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ORGANISATION OF CARIBBEAN UTILITY REGULATORS

Management Incentives and the Water Sector in Trinidad and Tobago

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Presentation Highlights

- Introduction
- Background
- The IOA Experience
- Ugandan Experience
- The New WASA
- Key Issues
- Concluding Remarks

Paper Focus

- This paper focuses on the important issues regarding improving operational efficiency in the water & wastewater sector.
- It seeks to encourage discussions on the appropriate strategies regulators, policy makers and other stakeholders ought to consider.
- It challenges regional policy makers to think outside the box by highlighting possible models that can be considered in reformation of the water & wastewater sector.

Introduction

- As Regulators, we aim to achieve the optimum levels of performance from our service providers.
- Within the Caribbean there are utilities with different ownership and governance structures.
- The focus for us ought not to be “the desirability of private participation” but rather “how to improve the services of our water and wastewater sectors”.

Background

- Private sector participation in the water sector began as a government policy agenda in 1993.
- The objective was to promote a viable and efficient sector with improved services at reasonable and affordable prices and to ensure investment for maintenance and expansion.

Background

- At that time the Water & Sewerage Authority (WASA) was being criticized for its poor level of efficiency and unsatisfactory performance.
- Factors contributing to the deplorable state included:
  - Lack of accountability, transparency, standards and controls;
  - Government intrusiveness and politicized decision-making;

Background

- Lack of competition leading to low motivation to lower operating costs
- Financial indiscipline
- Low/inadequate rates & charges
- Rate-of-return regulatory framework – little incentives to improve efficiencies

Pre-IOA Performance Indicators

UFW	50%
Employee/1000 connections	35 per 1000
Reliability	12 hrs/day; 10% with 24 hrs
Metering	1% of 240,000
Labour:Operating Costs	60%
Revenue Collection	55%
Accumulated Gov’t. Transfers	US $800 million
Wastewater	<20% coverage; disintegrated; abandoned

Interim Operating Agreement

- Private sector participation began in April 1996 with the contracting of the locally incorporated firm Trinidad and Tobago Water services (TTWS) in which Severn Trent Overseas Holdings Limited and the then George Wimpey International Holdings BV were equal shareholders.

Interim Operating Agreement

- The IOA was the first phase of a 2-phased approach of private sector participation in the sector.
- IOA consisted of a 3-year operation management contract to manage WASA.
- This was to pave the way to a Long-term Arrangement (that did not materialise).

Interim Operating Agreement

- Objectives:
- ☺ Increasing the quantity of available water by improving the efficiency of the distribution network and operating equipment;
- ☺ Improving the quality of water supply and wastewater effluent;
- ☺ Improving the management of water and wastewater systems through better operations, revenue collections and customer service; and
- Strengthening the water and wastewater institutions through long-term system planning and training.

IOA Impact

- Summary of performance was extrapolated from 2 reports:
  - End of First Year Report of the Consultative Committee (laid in Parliament in June 1997);
  - Mid-Term Review of WASA (conducted by int. independent consultants and reported in Parliament March 1999).

IOA Impact

- Operations:
  - Average plant & equipment downtime reduced from 54 days to 4 days
  - Average production increased from 139mgd to 163 mgd
  - Transmission to South Trinidad increased by 5.5 mg per week
  - Full Service Equivalent estimated increased from 43% to 48%

IOA Impact

- Leak Detection & Repair:
  - Number repaired reached 3,338 in April 1997
  - i.e. 49% above the monthly average of 1996
- Financial:
  - Operation Ratio (excluding depreciation and debt service) from 248.8 (1995/96) to 150.0 (first qtr. 1998)
  - Current Ratio from 0.25 (1996) to 0.65 (1999)
  - Collection Ratio from 81% to 99%

IOA Impact

- Others:
  - Employee numbers reduced by 33% (from 3,504 in 1996 to 2,394 in 1999)
  - Establishment of 24 hr customer service system

- Clearly, there were many improvements in performance coming out of the private sector management contract in T&T.

Existing Performance Situation

Performance Indicators	Current Situation 2006	Post IOA 1999
Unaccounted-for Water (UFW)	59%	45%
Annual Revenue	$460.0 million	
Total Operating Costs	$1.528 billion	Reduced by 50%
Operating Profit	($1.068 billion)	Small surplus
Total Connections	284,800	294,810
Metered Connections	9,500	
Total Staff	3,300	2,394
Employee per 1,000 connections	11	8
Current Ratio	0.26:1 (2003)	0.25:1 (1998)
Salaries as a proportion of operating costs	35.3%	
Total water supply	210 mg/day	163 mgd
Operation of the 24-hour customer service system	Operates between 6 a.m. to 10 p.m.	24-hours system operational

*Data collected was un-audited.

Observation

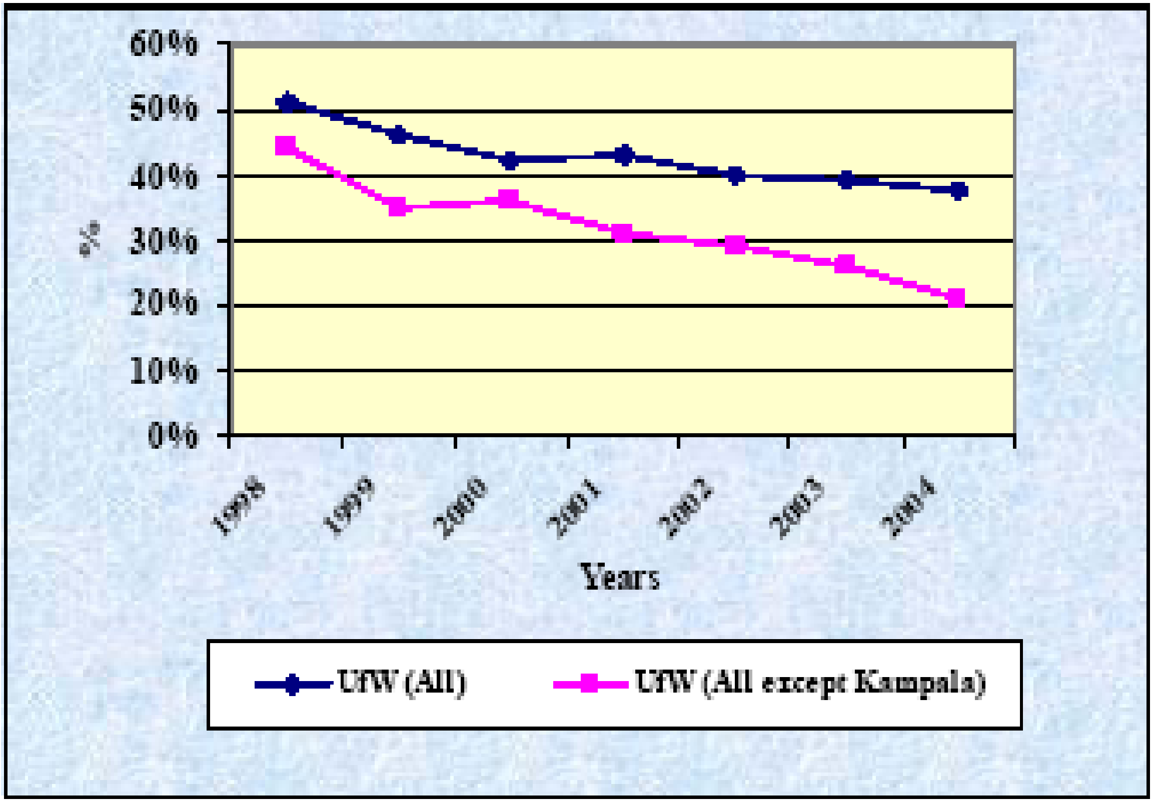
- Generally the performance of WASA has worsened since the IOA experience.
- What other models exist for promotion of performance improvement in the water & wastewater sector?
- Uganda's experience with private contracting may provide valuable clues.

Ugandan Experience

- Initiatives to improve the water and wastewater sector began in 1998.
- Mechanism used was renewable Area Performance Contracts with its subsidiary utilities:
  - To increase managerial autonomy;
  - To introduce performance incentives; and
  - To hold subsidiary operators more accountable.

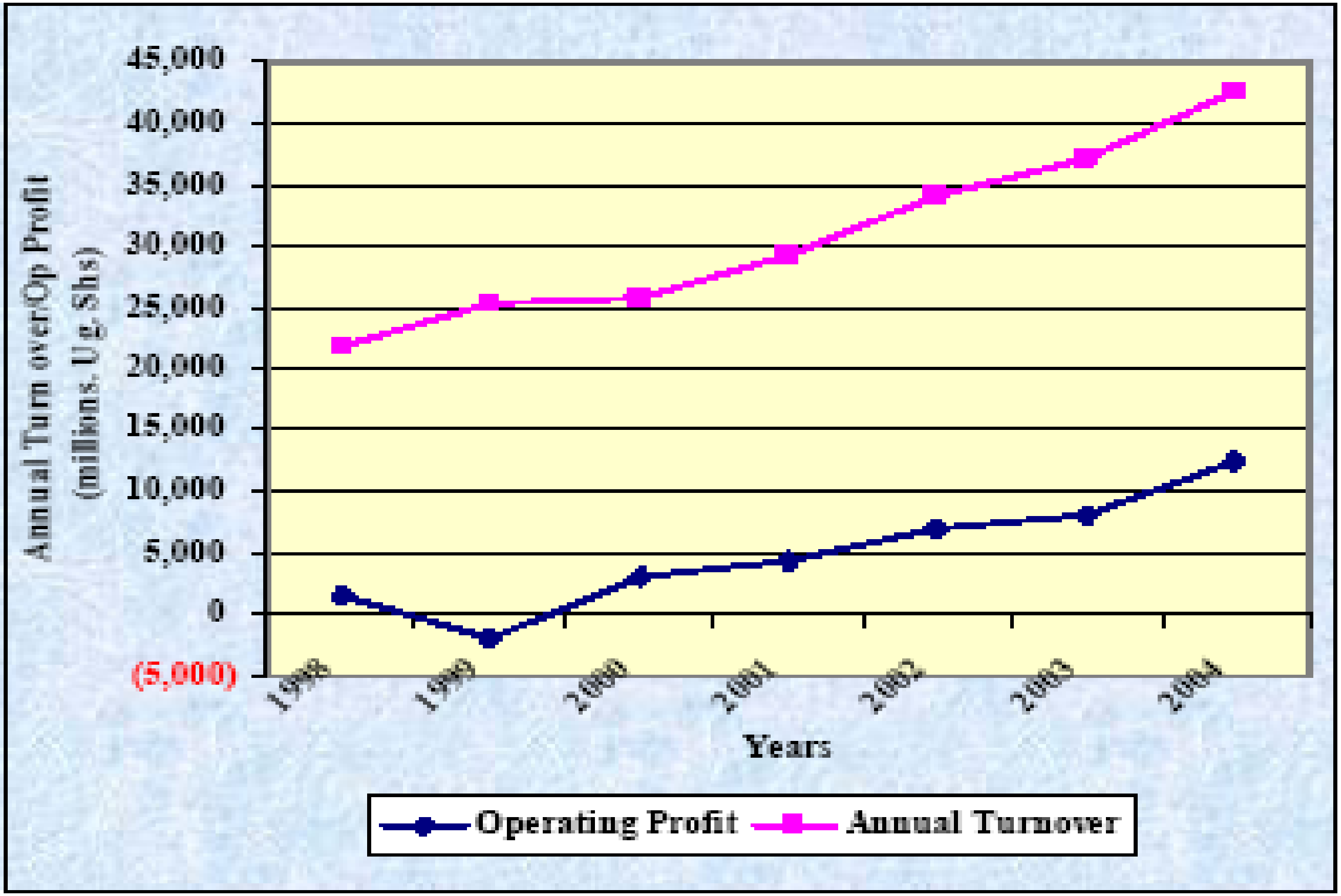
Outcome of Ugandan Experiment

Unaccounted-for Water (UFW) Reduction Trends in NWSC since 1998



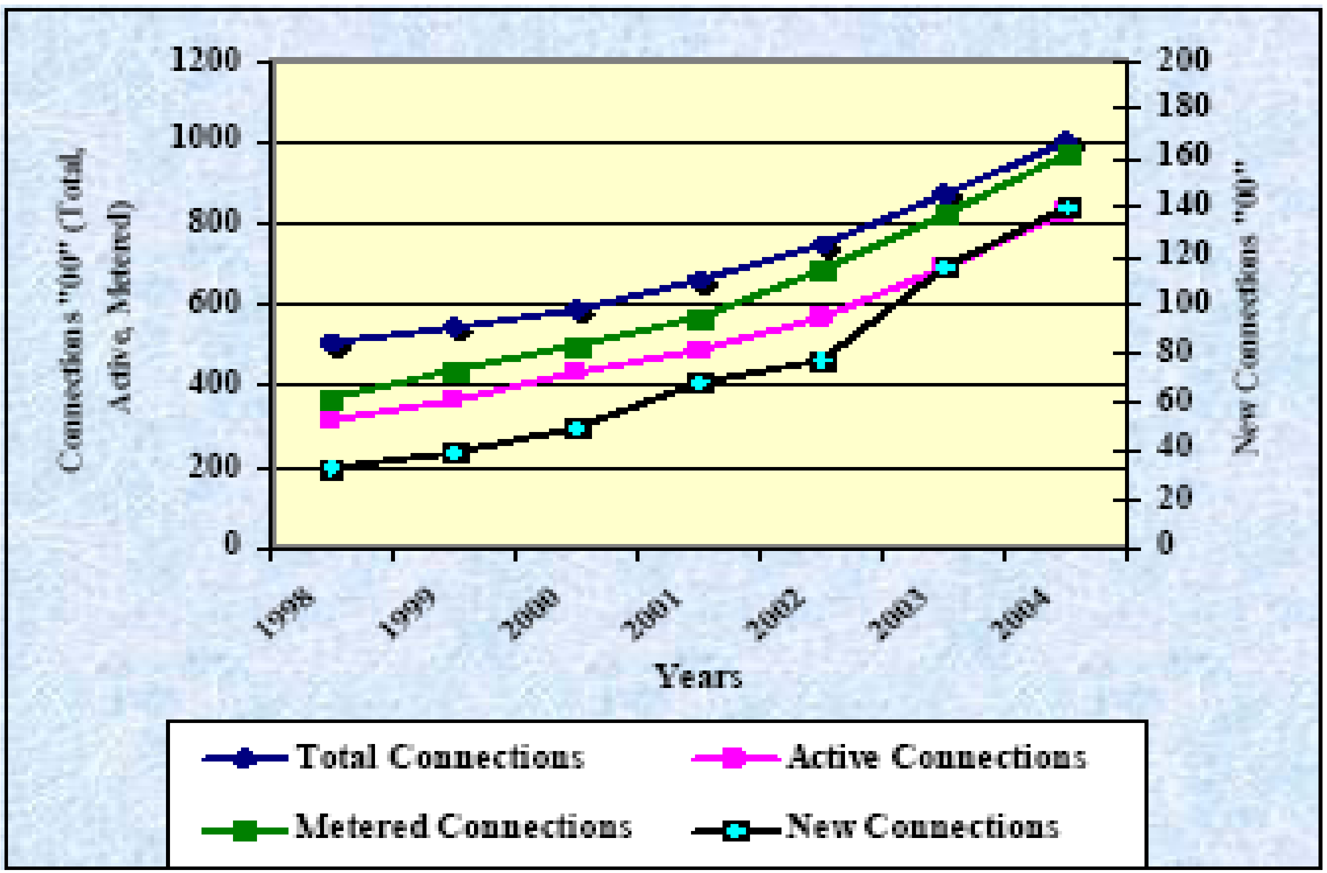
Source: Musigha et al. (2005)

Revenue and Operating Profit Trends in NWSC since 1998



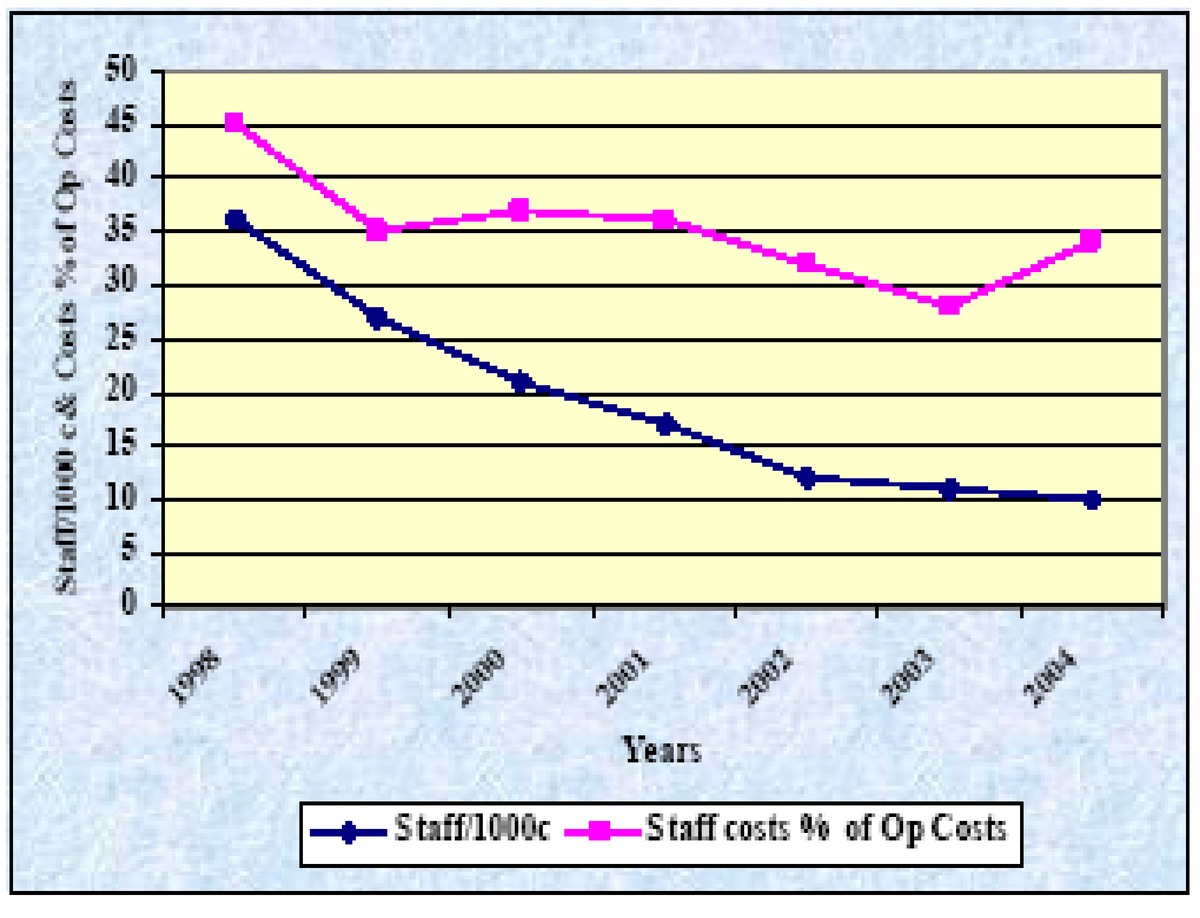
Source: Musigha et al. (2005)

Connections Growth Trends in NWSC since 1998



Source: Musigha *et al.* (2005)

Staff Productivity and Cost Efficiency Trends in NWSC since 1998



Source: Musigha *et al*. (2005)

Lessons Learnt

Essentials of Incentives Contracting

1. Appropriate Contract Design
2. Competition for Service Contracts
3. Performance Monitoring and Regulation

Lessons Learnt – Performance Monitoring and Regulation

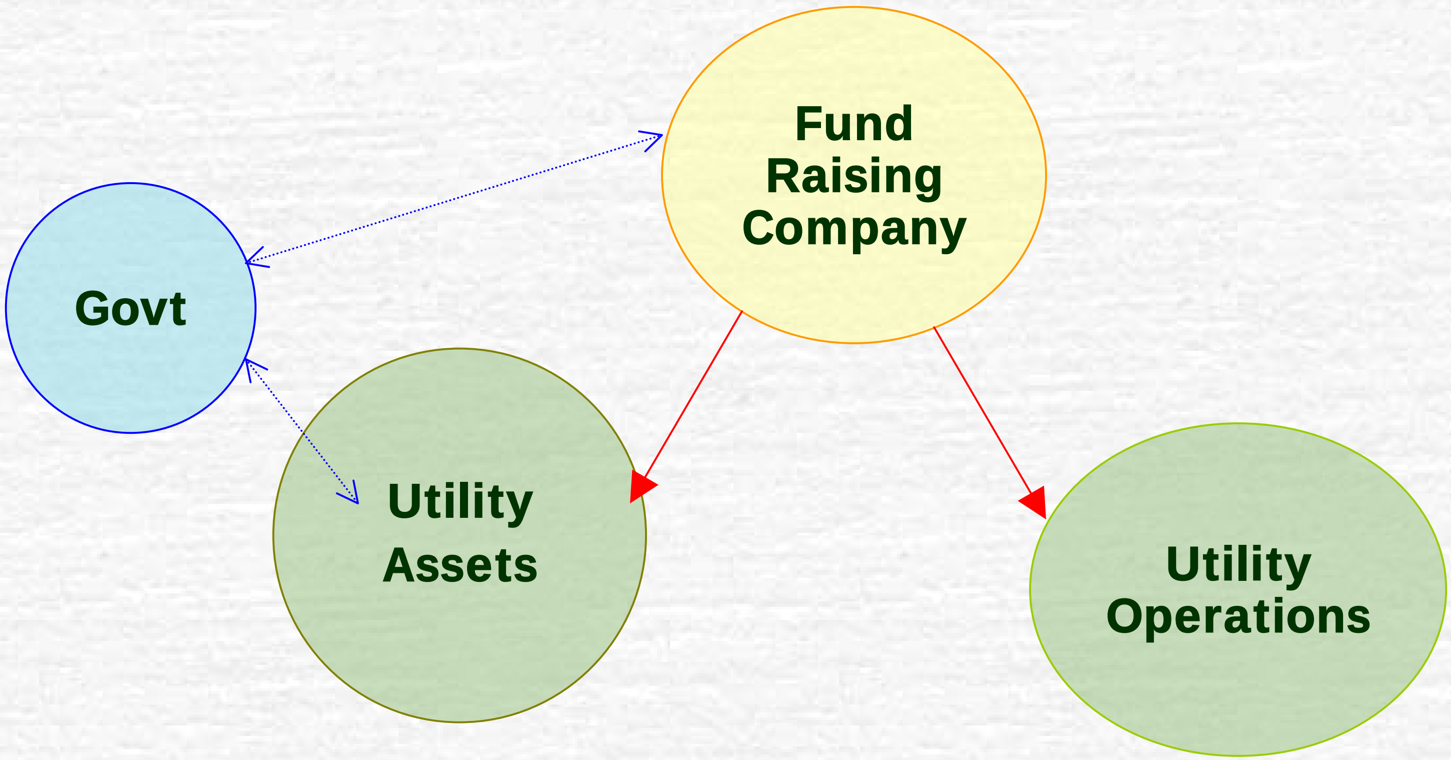
From the work Mugisha *et al*:

- Include purposive-based targets
- Performance targets should be informed by customer satisfaction surveys
- Ensure performance evaluation and feedback to operators
- Incentive mechanism should be rationally apportion operating risks to both utility and operators
- Incorporate tailor-made performance incentives as performance drivers

The Way Forward for WASA

- Assumption – ownership structures do not significantly influence water utility performance.
- Proposed that a mechanism offering Management Incentive Contracts the private sector for the operation of WASA.

Restructuring Model



ASSET HOLDING COMPANY

TRINIDAD AND TOBAGO WATER MANAGEMENT COMPANY (TTWMC)

POLICY & REGULATORY AGENCIES

- MINISTRY OF PUBLIC UTILITIES
- RIC
- EMA
- OTHER
  WHO; PAHO; TTBS
  WRA

Functions and Responsibities

- Sector Planning
- Internal Regulatory Control
- Performance Monitoring and Control
- Customer Service Complaints
- Service Contract Administration

Contracted Services

- Water Production
- Water Treatment & Transmission
- Water Distribution
- Metering
- Wastewater treatment and Transmission
- Wastewater Collection

Role of the TTWMC

- The core function of the proposed TTWMC will be:
  - To oversee all aspects of the water and wastewater sector and ensure that service is delivered to consumers at standards prescribed by relevant regulators.
  - To design, administer and monitor all operational contracts to be issued.
  - Customer Service complaints.
  - Internal Regulator Control.

Role of the TTWMC

- To undertake these and other functions, the TTWMC will need a core staff of dedicated professionals to supervise the private contractors to ensure the delivery of high quality services at performance standards as agreed upon in the service agreements.
- This is critical since careful and effective monitoring of performance targets, as set in the service contract agreements, is essential to the successful achievement of high quality performance improvements.

Possible Activities for Contracting

- Water production
- Water Transmission & Treatment
- Water Distribution
- Metering
- Wastewater Transmission & Treatment
- Wastewater Collection

Contract Bidding

- International Competitive bidding should be considered when inviting business proposals from prospective operators.
- Joint venture partnerships with international and local firms should be encouraged.
- Bidders should be requested to demonstrate in their business proposals the use of current and/or former WASA employees.

Benefits of this Contracting Modality

- Introduction of Competition for the market
- Retention of sector knowledge and skills
- Viewed by employees as a new opportunity and not as a termination of employment

Management Incentives

Management Fee = Base Fee + Performance Fee + Incentive Fee

Where:

- Base Fee = All Uncontrollable Costs + 75% (Operators' Pay + Controllable Costs)
- Performance Fee = 25% (Operator's Pay + Controllable Costs) x (a fraction of achieved weighted targets)
- Incentive Fee = X% x COM ($a\ UFW_p + b\ NME_p$)

Where:

- X% is the agreed percentage of the improvement in cash operating margin COM to be retained by the operator as a bonus;
- *a* and *b* are weighting factors attached to the performance indicators;
- and subscript "p" denotes incremental achievement relative to set targets or standards.

- Operators' Pay is the net take home pay of those service operators that have formed themselves into partnerships or quasi-limited companies.

A Word of Caution!

- There may be concerns that too excessive performance incentives could have a high impact on rates to consumers.
- Generally, consumers suffering from very poor levels of services typically are willing to pay more for improved services.
- While the mechanism could cause an initial rate shock, this can be addressed at the second price review (*in case is incentive based regulation*) when the operators true service costs are revealed, thus resulting in an adjustment in the management fee structure, as the regulator seeks to push operators towards greater efficiencies.

Lessons Learnt – Prescription for Incentive Contracting

The incentive-based approach used by the Ugandan NWSC were consistent with guidelines for designing incentive regulations as identified by Sappington (1994):

- Use incentive regulation to better employ the operator’s superior performance;
- Prioritise regulatory goals and design incentive regulation to achieve stated goal (*weighting of targets*);

Prescription for Incentive Contracting

- Avoid basing the operator's compensation on performance measures with excessive variability (*incentives based not based on hard to authenticate targets*);
- Limit the operator's financial responsibility for factors beyond its control;
- Choose exogenous performance benchmarks;
- Promise only what can be delivered and deliver whatever is promised.

Concluding Remarks

- It is my hope that some reformation will take place to improve performance in the water & wastewater sector of T&T.
- I believe that the proposed model can work given our local conditions.
- After all, the private sector participation in the water sector in T&T is not new.

Management Operator –
Beetham Wastewater Treatment Facilities

- In April 2006 WASA entered into a 5-year operating and maintenance contract with EarthTech Ltd.

Existing Lagoons – Built in 1960s


Bioreactor & Secondary
Clarifiers
March 2005

Outcome

- After 2 years of operation, plant effluent has been well below all standards set.
- There has been no industrial relations upheaval.
- Now there is even talk of selling the recycled water as cooling water for the Pt. Lisas Industrial Estate.

Thank You

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