

# Incentives for natural and cultural heritage conservation

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## Purpose

This paper examines to what extent incentive instruments are used in Australia for cultural heritage and nature conservation and considers what the future holds for such instruments.

## Incentives and market-based instruments

Incentives are often known by the more descriptive term 'market-based instruments' (MBIs). They encourage behaviour "through market signals rather than through explicit directives" (Stavins 2000).

Market-based instruments are a means of supplying publicly-sponsored conservation. They do not address the difficult issue of determining the demand for conservation outcomes. Nonetheless, by harnessing competition, MBIs may allow more conservation to be achieved for a given public outlay.

## How common are market-based instruments?

Market based instruments are used to promote both cultural heritage and nature conservation but, according to a 2004 report, their use in cultural heritage conservation remains minor (National Incentives Task Force 2004).

By contrast, it is clear that many market based instruments are applied to nature conservation and are considered to be at the policy frontier. (i.e. <http://www.nrm.gov.au/publications/nrm-mbi/index.html>)

Market based instruments are not really new. They have been part of the conservation scene for decades, albeit sometimes in crude form. At a 2003 symposium, Whitten et al (2004) grouped market-based instruments into three categories, as in the table below.

**Table 1: Examples of Australian market-based instruments**

Price-based	Licence fee for use of marine waters Aircraft noise levy (Sydney) Ozone depletion fee Waste effluent charges (Load base licensing) Mine site rehabilitation performance bond Greenhouse challenge subsidy South Australian beverage container deposit scheme Bushtender in Victoria
Rights-based	Hunter river salinity scheme Tradable Renewable Energy Certificates (RECs) Nutrient offset scheme in South Creek, Sydney Carbon legislation (see for example NSW, Qld or Vic) Development offsets (local and state levels)
Market friction	Banrock Station Wines environmental labelling Revolving funds for nature conservation Eco Certification Program (Tourism)

Source: Whitten et al (2004) Table 4.1

### **Price-based instruments**

Price-based MBIs involve subsidies or taxes proportional to the effect being targeted. An example of a price-based tax is the Load-Based Licensing scheme in New South Wales. Under a load-based licensing scheme, polluters are charged a fee based on the mass and impact potential of pollutants emitted. The lower the emissions from the business or industry, the lower will be the load based licensing fee paid to the pollution control agency. Subsidy-type market-based instruments include the tax concessions for Landcare management. A more recent example is BushTender, which Victoria has been trialling since 2001.

### **Rights-based instruments**

Rights-based MBIs (also termed “cap and trade” instruments) have been used extensively in Australia to manage resource over-allocation in fisheries and waterways. Perhaps the most famous rights-based market based instrument is the US Acid Rain Program - estimated to save US\$1 billion a year in costs relative to command and control regulation (Stavins 2000). In

pollution management, MBIs are more cost effective partly because they provide greater incentives for innovation (Harrington and Morgenstern 2004).

## **Market friction instruments**

Market-based instruments that reduce market friction promote environmental outcomes by stimulating a market to emerge. For example, extension schemes directed at better biodiversity management might reduce the set-up costs of farm-based tourism. Banrock Station Wines for example promotes the environmental management of its property.

Comerford and Binney (2005) present a more detailed, but compatible categorisation of market-based instruments. A useful listing of MBIs in current use is also provided on the Natural Resource Management website (see <http://www.nrm.gov.au/publications/nrm-mbi/projects.html>). A common theme is their variety.

## **Comparing market-based instruments**

The worth of different market-based instruments turns on their ability to achieve the desired environmental outcome in a value-for-money way.

Generally, from a policy viewpoint, there will be little to choose between measures which deliver market incentives to individuals and firms in different ways – say, by a direct subsidy or by a tax deduction. All instruments are subtly different but, to understand how resources are being directed, the key thing to know is the combined impact of all instruments on different activity levels. This has been the principle behind the efforts over the past 30 years of the Productivity Commission and its predecessors in measuring the “effective rates of assistance” afforded to different industries. This has aided policy transparency. A similar effort could be mounted to measure conservation incentives.

The 2004 National Incentives Task Force asserted:

*“An effective heritage system is founded on a balance of ‘sticks’ and ‘carrots’. The lack of a meaningful level of carrots undermines support from property owners for the system, makes regulation more difficult and misses opportunities for garnering support”* (summary, p.1)

The emphasis in this statement on types of measures, rather than their net effects may be misplaced.

## **Some recent developments**

The following are three examples of recently initiated tender schemes.

### **The BushTender scheme**

Since 2001, Victoria has trialled a subsidy-type market based instrument scheme called BushTender:

- The first was in 2001-02 in central and north eastern Victoria when 97 bids to conserve areas of remnant vegetation on private land were successful. \$400,000 was allocated and contracts were for three years.
- In June 2002, trials were extended to three areas in Gippsland with 33 successful landholders signing agreements. \$800,000 has been allocated and contracts were for five or ten years, with 10-year optional renewal.
- A third BushTender pilot is starting in southern Victoria where contracts are to be five years, with the possibility of extension to perpetuity.

BushTender uses an auction mechanism to set contract prices, which ensures competition in supply. The scheme's strength is its robust assessment methodology in which officials have the bids from potential suppliers and the assessed biodiversity importance of each site, so that they can calculate which if those bids offer best value for money in terms of the greatest biodiversity value for least cost per hectare. (The total score, known as the Biodiversity Benefits Index is calculated by multiplying the Biodiversity Significance Score and Habitat Significance Score and dividing by the bid price).

The trials have been oversubscribed and the environmental benefits seem significant.

A key finding is that many of the bids for the BushTender trials were for less money than officials had expected. Indeed, the early results indicated that using this method improved the cost effectiveness of expenditure seven fold (Stoneham et al 2003). However such schemes are expensive to set up, so their ultimate performance has still to be evaluated.

## **The New South Wales Environmental Services Scheme**

Inspired by BushTender, the NSW Government has a pilot project known as the Environmental Services Scheme that pays farmers to take part in a three-year, \$2 million scheme to provide environmental services (Grieve 2004).

The scheme is jointly managed by the NSW Department of Infrastructure, Planning and Natural Resources and NSW State Forests. Farmers whose bids are successful work with an environmental services team to develop a management plan that regenerates parts of their land. Once the regeneration work is complete, the Government pays the farmers for the work. In 2005 it was said that contracts had been signed with 24 individual landholders covering approximately 11,000 ha (see <[http://www.forest.nsw.gov.au/env\\_services/ess/default.asp](http://www.forest.nsw.gov.au/env_services/ess/default.asp)>)

## **Land management tenders on the Liverpool Plains, New South Wales**

The Liverpool Plains Land Management Committee is a community-based organisation working on the 1.2 million hectare Liverpool Plains in northern NSW. Its strategies include using Land Management Tenders. Several rounds of these tenders have now been completed, purchasing biodiversity, salinity and water quality benefits from farmers on about 10,000 hectares (after Bentley and Moss 2004).

The Land Management Tender approach is to auction contracts to landholders who agree to change their land management or land use in certain ways. Funding has been provided by the World Wildlife Fund, the NSW State Salinity Strategy and the Australian Government's Natural Heritage Trust. The tenders have involved multiple services – principally dryland salinity amelioration, biodiversity conservation and water quality.

Economic assessment suggests that the complexity of the auction process has posed difficulties, and this has raised questions about the applicability of the auction mechanism in a multi-issue context. Options such as the buyer nominating a reserve price have been under consideration.

### **The challenge with tender schemes**

While potentially valuable, the challenge with tender schemes of the kind outlined above is to avoid the sort of problems that have been identified with earlier market-based instruments, like the Conservation Reserve Program (CRP) in the United States. This program was created in 1985 to address problems of soil erosion (and to support farm incomes at a time of plummeting crop prices). The CRP (now widened to include water quality) involves tendering for annual payments in much the same way as the Australian schemes outlined (Perrot-Maitre and Davis 2001).

But as Saltzman (2005) explains, critics say the Conservation Reserve Program has four major failings. First, there is leakage – farmers seem to be ploughing up other land to compensate for land placed in the CRP. One finding was that leakage accounted for 13 to 45 per cent of CRP acreage in Corn Belt and Lake Belt states (Wu 2005). Second, the land eligibility criteria have been defined very broadly, allowing CRP enrolment for lands that do not need to be set aside. Critics charge that as much as 77 per cent of the CRP land in Minnesota could be farmed with little ecological harm if proper management practices were used (Gordon and Walsh 1995a). Third, the CRP may have created a perverse incentive to take less care - many non-participating farmers quickly realised that they had taken too good care of their land to qualify, even though their land was intrinsically as erodable as their neighbours'. Finally, in many cases farmers seem to have colluded in the bidding process (Gordon and Walsh 1995b).

The Australian pilot schemes will be seeking solutions to such issues. The researchers are applying insights from the branch of economics that deals with situations where the transacting parties have very different levels of information. A good outline of the relevant economic insights can be found in Bardsley (2004).

## Conclusion

Market-based instruments are in common use. There are many things to get right if the newer tender-type of market-based instruments are to live up to their promise of delivering the publicly funded portion of conservation more cost effectively.

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## **Further information**

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Victoria's third Bush Tender pilot

<http://www.dse.vic.gov.au/DSE/nrence.nsf/LinkView/15F9D8C40FE51BE64A256A72007E12DC8062D358172E420C4A256DEA0012F71C> accessed July 2006.