



WATER AND CLIMATE: POLICY IMPLEMENTATION CHALLENGES

PRACTICAL RESPONSES TO CLIMATE CHANGE
NATIONAL CONFERENCE 2012

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PRACTICAL RESPONSES TO CLIMATE CHANGE NATIONAL CONFERENCE 2012 ABSTRACT TEMPLATE

Decision-making under climate change uncertainty: developing adaptive urban water strategies

Introduction

Projected climate change impacts present a significant planning challenge for most urban water management agencies in Australia. Utilities are currently faced with the need to balance water demands with available supplies under climate variability. This tension is set to be amplified with the prospect of projected climate change impacts. Adaptive strategies represent an obvious solution in principle, but are often difficult to develop and implement. In the past reserve or insurance supplies have been the default strategy, however more recently utilities are seeking diversified portfolios and flexible strategies as a means toward providing improved water security at reduced cost.

This paper describes an assessment framework created for the Melbourne utilities to develop adaptive policies to respond to climate change, together with other contextual uncertainties, for their long term water supply demand investment strategy. This kind of assessment framework is new, and is pushing the frontiers of best practice. Whilst there are various theoretical methods for decision-making under uncertainty, some of which have been applied in other sectors (e.g., finance), they generally have not been applied to the water sector and have not been brought together in an integrated, practically-grounded process, such as that proposed in this paper to guide strategic planning and project level decisions.

Outcome

Specifically this approach proposes a method to characterise the uncertainties as trends or shocks in order to distinguish and better respond to the impacts of these uncertainties. Based on combinations of the trends and shocks, scenarios can be described and the resultant projected shortfall in supply calculated. The use of decision rules or policies is proposed to identify response measures and set the hierarchy for sequencing of types of response measures in order to package them into portfolios to meet a projected supply shortfall and the objectives of the utility.