Setting effective wastewater charges: A guide for municipalities

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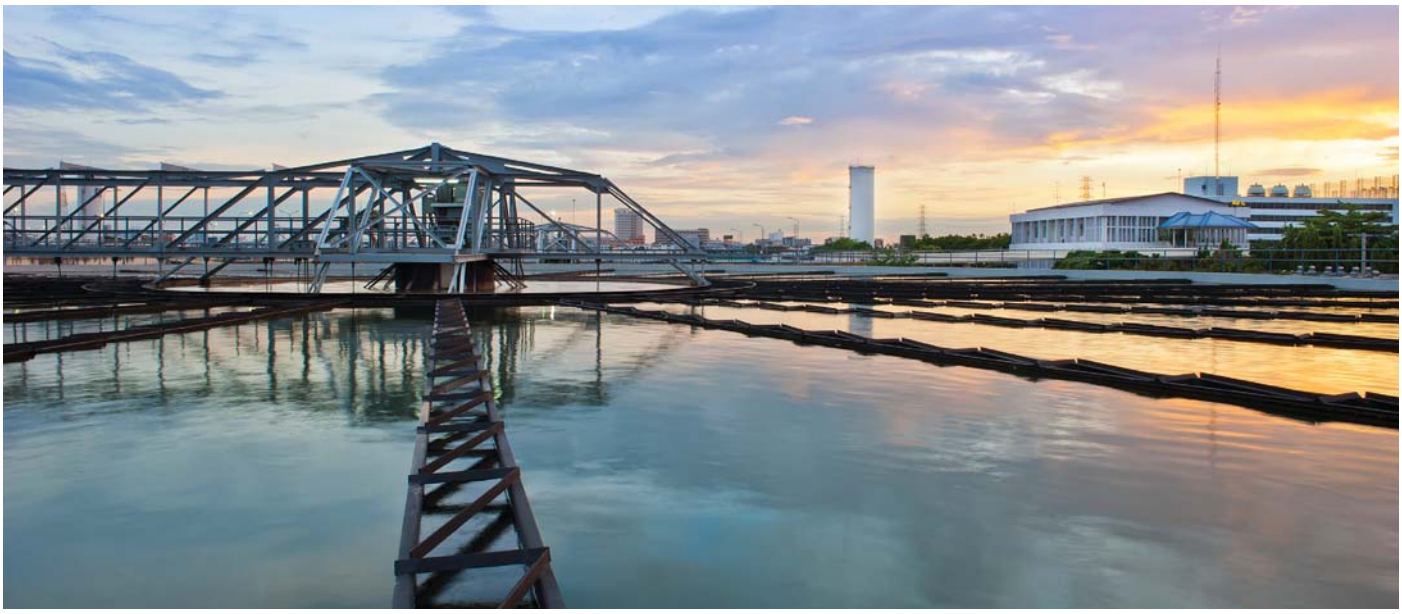
A newly-completed Water Research Commission study has developed a guide for municipalities on setting effective wastewater charges. The study describes the barrier in implementation of effective wastewater charges in South Africa and provides a roadmap to the best available knowledge and solutions for addressing wastewater charge barriers.



Background

Wastewater treatment services is one of the core business responsibilities of a municipality. Legislation in South Africa ensures the access to water services, affordably and effectively, to all consumers in an economic and sustainable manner. The approach for setting an effective wastewater treatment tariff is often challenging because it requires coordination of activities across multiple municipal departments and setting effective tariffs requesting a genuine long-term perspective.

Fundamentally, a municipality needs to issue a tariff that covers all wastewater treatment costs and recover all these costs from the clients that it serves. Thus this WRC study set out to:

- Assess the barriers slowing the development and implementation of suitable wastewater treatment charge structures at the municipal level.
- Recommend corrective actions to remove these barriers.
- Develop training guidelines that will facilitate the development of human capacity to cope with the barrier identified.

General approach

The study followed a comparative risk assessment approach. The purpose of this methodology was to identify and prioritise the full set of barriers to implementing effective wastewater charges. The comparative risk assessment was informed by a literature review, expert interviews and a national workshop, held in February 2015.

During the workshop, inputs from stakeholders were used to identify and contextualise further barriers experienced by municipalities. The workshop also resulted in recommendations that informed the development of an outline to a strategy to assist municipalities with setting effective wastewater charges.

The comparative risk assessment was followed by an economic investigation, which included data collection and economic modelling. Expect and empirical data was collected from a variety of sources. The combined findings of the research and workshop outputs were used to derive a summary of conclusions and recommendations, as well as to develop a strategy and training guidelines that can be used to facilitate the development of human capacity to cope with the barriers identified.

Main findings

The findings of this study indicate that there are significant barriers to the implementation of effective wastewater charges, most notably a lack of sufficient organisational capacity and resources. Through the analysis of different municipalities, marginal cost curves for wastewater services were developed to provide a guideline charge.

The analysis showed that effective charges

would generate R13.68 billion in total per annum, compared to the current income of R9.54 billion reported in the Financial Census of Municipalities (2013/14). This provides strong empirical evidence that the current wastewater charge structure is inadequate and under-recovers on likely actual costs.

Recommendations

The cost of provisioning wastewater services is the baseline for setting wastewater charges. However, to ensure adequate recovery of those costs (i.e. generating revenue from service provision) it is necessary to consider the suit of supporting services that affect a municipality's ability to appropriately assess, plan and implement effective wastewater charges.

The following recommendations emanate from the study:

- **Understanding the cost of treatment**

The cost of treatment is dependent on a range of endogenous and exogenous cost factors. Endogenous factors are under the direct control of the process municipality and can be managed internally. Exogenous cost factors are not under the direct control of the municipality but need to be taken into account nonetheless. Factors that would need to be considered include plant technology employed, the condition of the plant and life expectancy of the treatment plant, volumes of influent and the required water quality standards for plant effluent.

- **Need for asset management**

All water and wastewater systems are made up of assets, some that are buried assets and some that are visible. These are the physical components of the system, and can include: pipes, valves, tanks, pumps, treatment facilities, and any other components that make up the system. The assets that make up water or wastewater system generally lose value over time as the system ages and deteriorates. The deterioration of assets can result in increased maintenance costs, less effective water treatment and poorer levels of service delivery.

The intent of asset management is to ensure the long-term sustainability of the water or wastewater utility. By helping a utility manager make better decisions on when it is most appropriate to repair, replace or rehabilitate particular assets and by developing a long-term funding strategy, the utility can ensure its ability to deliver the required level of service perpetually.

- **Need to ring-fence water services**

Ring-fencing ensures that revenue generated from the provision of water services is separated from other revenue streams and reallocated back to water services in order to ensure ongoing service provision. The path to ring-fenced water services, however, requires many different intermediary steps, the main steps being accurately costing the provision of services as well as improved communication between financial and technical departments.

- **Consideration for context specific differences**

While great opportunities to learn from other municipalities exist, the heterogeneous nature of municipalities means that a 'one-size-fits-all' approach to setting wastewater charges is not appropriate. As such, municipalities need to evaluate the unique differentiators affecting their ability to deliver wastewater services.

This requires municipalities to understand how their assets and technological differences affect current services as well as provisioning for future development. As such, in the exceedingly wide variety of geographic and socio-economic contexts, the context of a given municipality and its capacity to implement reforms and projects needs to be taken into account.

- **Understanding consumer behaviour and demand elasticity**

To ensure that wastewater charges are adequate, fair (equitable), transparent and affordable, municipalities require an in-depth knowledge of their customer base and market. Information required includes the share between industrial, commercial and residential wastewater and the quantities and quality of each waste stream.

While cost recovery is essential, municipalities need to understand the financial situation of its customers to ensure that the charges are affordable. A detailed profile of the market can allow municipalities to optimize the balance between cost recovery and revenue generation.

- **Stakeholder consultation and generating consensus**

Wastewater services encompass a set of activities and responsibilities that is inclusive of, but not limited to, the collection and treatment of wastewater. The other services that complete that basket of activities labelled wastewater services include capacity planning, human resource development, infrastructure development, client base research and stakeholder communications.

The wide range of activities that constitutes treatment services covers a number of municipal departments and as such, the implementation of all of the various tasks will require a degree of coordination to ensure that the entire process is synergistic. Maintaining reasonable client expectations can be a critical factor in ensuring compliance among the client base. It stands to reason that a client base that is well informed of the level of services they will receive and the associated costs of enjoying that service are considerably more likely to pay for the service that they received.

The failure of municipalities to communicate charges or the charge setting process can result in customers perceiving that a municipality is providing poor services, and reduces their willingness to pay.

Customers need to be made aware of the charges for the service as well as the charge setting process, to ensure that the process is inclusive and transparent.

Guideline to setting effective wastewater charges

As part of the study a training guideline was developed to aid municipalities in setting effective wastewater charges. The guide provides benchmark wastewater charges for a municipality to compare to.

Key strategic thrusts are divided into intermediate goals to allow municipalities to gradually improve their cost accounting, ring-fencing, asset management, human resources and knowledge of the client base. The focus of this guide is primarily based on due diligence, cross departmental coordination and long-term planning. The interventions developed to address these barriers have been grouped into strategic thrusts with intermediate objectives that are grouped according to a specific time horizon for implementation.

Further reading:

o order the reports, *Implementation of effective wastewater charges by municipalities in South Africa: An investigation into the barriers and enablers* (**Report No. TT 673/16**) and *Setting effective wastewater charges: A guide for municipalities* (**Report No. TT 674/16**), contact Publications at Tel: (012) 761 9300, Email: orders@wrc.org.za or Visit: www.wrc.org.za to download a free copy.