POLICY BRIEF

March 2018
The WRC operates in terms of the Water Research Act (Act 34 of 1971) and its mandate is to support water research and development as well as the building of a sustainable water research capacity in South Africa.

Public acceptance of reclaimed water for potable uses in South Africa – Why communication, education and public participation matters

While water reclamation has been identified as a potential water augmentation alternative to ensure continuous water supply, there is still a need to address social issues relating to the 'yuck' factor and safety concerns, in order to ensure informed acceptance. Previous experience has shown that a failure to adequately address these is likely to lead to public resistance. A completed Water Research Commission (WRC) research project investigated and tested the major factors that governs people's decisions towards the acceptance and use of reclaimed water for drinking purposes; and developed strategies and tools to better inform information sharing and public engagement within the institutional decision-making process for introducing reclaimed water.

Background

Freshwater resources worldwide are limited and threatened by anthropogenic influences, such as overexploitation. As water resources become limited, water authorities are obliged to seek or develop alternative sources of water.

As large volumes of potable water are flushed away in urban contexts, reclaiming water is likely to become a more common strategy to supplement water demand deficiencies, while simultaneously addressing environmental concerns about the contamination of rivers and oceans.

Water reclamation has proven to be a reliable alternative water resource in meeting the demands of urbanisation, and may constitute a significant component of integrated water resource management. However, implementation is contentious due to social perceptions that pose several challenges relating to the ways in which a) both institutions and the public respond to issues of water scarcity and alternative choices and b) institutions engage with the public on water reuse to facilitate user acceptance of reclaimed water.

The intention of this WRC project was to investigate the major factors that influences people's decisions towards the acceptance/rejection reclaimed water for drinking purposes. Based on these factors, ways of addressing public perceptions through public knowledge acquisition and information flows were developed. In this study, public engagement and participation has been identified as key in addressing resistance and building trust relationships, so as to assist water institutions to effectively introduce and manage water reclamation schemes.

Study method

The research made use of a case study approach, employing qualitative research methods to investigate empirical phenomena within a real-life context.

Water reclamation has been implemented in several areas in South Africa, and many more municipalities have attempted to introduce this alternative, for many reasons. The study selected Beaufort West, eThekwini and Overstrand municipalities for detailed investigations because of their differences in stages of implementation, variability of scale provided by the municipalities, and their topography and geographical position, namely an inland, a coastal and a metro site.

Beaufort West has already implemented water reclamation and is currently monitoring water quality and supplying water to the public. After an unsuccessful initial attempt eThekwini has decided on re-implementation, while Overstrand is at an advanced planning stage.

The methodology included:

- Desktop study: literature review of international and local experience.
- Interviews with respondents (water services and individuals) in selected local case studies.
- A validation workshop to discuss findings.
- Comparative analysis to develop a generic guideline.

Overall findings

Of the many conditions and factors that can prompt the introduction of water reclamation, this research found

that in South Africa the main drivers are droughts, limited reliable alternative water resources, cost, minimisation of environmental pollution, and the inadequacy to meet the growing water demand.

Public perceptions of risks associated with using reclaimed water are initially dominated by the 'yuck' factor because the idea is at first repugnant. Deterioration of the quality of water, fear of drinking water of sub-standard quality, restrictions, tariffs and willingness to pay, and reduced water use were also identified as additional factors that govern the public's decision to accept or reject water reclamation.

Emotions underlying public perceptions that prevail at different institutional stages of implementing water reclamation include doubt and denial, mistrust, fear and safety concerns. Although rooted in knowledge deficits, emotive issues were often associated with mistrust in municipal capacity and a lack of a sense of choice.

Across the case studies, public resistance was predominantly attributable to doubt, fear, safety concerns and mistrust. In all cases, a clear need to build public trust in institutional processes and capacity was identified.. Public perceptions cumulatively contribute to public resistance, which manifests at logical stages in the institutional process of implementation, and if not addressed can culminate into rejection.

Following a thorough analysis, this research found that, in practice, the institutional process comprises four sequential stages, namely planning, decision-making, implementation and post-implementation.

Opportunities for addressing public perception during the institutional process of introducing water augmentation options should be considered during regular water resources planning activities, including water scarcity and risk management decisions, reconciliation and feasibility studies, reuse decision, implementation and post-implementation.

Strategies for influencing public perceptions emerge alongside the institutional process, and are intended to address public knowledge deficits and public engagement challenges.

The implementation of water augmentation options has many requirements that may differ from one region to another. Internationally, strategies that have been used to engage the public include public meetings, use of the media, users' surveys and direct public engagement.

In South Africa, where reclaimed water has recently been introduced, public engagement and participation is only done as part of the requirements for an environmental impact assessment (EIA) in terms of Government Notices GNR 385, 386 and 387 of the National Environmental Management Act (Act No 107 of 1998). Even then, the EIA process is limited as it is a once off process with no requirement for engaging throughout (pre-and post-implementation) and often not coherent. Findings from this study suggest in South Africa water reclamation has been implemented as a matter of urgency because of dire water scarcity, and the water institutions involved had no reasonable time for appropriate public engagement.

Conclusions and recommendations

Based on the findings, public acceptance of reclaimed water in South Africa remains contentious because there is a lack of a framework for addressing social and institutional factors. Within each municipal context and at stages of the institutional process for introducing water reclamation, opportunities for public queries and institutional response can serve simultaneously to enhance social learning and build trust in public institutions.

Framework guidelines for public engagement on water reuse

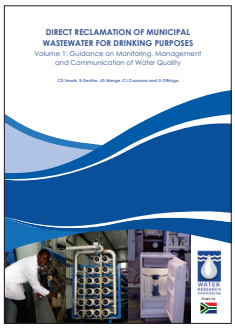
Water institutions should engage with identified target groups to shift public resistance toward acceptance and promotion. This research proposes an approach that will address public resistance to improve acceptance of water reclamation. It is recommended that these findings are incorporated into a strategy that will aid municipalities in their quest to improve water services provision through productive engagement with the public.

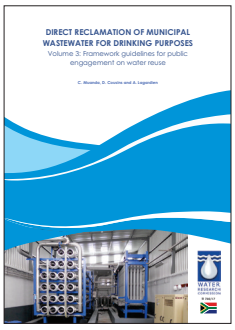
The guideline comprises four stages:

- Stage 1 calls for water services providers to enhance social learning about water scarcity and conservation in a specific demand and supply context, ahead of decision-making;
- Stage 2 ensures public understanding of the comparative benefits of reclaimed water and how wastewater effluent may be effectively treated to meet drinking water quality standards;
- Stage 3 confirms that reclaimed water is safe for consumption and reassures the public of municipal operational and supply capabilities;
- Stage 4 conveys departmental responsibilities for safety and regularly relays the results of testing the quality of drinking water as evidence of compliance with health standards.

Planning in each specific municipal environment paves the way for subsequent preparation, decision-making, implementation and monitoring, by addressing public resistance via a three-fold approach in which the aim is to:

- Understand public knowledge requirements that may underlie negative public perceptions:
- Sequential stages of the institutional process and public perceptions that may arise as a result of stage-related knowledge deficits are clarified;
- A framework for conducting a survey of public knowledge requirements at specific stages is provided;
- Guidance for the development of material to address surveyed public knowledge requirements is provided.
- Develop appropriate public engagement initiatives, based on specific knowledge requirements: a framework for appropriate engagement activities with the general public and specific target groups, based on local case studies, is provided.
- Evaluate the outcomes of the knowledge survey and public engagement initiatives prior to moving to the next stage.





To order the reports, *Direct reclamation of municipal wastewater for drinking purposes Volume 1: Guidance on monitoring, management and communication of water quality* (***Report No. TT 641/15***); *Direct reclamation of municipal wastewater for drinking purposes Volume 2: Investigation into institutional and social factors influencing public acceptance of reclaimed water for potable uses in South Africa* (**Report No. TT 734/17**) and *Direct reclamation of municipal wastewater for drinking purposes Volume 3: Framework guidelines for public engagement on water reuse* (**Report No. TT 735/17**), contact Publications at Tel: (012) 761-9300, Email: orders@wrc.org.za or Visit: www.wrc.org.za to download a free copy.