

# Promoting Conservation and Social Justice Through Next-Generation Water Prices.

Principal Investigator – Dr. Dayna Scott, York University, 2012-2014

## Challenge

It is well understood that water is becoming increasingly scarce and that water supply systems are becoming increasingly unreliable in many parts of the world. One part of the solution to these challenges lies in adequately pricing potable water. Proposals to increase prices to encourage conservation and spur innovation, however, have been met with concerns regarding the impact of price increases on the poor. Evidence from a number of jurisdictions indicates that poor households spend a larger share of their income on necessities such as water and, as a result, could be disproportionately harmed by efforts to raise water prices. Moreover, few debates include gendered analyses of the implications of water management models, or an investigation of how women might be differentially affected even though it is likely that higher water prices will mean unequal access to water, along the familiar social gradients of race, class, and gender. This project is an integrated research program that advances the state of knowledge of the economic and social impacts of water pricing reforms and provides project partners with the analytic tools to support their rate setting.

## Project

This project investigates the social and economic consequences of water rate reforms. Outcomes from this project will assist in price reform that can curb demand growth and reduce the magnitude of peak demands, which will reduce need for future infrastructure investments. Furthermore, the investigation and design of these water rate reforms have focused on avoiding burdening vulnerable social groups (and attendant political controversies). As a result, the project has generated knowledge of the role of water and access to water in the household, especially in the context of gender relations and is contributing new empirical knowledge of the impact of water security issues on the lives of women in Canada. By promoting water conservation, the project contributes to the reduction of energy consumption, carbon emissions and (by reducing flows through sewage treatment plants) impacts on aquatic ecosystems.

## Outputs

Outputs include:

- Spreadsheet model developed to demonstrate impacts of moving from uniform prices to increasing block rate prices and shared with Guelph city staff.

This research has resulted in scholarly journal publications and end-user reports:

- S. Renzetti, D. Dupont and J. Bruneau (2013) “Economic Instruments, Innovation and Efficient Water Use” Canadian Public Policy, 39(S2): 11-22.

- S. Renzetti and J. Bruneau (2013) "A Panel Study of Water Recycling in Manufacturing Plants" Canadian Water Resources Journal, under review
- D. Dupont and S. Renzetti (2013) "Household behaviour related to water conservation" Water Resources and Economics, under review
- S. Renzetti and D. Dupont "Buried Treasure: The Economics of Leak Detection and Water Loss Prevention in Ontario" BESRC Working Paper 2013-001
- S. Renzetti and C. Bodimeade, (2013) "Full-cost rates for water and the chimera of 'affordability'" Water Canada, March

Additionally, this research has been disseminated through several conference presentations:

- S. Renzetti and J. Bruneau "A Panel Study of Water Recycling in Manufacturing Plants"; S. Renzetti, D. Dupont, and O. Wood "Running Through Our Fingers: How Canada fails to capture the value of its top asset"; S. Renzetti "Water pricing in Canada" papers presented at Canadian Water Resources Association annual conference, Banff, June, 2012.
- S. Renzetti and J. Bruneau "A Panel Study of Water Recycling in Manufacturing Plants"; American Environmental Economics Association/Western Economics Association annual conference, San Francisco, July 2012
- S. Renzetti and J. Bruneau "A Panel Study of Water Recycling in Manufacturing Plants"; Tenth meeting of the International Water Resource Economics Consortium, Stockholm, Swede, August 2012
- S. Renzetti, J. Bruneau and D. Dupont "Economic Instruments, Innovation and Efficient Water Use" presented at "Innovative Approaches to Environmental Policy in Canada" workshop, Ottawa, September 2012
- K. Stinchcombe and S. Renzetti "Using Demand Elasticity as an Alternative Approach to Modeling Future Community Water Demand under a Conservation Oriented Pricing System: An Exploratory Investigation" and D. Dupont and S. Renzetti "Household behaviour related to water conservation" Presented at CWWA Energy and Water Efficiency Conference, Calgary, October 16-18, 2013

## Outcomes

Outcomes to date include:

- Guelph city staff are preparing to use the spreadsheet model in their reporting to City Council.
- Researchers have extended their analysis to longer-run demand forecasting and to develop further demand forecasting models that can be shared with other Canadian water agencies.
- A gap in representation of First Nations women's perspectives was identified in the original research plan and the project has since completed focus groups exclusively with First Nations women. This has secured the support and involvement of community partners, which is important for this project and also creates the opportunity for future collaboration.

## **Research Team and Partners:**

### **Research Team:**

Dr. Dayna Scott, York University

Dr. Steven Renzetti, Brock University

### **Partners:**

City of Guelph

Capital Region District (Victoria)

POLIS

National network on Environments and Women's Health

Canadian Women's Health Network

Canadian Water and Wastewater Association

### **Highly Qualified Personnel (HQP):**