

## **ANALYSIS OF RESIDENTIAL DEMAND FOR WATER IN KANDY DISTRICT**

**U.R.M.H.D.RATHNAYAKE AND S.THIRUCHELVAM**

*Department of Agricultural Economics and Business Management,  
Faculty of Agriculture, University of Peradeniya*

Urban and regional water demand for fresh water in Sri Lanka has grown over the last decades. To meet the growing water demand in Sri Lanka, as a demand management tool National Water Supply and Drainage Board (NWSDB) has increased the price of water in late 2002. In this context, this study aims to investigate the price elasticity of water and consumers' willingness to pay higher price for water quality improvements in Kandy District.

Time series data on aggregate monthly water consumption; total number of active connections, total water bill, per capita income, temperature, rainfall, and marginal price from January 2000 to December 2004 were used to estimate the water demand function for the residential sector. Data were obtained from NWSDB, Meteorological Department, and Census and Statistics Department. To investigate people's preference for increased price for drinking water quality improvement, primary data were collected from a randomly selected sample of 70 households in two Grama Niladhari (GN) Divisions in the Kandy District during January to February 2005.

Multiple linear regression models of Linear and Log-Log forms were tested to analyze the demand for water. PROBIT model was used to analyze the factors affecting consumers' preference for paying more. SHAZAME computer package was used to analyze data. Both models had higher goodness of fit, and multi-collinearity and auto correlation were found to be low. Out of the two models log log model was found to be more appropriate. The model showed that price, monthly income and number of connections were negative and significant determinants of the residential demand for water.

Estimated price elasticity was -0.08. Probit model showed that higher price for water supply was determined by income, water consumption, safety and reliability of water supply. Under increasing block rate pricing system, low volume users are affected due to its necessity. However, policy should be targeted to high volume consumers rather than low volume consumers. In addition to increase of price for water, reduction of non-revenue water, and consumers' education and awareness to get participation of the community to supply good quality water are needed.