

Service delivery

Gaining insight into the growing municipal water service delivery problem

A WRC-funded study has generated new perspectives on municipal water service delivery challenges.

Background

The sustainability of South African municipal water services provision is being challenged by the desire of government to extend high-quality services from a relatively small portion of the population to the whole. Evidence of failures in delivering are mounting and many reasons for this have been identified, including a lack of political will at local government levels, low budget priority, insufficient capital, lack of capacity and skill and flawed tariff and accounting structures.

This study generated new perspectives by surveying selected but representative, South African municipalities in their capacities as water service authorities (WSAs) on a range of financial sustainability issues – including cost burden on users, cross-subsidisation and cost calculations to set tariffs. The study is part of a wider investigation into the setting of tariffs that cover costs and satisfy demand, funded and advised by the Water Research Commission.

The key water service sustainability elements on which attention was focused in this study are:

- Backlogs in the water service coverage and infrastructure rehabilitation and maintenance;
- Standard of water service indicators;
- Relative importance of the provision of water services in the water service authorities' strategy and implementation (including budget and risk)
- Adequacy of skills to provide a sustainable water service
- Budgeting and planning for the sustainability of the water service
- Adequacy of the costing and tariff setting nexus, with particular attention paid to method and principle.

Growing challenge of service delivery

South African municipalities face enormous challenges to

sustain water service delivery in order to fulfil the desire of government to extend high-quality services from a relatively small portion of the population to the whole. Evidence of failures in delivery is mounting.

These challenges take place within an institutional setting, defined by the Constitution of South Africa, and a number of supporting Acts.

Tariff setting for cost recovery

The pursuit of the objective of increasing welfare under a cost recovery constraint through the use of the increasing block tariff (IBT), inevitably leads to a mismatch problem in tariffs set and demand satisfied. The strongest case for the IBT is to be built when the cost recovery is abandoned as a constraint and instead adopted as an objective, for example, in the form of minimising the shortfall in cost recovery, subject to the tariff structure not distorting price signals.

In terms of this objective, the IBT structure has considerable merit. The reason why it has considerable merit is that in many instances the national government has inadvertently set up a mismatch between service supplied and willingness to pay, making it unlikely that cost recovery can be realised, other than through distorting production and consumption in the economy. The IBT is the most feasible tariff structure for minimising the inevitable revenue shortfall.

An important, but neglected (in Africa) type of efficiency/equity analysis of water service provision in South Africa is that of the efficiency in mix of water service output. It has the aim of getting the right product mix. An analysis of efficiency in the mix of water service output is one that aims to match demand to the service produced. It is inefficient to produce a mix of outputs that the recipients cannot afford. A possible way forward to address water tariff efficiency/equity complications is through giving this mix more attention in future.

Main findings

The study found that many municipalities are unable to address backlogs in infrastructure asset maintenance and rehabilitation, leading to an increasing number of potable water interruptions and days of failed sanitation services. Furthermore, the current infrastructure of the municipalities is over-utilised.

Generally, municipalities are failing to rate risk of water service infrastructure, conduct water meter audits and record water interruptions and days of failed sanitation services.

Skills and human resources remain a challenge. The sampled municipalities' water service departments had a vacancy rate of 34% and high ratios of water service employee to population served. Water service engineers served up to 79 000 members of the population, which could be reduced to 58 000 if all vacancies were filled.

The total debt outstanding for the water service in the 2009/10 financial year for the sample of municipalities was R5 890 million, which is high.

Municipalities frequently underspent on capital budgets. One municipality surveyed, for example, spent only 24,4% of its water service capital budget in 2009/10. In many cases water services are not ring-fenced in municipal accounts, complicating the scope for accurate cost pricing and allocating water service costs into fixed and variable components.

Municipalities were inconsistent in the way they classified costs between fixed and variable. The maintenance of the asset registers was undertaken with regular updates and adequate information being presented, but inconsistencies in the application of the accumulated depreciation makes it difficult to determine the depreciated replacement cost versus current replacement cost (DRC/CRC) ratio. The information declared by this sample of municipalities suggested a DRC/CRC ratio of 75%.

The municipalities were aware that the wastewater function leads to external costs for the environment but do not estimate the value. The municipalities forecast demand for water service based on past trends rather than from information collected from their water service customers or service models and modelling.

Conclusions

It was concluded that under-recovery of costs occurs for

many reasons. Among others, it occurs because there are insufficient transfers to cover the costs of those who do not pay, from central government grant assistance to the poor, there is inadequate provision for replacement and maintenance costs (also called rehabilitation cost or deferred maintenance) and external costs are being omitted.

The problem of inadequate provision for replacement and maintenance costs should not occur if generally acceptable accounting principles for depreciation and maintenance are applied. Straight line depreciation of water infrastructure assets should in principle over-estimate depreciation where there is adequate maintenance renewal, because renewal has the effect of keeping infrastructure value somewhere between 65% and 95% of replacement value. The problem that is arising is that there is inadequate maintenance (renewal and rehabilitation), resulting in the current value (condition) of infrastructure falling below this proportion. It has been estimated that the DRC/CRC for water and sanitation infrastructure has declined to about 52%.

Recommendations

The following recommendations are made based on the outcome from this study:

- The Department of Water Affairs (DWA) should accept that South Africa faces a mounting challenge to water service delivery under the current institutional arrangements, and that these may need urgent review if serious adverse economic consequences are to be averted.
- There is an urgent need to clarify economically what the municipalities are trying to achieve through the tariff setting arrangements linked to water service delivery. To avert serious distorting effects, there needs to be more attention paid to demand. In turn, this requires that municipalities put more effort into generating knowledge about this demand.
- The IBT can play a potentially very important positive role, but not within the current DWA framework for tariffs setting. The DWA needs to change the model to one of minimising cost recovery shortfall, subject to the constraint of attaining a given level of social welfare and satisfying economic demand (as opposed to political demand).
- Regulations by the DWA should consider benchmarks for water service provision at the local government level and review the national department's monitoring and oversight over water service provision.
- The DWA and Water Boards must be transparent when determining tariffs to be charged to municipalities for either raw or potable water.
- Municipalities must record water service interruptions

and wastewater failures diligently in order to raise the risk profile of the water service.

- Municipalities must prioritise achieving the Blue Drop and Green Drop status and such priority must be reinforced in the service delivery mandate of municipalities.
- Municipalities must ringfence the water service in their accounts and apply financial modelling in order to determine tariffs that recover costs. Such modelling and forecasting must be supported by a sound costing methodology and be linked to the water service development plan (WSDP) and water management plan (WMP).
- Municipalities must implement strategies that reduce the excess burden of transfer costs by setting in place strategies to recover debt from consumers that can afford to pay, and by reducing cross-subsidisation of other municipal services from the water service.
- Municipalities must explore enterprise asset management models that provide for the full lifecycle of an infrastructure asset. Such a lifecycle starts with the asset to be acquired and ends with the disposal of the asset. The asset management models are able to record and predict the repairs and maintenance needs of the infrastructure used to support the water service, and must be used to motivate for further repairs and maintenance allocations in the operating budget and rehabilitation allocations in the capital budget. The enterprise asset

management model must be built on the foundation of an accurate asset register linked to the WSDP and WMP.

- Municipalities need to ensure that strategies are developed to spend both the operating and capital budget allocated. These may include the employment of project management skills or more efficient supply-chain management policies and/or supply-chain management capacity.
- Municipalities must develop tariff structures that will recover the cost of the water service.

The consideration of the study recommendations as well as the detailed study analysis and review of a sample of South African municipalities will actively assist to address the growing water service delivery problem. This will, in turn, support the growth and development of South Africa, its people and economy.

Further reading:

To order the report, *Trends in the insight into the growing South African municipal water service delivery problem* (Report No. 2087/P/13) contact Publications at Tel: (012) 330-0340, Email: orders@wrc.org.za, or Visit: www.wrc.org.za to download a free copy.