



## National Markets Based Instruments Pilot Program

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At  
New Horizons in Market Based Instruments  
11 November 2005

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## Outline of Presentation

- Overview of market-based instruments (MBIs).
- Origins and objectives of the MBIs round one pilot program.
- Overview of round One MBI pilot program.
- Findings.
- Knowledge gaps.
- Prospective.

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## Market-based Instruments

- Environmental MBI are an approach to addressing environmental problems that use primarily market signals (especially prices) rather than explicit directives or controls.
- Unlike 'command and control' approaches to resolving environmental problems, MBIs try to
  - (1) provide incentives for individuals, companies, resource users to act in a way that benefits themselves, but also society.
  - (2) give flexibility to individuals to achieve desirable environmental objectives

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## Types of Market-based Instruments (*Prices*)

### *Charges/Fees*

- Pollution/discharge and effluent charges (several examples exist in various Australian states for water and air emissions)

### *Market Design*

- Deposit refunds (such as South Australia's beverage container deposit system)
- Bush tenders and auctions (such as Victoria's Bush Tenders)

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## Types of Market-based Instruments (*Quantities*)

### *Cap and Trade Schemes*

- Tradeable discharge permits (such as Hunter River salinity trading scheme).
- Tradeable resource rights (such as transferable water entitlements)

### *Credit Schemes*

- 'Bubbles' and Offsets

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## Possible Criteria for Choosing MBIs

- Environmental effectiveness (ability to achieve goals)
- Cost effectiveness (\$ per unit of outcome)
- Distributional consequences (based on allocation of MBIs and burden of land use changes)
- Administrative feasibility (implementation & enforcement)
- Acceptability (which is influenced by consultation, information provided and extent to which implementation is progressive)

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## MBIs and Natural Resource Management

- MBIs have been applied widely, primarily in the context of well-defined point sources of pollution (such as sulphur dioxide) or where well-defined tradeable quantity (such as fish).
- Applying MBIs to *non-point sources* and *land-use change* is still in its infancy, and requires careful design to ensure the correct signals are provided to land owners/users.

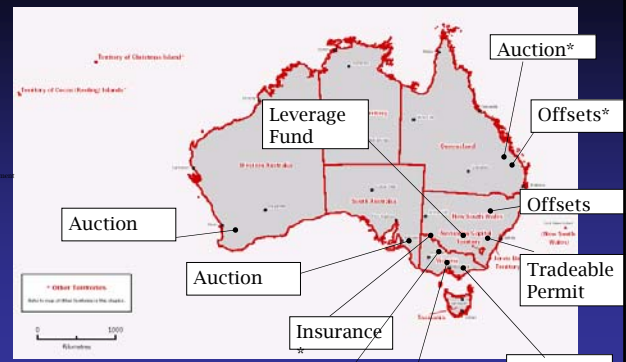
## MBI Pilot Program (round one)

- In 2002 Commonwealth and State governments, as part of the National Action Plan for Salinity and Water Quality, agreed to jointly fund a pilot program to investigate in what ways MBIs can be successfully applied for natural resource management purposes.
- \$5 million was made available with the aim of ‘..increasing Australia’s capacity to use MBIs to deliver natural resource outcomes’

## Overview of Round Pilot MBI Program

- Following call for tenders to participate in pilot program, the MBI Working Group received over 50 proposals. 11 pilots were selected and charged with reporting back their findings by July 2005.
- Pilots investigated use of auctions (4), cap and trade permits (3), offsets and credit trading (2), leverage fund (1) and conservation insurance (1).

## Location of Round One MBI Pilots



Source: National MBI Working Group

Tradeable Permit\*

Tradeable Permit

## Methods of MBI Pilot Program

MBI Type	Field Based	Experiment/Workshop
Auction	3	1
Tradeable Permits	2	1
Offsets	1	1
Insurance	0	1
Leverage Fund	1	0

Source: National MBI Working Group

## Land Use Issues of MBI Pilot Program

Land Use Issue	Number of Pilots Involved
Biodiversity	5
Salinity	8
Water quality	3
Carbon	2
Wind erosion	1

Source: National MBI Working Group

## Findings of MBI Pilot program (1)

- Auctions, cap and trade (for *point sources*) and offsets *can be successfully used to address a wide variety of water quality, salinity and environmental problems* in the Australian landscape.
- *MBIs, especially auctions, can deliver large cost savings* relative to traditional natural resource management (sometimes of several orders of magnitude)

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## Findings of MBI Pilot program (2)

- *To effectively implement MBIs there needs to be very good bio-physical modelling at the farm or paddock level, and adequate monitoring and enforcement of landholders' actions.* This makes MBIs for ambient outcomes much more difficult to implement.
- *To generate cost savings, MBIs require adequate testing and adaptation prior to implementation and well-developed communication strategies* to maximise participation by landholders.
- *No 'one-size-fits all' approach to land-use problems* and MBIs will need to be tailored to particular circumstances

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## Findings of MBI Pilot program (3)

- The more diffuse source of environmental harm, greater risk imposed on landholders and uncertainty over bio-physical linkages the lower rate of adoption of MBIs by landholders.
- *Auctions are ready to be applied over a wide range of landscapes* and larger areas and are a closer fit to current regulatory practice.
- *Initial cost of establishing MBIs is substantial* (bio-physical modelling, communication cost with stakeholders, etc.)

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## Findings of MBI Pilot program (4)

- *MBIs need adequate testing before implementation* (approaches must be tailored to landscape, environmental problem, institutional capacity, etc.)
- *Success of cap and trade approaches critically depends on well-developed markets* for discharges or conservation actions (making cap and trade difficult to implement with 'thin' markets).

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## Knowledge Gaps: Auctions

- Desirability of combining environmental outcomes (such as biodiversity and salinity) in one or separate auctions.
- Specification of contracts with landholders in terms of environmental outcomes rather than management outcomes and uncertainty/adoption tradeoff.
- Communication strategies and information provided to landholders.
- Efficacy of different auction types

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## Knowledge Gaps: Offsets

- Value of offset banks, especially to reduce transactions costs for land holders.
- Need to field trial offsets with non-point sources.

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## Knowledge Gaps: Prices vs. Quantities

- Economic theory suggest that price-based approaches (such as auctions) will tend to be preferred over quantity-based approaches (such as cap and trade) given uncertainty and environmental impacts are cumulative (such as dryland salinity).
- Experiments on relative merits of price versus quantity approaches for salinity would be helpful.

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## Knowledge Gaps: Actions versus Outcome Based MBIs

- Delineating rights in terms of management actions reduces risk to landholders, but at possible cost actions fail to deliver intended benefits. Also, some other actions may negate desired outcomes.
- Work on appropriateness of outcome-based or ambient-based approaches versus input or management based outcomes would be helpful.

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## Knowledge Gaps: Mixed Approaches

- MBIs are *not* mutually exclusive. It would be helpful to test the efficacy and value of using mixed approaches (such as combining auctions and offsets).

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## Knowledge Gaps: Institutional Constraints

- If MBIs are to be widely applied for resource management purposes in Australia, first need to be tested in wide variety of landscapes and institutional settings.

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## Prospective

- Some MBIs offer real possibility of delivering improved resource and environmental outcomes at much lower cost than current practice.
- Successful application of MBI requires careful design that must be adapted to landscape, resource issue to be addressed, institutional capacity of regional authorities, etc.
- Further research and trials of MBIs for resource management promises substantial payoffs in terms of better environmental outcomes at lower cost.

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