

**RESPONDING TO A CITY'S WATER PRICES:
THE CASE OF TSHWANE**

By

NICOLA ANN KING

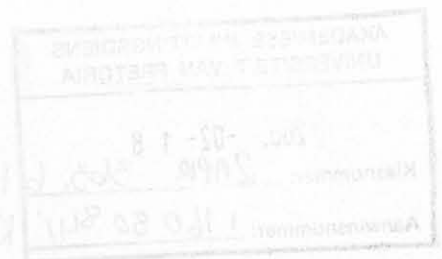
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“We need to ensure that there is development to meet the basic needs of our people, but that development should be mindful of our fragile resources.”

Nelson Mandela

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ABSTRACT

Water is considered one of the most essential of all natural resources and is currently classified globally as a scarce resource in terms of both quality and quantity. Current trends, recognise that water resources are an economic good and hence should be defined within a market structure and allocated according to some 'efficient' market price. However due to the nature of water as a social, financial, economic and environmental resource that is subject to spatial and temporal changes it is not easy to determine an appropriate set of prices. This move towards the efficient pricing of water resources is encompassed in the management approach focussed on demand management. The new Water Act for South Africa supports the move towards water demand management and hence economic pricing of water resources. Very little is however, known on the implications of pricing water resources in this way or on the responsiveness of consumers to these price changes. This dissertation focuses on the Tshwane municipality in South Africa. Using time-series and cross-sectional data, demand curves for water are estimated based on the pragmatic approach for the period 1995 to 2000. Price elasticities of demand for small agricultural holdings, household use at different income levels and industrial use are calculated. These results are then applied to consumer theory and the marginal values for water at these different levels are determined.

The elasticity results indicate that pricing can be used as an effective tool for water demand management in Tshwane. Agricultural small-holdings are more responsive than domestic users to price changes, and even more so in the long-run. Domestic water users tend to be relatively inelastic in their response to price changes, while industrial users prove to be the most responsive with a price elasticity of demand of -1.61 , becoming -2.18 in the long-run.

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FIGURE 6-23:

The amount of water which water users are likely to use for some purpose, is collected, treated and then used again water for the same purpose or for a different purpose.

ACCRONYMS AND ABBREVIATIONS

Act	National Water Act No. 36 of 1998
CMA	Catchment Management Agency
CVM	Contingent Valuation Method
DEAT	Department of Environmental Affairs and Tourism
DWAF	Department of Water Affairs and Forestry
KL	Kilolitre of water (as part of the daily consumption)
LR	Long run
MRTS	Marginal Rate of Technical Substitution
NWRS	National Water Resources Strategy
RSA	Republic of South Africa
SR	Short run
SSA	Statistics South Africa
WC & DM	Water Conservation and Demand Management
WDM	Water demand management
WMA	Water Management Area
WTP	Willingness to pay
WUA	Water User Association

DEFINITIONS

Re-use	The re-use of water in any form, treated or untreated, often at a large scale, for example at a catchment or watershed level.
Recycling	The “process” by which water, that has already been used for some purpose, is collected, treated and then used again, either for the same purpose or for a different purpose.