

MAXIMIZING THE BENEFITS FROM WATER AND ENVIRONMENTAL SANITATION

**Linking tariff structure changes to improved utility performance:
the case of NWSC**

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The design and implementation of an efficient, equitable, and sustainable tariff system remains a high priority and a great challenge for public and privately operated water utilities in developing countries. This paper attempts to show the different tariff structure changes that were adopted by the National Water and Sewerage Corporation (NWSC) since 1998. In summary, the tariff reforms included; the reduction of the connection and reconnection fees, the indexation of the tariff, the re-balancing of the tariff and the introduction of a new connection policy. The implementation of the above tariff changes have shown that cost reductions have implicit efficiency gains which can lead to the improved financial health of a company. With the implementation of the above tariff changes, the NWSC now operates on an improved financial basis. There are therefore lessons other utilities can learn on how the tariff changes were adopted, implemented, and their resultant effects.

Introduction

The tariff is a key instrument used in determining the efficient allocation of resources and provision of services. The design and implementation of an efficient equitable and sustainable tariff system remains a high priority and a great challenge for public and privately operated water utilities in developing countries. Although it is true that for sustainable utility operations tariffs have to be increased so as to reflect full cost recovery, this article attempts to show that improvements in performance can be achieved in the interim before recourse to increasing the tariff level. This can be achieved by instituting specific tariff changes which address the inherent weaknesses of the tariff structure. For Uganda, this was possible given the adequacy of the average tariff to cover what was considered (or benchmarked) to be an acceptable efficiency level.

Background

The current NWSC tariff structure came into force in April 1994. The NWSC has a uniform tariff across all its towns. The tariff structure is skewed with the domestic customers paying less than the commercial customers. The tariff therefore has an implicit cross subsidy across towns and within customer categories.

In comment to the tariff, a review mission of the World Bank in 1996 stated that, "It appears that the main weakness in the NWSC performance is the inappropriateness of the tariff structure as in the Waterworks (General rates) order, 1994". This was due to the fact that despite the significant investments made in most NWSC areas, it was evident that the increase in revenues was not proportional to the systems expansions and the relative increase in the customer base.

At the same time, there was a continuous increase in arrears. This state of affairs caused great concern to the NWSC management and the donors who were the main financiers of the sector at that time.

Review of Connection/Reconnection Fees: Review I

It was with this background that in 1998, the NWSC sought to review the tariff structure with the objective to review and improve the revenue base of the Corporation by raising the willingness to pay by customers.

An independent review carried out by a consultant recommended an increase in the general tariff by 18%, mainly due to high financial costs and over head costs the Corporation was faced with in providing water and sewerage services. The study also recommended a tariff structure aimed at offering incentives for widening the customer base and attracting back customers who were disconnected from supply. These included the elimination of minimum charges, the reduction of the connection and reconnection fees, and the introduction of a service charge.

The study was one focused solely on the financial angle, and the focus was very narrow, i.e. the financial bottom line of NWSC. The study did not look closely at the possible cost reduction efficiency gains angle as a means of achieving financial health. Therefore, the recommendation to increase the general tariff by 18% was seen as a paradox to widening the customer base and attracting back customers who were disconnected. However, the recommendations to eliminate the minimum charge and introduce a service charge, reduce the reconnection fees by 74%, and to reduce connection fees by an average of 50% were adopted. These tariff items

were considered deterrent to willingness by the customers to connect or reconnect to the NWSC services, let alone paying their bills.

These changes were met with great enthusiasm from the customers who responded with an increased demand for new connections. The graph below shows the sudden upward leap in the number of new connections during the FY 2000/2001.

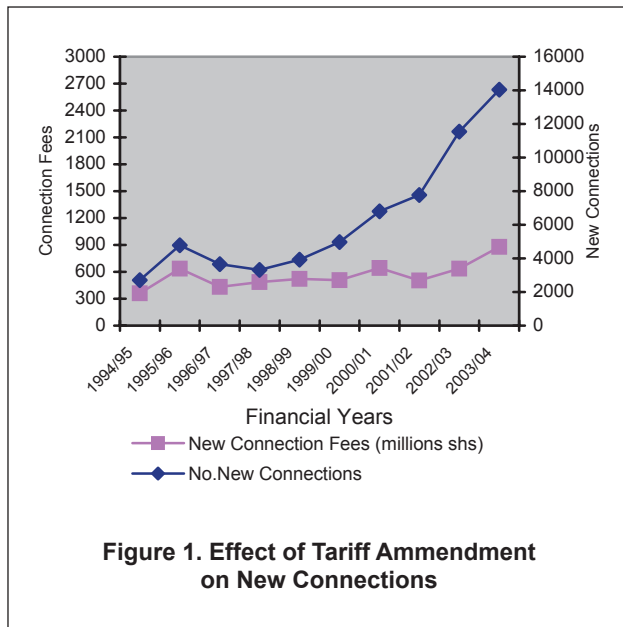


Figure 1. Effect of Tariff Amendment on New Connections

Insulating the Tariff through Indexation: Review II

The NWSC was yet again faced with another problem. From 1994 to 2002, the tariff remained unchanged and was therefore eroded over time by factors such as inflation and depreciation of the shilling against the dollar. In 2002, it was estimated that the tariff value was only 45% of the real value in 1994 (see Table 1). The eight years of decreasing real tariff had eroded the Corporation's ability to provide quality service and at the same time meet its expenses. However, this was also coupled with inherent inefficiencies within the Corporation at that time.

The situation came to a head in 1999, when a combination of operational inefficiencies and eroding revenues resulted in the Ministry of Finance Planning and Economic Development freezing NWSC debt obligations to the Government in order to allow NWSC to continue its operations while at the same time obliging NWSC to improve its operational efficiencies.

As a means of sustaining operations within the confines of the eroded tariff, the NWSC adopted a number of short-term change management programmes. These were aimed at improving and expanding service delivery while at the same time improving operational efficiencies. The programmes included the 100 Days programme, the SEREP I & II, the Area Performance Contracts I, II, and II, the Stretch Out Programme, the One Minute Management Concept, and the IDAMC's. The programmes resulted into a turn around in the operational and financial performance of the Corporation.

However, although the domestic costs had to some extent been reduced, foreign costs had increased due to changes in the exchange rate. Hence performance gains had been eaten up. Hence there was need to protect the operational efficiency gains from continuing erosion due to inflation and exchange rate depreciation. Furthermore, the NWSC was to commence servicing its debt to the Government in FY 2002/2003.

A study by the World Bank² estimated that the average tariff at that time was largely in line with the Long Run Marginal Cost of producing water. Therefore, while an increase in real tariff was not requested, it was necessary to protect the tariff from erosion by applying some form of indexation. Failure to act would have only exacerbated the situation in later years when accumulated inflation would most probably necessitate a sudden large tariff increase.

In April 2002, Cabinet passed a policy of indexation. The indexation was based on a composite formula against exogenous factors, which included domestic inflation, exchange rate, foreign inflation and electricity tariff. The merits of this composite formula were that it protected the tariff from all exogenous factors, and realistically reflected NWSC's costs. The first year of indexation was in the financial year 2002 which led to a 5% nominal increase in the tariff.

Table 1 NWSC Tariff as at April 1994 and effective dollar rated¹ tariff 2002

Customer Category	Tariff 1994 – 2002: Ushs/m3	Effective US \$/m3: 1994	Effective US \$/m3: 2002	% Erosion of Tariff
Stand Pipe	400	0.40	0.22	45%
Domestic	616	0.62	0.34	45%
Government/Institutional	760	0.76	0.42	45%
Commercial/Industrial				
Up to 500 m3/month	1,056	1.06	0.60	43%
500- 1500m3	1,264	1.26	0.72	43%
Above 1500	1,424	1.42	0.81	43%
Sewerage				
Domestic	75% of water bill	75% of water bill	75% of water bill	
Other	100% of water bill	100% of water bill	100% of water bill	

One of the immediate outcomes of this was that the Corporation was able to fully cover its depreciation expenses and also fund some of its capital investment thereafter. However, this is not to say that the financial improvements were only as a result of the indexation, because, as earlier on mentioned, through the short term enhancement programmes, the Corporation was able to rationalise its costs and reduce on expenditure heads thus freeing resources for capital investment.

The graph below shows the NWSC actual average tariff versus the real average tariff. The trend lines show that although the actual average tariff (water and sewerage tariff) decreased slightly due to the changing consumption pattern (skewed to domestic), the real tariff declined at a faster rate as depicted by the steeper gradient of the trend line.

This was due to the exogenous factors such as inflation. The graph also shows that after the indexation in 2002, the value of the real tariff has been maintained as depicted by the flatness of the curve.

Re-Balancing of the Tariff towards Sustainable Operations: Review III

As earlier on noted, the NWSC tariff structure is highly skewed with the domestic customers subsidized by the commercial /industrial customers. The structure was distortionary as it discouraged use among the large users. At the same time, it was not sustainable in that the growth of the customer base was skewed toward domestic customers who represented over 80% of the new connections. This

implied an increasing reliance of the NWSC revenues on the domestic customers. Table 2 below shows that whereas 83% of the total connections are domestic (household), only 34% of the revenues are from the domestic consumers. This is contrary to the industrial consumers who make up only 9.8% of the total connections yet account for 32.8% of the total revenues. This also meant that at least 86% of the connections and 52% of the consumption was below the average tariff. This trend implied that the NWSC would increasingly rely on an ever smaller percentage of users (industrial) to cross subsidize and remain afloat.

Hence, as a means of arresting the situation, the Corporation instituted a mechanism to ensure that there was equity while at the same time maintaining NWSC’s financial viability.

The NWSC introduced a process to gradually re-balance the tariff and thus reduce the amount of cross-subsidy available to the majority of domestic consumers who were paying below NWSC’s average costs (see graph below). This was done by offering targeted discounts to the larger water users, while at the same time applying the indexation factor to the other consumer categories.

In the two years that followed, it was evident that the gradual process of re-balancing of the tariff was taking root. The average tariff moved to cover O&M costs plus depreciation, while the domestic customers moved to a position where they covered O&M costs which they did not cover prior to the re-balancing. However, the Corporation is careful not to jeopardize its financial position by allowing big leaps and drastic cuts.

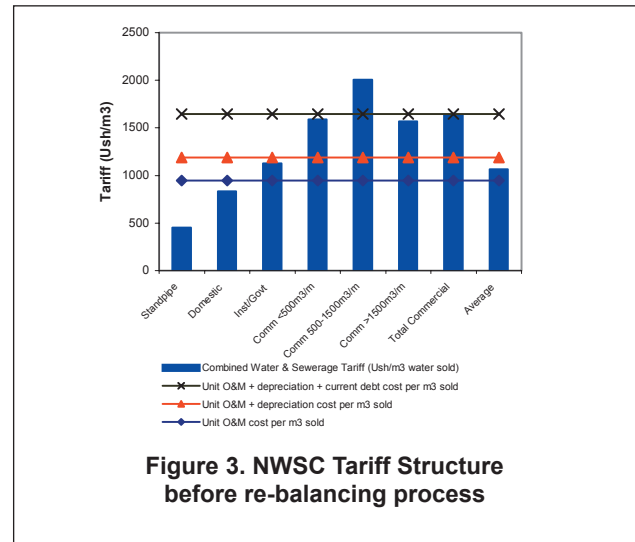
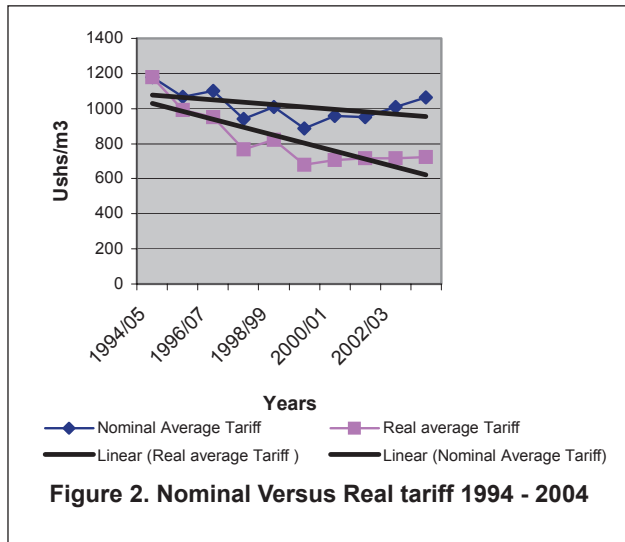


Table 1 showing NWSC Water Market Segments

Consumer Category	Share of Connections (Nos)	Share of consumption (cu.m)	Share of Revenues Shs	Average Tariff dollars per cubic meter
Public Stand Posts	3.2%	5.4%	2.4%	0.31
Domestic	83.3%	46.6%	34.4%	0.47
Institutions/ Government	3.7%	27.1%	30.4%	0.58
Industrial/ Commercial	9.8%	20.3%	32.8%	0.81
Total	100%	100%	100%	0.56

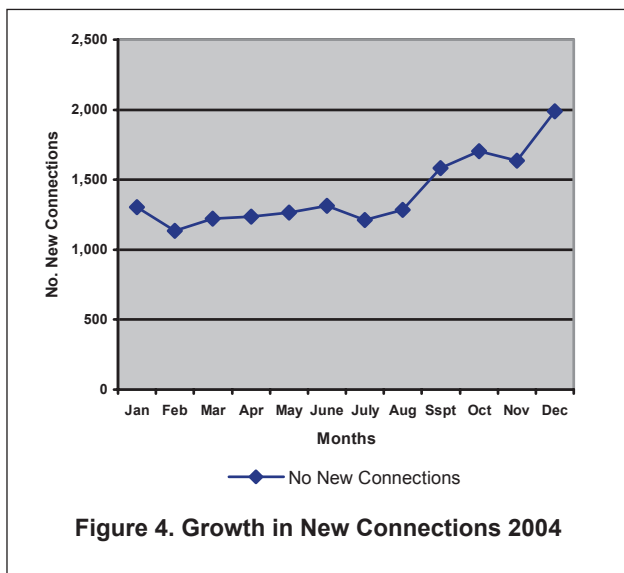
New Connection Policy; Provision and Maintenance of Service Lines to Customers: Review IV

Despite the review of the connection and re-connection fees, the NWSC realised that the connection policy was still inappropriate. The NWSC policy of connecting a new customer was such that the customer paid a connection fee and was also responsible for supplying all materials such as pipes and fittings necessary for connection between the supply line and the meter. As a result, the Corporation was faced with an increasing level of UfW due to use of poor materials by the customers, inaccessibility to new customers especially the poor, poor maintenance of the pipe network with recurring leaks and bursts.

In 2004, the NWSC management therefore came up with a new connection policy aimed at reversing the above mentioned short-comings. The implication of the policy was that the customer would only pay the normal connection fee, while the NWSC ensures that the customer is connected by purchasing all the pipes, fittings and carries out trenching and pipe laying up to the customer’s meter. The policy covered all customers within a distance of 50 meters from the NWSC service point, and a small surcharge was introduced in the tariff to defray the additional costs.

As a result, the number of new connections have increased dramatically from an average 1200 to 2000 per month as seen in the graph below.

The implementation of the policy revealed that there was a huge suppressed demand for new connections which was unveiled by the policy.



Conclusion

The NWSC has demonstrated that with the adoption of specific and systematic tariff changes, the company now operates on an improved financial basis. New connections have increased, the real value of the tariff has been maintained, and the tariff is gradually being balanced. However cognisance is still made of the fact that the NWSC tariff, although estimated at the Long run marginal cost, is still not sufficient to cover the financial (debt burden) costs, as well as the major investment costs. This and consistent with Keith Palmer, 2000, findings which alluded to the fact that even if the golden rule (LRMC status) is achieved, developing countries with immature water and sewerage systems will still tend to have inadequate cash flows, partly due to the lower income levels in the LDCs.

Notes:

1. Exchange rate in 1994 was an average of 1000/=:1 US \$ Current exchange rate used 1750: 1US \$
2. The Republic of Uganda Urban Water Supply and Sanitation Sector Policy Framework Study, November, 6, 2000

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