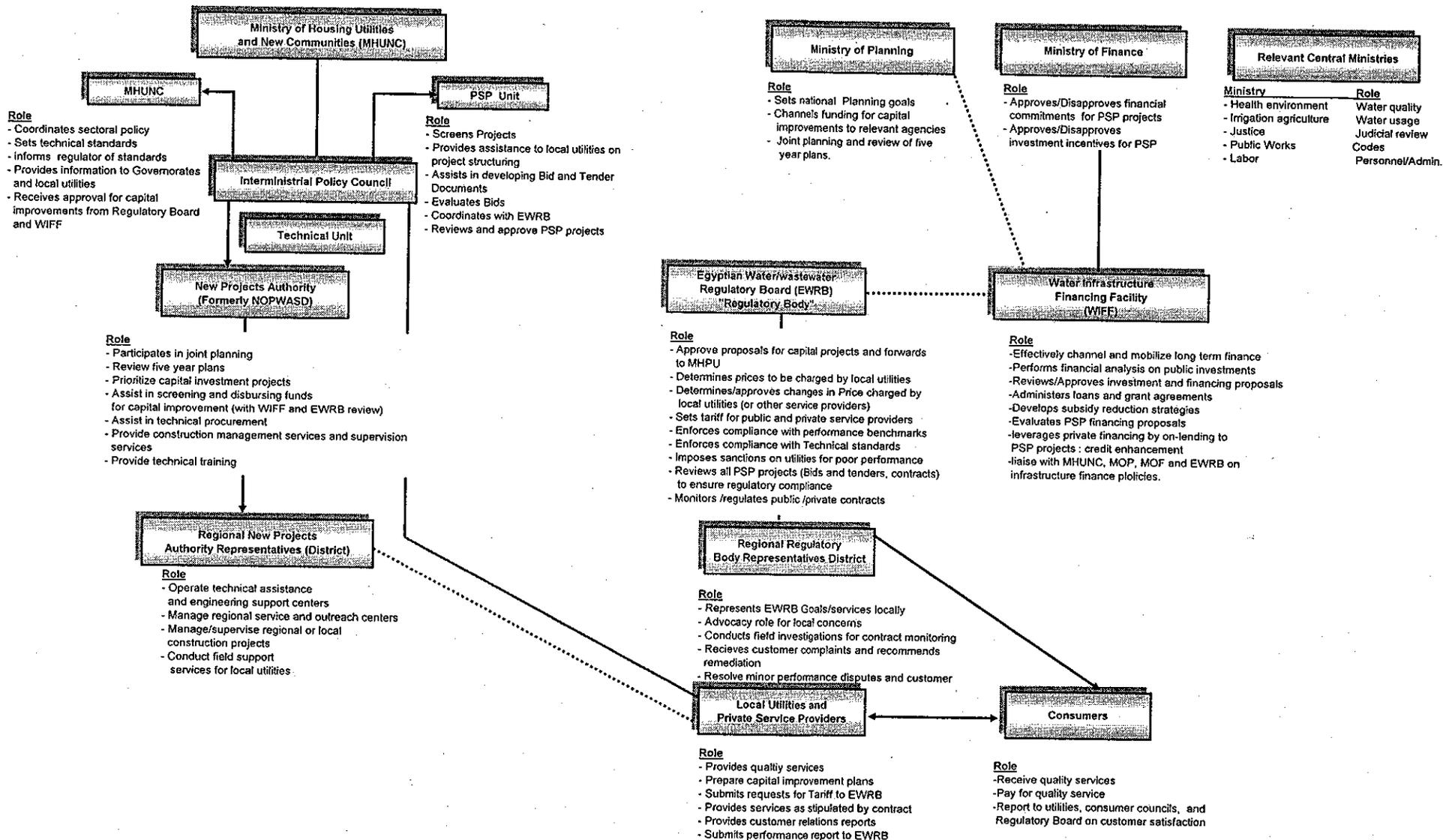


Illustration of Preliminary Regulatory Framework Roles and Responsibility



Proposed Approach for Efficiently Mobilizing Finance in the Water/Wastewater Sector

Rationale for Reforming the Financing of Water Projects

- Grant, loan, subsidy funding is co-mingled.
- No criteria justifying subsidies are applied.
- Projects are driven by engineering rather than financial viability considerations.
- Local utilities have limited say in design choices.
- Projects are not matched to needs.
- Public finance “crowds out” private finance.
- Rigorous investment analysis not applied .

Establish New Entity: Water Infrastructure Finance Facility (WIFF)

- Channel for mobilizing long-term finance
- Responsible for efficient financial mobilization for Public/Private Financed Projects
- Provides liaison between Utilities, MHPU (PSP Unit), NOPWASD, MOP/MOF
- Provides professional financial analysis
- Ensures prudence, due diligence & leverage through credit enhancement strategies

WIFF Responsibilities: Publicly Financed Projects

- Reviews proposed investments, ensuring higher quality projects
- Negotiates and Administers loan agreements between lenders, donors & borrowers
- Develops subsidy reduction strategies
- Disburses grant and loan funds to viable and approved projects
- Performs review and audits all project financial transactions

WIFF Responsibilities: Privately Financed Projects

- Serves as “Apex” financing agency
- Evaluates/appraises financial packages
- Leverages donor resources, helping finance credit-worthy PSP projects
- Offers Guarantee products to reduce risk
- Can On-lend to PSP projects (up to 25%) to mobilize more private finance
- Liaises with PSP Unit in MHUNC, Regulator, ensuring project compliance with criteria

WIFF Managerial Prerequisites for Efficient Operations:

- Professional Staff qualified in Investment Banking; experienced in project finance
- Insulated from political pressures; must make decisions on project merit & viability
- Develop a strategy for liaison between PSP Unit in MHUNC, Utilities, Regulatory Agency
- Ensure prudent practices, due diligence
- Ability to manage project portfolio; inject financial discipline in infrastructure finance

WIFF Management Options: (Each with different implications)

- A public agency that outsources needed financial and technical expertise
- A Financing Facility managed by a qualified private investment bank
- A Unit attached to either the Ministry of Planning, Ministry of Finance, or the National Investment Bank
- Should the Facility on-lend with a spread? If so, how much?

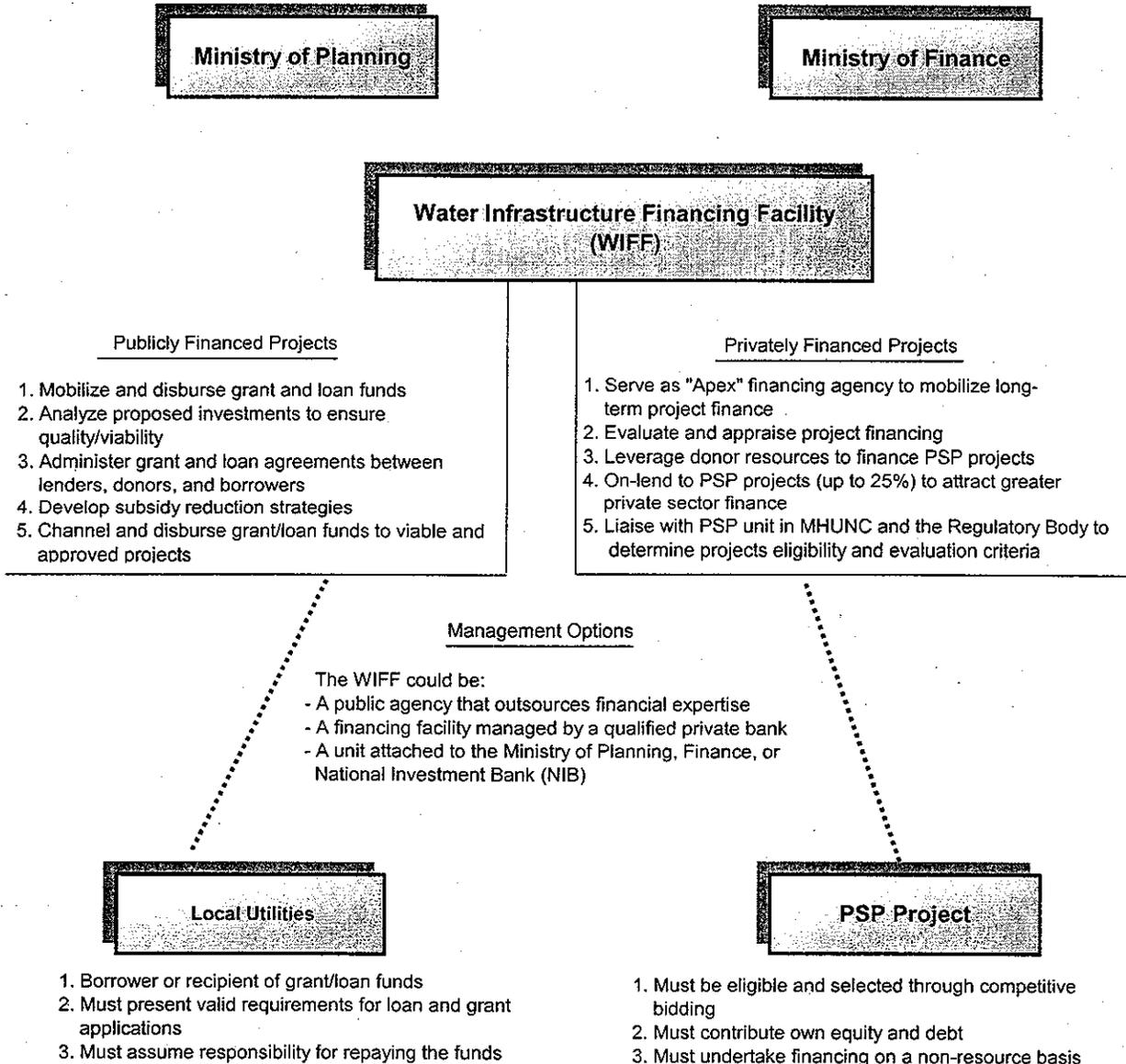
Local Utilities Role :

- Borrower / recipient of grant and loan funds
- Must justify projects when making loan and grant applications to MIFF/MHUNC/MOP
- Must assume responsibility for repayment of interest and principal on loans
- Financing requests must flow from the Utility's own capital development plan (Requires approval of MOP/MHUNC/EWRB)

Private Sector Projects

- Must be eligible for credit; company must be selected by competitive bidding
- Must be ready to make significant, dedicated, minimum contribution of its own equity and debt to the project
- Must mobilize its own financing on a non-recourse basis, with no government guarantee for the private sector portion of the project's financial package

A Proposed Approach to Mobilizing Project Finance More Efficiently into the Water/Wastewater Sector



Corporatization Strategy for Local Utility Reform

The “Glidepath” From Dependency
towards Full Autonomy

Defining the “Glidepath” Towards Local Utility Autonomy

- A transitional process for Local Utilities to attain management autonomy and financial self-sufficiency
- Progress is made by the adoption of business “best practices”
- Goal achievement will be measured and acknowledged by the Regulatory Body

First Steps needed to move towards autonomy:

- Creation of a “stand alone” entity *dedicated* exclusively to water/wastewater service
- Because of its importance, water service delivery can not depend on *ad hoc* use of workers, trucks, tools, supplies, budgets, etc. of *other* municipal departments (like Public Works, Highway, Sanitation)

A “Dependent” Water Utility

- A Municipal unit *exclusively* providing water and wastewater services, but which must rely largely upon *subsidies and grants* because its revenue is much less than its actual costs of operation and maintenance
- By adopting business “best practices” it can begin performance improvement

“Graduation” to Public Economic Authority (PEA) Status

- Aggressive billing and collection
- Accurate *Performance* reporting: Balance sheets, Budgeting, Accounts receivables, Disbursements, Unaccounted for Water,
- Develop a multi-year Business Plan
- Design a comprehensive Customer Service Plan

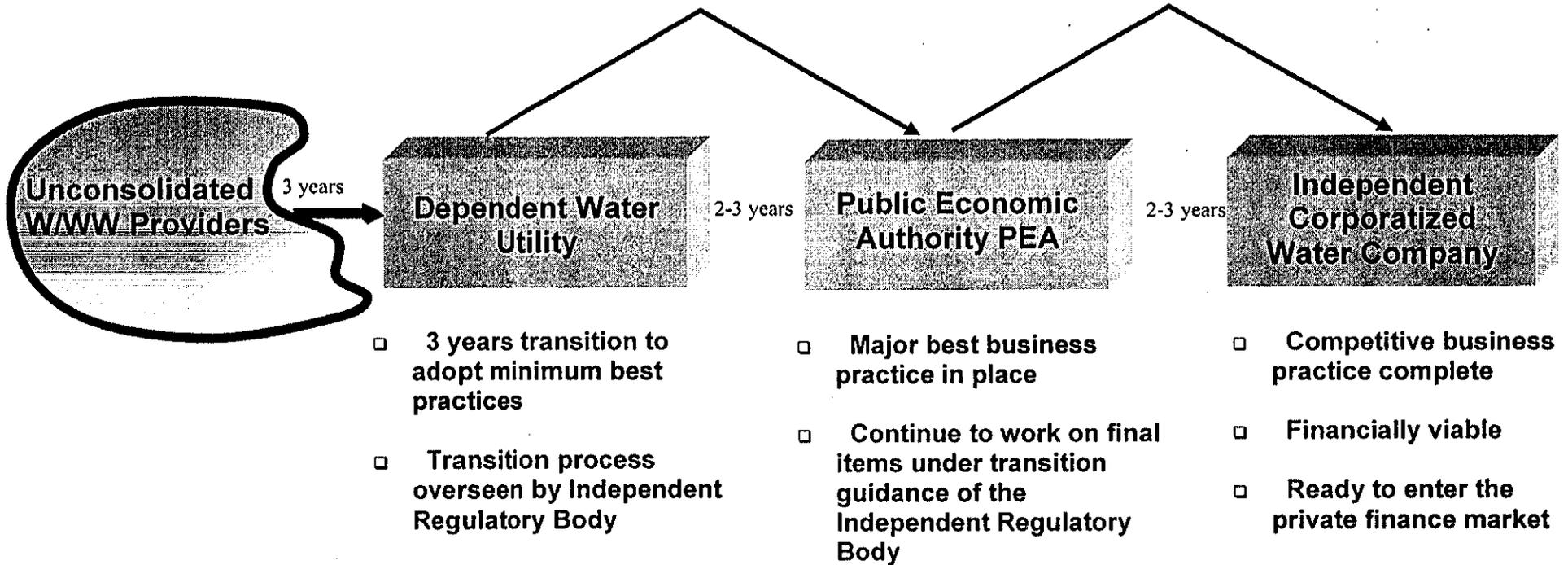
Determination of Status Ranking

- Egyptian Water Regulatory Board (EWRB) monitors performance of local utilities; sets goals and standards, certifies status
- Performance indicators comply with “best practices” of water service delivery

Final Stage: Independent Corporatized Water Company

- Operations result in full cost recovery
- Performance measured by water quality, reliability of service, rapid response time to fix complaints of low pressure, outages, etc
- Able to develop own capital budget, ability to meet all its financial obligations on time
- Access to private lending, capital market

Minimum Corporate Standards and "Glidepath" to Graduate to Full Autonomy



Minimum Corporate Standards and "Glidepath" to Graduate Full Autonomy

1. Dependent Water Utility

- 3 years transition to adopt minimum best practices
- Transition process overseen by Independent Regulatory Body
- Year 1
 - Assets Inventory completed
 - Projects
 - Personnel
 - Stores
 - Service providers
 - Accounting System
 - Unified
 - Commercially accepted
- Year 2
 - Performance measurement system
 - Operating budget
 - Capital (BAB III) budget
 - Organization staffing plan
 - Application for PEA status
 - Bulk customer metering
 - Customer registry and billing system introduced

Minimum Corporate Standards and “Glidepath” to Graduate Full Autonomy

2. Public Economic Authority PEA

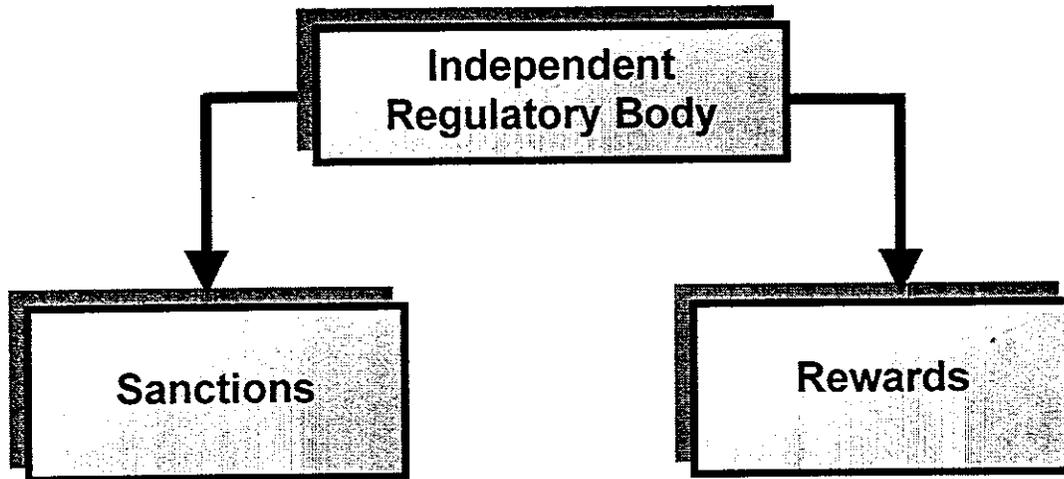
- Major best business practice in place
- Continue to work on final items under transition guidance of the Independent Regulatory Body
- Develop multi-year business plan
- Develop rational personnel policy
- Acceptable MIS system
- Develop customer service plan
- Develop water loss program
- Develop design, construction, and contracting capacity
- Integrate meter reading, billing, and collection systems

Minimum Corporate Standards and “Glidepath” to Graduate Full Autonomy

3. Independent Corporatized Water Company

- **Competitive business practice complete**
- **Financially viable**
- **Ready to enter the private finance market**
- **Ability to forecast tariff schedules**
- **Ability to generate profit and loss statement**
- **Ability to pledge assets**
- **Reach goal of access to capital markets and service debt**

Sanctions and Rewards Used by the Regulatory Body to Manage W/W Sector



- Assess operating subsidy requirement
- Review tariff implications of capital improvements
- Recommend removal/sanctioning of utility management

- Revenue retention
 - Ability to retain efficiency earnings
 - Ability to invest retained earnings
- Management development
 - Ability to promote on merit
 - Ability to pay bonus for performance
 - Technical training
- Tariff request approval
 - Increased ability to borrow independently
 - Increased ability to access capital markets
- Access to competitive source of debt/equity

REGULATORY BODY

PSP, REGULATORY
&
CORPORATIZATION
LAWS

ISSUES AND PROPOSED
ACTIONS

PSP ENABLING LAW

- **PROBLEMS**
 - UNCLEAR POWER TO DELEGATE SERVICE PROVISION
 - LIMITATIONS ON DURATION OF CONTRACT, RATE OF RETURN, ETC.
 - OVERLAPPING APPROVAL PROCESS
 - UNCLEAR PROCEDURES ON CONTRACT MONITORING
 - LENGTHY DISPUTE RESOLUTION SYSTEM
- **ACTION**
 - DRAFT PSP LAW
 - DEFINE SCOPE OF PSP IN WATER SERVICES
 - REMOVE LEGAL LIMITATION TO INVESTORS
 - DEFINE POWERS TO ENTER INTO PSP CONTRACT
 - DESIGN EFFECTIVE CONTRACT MONITORING SYSTEM
 - DESIGN TRANSPARENT PROCUREMENT PROCESS
 - CLARIFY CONSUMER RIGHTS AND OBLIGATIONS
 - DEFINE TERMS OF TERMINATION AND TRANSFER

CORPORATIZATION LAW

• ISSUES

- LIMITED CORPORATE GOVERNANCE AND ACCOUNTABILITY
- CONSTRAINTS TO OPERATE COMMERCIALY
- LIMITED FINANCIAL AUTONOMY
- ACCOUNTING SYSTEMS VARY AND NOT COMMERCIALY ACCEPTABLE
- UTILITIES NOT ORGANIZED AS COMMERCIAL CONCERNS
- ONEROUS PERSONNEL AND ADMINISTRATIVE REQUIREMENTS
- NO CLEAR STRATEGY FOR TRANSFORMING WATER ENTITIES TO SELF- FINANCING AUTONOMOUS AGENCY

• ACTION

- CREATE 3-TIER ORGANIZATIONAL STRUCTURE
 - DEPENDENT WATER UTILITY,
 - PUBLIC WATER COMPANY,
 - AUTONOMOUS CORPORATIONS
- DEFINE CRITERIA FOR TRANSITION TO CORPORATION
- DEFINING MANAGEMENT AND FINANCIAL CORPORATE BENCHMARKS
- DEFINE RESPONSIBILITIES OF CENTRAL AND LOCAL LEVELS
- DEVELOP STRATEGY FOR REMOVING CONSTRAINTS TO EFFICIENT OPERATIONS
- DESIGN CORPORATIZATION LAW AND OTHER LEGAL INSTRUMENTS

REGULATORY BODY LAW

• ISSUES

- CURRENT LAW DOES NOT PROVIDE FOR INDEPENDENT OVERSIGHT OF WATER SERVICE PROVIDERS
- INADEQUATE REGULATIONS GOVERNING CONTRACTS, PERFORMANCE AND ENFORCEMENT TO OVERSEE
 - QUALITY STANDARDS
 - EFFICIENCY
 - TARIFF STRUCTURE
 - CONSUMER ISSUES
- CURRENT STRUCTURE DOES NOT PERMIT INCENTIVES OR PENALTIES FOR PERFORMANCE
- CURRENT LAW IS UNCLEAR ON MANAGING CONFLICT BETWEEN CONSUMER, PROVIDER & PUBLIC ENTITY.

• ACTION

- DEFINE FUNCTIONS AND AUTHORITY:
 - TARIFF SETTING
 - DETERMINE TRANSITION CRITERIA FOR WATER ENTITIES TO CORPORATE LEVEL
 - SOLVE REGULATORY CONFLICT ISSUES
 - MONITOR CONTRACTUAL OBLIGATIONS
 - REVIEW PERFORMANCE OF WATER ENTITY TO RECOMMEND SUBSIDY
- DEFINE COMPOSITION OF BOARD
- DEFINE TERM & CONDITIONS OF APPOINTMENT
- DEFINE PROCEDURES FOR CERTIFYING TRANSITION FROM DEPENDENT TO COMPANY TO AUTONOMOUS CORPORATION
- DEFINE RELATIONS WITH OTHER GOVERNMENT ORGANS
- DESIGN LAW TO CREATE REGULATORY BODY
- DETERMINE APPEALS PROCEDURES- TO COURTS? CONSTITUTIONAL COURT FOR REVIEWS BOARD 'S ULTRAVIRES ACT?

Private Sector Participation Policy for the Egyptian Water/wastewater Sector

Rationale for PSP

- ***Avoided Cost:*** Private sector assumes most of the burden for financing infrastructure
- ***Technology Transfer:*** Private firms choose state-of-the art/most cost-effective design
- ***Human Development:*** Local staff are trained
- ***Productivity up:*** Firms seek to recover costs
- ***Additionality:*** Govt. focus on social welfare

Goals & Objectives of PSP

- Benefits of Competitive Utility Mgmt
- Approach to cost recovery/self-financing
- Providing alternative service delivery options to municipalities
- Reallocating risk from public to private
- Creation of “investor friendly” climate
- Protecting interests of stakeholders

Scope and Modalities of PSP

- Unbundling / contracting out
- Management contracting O & M
- Long-term Concession agreements
- BOO/BOT, other partial equity options
- Sale of assets to strategic investor
- Initial Public Offering of Shares of stock

Designation of PSP Unit

- Need to centralize decision authority at one place in Ministry: Directorate (PSP Unit)
- Reports to Minister thru an Interministerial Council; Liaison with MinPlan, Finance
- Coordinates with Egyptian Water / Wastewater Regulatory Board (EWRB)
- Provides Service functions to Governates, Utilities, and Communities

Institutional Strategy to Generate Deal Flow

Directorate (PSP Unit) Functions

- Conducts series of transactions (deal flow)
- Responsible for *project life cycle*: initiates deals; sustains transactions to *closure*
- *Demand driven*: at request of Governates, Local Water Utilities, communities
- *Pro-active*: Initiates pilot projects
- Promotes PSP as alternative to traditional public projects

Deal Flow: *Project Life Cycle*
Sequence

Project Life Cycle: Sustaining The Deal Flow

- Setting priorities
- Determining viability
- Criteria for private investor interest
- Pre-feasibility stage
- Engineering design; performance standards
- Preparing Bid & Tender Documents
- Use model contracts
- Protecting the public
- Assessing need for public support
- Credit enhancement

Deal Flow: Project Life Cycle Actions needed for Closure

- How proposals reach "competitive range"
- BAFO process
- Award and public announcement
- Appeal and protest procedures
- Contract negotiation
- Monitor construction
- Inspect, Accept & Certify compliance
- Release performance bonds
- Handover for "sign off" by Local Utility
- Start-up of new unit

Action Plan to Create a PSP Unit

Action Plan Events

- Convene PSP Working Group
- Prepare Draft PSP Enabling legislation
- Develop implementation plan
- Draft guidelines and operation manuals
- Submit PSP Working Group Findings and Recommendations to the Minister

Recommended Role and Structure of the Egyptian Water Regulatory Board (EWRB)

Role	Structure
<ul style="list-style-type: none"> - Reviews proposal for capital projects and recommend action to MHUNC - Determines prices to be charged by all utilities - Determines adjustments to tariff charged by utilities - Enforces compliance with performance benchmarks - Enforces compliance with Technical standards - Imposes/recommends sanctions on utilities for under performance - Review all PSP projects to ensure regulatory compliance - Monitor public and private contracts - Coordinate with MHUNC, PSP unit, and WIIF to ensure effective reform 	<ul style="list-style-type: none"> - Regulatory Body with significant independence - Separate body outside of Ministerial control - Board with 7 commissioners - Minister of MHUNC serves as Chairman - NOPWASD chairman and representative of Governorates granted membership - Four other qualified members appointed by Prime Minister - Staggered terms/cannot be fired - Technical Secretariat - Regional representatives - Self-Financing through license fees

ACTION PLAN

PSP, REGULATORY BODY, CORPORATIZATION IN THE WATER SECTOR

ACTION PLAN

Action/Dates	Aug.	Sept.	Oct.	Nov.	
Steering Committee	31				
WG workshop		7-10			
Draft regulatory, PSP & coporatization strategy paper & draft PSP law to WG		26			
Steering committee meeting (oversight committee)		30			
Oversight committee submits WG report to MHUNC			15		
Minister submits report to Cabinet				1	
WG /consultants work on details					Nov. --

Working Group Short -Term Proposed Action Plan

August 31 - September 30, 1998

Preparing for a Workshop Sept. 1- 6 (tentative)

- Preparation for a 5-day workshop
 - Review LIR materials distributed on August 31 at Steering Committee Meeting
 - Identify issues relevant to the the respective group
 - Prepare comments and suggestions for discussion at the workshop
- Prepare laws, Presidential and Ministerial Decrees relevant to their respective tasks for use at the workshop and for consultants.

Workshop Attendance Sept. 7-10 (tentative)

- Day 1-2 : Review and discussion
 - What are existing institutional and legal constraints?
 - Are there lessons from international best practices?
 - What are prerequisite actions for the proposed institutional and legal restructuring scheme to be operational?

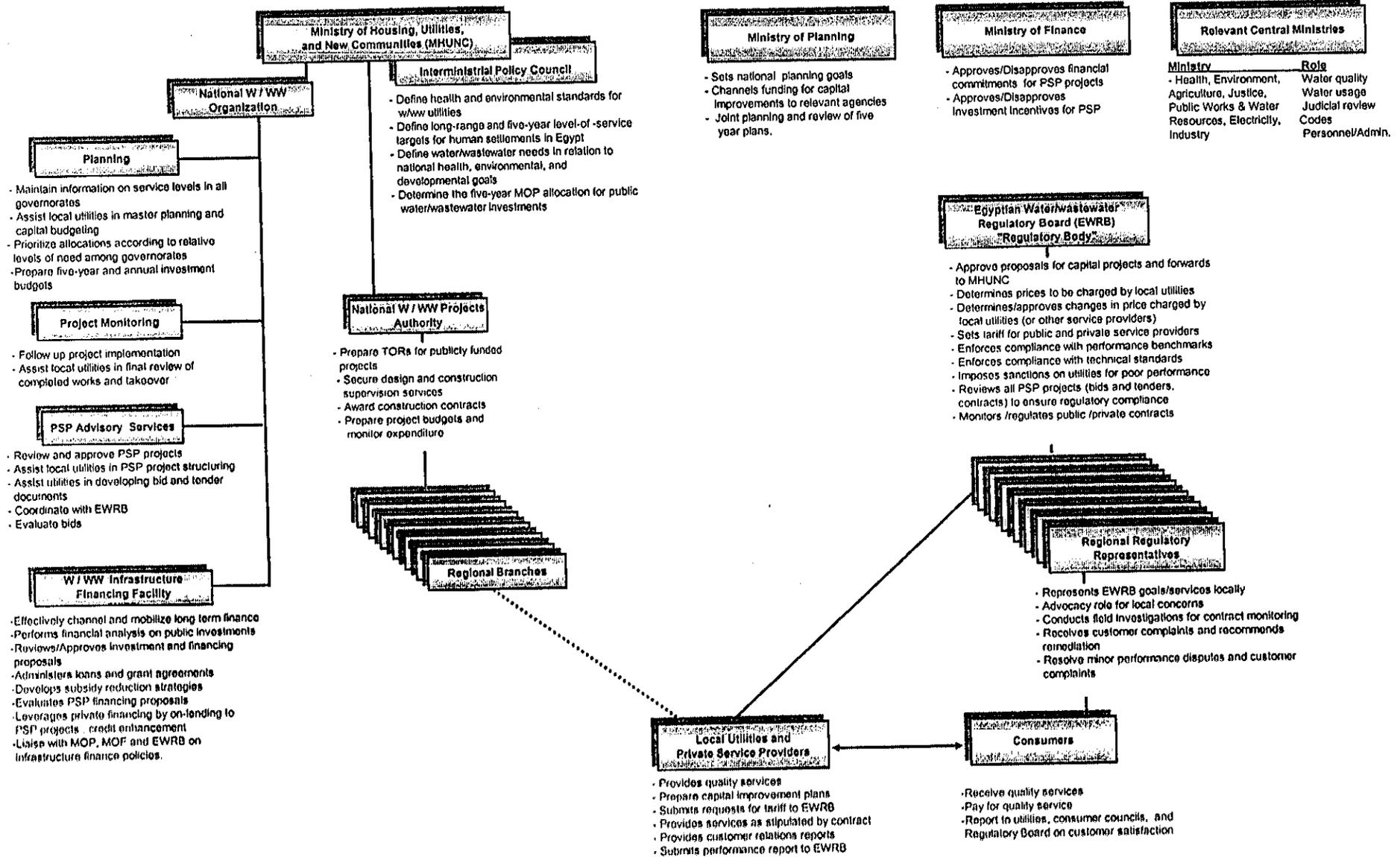
Day 3 : Specific Group Meetings

- Outline key issues addressed in establishing a Regulatory Body
- Outline key legal and institutional issues to make PSP operational
- Outline suggestions for the 'glide path' approach to corporatization of utilities
- Outline prerequisite institutional reforms

Post workshop Sept. 10-30

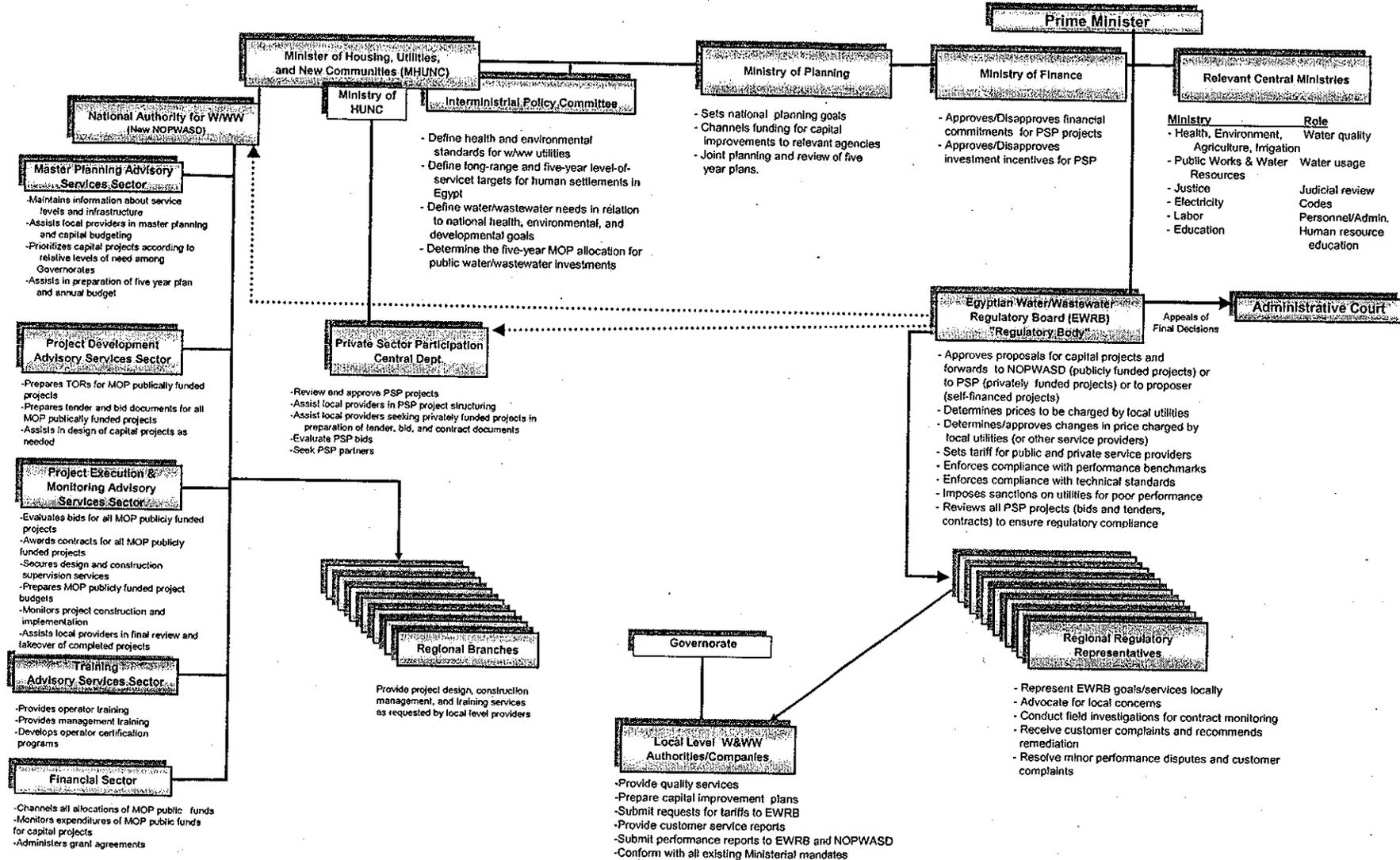
- Meetings and communications with consultants when needed
- Review report on Sept. 26
- Submit report to the oversight committee
- Prepare action plan for long term tasks - Sept. 30.

Illustration of Preliminary Regulatory Framework Roles and Responsibilities



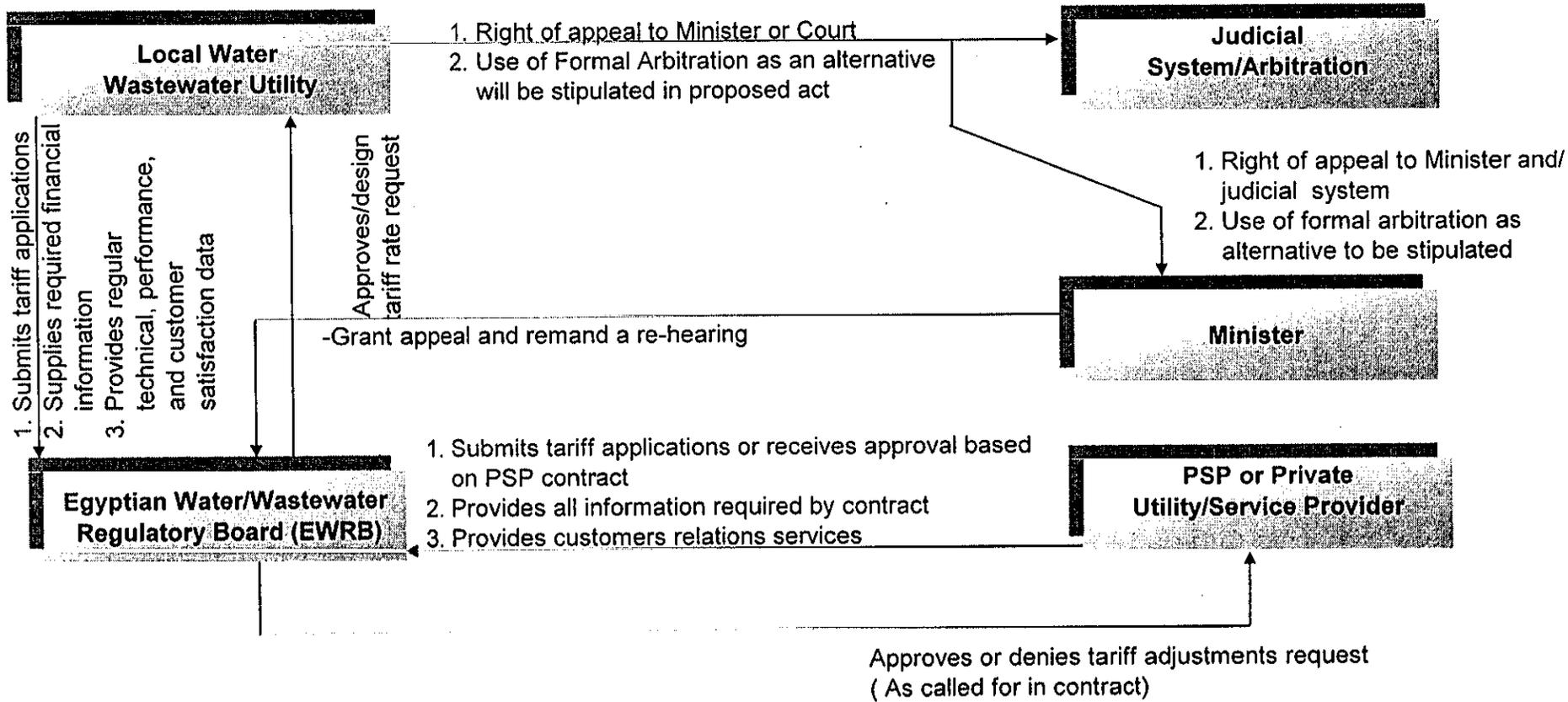
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Illustration of Regulatory Framework Roles and Responsibilities

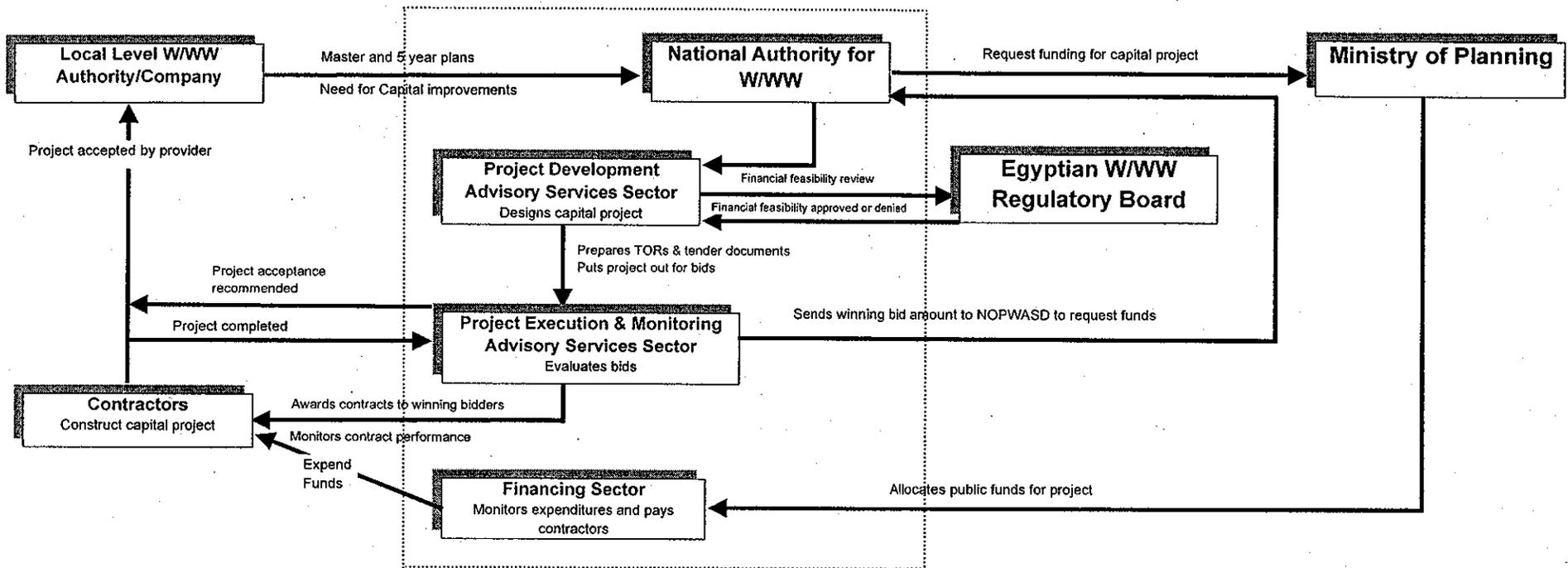


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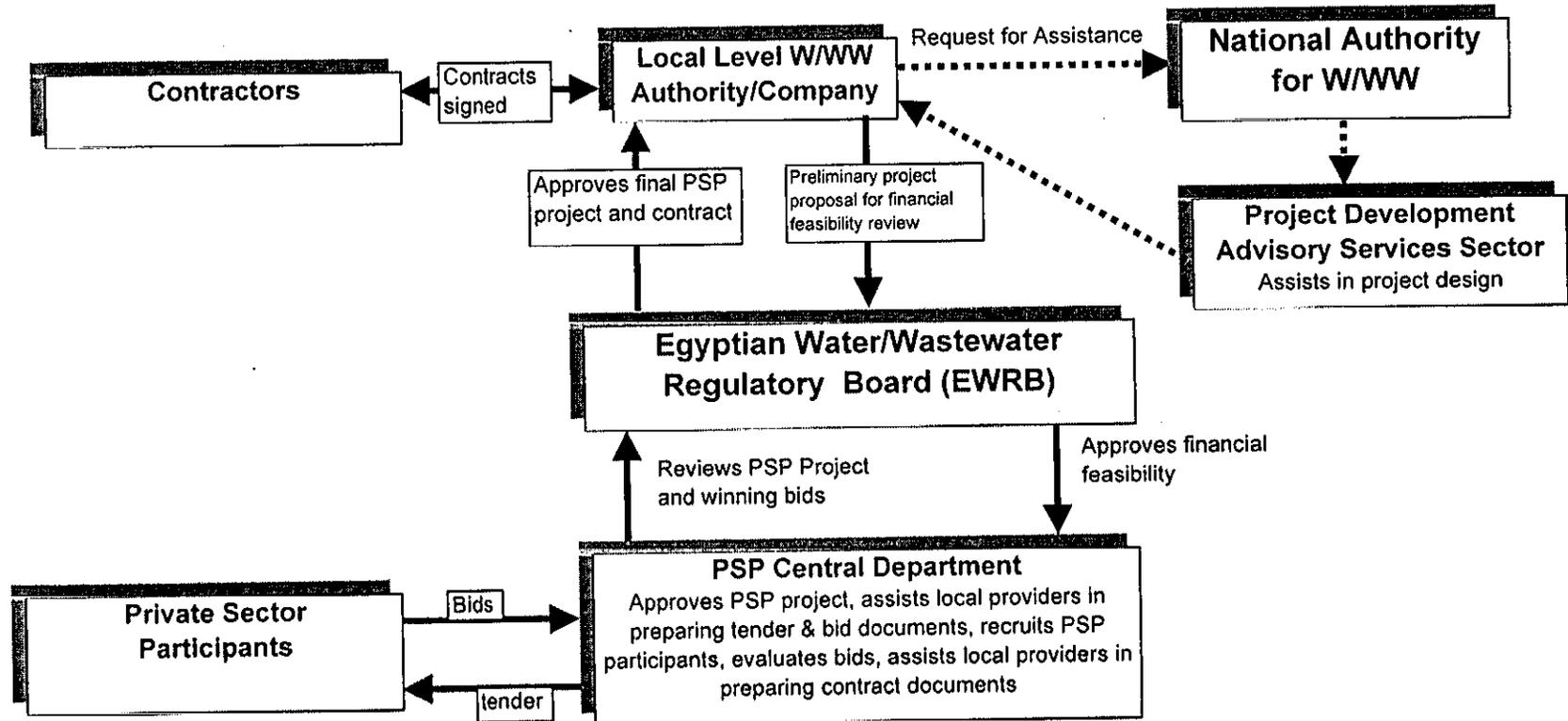
Proposed Tariff - Setting Process



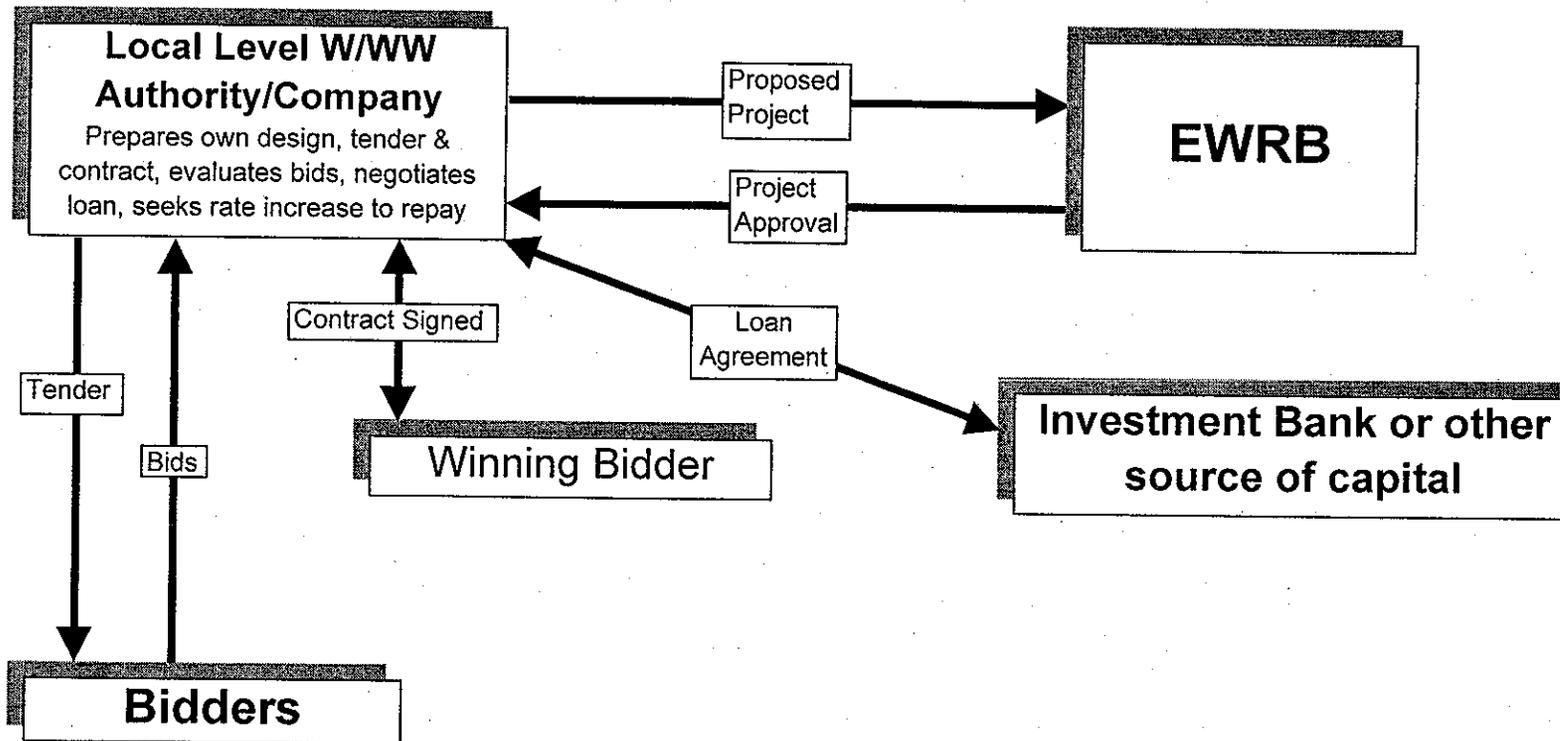
Functional Flow for MOP Publicly Funded Capital Projects



Functional Flow for Privately Funded Capital Projects



Functional Flow for Self-Financed Capital Projects



TRANSITION SEQUENCE FOR LOCAL UTILITY REFORM

<i>Phase</i>	<i>Applies to</i>	<i>Conditions for Graduation</i>	<i>Duration</i>	<i>Organizational Form</i>
Preparation for consolidation	Utilities run by local administration	<ul style="list-style-type: none"> • Inventories of existing assets, supplies, and personnel prepared • Income statement prepared • Organization and staffing plan prepared • Cost center classification prepared • O&M budget prepared 	1-2 yrs	Task Force
Organizational consolidation and takeover of operations	<ul style="list-style-type: none"> • Graduated local administration utilities • Existing PEAs & PWCs 	<ul style="list-style-type: none"> • Utility department or PEA established • Managers appointed • Board of Directors appointed • Staff seconded or provisionally appointed • Chart of accounts prepared • Bulk meters installed at all treatment plants • Networks mapped • Business plan for achievement of level-of-service standards and financial viability prepared • Five-year capital plan prepared • Cost and rates study prepared and approved by EWRB 	1-2 yrs	<ul style="list-style-type: none"> • Transitional PEA (if presently a local administration utility) • PEA (if presently PEA) • PWC (if presently PWC)
Transition to autonomy	<ul style="list-style-type: none"> • All consolidated utilities 	<ul style="list-style-type: none"> • Management, financial, and regulatory reports produced regularly • Staffing appointments finalized • Personnel policies and procedures developed • Tariff schedules implemented • Annual business plan targets achieved • All health and environmental standards met • Recurrent costs recovered from users in full 	3-5 yrs	<ul style="list-style-type: none"> • PEA or PWC

SECTION III

**Proposed Framework for Water/Wastewater Sector Reform in
Egypt**

Legal, Institutional, and Regulatory Reform of the Egyptian Water and Wastewater
Sector Project

Chemonics International, Inc. and The Institute for Public-Private Partnerships

United States Agency for International Development

Proposed Framework for Water/Wastewater Sector Reform in Egypt

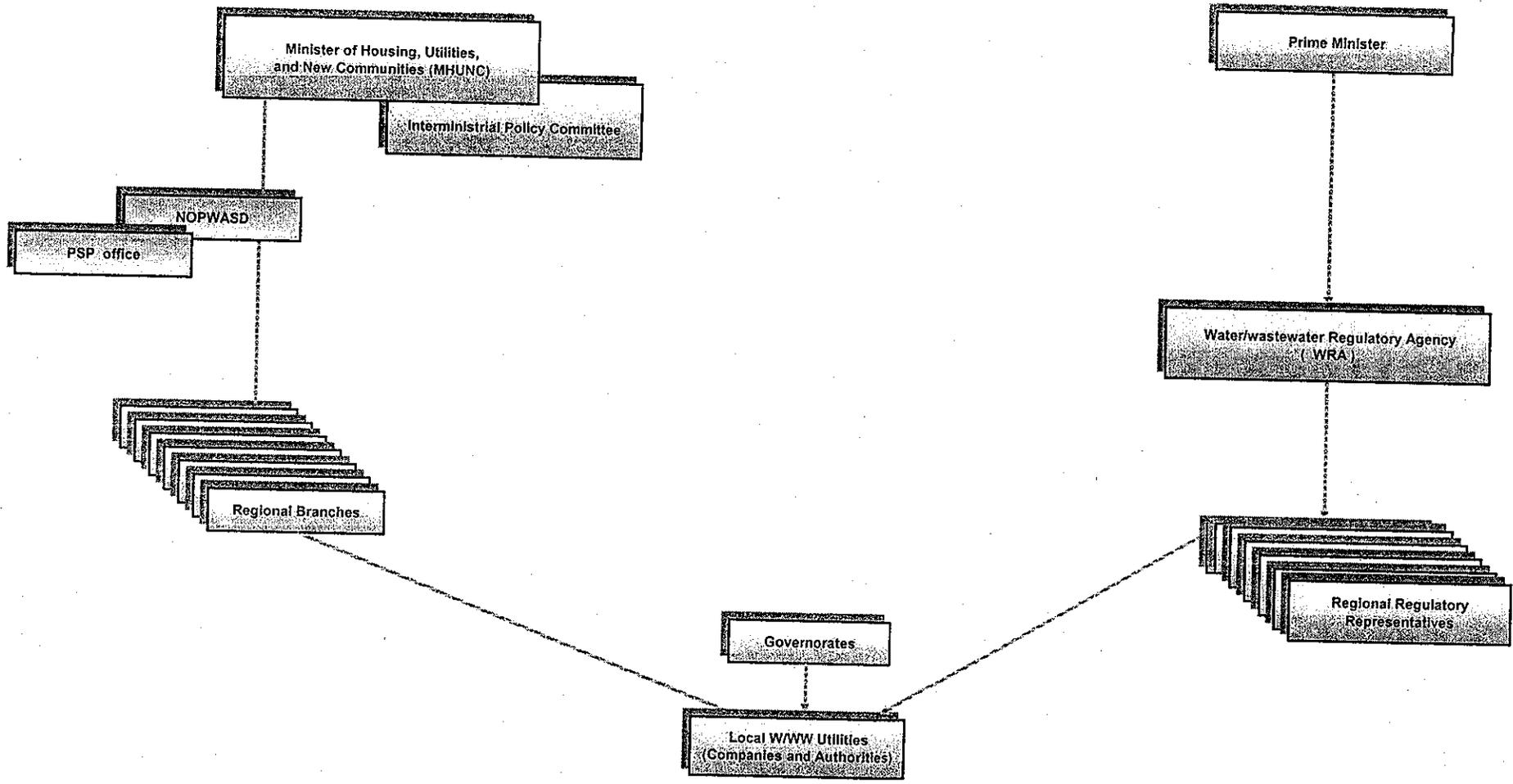
October 1998

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Proposed Regulatory Framework



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SECTION IV

**Overview of Presentation to the Ministry of Housing,
Utilities, and Urban Communities**

**Legal, Institutional and Regulatory Reform
of the Egyptian Water/Wastewater Sector Project (LIRR)**

**Overview
Presentation to
The Ministry of Housing, Utilities
and Urban Communities**

**Chaired by: Dr. Mohamed Ibrahim Soliman,
Minister of HUUC**

8 March 1999

Objectives of Institutional Reform

1. Utilities committed and able to achieve improved technical performance

quality
of
service

2. Utilities committed and able to achieve improved economic performance

cost
recovery

3. Sector financial performance improved utilizing new financial engineering tools

Effective
PSP

4. Sector able to meet future Demand
(unserved, underserved areas,
Urban, industrial, tourism
development + solving env./health
related problems)

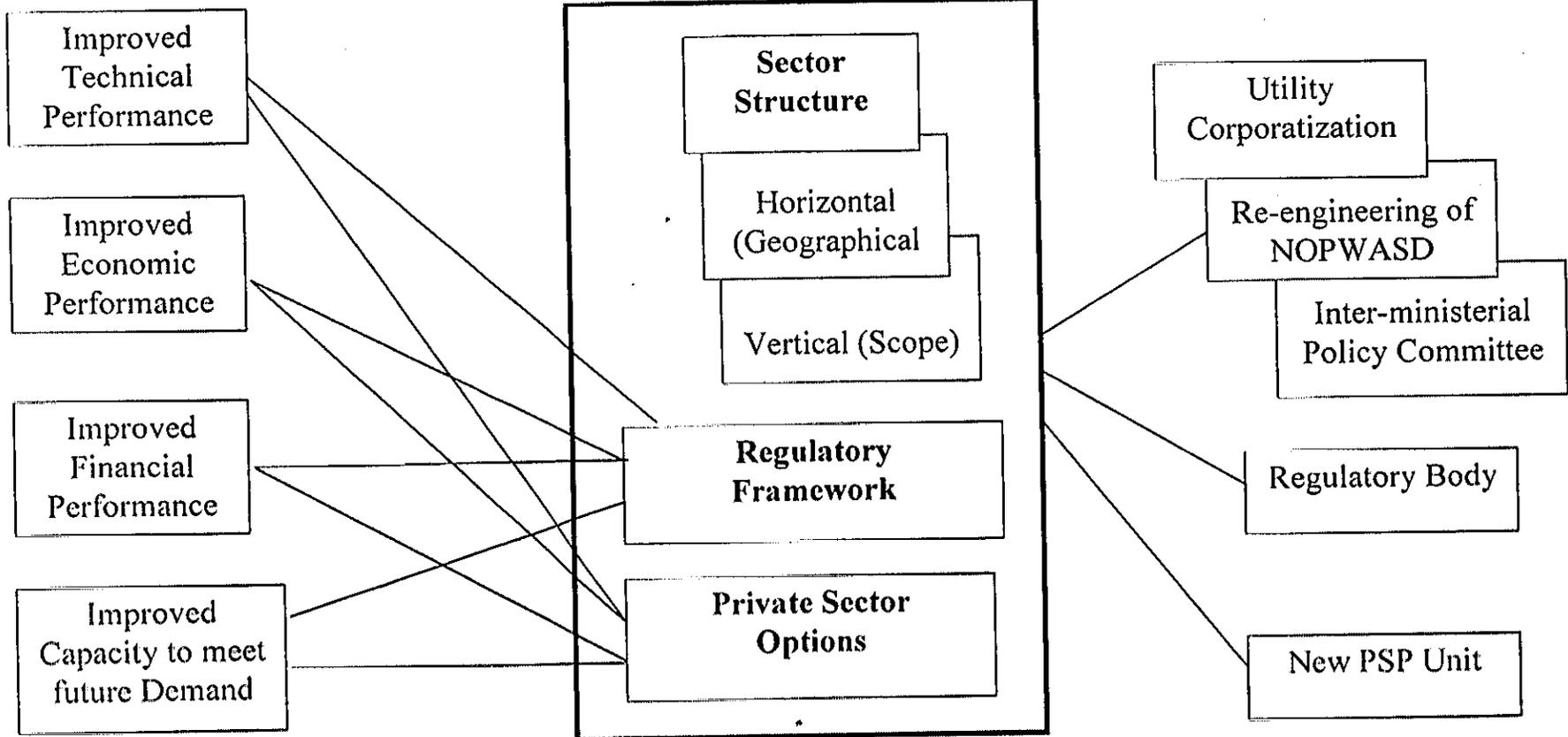
Effective
PSP

Institutional Development Basic Decisions

Basic Decisions

Components

Objectives



Regulation: What?

- A set of policies, procedures, and institutions which enables actual or quasi-private sector efficiencies in public utilities, while protecting customers from the market imperfections of monopoly in a sector charged with a public interest.
- An independent governmental agency which assures utility operators and investors of tariff levels adequate to meet legitimate costs and a reasonable rate of return.
- The agency assures that new investments are economically and financially viable.
- The agency bases its tariff decisions on expert assessment of the economic cost of providing a given level of service.
- The agency has the power to impose sanctions on operators and investors who do not comply with performance standards.
- While most regulatory mechanisms act as surrogates for competition, the regulator also looks for opportunities to introduce competition.
- Conduct Regulations exercise direct control over the objectives of the regulated utilities, while structural regulations exercise direct control over the market environment around the utilities.

Regulation: Why?

- Because commercially-oriented service providers are typically more efficient than governmental organizations --i.e, because we want to corporatize the utilities--but the customer protection assured by full competition is often missing in the public utilities sector.
- Because the tariff-setting process must be entrusted to an independent agency in order that:
 - corporate utilities can recover legitimate costs
 - the private sector is assured of a reasonable return without unreasonable risk
- In order to set realistic but challenging improvement targets for transitional utility organizations on the way to corporatization.
- In order to assure that current infrastructure O&M potentials are fully achieved before investing in new facilities (which otherwise still would not achieve their design objectives).
- In order to assure that all latent economic efficiencies are achieved before allocating subsidies which might only perpetuate inefficiency.

Regulatory tasks required under different options for private sector participation

Regulatory task	Management contract	Lease	Concession	BOT	Asset Sale
Regulate prices	-	✓	✓	✓	✓
Promote operating efficiency	-	✓	✓	✓	✓
Specify & monitor service standards	✓	✓	✓	✓	✓
Control externalities	✓	✓	✓	✓	✓
Maintain public good functions	✓	✓	✓	✓	✓
Ensure asset serviceability	✓	✓	✓	✓	✓
Ensure development of essential infrastructure			✓		✓
Prevent manipulation of land values			✓		✓
Prevent unfair trading practices	✓	✓	✓	✓	✓
Promote efficient water use	✓	✓	✓	Possibly	✓
Ensure responsiveness to final customer needs	✓	✓	✓	-	✓

Planning a private sector arrangement starts with the selection of the type of private involvement and the area that it will cover. But, the effectiveness and consequences totally depend on the regulatory mechanisms used to influence private sector decision-making and on how they are implemented.

Requirements for Effective Regulation

- Uniform, accurate, and reliable utility performance and financial record-keeping and reporting
- Perceived impartiality of the regulator in relation to politicians, utilities, and the public
- Highly qualified staff capable of:
 - verifying the level of service
 - assessing the reasonable economic cost of that level of service
- Transparent policies and procedures
- Dispute resolution mechanisms
- Authority to enforce decisions, rewards, and sanctions

Utility Corporatization: What?

- Transforms utilities into public, public/private, or fully private companies.
- Corporate utilities own their assets, can make autonomous personnel and procurement decisions, and can enforce customer obligations to pay approved charges.
- Corporate utilities must keep commercial accounts and other regulatory reports according to standards.
- As regulated companies, corporate utilities are responsible for:
 - meeting minimum service targets (quality, quantity, reliability, coverage)
 - complying with maximum permissible price levels
- Subsidies are allowed only where and to the extent that government explicitly charges the utility with demonstrably unprofitable service targets.

Utility Corporatization: Why?

- In order to transform utilities into businesses working according to commercial principles and so introduce market-like incentives for performance.
- In order to remove the constraints on financial and personnel management which excuse present utilities from responsibility for performance.
- In order to subject all utilities to a uniform set of technical and economic standards so that their performance can be compared, and rewards (salaries, new investment, etc) allocated to the most efficient.
- In order to enable private equity participation.

Creating an Enabling Environment for Private Sector Participation: What?

- Identifying feasible PSP projects through development of PSP criteria and conduct of prefeasibility studies.
- Determining project financial structure: cost/revenue forecasting, finance sources, risk/reward allocations
- Developing tools to assure a transparent and credible procurement process:
 - * technical specifications
 - * financial responsibilities
 - * performance guarantees
 - * provisions for tariff adjustments
 - * provisions on dispute resolution
 - * bid evaluation criteria
 - * competitive tendering processes and rules on unsolicited proposals.
- Creating a credible, independent regulatory agency to assure private providers of a reasonable return on investment.

Creating an Enabling Environment for Private Sector Participation: Why?

Why PSP?

- Because public funds are insufficient to cope with the demand for water supplies and comply with GOE environmental protections standards.
- Because the public funds freed up by private investment can be directed to investments which are equally needed but less profitable.
- Because private-sector technological and managerial efficiencies can provide benchmarks for public investment and utility performance.

Why Enabling Institutions?

- To convince financiers of the GOE's capacity to:
 - apply transparent procurement procedures
 - carry the procurement process to closure
 - provide opportunity for a reasonable return
 - screen qualified bidders
- To assure the GOE and the public that the public interest is protected.

National Sector Policy Development: What?

- Setting realistic level-of-service targets (quantity, quality, reliability, coverage) for different types of community (metropolis, secondary cities, rural towns, large villages, small villages, etc) and/or water environments, in accordance with national health, environmental, and development goals.
- Setting objective criteria of ability-to-pay as a transparent basis for project economic analysis and subsidization policy.
- Determining the volume of public investment needed in the sector
- Assuring that sector policies, and plans are observed by other ministries.
- Assuring that the public understands government's sector objectives, standards, and plans.

National Sector Policy Development: Why?

- To assure that public funds are invested in the sector in accordance with objective, fair, and transparent criteria and priorities.
- To provide minimum service level standards to be met by all public and private operators in the sector.
- To assure that the programs and activities of other ministries do not undermine the goals of w/ww sector investments, programs, and institutions.
- To increase the public's expectations of service providers, assure all communities that their needs are being or will be addressed, and to make the public aware of the stages of the restructuring process.
- To assure that subsidies and public investments are targetted according to objective social and economic criteria.

SECTION V

Competitive Utility Management Workshop



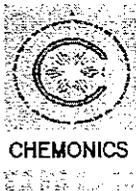
LIRR Project

**Legal, Institutional, and Regulatory Reform for the
Water/Wastewater Sector In Egypt (LIRR) Project**

COMPETITIVE UTILITY MANAGEMENT WORKSHOP

**OCTOBER 27-28, 1999
NILE HILTON HOTEL
CAIRO, EGYPT**

CONDUCTED BY:



CHEMONICS INTERNATIONAL, INC



**THE INSTITUTE FOR
PUBLIC-PRIVATE PARTNERSHIPS**



CHEMONICS EGYPT



LIRR Project

Legal, Institutional, & Regulatory Reform of the Water/Wastewater Sector in Egypt Project

Competitive Utility Management Workshop

Nile Hilton Hotel
Alf Laila wa Laila Hall
Cairo, Egypt
October 27-28, 1999

Tuesday, October 26, 1999

8:00 PM Welcome Dinner Reception and Registration,
Rotisserie Belvedere Restaurant

Wednesday, October 27, 1999

9:00-9:10 Welcome and Opening Remarks
(Mr. Mark Silverman, USAID)

9:10-9:30 Participant Introductions

9:30-10:00 Overview of LIRR Project
(Mr. Matthew Hensley and Dr. Ahmed Gaber, LIRR)

10:00-11:00 Water/Wastewater Sector Reform: History and Progress
(Eng. Mohamed Ashmawi, LIRR)

11:00-11:15 Coffee/Tea

11:15-12:15 Regulation of Water Utilities: Rationale, Methodology, and
Implications
(Mr. Matthew Hensley, Dr. Gary Powell, LIRR)

12:15-1:00 Discussion

1:00-1:15 Coffee/Tea

1:15-2:45 Quality of Service Regulation
(Dr. Ahmed Gaber, LIRR)

2:45-3:30 Discussion

3:30-4:30 Buffet Lunch, Ibis Cafe



LIRR Project

**Legal, Institutional, & Regulatory Reform of
the Water/Wastewater Sector in Egypt Project**

Competitive Utility Management Workshop

**Nile Hilton Hotel
Alf Laila wa Laila Hall
Cairo, Egypt
October 27-28, 1999**

Thursday, October 28, 1999

- | | |
|-------------|---|
| 9:30-10:30 | Competitive Utility Management Strategies: Reforming the Sector from Within
(Dr. Ahmed Gaber, LIRR) |
| 10:30-11:15 | Discussion |
| 11:15-11:45 | Price Cap Regulation: Determining Appropriate Tariff Rates
(Dr. Gary Powell, LIRR Project) |
| 11:45-12:00 | Coffee/Tea |
| 12:00-1:15 | Action Planning Processes: Developing Strategies, Tactics, Participation, and Accountability
(Mr. Tony Stellato) |
| 1:15-2:00 | Closing Remarks
(LIRR Team) |
| 2:00-3:00 | Checkout for out-of-town guests
Buffet Lunch, Ibis Cafe |

**COMPETITIVE UTILITY MANAGEMENT WORKSHOP
OCTOBER 1999
INVITED PARTICIPANTS**

	Name	Title
GOE		
1	Eng. El Shafei El Dakroury	Chairman, NOPWASD
2	Eng. Mahmoud El Sarnagawy	Chairman, NUCA
3	Mr. Gamal Mohamed Ahmed	First Undersecretary, Ministry of Planning
4	Mr. Fathi El Sheikh	First Undersecretary, Ministry of Planning
5	Eng. Samy M. Omara	Deputy Chairman, NOPWASD
6	Eng. Aliya El Gibaly	Utilities Supervisor, MHUUC
7	Eng. Magda Abd El Moula	General Manager, Utilities Dept., MHUUC
8	Eng. Hassanein El Shihawy	Chairman, GOGCWS
9	Eng. Mohamed El S. Youssef	Chairman, CGOSD
10	Eng. Hassan El Shafei	Chairman, AWGA
11	Eng. Nadia Ahmed Abdou	Vice Chairman, AWGA
12	Eng. Hassan El Hekaa	Chairman, AGOSD
13	Eng. Nabil Shehata	Manager, AGOSD Technical Office
14	Eng. Mohamed El S. Hamad	Chairman, Sharqiya W/WW Authority
15	Eng. Taha Shehata	Chairman, Beni Suef W/WW Authority
16	Eng. Samir Hassan Abu Ellil	Chairman, Minya W/WW Authority
17	Eng. Hassan Sabalek	Chairman, Aswan W/WW Authority
18	Mr. Gaber El Darrab	Finance & Administration Manager, Aswan W/WW Authority
19	Eng. Abd El Mohsen Dawoud	Chairman, Gharbiya W/WW Authority
20	Eng. Ahmed Shehab	Chairman, Daqahliya W/WW Authority
21	Eng. Mostafa Hegazy	Vice Chairman, Daqahliya W/WW Authority
22	Eng. Assad Salama Attiya	Chairman, Fayoum W/WW Authority
23	Eng. Mahmoud Masood	Deputy Chairman, Fayoum W/WW Authority
24	Mr. Salah Helmy	General Secretary of Governor of Fayoum
25	Eng. Mahmoud Mansour	Chairman, Beheira Water Company
26	Eng. Abd El Monem Zalouk	Chairman, Kafr El Sheikh W/WW Company
27	Eng. Ahmed Kadry	Chairman, Damietta Water Company

28	Eng. Fouad Mikhail	GM Projects, Damietta Water Company
29	Eng. Mohamed Abu Zeid	Manager, Luxor W/WW Utility Dept.
30	Eng. Abdel Hakim Khalil	Water Manager, Luxor Utility Dept.
31	Eng. Adel Mahrous	Manager, South Sinai W/WW Utility Dept.
USAID		
32	Mr. Mark Silverman	Associate Director
33	Mr. Timothy Alexander	Water/Wastewater Division
34	Mr. Mohamed El Alfy	Water/Wastewater Division
35	Mr. Mamdouh Raslan	Water/Wastewater Division
36	Mr. Moenes Youannis	Water/Wastewater Division
37	Mr. Medhat Wissa	Water/Wastewater Division
38	Mr. Adel Halim	Water/Wastewater Division
39	Mr. Wasiem Daniel	Water/Wastewater Division
40	Mr. Abu El Maaty Omar	Water/Wastewater Division
LIRR Project		
41	Mr. Matthew Hensley	Chief of Party
42	Ms. Neda Nahas	Deputy Chief of Party
43	Mr. Tony Stellato	Institutional Development Specialist
44	Dr. Ahmed Gaber	Senior Policy Advisor
45	Eng. Mohamed Ashmawi	Senior Technical Advisor
46	Dr. Gary Powell	Senior Consultant
47	Dr. Hani Sarie El Din	Senior Legal Advisor
Other Related Projects		
48	Mr. Daniel Davis	Chief of Party, AGOSD Project
49	Mr. Richard Robinson	Finance Group Leader, AGOSD Project
50	Dr. James Westfield	Project Director, AWGA Institutional Project
51	Dr. David Ferguson	Deputy Project Director, AWGA Institutional Project
52	Mr. Ernest Slingsby	Senior Vice President, PADCO, Middle Egypt Utilities Project
53	Dr. Mohamed Ibrahim	Deputy Chief of Party, Middle Egypt Utilities Project
54	Dr. Fernando Bertoli	Chief of Party, Secondary Cities Project
55	Mr. Dewey Bryant	Institutional Development Specialist, SCP
56	Mr. John Rattray	Chief of Party, AWGA Master Planning Project
57	Mr. Patrick Gallagher	Vice President, CDM, AWGA Master Planning Project
58	Mr. Douglas Campbell	Resident Manager, Qena W/WW Feasibility Study Project

59	Eng. Hassan Morsi	Project Director, Qena W/WW Feasibility Study Project
60	Mr. Youssef Naguib	Vice President ECG
61	Mr. Aladdin Saad	Co Team Leader, Fayoum Water and Sanitation Project

LIRR Competitive Utility Management Workshop
USAID Opening Remarks
October 27, 1999

Respected utility chairmen, representatives of NOPWASD and the central government, consultants, and colleagues.

- Egypt and the United States are entering a new phase in their relationship, based on mutual regional interests and trade and investment. In keeping with the objective of increasing direct trade and investment as a means to increase economic growth for Egypt, the fundamental theme of USAID/Egypt's new strategic plan is moving from aid to trade and investment.
- Twenty years ago, power, telecommunications, water and sanitary sewerage services all had great challenges. With significant investment by the GOE and USAID, improvements are benefiting millions of Egyptians, and providing a strong base for private sector investment. Substantial investment in new infrastructure capacity is still needed, but long-term solutions must rely on a regulatory climate conducive to decentralized delivery of services, increased private investment, and the mobilization of capital with revenues sourced locally.
- While USAID has been the largest donor in the Egyptian water and sanitation sector for twenty years, the *Legal and Institutional Regulatory Reform* (LIR) initiative is the first USAID effort to develop a cohesive set of reforms for the sector as a whole aimed at encouraging private sector investment and commercial management principles. This reflects the Government of Egypt's increased commitment to support legal/regulatory reform to promote private sector involvement and improve productivity in key infrastructure sectors.
- Over the next few years, the primary challenge facing Egypt's water and sanitation sector is to manage the transition from dependence on traditional grant sources of financing urban infrastructure, and establish incentives for utilities to recover costs, achieve new performance standards, and access private capital markets for financing capital investments.
- Our priority in the future for the water and sanitation sector will be to assist the Government of Egypt to consolidate and continue gains made in legal/regulatory reform, and private sector participation, while we intensify and complete ongoing utility-level institutional development efforts, and our infrastructure commitments.
- The framework for sector reform to be presented in this workshop embodies both USAID and GOE priorities. We want to focus on establishing the conditions for mobilizing sustainable access to financing, while enhancing services to customers.

- We view this as a logical graduation strategy for a program that has matured to the point where public sector entities are now ready to devolve authority to local governments for planning, management, raising and allocating resources. This will require support by both central and local government officials for a change in the sector's framework that promotes cost-of-service pricing, increased accountability, and incentives for corrective measures and initiative.
- We are very pleased to support your efforts to achieve rapid progress on regulatory reform before we phase out our support for the water and sanitation sector by year 2004. We believe there remains substantial potential for success within this transition period, and we look forward to working with you in this important endeavor.



LIRR Project

Water Sector Reform Program

Legal, Institutional, Regulatory Reform (LIRR) features three priority themes:

- 1) *Regulation*: Develop a framework for encouraging transparent tariff setting
- 2) *Private Investment*: Promote investment and competition in the sector
- 3) *Utility Autonomy, Reform, and Corporatization*: Incentives/Accountability

1

Sector Reform Objectives

- Enable and encourage utilities to achieve new service & performance standards
- Enable and encourage utilities to achieve operating cost recovery
- Enable conditions for future self-financing of capital investment by utilities

2

Chronology of the LIRR Program

- 6/17/98: Minister of Housing receives Cabinet approval for sector reform
- 7/12/98: NOPWASD requests USAID assistance in developing model for reform
- 8/30/98: Preliminary design of reform framework presented to Steering Committee
- 9/15/98: GOE accepts major elements of proposed reform framework
- 11/1/98: Draft Law on PSP and Reform Decree negotiated with Steering Committee
- 3/1/99: Draft Law on PSP and Reform decree presented to Minister

3

LIRR Chronology (cont.)

- 4/5/99: Minister and Steering Committee travel to U.S. for reform study tour
- 5/1/99: Ministry and LIRR team develop strategy for strengthening the framework and presenting reform package to Prime Minister, Governors' Council, Utilities, and Parliament for approval
- 6/7/99: Reform Decree and Law approved by MHUUC for submission to Minister and parliament
- 6/99: LIRR requested to assist GOE in process of evaluation/negotiation of Suez Gulf BOT Project.

4

Key Elements of the Reform Framework: *Regulation*

- Creation of a quasi-independent regulatory board responsible for setting performance standards and 'reasonable tariffs'
- EWRA governed by an 11 member Board of public and private experts appointed by the Prime Minister for fixed terms
- EWRA issues licenses and reviews award of concessions and other forms of PSP
- EWRA may charge fees and levy fines

5

Key Elements of the Reform Framework: *PSP*

- Private Sector Participation (PSP) will be coordinated and managed by a professional technical unit in MHUUC
- PSP projects will be carried out using best practices in competitive tendering and transparency in bid evaluation and award
- PSP projects will be subject to regulatory review and rigorous analysis to allocate project risks appropriately

6

Draft Law on Public W/WW Utility Concessions

Follows examples in the power & telecom sectors, mitigating investor risks in the 1947 Concessions Law on a sectoral basis nationwide

- Revokes limitations on profits
- Extends possible duration to 99 years
- Abrogates right of government to unilaterally amend or revoke the concession

7

Key Elements of the Reform Framework: *NOPWASD*

- NOPWASD to be reorganized as a strategic support organization
- Central Departments for Project Development, Planning, Implementation and Monitoring
- Reviews and supervises all publicly-funded projects (BAB III) and cross-Governorate projects
- NOPWASD will set technical standards

8

Key Elements of the Reform Framework: *PEAs*

- Decree establishes Governorate *PEAs* nationwide: planning, management, cost-recovery, and efficient staffing levels
- Decree makes utilities accountable to EWRA based on performance standards/cost-recovery
- Objective is to move utilities to autonomous, corporatized, service providers

9

Suez BOT Project Support

- LIRR requested to advise on BOT bid evaluation
- 18 firms submitted letters of interest
- 18 consortia prequalified, 6 submitted formal proposals
- Two-envelope process, technical bids currently under review

10

LIRR Project Next Steps

- Support to establish the EWRA: organization design, forms of regulation, procedures, standards, staffing, etc.
- On-going evaluation assistance on Suez Gulf BOT Project
- Develop procedures for PSP Unit and a short-list of viable pilot projects
- Prepare corporatization models and legislation to elevate utility performance
- Capacity-building for national and local officials on sector reform

11

Next Steps: *Regulatory Body*

- Regulatory team developing procedures, by-laws, and guidelines on regulatory body
- Preparation of 'economic regulation' models to establish formulas for tariffs
- Regulatory team preparing utility reporting requirements and accounting standards
- Regulatory team to conduct technical training for nominated regulatory body staff

12

Next Steps: *Utility Reform and Corporatization*

- Legal analysis of requirements for corporatization and preparation of strategy
- Action Plan for utility reform and regulatory compliance preparation
- Prepare guidelines on benchmarking and develop model rate application case
- Conduct 2-3 workshops on corporatization and competitive utility management

13

Next Steps: *Private Sector Participation*

- PSP team developing screening criteria for project selection
- PSP team continuing to conduct Suez BOT bid evaluation
- PSP team working with MHUUC to select two 2 PSP projects for pre-feasibility
- PSP team will conduct 2-3 training programs for candidate PSP Unit staff and utilities

14

Issued Discussed During the Previous Year:

- Ministry of Housing, Utilities and Urban Communities Initiative for sector reform.
- Cabinet of Ministers Decree regarding the necessity of sector reform.
- Proposed sector reform overview.
- The organizational units within the framework of sector reform management:
 - At the national level.
 - At the governorate level.

1

1- Ministry of Housing, Utilities and Urban Communities Initiative for Water and Wastewater Sector Reform.

Industrial Problems

- 1- Multiplicity of administrative subordination.
- 2- Financial unbalance in the sector (Fixed tariff).
- 3- Shortage of administrative experience and unavailability of administrative systems.
- 4- Inadequate salary brackets and incentives.



Symptoms

- 1- Multiplicity of administrative
- 2- Financial unbalance in the sector (Fixed tariff).
- 3- Shortage of administrative experience and unavailability of administrative systems.
- 4- Inadequate salary brackets and incentives.
- 5- Human resources inadequate capabilities.



Final Result

Low Level of Total Efficiency

2

**2- Cabinet of Ministers Decree for Sector Reform
of June 17, 1998**

- Approval on Water and Wastewater Sector reform on the national aiming at unifying the supervision of planning, implementation, operation and maintenance, and preparation of necessary decrees.
- Securing necessary funds for replacement and rehabilitation of water and wastewater networks.
- Securing funds necessary for human resources training.
- Encouraging the private sector to participate in Water and Wastewater Sector.

3

IPCC

1. Prepare targets, policies, and strategies of the sector to be in concurrence with the state five-year plans and within its framework.
2. Develop policies and strategies concerning private sector participation in water/wastewater sector projects.
3. Develop policies and strategies concerning economical performance of companies and organizations, and the relationship between the same and the methods of cost recovery and service pricing.
4. Review tariff proposed by the Regulatory Agency and issue a memorandum including any required instruction on redistributing burdens, or direct governmental subsidy. The final proposal to be submitted to Prime Minister for approval.
5. Propose the volume of investments required for the sector within the framework of the state plan; and determine principles for prioritization and selection of projects to be incorporated into the plan.
6. Make recommendations concerning human resources needs in the sector; and coordinate with education and training authorities for the provision of necessary technical and administrative staff for the sector.
7. Prepare recommendations on amendments to be introduced to the laws and decrees regulating the sector.
8. Coordinate the policies and plans of the water/wastewater sector with those of other economic and service sectors.

4

**W/WW Sector Regulatory Agency Board of Directors
Chaired by the Minister of Housing and Chairman of
Executive Agency**

1. Develop criteria for technical, economic and financial performance required for utilities, process and timing of periodic reporting, and control and audit procedures by the Agency.
2. Provide technical assistance to the utilities in terms of preparation of studies, on the basis of which target performance levels are determined.
3. Set principles and controls for preparing costs study, service pricing, and procedures of submitting requests for tariff adjustments.
4. Examine and review tariff adjustment requests submitted by water/wastewater utilities according to principles and criteria set by IPCC and submit the same to the Prime Minister for approval.

5

**W/WW Sector Regulatory Agency Board of Directors
Chaired by the Minister of Housing and Chairman of
Executive Agency**

5. Review and approve wording of contracts and agreements that determine the reciprocal relationship between service providers and customers.
6. Monitor compliance of utilities with target technical, economic, and financial performance criteria mentioned in Item (1) of this Article and application of tariff schedules approved by the Agency for them.
7. Review financial and economic feasibility of new projects to evaluate expected impacts on the cost and price of service delivery.
8. Issue required operating licenses for water and wastewater facilities.
9. Determine procedural and executives steps necessary for the transformation of PEA's and companies working in the sector into joint-stock companies within five years from the date of issue of this Decree.

6

Central Department for Private Sector Projects

1. Determine general terms and controls regulating the private sector participation in the water/wastewater projects.
2. Develop and organize process of preparation of prefeasibility studies for the private sector participation in the water/wastewater projects and prioritization.
3. Develop and organize procedures for preparation of pre-qualification and tendering documents for water/wastewater utility concessions and contract.
4. Provide data to investors concerning opportunities for the private sector participation, laws and regulations regulating investment in the sector.
5. Provide technical assistance to all authorities and companies working the sector during all stages of planning, tendering and implementation of projects executed with the participation of the private sector.

7

Housing and Utilities Sector

1. Follow up on all activities of the sector in all its organizations and agencies; collect and analyze data about the sector development and problems; and prepare and submit periodic reports on the same to the Head of the Housing and Utilities Sector.
2. Work with the IPCC as regards preparation of the annual report on the sector achievements, problems impeding its development, and proposed solutions.
3. Prepare studies on the problems of the sector; respond to queries submitted to the Ministry; and submit and follow up the same with the Head of the Housing and Utilities Sector.

NOPWASD

1. Work as a technical secretariat of the IPCC of water sector.
2. Prepare strategic plans and development programs at the national level for the water and wastewater sector, within the state development plans and submit them to the IPCC.
3. According to authorities entitled to it, implement large governorate-level projects incorporated in its plan under Bab III, including design and preparation of studies, tender documents, specifications and contracts; analyze tenders; award contracts; and supervise implementation and obligations to the entity in charge of operation and maintenance.
4. Set codes and specifications for materials, requirements and equipment for establishment, operation and maintenance of water and wastewater utilities in cooperation and coordination with competent agencies; and participate, in coordination with competent entities, into developing a system to monitor compliance of all concerned entities.
5. Set codes and specifications for performance criteria and methods of evaluation of water and wastewater plants and networks in terms of technical and environmental aspects, impact on occupational health, safety factors, disaster control and contingency plans.
6. Develop and implement programs for the development of human resources to enhance the technical and administrative performance of the staff in the sector, through establishing and managing specialized training centers.

9

NOPWASD

7. Conduct studies and applicable research to address technical problems facing the sector.
8. Upon request by public/private legal entities, or Arab/foreign countries, act as advisor and provide expertise, technical assistance and services in the fields of water/wastewater projects, against fees specified by its Board of Directors.
9. During the first operation cycle, undertake operation, maintenance and supervision of plants of which their implementation NOPWASD finishes until the expiry of the guarantee period.
10. Supervise the implementation of the above mentioned plans and programs, after IPCC approval.
11. Specify bases and guidelines for developing governorate-level water and wastewater plans, provide technical assistance throughout their preparation, and make sure that they are compatible with the policies and strategies set by water and wastewater IPCC.
12. Set principles and criteria for selecting projects that could be incorporated in its plan, out of those incorporated in the plans of organizations and companies working in the sector; and develop NOPWASD investment plan in coordination with concerned utilities. This plan should be approved by IPCC.

10

**Local W/WW Utilities
(Authorities and Companies)**

1. Prepare plans necessary for managing the sector within the scope of governorate.
2. Prepare costs and service pricing studies.
3. Implement projects listed in their plans; and has the authority of tendering, awarding, contracting, and supervising the construction.
4. Implement technical upgrading and rehabilitation projects to control loss and enhance performance level.
5. Implement programs for upgrading and developing technical and managerial efficiency level of the staff.
6. Conclude service delivery and concession contracts with public utilities to establish, manage, and maintain water and wastewater networks.
7. Manage, operate and maintain governorate water/wastewater facilities and secure necessary financial resources.
8. Review projects proposed by governmental or non-governmental programs, within its geographic scope, follow-up on them; and coordinate between them in all planning, implementation and operation phases.

Defining Regulation

- Regulation is a tool used by governments to protect consumers from “Monopoly Pricing” while simultaneously encouraging investors to risk capital in water sector investments
 - Regulation is used to enforce standards in quality and performance
 - Regulation is used to control unreasonable prices and to limit unsustainable subsidies
 - Regulation can be applied by governments at all levels: National, Governorate, and municipal
 - Economic regulation refers to setting and adjusting tariffs
 - Other forms of regulation include quality, performance, health and safety
- 1

Rationale for Regulation of Water Service Providers

- In competitive markets, regulation is not required, the public has choice
 - In natural monopolies, prices should be regulated and based on cost of service and risk/reward ratios
 - Well designed regulation promotes competitive utility management and encourages efficiency
 - Regulation allows for consumer representation
 - Regulation provides investors with confidence that large capital investments will yield reasonable returns and that tariffs will be transparently set and adjusted
- 2

Requirements for Successful Regulation

- Regulation requires accurate and reliable information
- In the absence of competition, regulators must determine both the costs of producing water and the “fairness” of its price
- By introducing competition “for the market”, regulators can use “auctions” to promote price efficiency and improve value
- Regulatory procedures must be transparent in order to be effective

3

A Regulatory Framework for the Water Sector in Egypt Would:

- Promote cost recovery and commercial tariffs
- Compel performance “benchmarking”
- Improve operations and maintenance and reward competitive utility management
- Foster financial management and customer relations
- Reduce financial drain and leverage resources
- Encourage private investment in the sector

4

Fundamentals

- Political economy of utility regulation
 - Tariffs tend to be political
 - Consumers = voters
 - Strong short-term pressures to hold below costs (unsustainable)
 - Investments are large and immobile, with long pay-back periods
 - Investors require credible commitments about tariffs and other rules of the game
 - Risk of government renegeing on commitments raises the cost of capital
 - Risks are perceived as being greater in emerging markets
 - Compare opportunity costs, i.e. investing in water vs. blue chip stocks--US Dow Jones 1998, up 40%, Indonesia water, down 20%

5

Fundamentals (cont.)

- Certainty vs. Flexibility
 - Very specific, detailed rules that cannot be changed unilaterally
 - Certainty will lower cost of capital, BUT
 - Difficult to adapt to changing circumstances, and
 - Difficult to provide incentives for efficiency
 - More flexible approaches
 - Easier to adapt to changing circumstances, and
 - Easier to provide incentives for efficiency, BUT
 - Uncertainty and potential for misuse can increase cost of capital, especially in countries just beginning to develop

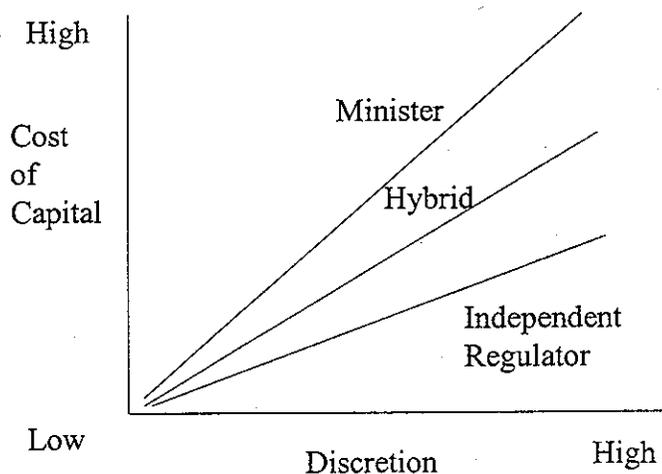
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Importance of Regulator's Independence

- Attract investors at lowest possible cost of capital
- Take politics out of price setting
- Surrogate for competition in order to get least cost services
- Provide credibility vis-à-vis the consumer
- Set standards that are technically sufficient
- Unbiased, even-handed decisions and enforcement

7

Independence and Cost of Capital



8

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How to Achieve Independence?

- A clear mandate excluding Ministerial direction established in law.
- Appointed on basis of professional criteria with restrictions on conflicting interests, often involving Executive and Legislative.
- Protected from arbitrary removal during fixed terms, not co-extensive with the Government.
- Fixed salaries.
- Ear-marked funding.
- Independent minded appointees.
- Skillful strategic management.

9

U.S. Regulatory Framework

- State regulatory commissions (3 to 7 members)
- Responsible for all economic regulation, including rate setting, prudence review, territorial certificates, monitoring, rule making, enforcement, cost review, and financial and managerial auditing as well as deciding disputes between utilities and utilities and customers
- Consults with other regulators of quality and resources
- Commissioners are appointed or elected, serve for specified terms, and are removed only for cause
- Decisions are final with a right to appeal to the appellate Court
- Primarily use rate base/rate of return regulation, although some alternate methodologies are used in some states
- High investor confidence/capital is available to well run utilities
- Rates provide full cost recovery for prudently incurred costs and expenses, plus the opportunity to earn a reasonable return on investment.

10

United Kingdom Regulatory Framework

- The Director General of the Office of Water Services
- Responsible for setting price caps, providing incentives, monitoring financial and managerial functions, settling disputes, protecting the consumer, setting performance standards, promoting economy and efficiency, enforcing standards and license conditions, and facilitating competition. Not responsible for granting licenses, setting the legal structure for the industry, water quality or controlling profits.
- Director General is appointed for a fixed term by the Secretaries of State, subject only to dismissal for cause or incapacity
- Decisions are final subject to appeals to the High Court
- Price caps are set every 5 years and only the performance is regulated. Profits come from achieved efficiencies. Costs are recovered within the price cap.
- Failure to meet specific performance standards requires the firm to pay penalties to the affected consumer

11

Functions of the EWRA

- Examine, review, & approve tariff rate requests
- Develop performance criteria in conjunction with local utilities
- Provide technical assistance & guidelines on cost of service studies & rate applications
- Review financial & economic feasibility of new projects
- Issue required operating licenses for w/ww utilities
- Monitor compliance of utilities on performance improvements & corporatization

12

Structure of the EWRA

- 11 Commission members appointed by Prime Minister for staggered terms
- Chaired by the Minister of Housing, Utilities, & Urban Communities
- Headed by an Executive Director and Technical Secretariat
- Divisions: Rate Analysis, Technical Compliance, Consumer Service, Economics & Research, Legal
- Budget of the EWRA would be independent & partly financed from fees, surcharges, & fines

13

EWRA Economic Regulation Methodology

- Public & Private utilities subject to Economic Regulation
- Incentive-based regulation will be utilized in most cases
- “Price Cap” reviews will be held every 5 years with compliance reviews held annually
- Contract monitoring of PSP concessionaires will be institutionalized
- Appeals process & dispute resolution procedures will be developed in the EWRA Executive Regulations

14

Quality of Service Regulation

Example of methods used to
assess overall service to
customers

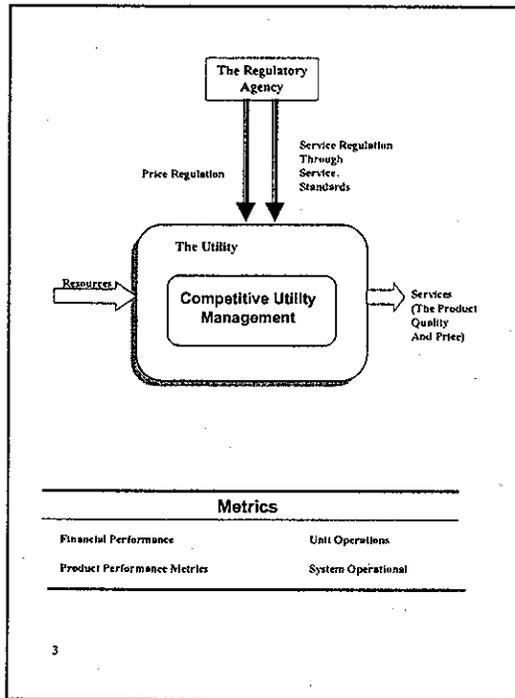
October 1999

1

Utility Obligation

- The utility has "the obligation" to render safe and adequate service.
- A reduction in the quality of output or service standards is equivalent to an increase in price.
- Without adequate quality of service regulation, price regulation may be rendered ineffective; "buyers can be exploited just as effectively by giving them poor or unsafe service as by charging them excessive prices"

2



Definitions:

Standards:

The definition according to ISO is:

“Document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.”

Standards could be:

- A “specification; standard
- A guidance standard

A specification is a detailed set of requirements to be satisfied by a product, material, process or system, indicating the procedures for checking conformity of these requirements.

4

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Metric Examples:

Financial Performance Metrics:

- o Unit cost of product: LE/m³
- o Percent LE billed actually collected
- o Total revenue as percent of O&M costs

Product Performance Metrics:

- o Water pressure (% property at risk)
- o Service interruptions (hrs/year/zone)
- o Sewer flooding incidents (% of connected properties flooded)
- o Water quality (deviation from a standard)

Unit Operations Metrics:

- o Labour hours per unit process
- o Energy use per unit process
- o Equipment utilization rate

System Operational Metrics:

- o Speed of response to customer complaints
- o Speed of response to a new service connection

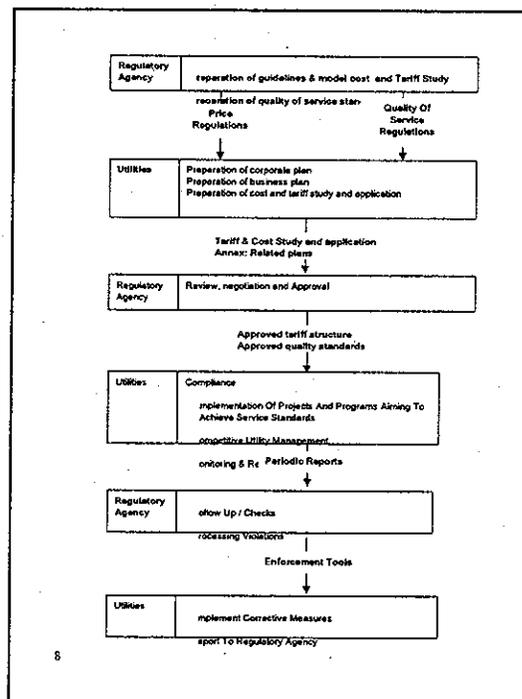
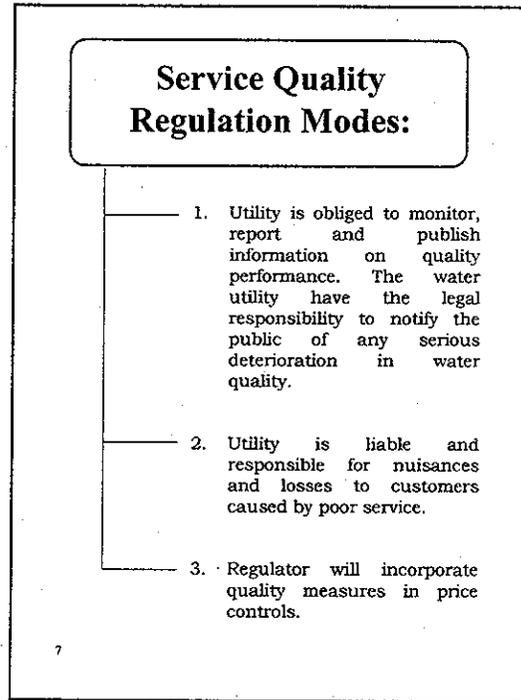
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Regulatory Instruments for Service Quality Control

● Aspects mainly determined by managerial efficiency (e.g. speed for response to leaks or other complaints, timely connections and repairs)

● Aspects that primarily depend on capital expenditure (e.g. drinking water and effluent quality, adequate capacity)

6



How Standards Work

- **Regulator or Technical Group** sets standards
- **Utility** decides how best to comply
- **Utility** collects measures and reports
- **Regulator** audits for accuracy of reporting and determines if there has been a violation
- **Utility** decides on corrective action when violations occur
- **Regulator** reviews and enforces the corrective action

9

Standard Setting

- Setting standards is a complex and demanding task
- It involves cost-quality trade-offs
- Standards must be: realistic, attainable, well defined, technologically sound and enforceable
- Standards must be in line with social and economic reality

10

What Does It Take to Make Standards Work

- Basing standards on comparable processes
- Standardized charts of accounts and rules
- Regular, reliable performance measurement and reporting
- Follow-up audits
- Corrective action when standards are not maintained
- Incentives and penalties based on performance

11

Standards Development and Administration Would Require the Regulatory Body to Acquire Skills in:

- Technical areas such as maintenance, utility operations, management, and financial management
- Defining and setting standards
- Setting appropriate measures
- Monitoring and auditing
- Review of corrective action plans and enforcement
- Information processing
- Contract monitoring

12

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Effective Enforcement Requires

- **Utility** measurement and reporting of their performance against the standard
- **Utility** identification of the causes of failure to meet standards
- **Utility** planning and execution of corrective action
- **Regulator** monitoring and auditing of reports
- **Regulator** review of corrective actions

13

To Make Standards Work:

- Raise the overall levels of utility personnel professional training by providing:
 - Technical assistance in problem identification and corrective action planning.
 - Training and resources to help utilities carry out corrective actions
- Promote technology transfer perhaps through strengthening existing water and wastewater professional associations.

14

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**COMPETITIVE UTILITY
MANAGEMENT STRATEGIES**

WHAT IS A COMPETITIVE UTILITY?

A Competitive utility.....

- delivers service to the fullest capacity its assets can supply.
- delivers its services at lower cost than comparable utilities.
- develops its assets to provide the levels of service for which its customers are willing to pay.

Competitive utilities.....

- ... attract customers.
- ... attract qualified personnel and supplies.
- ... attract capital investment.

Competitive Utility Management Strategies

I Quick Fixes

- QF1 Preventive maintenance
- QF2 Reduction of non-revenue water
- QF3 Billing and collection
- QF4 Customer orientation
- QF5 Cost management

II Longer-Term Measures

- LT1 Develop utility "instrumentation" to standards required for adequate utility management and regulation
- LT2 Design and implement business process re-engineering
- LT3 Plan and implement cost-effective projects to eliminate bottlenecks in physical systems and processes
- LT4 Prepare master plans and five-year capital programs
- LT5 Conduct costs and rates studies
- LT6 Develop financing strategies

I. "QUICK FIXES"

Performance improvement measures which:

- Require little or no capital investment, focus on current operation
- Can be implemented by relatively low-level operating units (process improvement rather than process re-engineering)
- Demonstrate to customers and regulator that the utility utilizes its existing assets efficiently

Having maximized the productivity of existing assets, you'll be in a better position to identify real needs for longer-term measures like rehabilitation, capital investment, and re-engineering

Some Quick Fixes for Local Utilities

- QF1 • Preventive maintenance
- QF2 • Reduction of non-revenue water
- QF3 • Billing and collection
- QF4 • Customer orientation
- QF5 • Cost management

Targeting Quick Fixes

- Use Pareto analysis (fishbone analysis) to set implementation priorities
- Review implementation lessons learned
- Extend strategies to other plants districts, users classes, etc

Pareto Characteristics of Typical Utility Performance Gaps

Cost Efficiency	
Pareto Feature	Tactical Implications
Compact units account for only 10-20% of total water production, but their unit costs of production may be three times that of conventional plants.	<ul style="list-style-type: none"> Decommission unnecessary compact units. Focus O&M and capital improvements on conventional plants.
Revenue Improvement	
Pareto Feature	Tactical Implication
Non-domestic uses are fewer than 10% of users, but consume 20% of production and constitute 35% of sales.	Focus metering, billing, and collection efforts on non-domestic uses.

QF1: Preventive Maintenance

Luxor City WTP preventive maintenance program reduced the number of capital repairs needed, thereby:

- * reducing time to restore units to service
- * increasing reliability
- * reducing repair costs by 90%
- Valve exercising
- Sewer cleaning

Results will help you target needs for cost-effective rehabilitation or replacement

QF2: Reducing Non-revenue Water /1

Sources of Non-revenue Water

- * Process water waste at plants
- * Illegal Connections
- * Distribution losses
- * Faulty meters
- * Leaky connections
- * Irregular meter reading or billing
- * Stand posts
- * Unmetered usage

Reducing Non-revenue Water /2

Strategies (Cont'd)

- 0) Meter all main treatment plants
- 1) Systematic leak detection and repair
 - * reduces distribution losses
 - * helps identify mains for cost-effective rehabilitation projects
- 2) Quality control of meter reading
- 3) Installation and repair of meters
 - * order of priority: non-domestic, sewer, large diameter
 - * increases customer confidence and willingness to pay
 - * facilitates waste control by customers
- 4) Waste audits and waste minimization for governmental users
 - * Mugamaa study (95% of consumption is waste)

**Reducing Non-revenue Water/3:
Benefits**

- Reduces cost per m³ sold
- Loss reduction increases quantities delivered, pressure, and reliability

**QF3: Increasing Collections/1
Problem Sources**

- Utility collection efforts not aggressive enough
- Customer attitudes or ability to pay
- Data systems make arrears targeting difficult
- Governmental agency budgets do not allocate enough for utility services
- Commercial users may avoid payment by means of influence

Increase Collections/2: Strategies

Rationalize utility collection efforts:

Short-term: track nondomestic and wide-diameter connections closely

- Long-term: automate billing systems

Adopt more aggressive methods:

Additional collectors

- Incentives for collectors
- Installment plans for accounts with large arrears
- "Demonstration" shut-offs

Work with governorate finance departments on budget allocations

Increase Collections/2 (cont'd)

The Problem of Large Free Riders

- Ability to pay is there
- Supposed social and economic benefits they provide (employment, etc.) are canceled out by impact of free-riding on utility services
- If this customer class will not pay, then user cross-subsidization will not work and domestic tariffs will have to increase

**Increase Collections/3
Benefits**

- Improved cash flow
- Communicates the value of the service to the customer

QF4: Customer Orientation

- Utility autonomy ("corporatization") entails a shift in financial sources from subsidies to sales
- Customers are your ultimate source of growth and profitability
- The key to customer orientation is mutual accountability
- Customer orientation measures do not require major effort and cost, but they do require creativity and managerial support

Customer Orientation Strategies/1 Increasing Mutual Accountability

- The customer service agreement (s) should include the utility's customer service standards and offer "compensation" for substandard performance by the utility
- The invoice is the utility's report card, but also an account of services rendered
- Pursuing receivables shows that the utility respects itself and that water has a cost
- Use surveys, questionnaires, and meetings to find out the service improvements your customers care about
- Inform the public of specific utility service improvement programs, and encourage the public to monitor progress

QF5: Cost Management

- Cost accounting provides information for identifying cost benchmarks and cost control opportunities
- The more you disaggregate cost centers into their component operating units (the individual plants, network service areas, billing and collection areas), the more effectively you can target cost control measures.
- The more you decentralize planning and budgeting systems, the more you can hold operating units accountable.
- Use performance measurement, performance-based budgeting, and performance-based incentives to induce competition between similar operating units.

II. Longer-Term Measures

- LT1 • Develop utility “instrumentation” to standards required for adequate utility management and regulation
- LT2 • Design and implement business process re-engineering
- LT3 • Plan and implement cost-effective projects to eliminate bottlenecks in physical systems and processes
- LT4 • Prepare master plans and five-year capital programs
- LT5 • Conduct costs and rates studies
- LT6 • Develop financing strategies

LT1: Instrumentation

- Expanded customer metering
- Water quality sampling and testing
- Mapping and hydraulic analysis
- Infiltration/inflow studies
- Financial/MIS systems
- Regulatory reporting

LT2: Re-engineering

- Decentralize the organization structure where appropriate to improve customer service and increase decentralization and internal competition
- Determine staffing needs based on performance standards. Adopt personnel policies and procedure, which support performance orientation. Plan and budget for competitive salary scales
- Restructure purchasing and inventory systems as necessary to improve quality of inputs and control inventory costs

LT3: Cost-Effective Small Projects

- Unit process rehabilitation works
- Power factor correction
- Rehabilitation of storage tanks
- Replacement of old networks
- Hydraulic improvement projects
- Effluent re-use

LT4: Master Planning and Project Planning

- Appropriate levels of service, based on willingness to pay
- Appropriate technology
- Economies of scale and component sizing
- Modular implementation
- Financial and economic analysis

LT5: Cost and Rate Studies

- Step 1.* Determine revenue requirements
- Step 2.* Separate costs by function (cost center)
- Step 3.* Allocate revenue requirements to cost centers
- Step 4.* Allocate functioned cost among customer classes
- Step 5.* Design rate structure

**LT6: Capital Financing/1
Financing Options**

- Self-financing through internally generated surpluses
- Interest-free loans from the national w/ww sector public investment program (subject to IPC conditions)
- Debt financing <Bab III
 <Banks
- Private sector participation (BOTs and concessions)
- Equity investment (?)
- Community participation

**Capital Financing/2:
Financing Strategies**

Project Characteristics	Source of Finance
Large projects with high rates of financial return	Private sector participation
Large projects with high rates of social return and low rates of financial return	IPC interest-free loans
O&M capitalization, systems modernization (quick payback)	• Self-finance through rates • Bab III loans
Local extensions	Community participation

Price Cap Regulation

Competitive Utility Management Workshop
The Institute for Public-Private Partnerships
October 1999

1

Overview

- **Economic Goal of price regulation**
- **Rate of return regulation**
- **RPI-X Price cap regulation**
 - **Incentives**
 - **Setting X factors**
 - **Regulatory lag**
 - **Cost Passthrough**
 - **Regulatory commitment**
 - **Sliding-scale price cap regulation**
 - **Quality and technical standards**
- **Case studies**

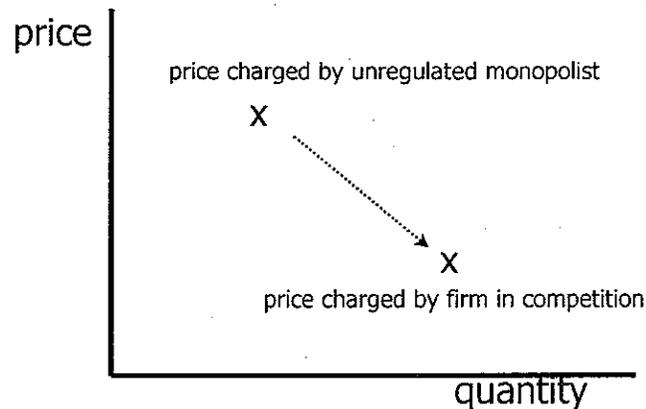
2

Economics of Regulation

- From an economic perspective, what is regulation of a monopolist trying to achieve?
 - decrease price and increase output of monopolist to levels of a firm in a competitive environment
 - improve the quality of the services of monopolist to the level of firms in a competitive environment (or better!)
 - integrate economic goals of society into monopolist's performance?

3

The economic goal of regulation



4

Forms of Price Regulation

- Rate of Return (ROR) Regulation*
- Price Cap Regulation*
- Sliding-Scale Price Cap Regulation*
- Benchmark Approaches, Yardsticks, etc.

5

Rate of Return Regulation

- Involves 2 steps:
 - determine revenue requirement
 - what level of rates in the aggregate will ensure that total revenues will cover all operating expenses, including a fair return on invested capital?
 - determine rate structure
 - how should we allocate total costs among different classes and categories of service?

6

Revenue Requirement

$$RR = O\&M + D + T + P$$

where:

- RR = revenue requirement
- O&M = operating and maintenance costs
- D = depreciation
- T = taxes
- P = reasonable profit

Goal: cost recovery plus fair profit for utility

7

Income Statement: Firm in a Competitive Environment

Revenue	500	
Operating Expenses	200	
Depreciation	<u>100</u>	
Income before tax	200	
Tax	<u>80</u>	
Net Income	120	↓

- Net Income is the *residual* outcome from the firm's operations.
- *Competition* drives net income to a fair level.

8

Income Statement: Regulated Firm in Non-Competitive Environment

Revenue	500	↑
Operating Expenses	200	
Depreciation	<u>100</u>	
Income before tax	200	
Tax	<u>80</u>	
Net Income	120	

- regulator begins by setting "allowed" net income
- work backwards up the income statement, estimating costs to arrive at the needed revenue requirement.

9

Problems with ROR Regulation

- poor incentives for cost reduction
- heavy regulatory burden: costly and time-consuming process
 - frequent reviews
 - all utility costs must be carefully scrutinized
 - revenue requirement and fair profit must be established at each review
- incentive to over-invest in capital, under-invest in labor

10

Price Cap Regulation

- the *price increases* of services of monopolist are regulated (capped):
 - profits are not regulated
 - multiple services
 - RPI-X price cap regulation

11

- If the firm can lower its costs, it gets to keep the additional profit:

Revenue	500		500
Operating Expenses	200	→	150
Depreciation	<u>100</u>		<u>100</u>
Income before tax	200		250
Tax (40%)	<u>80</u>		<u>100</u>
Net Income	120	→	150

- Like a firm operating in a competitive environment, a firm's profits are a *residual* outcome: the firm has incentive to lower costs in order to make more profit!

12

<u>Year</u>	<u>RPI</u>	<u>X</u>	<u>RPI-X</u>	<u>Allowed Price</u>
1999	-	-	-	LE1.000
2000	20%	3%	17%	LE1.170
2001	18%	3%	15%	LE1.346
2002	16%	3%	13%	LE1.520
2003	15%	3%	12%	LE1.703
2004	12%	3%	9%	LE1.856

note: RPI-X is the allowed % price increase each year.

13

Retail Price Index, RPI

- The RPI is the primary index of consumer prices in Great Britain
- for water sector: RPI + K system was established in the 1986 privatization of water industry:
- real prices were allowed to rise
 - may be interpreted as: $RPI-X+Q$

where Q is the cost of investments to meet quality targets

14

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X-Factor

- The X factor can vary from year to year, but is fixed in advance
- X factor is set based on expected productivity increases by utility
- Positive X factors imply that prices must decrease in *real terms*

15

Incentives Under Price Cap Regulation

- Under price cap regulation the firm has incentives:
 - to minimize its production costs
 - to find the optimal mix of capital and labor
 - to make investments to reduce its costs
- between reviews, the financial goals for a firm under price cap regulation are similar to the financial goals of a firm operating in a competitive environment.

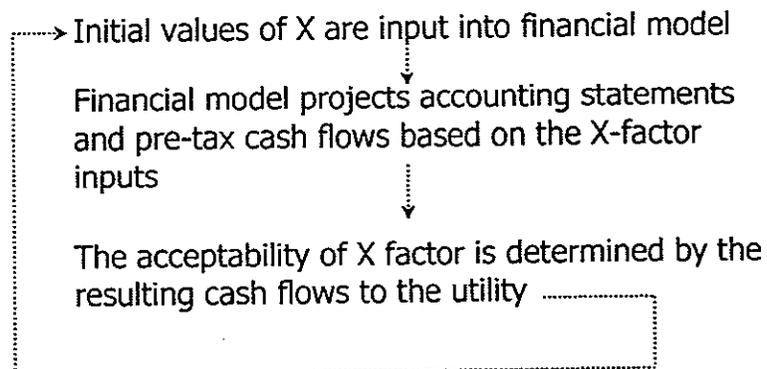
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Setting X Factors

- Regulators take into account many of the following factors when setting X factors:
 - value of existing assets
 - cost of capital
 - expected rates of growth of productivity and demand
 - progress of competition
 - past performance of utility and financial condition of utility

17

Iterative Procedure to Determine X



18

Other Issues in Price Cap Regulation

- Regulatory Lag
- Cost Passthrough
- Commitment
- Sliding Scale Price Caps
- Establishing Initial Prices
- Regulating Quality
- Case Studies

19

Optimal Regulatory Lag

The *optimal regulatory lag* is a tradeoff between:



both increase as the regulatory lag is increased

20

Regulatory Lags in UK Privatizations

British Telecom	initially 5 years, then 4 years
Water Companies	10 years, 5 years if requested by Ofwat or utility
British Gas	5 years
Electricity:	
Transmission	initially 3 years, then 4 years
Distribution	5 years
Supply	4 years

21

Sliding-Scale Price Cap Regulation

- adds a rate of return constraint to the price ceiling:
 - a utility is allowed to retain all earnings under the specified cap as long as its earned rate of return is less than some specified amount.
 - the utility is allowed to keep a portion of any further earnings for a rate of return between that level and some higher specified level.
 - the utility may have to refund all additional earnings for a rate of return above some upper ceiling.
 - some regulators may revise price caps if the rate of return falls below some specified level.

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ACTION PLANNING

Legal, Institutional, and Regulatory Reform Project

Competitive Utilities Management Workshop

**Cairo, Egypt
27-28 October 1999**

1

ACTION PLANNING Main Phases

- **Set strategic direction**
- **Develop tactical plans**
- **Check, integrate, finalize**

2

ACTION PLANNING/1 SET STRATEGIC DIRECTION

- 1) Develop statement of mission and values
- 2) Define performance indicators and determine current performance levels
- 3) Assess strengths, weaknesses, opportunities, and threats
- 4) Define priorities and set strategic objectives for plan term
- 5) Project costs and revenues for five-year term, incorporating planned capacity additions
- 6) Use sensitivity analyses to estimate rates of improvement in cost and revenue performance needed to achieve O&M cost recovery in five years

3

Example Statement of Mission, Values, and Strategic Objectives

MISSION

To meet ongoing needs for reliable water and wastewater services at prices customers are willing to pay.

VALUES

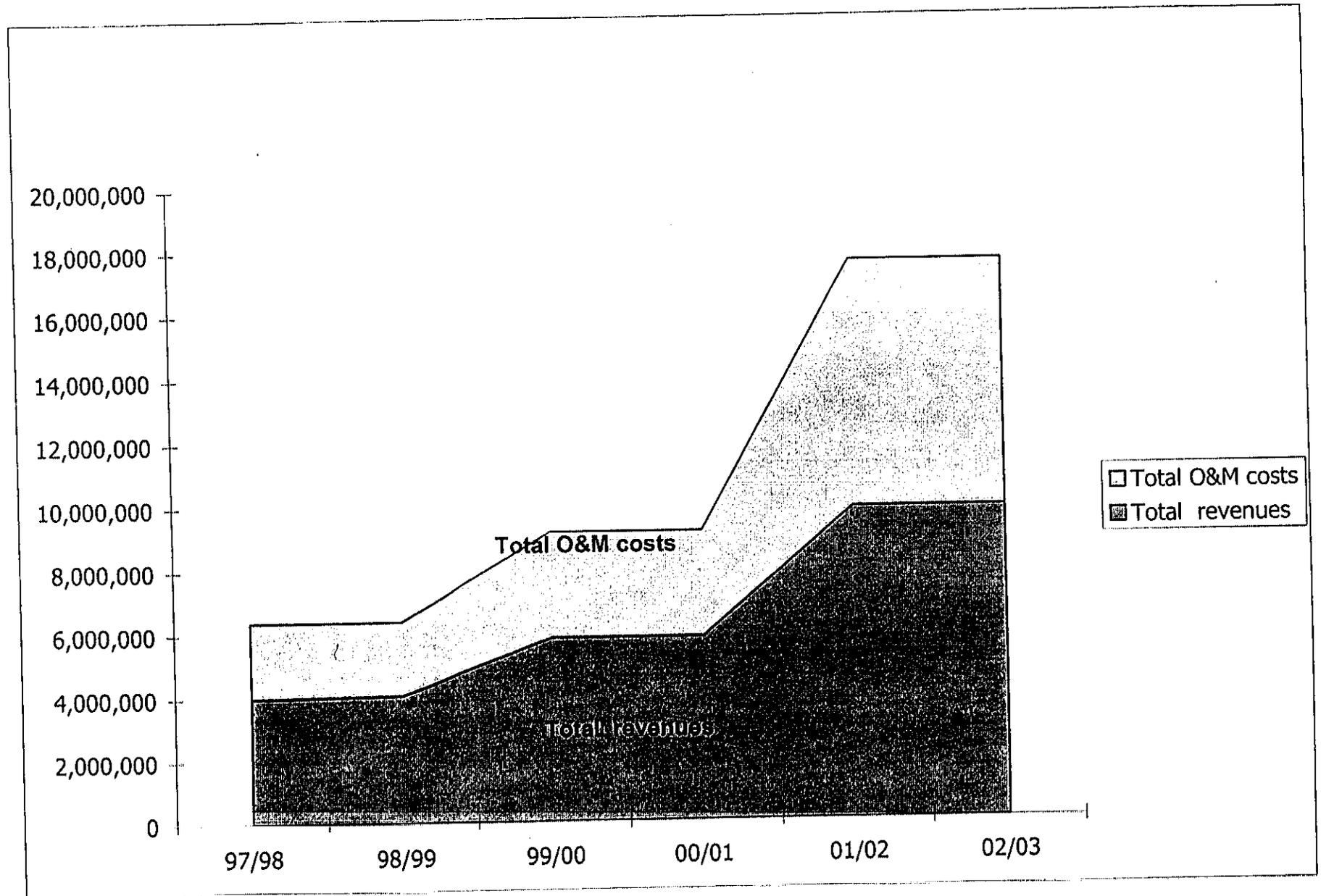
- The utility will establish and maintain a continuous dialogue with customers, based on principles of mutual accountability as expressed in our customer service agreements.
- The utility is committed to the future professional development and market-based compensation of employees who achieve or exceed plan performance targets.
- The utility's approach to performance improvement is based on the principles of information-based planning and evaluation and decentralized decision making.

STRATEGIC OBJECTIVES

- To maintain and if possible increase the output of treatment plants, and to effectively operate new treatment plants.
- To maintain piped water supply coverage levels at 90% of the urban population, increase rural water supply coverage from 50 to 65% of the rural population, and to extend sewer coverage from 25% to 60% of the urban population.
- To recover 100% of O&M costs.

4

KOM OMBO-NASR-DARAW UTILITY: COST AND REVENUE PROJECTIONS (BASE SCENARIO)
(1997-2003)

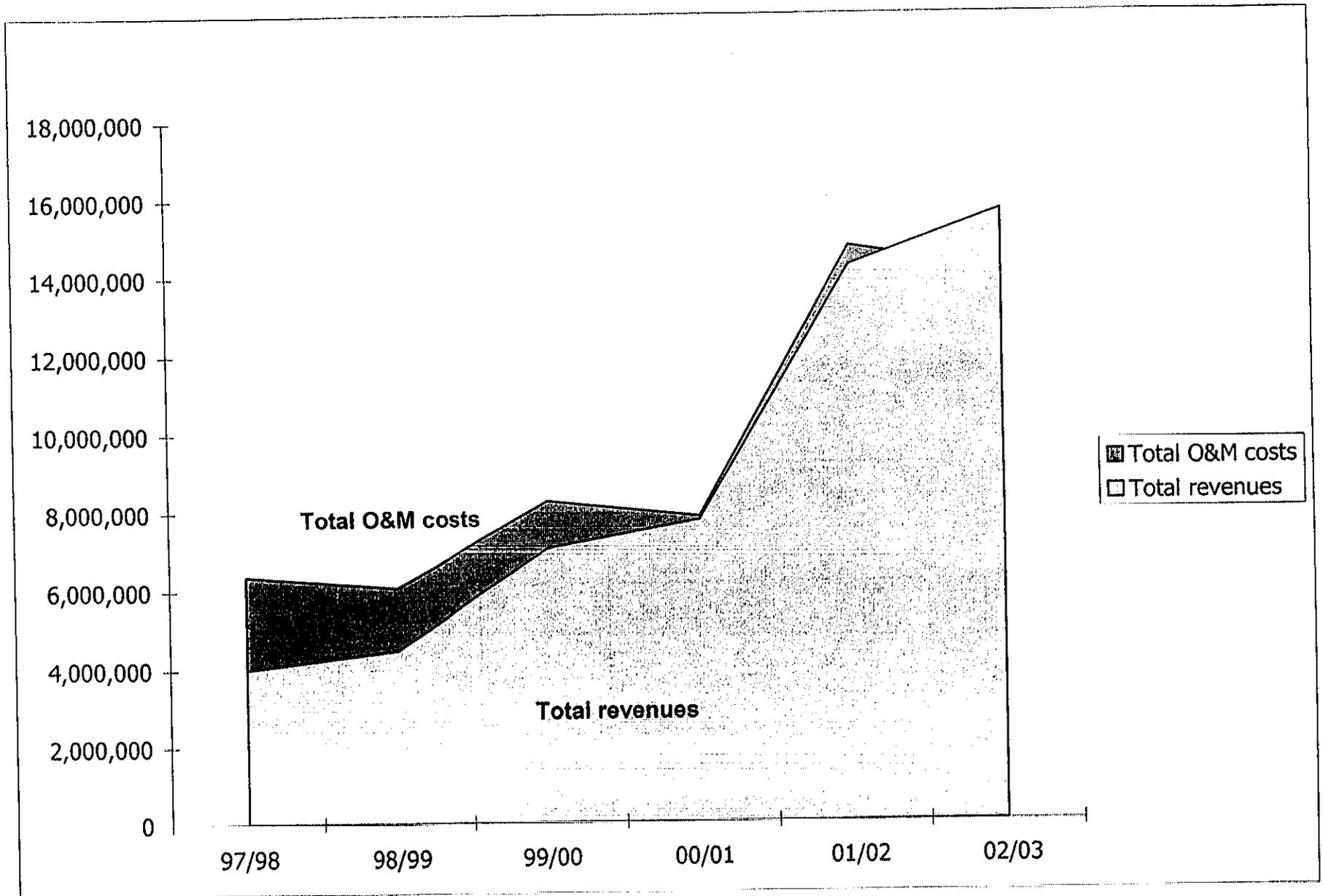


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**KOM OMBO-NASR-DARAW UTILITY: COST AND REVENUE PROJECTIONS (BASE SCENARIO)
(1997-2003)**

	97/98	98/99	99/00	00/01	01/02	02/03
Water production (m3/yr)	14,493,060	14,493,060	20,800,260	20,800,260	33,414,660	33,414,660
Unit water O&M cost (LE/m3)	0.44	0.44	0.44	0.44	0.44	0.44
Total water O&M cost (LE)	6,376,946	6,376,946	9,152,114	9,152,114	14,702,450	14,702,450
Water revenue collection (LE)	3,996,976	4,058,057	5,824,073	5,824,073	9,356,105	9,356,105
Water collection /m3 (LE/m3)	0.28	0.28	0.28	0.28	0.28	0.28
Wastewater flow (m3/yr)					6,361,950	6,361,950
WW unit O&M cost (LE/m3)					0.46	0.46
Total ww O&M cost (LE)					2,926,497	2,926,497
WW unit revenue (LE/m3 flow)					0.08	0.08
WW revenue collection (LE)					508,956	508,956
	97/98	98/99	99/00	00/01	01/02	02/03
Total O&M costs	6,376,946	6,376,946	9,152,114	9,152,114	17,628,947	17,628,947
Total revenues	3,996,976	4,058,057	5,824,073	5,824,073	9,865,061	9,865,061
Annual O&M deficit	2,379,970	2,318,890	3,328,042	3,328,042	7,763,887	7,763,887
Cumulative O&M deficit	2,379,970	4,698,860	8,026,901	11,354,943	19,118,829	26,882,716

KOM OMBO-NASR-DARAW UTILITY: COST AND REVENUE PROJECTIONS (THIRD SCENARIO)
(1997-2003)



KOM OMBO-NASR-DARAW UTILITY: COST AND REVENUE PROJECTIONS (THIRD SCENARIO)
(1997-2003)

		97/98	98/99	99/00	00/01	01/02	02/03
1)	Water production (m3/yr)	14,493,060	14,493,060	20,800,260	20,800,260	33,414,660	33,414,660
2)	Unit water O&M cost (LE/m3)	0.44	0.42	0.40	0.38	0.36	0.34
3)	Total water rO&M cost (LE)	6,376,946	6,058,099	8,259,783	7,846,794	11,975,238	11,376,476
4)	Water revenue collection (LE)	3,996,976	4,463,862	7,047,128	7,751,841	13,698,273	15,068,100
5)	Water revenue collection /m3 (LE/m3)	0.28	0.31	0.34	0.37	0.41	0.45
6)	Wastewater flow (m3/yr)					6,361,950	6,361,950
7)	WW unit O&M cost (LE/m3)					0.44	0.44
8)	Total ww O&M cost (LE)					2,780,172	2,780,172
9)	WW unit revenue (LE/m3 flow)					0.09	0.10
10)	WW revenue collection (LE)					559,852	615,837
		97/98	98/99	99/00	00/01	01/02	02/03
11)	Total O&M costs	6,376,946	6,058,099	8,259,783	7,846,794	14,755,410	14,156,648
12)	Total revenues	3,996,976	4,463,862	7,047,128	7,751,841	14,258,125	15,683,937
13)	Annual O&M deficit	2,379,970	1,594,237	1,212,655	94,953	497,285	-1,527,289
14)	Cumulative O&M deficit	2,379,970	3,974,207	5,186,862	5,281,815	5,779,100	4,251,811

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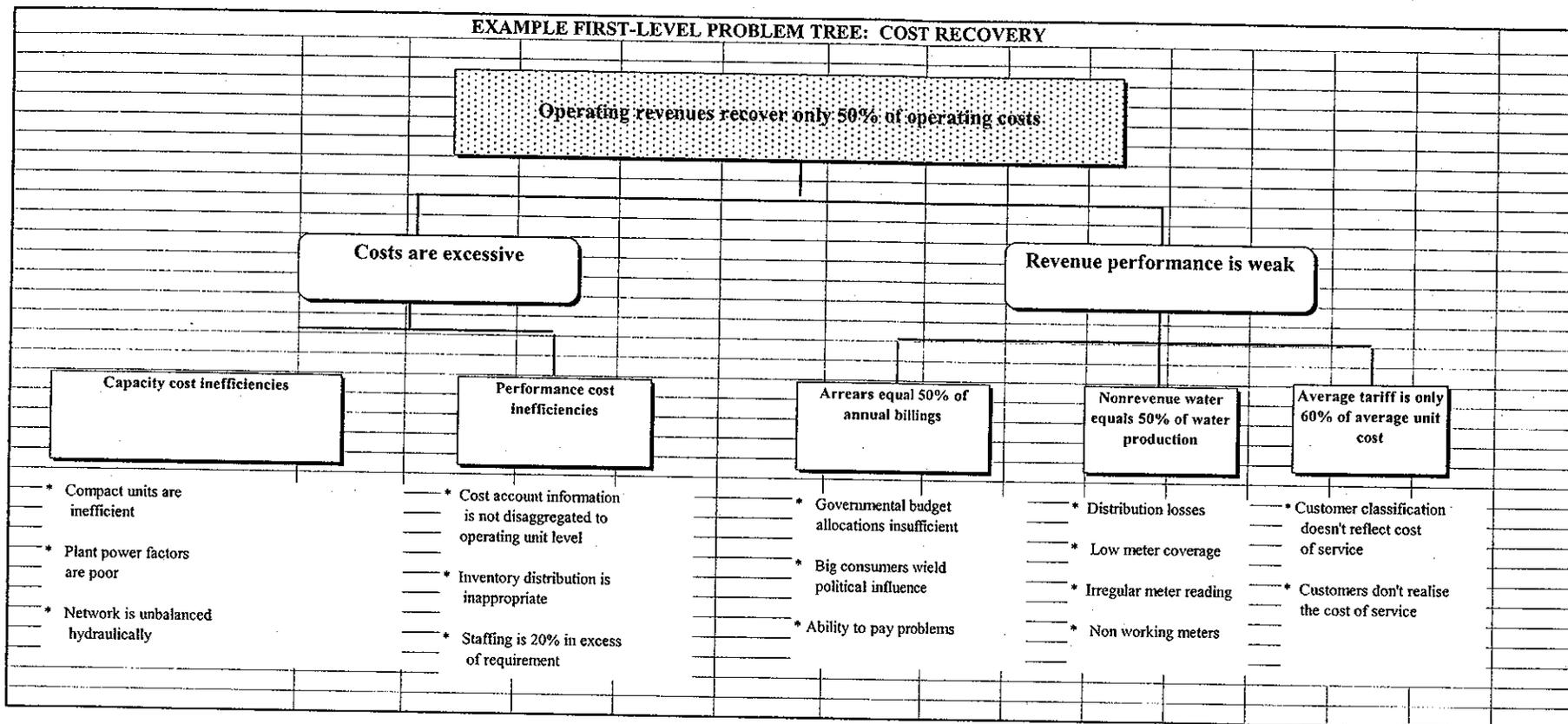
ACTION PLANNING/2 DEVELOP TACTICAL PLANS

- 7) Conduct organization-wide assessments to analyze performance gaps and identify strategies
- 8) Undertake tactical planning and evaluation studies and select tactics
- 9) Prepare tactical plans

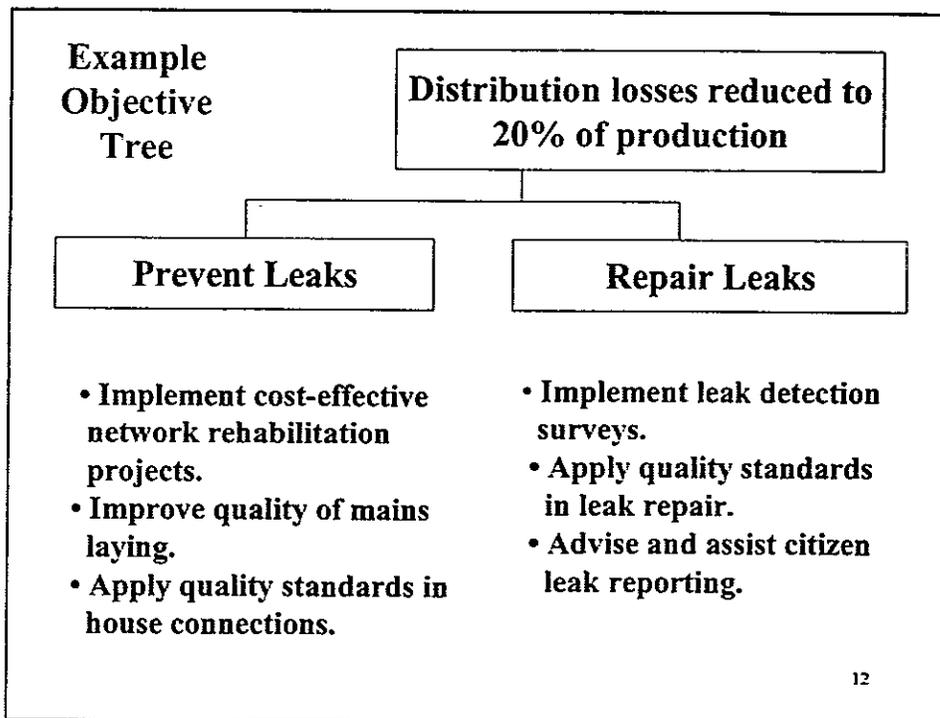
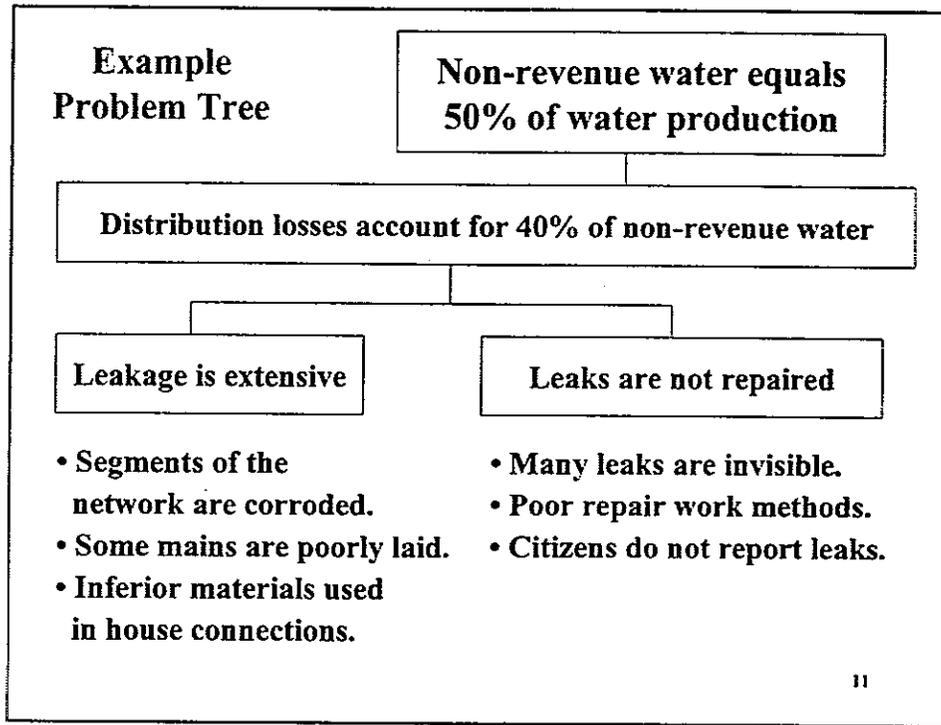
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KOM OMBO-NASR-DARAW UTILITY: COST AND REVENUE PROJECTIONS (THIRD SCENARIO)
(1997-2003)

EXAMPLE FIRST-LEVEL PROBLEM TREE: COST RECOVERY



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CRITERIA OF TACTICAL EVALUATION

- Quality of analysis and documentation
- Magnitude of impact on objective
- Timing of impact
- Cost effectiveness
- Risk

13

ELEMENTS OF TACTICAL PLANS

- Objective
- Baseline situation
- Problem analysis
- Strategy and technical approach
- Performance indicators and monitoring plan
- Organization and management
- Implementation plan
- Staffing and training requirements
- Facility and equipment requirements
- Operating costs

14

ACTION PLANNING/3 CHECK, INTEGRATE, FINALIZE

- 10) Aggregate performance targets, check them against plan targets, and reconcile differences
- 11) Conduct integration exercises at all levels
- 12) Set targets, costs, and staffing projections for each division/department
- 13) Develop monitoring system plan
- 14) Develop five-year organization and staffing plan
- 15) Develop five-year budget

15

**Averages of Evaluation Forms
GOE Participants**

Activity Title: *Competitive Utility Management Workshop*

Location: *Nile Hilton Hotel*

Duration: *2 days*

Date: *October 27-28, 1999*

Logistics/Administration

	Excellent	Very Good	Good	Fair	Poor
Orientation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Length of Activity	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Place of Activity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Translation Facility	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LIRR Staff Assistance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coffee Breaks & Lunch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Content & Results

<input type="checkbox"/> Session 1: Water/Wastewater Sector Reform: History & Progress					
- Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 2: Regulation of Water Utilities: Rationale, Methodology, and Implications					
- Materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 3: Quality of Service Regulation					
- Materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 4: Competitive Utility management Strategies: Reforming the Sector from Within					
- Materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 5: Price Cap Regulation: Determining Appropriate Tariff Rates					
- Materials	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 6: Action Planning Processes: Developing Strategies, Tactics, and Accountability					
- Materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

General Rank

Comments	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Thank you for the welcome reception, would like more workshops, excellent organization, attention to details, too short, needs one week

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Regulatory Reform Issues and Proposals

Prepared by LIR
Institutional Development for Water and Wastewater
United States Agency for International Development
Chemonics International
Chemonics Egypt
Institute for Public-Private Partnerships

September 30, 1998

The Role of the Egyptian Water Regulatory Board (EWRB)

- Protect Consumers by
 - Serving as a Surrogate for the Competitive Market
 - Encouraging Economic Viability of the Sector
 - Providing Incentives for Efficient Performance
 - Ensuring Water Quality Standards are Met
 - Ensuring Wastewater Treatment Standards are Met
 - Ensuring Good Customer Service
 - Ensuring Financial Feasibility of all Capital Projects

2

The Role of the EWRB (cont')

- **Specific tasks for the EWRB**
 - Sets rates to be charged by local utilities
 - Approves changes in rates upon application from local utilities
 - Enforces compliance with Performance Benchmarks
 - Enforces compliance with technical standards
 - Imposes sanctions on utilities for poor performance or service
 - Provides incentives for good performance
 - Monitors/Regulates Public/Private Contracts
 - Reviews PSP projects to ensure regulatory compliance
 - Approves proposals for capital projects to be built with public or private funds
 - Sets rates sufficient to cover O & M expenses on MOP publicly funded projects
 - Sets rates sufficient to cover debt servicing and O & M expenses on privately funded projects

3

Role of EWRB in MOP Funded Projects

- Capital projects funded by grants or "soft loans" still impact the local utility and the rates its customers must pay because O & M expenses will accrue after the project is completed.
- Therefore, the EWRB must approve all capital projects to ensure that they are appropriately sized and prudently built.
- Consequences of no regulatory involvement:
 - Over or under sized plant may lead to excess capacity or shortages
 - Excess capacity leads to excessive O & M in the rates that consumers must pay
- Consequences of regulatory involvement
 - Serves as a check on appropriateness of plant size
 - Ensures service in accordance with standards
 - Ensures that customers pay an appropriate rate for O & M

4

Private Sector Participation Central Department

- Create a new Central Department for Private Sector Participation under the Ministry of Housing, Utilities, and New Communities (alternatively, under the National Investment Authority)
- Responsible for review and approval of PSP projects
- Assists the local providers in developing, structuring, and pursuing private sector participation in capital projects
- Evaluates bids
- Actively seeks PSP partners to participate in the sector projects

5

National Authority for W/WW in Relationship to the MHUNC

- A National Authority for Water/Wastewater that reports to the Minister is desirable to elevate the profile of the sector and show its importance to Egypt
- A re-engineered NOPWASD as a National Authority for Water/Wastewater would provide services at the request of the Local Authority for all MOP publicly funded projects
- What are the functions involved?
 - Master Planning Advisory Services
 - Project Development Advisory Services
 - Project Execution & Monitoring Advisory Services
 - Training Advisory Services
 - Finance Sector to channel MOP allocations

6

Cairo and Alexandria

- Cairo and Alexandria subject to EWRB jurisdiction
- Cairo and Alexandria would use services of NOPWASD or a National Authority for Water/Wastewater only if desired

7

Transition to Self-Sustaining Utilities

- Goal is viability for all service providers
- Assumption: Not all service providers are starting from the same level of service
- EWRB ensures performance standards are met and monitors provider transition to self-sustaining/viable status

8

New Cities and the Regulatory Framework

- Separate PEAs in the New Cities
 - 6 October
 - 10 Ramadan
 - Sadat
 - Burg-il-Arab
- Subject to EWRB Jurisdiction
- Would use services of the National Authority for Water/Wastewater as needed
- Coordination within the MHUNC as necessary

9

SECTION VI

**Workshop on Identifying, Appraising, and Tendering PSP
Projects in the Water/Wastewater Sector in Egypt**



LIRR
Project

LEGAL, INSTITUTIONAL, AND REGULATORY REFORM OF THE
WATER/WASTEWATER SECTOR IN EGYPT PROJECT

Workshop on Identifying, Appraising, and Tendering Private
Sector Participation (PSP) Projects in the Water/Wastewater
Sector in Egypt

UNDER THE AUSPICES OF
*H.E. Dr. Mohamed Ibrahim Soliman, Minister of Housing, Utilities, and Urban
Communities*

IN ASSOCIATION WITH
H.E. Gen. Mostafa Abd El Kader, Minister of Local Development

IN COLLABORATION WITH
The United States Agency for International Development

CONDUCTED BY:



CHEMONICS INTERNATIONAL



THE INSTITUTE FOR
PUBLIC-PRIVATE PARTNERSHIPS



CHEMONICS EGYPT

CAIRO SHERATON HOTEL
CAIRO, EGYPT

18-19 April 2000



LIRR
Project

Chemonics International, Institute for Public-Private Partnerships, and Chemonics Egypt

**Workshop on Identifying, Appraising, and Tendering Private Sector Participation
Projects in the Water/Wastewater Sector**

INDEX

1.	AGENDA
2.	LIST OF PARTICIPANTS / SPEAKERS
3.	OVERVIEW OF WORKSHOP GOALS
4.	BENEFITS AND CHALLENGES OF PSP IN THE WATER/WASTEWATER SECTOR
5.	PROJECT SELECTION, STRUCTURING, AND FINANCIAL ANALYSIS
6.	ESSENTIAL ELEMENTS OF PSP CONTRACTS: A CHECKLIST FOR PROJECT MANAGERS
7.	SUEZ GULF CONCESSION/BOT CASE STUDY
8.	PSP OPTIONS AND CASE STUDIES
9.	POST TRANSACTION REGULATION AND CONTRACT COMPLIANCE: TECHNIQUES FOR TARIFF SETTING AND ADJUSTMENT
10.	FINANCIAL MODEL DEMONSTRATION
11.	PROPOSAL FOR REORGANIZATION OF THE WATER/WASTEWATER SECTOR IN EGYPT
12.	UNIDO CRITERIA FOR SUCCESSFUL BOTs



**LIRR
Project**

*Chemonics International, Institute for Public-Private Partnerships, and
Chemonics Egypt*

Workshop on Identifying, Appraising, and Tendering Private Sector Participation (PSP) Projects in the Water/Wastewater Sector in Egypt

Under the auspices of
H.E. Dr. Mohamed Ibrahim Soliman, Minister of Housing, Utilities, and Urban Communities
In association with
H.E. Gen. Mostafa Abd El Kader, Minister of Local Development
In collaboration with
the United States Agency for International Development

Tuesday, 18 April 2000

- | | |
|-------------|---|
| 8:30-9:00 | Check-in and Registration (Coffee/Tea) |
| 9:00-9:30 | Welcome and Introductions <ul style="list-style-type: none">- <i>Dr. Ahmad Gaber, LIRR Project</i>- <i>Mr. Mark Silverman, USAID Associate Director</i>- <i>H.E. Gen. Mostafa Abd El Kader</i>- <i>H.E. Dr. Mohamed Ibrahim Soliman, MHUUC</i> |
| 9:30-9:45 | Overview of Workshop Goals <ul style="list-style-type: none">- <i>Mr. Matthew Hensley</i> |
| 9:45-10:45 | Benefits and Challenges of PSP in the Water/Wastewater Sector <ul style="list-style-type: none">- <i>Dr. Hani Sarie El Din</i> |
| 10:45-12:00 | Project Selection, Structuring, and Financial Analysis <ul style="list-style-type: none">- <i>Eng. Terence Driscoll, Mr. Ned White</i> |
| 12:00-12:30 | Discussion |
| 12:30-12:45 | Coffee/Tea |
| 12:45-1:30 | Essential Elements of PSP Contracts: A Checklist for Project Managers <ul style="list-style-type: none">- <i>Eng. Terence Driscoll</i> |
| 1:30-2:15 | Suez Gulf Concession/BOT Case Study <ul style="list-style-type: none">- <i>Eng. Terence Driscoll</i> |
| 2:15-2:45 | Discussion |
| 2:45-3:45 | Buffet Lunch |

CAIRO SHERATON

18-19 APRIL 2000



**LIRR
Project**

*Chemonics International, Institute for Public-Private Partnerships, and
Chemonics Egypt*

Workshop on Identifying, Appraising, and Tendering Private Sector Participation (PSP) Projects in the Water/Wastewater Sector in Egypt

Under the auspices of
H.E. Dr. Mohamed Ibrahim Soliman, Minister of Housing, Utilities, and Urban Communities
In association with
H.E. Gen. Mostafa Abd El Kader, Minister of Local Development
In collaboration with
the United States Agency for International Development

Wednesday, 19 April 2000

- | | |
|-------------|---|
| 9:00-9:30 | Overview of Day Two (Coffee/Tea) |
| 9:30-11:30 | PSP Options and Case Studies:
>>Service Contracts
>>Lease and Incentive-based Investments
>>Concessions, BOTs
- <i>Eng. Bruce Soule, Eng. Terence Driscoll, Mr. Matthew Hensley</i> |
| 11:30-12:00 | Discussion |
| 12:00-12:15 | Coffee/Tea |
| 12:15-1:15 | Post Transaction Regulation and Contract Compliance:
Techniques for Tariff Setting and Adjustment
- <i>Mr. Matthew Hensley, Mr. David Jankofsky</i> |
| 1:15-2:00 | Financial Model Demonstration/Simulation
- <i>Mr. Ned White, Mr. Matthew Hensley</i> |
| 2:00-2:30 | Discussion |
| 2:30-3:00 | Closing Remarks |
| 3:00-4:00 | Buffet Lunch
<i>Checkout for out-of-town guests</i> |

CAIRO SHERATON

18-19 APRIL 2000

Workshop on Identifying, Appraising, and Tendering PSP Projects

Cairo Sheraton

18-19 April 2000

Invited Participants

	NAME	TITLE
<i>GOE CENTRAL LEVEL</i>		
1.	H.E. Dr. Mohamed Ibrahim Soliman	Minister, Housing, Utilities, and Urban Communities
2.	H.E. Gen. Mostafa Abd El Kader	Minister, Local Development
3.	Eng. Magd El Din Ibrahim	Deputy Minister, Housing, Utilities, and Urban Communities
4.	Eng. El Shafei El-Dakroury	Chairman, NOPWASD
5.	Eng. Fathi Qozman	Vice Chairman, CAD
6.	Eng. Sherif Lotfi	Vice Chairman, NUCA
7.	Eng. Hussein Hosny	Chairman, CWO
8.	Mr. Fathi El Sheikh	First Undersecretary, Ministry of Planning
9.	Eng. Gamal Mohamed Ahmed	First Undersecretary, Ministry of Planning
10.	Acct. Helmy Zein El Din	First Undersecretary, MHUUC
11.	Mr. Mohamed Nashat	First Undersecretary, President, Financing Sector, Ministry of Finance
12.	Dr. Beyaly El Beyaly	Executive Director, PSP Unit
13.	Eng. Samy M. Omara	Deputy Chairman, NOPWASD
14.	Eng. Mohamed Abd El Daim	Deputy Chairman for Economic Affairs, NUCA
15.	Eng. Essam Rashad	Head, Housing & Utilities Sector, MHUUC
16.	Eng. Ossama Abd El Rahman	General Manager of International Cooperation, NOPWASD
17.	Eng. Samira Nicola	Head of Central Dept. For Research & Studies, NOPWASD
18.	Eng. Seham Khalifa	President, Research & Studies Organization, MHUUC
19.	Eng. Zeinab Nabih Mounir	CWO, General Manager, Technical Office
20.	Eng. Magda Abd El Moula	General Manager, Utilities Department, MHUUC
21.	Eng. Mohamed Safar	Deputy Head of Construction Dept., NOPWASD

GOE LOCAL LEVEL (in alphabetical order by governorate)

22.	Eng. Hassan El Hekaa	Chairman, AGOSD
23.	Eng. Nabil Shehata	Director, Technical Office, AGOSD
24.	Eng. Hassan El Shafei	Chairman, AWGA
25.	Eng. Hassan Sabalek	Chairman, Aswan W/WW Authority
26.	Eng. Mahmoud Mansour	Chairman, Beheira Water Company
27.	Eng. Taha Shehata	Chairman, Beni Suef W/WW Authority
28.	Eng. Mohamed El Said Youssef	Chairman, CGOSD
29.	Eng. Hassanein El Shihawy	Chairman, GOGCWS
30.	Eng. Ahmed Kadry	Chairman, Damietta Water Company
31.	Maj. Gen. Ahmed Amin Abdeen	Chairman, Daqahliya W/WW Authority
32.	Eng. Mamdouh Barakat	Chairman, Fayoum W/WW Authority
33.	Eng. Abd El Mohsen Dawood	Chairman, Gharbiya W/WW Authority
34.	Eng. Abd El Monem Zalouk	Chairman, Kafr El Sheikh W/WW Authority
35.	Eng. Mohamed Abu Zeid	Manager, Luxor W/WW Utility Department
36.	Eng. Samir Hassan Abu Ellil	Secretary General, Minya Governorate
37.	Eng. Hassan Abdel Aziz	Head, 6th of October City
38.	Eng. Fawzy El Zoghby	Deputy Head, 6th of October City
39.	Ms. Safaa Mohamed Abd El Moez	GM, Finance & Administration, 6th of October City
40.	Eng. Mohamed El S. Hamad	Chairman, Sharqiya W/WW Authority
41.	Eng. Adel Mahrous	Manager, South Sinai W/WW Utility Dept.
42.	Eng. Saber el Sayed el Morsi	Deputy Manager, South Sinai W/WW Utility Dept.

OTHER INTERESTED PARTIES

43.	Mr. Peter Flik	First Secretary, Land and Water Development, Royal Netherlands Embassy
44.	Mr. Ayman Khoudeir	Program Officer, Water Sector, Royal Netherlands Embassy
45.	Dr. Tarek A. Morad	Senior Program Officer, Development Cooperation Section, Royal Netherlands Embassy
46.	Mr. Aly El-Kirdany	Senior Technical Advisor, Royal Danish Embassy

47.	Dr. Diaa El Monayeri	Consulting Engineer, EnviroCivec
48.	Mr. Samuel Coxson	Chief of Party, Middle Egypt Institutional Development Project, PADCO
49.	Dr. James Westfield	Project Director, AWGA ISC Project, Hagler Bailly
50.	Mr. Richard Robinson	Senior Financial Advisor, AGOSD ISPR Project, CH2Mhill-Chemonics
51.	Mr. John Rattray	Project Director, AWGA Water Master Plan Project, CDM
52.	Dr. Fernando Bertoli	Chief of Party, Secondary Cities Project, Chemonics
53.	Mr. Jeffrey Hendrich	Chief of Party, Middle Egypt Master Plan Project, Harza
54.	Eng. Tarek Selim	Senior Institutional Specialist, FORWARD Project
55.	Dr. Amr Hassanein	Senior Financial Advisor, FORWARD Project, FINBI
56.	Mr. Magued Mansour	Senior Financial Advisor, FORWARD Project, FINBI
57.	Eng. Yossef Naguib Iskaros	Vice President, ECG Consulting Office
58.	Eng. Gen. Omar El Farouk	Deputy Director, Canal Cities Project, Black & Veatch International
59.	Mr. Robert Wagner	Managing Director, Privatization Coordination Support Unit, CARANA Corporation
60.	Gen. Farouk el Sheikh	Project Coordinator, MEUIS Project

USAID

61.	Mr. Mark Silverman	Associate Director, USAID/Egypt
62.	Mr. James Harmon	Director, Water/Wastewater Division
63.	Mr. Timothy Alexander	Water/Wastewater Division
64.	Mr. Glenn Whaley	Water/Wastewater Division
65.	Mr. Mohamed El Alfy	Water/Wastewater Division
66.	Mr. Mamdouh Raslan	Water/Wastewater Division
67.	Mr. Moenes Youannis	Water/Wastewater Division
68.	Mr. Medhat Wissa	Water/Wastewater Division
69.	Mr. Adel Halim	Water/Wastewater Division
70.	Mr. Wassim Daniel	Water/Wastewater Division
71.	Mr. Abu El Maaty Omar	Water/Wastewater Division
72.	Ms. Noha El Maraghy	Water/Wastewater Division
73.	Ms. Wafaa Faltaous	Water/Wastewater Division

74.	Mr. Robert Hanchett	Water/Wastewater Division
75.	Mr. Mostafa Dahy	Water/Wastewater Division
LIRR Project (presenters)		
76.	Mr. Matthew Hensley	Chief of Party
77.	Ms. Neda Nahas	Deputy Chief of Party
78.	Dr. Ahmed Gaber	Senior Policy Advisor
79.	Eng. Mohamed Ashmawi	Senior Technical Advisor
80.	Eng. Terence Driscoll	Senior Technical Advisor
81.	Mr. Ned White	Senior Macro Economist
82.	Eng. Bruce Soule	Senior Environmental Advisor
83.	Mr. David Jankofsky	Senior Regulatory Specialist
84.	Eng. Ashraf Khalil	Senior Technical Advisor
85.	Dr. Hani Sarie El Din	Senior Legal Advisor
86.	Dr. Yohannes Kassahun	Senior Legal Advisor
87.	Mr. Tony Stellato	Institutional Development Specialist
88.	Eng. Samir Badr El Din	Senior Technical Advisor

Keynote Speech by H.E. Dr. Mohamed Ibrahim Soliman

Arab Republic of Egypt

Ministry of Housing, Utilities and Urban Communities
Minister's Office

Thanks to:

General Mostafa Abd El Kader
Mr. Mark Silverman

Minister of Local Development
Associate Director of USAID/Egypt

It is my pleasure and honor to share with you the workshop that was organized by the *Institutional Development for Water & Wastewater Sector Project* in cooperation with the *United States Agency for International Development in Egypt*.

The water and wastewater sector is one of the most important sectors in Egypt, as it serves our most basic requirement. Therefore, investment in the water and wastewater sector is of great economic interest for its social, health, and economic benefits.

In the past two years, the government has accomplished a great leap in the provision of water and wastewater services. The percentage of beneficiaries of pure drinking water has reached about 85%; hence, the rate of water coverage in Egypt has become similar to rates of countries with higher per capita income.

The sector is still in need of more, however, because coverage rate is only one aspect that interests the government. The Government of Egypt is also targeting continuity of water service and water pressure with the least possible rate of loss. This means increasing water share per person to international levels, and efficiently collecting and treating wastewater in line with water system development.

The increase and development of water and wastewater services are very important for national growth in all areas. Safe and clean water will help in decreasing child mortality rate, as well as have a positive effect on health and productivity. Furthermore, providing Egypt's cities, villages and *marakez* with clean water is a means to reducing suburban/urban migration, and will assist in a more geographically positive distribution of development. The success of the new urban communities and the expansion into the desert depends largely upon new water projects.

It is noteworthy that it is impossible for development and expansion of water service to take place without similar development in wastewater. This means that developing the

first one will not just be a solution for a public health problem, but may create another problem affecting health and environment.

Investments in projects in this sector have reached LE 43 billion since 1981. Still, funding is the greatest challenge for development and expansion in the provision of service. It is estimated that, in order to reach comprehensive coverage of water and wastewater services in Egypt by the year 2017, the sector requires investment of about LE 30 billion.

As you all know, the water and wastewater sector is undergoing tremendous change. The Government is trying to balance its capital while at the same time decreasing foreign aid. Therefore, the main sources of funding for development projects in water and wastewater sector necessitate a search for new non-traditional sources of funding.

Private Sector Participation, is a new "technology" being used to invest in utilities, and has become a necessity more than an option for the development of the sector. Therefore, our interest in attracting and encouraging such cooperation is one of the primary objectives among our efforts to improve the sector. Cooperation is an essential component of the development process.

Private Sector Participation, in the form of enhancements for some existing projects, might help to provide utilities with the necessary funds. Other ways to fund new projects, such as the BOT system, will create the opportunity to distinguish between funds for the proposed special project and funds for utilities. It is worth noting that the application of such project funding techniques on service and management contracts is among the main topics of this workshop.

There is no sector in Egypt that cannot make use of Private Sector Participation in one form or another. It is true that such participation cannot replace general investment in the sector, but it will certainly relieve some pressure on the government.

As previously mentioned, Private Sector Participation is a "technology" that requires special talents. As you will see, it will require all of us to understand the definitions of financial and economic analyses, and to apply them to planning for general investment.

In closing, I hope that this workshop will fruitfully end by full awareness of such definitions. Therefore, do not hesitate to ask questions so we will leave the workshop with greater ability and knowledge to identify, evaluate, and tender projects for Private Sector Participation in accordance with the needs of water and wastewater sector.

Objectives of the PSP Workshop

- Provide GOE participants exposure to international best practices from around the world
- Examine planning, structuring, and procurement strategies and techniques
- Provide insight on fashioning a policy and institutional framework to coordinate and manage PSP projects to financial closure

1

Characteristics of Successful PSP Programs Around the World

- Legal and Regulatory Framework in place prior to initiating PSP Transactions
- Establishment of a PSP Unit responsible for coordinating and managing the process
- Creation of an independent regulatory agency to transparently introduce cost recovery and commercial tariffs
- Detailed screening criteria of pilot projects prior to initiating bidding process

2

Characteristics of Successful PSP Programs (Cont.)

- Discourage or prohibit procuring PSP projects on an unsolicited basis
- Establish a “watchdog” office in MOF to ensure that Government agencies are receiving “value for money” on PSP
- Investment in training to build capacity at the national and local levels yields substantial dividends

3

Use PSP and Regulation to Drive Overall Sectoral Improvement

- Targeting subsidies to low income users promotes efficient pricing and conservation
- Long-term thinking must include a vision for an efficient market structure: public and private sector working to improve service
- Decentralization and autonomy promote accountability and corporate governance
- Focus is on customers and competition

4

Rationale for Private-Sector Participation (PSP) Projects In Environmental Infrastructure

1

Current Situation -- I

- Water
 - Inadequate Facilities & Coverage
 - Inadequate Sources/Lack of Protection
 - Poor Treatment/System Performance
- Wastewater
 - Inadequate or Absent
 - Polluted Rivers
 - Public Health Threat

2

220

Current Situation -- II

■ Solid Waste

- Lack of Adequate Collection
 - Unsuitable Disposal
 - Inappropriate Technology
-



Need for Capital and Expertise

3

But Where and How ?

■ Traditional Financing Sources

- National Government
- Local Government
- National Banks
- Development Banks
 - ┆ World Bank
 - ┆ ADB
 - ┆ Other

4

Problems With Traditional Funding Sources

- Government
 - ✓ Infrastructure Needs Too Great
 - ✓ Projects Often Funded Year-to-Year or Not At All
 - ✓ Little Focus on Improved Utility Efficiency
 - ✓ Inappropriate Subsidy of Users

5

Problems With Traditional Funding Sources

- National Banks
 - ✓ Infrastructure Needs Too Great
 - ✓ Long Investment Periods
 - ✓ Collateral/Ownership Issues
 - ✓ Terms Unattractive

6

Problems With Traditional Funding Sources

- Development Banks
 - ✓ Require Sovereign Guarantee
 - ✓ Government Must Allocate Reserves
 - ✓ Little or No Utility Optimization Possible

7

Private Sector Participation

- Source of Financing
- Source of Expertise
- Price Guarantee
- Performance Guarantee
- No Sovereign Guarantee (Usually)

8

Private-Sector Participation--How To Succeed

- Selection Process is Critical to Success
- Choice of Firm is Critical to Success
- PSP More Complicated & Less Forgiving
 - ┆ Long-term Agreements
 - ┆ Bonds Required (Bid & Performance)
 - ┆ Specific Performance Demanded
 - ┆ Liquidated Damages
 - ┆ Obligation of Public Sector to Raise Tariffs as Required

9

Purpose of Seminar

- Benefit from PSP Experience of Others
 - ┆ Institutional
 - ┆ Regulatory
 - ┆ Legal
 - ┆ Project Level
 - ┆ Fair Contract with Experienced Partner
 - ┆ Sharing of Risk
 - ┆ Best Performance at Lowest Cost
 - ┆ "Win-Win-Win"

10

The Rationale, Record, and Techniques of Public-Private Partnerships in Water and Wastewater Infrastructure

1

The International Record on Private Sector Investments in Infrastructure

- ◆ Currently over \$60 billion per year
 - ◆ SECTORS
 - ◆ Telecom
 - ◆ Power
 - ◆ Transportation
 - ◆ Water & Wastewater
 - ◆ Average Project Size : \$300 million
 - ◆ Average Water Project Size: \$50 million
- | <u>WHERE?</u> |
|-----------------------------|
| ◆ Asia: 30% of new projects |
| ◆ North America: 22% |
| ◆ OECD Europe: 21% |
| ◆ Latin America: 18% |
| ◆ East Europe & NIS: 5% |
| ◆ Mid-East & Africa: 4% |

2

225

Reasons for Poor Performance in Water Services

- ◆ Delivery of water & sanitation services usually occurs without competition
- ◆ Individuals & organizations responsible for managing & delivering services are not given incentives
- ◆ Users are not involved in the process*

(*Source: World Bank, World Development Report 1994, Infrastructure for Development)

5

Debate: Public vs. Private

Arguments for Privatization

- ◆ "Private sector is more efficient, has better management & technology"
- ◆ "Privatization and take loss-making enterprises off of Government's books."
- ◆ "Privatization can increase Government revenue through high selling prices."
- ◆ "Privatization will give enterprises access to new sources of finance."
- ◆ "The Private Sector can implement and construct projects faster than the Government."
- ◆ "Privatization helps the country's private sector growth faster."

Arguments against Privatization

- ◆ "Private sector only cares about profits and thus will not provide services to the poor or protect the environment."
- ◆ "If an SOE is profitable, Government should hold onto it."
- ◆ "Important sectors of the economy are part of the national patrimony and therefore should belong to Government."
- ◆ "The private sector in our country does not have any experience in managing certain public services."
- ◆ "Privatization will cause lay-offs."
- ◆ "Privatization will make services available only to the rich, not the poor."
- ◆ "By selling, the Government will not be able to get back all of the money it put into the enterprise."

6

The Nature of Goods & Services

(What should the role of Government be?...)

EXCLUSION

- ◆ How well can the seller of the good/service enforce payment by the buyer?

◆ *Feasible vs. Infeasible*

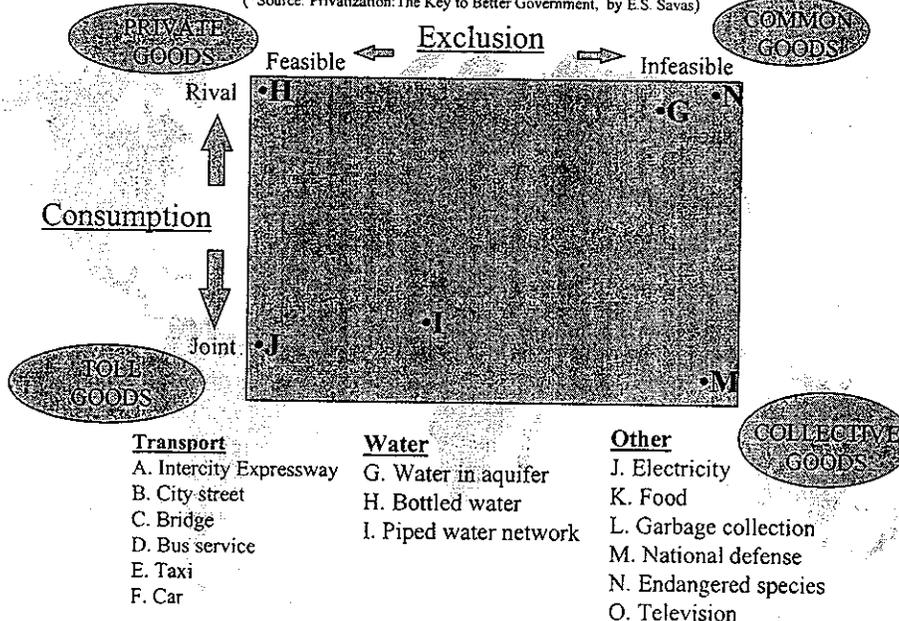
CONSUMPTION

- ◆ Does one person's consumption of this good/service limit the ability of another person to consume that good/service?

◆ *Rival vs. Joint*

Characteristics of Goods & Services: Exclusion vs. Consumption*

(*Source: Privatization: The Key to Better Government, by E.S. Savas)



What should the role of Government be in the provision & consumption of goods & services?

Type of Good	Problem	Role of Govt.?
--------------	---------	----------------

Private Good

Toll Good

Common

Good

Collective

Good

9

International Trends that make Public-Private Partnerships in Water Services Feasible

- ◆ Limited public works budgets & end of sovereign borrowing
- ◆ Combinations of high population growth and high economic growth
- ◆ Competitive international market for construction and equipment supply
- ◆ Technological advances in water & waste treatment
- ◆ Successful demonstration projects

10

Reasons for Public-Private Partnerships in Water Services

- ◆ Improved Efficiency & Service
- ◆ Additionality
- ◆ Avoided Costs
- ◆ Technology Transfer

11

“What is to be done?”

- ◆ “Manage infrastructure like a business not a bureaucracy.” Apply commercial principles
- ◆ Introduce competition whenever feasible
- ◆ Involve users and other stakeholders in the decision-making process*

(*Source: World Bank, World Development Report 1994, Infrastructure for Development)

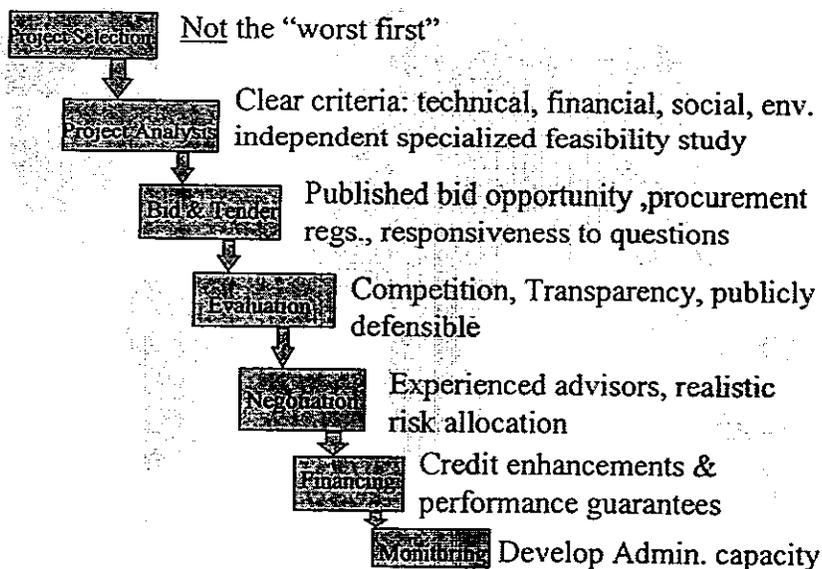
12

Critical Qualities of Government P3 Policy

- ◆ Role of Government : Long-term commitment to P3
- ◆ Clearly articulated Government objectives
- ◆ Political leadership
- ◆ Public-Private Dialogue: New Ideas
- ◆ Transparency & fairness in competition
- ◆ Process: Clear institutional roles
- ◆ Avoid conflicts of interest

13

Policies for the P3 Life Cycle



14

Forms of PSP Transactions

1

Forms of Transactions

- Design/Build (Turnkey)
- Design/Build/Operate
- BOT/BOOT
- Concessions
- Service Contract
 - Contract Operations
 - Contract Management

2

Design/Build/Operate

- Contractor (Consortium) Designs & Constructs Facility
- Lump-Sum Price
- All Public Financing of Capital Cost
- Public Sector Ownership at Acceptance
- Operation (Optional) for Lump-Sum

3

Design/Build/Operate

Public Financing Available
Specific Scope of Work
Best for New Facilities

- Advantages:
 - Public Freed of Commercial Risk
 - Debt Financing May Be Cheaper than Equity
- Disadvantages
 - More Difficult for Upgrades

4

Build-Operate-Transfer (BOT)

- Consortium Designs, Constructs, Finances & Operates Facility: 10--25 Year Contract
- Lump-Sum Price ("Take or Pay")
 - ┆ Fixed Payments Begin at Construction Completion
 - ┆ Operation Payment Adjusted According to Demand, Inflation, & Currency
- Public Sector Ownership at Acceptance (vs BOOT)
- Transfer at Contract End:
 - ┆ Retain Private Operator
 - ┆ Tender Operation to Other Bidders
 - ┆ Public Operation of Facility

5

Build-Operate-Transfer

Public Financing Unavailable
Specific Scope of Work
Best For New Facilities

- Advantages:
 - ┆ Public Freed of Commercial Risk
- Disadvantages
 - ┆ More Difficult for Upgrades/Additions
 - ┆ Larger Companies/Consortiums
 - ┆ Take or Pay Clause

6

BOT Take Or Pay Clause

- Government Agrees To Pay Private Sector For Minimum Demand At Guaranteed Price
 - Demand Forecast Is Most Critical Element of Feasibility Study
 - Major Risk in BOT Projects
 - Often Required By Lenders

7

Concessions

- Used in Large Projects with Comprehensive Scope Including Billing and Collection
- Consortium Designs, Constructs, Finances & Operates All Facilities: 20--30 Year Contract
- Lump-Sum Price or Adjusted Through Negotiations
 - Price Often Quoted as a Tariff
- Public Sector Ownership of Facilities

8

Concessions

Imprecise Scope of Work

Comprehensive Scope of Services

Addressing Long-Term Needs

■ Advantages:

- ┆ Responsibility for All Services
- ┆ No "Take or Pay" Clause

■ Disadvantages

- ┆ Tender Difficult/Complex Contract
- ┆ Existing Employees ?

9

Service Contracts

- Also Termed "Contract Operations"
- Contractor Performs Operations Function Only --
-- No Capital Provided
- Lump-Sum But Adjusted for Demand, Inflation,
& Currency Fluctuations
- "Maintenance Bank" Used
 - ┆ Maintenance Set Aside as Allowance
 - ┆ Contractor Receives What is Spent

10

Service Contracts

- Little or No Capital Required
- Utility Optimization Desired:
 - Lower Operating Costs
 - Improved Quality
 - Higher Technology
- Shorter-Term: 5 - 7 Years

11

Service Contracts

- Advantages:
 - Utility Optimization
 - Transfer Risk to Private Sector
 - Fixed Cost
 - Savings Can Be Provided Up Front (Discounted)
- Disadvantages
 - Staff Layoffs Possible
 - Loss of Control?

12

Service Contracts

■ Upfront Payment Example:

- City Operates Facility for \$2 M/Year
- Service Contractor Offers \$1.5 M for 5 Years
- \$0.5 M per Year Savings or \$2.5 M Overall
- City Receives, Say, \$1.5 M on Contract Signing and City Retains Same Tariff

Preparing Feasibility Studies & Tender Documents for PSP Transactions

Engineering/Planning Issues

- Demand for Service--Accuracy is Critical
 - Master Plans/Facility Planning
 - 20 - 30 Year Projections
 - I Population/Commercial/Industrial Growth
 - I Usage (water, wastewater, solid waste volume)
 - I Long-term Improvements in Efficiency
 - **Nonrevenue Water Reduction**
 - **Infiltration/Inflow Reduction**
- ⇒ Think of It As Your Revenue Projection

Engineering/Planning Issues

- Age and Capacity of Existing Facilities
- Resources Available to Execute PSP:
 - Municipal Staff
 - ┆ Size of Staff
 - ┆ Capabilities (Engineering/Operations/Contracts)
 - Local Consultants
 - International Consultants

3

Engineering/Planning Issues

- Municipality's Current Financial Position over Past 3 - 5 Years:
 - Profitability
 - Cash Flow
 - Tariff Level vs. Ability to Pay
 - Accounts Receivable Levels

4

Evaluating Potential Strategies for PSP Projects

- Conventional Procurement
- Build-Operate-Transfer (BOT)
- Concession
- Lease/Purchase
- Management Contract
- Service Contract

5

Project Life Cycle

- Project Identification/Prefeasibility Study
- Feasibility Study
- Prequalification of Prospective Tenderers
- Issue Tender Documents
- Evaluation and Award
- Negotiation of Final Contract

6

Project Identification/ Prefeasibility Study

- Purpose of Facility
- Size/Capacity of Facilities
- Technology Assessment
- Location of Facilities
- Preliminary Cost Estimate ($\pm 30\%$)
- Tariff Projection and Feasibility Determination
- Offtake Agreements
- Government Approvals

7

Feasibility Study Elements

- | | |
|----------------------------|---|
| ■ Detailed Demand Forecast | ■ Soils Data |
| ■ Technology Selection | ■ Preliminary Drawings |
| ■ Materials Balance | ■ More Detailed Cost Estimate ($\pm 20\%$) |
| ■ Site Data | ■ Tariff Projection and Final Feasibility Determination |
| ■ Layout of Facilities | ■ Environmental Assessment |
| ■ Building Elevations | |

8

Prequalification of Vendors

- Identify Screening Criteria:
 - Prior Experience on Similar Projects
 - Financial Stability
 - Current Backlog
 - Ability to Execute Project
- Request for Qualification
- Screen According to Established Criteria
- Weighted Vs. Unweighted Criteria
- Select "Short List" (3 - 5 Firms)

9

Content of Tender Documents

- Detailed Scope of Work
- Special Requirements
- Specific Project Schedule
- Bonding Requirements
- Liquidated Damages
- Alternate Technology Allowed
- Proposed Equipment List

10

Content of Tender Documents

- Proposed Contract
- Proposed Payment Terms
- Project Management Requirements
- All-Inclusive Price
- Alternate Bid Price
- Financing Arrangements
- Startup Requirements
- Acceptance Criteria

11

Evaluation and Award (Two Envelope Tender Process)

- Open Technical Proposals:
 - I Review Technical Proposals
 - I Responsiveness to Scope
 - I No Carryover of Qualifications Scores
 - I Rank Technical Proposals on Pass-Fail Basis
 - I Bid Bond Should Be Included

12

Evaluation and Award (Two Envelope Tender Process)

- **Open Financials of All Qualified Bidders**
- **Public Opening**
- **Resolve Outstanding Questions/Problems**
- **Select Lowest Responsive Bidder**
- **Notify All Bidders of Ranking**
- **Negotiate Final Contract**

Financing Structuring & Credit Enhancement Options for Public-Private Partnerships in Water Services

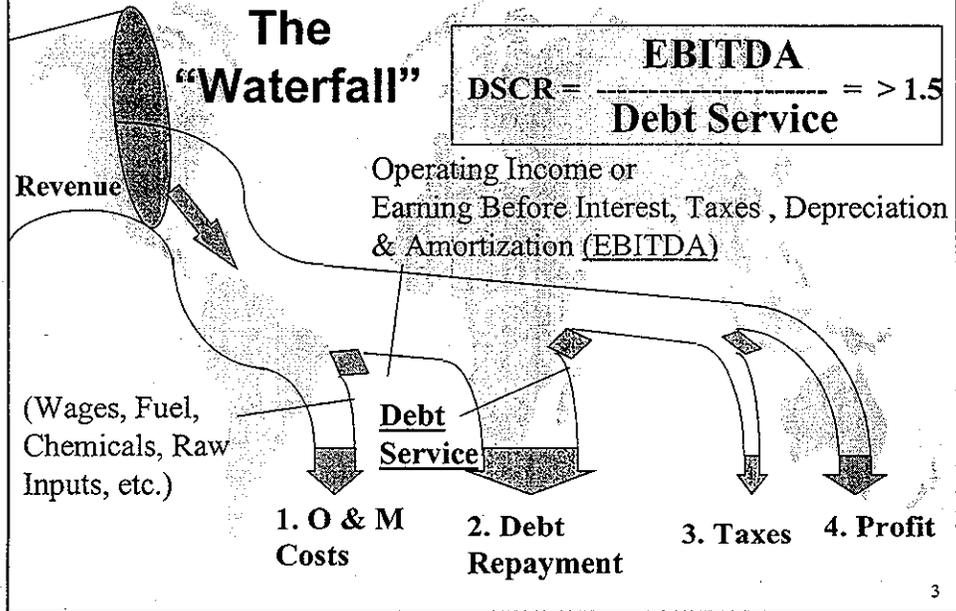
1

Financing Methods: The Lender's Perspective

- ◆ **Public Finance**
- ◆ **Corporate Finance**
- ◆ **Limited-recourse "Project Finance"**

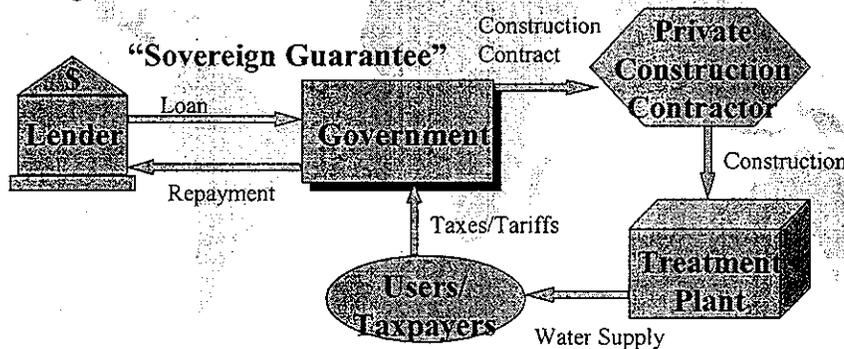
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Debt Service Coverage Ratio (DSCR)



Public Finance

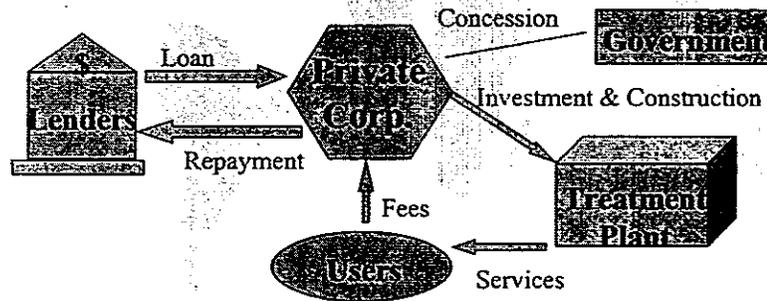
- ◆ The Government borrows funds to finance a water system or project and provides a sovereign guarantee to lenders to repay all funds. Government often contributes its own equity in addition to borrowed funds
- ◆ Lenders analyze government's total ability to raise funds through taxation and general public enterprise revenues, including new tariff revenue from the project
- ◆ Sovereign guarantee becomes a liability on Government's list of financial obligations



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Corporate Finance

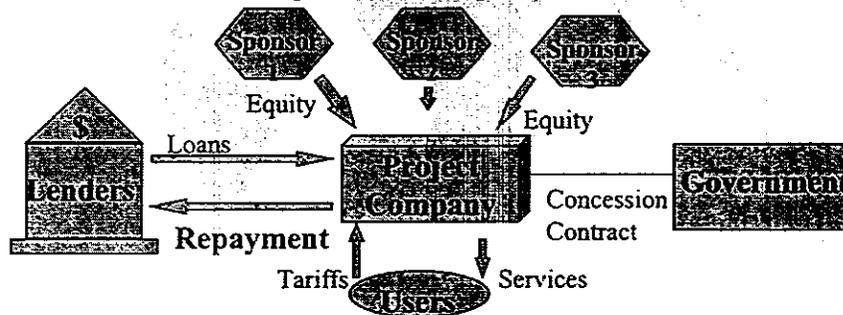
- ◆ A private corporation borrows funds to construct a new water treatment facility and pledges its assets to repay lenders from its available operating income and the assets on its balance sheet.
- ◆ The corporation may choose to contribute its own equity as well.
- ◆ In performing credit analysis, lender's look at the corporation's total income from operations, its stock of assets, and its existing liabilities.
- ◆ The loan shows up as a liability on the corporation's balance sheet ("Mining the Corporate Balance Sheet")



5

Limited-recourse "Project Finance"

- ◆ A Team or Consortium of private firms establish a new Project Company to Build-Own-and Operate a specific infrastructure project. The new project company is capitalized with equity contributions from each of the sponsors
- ◆ The Project Company borrows funds from lenders. The lenders must look to the projected future revenue stream generated by the project and the Project Company's limited assets to repay all loans.
- ◆ The host country government does not provide a financial guarantee to lenders, limited cashflow shortfall guarantess from sponsors. "Off-Balance-Sheet" financing



6

Goal: Minimizing Credit Risk

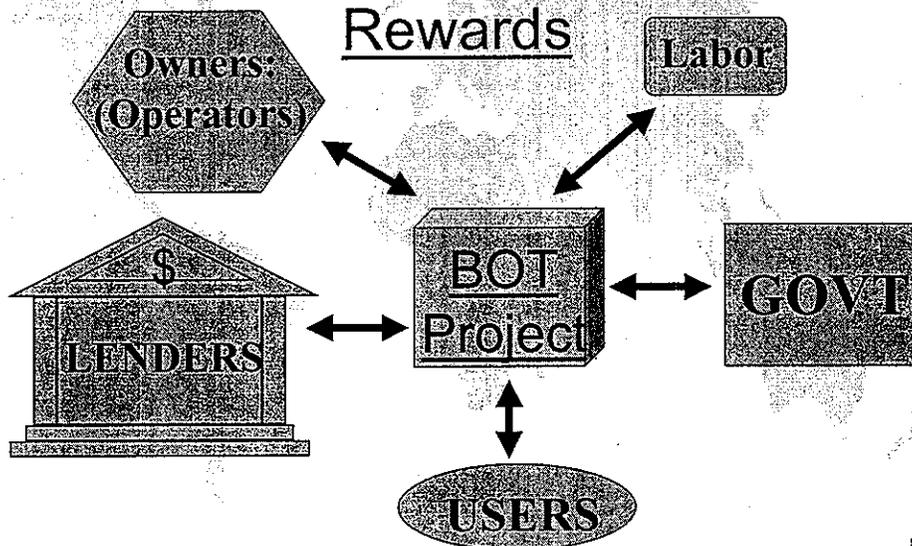
- Technology Risks
- Construction/Completion Risks
- Operating Risk
- Market Risk
- Economic Risk
- Political Risks
- Regulatory Risks
- Force Majeure Risk
- Foreign Exchange/Currency Risk
- Environmental Risks

Credit Risk

7

Infrastructure Credit Enhancement: Shifting & Balancing Risks &

Rewards



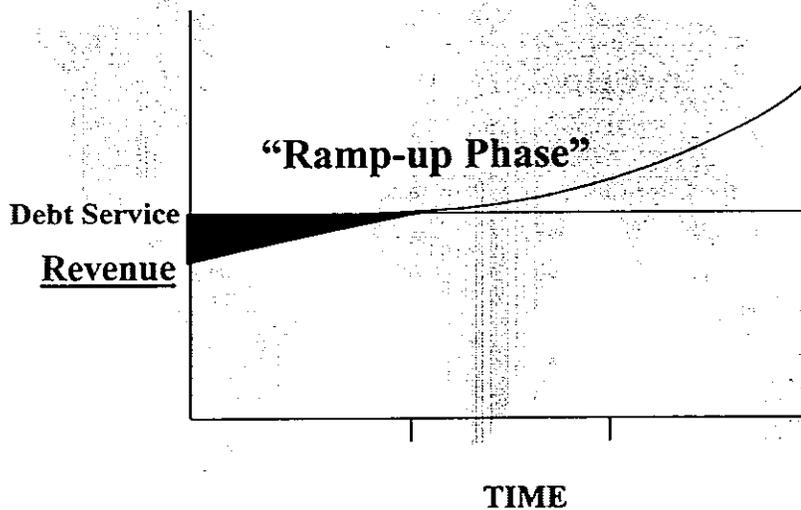
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Credit Enhancement Techniques

1. Raise Tariffs
2. Decrease O & M Costs
3. Increase Equity Investment
4. Establish a Reserve Account
5. Create Additional Sources of Revenue
6. Provide Financial Performance Guarantees
7. Create "Mezzanine" Financing/Subordinated Debt
8. Extend the Debt Term
9. Govt. Guarantee on a Tranche of Project Debt
10. Borrow with a Grace Period
11. Defer Principal Repayments

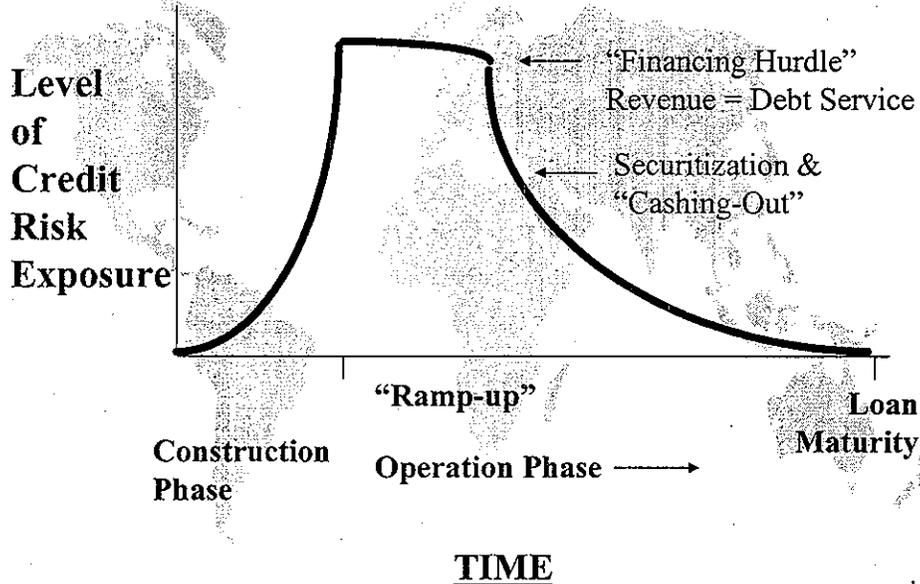
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The Infrastructure Financing Challenge:

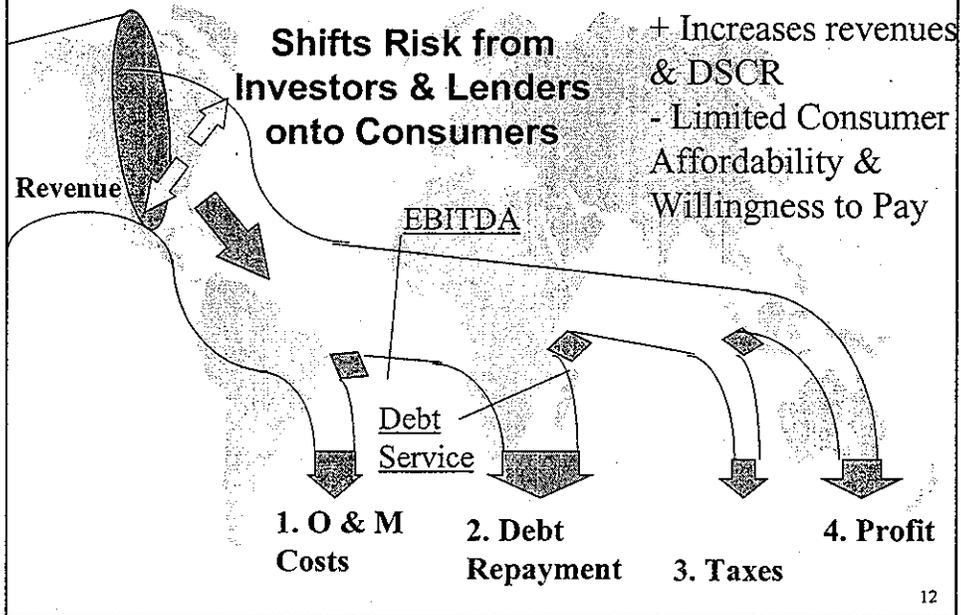


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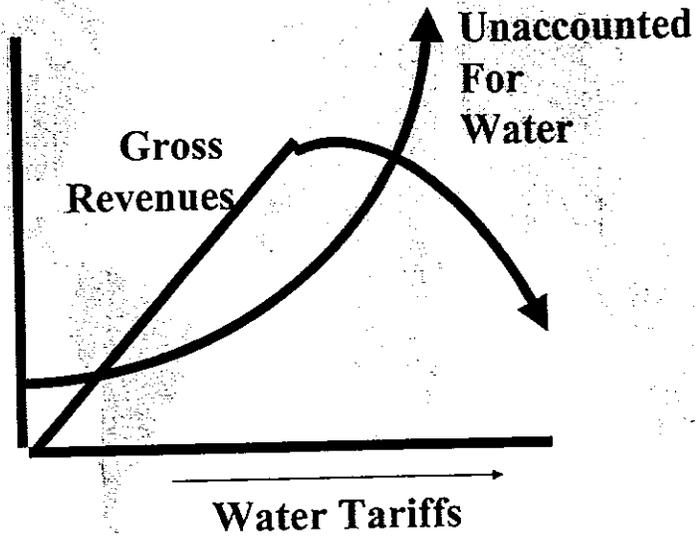
Lender's Perception of Risk



1. Increase Water Tariffs

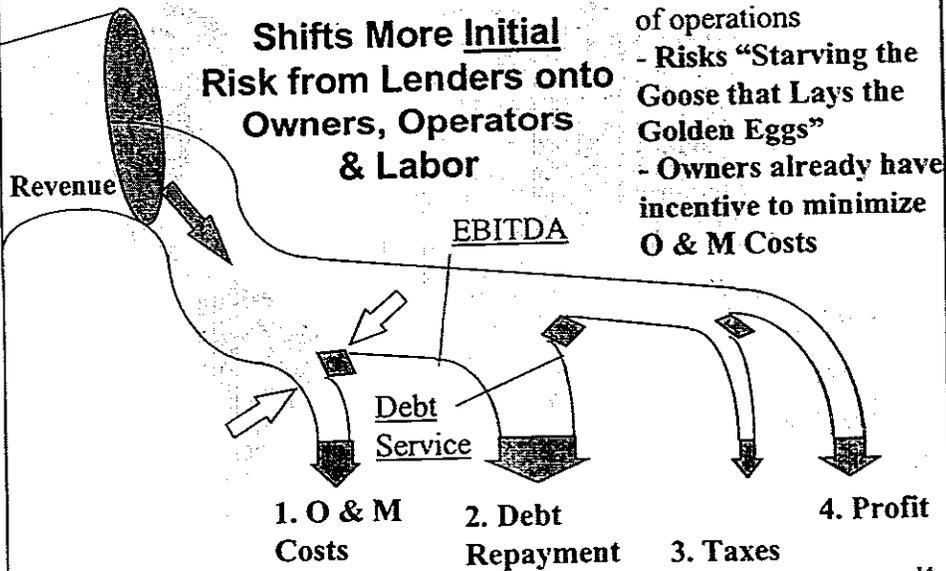


Water Affordability Constraints



13

2. Reduce O & M Costs

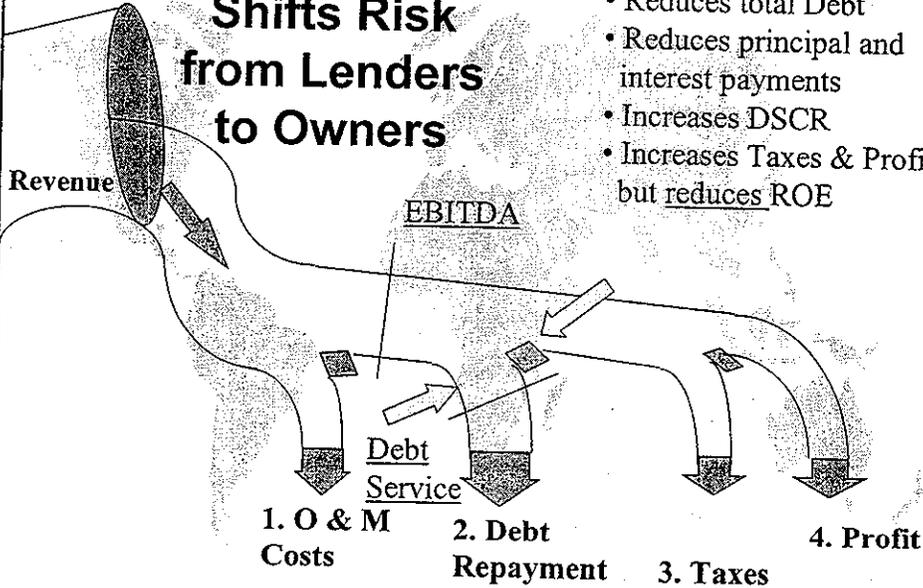


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3. Increase Equity Participation

**Shifts Risk
from Lenders
to Owners**

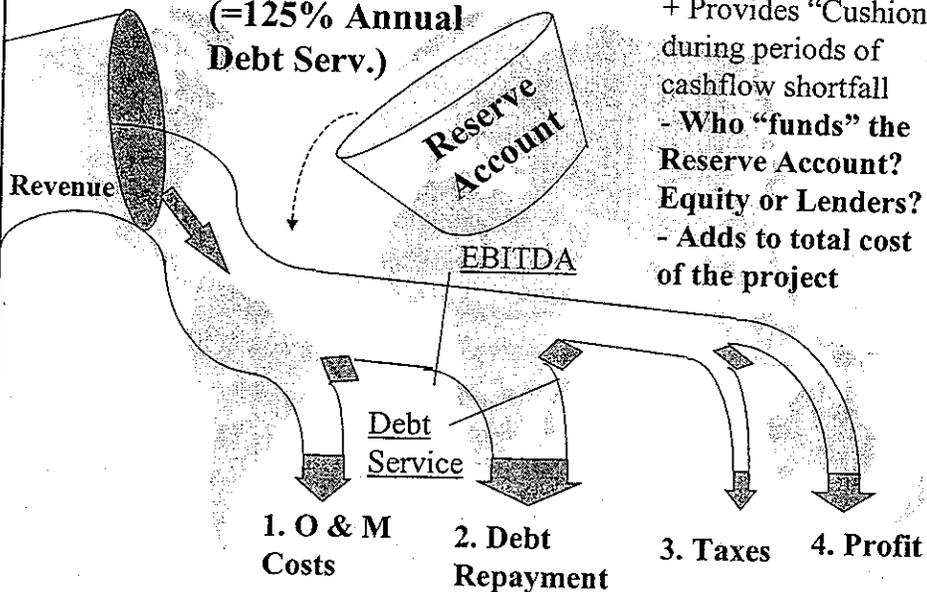
- Reduces total Debt
- Reduces principal and interest payments
- Increases DSCR
- Increases Taxes & Profit but reduces ROE



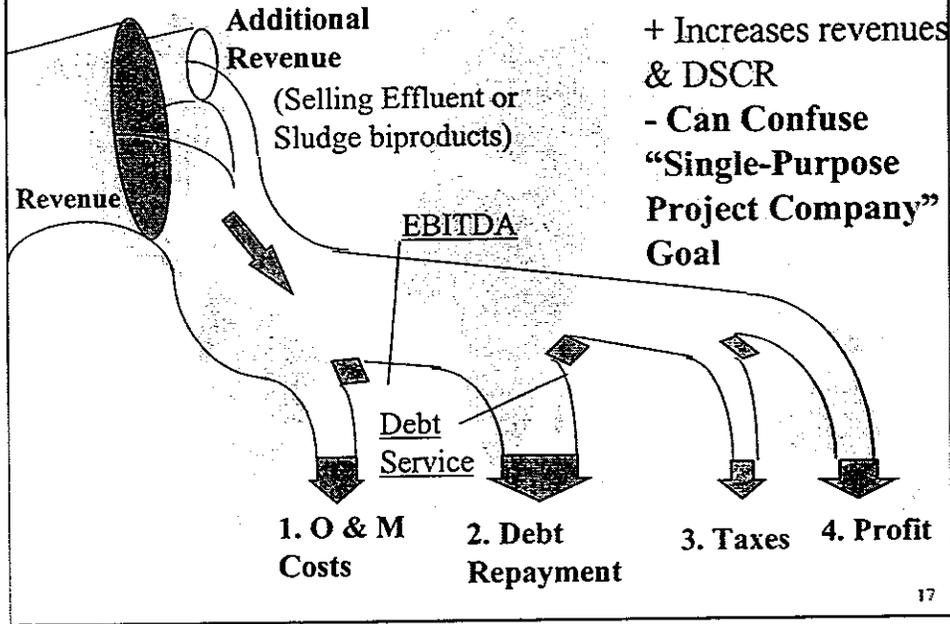
4. Establish a Reserve Account

(=125% Annual Debt Serv.)

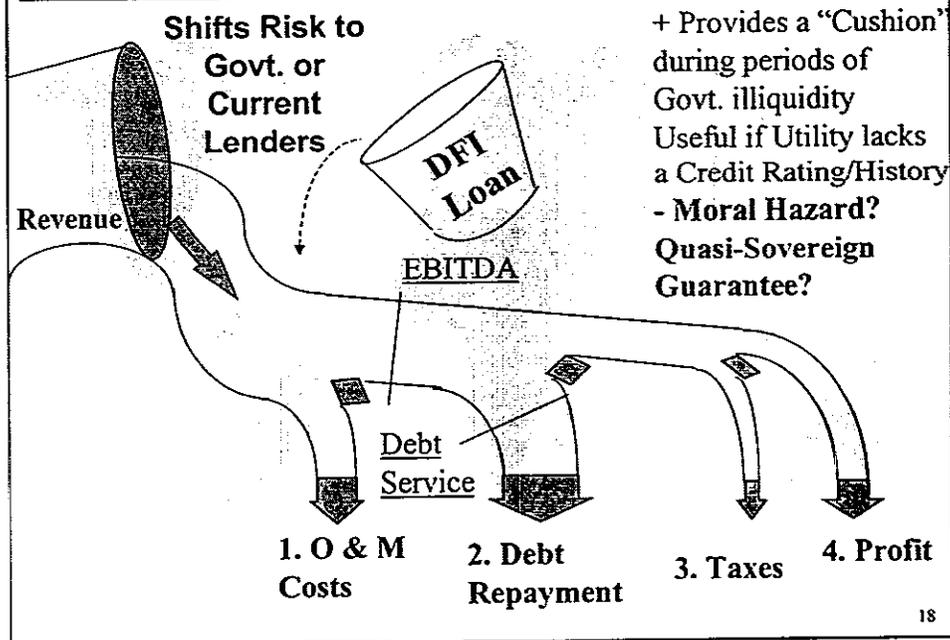
- + Provides "Cushion" during periods of cashflow shortfall
- Who "funds" the Reserve Account? Equity or Lenders?
- Adds to total cost of the project



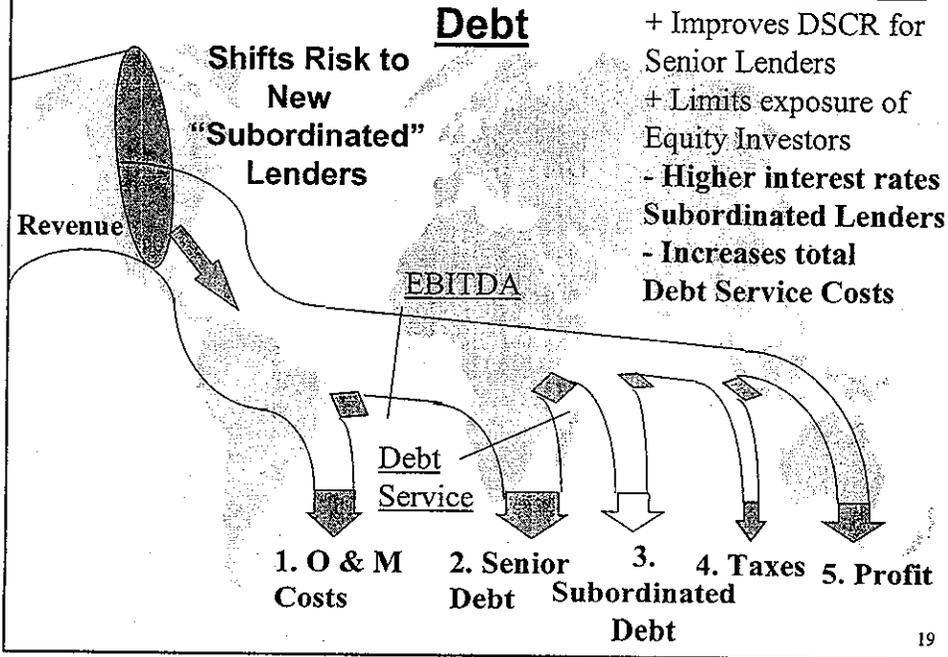
5. Create Additional Sources of Revenue



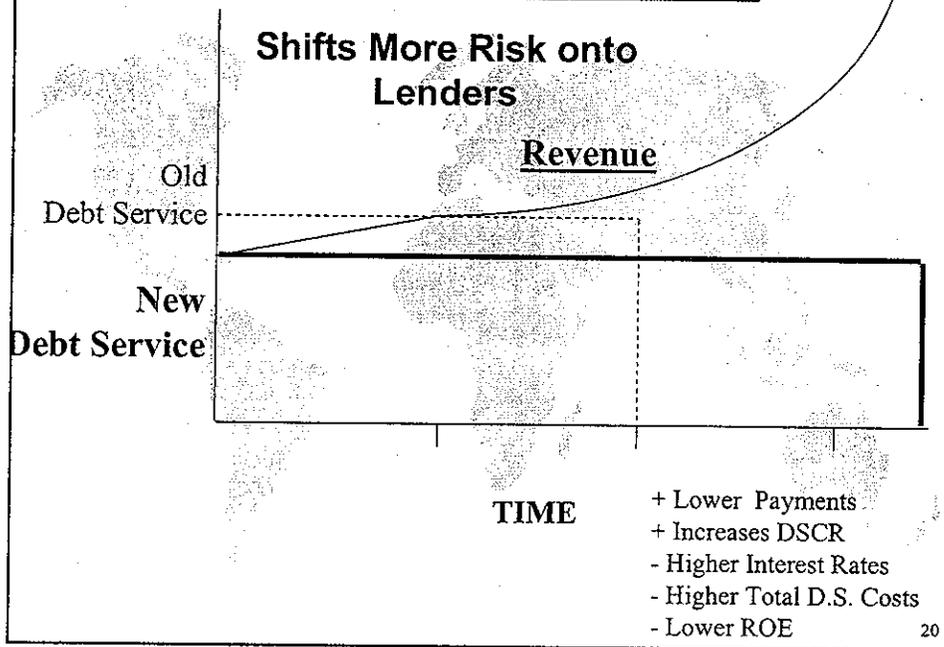
6. Financial Performance Guarantee by DFI



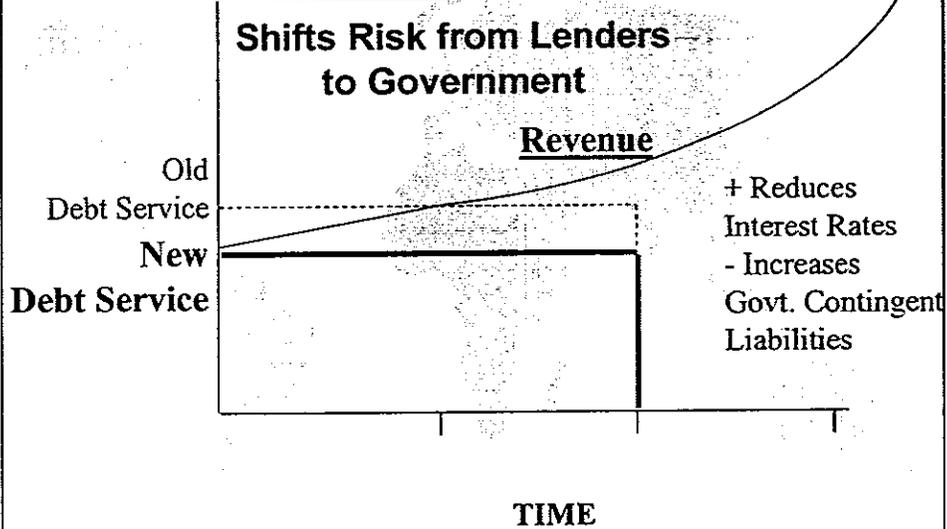
7. Create a Mezzanine Level of Subordinated Debt



8. Extend the Debt Term

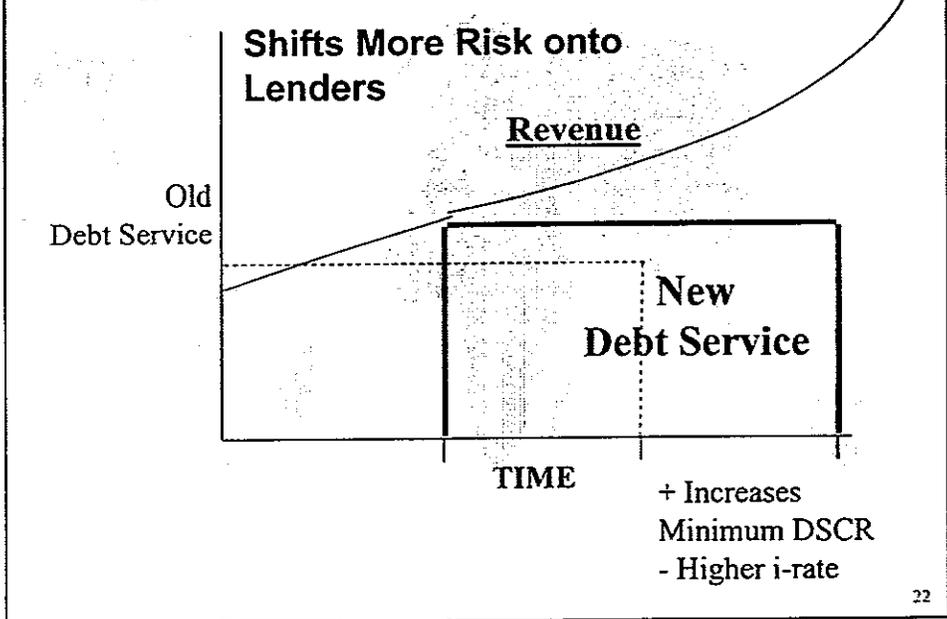


9. Provide a Govt. Guarantee on a Portion of the Debt



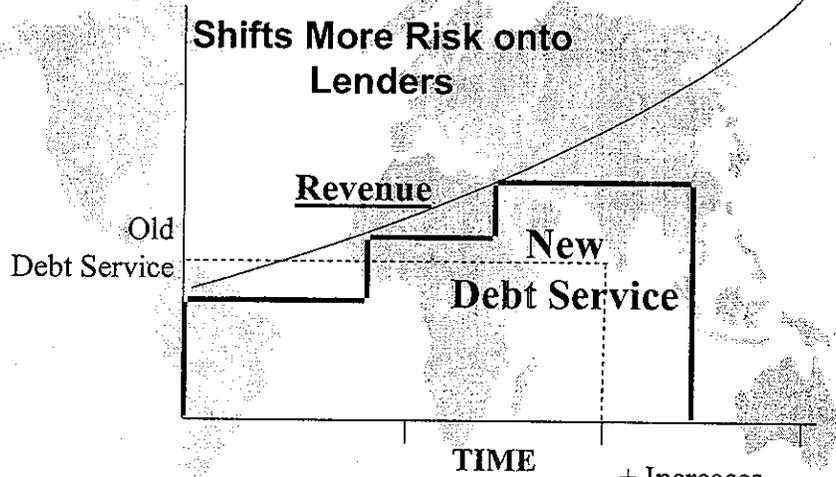
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10. Borrow with a Grace Period



22

11. Deferred Principal Payments



- + Increases Minimum DSCR
- Higher i-rate

Elements of PSP Contracts

1

Purpose of Contract

■ Defines:

- Work to Be Done and Term
- Amount to Be Paid for the Work
- Performance Standards
- Adjustments for Changes
- Allocation of Risk
- Insurance and Bond Requirements
- Termination for Cause and Force Majeure

2

PSP Contract Elements--1

- Definition of Terms Used
- Grant of Exclusivity
- Detailed Scope (Feasibility Study)
 - ┆ Areas to Be Served
 - ┆ Specific Duties
- Conditions Precedent to Contract
 - ┆ Satisfied Before Contract Commencement

3

PSP Contract Elements--2

- Conditions Precedent (Cont'd)
 - ┆ Treated Water Agreement
 - ┆ Government Authorization
 - ┆ Financing Arrangements Formalized
 - ┆ Legal Opinions Received
 - ┆ Site Acquisition Completed
 - ┆ Representations and Warranties in Effect on Commencement Date

4

PSP Contract Elements-3

- Description and Disposition of Existing Assets
- Coordination With Other Works
- Construction Standards, Procedures and Ownership

5

PSP Contract Elements-4

- Operation and Maintenance Procedures
- Overall Performance Standards
- Reporting Requirements
- Management of Project Company and Oversight Committee

6

PSP Contract Elements--5

- Side Agreements
 - Required Financial Reports of Project Company
 - Insurance Type and Coverage
 - Disposition of Personnel of Both Parties

7

PSP Contract Elements--6

- Representations and Warranties
- Liquidated Damages
- Events of Default and Termination
- Dispute Resolution
- Force Majeure

8

PSP Contract Elements--7

- Assignment of the Contract
- Changes in Project Company Structure
- Indemnification Clauses
- Consequential Damages
- Third Party Claims
- Handback Provision

9

PSP Contract Elements--7

- Changes in Law
- Entire Agreement
- Language
- Taxes

10

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Typical Contract Exhibits--1

- Feasibility Study
- Bulk Water Supply Agreement
- Description of Existing Facilities & Stores
- Licenses
- Operations and Maintenance Plan

11

Typical Contract Exhibits--2

- Performance Targets and Indicators
 - Raw and Treated Water Requirements
- Performance Guarantees and Bonds
- 5-year Investment Program and Schedule
- Legal Description of Sites and Territory

12

Typical Contract Exhibits--3

- Treated Wastewater Offtake Agreement
- Legal Opinions
- Insurance Certificates
- Customer Agreements
- Customer Tariff

Suez Concession Case Study

1

Suez Background--1

- Original Project Scope:
 - 200,000 M3/Day Water Project To Supply Potable Water To Four Industries in Suez Industrial Area
 - Industries Were Not Committed Nor Was Demand Firm or Assured in Long-Term
 - GOE Prepared To Guarantee Debt Payments
 - No Feasibility Study Prepared
 - BOT Structure Proposed

2

Suez Background--2

- Original Scope Deemed Not Feasible:
 - Only Four Customers !!!
 - No Commitment By Customers To Build
 - Questionable Demand Forecast
 - GOE Risk (Guarantee) Estimated At LE 500,000 Per Day For ? Years !
 - Project Possibly Not Capable of Being Financed
 - Fear of No Qualified Bidders

3

Suez Background--3

- Original BOT Scope Revised To Concession:
 - Includes Operation and Maintenance of Tenth of Ramadan Water Facilities:
 - Raw Water Intake
 - Two Existing Water Treatment Plants
 - Industrial Customers To Be Served When Needed From Existing and New Facilities
 - New 100 KM Pipeline When Needed

4

Suez Bid Process

- Two Envelope Process
 - Technical Proposal
 - Financial Proposal
- Technical Offers Evaluated First (6 Bids)
 - Detailed Technical Specifications Prepared
 - Offers Evaluated With Regard To Specifications
 - Little Bidder Innovation Allowed
 - Pass-Fail To Move To Financial Proposal

5

Suez Bid Process

- Technical Proposal Contents
 - Proposed Scope and Materials of Construction
 - Project Approach
 - Project Schedule
 - Proposed Organization and CVs of Staff
 - Comments on Contract
 - Verification of Bid and Performance Bonds
 - ➔ Process Required Approximately 6 Months

6

Suez Bid Process

■ Financial Proposal

- Sealed At Ministry During Technical Review
- Public Bid Opening
 - ┆ 33 Years of Tariffs
 - ┆ Electricity and Maintenance Costs Specified
- 6 Qualified Bidders (All Passed Technical Proposal)
- Lowest Conforming Bidder To Be Selected
- ➔ Process Required Approximately 1 Month

7

Suez Bid Process

■ Financial Proposal

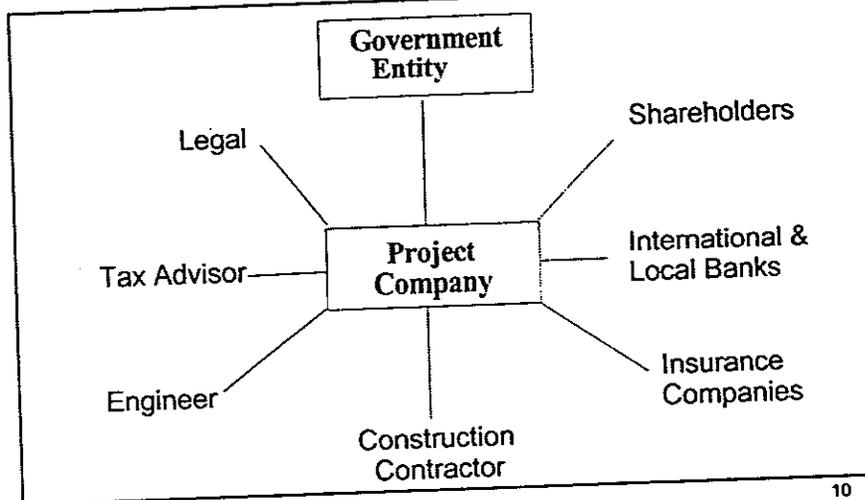
- Low Bidder
 - ┆ Price At Take Or Pay Demand
 - ┆ Lowest Net Present Value of Tariffs at Given Discount Rate (14%)
 - ┆ Specified Inflation Rate (4.5%)
 - ┆ Specified Electricity Rate (0.25 LE/Kw-hr)
- Estimated Initial Tariff--0.6 LE/Cu M

8

BOT / Concession Structure

9

TYPICAL BOT/CONCESSION STRUCTURE



10

Suez--Lessons Learned--1

- **Begin With a Feasibility Study:**
 - Detailed Demand Forecast
 - Capital and Operating Cost Estimate
 - Tariff Forecast and Affordability Determination
 - Estimate Size of Government Guarantee
- **Tender Documents Should Ask For Performance and Specify Raw Water Quality**
 - Let Private Sector Be Creative !
- **Specify Step-By-Step Bid Opening Procedures**

11

Suez--Lessons Learned--2

- **Specify Bids Be Rounded To Nearest 0.001 LE**
 - Avoid A Reason To Protest
- **Require Documents Such As Bid Extensions and Bid Security Extensions To Be Received Prior To Bid Opening**
 - Log In Time Received
 - If All Documents Not Received, Bid Is Nonresponsive

12

Suez--Lessons Learned--3

- Answer No Contractor Questions Except For Procedural Questions and Dates
 - Presence At Bid Opening Not Required
- Read First and Last Year Bids and Then Post Bids
 - Time To Read Bid Is Excessive (1 Bid=33 Numbers)
- Require Each Bidder To Have One Representative With Power-Of Attorney At Opening
 - Execute Documents At Bid Opening

13

PSP TECHNIQUES

<u>TYPE</u>	<u>TERM</u>	<u>GOAL</u>	<u>NEW FINANCE</u>	<u>EXAMPL E</u>
Service Contract	1-3 Years	Operating/Cost Efficiency in 1 subsector	Working Cap. For Contractor (\$5k - \$500k)	Santiago, CHILE
Management Contract	3-5 Years	General Operating/ Cost Efficiency	Working Cap. For Contractor (\$50k - \$1m)	Indianapolis, IN - USA
Lease	7 - 15 Years	Gen. Op. Efficiency & Profitability	Working Cap. For Utility (\$1m - \$10m)	GUINEA (\$3m)
Concession (BOT)	20 -35 Years	New L-T Investment & Profitability	New L-T Investment (\$50m-\$1b+)	Suez, EGYPT (\$120m)

Options in Public-Private Partnerships:

A Case Study- City of Indianapolis, Indiana USA

City of Indianapolis

- Population -- 800,000
- 4 Public Employee Unions Representing 70% of all city employees
- 1992: "One of the Most Efficiently Run Cities in U.S." but:
 - Unfunded Infrastructure Liabilities \$1.10 Billion
 - Unfunded Sewer Liabilities \$250 Million
 - Annual Operating Budget \$450 Million

3

Indianapolis Background

- Property Taxes Increasing
- Tax Base Departing
- 1992 Established Service Efficiency and Lower Taxes for Indianapolis Commission:
 - No Reports Just Transactions !
 - No special arrangements, just Do the Right Thing
- Active Union Opposition. Vowed to "Go down swinging"
- Managed Competition Challenge: "Talk the talk and walk the walk"

4

Wastewater Treatment Plants

- 2 Facilities @ 325 M³/second each
- History of Increasing Operating Costs:
 - \$30 Million Annual Operating Budget
 - 328 Employees
 - Sewer Rates to Increase by 38%
 - Management Contract Savings Predicted @ 5%
 - Union Proposed 10% Savings (\$3 million/year)
- City Opted to Tender Service Contract

5

Tender Results

- Two Private Bidders Proposed 44% Savings (versus 5 - 10% Projected)
- Winning Bid Saves City \$65 M over 5 Years (\$13 million/year)
- Contract Term:
 - 3 Years
 - 2 Optional Years

6

How Were Savings Achieved ?

- City Froze Hiring for 2 Years in Advance of Tender in Anticipation of Reductions
- Contractor Proposed Hiring 206 Out of Staff of 328 (63%)
- Relocated ≈122 (38%) of Workers to Other Jobs Within City or Outplacement
- Contractor Allocated \$300,000 for Outplacement of Staff to Private Sector

7

Regulation Through Contract

- Contract Designates Contract Compliance Officer
- City Can Terminate Without Cause- 90 Days
- Contractor Must Comply With U.S. Regulations
- Required Contractor Reports:
 - Monthly: Operations, maintenance, inventories
 - Quarterly: Minority Business Subcontracting
 - Annual: Contract Performance Reports

8

Regulation Through Contract

- Inception Inspection by Both City and Contractor
- Dispute Resolution: Consultation & Arbitration
- Allowance for Fee Adjustment Due to Changes in Laws

9

Regulation Through Contract

- Events of Contract Default and Remedies:
 - Contractor Default ⇒ Payment Withheld
 - City Default ⇒ Contract Termination
 - Party in Default ⇒ Reimburse Other Party Cost
- Performance Guarantee: Contractor Liable for Federal Penalties on Effluent Quality

10

Results After 6 Years

- Quality of Effluent Has Met Standards
- Major Cost Savings Have Been Realized
- Savings to City Have Funded Other Services Rather than Returned to Rate-Payers
- More Coordination Required in Regulation (Technical and Financial)
- City Extended Contract Scope (Collection System) and Term, and Renegotiated Price

11

Service Contracts:

A Case Study- Santiago Water Utility Santiago, Chile

From "Private Sector Participation in the Water Supply and Wastewater Sector. *Lessons from Six Developing Countries*", World Bank 1996

1

EMOS- Santiago, Chile

Empresa Metropolitana de Obras Sanitarias
(EMOS)

- Agency created in 1977- converted to shareholder company in 1989
- Operates utilities to provide public services:
 - Drinking Water Production & Distribution
 - Sewage Collection & Treatment
- Extensive reliance on service contracts since 1979

2

EMOS Background

- Serves Greater Santiago Area
- Plus 21 peri-urban localities
- 450 square kilometers
- 5 million inhabitants served (40% of Chilean population)
- Water Service - 100% household coverage
- Sewerage Service - 97% household coverage

3

EMOS Management

- EMOS responsibilities:
 - Overall utility management
 - System planning
 - Contracting for engineering, materials, construction services, O&M
 - Billing and collections
 - Customer service
 - Regulatory reporting

4

EMOS Contracting

- Contracting policy is to outsource specific activities to specialized private firms
- 30 activities currently under service contracts- accounts for 52% of total operating costs (\$13 million per year)
- Services include meter reading, leak detection, pipeline installation and repair, pipeline cleaning, pump station maintenance, equipment maintenance

5

EMOS Contracting cont.

- Promotes competition
- Results in reduced costs for goods and services
- Results in increased operational flexibility
- Does not contract out activities considered strategic, i.e. billing and collection, accounting.
- Contracts awarded through competitive bidding for period of two years

6

Level of Quality and Service

- EMOS today is the best performing water/wastewater utility in Chile
- Treated water/wastewater consistently in compliance with standards
- Water metering coverage is about 100%
- Ratio of employees to water connections is very low (1.9 per 1000)
- Unaccounted-for-water is below 22%
- Tariff collection rate is over 94%

7

Operational Performance Indicators

<i>Indicator</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>
■ No. of Connections					
Water	837	867	905	944	985
Sewerage	777	807	868	915	956
■ Coverage (% of all households)					
Water	99	100	100	100	100
Sewerage	91	93	95	97	97
■ Water Production (millions of Cu. M per year)	462	453	466	469	475
■ Unaccounted-for-Water %	28	27	27	24	22
■ Pipe Breaks per 100 km pipe per year	39	39	38	35	31

8

Financial Performance Indicators

<i>Indicator</i>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
(millions of dollars except as noted otherwise)					
■ After-tax profits	15	19	29	36	53
■ Real investment	19	34	51	44	46
■ Dividends paid	5	17	18	20	26
■ Operating costs per cubic meter of output	0.18	0.20	0.21	0.23	0.22
■ Unaccounted-for-water (percentage of total)	28.1	26.9	26.8	23.7	21.9

9

EMOS Success Factors

- Outsourcing of services to private firms
- Continuity of management
- Strong leadership and accountability
- Comprehensive and efficient tariff structure
- Backed by system of direct government subsidies to low-income consumers

10

Summary of Service Contracting

- Outsourcing goods and services to private enterprises can result in drastically improved service to the users
- Can result in higher operating efficiency and improved service quality
- Can result in increased revenues and decreased operating costs

11

Summary of Service Contracting cont.

- Water losses can be decreased resulting in increased revenues and postponement of new facilities
- Customer service and customer satisfaction should increase

12

Project Structuring Options Case Study:

GUINEA Water System Lease

1

Lease (Affermage)

Government, as the Lessor, "farms out" to a private Lessee responsibility for operation & maintenance, provision of working capital and short-term assets, and the retention of profits in exchange for the payment of a Lease fee (Rent). Government retains responsibility for ownership, long-term planning, and long-term capital investment.

Responsibility	Government	Private Lessee
Operation & Maintenance		
Working Cap. & Short-term assets		
Long-term planning		
Ownership of Long-term assets		
Collection of Lease Fee (% of Rev./unit)		
Retention of Net Profits		

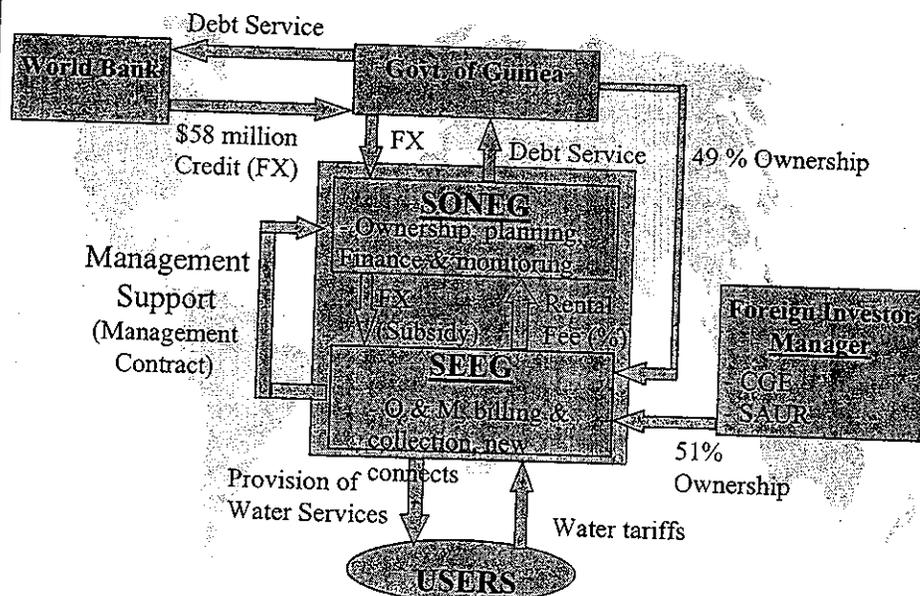
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Background: Guinea Water System

- ◆ 1987 - Less than 40% of urban population have access to piped water
- ◆ The DEG (Entreprise Nationale de Distribution des Eaux de Guinee): O & M, billing, and collection.
- ◆ The MRNE (Ministry of Natural Resources & Environment) System planning and financing.
- ◆ Problems:
 - + 40% UFW & only 5% of accounts metered
 - + Low tariffs (\$0.12/m³) cover only 15% of actual costs
 - + Lack of qualified staff
 - + Chronic shortages of foreign exchange & spare parts
 - + Large unpaid bills by private users, collection ratio < 20%
 - + Government provided annual operating subsidies

3

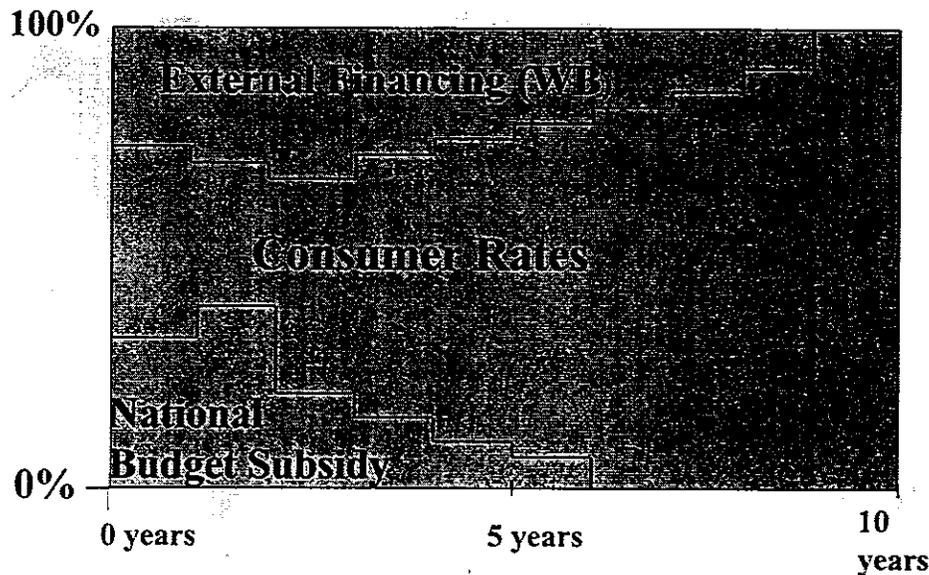
Lease Structure



4

205

Water Rates: Declining Subsidy



5

Lease Contract Conditions

- ◆ \$3.0 million in equity from FIM
- ◆ \$400,000 Performance Bond, 2 year Grace Period
- ◆ Chairman of Board of SEEG chosen by Govt.
- ◆ General Manager of SEEG chosen by FIM
- ◆ 75% of Board must approve all major decisions (Govt. retains Veto power)
- ◆ SEEG is permitted to cut off water supply for non-payment
- ◆ No consultation mechanism for investments SONEG makes, which SEEG must then operate

6

Lease Fee Mechanism

$$\text{Lease Fee} = \text{LCR}(\%) \times \frac{\text{Revs.} - \text{Costs}}{\text{Unit}}$$

Performance Improvement Options:

- ◆ Reduce UFW
- ◆ Reduce Operating Costs
- ◆ Increase Connections
- ◆ Increase Water Sales

7

Interim Results

- ◆ Foreign Investor Manager Selection - Winning LCR 30% below consultant estimates

Catagories	1989	1996
Pop. with access to safe water	37%	52%
Connections	12,000	30,500
Metering	5%	95%
UFW	40%	47%
Tariff (\$/m3)	\$0.12/m3	\$0.90/m3
Operating Ratio (Op. costs/revs.)	122%	71%
Employees	515	310

8

Group Assignments

1. At the mid-way point, is this public-private partnership successful?
2. Identify the most important issues facing this project for the next five years
3. What new measures or structure would you propose to address these issues?

9

Guinea Lease: Issues

- ◆ Labor Retraining
- ◆ High Tariffs
- ◆ Contract Monitoring & Regulation:
new connections
- ◆ Incentives: shared commercial risk

10

Water and Sewerage Authority, Trinidad & Tobago

- ◆ Population: 1.3 million
- ◆ WASA: 240,000 user accounts
- ◆ **Problems:**
 - ◆ \$800 million in operating subsidies (1965 - 1993)
 - ◆ 50%+ UFW
 - ◆ 1% of accounts metered
 - ◆ Average availability: 12 hrs./day (high variance)
 - ◆ 90% access to potable water, 30% to water-born sewerage
 - ◆ Underinvestment in mains, repairs, spare parts, etc.
 - ◆ Overstaffing

11

Project Results

- ◆ 3 - 5 year flexible management contract (concession)
- ◆ \$83 million in new working capital from contractor
- ◆ 90 days required to gather new project information
- ◆ Priority investment in new meters
- ◆ Contractor fees: 40% fixed, 60% performance-based in 6 categories:
 - ◆ Continuity of supply of water to customers
 - ◆ Maintaining a ceiling on connection costs per customer
 - ◆ Maintaining a ceiling on operating debt to income ratio
 - ◆ Achieving targeted operating sales levels
 - ◆ Maintaining targeted water treatment capacity
 - ◆ Providing a targeted level of operating staff to WASA
- ◆ Creation and Establishment of new Regulatory Body

12



National BOO/BOT Programs in Water & Wastewater:

MALAYSIA

1

Background on Malaysia

- ◆ Population: 19.5 million (1998)
- ◆ GDP per capita \$3,000 (1998)
- ◆ Ethnic Groups: Bumiputera; Straits Chinese; Indian
- ◆ 1969 New Economic Policy
- ◆ 1981-1982 Oil Shock & Debt Crisis
- ◆ 1981 Mahatir Mohamed elected PM
- ◆ 1983 "Malaysia Incorporated"

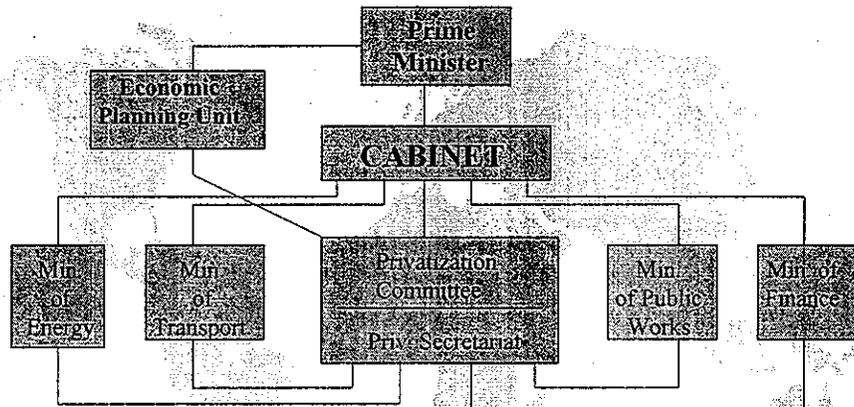
2

Privatization Strategy

- ◆ 1983-85 high level public/private dialogue on privatization strategy
- ◆ 1985 "Guidelines on Privatization" issued and "Privatization Handbook" at \$10 each
- ◆ Clear Privatization Objectives:
 - ✓ Relieve financial & administrative burden of SOE's on Government
 - ✓ Promotion competition & efficiency of enterprises
 - ✓ Stimulate entrepreneurship & private sector-led growth
 - ✓ Reduce the size of the public sector & its economic monopolies
 - ✓ Promote entrepreneurship & advancement of Bumiputeras

3

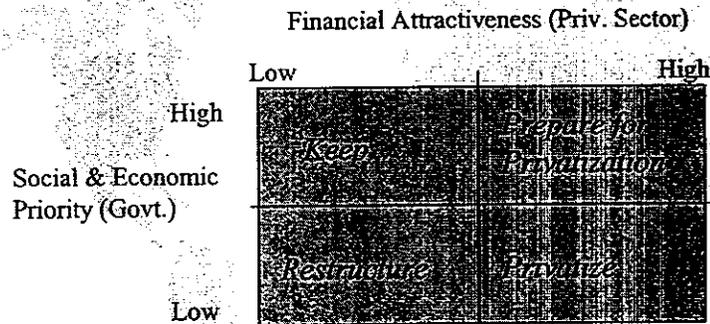
Privatization Institutional Framework



- Clear vertical structure
- Strong, focused technical capability
- High-level political commitment

4

Privatization Selection



- ◆ Clear planning & assignment of priority

5

Infrastructure Concessions: Unsolicited Proposals

- ◆ Private firms may identify infrastructure projects to undertake and submit proposals to the EPU
- ◆ EPU analyzes proposals: financial, economic, legal, social, environmental, etc.
- ◆ If acceptable, EPU gives proposer temporary exclusive right to undertake next steps required in project development
- ◆ If next steps are not acceptable, EPU may cancel exclusivity
- ◆ If project are viable, but proposal is not acceptable, EPU may bid the project out openly

6

Distribution of Privatized Infrastructure Projects (1983-1994)

Sub-sectors	Number	(%)
Roads & Railway	11	10.1%
Ports	7	6.4%
Water Supply	6	5.5%
Electricity	8	7.3%
Other Infrastructure	17	15.6%
Sub-total	49	45%
Non-Infrastructure	60	55%
Total	109	100%

7

Water Projects Privatized

Project	Method	Size	Date
Labuan Water Supply	BOT	\$127m	1987
Ipoh Water Supply	BOT		1989
Larut-Matang Water Supply	BOT		
Sungai-Selangor II	BOT	\$160m	1992
Johor Water Supply	BOT	\$210m	1992
Taiping Water Services	BOT	\$16 m	1988
Malaysia Wastewater	BOT	\$2.3 b	1993
Selangor Treat. Plant	MC		1987

8

Conclusions: Malaysia Public-Private Partnership Policies

- ◆ First such program in the developing world
- ◆ Strong, high-level political commitment
- ◆ Clear privatization objectives, planning & implementation procedures
- ◆ Well-communicated to public & labor
- ◆ Dedicated, skilled, high-level unit
- ◆ Successful, visible demonstration projects
- ◆ Unsolicited proposals mechanism
- ◆ Concurrent with economic liberalization & growth policies
- ◆ Furthered Government social policies & objectives

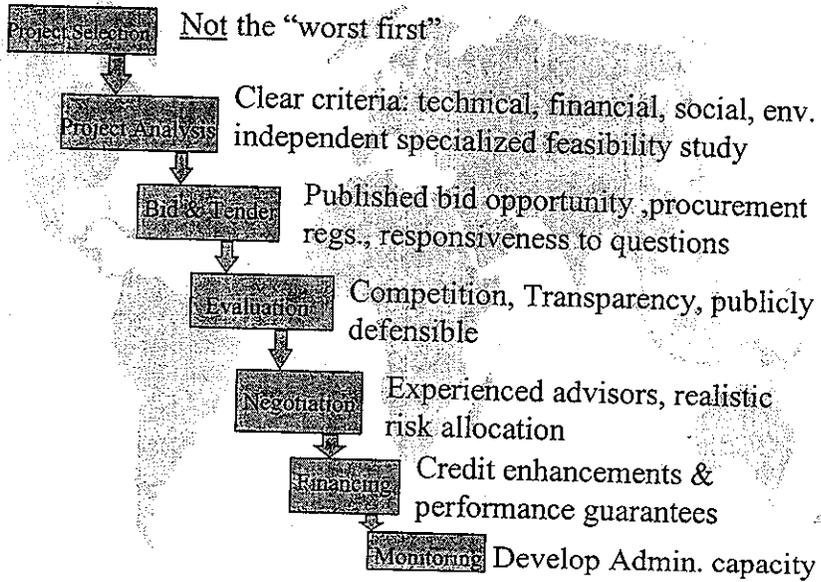
9

Critical Qualities of Government P3 Policy

- ◆ Role of Government: Long-term commitment to privately provided infrastructure
- ◆ Clearly articulated Government objectives
- ◆ Political leadership
- ◆ Public-Private Dialogue: New Ideas
- ◆ Transparency & fairness in competition
- ◆ Process: Clear institutional roles
- ◆ Avoid conflicts of interest

10

Policies for the P3 Life Cycle



Buenos Aires Water Concession

1

Buenos Aires Water Concession - Background

- ◆ Authority over infrastructure decentralized to the City of Buenos Aires in 1980
- ◆ BA Population : 8.6 Million
- ◆ PSP in Water is part of a broader national effort
- ◆ Framework is being developed to restructure country into a Market Economy

2

Buenos Aires Water - Conditions Prior to Transaction

- ◆ 1.2 Million Water Connections
- ◆ 1.0 Million Sewerage Connections
- ◆ Revenue \$300 Million

3

Buenos Aires Water - Rationale for Privatization

- ◆ Only 70% of Population have water service
- ◆ Only 55% of Population have Sewerage
- ◆ Unaccounted for Water (UFW) 45% (high)
- ◆ Only 20% of connections were metered
- ◆ Water demand far exceeded supply
- ◆ 8,000 employees: 9 per thousand customers
(Compared to efficient level: 3-4 per 1,000)

4

Buenos Aires Water - Rationale for Privatization (cont'd)

- ◆ Issues:
- ◆ Excessive Political interference
- ◆ Investment and Maintenance at low levels:
less than 10% of needed amount (\$20
million vs. \$240 million needed)
- ◆ Management performance and Water
Quality was poor
- ◆ Customers frequently had complaints

5

Buenos Aires Water Privatization Methodology

- ◆ 4 Step Program
- ◆ Scope of Operation:
- ◆ Operation &
Maintenance
- ◆ Rehabilitation
- ◆ Expansion of service
area
- ◆ Exclude non-core
activities
- ◆ Decision on
Concession Size and
Scale
- ◆ Decision on Single or
multiple contracts
- ◆ Application of
physical, commercial
& economic factors

6

Buenos Aires Water Privatization Methodology:

- ◆ 4 Step Program was adopted
- ◆ Step 1 - Initiation - A high level committee was established to oversee privatization (11 members including Ministry, municipality, Province, Ministries of Finance, Labor, and representative from Congress)
- ◆ Debate resulted in selecting a Concession
- ◆ Choice was based upon Evaluation of Risk

7

Buenos Aires Water : Privatization Method (cont'd)

- ◆ Step 2 - Preparation of Bidding Documents
- ◆ Regulatory Framework was Established in Bid docs: 3 Representatives: ETOSS Board, Tasked with Monitoring; made independent
- ◆ TOR was promoted and publicized in a process of stakeholder consultation
- ◆ Technical & Financial Feasibility was determined using benchmarks, water rates

8

Buenos Aires Water Privatization Method (cont'd)

- ◆ Step 3 - Bidding: Prequalification Criteria were set high: Bidders must buy Bid & Tender Package for \$30,000 (103,000 LE)
- ◆ Operator must have had experience operating water systems in cities over 2.0 Million population
- ◆ At least 25% of equity portion of finance must be held by the operator (continued-)

9

Buenos Aires Water Privatization Method (cont'd)

- ◆ At least 51% of shares have to be owned by the Concession (not allowed to be transferred)
- ◆ 10% of equity to be dedicated to employees
- ◆ Bidders must have Minimum annual billings of \$250 million
- ◆ Equity of Consortium \$75 Million or more

10

Buenos Aires Water Privatization Method: (cont'd)

- ◆ Step 4 - Bidding & evaluation was conducted
- ◆ 30 year term of concession contract was set
- ◆ Tender had "Performance Benchmarks" not specific investment level amounts
- ◆ Benchmarks were set for gradual performance improvements over time

11

Buenos Aires Water Privatization Method (cont'd)

- ◆ Performance Benchmarks (over time):
 - Coverage (% of population being served)
 - % of wastewater treated
 - % of network rehabilitated
 - Improvement in unaccounted for water
 - Quality of service
 - Water quality (by international standards)
 - Incentives for increasing water metering

12

Buenos Aires Water Privatization Method (cont'd)

- ◆ Performance benchmarks were made part of the Concession Agreement:
- ◆ Water rates were to be reassessed every five years, based upon an approved investment plan
- ◆ Rate increase linked to cost increases due to inflation if that exceeded 7%

13

Buenos Aires Water Privatization Method (cont'd)

- ◆ Step 5 - Transfer of services:
- ◆ Reduction in Workforce strategy
 - 1,600 employees
 - voluntary retirement
 - Central govt. financed \$40 million as part of severance payments
 - 2,000 employees - voluntary retirement financed by Concessionaire (\$50 million)
 - Company absorbed 3,600 (50% less 6 months)

14

Buenos Aires Water Tender/Investment Program

- ◆ Compliance with performance benchmarks called for \$130 million new investment/year
- ◆ After 30 years, 100% coverage in water service and 93% coverage in sewerage connections (4 million new customers)
- ◆ First five years requirement: \$1.2 billion in capital investment

15

Buenos Aires Water: To Comply with Investment target

- ◆ First 5 year target of \$1.2 billion - Structure:
 - \$250 million - IFC
 - \$98 million - IDB credits
 - \$ (balance to be generated by Internal cash flow)
- ◆ Financing strategy of maximized "Self Finance" of investment by generating new customers and improved efficiency

16

Buenos Aires Water Results of the Tender

- ◆ Five strong consortia were prequalified:
 - Lyonnaise des Eaux/Companie Generale
 - Thames Water
 - Northwest Water
 - Canal Isabel
- ◆ Above 4 actually submitted bids
- ◆ Two step bidding process
- ◆ One bid rejected as not technically feasible

17

Buenos Aires Water Results of the Tender

- ◆ Winning bidder: Consortium of Aguas Argentinas, Lyonnaise des Eaux, plus French, Spanish, British and local subs
- ◆ Lyonnaise des Eaux - 25.3%
- ◆ Local investors - 39%
- ◆ Employees - 10%
- ◆ Foreign operating firms - 25.7%

18

Buenos Aires Water - Conclusion & Early Results:

- ◆ 125 km of pipe repaired; 1,000 km sewerage cleaned
- ◆ For the first time in years, no water shortage during period of peak demand
- ◆ Water quality improved due to low cost improvements in water treatment regime
- ◆ Customers satisfaction improved; response time shorter
- ◆ 40,000 new meters installed: industrial users

19

Buenos Aires Water: Lessons Learned

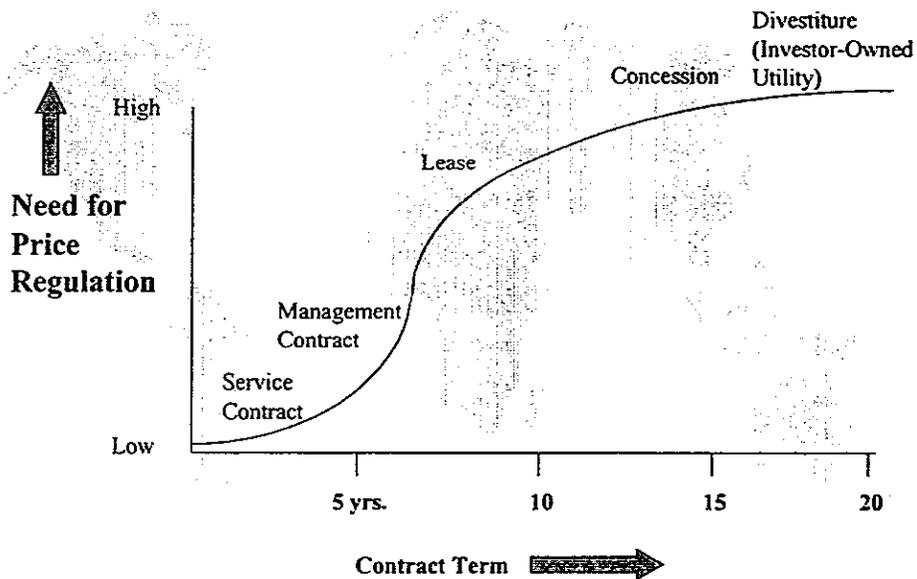
- ◆ Top level Political Commitment essential
- ◆ Include all stakeholders in the planning (Labor)
- ◆ Incremental improvements less important
- ◆ Donor participation helpful but only for appropriate stages and functions : TA, training, contribution to debt finance
- ◆ Benchmarks with incentives needed to attract qualified bidders to submit proposals

20

Post-Transaction Monitoring & Performance Compliance Techniques for Public-Private Partnerships in Water

1

Contract Term vs. Need for Price Regulation



2

MSP Performance Monitoring

◆ **Price & Financial Performance Monitoring**

- ✦ What conditions or changes that necessitate price/tariff adjustment?
- ✦ How will these changed conditions be verified? By whom?
- ✦ By how much should prices adjust? Who decides?

◆ **Technical Service Quality Monitoring**

- ✦ What indicators/measurements are appropriate for service quality?
- ✦ What indicators/measurements are appropriate for equipment and asset maintenance?
- ✦ Who should gather, analyze, & verify this data?
- ✦ How much should be spent on technical service quality monitoring and who should pay for it?

3

MSP Performance Monitoring

◆ **Legal Contract Administration**

- ✦ How should contractual terms & clauses be interpreted and grievances & possible fines imposed?
- ✦ How should contractual disputes be resolved?

◆ **Consumer Service/Protection Monitoring**

- ✦ Should an official be designated to accept & respond to consumer complaints and inquiries?
- ✦ How should consumer complaints be responded to to make it meaningful?
- ✦ How should consumer service levels be measured & enforced?

4

MSP Performance Monitoring

◆ Institutional Management of Performance Monitoring

- ✦ How much human resources should be involved in performance monitoring? Are new human resources needed?
- ✦ How much should be spent on performance monitoring and who should bear that cost?
- ✦ Should monitoring officials be "independent" (partially independent)
- ✦ How often should information be reported and shared?
- ✦ How should periodic issues be discussed between parties?
- ✦ Should other specific monitoring roles be created for issues such as labour, black empowerment, or gender impacts?

5

Case Study: Indianapolis, IN

- ◆ Population: 800,000
- ◆ 4 Public Services Unions, members of American Federation of State, County, & Municipal Employees (AFSCME) 70% of City Employees
- ◆ 1992: "One of the most efficiently-run cities in the U.S." But:
 - ✦ Unfunded Infrastructure Liabilities \$1.1 Billion
 - ✦ Unfunded Sewer Liabilities \$250 million
 - ✦ Unfunded Airport Liabilities \$220 million
 - ✦ Unfunded Fire & Police Pensions \$400 million
 - ✦ Annual Operating Budget \$450 million

6

Indianapolis Background

- ◆ Property Taxes “Voting with your Feet”
- ◆ 1992 Established Service Efficiency and Lower Taxes for Indianapolis Commission (SELTIC)
Two Rules:
 - + No Reports - Transactions!
 - + No Sacred Cows
- ◆ Active AFSCME Opposition - “Go Down Swinging”
- ◆ Managed Competition Challenge - “Talk the talk and walk the walk.”
- ◆ High Mid-level Management Overhead

7

Indianapolis, Wastewater Treatment Plant

- ◆ History of rising operating costs:
 - + 1992: \$30 million operating budget
 - + 328 employees
 - + \$250 million unfunded sewer collection liabilities
 - + Sewer tariffs would need to increase by 38%
- ◆ Management Consultants Study Predicted only 5% cost savings through a Management Contract
- ◆ AFSCME (Union) proposed 10% savings
- ◆ Two private bidders proposed 44% savings
- ◆ Winning bid saves city \$65 million over 5 years

8

Indianapolis, Indiana

“The contractor shall use its best efforts to employ all interested and qualified employees of the AWT Facilities as its employees at the AWT Facilities, consistent with its intent to have an initial staffing level of 206 employees.”

“The Contractor shall provide current City AWT Facilities employees with a total package of compensation and benefits equivalent to or better than compensation provided by the City.”

“If at any time subsequent to the Effective Date of this Agreement the Contractor makes a determination to reduce the number of employees at the AWT Facilities, the Contractor shall use its best efforts to place displaced employees in comparable capacities at other facilities operated by the Contractor.”

9

Indianapolis, Indiana

“The Contractor shall pay \$300,000 to support a displaced worker assistance program which will be designed and administered by the Contractor...Any moneys remaining in the Fund at the end of the First Agreement Year shall be credited to the Annual Fee for the Second Agreement Year.”

“The Contractor shall not discriminate against any employee or applicant for employment...with respect to hire, tenure, terms, race, religion, color, age, sex, handicap, national origin, ancestry, or disabled veteran status.”

“...the Contractor shall not place any restriction upon the ability of the employees at the AWT Facilities to become employees of the City, or employees of any contractor which may in the future operate and maintain the AWT Facilities.”

10

Regulation through Contract Compliance

- ◆ Contract designates a Contract Compliance Officer (“CCO”)
- ◆ City has right to terminate without cause, 90 days
- ◆ Contractor must comply with environmental regs. (U.S. Federal Govt. - Env. Protection Agency)
- ◆ Required Reports by Contractor:
 - ✦ Monthly Operations, maintenance, lab analysis, inventories
 - ✦ Quarterly Reports on Minority & Women-owned business subcontracting
 - ✦ Annual Contract Performance Reports

11

Indianapolis: Regulation by Contract

- ◆ Inception inspection of all facilities by Contractor & CCO
- ◆ Dispute Resolution: consultation & arbitration procedures
- ◆ Allowance for increases in Annual Fee if operating costs rise due to new State or Federal Regulations
- ◆ Events of Default & Remedies:
 - ✦ Withholding payment to defaulting contractor
 - ✦ Termination by Contractor if City is in default
 - ✦ Cost reimbursement by defaulting party
- ◆ Penalties: Contractor liable to other State & Federal Agencies

12

Indianapolis: Interim Results

- ◆ 2 years cost savings to City exceeded projections:
 - + \$21.6 million for Operating Costs
 - + \$4.2 million in Capital Costs
- ◆ Quality of Effluents has met standards (Coliform & TSS)
- ◆ More Coordination Needed in Regulation (Technical & Financial) by City Government
- ◆ City Savings have gone to fund investments and other services rather than returned to rate-payers
- ◆ No job losses: 123 Plant workers successfully relocated within City Government

13

Assignment

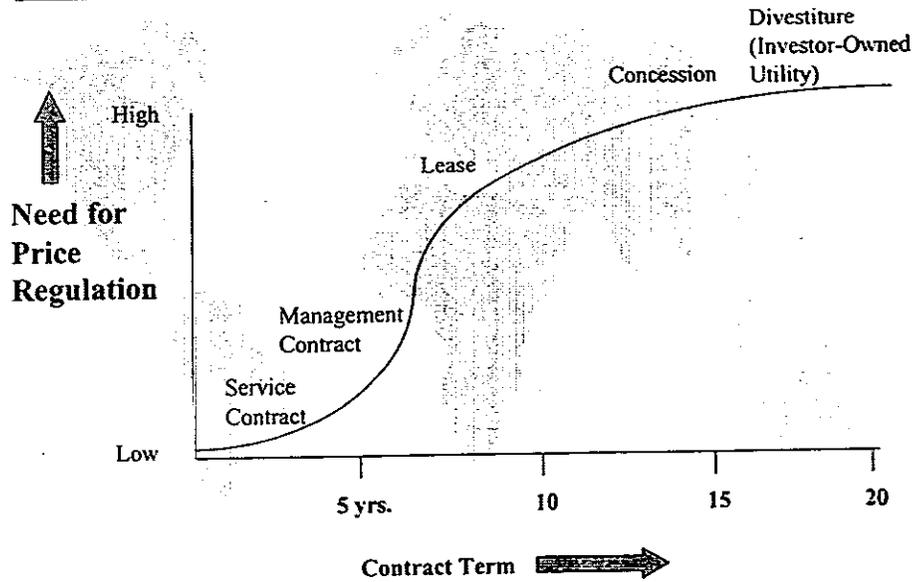
1. What categories of performance indicators should be covered?
2. Should National/Provincial Govt. Agencies play a role in performance monitoring?
3. What human resources and skill sets are needed to monitor performance?
4. What information should be included in reports on this MSP? How frequently?
5. Outline standard procedure areas for responding to project performance issues.

14

Price Regulation Techniques for Public-Private Water Utilities:

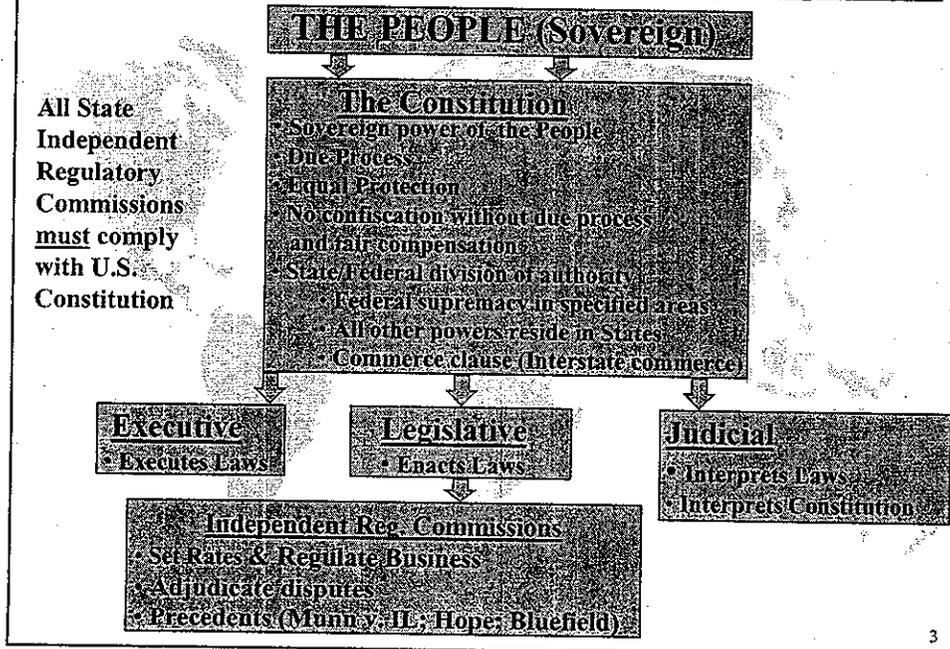
International Options & Case Exercise

Contract Term vs. Need for Price Regulation

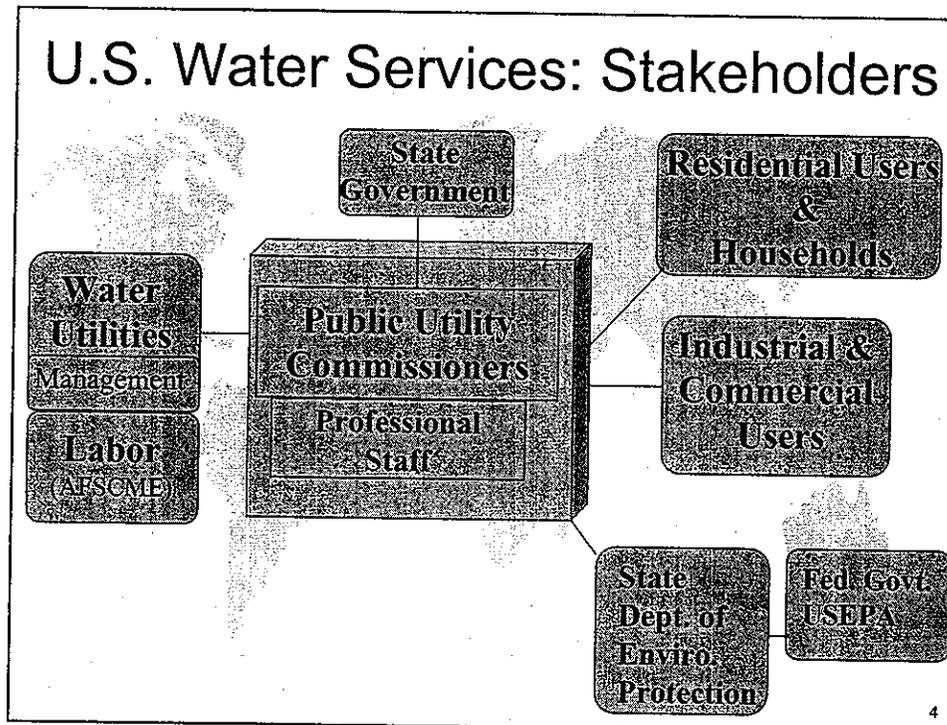


313

U.S. Legislative Framework for Utility Regulation



U.S. Water Services: Stakeholders

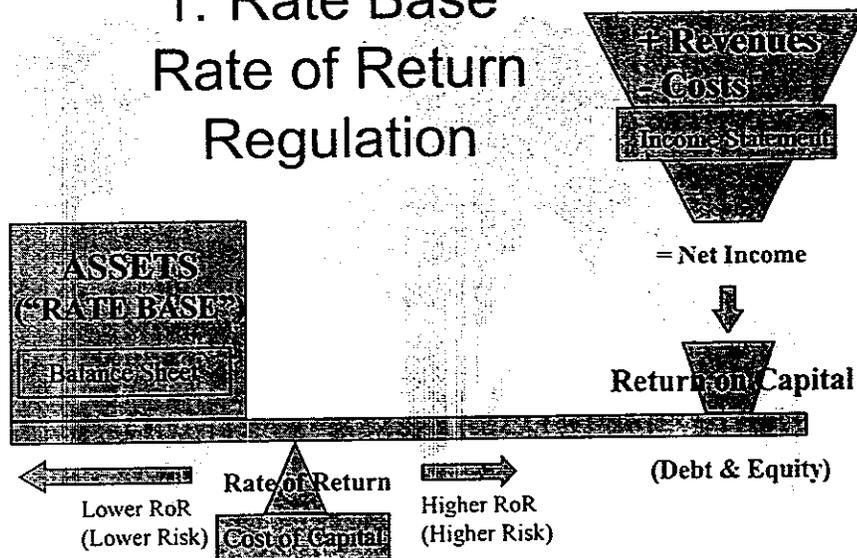


The U.S. Approach to Regulation 1944 (FPC vs. Hope Natural Gas)

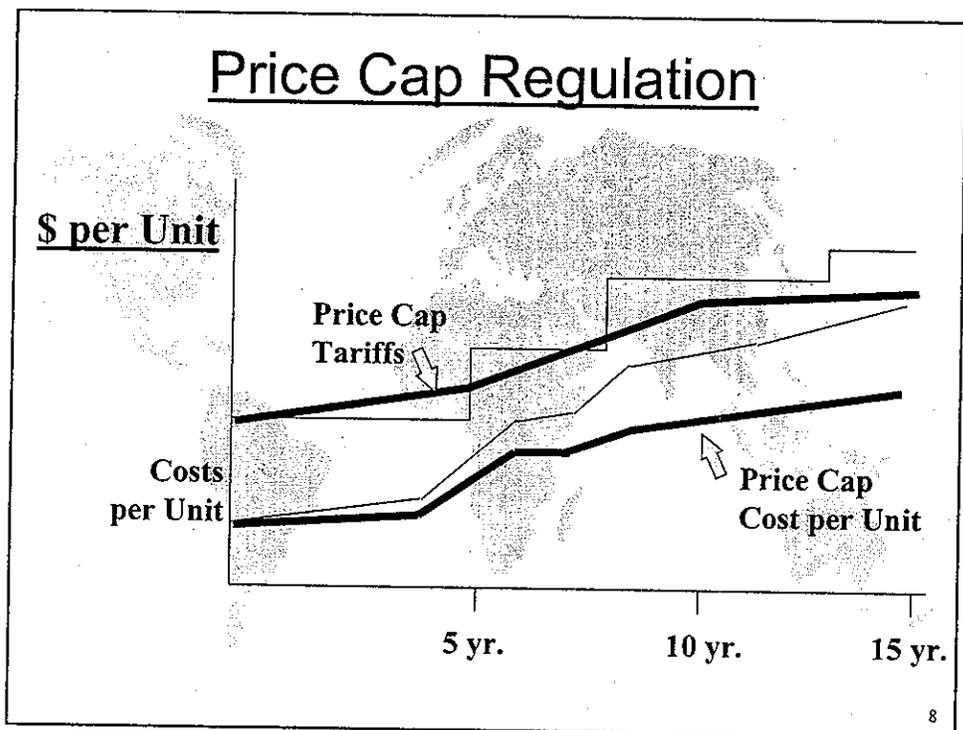
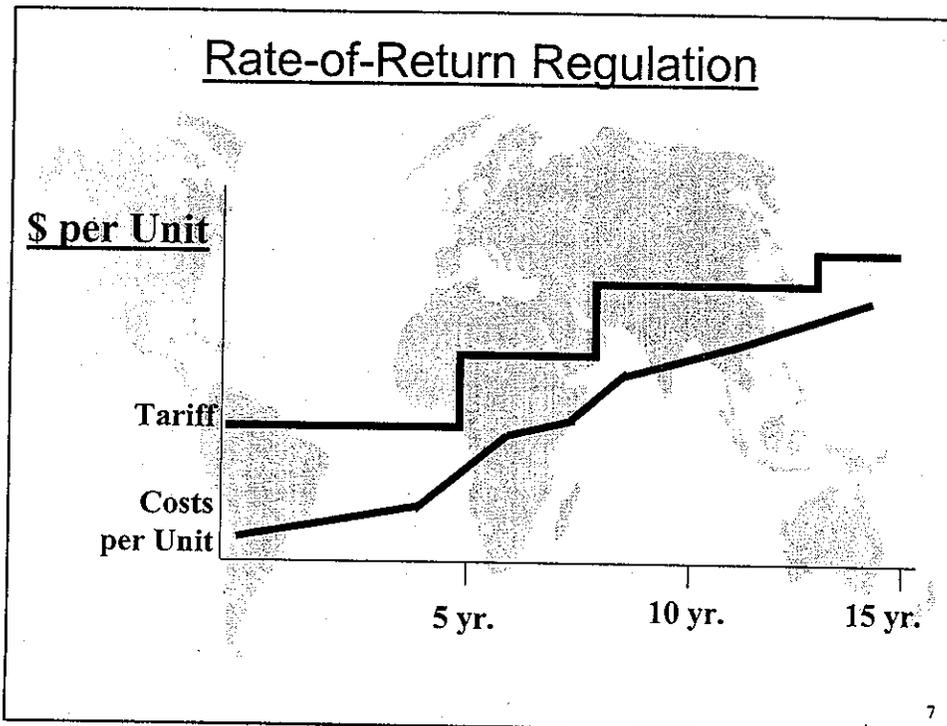
“..it is important that there is enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock... By that standard the return to the equity owner should be commensurate with risks on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and attract capital.”

5

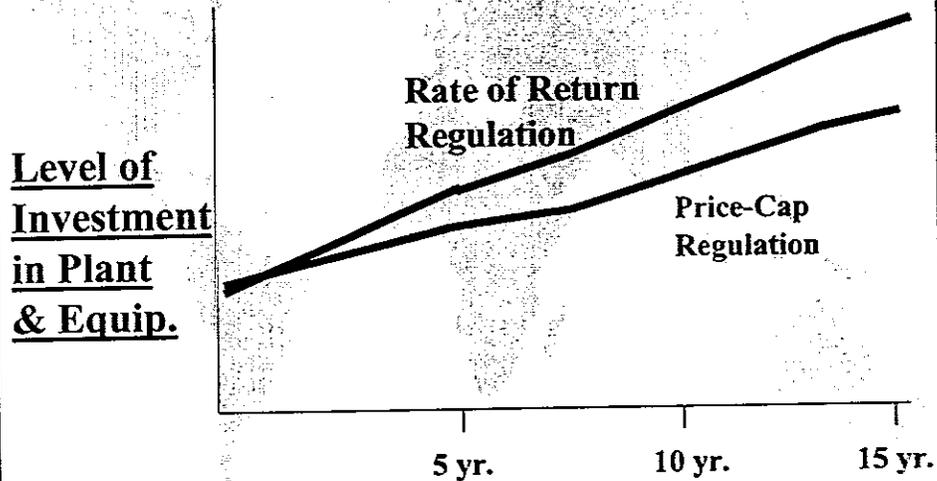
1. “Rate Base” Rate of Return Regulation



6



RoR vs. Price Cap Regulation



9

RoR vs. Price Cap Regulation

Rate of Return

- ◆ Provider Initiates Rate Case
- ◆ Incentive to Invest More
- ◆ Costs of Filing & Reviewing Rate Cases
- ◆ Full Transparency
- ◆ Govt. capacity to regulate?

Price Cap Regulation

- ◆ Regulator sets Review Period
- ◆ Incentive to Operate More Efficiently
- ◆ Generally lower costs of Regulation
- ◆ Less Transparency
- ◆ Govt. capacity to regulate?

10

U.S. Water Services Market

◆ Market

- ◆ 72% served by public utilities (Large Metropolitan Areas)
- ◆ 28% served by Investor-owned utilities (small towns & suburbs)

◆ Trends & Issues:

- ◆ Safe Drinking Water Act Regulations
- ◆ Rising Capital Investment Requirements
- ◆ Growing Operating & Maintenance Costs
- ◆ Privatization & Competition
- ◆ Mergers & Acquisitions

11

III. Advantages & Disadvantages of Rate-of-Return Approach

ADVANTAGES

- ◆ Multisectoral Approach
- ◆ Due Process
- ◆ Transparency & Fairness
- ◆ Ensures Cost-Recovery & Attracts Investment
- ◆ Promotes Environmental Compliance
- ◆ Can Regulate both Public & Private Utilities

DISADVANTAGES

- ◆ Bureaucratic Costs of Regulation
- ◆ Promotes Overinvestment
- ◆ Lack of incentives for efficiency
- ◆ Privatization (Competition) works better than regulation for improving efficiency

12

“The U.S. approach to price regulation for water utilities is partly an art and partly a science that can be flexibly applied to meet changing goals and objectives.”

Project Financing Feasibility
Model
for Water Concessions

**FINANCIAL
STRUCTURING
DEMONSTRATION**

PURPOSE

- ◆ To Provide Public Sector Officials Responsible for Structuring Water Concessions with a Tool to establish viability benchmarks for:
 - Tariffs (Fixed, Variable, User Classes & Growth Rates)
 - Return on Equity
 - Interest Rates & Lending Periods on Debt
 - Debt/Equity Ratios
 - Debt Service Coverage Ratios

Background Information:

- ◆ Population of PODUNK: 250,000
- ◆ 15% from Group Alpha, 100% coverage (\$5,000/Cap.)
- ◆ 85% from Group Beta, 50% coverage (\$1,200/Cap.)
- ◆ Currently 50% UFW
- ◆ Podunk cannot finance its own system expansion internally nor borrow from financial markets for the estimated LE 155,000,000 of new Investment needed
- ◆ Govt. Decided to seek a 20 year concession with a private consortium

PROBLEMS:

- ◆ How much should tariffs be expected to increase to recover the costs of this new investment?
- ◆ Should tariffs change the same for all users (Alpha, Beta, Commercial, Industrial)?
- ◆ Will users be able to afford these tariffs?
- ◆ What can the Government do to minimize the need to increase tariffs by employing Credit Enhancement Techniques?

Financial Feasibility Model:

◆ Assumptions:

- LE 155 million Capital Investment needed
- 14% interest rate available on debt
- Investors require 18% Return on Equity
- Lenders require a minimum DSCR > 1.5x
- Residential consumers currently pay LE 0.85/m³
- Any dramatic increases in residential tariffs will cause accounts to go into default and provide incentives for increased "Non-Technical Losses"

Options to Change in Model

- Change Tariffs:
 - Fixed Tariffs (LE per Account per Year)
 - Variable Tariffs (LE/m³)
 - User Classes (Alpha, Beta, Commercial, Industrial)
 - Tariff Growth Rates (Years 1 - 5, 6 - 10, 11 - 20)
- Change the Debt/Equity Ratio
- Change Interest Rates on Debt
 - Sovereign Guarantee available on a portion of debt
- Offer Tax Holiday?
- Change Workers Salaries & Amount Spent on Training

Key Terms

ENGLISH:

- ◆ “Capital Expenditure”
- ◆ “Percent Financed by Equity”
- ◆ “Required Return on Equity”
- ◆ “Interest Rate”
- ◆ “Sovereign Guarantee”
- ◆ “Interest Only Payments”
- ◆ “Internal Rate of Return (IRR)”
- ◆ “Debt Service Coverage Ratio”

ARABIC:

More Key Terms

ENGLISH:

- ◆ “Tax Holiday”
- ◆ “Fixed Tariffs”
- ◆ “Variable Tariffs”
- ◆ “Tariff Growth Rates”
- ◆ “Personnel”
- ◆ “Training”
- ◆ “Collection Rates”
- ◆ “Average Consumer Bill”

ARABIC:

Averages of Evaluation Forms — GOE Participants

Activity Title: *Identifying, Appraising, and Tendering Private Sector Participation* **Location:** *Cairo Sheraton Hotel* **Duration:** *2 days* **Date:** *April 18-19, 2000*

	Excellent	Very Good	Good	Fair	Poor
Logistics/Administration					
Orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Length of Activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Place of Activity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Translation Facility	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LIRR Staff Assistance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coffee Breaks & Lunch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Content & Results					
<input type="checkbox"/> Session 1: Benefits and Challenges of PSP in the Water/Wastewater Sector					
- Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 2: Project Selection, Structuring, and Financial Analysis					
- Materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 3: Essential Elements of PSP Contracts: A Checklist for Project Managers					
- Materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 4: Suez Gulf Concession/BOT Case Study					
- Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 5: PSP Options and Case Studies					
- Materials	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 6: Post Transaction Regulation and Contract Compliance: Techniques for Tariff Setting					
- Materials	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Session 7: Financial Model Demonstration/Simulation					
- Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Speakers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General Rank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

Thanks for the 2 Ministers attended, Terry [Driscoll] was outstanding, need more workshops, very informative, well organized, 2 screen system was very helpful, LIRR has the reputation of organizing the best workshops in Egypt.

SECTION VII

**Egyptian Senior Government Officials Visit — Invitational
Travel for the Minister of Housing, Utilities and Urban
Communities and Delegation**

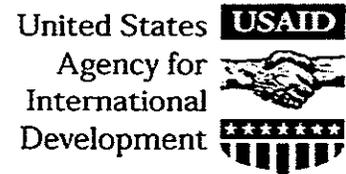
Egyptian Senior Government Officials Visit



Legal and Institutional Reform: Egypt Institutional Development for Water and Wastewater Services

April 3 - 12, 1999

Sponsored by:



Organized by:

Chemonics International Inc.
The Institute for Public-Private Partnerships

Egyptian Senior Government Officials Visit Delegate Background

His Excellency Dr. Mohamed Ibrahim Soliman, Minister, Housing, Utilities and Urban Communities (MHUUC). His Excellency Dr. Soliman received a Bachelor of Science and a Master of Engineering from the Ain Shams University in Cairo before going on to studies at McGill University in Montreal, Canada. At McGill, he completed a master's degree and a Ph.D. in civil engineering. In addition to his duties as Minister of Housing, Utilities and Urban Communities, His Excellency is active on many boards and societies. He is the vice chairman of the board of directors of the International Association for Major Metropolises, secretary of the Canadian Society for Civil Engineering in Egypt, and a member of the Canadian-Egyptian Friendship Corporation. His Excellency Dr. Soliman also devotes his time as the president of the McGill University Alumni association in Egypt and as a professor of civil engineering at Ain Shams University in Cairo.

Eng. Mohamed Magd El Din Ibrahim, First Undersecretary, Ministry of Housing, Utilities and Urban Communities, and Head, Technical Office for the Minister. Eng. Ibrahim received his Bachelor of Science degree in civil engineering from Ain Shams University and has completed training and diploma courses in Italy and Japan, as well as course work at the American University in Cairo. He has worked for the El Nasr Contracting Company, Central Development Authority, and the Higher Advisory Committee of Development before moving to his current position at the Ministry of Housing, Utilities and Urban Communities. Mr. Ibrahim also serves as a board member of numerous organizations, including the National Organization of Potable Water and Sanitary Drainage.

Eng. Mahmoud El Sarngawy, Chairman, National Organization of Potable Water and Sanitary Drainage (NOPWASD). As Chairman of NOPWASD, Eng. El Sarngawy oversees the provision of water and wastewater services for all governates of Egypt. NOPWASD is responsible for the establishment of policy and design for water and wastewater projects on a national level. NOPWASD has 2,000 full time employees, of which 550 are engineers.

Eng. Hussein Hosny, First Undersecretary, Ministry of Housing, Utilities and Urban Communities, and Chairman, Cairo Wastewater Organization (CWO). As Chairman of the Cairo Wastewater Organization, Eng. Hosny is responsible for the oversight and implementation of the Greater Cairo Wastewater project. The project includes the construction and rehabilitation of pumping stations, treatment plants, and sewers. The CWO was established in 1981 to address wastewater collection and treatment issues in greater Cairo.

Eng. El Shafei El Dakroury, First Undersecretary, Ministry of Housing, Utilities and Urban Communities, and Vice Chairman, New Urban Communities Authority (NUCA). The roles and responsibilities of the New Urban Communities Authority include the formulation of policy and plans for new urban communities, coordination between authorities for construction of utilities, and the execution of the tendering process for projects. There are over 1500 engineers employed at the New Urban Communities Authority.

USAID & Egypt Institutional Development for Water and Wastewater Services Project Staff

Mohammed El Alfy, U.S. Agency for International Development/Cairo. Mr. El Alfy is the Egyptian project officer for USAID's Legal and Institutional Reform: Egypt Institutional Development for Water and Wastewater Services Project.

Matthew L. Hensley, Chief of Party for the Egypt Institutional Development for Water and Wastewater Services Project. Mr. Hensley is the President of the Institute for Public-Private Partnerships. An economist and public-private partnership specialist, Mr. Hensley has extensive experience in environmental projects including water and wastewater, and solid waste management and disposal. He holds a master's degree in international economics from the George Washington University in Washington, D.C.

Dr. Ahmed Gaber, Technical Advisor to the Egypt Institutional Development for Water and Wastewater Services Project. Dr. Gaber is the General Manager of Chemonics Egypt/Ahmed Gaber and Associates. With a distinguished career as an engineer that spans more than 20 years, Dr. Gaber is a specialist in environmental and chemical engineering project management, training, and institutional development in Egypt. Dr. Gaber holds numerous advanced degrees including a Ph.D. in chemical engineering from Cairo University, a master's degree in biomedical engineering from the University of Virginia, Charlottesville, and a master's degree in chemical engineering from Cairo University.

Maria Gonzales, Training Coordinator, Chemonics International. Ms. Gonzales oversees the management of USAID-funded invitational travel events for Chemonics. She holds a master's degree in international development studies from the Elliot School of International Affairs at George Washington University.

**Legal, Institutional, and Regulatory Reform of the Egyptian Water/Wastewater Sector Project
Invitational Travel for the Minister of Housing, Utilities, and New Communities and Delegation
April 1999
(USA)**

3-12 April 1999							
Time	Saturday April 3	Sunday April 4	Monday April 5	Tuesday April 6	Wednesday April 7	Thursday April 8	Friday April 9
8:30 am	<i>Workshop Summary and Announcements</i>						
8:45 am to 11:30 am	Arrive Boston	Invitational Tour Orientation, Objectives & Administrative Briefing	Briefing at the Office of the Director of the MWRA, Organization and Structure of the MWRA	Briefing at Headquarters of Camp-Dresser McKee: Case Study on Seattle DOLT Design- Build Contract	Briefing and Audience with Mayor and Ex- Deputy Mayor, City of Indianapolis on the Indianapolis P3 Program	Site Visit: Indianapolis Advanced Wastewater Treatment Plant Privatization Structuring & Regulation (Staff)	Briefing with Labor Officials and Contract Compliance Officers
1:00 pm to 4:00 pm	Free Evening	Tour of Boston	Site Visit of Deer Island Facility: Technical & Regulatory Standards	Site Visit to Private Water/Wastewater Treatment Plant: Performance Standards & Benchmarks	Public Utilities Commission of Indiana: Introduction/ Orientation of the Regulatory Body and Rate Setting (Staff)	Site Visit: White River Environmental Partnership (M. Roob)	Visit to Mosque Travel to DC
Evening		Welcome Reception		Travel to Indianapolis			

April 9-11: Washington, DC Visit

April 11: Travel to Cairo via New York City

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**International Invitational Tour
Private Sector Participation and Regulation of Water & Sanitation
U.S.A. (Boston & Indianapolis)**

I. Objectives & Summary

The goal of this international study tour is to provide senior officials from the water and sanitation sector of Egypt with important international best practices and lessons learned in establishing legal and policy frameworks for private sector participation in water and sanitation and for establishing the role of a sector regulator. The governments, institutions, and utilities featured in this invitational tour have been selected based upon the applicability of their experience and lessons learned for the current policy, institutional, and regulatory framework issues currently facing government officials, utility managers, and future sector regulators in Egypt.

This is a 10-day international invitational tour to the United States of America. The United States has been selected as an example of a developed regulatory system for water and sanitation services with an established track record of private sector participation. Briefings and technical site visits to public utility commissions, private water companies, and privately-operated water facilities in Boston and Indiana will provide first-hand best practices in regulating private sector participation in water and sanitation.

1. Boston- U.S.A.

As a leading US metropolitan area, Boston, Massachusetts provides several examples of high quality utility performance, effective regulatory and enforcement agencies, and is the home of some of the largest U.S. water and wastewater engineering firms and operators.

During the brief visit to Boston, the Egyptian delegation will meet with the Director of the Massachusetts Water Resources Authority (MWRA) to discuss technical, financial, and environmental regulation and enforcement procedures. While at MWRA, the delegation will also be briefed the organization and operating procedures and practices of the MWRA. MWRA officials will also discuss the use of "state of the art" technology and its applications in the water sectors in the United States and Egypt. Afterwards, a site visit will be arranged to visit the Deer Island Wastewater Facility, one of the largest and most important facilities of its kind.

The following day, the Egyptian delegation will be hosted at the headquarters of Camp Dresser & McKee (CDM) one of the oldest and largest US environmental engineering firms. While at CDM, the delegation will be briefed on the structure and progress of the Seattle DOLT Design-Build-Operate Project. This project, led by CDM, is one of the largest privately financed and managed DBO contracts in the United States. The private sector is responsible for the design, construction, and operation of the entire facility and is guaranteeing cost savings to the water authority greater than the authority had anticipated. The DOLT DBO represents a useful lesson for Egypt in that, if done properly, private firms may be willing to undertake financial and performance risk in partnership with the local water authority. CDM International President Mr. Richard Fox and Senior Vice President Patrick Gallagher will lead the presentations.

After the sessions at CDM, the delegation will be taken on two final site visits of particular importance: a) Site Visit of the Boston Harbor Clean Up and Urban Redevelopment Authority, b) the New Bedford, Massachusetts O & M Contract (10 years of \$51.0 million for Water/Wastewater Treatment). If time permits, other privately operated or contracted out facilities within the greater Boston area, such as water supply, wastewater treatment, and sludge pelletization, may be visited.

2. Indiana - U.S.A.

With a population of nearly 4 million, Indiana provides a number of valuable lessons in private sector participation and regulation of water and sanitation services. Indiana's State Public Utility Commission is one of only ten states in the U.S. that regulates both publicly-owned as well as privately-owned water utilities. The Indiana PUC regulates 277 publicly-owned and 60 privately-owned water utilities. This regulatory body is a leading innovator among U.S. water regulators by holding public and private utilities to similar standards of service and through providing "benchmark comparisons" between utilities that fosters indirect competition and provide guidance for improvements in water utility management. Additionally, the Indiana PUC is currently examining different forms of regulation to deal with the shortcomings of traditional "Rate of Return" based regulation in the water and sanitation sector. These include regulatory techniques that allow for privatization, cost reduction incentives, and compliance with new U.S. Safe Drinking Water Act Amendment standards.

The Indiana-American Water Company, a private water utility currently owns some 60 water utilities throughout Indiana, and manages the operation of over 5 water utilities through "contract operations." As a member of the National Association of Water Companies, Indiana-American provides an important private sector perspective on issues relating the provision and regulation of water and sanitation.

The capital city of Indianapolis, IN (pop. 800,000) faced a difficult situation in 1994: it was overdue for a \$200 million rehabilitation of its sewerage collection and wastewater treatment system, and the only available option to pay for it appeared to be through raising local property taxes. Businesses were already leaving the city to relocate in the suburbs citing property taxes as one of the main reasons. Instead of raising taxes the city analyzed and then entered into one of the first management contracts in the U.S. for the operation and maintenance of the its White River wastewater treatment plant. The contract for this public-private partnership provides considerable detail listing the spare parts, inventory of chemicals, and operating decisions that are the responsibility of the private contract operator. The contract specified that all city employees who were hired to work for the new private operator receive salary and benefits equal to or better than the what they had been earning from the city. While the contractor only needed to hire 305 of the existing 512 city employees who ran the plant, the city honored its commitment to the local public employees union to find other jobs within city government for the remaining 207 workers. Now in its fourth year, the management contract is projected to save the city of Indianapolis, IN \$165 million or over \$700 per household over the five-year life of the contract.

Our Mission

AFSCME Indiana Council 62 has more than 100 AFSCME Indiana Council 62 contracts in place across the state, including one representing 10,000 state employees. These contracts are the centerpiece of the union. The rights benefits and pay they guarantee are the main objectives of the membership.

As a part of the most powerful union in the nation, as well as one of the largest, AFSCME Council 62 has the resources to get its members to the bargaining table and to negotiate top-rate contracts.

We Are...

Indiana Council 62 of the American Federation of State, County and Municipal Employees representing 18,000 public and private sector employees in 73 locals across the state.

We're Indiana's largest public employee and health care union, and we represent:

- Street and Sanitation Workers in Indianapolis
- Registered Nurses across Indiana working for the state
- Clerical workers in Muncie
- School employees in Fort Wayne, Indianapolis and South Bend
- Hospital workers in Evansville
- Highway workers in Bloomington
- Nursing home workers in Frankfort
- Direct care employees at Indiana's state hospitals

Council 62 represents the whole spectrum of employees, from blue collar maintenance workers to attorneys, secretaries, and medical technicians.

Contact Information

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Deer Island Sewage Treatment Plant

The new Deer Island Treatment Plant has been designed to meet the environmental protection mandates of the Federal Clean Water Act. Facilities already placed in service have allowed MWRA to:

- Begin converting to fertilizer the many tons of sewage sludge that had been dumped into Boston Harbor each day,
- Provide the northern two-thirds of the service area with improved treatment for all flows through a new 1.2 billion gallon per day Primary Treatment Plant, and
- Begin providing secondary treatment to most dry weather flows.

The following section details just how these improvements have transformed each step in MWRA's sewage treatment process:

PUMPING

This critical first step moves sewage into the treatment plant from area sewers. Ten new pumps (and motors, as pictured) have been installed to replace the most unreliable components of the old plant, allowing MWRA to pump more consistently and decrease overflows of untreated sewage to local rivers and the harbor. In 1988, 400 million gallons per day was peak capacity. Peak today is more than 800 million gallons per day.

PRIMARY AND SECONDARY TREATMENT

Sewage treatment removes solids - organic, inorganic, domestic and industrial - from wastewater. Primary treatment does it through gravity settling. Because space is in demand on Deer Island, the new plant was designed with stacked settling tanks for the removal of solids. These two story tanks provide twice the area for settling, achieving a higher rate of solids removal in the same space.

Modern sewage treatment plants generally utilize the gravity process of primary treatment followed by some form of biological or "secondary" treatment. At Deer Island, the new secondary treatment plant provides a two-step process: first, the wastewater is aerated to promote the growth of bacteria, then the resulting solids settle and are removed. While 60% of pollutants are removed in primary treatment, the addition of secondary treatment has raised solids removal rates to over 80%.

In the 1980s the Deer Island plant removed so few of the solids present in wastewater (about 25%) that 138 tons of them (including sludge) passed through the plant into Boston Harbor each day. Completion of the new primary treatment plant in 1995 and the addition of the first two phases of secondary treatment in 1997 and early 1998 have reduced this to an average of 45 tons per day being discharged.

SLUDGE DIGESTION

Solids removed by gravity settling go eventually to one of the plant's 12 new egg shaped sludge digesters. Digestion readies sludge for conversion to fertilizer. Microorganisms in the digesters grow by consuming sludge and breaking down the organic matter while at the same time producing methane gas. This gas is used for heat and power. The new egg shape is ideal for mixing and has so far yielded greater quantities of methane per volume of sludge processed to offset fuel costs, while producing a consistently well-digested sludge.

Before 1991, digestion was essentially the process that readied sludge for release onto the harbor's outgoing tide. Now, all of the sludge (except sludge from a small MWRA plant in Clinton) is removed at MWRA treatment plants and shipped to the sludge to fertilizer plant in the former Fore River Shipyard in Quincy.

DISINFECTION

Untreated sewage carries large numbers of disease causing microbes. Like most plants, Deer Island uses a form of chlorine (sodium hypochlorite, the active ingredient in bleach) to disinfect wastewater before discharge. Because the same toxicity that makes chlorine a good disinfectant makes it dangerous to marine organisms, the less used the better. Large disinfection basins at the new plant have allowed for 20% less sodium hypochlorite use (a \$1.2 million chemical cost savings per year). A fifty percent increase in "contact time" within these basins also means that the process is ensuring fuller disinfection of wastewater while chlorine use has dropped.

What is the MWRA?

MWRA is a Massachusetts public authority established by an act of the Legislature in 1984 to provide wholesale water and sewer services to 2.5 million people and more than 5,500 large industrial users in 61 metropolitan Boston communities. Here are some essential MWRA statistics:

- 43 sewerage customer communities
- 46 water customer communities
- 61 customer communities collectively
- 2.5 million people served
- 870,000 households served
- 5,500 businesses served
- 255 million gallons of water supplied per day (on average)
- 370 million gallons of sewage treated per day (on average)

WATER ONLY	SEWER ONLY	WATER AND SEWER	
Chicopee	Ashland	Arlington	Newton
Leominster***	Braintree	Bedford*	Norwood
Lynn**	Burlington	Belmont	Quincy
Lynnfield Water District	Dedham	Boston	Revere
Marblehead	Hingham	Brookline	Somerville
Marlborough*	Holbrook	Cambridge*	Stoneham
Nahant	Lancaster	Canton*	Wakefield
Northborough*	Natick	Chelsea	Waltham
Peabody*	Reading	Clinton	Watertown
Saugus	Randolph	Everett	Wellesley*
Southborough	Stoughton	Framingham	Winchester*
South Hadley FD 1	Walpole	Lexington	Winthrop
Swampscott	Westwood	Malden	Woburn*
Weston	Weymouth	Medford	
Wilbraham	Wilmington	Melrose	
		Milton	
Worcester***		Needham*	

*indicates partially supplied water by MWRA

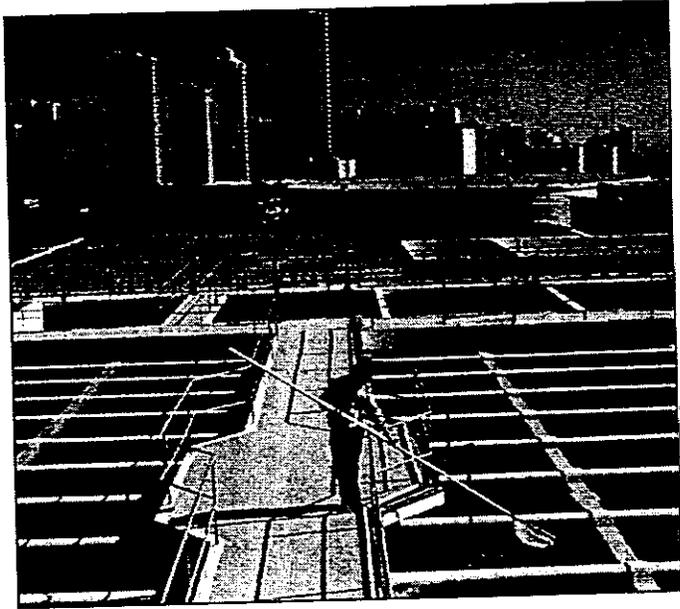
**water supplied to GE only

***MWRA is emergency back-up water supply

SECTION VIII

**Egyptian Senior Government Officials Visit — Orientation
Study Tour for Egyptian Utility Chairmen**

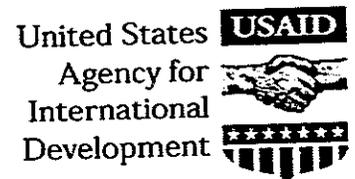
Egyptian Senior Government Officials Visit



Legal and Institutional Reform: Egypt Institutional Development for Water and Wastewater Services

April 3 - 12, 1999

Sponsored by:



Organized by:

Chemonics International Inc.
The Institute for Public-Private Partnerships

Water Sector Officials Observational Study

Delegate Background

Eng. Mamdouh Barakat, Chairman, Fayoum Water and Wastewater Authority. Eng. Barakat oversees the water and wastewater utilities in the governorate of Fayoum. He previously worked as the assistant general secretary for the governorate of Fayoum. He holds a bachelor of arts degree in history from Cairo University.

Eng. Samir Hassan Abu Ellil, Chairman, Minya Water and Wastewater Authority. Eng. Abu Ellil manages and supervises authority activities, arranges and manages the board meetings, and monitors the water and wastewater projects in the governorate. He previously worked as the general director of the Minya city council. He holds a bachelor of science degree in agriculture from Assuit University.

Eng. Mahmoud Mansour, Chairman, Beheira Water Company. Eng. Mansour is responsible for planning, organizing, orienting, and controlling the water and wastewater plans in the governorate of Beheira. Eng. Mansour previously served as vice chairman for financial and commercial affairs at the Beheira Water Company. He has a master's degree in administration of works from Alexandria University.

Eng. Osama Abd El Rahman, General Manager of International Cooperation, National Organization of Potable Water and Sanitary Drainage (NOPWASD). Eng. El Rahman manages donor funds for water and wastewater projects in Egypt. Eng. El Rahman holds a bachelor of science degree in civil engineering from Cairo University.

Eng. Mohamed Hassan Safar, Deputy Head of Construction Department, National Organization of Potable Water and Sanitary Drainage (NOPWASD). Eng. Safar supervises construction of water and wastewater projects in lower Egypt and the Sinai. He holds a bachelor of science degree in mechanical engineering from Ain Shams University.

Eng. Taha Shehata, Chairman, Beni Suef Water and Wastewater Authority. Eng. Shehata implements strategic plans for the authority, supervises activities in all district branches, and serves as coordinator between the governmental directorates and donors. He participates in competitive utility management workshops that address reform of the water and wastewater sectors. Previously, Eng. Shehata served as vice chairman in the affairs department at the Beni Suef Water and Wastewater Authority. He graduated with a bachelor of science degree in electrical engineering from Alexandria University.

Eng. Mohamed Abu Zeid, Manager, Luxor Water and Wastewater Utility Department. Eng. Abu Zeid is responsible for the management of the water and wastewater department. He holds a bachelor of science degree in mechanical engineering from Helwan University.

Technical and Administrative Advisor Background

Eng. Abdelmaati Omar, Project Officer for Water and Wastewater Division, United States Agency for International Development/Cairo. Eng. Omar is the project officer for Middle Egypt Master Plan contract for the Fayoum, Beni Suef, and Minya governorates. He is responsible for managing the Middle Egypt construction program, including the high priority project and commodity procurement program. Previous USAID programs include the Cairo Water and Wastewater project, and the Provincial Cities Development project. Eng. Omar holds a bachelor of science degree in mechanical engineering from Ain Shams University.

Mr. James Baker, Director of Project Finance, Chemonics International Inc. Mr. Baker serves as a utility management and finance specialist at Chemonics. He is responsible for the Project Finance Practice Group, Global Division which undertakes projects involving private sector approaches in the provision of infrastructure. Mr. Baker holds an MPA degree in public administration and a BSE degree in civil engineering, both degrees earned at the University of Michigan. He will join the delegation for the Phoenix portion of the program.

Matthew L. Hensley, Chief of Party for the Egypt Institutional Development for Water and Wastewater Services Project. Mr. Hensley is the President of the Institute for Public-Private Partnerships. An economist and public-private partnership specialist, Mr. Hensley has extensive experience in environmental projects including water and wastewater, and solid waste management and disposal. He holds a master's degree in international economics from the George Washington University in Washington, D.C. Mr. Hensley will join the delegation for the San Diego and Tijuana portions of the program.

Ms. Anna Johnson, Training Administrator, Chemonics International Inc. Ms. Johnson manages USAID training programs for contracts in the Middle East. She holds a bachelor of arts degree in political science and Asian studies from Beloit College.

Eng. Ashraf Khalil, Vice President, Chemonics Egypt. Eng. Khalil provides technical and contractual oversight for Chemonics Egypt's projects. He also develops organizational management systems. Previously, he was vice president of business development at Engineering Consultants Group where he was a board member. Eng. Khalil holds a bachelor of sciences degree in civil/sanitary engineering from Cairo University.

Ms. Neda Nahas, Deputy Chief of Party, Legal and Institutional Reform Project. The project addresses a broad restructuring of the water/wastewater sector in Egypt. Ms. Nahas holds a master of science degree in education/teaching English as a second language, from Nazareth College.

Mohammad Ramadan Salama, Interpreter. Mr. Ramadan has provided interpretation and translation services for a number international conferences and training programs on agricultural reform policies, and infrastructure projects in water treatment and solid waste management. He holds a master of arts degree in modern English literature from Ain Shams University, and is currently pursuing a doctorate degree in comparative literature from the University of Wisconsin, Madison.

Legal, Institutional, and Regulatory Reform of the Egyptian Water/Wastewater Sector Project

**Orientation Study Tour for Egyptian Utility Chairmen
Phoenix, AZ; San Diego, CA; Tijuana, Mexico.**

20-29 January, 2000

20-29 January 2000	
Day	Schedule
Thursday, January 20	Travel day Delegation arrives in New York, travels on to Phoenix, Arizona
Friday, January 21	Phoenix, Arizona Technical and administrative orientation <i>Site Visit:</i> Scottsdale Water Treatment Plant
Saturday, January 22	Phoenix, Arizona Overview of Regulatory Issues in the State of Arizona Afternoon is free
Sunday, January 23	Phoenix, Arizona Free day Options: City tour of Phoenix and shopping, or tour of the Grand Canyon
Monday, January 24	Phoenix, Arizona <i>Site Visit:</i> Chapparel City Water Company <i>Site Visit:</i> Arizona Public Service Commission Evening: Depart for San Diego, California
Tuesday, January 25	San Diego, California <i>Site Visit:</i> California-American Water Company
Wednesday, January 26	San Diego, California <i>Site Visit:</i> Live Oak Springs Water and Power Company
Thursday, January 27	Tijuana, Mexico Leave for Mexicali/Tijuana, Mexico (20 minute drive) <i>Site Visit:</i> Tijuana Water Utility Return to San Diego, California
Friday, January 28	San Diego, California
Saturday, January 29	Depart San Diego to Cairo via JFK

The Water and Wastewater Sector in Egypt: An Overview

KEY POINTS

- ▶ Water is scarce and getting scarcer
- ▶ Pollution is a growing problem
- ▶ Legislation is in place, but implementation remains an issue
- ▶ Institutional framework is complex and overlapping
- ▶ Significant investment in infrastructure is needed
- ▶ Private sector approaches show promise

Water Scarcity: The last decade has seen Egypt shift from a situation of water abundance to a water deficit, and water resources are becoming increasingly scarce. Egypt depends on the Nile for approximately 95 percent of its water.

- Water from Nile: 55.5 billion cubic meters annually
- Total water (Nile, groundwater, reuse): 63.5 billion cubic meters
 - Agricultural use: 85%
 - Domestic and industrial use: 15%

Egypt's population is growing by more than one million people a year. This growth rate, matched with increasing urbanization, higher standards of living, and an agricultural policy that emphasizes expanded production to feed this growing population, means that the per capita value of water resources of 922 cubic meters per year in 1990 is expected to drop to 337 cubic meters per year by 2025. A country is generally deemed to be water stressed if annual supplies are less than 1,000 cubic meters per person.

Water Pollution and Wastewater Management: Increasing pollution of surface and groundwater resources poses a significant problem in many areas. Domestic, industrial, and agricultural wastes are the major sources of pollution.

- 90% of Egypt's wastewater is untreated
 - 95% of rural inhabitants are without wastewater services
 - 80% of industrial wastewater discharge goes unmonitored
 - Annual industrial use: 6.4 billion cubic meters
 - Annual discharge: 5.5 billion cubic meters
 - Amount supplied from the Nile: 65%
 - Amount of effluent received by the Nile: 57%
- Daily industrial discharge into the Nile includes:
- 1100 tons dissolved solids
 - 300 tons suspended solids
 - 168 tons oil
 - 1.5 tons heavy metals

Fecal contamination of waterways from untreated municipal sewage threatens communities that use the contaminated waterways. The Cairo General Organization for Sanitary Drainage (CGOSD) operates six municipal wastewater treatment plants in the Cairo area. These plants

have a total capacity of 3 million cubic meters of wastewater/day. Operation and maintenance problems, however, at these and other municipal plants throughout Egypt are common. Many municipal plants are severely overloaded and cannot effectively treat the wastes they receive. Others do not have adequate laboratories to perform routine control procedures or lack proper spare parts, equipment or trained personnel.

The high levels of inorganic and organic pollutants in industrial discharges may cause serious damage to sewer systems, impair the performance of oxidation pond systems, and restrict the reuse of treated effluent.

Fertilizer, pesticides, salinization, and other agricultural residues add to the surface and groundwater pollution. Fertilizer use, in particular, has increased dramatically since the construction of the Aswan High Dam, since nutrients from flood waters are no longer available to replenish the soil. Egypt uses considerably more fertilizer and pesticides than other countries in the region. In addition, while not as significant as the other pollution sources, increasing inland navigation for tourism and commercial and public transport also contributes domestic wastes, oil and grease residues.

Legislation and Regulation: The Environmental Protection Law (Law 4/1994) is Egypt's most comprehensive environmental legislation. The law defined the role of the Egyptian Environmental Affairs Agency (EEAA) and made the agency responsible for the overall coordination and management of environmental affairs. Other legislation addresses wastewater hookup and discharge, monitoring, and conditions for the reuse of liquid wastes for irrigation purposes, but no existing laws or regulations address sludge management or disposal in any meaningful manner.

Egypt has a long history of environmental legislation, and the volume of legislation dealing with environmental topics suggests that it may be time for Egypt to consider re-authoring existing laws to bring together all legislation for a given sector under one umbrella. The establishment of an environmental water law, for example, would streamline existing regulations, making them both more accessible and easier to implement.

Although environmental legislation may need amending or strengthening in specific areas, the major issue is enforcement.

On the private sector front, the Government of Egypt has been working since 1991 to improve the climate for privatization and private sector participation. Legislative milestones include removing foreign exchange restrictions, authorizing the creation of financially autonomous utilities, and passing investment law 8/1997, which allows foreign ownership, repatriation of earnings and capital, and the freedom to set profit margins and prices. The Government of Egypt is engaged in legal and institutional reform for the water and wastewater sector. With a project initiated last spring, legislation is being drafted to rationalize institutions, provide greater autonomy for local utilities, establish a regulatory program, promote corporatization and commercialization, and enhance private sector participation.

Institutional Issues: The institutional framework of Egypt's water and wastewater sector is quite complex, involving not only over a dozen ministries and national organizations, but also a number of local institutions. It is characterized by overlapping responsibilities and general limitation to autonomous management, through local institutions with a local and corporate identity have generally performed better than those located with government administrations. Local government includes regional governorates [provinces], which are divided into markaz [districts], each of which contains towns and villages with their own administrations.

The EEAA, which is under the Ministry of the Environment, has overall responsibility for coordination and management of environmental affairs. Responsibility of water and sanitation is distributed between the Ministry of Housing, Utilities and Urban Communities and the Ministry of Local Administration, which oversee water supply and sewage treatment. The Ministry of Health has the overall responsibility of water quality and water supply and sanitation health effects, monitors drinking water quality and wastewater discharge content, and issues water quality standards. Other ministries involved include international cooperation, planning, and finance.

Authority for the management of water resources lies with the Ministry of Public Works and Water resources. It is the only body to authorize use of water from the Nile, canals, drains, and groundwater sources. Along with the Ministry of the Interior, it has some responsibility for enforcing the law. It also monitors water quality and quantity and issues discharge licenses. The Ministry of the Interior formulates water policy, patrols waterways, and enforces the law. The Ministry of Industry oversees planning for and treatment of industrial waste. Other ministries involved in water management and use include agriculture and land reclamation, tourism, power, and transportation.

The National Organization for Potable Water and Sanitary Drainage (NOPWASD) established in 1981, is responsible for the design and engineering of major water and wastewater projects in all governorates except for Cairo, Alexandria, the canal cities, Sinai, and the Red Sea Governorates. This organization is under the general auspices of the Ministry of Housing and Public Utilities. At the provincial level, water supply and sanitation services reside with the governorates, with the exception of Greater Cairo Water Supply and the Alexandria General Water Authority (GCWGA and AWGA, respectively). The operation and maintenance of water and wastewater facilities is the responsibility of the local units at the governorate level.

Independent water supply and sewerage organizations exist in the cities of Cairo, Alexandria, and in the Canal Zone, including: the Cairo General Organization for Sanitary Drainage (CGOSD), GCWGA, AWGA, the Alexandria General Organization for Sanitary Drainage (AGOSD), and the Suez Canal Authority.

Water and Wastewater Sector Investment Needs: The Government of Egypt has been working since 1982 to upgrade its water and wastewater sector. The 15 year period of 1982-1997 saw:

- \$8.8 billion in investments allocated
- Potable water production increase 280%, to 16.5 million cubic meters a day

- Wastewater service increase 650%, to 8 million cubic meters a day
 - Urban water supply coverage increase from 70% to 90%
 - Rural water supply coverage increase from <10% to 56%
 - Urban sewerage coverage increase to 30% for most areas, and to almost 70% for Cairo
 - Rural sewerage coverage remain low, about 3%
- ▶ The goal: 100% coverage in water and wastewater service by 2017
 - ▶ Required investment: \$19.2 billion

The current condition of the Egyptian water and wastewater infrastructure is unsatisfactory. The investment required for upgrading operation and maintenance (O&M), exclusive of rehabilitation and new investment, exceeds the financial capacity of the Government of Egypt. Investments needed to keep pace with maintenance and upgrades are estimated to range from \$4 to \$7.5 billion. The demands of a growing population and continued economic growth require greater access and higher quality of service in the water and wastewater sector. Such investment needs call for market-based incentives and participation from the private sector.

Private Sector Approaches: In a piece of landmark legislation, Presidential Decree 281/1995 authorized the creation of financially autonomous utilities. The legislation allows commercial approaches to delivering public water and wastewater services, giving utilities the ability to levy and retain tariffs and generate revenues. Utilities are improving rate setting, bill collection, and cost analysis. Extensive on-the-job training programs at water and wastewater facilities across the country are helping to improve service, increase revenues, and contain costs.

Municipalities are testing new approaches to utility management such as commercial contracting, build-own-operate, and build-operate-transfer. The Government of Egypt is also considering establishing concessions for water and wastewater operation and maintenance in some areas. Such concessions could conceivably be turned over to private companies and run on a contractual basis.

Sharm El Sheikh, a popular resort town, serves as an illustration of this trend, where the move toward private participation in utility operations is already well advanced. Many services are managed by private companies, giving the town one of the highest wastewater service access rates in the country. A private system supplies water to most of the hotels in the city's popular Naama Bay area, and a private wastewater treatment facility is being built that will also supply treated water for reuse.

Conclusion: As demand for water increases and supply becomes more limited, infrastructure investment and institutional reforms will become even more critical. As the Government of Egypt attempts to reduce its reliance on borrowing and decrease its budget deficit, it will need to access private capital and increase private participation in the water and wastewater sector to effect needed changes.

LIRR Egyptian Utility Chairmen Observational Study Tour

**Phoenix, Arizona; San Diego and Los Angeles, California; Tijuana, Mexico
20-29 January 2000**

Thursday, January 20: Travel day

Delegation arrives in Los Angeles, travels on to Phoenix, Arizona.

Home to one of the most arid regions in the U.S., the State of Arizona is a pioneer in the use of public-private partnerships as a way to manage and solve its water and wastewater challenges. The site visits and presentations in Arizona will focus on the regulatory environment for privatized water projects and facilities, the use of corporate principles in the management of municipally owned and operated facilities, and the similarities between the environmental considerations in Arizona and Egypt. Arizona, like Egypt, relies heavily on one major river (the Colorado) as a source of potable water. The Colorado passes through several states and as a result there are continuing issues of jurisdiction and sustainable use of this natural resource. With a burgeoning population, the growth of new communities or suburbs is on the rise in the state, placing greater demand on municipalities, and the river, to supply enough water to all inhabitants.

Friday, January 21: Phoenix, Arizona

Technical and administrative orientation

The technical and administrative orientation is designed to welcome chairmen to the U.S. and to give an overview of the technical issues to be addressed during the tour. The delegation will also complete administrative paperwork and receive an overview of the logistical issues related to the tour.

Site Visit: Scottsdale Water Treatment Plant

Scottsdale is one of the first municipalities in the U.S. to use privatization for an environmental facility of this type. Privately operated, 25 year, full service contract for the financing, design, construction, and operation of the facility. Transferred back to the city in the past several years. A true BOT with and accelerated T.

Jim Clune

Tel.: (602) 585-0890

Saturday, January 22: Phoenix, Arizona

Overview of Regulatory Issues in the State of Arizona

David Jankofsky, Director of Strategic Planning and Budgeting in the Department of Transportation, former Director of the Utilities Division of the Arizona Corporation Commission (1997-1999); Team Leader, Regulatory Group, LIR Project.

The presentation will focus on the physical and regulatory environment in Arizona and its relationship to the initiatives of NOPWASD and the LIR project. The presentation will illustrate the relationship between regulators and water facility operators and how both

parties, working together, achieve greater efficiency in the provision of services at a reduced cost. Mr. Jankofsky will focus his presentation around the role of corporatized utilities in the State of Arizona and the parallels to the GOE's recent initiatives in the sector. He will also show how both parties can establish working guidelines and performance targets based on technical and economic standards and principles.

Afternoon is free.

Sunday, January 23: Phoenix, Arizona

Free day

Options: City tour of Phoenix and shopping, or tour of the Grand Canyon.

Monday, January 24: Phoenix, Arizona

Site Visit: Chapparel City Water Company, Privately Owned and Operated Water Treatment Facility

Serving the new community/suburb of Fountain Hills (home to the world's largest fountain) in the desert.

The site visits to Chapparel City Water Company and Scottsdale Water Treatment Plant will focus on how two distinct water treatment facilities, one municipal plant and one private facility, operate according to international best practices. Each site visit will focus on the technical, engineering, financial, and regulatory issues each facility has to deal with on a regular basis. The host facility will explain the role of the operators vis-à-vis the roles of the regulators and consumers. The differences between each facility will be subtle yet distinctive.

Site Visit: Arizona Public Service Commission

The role of the regulator is critical for chairmen to understand in terms of the new regulatory environment in Egypt. Chairmen will be able to interact with regulators of local utilities in a productive, adult-learning environment. The Commissioner will present an overview of the role of the PSC in Arizona, its links to neighboring states, its relationship to consumers, and ultimately its working relationship to corporatized and privatized water utilities. Topics of discussion will include: rate/tariff cases, performance monitoring, public hearings, labor, and environmental and economic considerations of plant operations.

Evening

Depart for San Diego, California

Tuesday, January 25: San Diego, California

San Diego, California is a medium size city in Southern California. The town's water comes from the same Colorado River that supplies most of Arizona, Southern California,

and Northwestern Mexico with potable water. Again, the relevance to Egypt and the Nile is clear. San Diego and its environs is also home to several private and municipal water facilities.

Site Visit: California-American Water Company

The California-American Water Company serves Los Angeles, Monterey, San Diego, and Ventura counties. The CAWC is located in Chula Vista, California.

John Barker
Treasurer
8800 Kuhn Drive
Chula Vista, CA 91914
Telephone: 619-482-3747
Fax: 619-656-2408

Wednesday, January 26: San Diego, California

Site Visit: Live Oak Springs Water and Power Company

Live Oak Springs Water and Power Company serves San Diego county. It is located in Boulevard, California, five miles north of the Mexican border and sixty-five miles east of San Diego.

Nazar Najor
Manager
P.O. Box 1241
Boulevard, CA 91905
Telephone: 619-766-4288

Thursday, January 27: Tijuana, Mexico

The delegation will drive from San Diego to Tijuana, which is approximately a 20 minute drive.

Mexico has some interesting parallels to Egypt. Much of the Northern part of the country is arid and relatively poor, compared to towns over the border in the U.S. Much of the water that serves the population of Mexicali in Baja California comes from the Colorado River. Mexico, like Egypt, is divided into relatively autonomous states. Each state sets its own environmental and health standards and each state is responsible for its own contracting with private sector service providers. The regulatory commission for the State of Baja California is called CESPM. CESPM has initiated contracts with private providers of water and wastewater services throughout the state. Members of CESPM's staff will explain the unique nature of their regulatory role as it relates to the US.

Site Visit: Tijuana Water Utility

Return to San Diego, California

Friday, January 28: Los Angeles, California

The delegation will drive from San Diego to Los Angeles, which is approximately a two hour drive.

Site Visit: Public Utilities Commission

The State of California has some of the country's strictest environmental and health standards. The role of the California Public Utilities Commission is to regulate the operations and performance of, inter alia, water utilities.

Saturday, January 29

Depart Los Angeles for Cairo

San Diego Water Pollution, San Diego-Tijuana Water Problems

Untreated Mexican sewage of mostly residential origin, flowing at a rate of 13-15 million gallons per day, contaminates the Tijuana River Valley and drains on the U.S. side of the border near San Diego. While this has been a problem for nearly 60 years, it has been recently growing much worse. A health quarantine was in effect at Imperial Beach, California, for over 140 days during 1993 due to the sewage, which adversely impacted that city's tourism industry. Average annual losses have cost the city an estimated \$100 million. An agreement was reached in 1990 between the United States and Mexico to build a \$200 million border facility by 1995 to handle sewage flowing from Tijuana into San Diego. The city of San Diego originally planned to build its own treatment facility alongside the international one, but later canceled these plans. The federal commission in charge of construction of the international plant then announced that completion of the plant would be delayed until at least 1998, partly due to the city of San Diego's change in construction plans and winter floods. The need for funding could threaten or delay completion of the project.

The U.S.-Mexican border area in recent times has come under heightened scrutiny for high levels of environmental degradation. Among a wide variety of different water pollution and depletion problems affecting the border region, water pollution in the San Diego-Tijuana area represents a highly visible and serious challenge to environmental quality. The problem is not new. Untreated Mexican sewage has contaminated the Tijuana River Valley in San Diego for 60 years. However, most experts agree that the pollution problem has grown worse.

Water quality is deteriorating along the border largely due to over-development. In 1991, the Council on Scientific Affairs of the American Medical Association described the border region as "a virtual cesspool" of pollution and disease, noting that 46 million liters (about 13-15 million gallons) of raw sewage flow each day into the Tijuana River. Much of the sewage that enters the river in Mexico and crosses the border, sometimes referred to as "renegade" flows, and travels through aged, inadequate or non-existent pipelines.

The raw sewage has created an environment where mosquito breeding is rampant and the potential for the transmission of vector-borne diseases is high. At the beach, swimmers are in danger of contracting hepatitis, dysentery, and other diseases from bathing in waters polluted by sewage. Swimmers most frequently suffer from gastroenteritis — an illness characterized by vomiting, diarrhea, stomachaches, and fever.

Imperial Beach, California (next to San Diego, first issued a quarantine for hazardous ocean water quality in 1959. Quarantines have been imposed intermittently ever since, mostly due to sewage releases in Mexico. Since the early 1980s, the Playas de Tijuana treatment plant, located one mile south of the border, has discharged about one million gallons per day of raw sewage into the ocean due to leakage and system failures. Drainage from the Tijuana River appears to have contributed the most towards unsanitary conditions at the beach. Health quarantines were in effect at Imperial Beach, for 146 days from January through August of 1993, dampening the city's summer tourism and commerce activity.

Most local marine biologists emphasize that sewage contamination of the coastal margins is not a long-term problem. Nature will take care of most of the clean-up on its own. Strong offshore currents carry away most effluent before it has a chance to cause long-term damage, and sunlight helps to break down whatever remains. However, over the short-term, raw sewage can accelerate the deoxygenation of the water, depriving plants and animals of a necessary component for their survival. The release of sewage particles into the water, called organic loading, can block sunlight and in the process prevent normal plant growth and photosynthesis. Sediment that settles on the ocean floor can kill off bottom-feeders like brittle stars, sea urchins, starfish, sea worms, clams, and mollusks as well as an entire generation of kelp plants.

The water pollution problem in the San Diego-Tijuana area does not emanate exclusively from Mexico. The California Regional Water Quality Control Board has accused the city of San Diego of under-reporting sewage spills and dumping 20,000 tons of sewage solids into the Pacific Ocean over the past five and a half years. The water agency threatened the city with a \$3.3 million fine for violations of environmental standards for sewage disposal. If the fine is levied against the city, it will not be the first time. In March, 1991, U.S. District Court Judge Rudi Brewster imposed a \$3million fine, citing 3,701 spills between July 1983 and December 1990 that released 99 million gallons of raw sewage and contributed to some 400 health quarantines of beaches and public waterways.

One of the worst sewage spills in the nation's history took place at Point Loma in February, 1992, when an outfall pipe ruptured. Bacteria counts soared to more than 1,000 times the legal limit, prompting local officials to close beaches from the border to the mouth of the San Diego River for about two months.

Current allegations of water pollution by the city of San Diego center largely around the operations of the Point Loma sewage treatment plant near the northern part of San Diego Bay. The plant receives about 180 million gallons of sewage each day from San Diego and 16 other areas (including Tijuana), that includes about 200 tons of solids. To comply with federal permits under the Clean Water Act, the plant must remove 75 percent of the solids it receives. About 13 tons per day are allowed to be disposed of at sea, and the remaining processed solids (called sludge) must be kept on land in landfills or as compost. According to a state sanitary engineer, at certain times during 1992 and 1993, the plant's efficiency dropped as low as 17 percent because from 20 to 250 tons of solids that had previously been removed were returned into the city's sewer system at a sludge-drying facility on Fiesta Island.

The greatest effort to tackle the San Diego-Tijuana area water pollution came in the form of a joint agreement signed in mid-1990 to build a \$200-million facility along the border to handle sewage flowing from Tijuana into San Diego. The plant would cleanse waste effluent from Mexico to U.S. standards and discharge it several miles from the coastline via a huge outfall. A new sewage treatment plant for the city of San Diego would be built on the same site, and the two plants would share a 12-foot diameter pipe to dispose of the treated wastewater. The city has since canceled plans to build its own plant. Originally, Mexico was expected to contribute about \$41 million to the project, the U.S. Government about \$100 million, and the state of California and city of San Diego the remainder. The plant was expected to become operational in 1995.

In April, 1993, the International Boundary and Water Commission (IBWC) -- a U.S. federal agency that addresses water pollution along the border and is overseeing construction of the border plant -- announced that completion had been delayed until at least 1998. A commission spokesman blamed winter floods and the city of San Diego for the delay. Some officials have expressed concern that the treatment plant as currently proposed is already undersized. Juan Vargas, a San Diego City Councilman, believes that by the time the 25-million-gallon-a-day treatment plant is operational, the flow of Mexican sewage will exceed the plant's capacity.

Funding problems could endanger the project further as work continues on it. Estimates for the total cost of the plant now are around \$235 million. Congress approved \$58 million towards construction, less than the \$70 million proposed by President Clinton. State and local budget shortfalls are having an effect on current treatment activities. In 1990, San Diego began treating overflow Mexican sewage on a temporary basis, with the IBWC and the California state government helping to pay for treatment costs. Those funds have since dried up, forcing the city to curtail its treatment of overflow. The city can handle 13 million gallons of Mexican sewage daily. When rains or river flows exceed that amount, the sewage is now allowed to flow through the Tijuana River Valley.

In September, 1993, the San Diego city and county governments issued emergency declarations, hoping to spur the IBWC to spend up to \$10 million on temporary sewage treatment projects. Some short-term measures that could be undertaken include:

Construction of an "equalization basin" in which Tijuana sewage would be stored during the day and sent back to Tijuana at night when the system is not as overburdened; and
Construction of 10 acres of "oxidation" ponds capable of handling up to 30 million gallons a day of raw sewage, which would be chlorinated and piped into Mexican waters.

The IBWC has opted for the latter plan.

A more long term solution to the U.S.-Mexican border water pollution problems is needed. A border-bond plan as announced by the Clinton Administration in July, 1993 could be a step in the right direction. The border-bond plan would create a joint U.S.-Mexican agency that would issue around \$8 billion worth of bonds to pay for the cleanup of the border. The bonds would be used to build treatment plants for sewage and drinking water along border-area rivers. Sewage and water fees from local residents on both sides of the border would be used to repay the bonds.

In the overall picture, both the United States and Mexico have demonstrated an increased willingness to peacefully negotiate to overcome water pollution and depletion problems along their common border. However, high levels of pollution have built-up over a period of many years to contaminate water in the region. Even with strong measures, it will take time for pollution levels to return to acceptable levels.

The treaty to jointly build and operate an international treatment facility was signed in 1990. As the facility has not yet been completed, and funding to complete it remains uncertain, the case could be considered to be moving towards resolution. While the treaty addresses the pollution

problem, it does nothing physically to stop the pollution, nor does it specify any legal measures on pollution control in the interim. Even after the treatment facility is completed, there remain serious questions about how much pollution will be prevented from entering the Tijuana River.

Although NAFTA originally a bi-lateral agreement between the United States and Mexico, it is no doubt covered in provisions, or related to them, in the NAFTA agreement.

There are sub-national factors at play in the situation. Both San Diego County and the California Regional Water Quality Control Board act to monitor and enforce sanitary water standards in the San Diego area. Primary responsibility for sewage treatment rests with the county. The state imposes fines on the county for violations of the standards.

A \$239 million facility to treat human and other types of waste is supposed to be completed by 1995. Waste that includes lead, cyanide and others, is dumped at the rate of 20 million tons per year into the Tijuana River. The Mexican portion of cost is 16 percent, and is a response to NAFTA criticisms. However, the Pacific pocket mouse is home to the site of the facility, listed in February 1994 as an endangered species by the U.S. Fish and Wildlife Service. This may delay or change the site of the project. Others have proposed an integrated pond system followed by secondary treatment through constructive wetlands.

Local officials estimate that pollution of the Tijuana River has forced about 2.5 miles of shoreline to remain quarantined on a near-permanent basis. Quarantines have cost Imperial Beach more than \$100 million a year in lost tourism and recreation opportunities.

Disease is a serious problem in this case. Diseases such as malaria, dysentery, and hepatitis tend to flourish where large quantities of raw sewage inundate the local surroundings. No significant impact has been observed on the fishing or marine harvesting industries, although the president of the urchin producers association of San Diego has expressed deep concern about high levels of sewage — equating its potential damaging effects on sea floor marine life with the effects of radiation.

Author: Steve Pearson

Source: <http://www.american.edu/projects/mandala/TED/SANDIEGO.htm>

Legal, Institutional, and Regulatory Reform
of the
Water/Wastewater Sector in Egypt (LIRR) Project

**Water/Wastewater Sector Officials
Observational Study Tour to the United States and Mexico
20-29 January 2000**

Tour Report

Prepared by:
LIRR Consultants

February 2000

Contents

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- Section 2 Delegation
- Section 3 The Technical and Administrative Advisors
- Section 4 Daily Resume of Activities
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Section 1 Introduction

The Legal, Institutional and Regulatory Reform of the Water/Wastewater Sector in Egypt (LIRR) Project organized a study tour for the water/wastewater utility Chairmen in the Egyptian Governorates. The chairmen were selected from those governorates where USAID is financing projects.

LIRR sent invitations directly to relevant utility Chairmen. The final delegation, selected by the Deputy Minister MHUUC and approved by concerned Governors, comprised seven utility heads as well as two top management officials from the National Organization for Potable Water and Sanitary Drainage (NOPWASD). In addition, one USAID/Egypt officer and a team of technical and logistical advisors accompanied the delegation.

A detailed listing of the delegation and Technical/Administrative advisors are included in Sections (2) and (3) respectively.

The tour was designed to cover the following topics:

- Rate/Tariff Cases
- Operations and Maintenance
- Role of the Regulator
- Role of the Consumer
- Performance Monitoring
- Environmental Considerations
- Labor Issues
- Health Standards Compliance
- BOTs

The cities of Phoenix, Arizona and San Diego, California in the US, as well as Tijuana, Mexico were selected for the tour. The two U.S. cities were selected for their climatic and geographic similarity to Egypt. Tijuana was selected for its parallels as an emerging market and environmental similarity.

This Tour Report comprises four sections in addition to this Section entitled Introduction. The remaining sections are Sections 2 and 3, including the coordinates of the Delegation Members and Technical/Administrative Advisors respectively, and Section 4, containing a resume of daily activities. The report also includes eight exhibits containing material and brochures provided during the delegation visits to different organizations, and the exit review and delegates' tour evaluations completed on the final day of the tour.

Section 2 The Delegation

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Beheira Water & Drainage Company

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Section 4 Tour Report/Evaluation of Advisors

Jan. 21 – a.m. visit to the Scottsdale “Water Campus”, hosted by Jim Clune, Director of Water and Wastewater Treatment, City of Scottsdale.

The Scottsdale facility was said to have been developed as a BOT project. However as described by the host, it sounded more like a “Design-Build” or hybrid turnkey type of facility which was designed, financed, constructed and operated by a private consortium for several years and then turned back to the City. The City is making payments to the investor consortium over a 22-year period from 1986 to 2008.

Operations Conducted at the Water Campus:

The Campus consists of three separate facilities, two wastewater treatment/water reclamation plants and one potable water treatment plant. The two wastewater treatment-reclamation facilities have the following characteristics:

- Secondary Treatment/Reclamation – 12 million gallon per day (mgd) capacity plant (equivalent to 45,420 cmd) which treats a portion of Scottsdale’s wastewater; some of Scottsdale’s wastewater is transferred to Phoenix for treatment.
- Effluent from the reclamation plant is reused for irrigation of parks, roadway median strips and golf courses; reclamation plant effluent quantities in excess of irrigation requirements are sent to the Advanced Wastewater Treatment Plant (AWTP) for processing. AWTP effluent is of drinking water quality and is recharged into the groundwater aquifer.
- The AWTP with a capacity of 10 mgd (37,850 cmd) processes treated wastewater from the reclamation plant during periods when the demand for irrigation is low; it also processes raw water from the Central Arizona Project (CAP) canal, during periods when the City’s allocation from the canal exceeds its requirement for the production of potable water.
- The reclamation plant processes include pretreatment, primary treatment, aeration, clarification, filtration and chlorination.
- The AWTP processes include addition of sulfur dioxide and ammonia, micro-filtration, addition of sulfuric acid and an antiscalant, high pressure pumping, reverse osmosis, decarbonization, post treatment, chlorination and recharge.

The potable water treatment plant has a capacity of 50 mgd (equivalent to 189,250 cmd) and processes raw water from the CAP canal. The canal takes water from the Colorado River approximately 130 miles from Phoenix and Scottsdale. The raw water is of relatively poor quality due to high level of suspended solids and the evaporation that occurs as it traverses through the desert in the canal. The Colorado River water is shared by the states of Colorado, Nevada, California and Arizona through an interstate compact

established under federal legislation. (A copy of the agreement is on file with Chemonics International.)

Water treatment is accomplished in six steps including:

1. pre-treatment, consisting of chlorination and the addition of powdered activated carbon and potassium permanganate
2. coagulation through the addition of a coagulant, aluminum sulfate
3. flocculation, with polymers added to form larger and heavier particles, with three stages of mixing in large flocculators
4. sedimentation, the large aggregated particles (floc) are removed by settling
5. filtration, of small remaining particles by filtering through anthracite coal and fine sand
6. disinfection using chlorine to render inactive any remaining bacteria, viruses or other harmful microorganisms

The group was given a complete tour of the facilities with a very comprehensive description and explanation provided by Mr. Clune.

The host, though extremely knowledgeable of the facilities and operations under his control, was not well versed in the financial and general management aspects of the Scottsdale water utility and was unable to answer questions in those areas. He referred the group to the General Manager of the utility for information on water rates, operational parameters, statistics, performance indicators and financial statements (materials now on file with Chemonics International). He did however, provide some figures on the costs of Colorado River water received through the CAP canal which is now very expensive at \$1,200 per acre-foot. With one acre-foot = 325,000 gallons, the unit cost per 1,000 gallons is \$3.69 or \$0.98 per cubic meter (LE3.3 per cubic meter).

Lunch – was hosted by Chemonics at the El Chorro Restaurant in Paradise Valley. The location was selected based on its proximity to a mosque so that the delegates could attend prayer before lunch.

Afternoon – briefing conducted by Jim Baker providing first, a recap of the key points observed at the Scottsdale facilities and second, the objectives of the study tour and demonstrating how the sites had been selected in a way that would support achievement of the objectives. Two broad concepts had been adopted in designing the tour:

1. To select sites to be visited that would demonstrate U.S. experiences that would be relevant to the nature of the Egyptian water sector after implementation of the LIRR project reforms.
 - Regulatory system
 - PSP in the sector
 - Border situation
 - Increased autonomy and corporatization of utilities
 - Water reuse practices

2. To select sites having commonality and comparability with the Egyptian environment
 - Desert physical environment
 - Heavy reliance on a single river (Nile and Colorado)
 - Utility organizational similarities (e.g., holding company with many separate and dispersed operating units in the U.S. and the Governorate utility with many separate and disbursed operating municipal or *markaz* units).

Anna Johnson then covered a number of administrative details and distributed the remaining amounts of per diem advances.

Jan. 22 - a.m. presentation by David Jankofsky covering the utility regulatory system in Arizona. David is the former director of the Utilities Division of the Arizona Corporation Commission (sometimes referred to as the Public Service Commission) and provided a thorough description of the key elements of the regulatory program. Some of the key points stressed by David are:

1. The Commission covers economic regulation only, i.e., it controls such matters as water and wastewater rates, level of service provided by the utility, conditions under which service may be interrupted (cut-off), and the relationships that the utilities maintain with customers. The commission is also responsible for approving all proposed capital investments. Other agencies are responsible for environmental and health issues. The Commission regulates privately-owned utilities only; publicly-owned water utilities are regulated by the elected officials of the local agency, i.e., the city council.
2. David also spoke to the issue of how the regulatory agency and regulated private utilities work together to their mutual benefit and the overall welfare of utility customers by:
 - Enforcing rules to ensure good performance/service typically helps keep operational efficiencies high; the regulatory program allows the utilities to increase rates in order to maintain its earnings at prescribed and authorized level.
 - Additional incentives are provided for efficiency and productivity.
 - Disincentives (penalties) are provided to discourage poor performance.
3. The Commission also regulates publicly-owned utilities when they become involved in a PSP transaction with specific PSP rules and regulations, including those covering the procurement process, corporatization, and marketing.

David provided a detailed description of the processes through which the Colorado River water resources are allocated among the four states and how the water is transported via the CAP canal from the point of extraction from the river to Phoenix and onward to Tuscon. He also described the other main sources, which include several reservoirs built in the mountains and groundwater that provides a reliable high quality source. Coupled with the CAP water, the area has a secure water supply for the long term.

There were many questions from the delegates and a lively discussion. This topic caught the interest and attention of the delegates as much as any on the tour.

Jan. 24 - a.m. visit to the Arizona Corporation Commission. Briefing provided by Bob Kennedy, Consumer Service Program Manager and Carl J. Kumasek, Commissioner and Chairman of the Commission. The briefing covered some of the information already provided by David on Saturday, but brought out additional details and allowed for exploration of additional areas by the delegates. The Commission regulates in excess of 350 water utilities, some of which are very small and none that are very large. The organizational chart of the Commission and a copy of its most recent annual report were distributed. Copies of the regulations and bylaws of the Commission were made by Anna Johnson and distributed.

The group was then invited to observe a hearing which was being held that morning. The hearing dealt with the regulation of independent power producers, who are now able to compete with the principal power utility(ies), conduct marketing campaigns and sell power to consumers through consolidated bills issued by the principal utility organization(s). The subject of the hearing was a proposed "code of conduct" establishing the rules governing how independent power suppliers and power distributors act in the recently established competitive environment.

Jan. 24: p.m. visit to Citizens Water Resources (CUC), the largest private w/ww service provider in Arizona. Its service area is 95 square miles, with 60,000 water customers and 45,000 wastewater customers. According to our very gracious hosts Ray, Teri Sue, and Mike, private utilities are more efficient than public. The CUC has 1200 customers per employee, while public w/ww utilities average 400-500 customers per employee. (The CUC has a total of 88 employees servicing a large retirement community.) The annual capital expenditure is about \$35 million. Municipal utilities tend to be 100% developer financed for new areas.

It was found that CUC has a somewhat adversarial relationship with the Arizona Corporation Commission (ACC). The CUC must apply to the ACC every 3-5 years for a rate increase and it takes about 12 months from application to approval. The last rate increase request cost the CUC \$800,000 to prepare and was rejected in the end. (The CUC was able to recoup about 1/2 of the application cost.)

Critique of the Arizona portion of the tour by Mr. Jim Baker:

Overall, the technical substance of the tour was well designed and appropriate for the delegates. All administrative and logistics arrangements were well-planned and everything went off like "clockwork". The hosts were cordial and spent whatever time was required to cover their subjects and respond to all questions. The Arizona Corporation Commission was particularly gracious, taking the time at the beginning of the hearing to welcome the delegation and to introduce them to the parties and other observers. All of the non-delegates played important roles that if omitted, would have

detracted significantly from the quality of the tour. The interpreter accompanying the tour was no less than outstanding.

Congratulations and thanks go to Anna and Jeff for another superb performance by IET. Sincere thanks also to Neda Nahas and Ashraf Khalil who continually reminded the delegates of the correlation between sites visited/presentations given and the relevant aspects of the LIRR project, pending legislation and evolving nature of the Egyptian water sector.

Jan. 25 - San Diego

a.m.: visited the California-American Water Company, whose parent company is the American Waterworks Services Company, Inc. AWC is the largest private water company in the U.S., serving over 10 million customers across several states. Our host Carl Frye stated that they have recently acquired Citizens Water Resources (visited in Phoenix) and are currently operating utilities in California, Arizona, New Mexico, and Hawaii. Some discussion revolved around the company's relationship with the different regulatory bodies in each state. The hosts contend that it is much easier to work with appointed regulatory commissioners than elected ones because customer needs take priority over political considerations.

The company operates at 60% debt against 40% equity. The transparent regulatory system allows utilities to borrow at very low interest rates. The Arizona water tariff rate is \$1/1000 gallons.

Throughout the tour, the Egyptian delegates were astounded at the extremely low staffing requirements for operating water or wastewater facilities in the US. CAWC customer to employee ratio in California is 500:1, while in Arizona it is only 1000:1. These figures elicited a number of comments from the Egyptian utility chairmen, who humorously vented their extreme frustration with the number of staff imposed on them by their superiors.

The economic indicators used to calculate rate of return include per customer costs of billing and meter reading, and earnings per share. A comparison of the 4 states where the CAWC provides service follows.

	CA (water)	AZ (water)	NM (water)	Hawaii (WW)
# of customers	100,000	4,600	16,000	10,000
# of regulatory commissioners	5	3	5	3
Selection process	appointed	elected	appointed	elected
Type of regulation	3-yr forward looking	historical (look at previous years' ROR)	historical	historical
Rate of Return	11%	8%	12-14%	16%

Jan. 26 - San Diego

All day visit to Live Oaks Springs Resort, owned by entrepreneur Nazar Najor. He also operates the resort and provides water from wells for the seasonal and permanent residents. He stated that he uses the latest technologies in water and waste treatment. He also stated that he is currently breaking even on his w/ww services but expects to make a profit in the coming years. This site provided an excellent example of a small, innovative private utility.

Jan. 27 - San Diego

a.m.: The appointment with the Tijuana Water Utility was cancelled. The Tour Organizers at once set up an appointment with the CA Department of Health. The Department of Health is responsible for monitoring the fulfillment of the Safe Drinking Water Act and US EPA requirements. The department monitors over 140 water systems for compliance with regulations, monitors water quality, enforces orders, issues public notifications, and provides technical assistance (Refer to Exhibit 8 for more information).

p.m.: We then proceeded to Tijuana for lunch and tour of the city.

Jan 28- San Diego

The debriefing session was attended by the entire delegation. Matthew Hensley and David Jankofsky lead the debriefing session, with Neda Nahas providing contextual relevance of the tour to Egypt and updating the delegation of recent developments in the sector reform agenda.

Abel-Maaty Omar made an opening statement emphasizing that USAID and the Government of Egypt have agreed to issue the new law for the organization of the water and wastewater sector of Egypt and the "Public Utility Concessions for Establishment, Management and Utilization of Water/Wastewater Utilities." From this study tour, he said, new ideas should arise to fine tune the reform program. Discussions should produce strategies to push forward the program.

Objectives of LIRR Project were presented and discussed, and the components of the reform program expounded upon.

The Chairman of Minya raised an issue that should be discussed in future LIRR workshops: "To date it is not clear if the objective is centralization or decentralization."

Participants expressed extreme satisfaction with the overall tour and completed tour evaluation forms.

Jan. 29 - San Diego > New York > Cairo

January 2000 OST

Evaluation Phoenix & San Diego

LIRR Project

	Mamdouh Barakat	Samir Hassan Abu Ellil	Mohamed Ahmed Abu Zeid	Mohamed Mansour	Taha Mohamed Shehata	Mohamed Hassan Safar	Osama Abd El-Rahman
1. What were your training goals?	<ul style="list-style-type: none"> - Observing O&M activities - Discussing means of cost recovery - Orientation to PSP in WWW sector 	<ul style="list-style-type: none"> - Observing water utility organization - Visiting w/ww facilities - PSP in water systems - Regulatory bodies and their role in service pricing and costs - Relation between Ministry of Health & water companies 	<ul style="list-style-type: none"> - Knowing how to reform the sector in Egypt - Benefiting from American experience in the sector development 	<ul style="list-style-type: none"> - Observing utility management, operation, and organization in U.S.A and similarities with Egyptian water systems - Visiting and benefiting from regulatory entities in the w/ww sector 	<ul style="list-style-type: none"> - Observing some w/ww utilities - Orientation to how to promote PSP in the sector - Coordinating with government how to address sector issues - Orientation to restructuring 	<ul style="list-style-type: none"> - "Enabling GOE to achieve new service and performance - Enabling GOE to achieve cost recovery - Encouraging PSP to fund and operate utility projects" 	<ul style="list-style-type: none"> - Observing water systems - Orientation to regulatory systems in USA to apply in Egypt
2. Were the above goals fulfilled?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If Yes, please explain how each goal was fulfilled. If No, please explain why not.	<ul style="list-style-type: none"> - Field trips - Frank discussions - Efficient professionals & lecturers - Commendable cooperation from the admin. & technical body 	<ul style="list-style-type: none"> - Fruitful visits - Clear discussions and explanation - Opportunity to participate in discussion 	Field trips and fruitful enlightening meetings	<ul style="list-style-type: none"> - Field trips, discussions, explanations - visits to the regulatory and health agencies - Observing reporting system - Hearing sessions about rate cases 	<ul style="list-style-type: none"> - Visit to Live Oak and briefing about how to address problems - Hearing sessions - Visiting the regulatory Agency - Impressed with few staff performing efficiently 	<ul style="list-style-type: none"> - Field trips - Discussions with concerned staff - Hearing sessions 	<ul style="list-style-type: none"> - Field trips to observe applied systems - Visiting regulatory agencies
3. Did you acquire new skills or knowledge through this program?		Yes	Yes	Yes	Yes	Yes	Yes

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	Mamdouh Barakat	Samir Hassani Abu Ellil	Mohamed Ahmed Abu Zeid	Mohamed Mansour	Taha Mohamed Shehata	Mohamed Hassan Safar	Osama Abd El-Rahman
If Yes, please describe		<ul style="list-style-type: none"> - Observing water systems in Arizona & San Diego - Visiting some private utilities 	Knowing steps that should be followed to reach goals	<ul style="list-style-type: none"> - Observing w/www management, approaches, and water quality control techniques - PSP in management and operation of facilities 	<ul style="list-style-type: none"> - Visiting facilities that have taken steps towards privatization - Employment of specialized manpower - Automated activities - Available information 	"How to deal with regulatory agencies"	"Meeting commissioners to know how to deal with regulation"
4. Will you be able to use this new knowledge in Egypt?	Yes	No	Yes	Yes	Yes	Yes	Yes
If Yes, please explain how you will use this new knowledge in Egypt. If No, explain why you will not be able to use this knowledge when you return to Egypt.	<ul style="list-style-type: none"> - Can be applied if enabling environment (financial, regulatory, administrative conditions) is made available - Can utilize study currently underway in Beheira 	<ul style="list-style-type: none"> - Enabling environment (i.e. social, political and economic conditions) does not exist yet. When it is, only then this knowledge can be applied. The same can apply to the concept of decentralization 	- In Luxor, a tourist city, tariff can be increased while considering the social dimension	- Can be applied if there is an enabling environment politically, socially, and economically	<ul style="list-style-type: none"> - Updating information - Upgrading customer policy - Automation - Manpower rationalization - Trying to raise tariff 	"I'll do my best"	Discussing [the role of] the regulatory body with NOPWASD Chairman
5. What was the most beneficial part of your program? Please describe.	Field trips	Field trips	<ul style="list-style-type: none"> - Hearing sessions - Wrap-up discussion 	Visiting regulatory and health entities responsible for water quality and prices control	<ul style="list-style-type: none"> - Field trips - Hearing sessions 	- Site visits and discussion	<ul style="list-style-type: none"> - Hearing session in Arizona - Visiting water facilities
6. What was the least beneficial part of your program? Please describe.	Mexico	Visit to the Ministry of Health	Not visiting Mexico [sic]	Visiting Mexico	Visiting Mexico		Visiting Mexico-technically speaking
7. Would you make any changes to the program? Please explain.		Insufficient time. Suggesting longer duration	No	<ul style="list-style-type: none"> - Longer duration - More visits to health and control entities 	Longer duration		No

	Mamdouh Barakat	Samir Hassan Abu EIII	Mohamed Ahmed Abu Zeid	Mohamed Mansour	Taha Mohamed Shehata	Mohamed Hassan Safar	Osama Abd El-Rahman
				- Arranging for technical cooperation between Egyptian and American water systems			
8. Would you recommend this program for others? Please explain your answer.	Yes	Possibly. Deputy chairmen can benefit from such a tour	Yes, so that many people may benefit	Yes, technical and financial managers	Yes	Finance staff	Yes, finance staff in PEAs
9. Do you have any additional comments about the training program?	- American & Egyptian logistics highly efficient - Translator highly commendable	Many thanks to Chemonics Egypt & International	No	Thanks a lot to all those who arranged the tour	Thanks to a) Neda for good arrangements of the trip; b) M. Ramadan, his excellent translation; and c) Anna, her help and cooperation	No	No

LOGISTICAL EVALUATION

	Mamdouh Barakat	Samir Hassan Abu Eillil	Mohamed Ahmed Abu Zeid	Mohamed Mansour	Taha Mohamed Shehata	Mohamed Hassan Safar	Osama Abd El-Rahman
1. Pre-Departure orientation	Very helpful	Very helpful	Very helpful	Very helpful	Very helpful	Very helpful	Very helpful
2. Arrival briefing/ orientation	Very helpful	Very helpful	Very helpful	Very helpful	Very helpful	Very helpful	Very helpful
3. Length of program	Appropriate	Too short	Too short	Too short	Appropriate	Too short	Too short
4. Hotels	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
5. Air travel	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
6. Ground travel	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
7. Chemonic support staff	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
8. Overall organization	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

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SECTION IX

Logistical Evaluation

LOGISTICAL EVALUATION

This form seeks to evaluate various aspect of the training program you have just completed in the United States. We would appreciate it if you would take approximately 5 minutes to complete the evaluation of your program experience.

GENERAL INFORMATION

Name: Dr. Beyaly Hosney El Beyaly

Job Title: Executive Director of PSP Unit

Name of your Organization: Housing, Utilities and Urban Communities Ministry

PROGRAM CONTENT AND RESULT

1. Please rate the following items according to your level of satisfaction . a space is provided for any comments you would like to add.

	Very Helpful	Somewhat Helpful	Not Very Helpful
a. Pre-departure orientation	___✓___	_____	_____
b. Arrival briefing / orientation	___✓___	_____	_____

COMMENTS:

LOGISTICS/ADMINISTRATION

Please rate the following:

1.	Length of program	Appropriate	___✓___	Too long	___	Too short	___
2.	Hotels	Excellent	___	Adequate	___✓___	Poor	___
3.	Air travel	Excellent	___✓___	Adequate	___	Poor	___
4.	Ground travel	Excellent	___✓___	Adequate	___	Poor	___
5.	Chemonics support staff	Excellent	___✓___	Adequate	___	Poor	___
6.	Overall organization	Excellent	___	Adequate	___✓___	Poor	___

Please sign and date this evaluation. Thank you very much.

Participant Signature: Dr. Beyaly H. El Beyaly

Date: June 13, 2000

2. What were your training goals?
- a. How to select pilot projects and evaluate public and private water and wastewater investment proposals
 - Two. - How to strengthen the financial viability of public & private projects
- How to develop effective bid documents and tendering strategies
 - c. How to plan and structure innovative projects to improve operational efficiency and reduce UFW and other system losses

3. Were the above goals fulfilled? Yes No

If Yes, please explain how each goal was fulfilled. If No, please explain why not.

4. Will you be able to use this new knowledge in Egypt? Yes No

If Yes, please explain *how* you will use this new knowledge in Egypt. If No, please explain *why* you will not be able to use this knowledge when you return to Egypt.

5. What was the *most* beneficial part of our program? Please describe.

- Case studies for different PSP projects in different countries
- Financial model for financial structured tariff study
- Site visits for water/wastewater Facilities

6. What was the *least* beneficial part of your program? Please describe.

- Post transaction performance monitoring techniques and consumer protection strategies (short time presentation/needs for case studies action plan)

7. Would you make any changes to the program? Please explain.

- No because the training program needs 3 weeks not only 2.

8. Would you recommend this program for others? Please explain your answer.

- Yes it is essential basic course for anyone in PSP projects.

9. Was there anything else that could have been done to make this a more successful program? Please explain.

- The importance of the role of regulatory bodies with the public/private sector participation

10. Do you have any additional comments about the training program?

- Increasing the period of the program to 3 weeks.

Thank you very much for completing this evaluation. Please sign and date it.

Participant Signature: Dr. Beyaly H. El Beyaly **Date:** June 13, 2000