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Pricing in Paradise
(Cost Recovery and Tariff Reforms: Malé Experience)

by

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The views expressed in this paper are those of the author and do not necessarily reflect the views and policies of the Asian Development Bank.

I. Introduction

Male', the capital island of the Maldives now has a population of over 80,000 while its area is only 2.75km². Originally water for drinking and cooking came from the thin, fragile aquifer. This water lens has survived several generations when the population density was thin and urbanization activities were few. Then, groundwater was generally considered safe to drink.

However, in the mid 90's, Male' was experiencing intense water shortages. The underground aquifer, once the major source of water for all purposes, was depleted of fresh water and displaced by brackish or salt water. Rainwater harvesting became an alternative solution but could not meet all the demands for water.

Distribution of available water was ineffective, often involving long walking distances, long queues, exorbitant charges by water vendors, and more. The wastewater handling systems, on the other hand, faced challenges such as corrosion, blockage, flooding, leakage and poor maintenance.

The water sector in Maldives has been fortunate during the 80's and early 90's in the sense that there were several countries and agencies that provided generous assistance to the infrastructure development. The sewerage network; a rainwater harvesting system, and public taps were developed using these assistance. A couple of desalination plants were also supplied as part of the package and they were used to top up the supply during dry period.

Despite this, the water situation did not improve significantly. Population migration into the Male' from outer islands continued unabated and the water demand kept growing. Within a couple of years, water demand outpaced the water supply. The Operation and Maintenance costs reached levels where the Government could no longer sustain the services free of cost to the consumer.

II. Private Sector Participation

We seriously considered private sector participation (PSP) because we needed to reduce the financial burden and risk to the government. We also thought PSP would increase our operational efficiency and transparency, attract better personnel, and allow us to use the best technology available in the market.

Our financial solution was a joint venture (JV) that focused on increasing Male's desalination capacity, sewer rehabilitation and maintenance, full cost recovery for WSS, and full piped reticulation of water. Male' Water and Sewerage Company Pvt Ltd (MWSC) was established on 1st April 1995 to address this dream.

III. Start Up

The primary objective of MWSC is to produce and distribute desalinated water in Male' on a commercial basis, with viability and sustainability as key words.

The authorized share capital of MWSC is Rf 320 million of which 70% was subscribed by the Government, 18% by IFU (Danish Industrialization Fund for Developing Countries) and 12% by NTR/HOH, a private Danish firm and a leader in manufacturing desalination equipment.

Apart from shareholding, NTR/HOH took the overall responsibility of supplying and erecting all desalinization equipment, installation of the main network and the responsibility of managing the company over a period of five years.

The Government granted the company a monopoly concession for all public water supply and sewerage services for a period of 20 years. Under this concession, GOM exempted import duty for equipment and machinery and replacement spare parts. The Government also ensured that repatriation of dividends was easy by making foreign currency available to all investors through the local banks.

IV. Development of Water tariff

The keywords in our development activities have been sustainability and viability. We firmly believed that the service will not become sustainable if all costs are not recovered in one form or another. We also believed that the business will not become viable unless the consumer has the ability to pay for the service provided by the service provider.

Hence studies were conducted to find the affordability levels of various types of consumers and their willingness and ability to pay. The results indicated that desalinated water at cost of production plus a mark up is too expensive for all consumers to pay at a flat rate. We also realized that people consumed high quality water in quantities they could afford. There were also sections that were willing and capable of paying a higher price due to the nature of their business and there was another section of the community that was not able to pay anything.

Finally, the tariff agreed between the Government and the service provider is:

Initial Tariff 1996

Domestic Customers

Band 1	0-90 liters/day	Rf 25.32 per m ³
Band 2	91-270 liters/day	Rf 75.95 per m ³
Band 3	271 liters and above	Rf 101.26 per m ³

Institutional Customers

Flat rate Any Consumption Rf 75.95 per m³

Commercial Customers

Flat rate Any Consumption Rf 101.26 per m³

Kiosks

Flat Rate Any quantity Rf 100.00

We maintained the tap bays as it was and water supply free to the consumer but were paid by the Government at institutional rate.

Band 1 tariff for the domestic customer was finalized on the basis that the subsistence requirements should be made affordable to all. Since the average household size was 9, and the minimum required by each for drinking and cooking is 10 liters/day, the first band considered 90 liters/day as the subsistence need of a family unit (a customer).

The tariff according to our opinion fulfilled all the requirements.

- a) It provided free water to those that cannot afford to pay.
- b) It provided subsistence water at a price much lower than cost of production and at a rate affordable.
- c) Higher tariff for higher consumption is justified as customers will use larger quantities only when they have the capability to pay.
- d) The tariff designed with the cross subsidy across customer bands reduced the large subsidy by the government and also allowed a profit to the service provider.
- e) A higher charge against higher consumption is assumed to become a factor that would encourage conservation and make consumers use less water, thereby helping protect the environment.

Present Tariff

The tariff was revised twice since 1996. First revision was in 2003 and the second revision was in August 2005; and on both occasions it was scaled down benefiting the consumer.

Domestic Customers

Band 1	0-100 liters/day	Rf 22.00 per m ³
Band 2	101-500 liters/day	Rf 70.00 per m ³
Band 3	501 liters/day and above	Rf 95.00 per m ³

Tariff for institutional and commercial customers remain unchanged. Kiosk rates also remain unchanged; however we have started offering small discounts to customers when large quantities are purchased.

The second revision in tariff resulted in a loss of income to the company. This loss, however, is compensated by the Government paying for it.

This reduction was necessary to reduce the burden of the people affected by the increase in living costs due to the tsunami. The reduction has been brought about without violating the principles of the JV agreement.

V. Cost Recovery

We have designed the water tariff after considering all the costs related to providing the service.

Cost centre considered for monitoring

1 Variable Cost

A. Direct production cost – Water. They include

- Fuel and Oil
- Spare parts and repairs
- Material and equipment
- Direct labor
- Contract service
- Consumables
- Distribution Cost
- Laboratory and Quality Assurance
- Maintenance of Water and Sewer Network
- Workshop and stores related costs

B. Direct Operating Cost –Sewer

- Spare parts and repair
- Electricity
- Materials and Equipment hire
- Direct Labor
- Sewage Consumables
- Manhole rehabilitation
- Contract Services

2 Fixed Costs

Salaries, allowances and all other administrative costs are included here.

3 Sales and marketing costs

Public relations activities, Sales promotion activities and marketing expansion activities are included in this cost center.

4 Finance and procurement costs

Expenses on recovering debts, software maintenance costs, Bank charges, Cargo clearance and Import license fees etc are the types of costs under this category.

We have gone into the details of separating out various cost centers and their sub categories. This detailed probing into costs may be seen as laborious and cumbersome. On the contrary, they become tools for cost cutting and helped us become more productive.

Our profit target is to realize 15% IRR on the total investment over a 20 year period. Since the tariff is different for different categories and 3 tiered for the domestic customer, the average sales price of a cubic meter of water depends on the composition of sales of each category.

Over the years, we have found that the average sales price per cbm varies from year to year but we are able to keep it within reasonable variance through proper house keeping and good management practices.

We analyze the costs at the end of each month and calculate the variance against the budgeted figures and take cost cutting measures when there are high variances. The net result is a healthy bottom line figures for the shareholders and continuous good service for customers.

VI. MWSC Operation - A Success Story

- The service is now dependable. There is continuity 24/7 at a promised quality and pressure.
- MWSC is also able to develop additional production capacity according to demand without financial difficulties, and without requiring additional shareholder inputs. The shareholders are also assured of dividends at the end of the year.
- Staff turnover is low, and manpower training is given due importance and budgetary backing.
- Production facilities use state of the art equipment. We have reduced the energy cost of production by using technological innovations.
- Unaccounted for water is continuously maintained at a level below 6%.
- Sewerage system maintenance that consumed major portion of the staff time at the beginning is now a well maintained system that involves little daily attention.
- The Ministry of Finance and Treasury that monitors MWSC operations very closely considers MWSC one of the best managed and transparent companies in the Maldives.
- MWSC has contributed to the growth of the building industry. Before MWSC, it wasn't practical to have high rise buildings due to shortage of water. Now the skyline is full of high rise buildings and Male' is now able to accommodate a larger population with an improved quality of life.

VII. Lesson Learnt From Our Experience

First, consumers are willing to pay for the service they receive when it meets with their expectation.

Second, when the development concept is acceptable to the government and the service provider, then the means of financing and management do not become restricting factors. Everything else becomes a demand and supply issue.

Finally, a system can be maintainable only when the user pays for the service. Full cost recovery should be the aim from the very beginning, but we should have flexibility to adjust depending on the customer's ability to pay.

VIII. Recommendations

For small communities living with water shortage and inadequate infrastructure for providing the service, we would say that:

Quality of life begins with water. When the most important task of the most productive person in a family is fetching water, then there is less time for more productive work. Again there is fear of getting sick using unsafe water. Money spent on finding cure for water related sickness and time lost during sickness are huge losses that can be avoided through judicious investment of water. MWSC would recommend all small island communities to be bold and make the right decision like we did.