

Implementation of Market Based Instruments (MBIs) to Drive Improvements in NRM

A Sustainable Irrigation Program R&D Project

2006/07

Background

Government is interested in expanding the use of market based instruments (MBIs), in particular quantity based instruments, to enhance environmental outcomes, improve the cost-effectiveness of policy interventions, increase rates of change and demonstrate impact in a transparent and accountable way.

Price based instruments, such as incentives, are commonly employed in the management of water and of the impacts arising from water use. Quantity based instruments (eg auctions, cap and trade systems) have had limited practical application other than for well defined, point sources of pollution due to the difficulty in defining and enforcing property rights.

Research of quantity based instruments for diffuse source pollution in Australia is currently focused on designing and trialing instruments as isolated packages. In practice, a suite of concurrent instruments, administered by agencies at Federal, State and catchment levels, are used to achieve natural resource management outcomes. So for quantity based instruments to successfully deliver on their intended outcomes, their designs must account for the positive and negative effects of interactions with other, existing policy instruments.

Predicting these interactions and evaluating the impacts of existing and additional MBIs is a complex task with limited trusted methodologies available. This is due to:

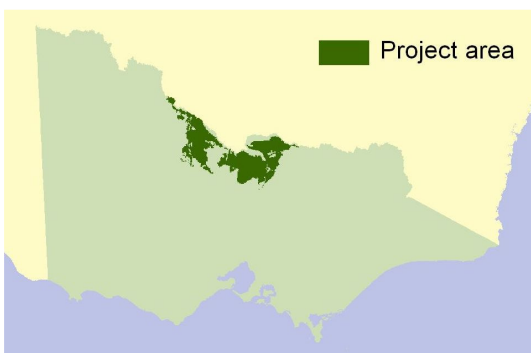
- (a) policy instruments being implemented as a package, so the impact of a specific instrument is difficult (if not impossible) to measure;
- (b) limited availability of data for ex-post evaluation;
- (c) policy instruments being often targeted at a number of policy objectives at one time; and
- (d) difficulty demonstrating a causal relationship between a policy instrument and observed change, due to scientific uncertainty and to the interdependence of environmental factors that may contribute to the impact and may not be easily differentiated.

The wide range of instruments already in place, the complex decisions required to select and design appropriate MBIs and the unknown effects of combining instruments are significant barriers to the adoption of MBIs by regional decision makers such as Catchment Management Authorities (CMAs).

Objectives

The project has three broad objectives which aim to help CMAs overcome the difficulties associated with adopting new MBIs:

- Design and trial an MBI with the North Central CMA and the Goulburn Broken CMA,
- Support the implementation of MBIs and build capacity of North Central CMA and Goulburn Broken CMA to select and implement MBIs, and
- Develop a framework for evaluating the effectiveness and efficiency of MBIs.



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Progress So Far – MBI Design and Implementation

Following consultation with each CMA, the Goulburn Broken CMA identified phosphorous emissions in surface runoff as its priority for creation of an MBI, while the North Central CMA identified salinity as its focus for the project.

From the perspective of MBI design and selection to control phosphorus and salinity emissions, three key conditions had to be taken into account. These were:

- (a) legislation requires surety of achieving long term and short term water quality standards,
- (b) achieving the standard entails managing both point and non-point sources of emissions, and
- (c) significant heterogeneity exists across non-point sources (farm contexts).

Cap and trade emission markets were identified as the only MBIs that would satisfy all these conditions. Subsequently markets in salt emissions were designed for North Central, while a phosphorus emissions market was designed for Goulburn Broken.

Despite support from the CMAs and encouragement from the Department of Sustainability and Environment, it was not possible to trial these particular MBIs for two main reasons:

1. Addressing the political and institutional capability issues of the implementation process, even in a limited trial, was not possible in the time available. A comparable project is creation of the Lake Taupo nitrogen emissions market in New Zealand, which has taken five years to begin implementation after its original design.
2. Piloting the market for a short time or in a small locality could lead to permanent transfers of wealth among participating landholders. This implies that from a social equity perspective, creation of an emissions market is an all or nothing exercise.

Progress So Far – Frameworks for Choosing MBIs

Prior to designing a framework for choosing MBIs, a review was undertaken to consider the range of approaches in use throughout Australasia. The review found that existing frameworks recognised that there was considerable uncertainty associated with the behavioural responses of landholders and institutions, but provided no clear way of taking this into account when choosing MBIs.

This suggests that as well as the existing economic approaches, a new framework for selecting MBIs should incorporate uncertainty associated with the response by both landholders and institutions to the new MBI.

Stakeholders

Victorian Department of Sustainability and Environment
Victorian Department of Primary Industries
Goulburn Broken Catchment Management Authority
North Central Catchment Management Authority

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