CRC for
Water Sensitive Cities

Program A: Society | Project A1.3 | Project duration: July 2012 - July 2016

Economic incentives and instruments

Overview

Economists and policy-makers heavily rely on economic and non-economic incentives to encourage the take-up and adoption of new systems and technologies by industry and the society at large. This is particularly the case in the environment sector where incentives either do not exist or are not properly aligned to socially desirable behaviours such as the adoption of water sensitive practices.

This project aims to design effective economic policy mechanisms to encourage take-up of water sensitive practices by individuals and organisations, investment in new infrastructure and technologies by agencies and utilities, and reduction in pollution of waterways. It will analyse the optimal mix of policy mechanisms and develop appropriate funding mechanisms considering public and private benefits and who should pay for the implementation of water sensitive urban design solutions.

Key outcomes

This project will deliver recommendations on and economic instruments for the design of an optimal mix of policy and funding mechanisms (including regulatory, market, incentive and educative mechanisms) to promote take-up of water sensitive practices that focus more on costs and benefits to the wider community rather than just private individuals or companies. These outcomes will significantly broaden the portfolio of existing policy options available to policy-makers and regulators in government and industry.

This project will deliver the tools and guidelines on economic incentives and instruments relating to:

- non-point source pollution
- water conservation and water pricing
- economic and non-economic motivations to promote water sensitive practices
- an optimal mix of policy mechanisms
- funding mechanisms for improving environmental outcomes such as crowdfunding.

Early insights into peer pressure around households' water consumption

The project on mechanisms for pollution reduction has produced several interesting results. For example, it found that social mechanisms and norms such as peer sanctions and peer communication can have different impacts in different kinds of social dilemma scenarios.

The research on water conservation programs relies on social comparisons to understand water use. For example, normative messages that compare a household's water use to its peers were found to reduce consumption between 2-6%. Larger water users save more water and there is significant variation in savings across different water utilities.

An Australian Government Initiative

CRC AUSTRALIA

Project design

This project consists of a number of components looking at policy mechanisms for improving environmental outcomes, water conservation programs, risk perceptions of experts, and cost-benefit analyses of different policies for reducing private household emissions in a specified local government area.

The study on policy mechanisms compares a formal regulatory mechanism with informal peer monitoring and social sanctions and examines its effectiveness in reducing pollution in waterways as compared to formal regulatory approaches. It also investigates how different kinds of informal mechanisms, such as social sanctions and peer communication, work and which are more effective. The project on water conservation programs analyses data from randomised experiments utilising social norms to promote water conservation. Another project researches and tests crowdfunding mechanisms for financing water sensitive urban design projects. The research will be one of the first forays into crowdfunding for public goods.

The cost-benefit analysis comprises a case study in Western Australia's Southern River catchment in collaboration with the Western Australian Department of Water and the Swan River Trust. It will measure seasonality and trend in nitrogen and phosphorus emissions in the catchment and relate these to land use changes over time, especially land clearing for development. The purpose of this work is to measure the rate at which emissions are changing. The case study will also assess the cost and benefits of different policies for reducing emissions including behaviour change among households, local authorities' policies and restrictions on developers.

Outlook

One of the next steps is to compile the findings on using social norms for water conservation into a working paper which is scheduled for release by mid 2015.

Results from the water pricing experiment, which is expected to go into the field in 2014/15, will uncover whether scarcity pricing can reduce water use during droughts. This project has close links to Project C5.1 (Intelligent urban water systems) which is using advanced metering data and data-mining algorithms to identify behavioural patterns of water use.

In terms of crowdfunding research, the project team is in discussion with industry participants and working on scoping a survey which is scheduled for completion by mid 2015. It is anticipated that a crowdfunding platform will be established by mid 2016 with agreements with industry participants in place to begin collecting data. The crowdfunding project will bridge many pillars of the CRC for Water Sensitive Cities' programs by providing an adoption pathway for its research and establishing a business case for industry partners why they should adopt water sensitive urban design.

About the Cooperative Research Centre for Water Sensitive Cities

The Cooperative Research Centre for Water Sensitive Cities (CRCWSC) brings together interdisciplinary research expertise and thought-leadership from Australia and the world to address current urban water management challenges facing our cities and regions. In collaboration with over 80 research, government and industry partners, it develops and synthesises knowledge into powerful tools and influences key players aiming to achieve sustainable, resilient and liveable water sensitive cities.

Further information

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