Australian case study – economic instruments in Murray Darling Basin water reform

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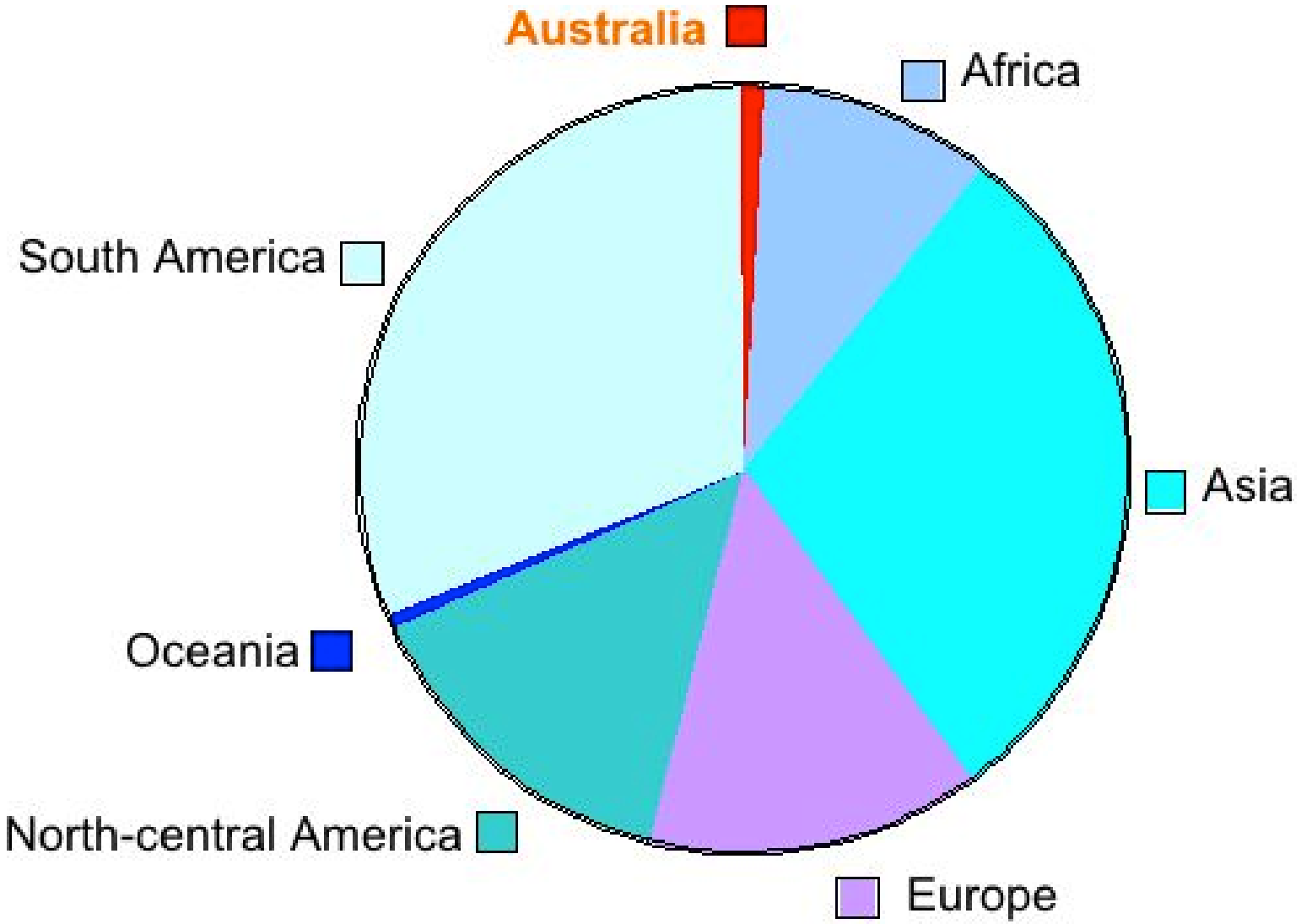
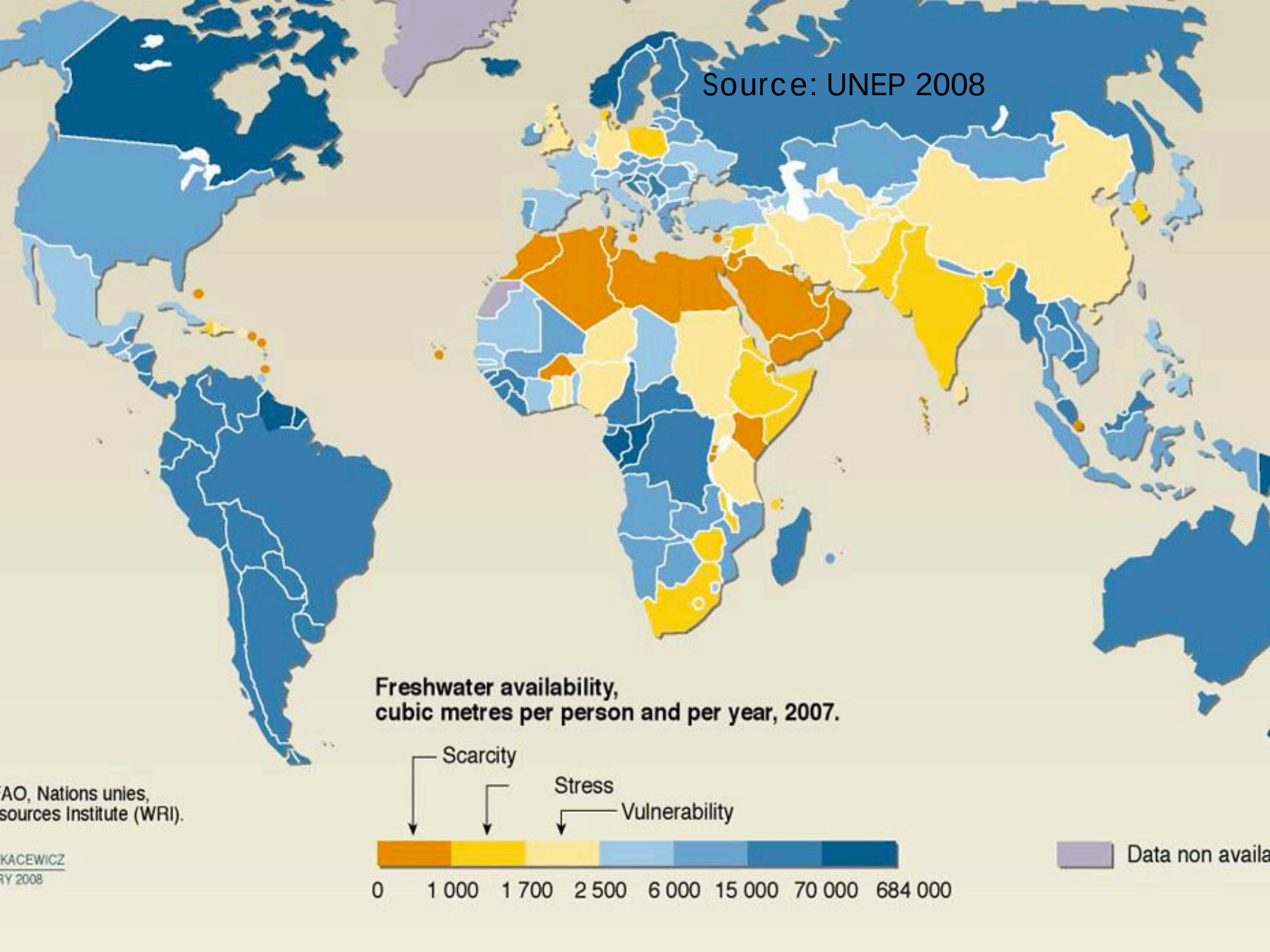
Case study overview

- Role of selected economic instruments in Australia's Murray Darling Basin in establishing water security
  - Water markets (and trading)
  - Incentives
  - Legislation and regulation
- Areas of unfinished business
- Some broader lessons

Global water resources




Source: UNEP 2008
Freshwater availability,
cubic metres per person and per year, 2007.
Scarcity
Stress
Vulnerability
0
1 000
1 700
2 500
6 000
15 000
70 000
684 000
Data non availa
AO, Nations unies,
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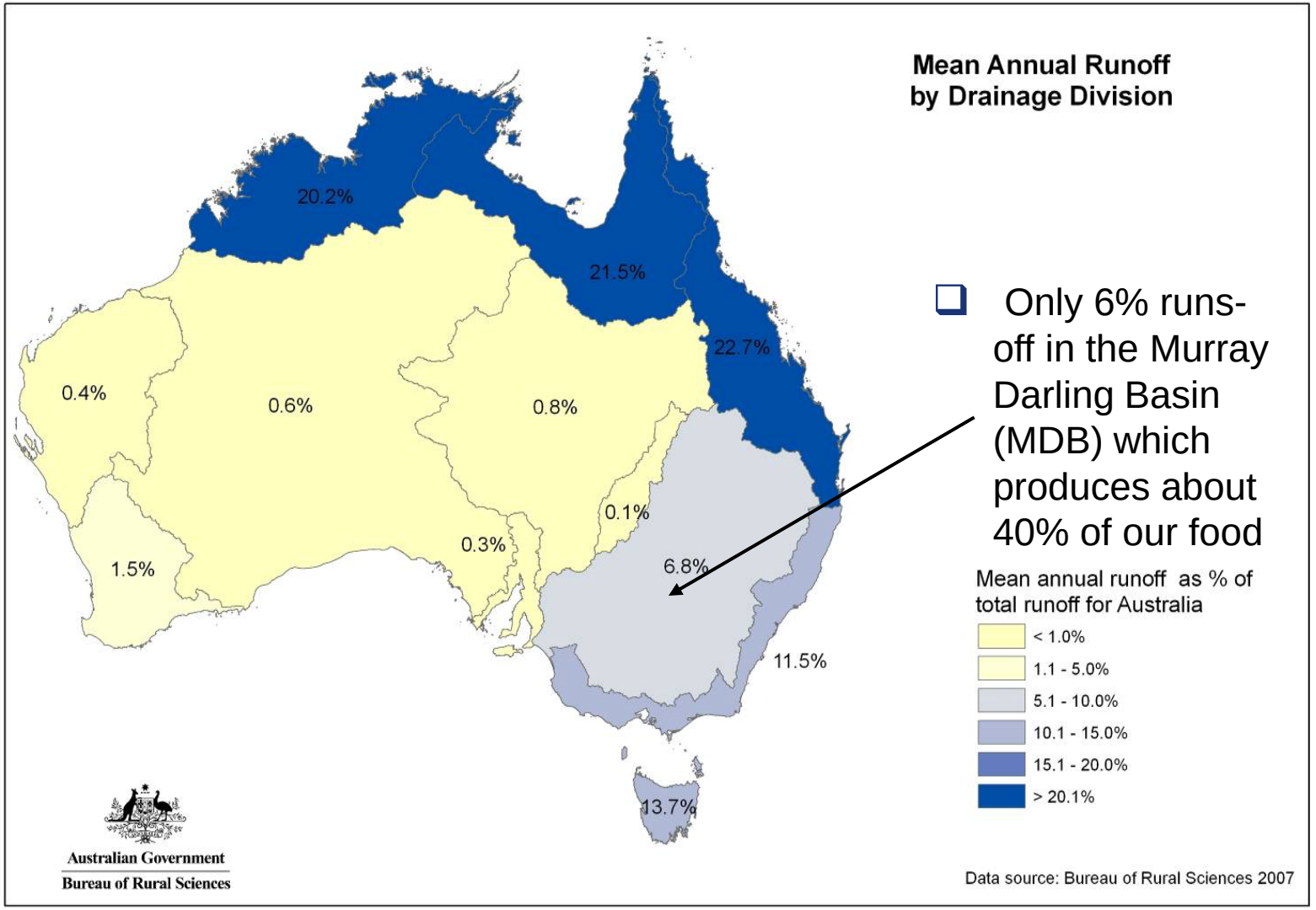
KACEWICZ
Y 2008

Australian runoff



- Only 6% runs-off in the Murray Darling Basin (MDB) which produces about 40% of our food

Australia building on a decade of reform

- 1994 Council of Australian Government (COAG) water reforms – recognition of threats to sustainability
- 1994 cap on Murray Darling Basin (MDB) surface water extractions
- 2004 National Water Initiative (NWI) – 'guideline' blueprint for action
- 2007 Water Act – framework for market development, and long term sustainability
- 2007 to present - ongoing market development, and programmatic and regulatory reform focused on strengthening the role of market in establishing water security for all participants

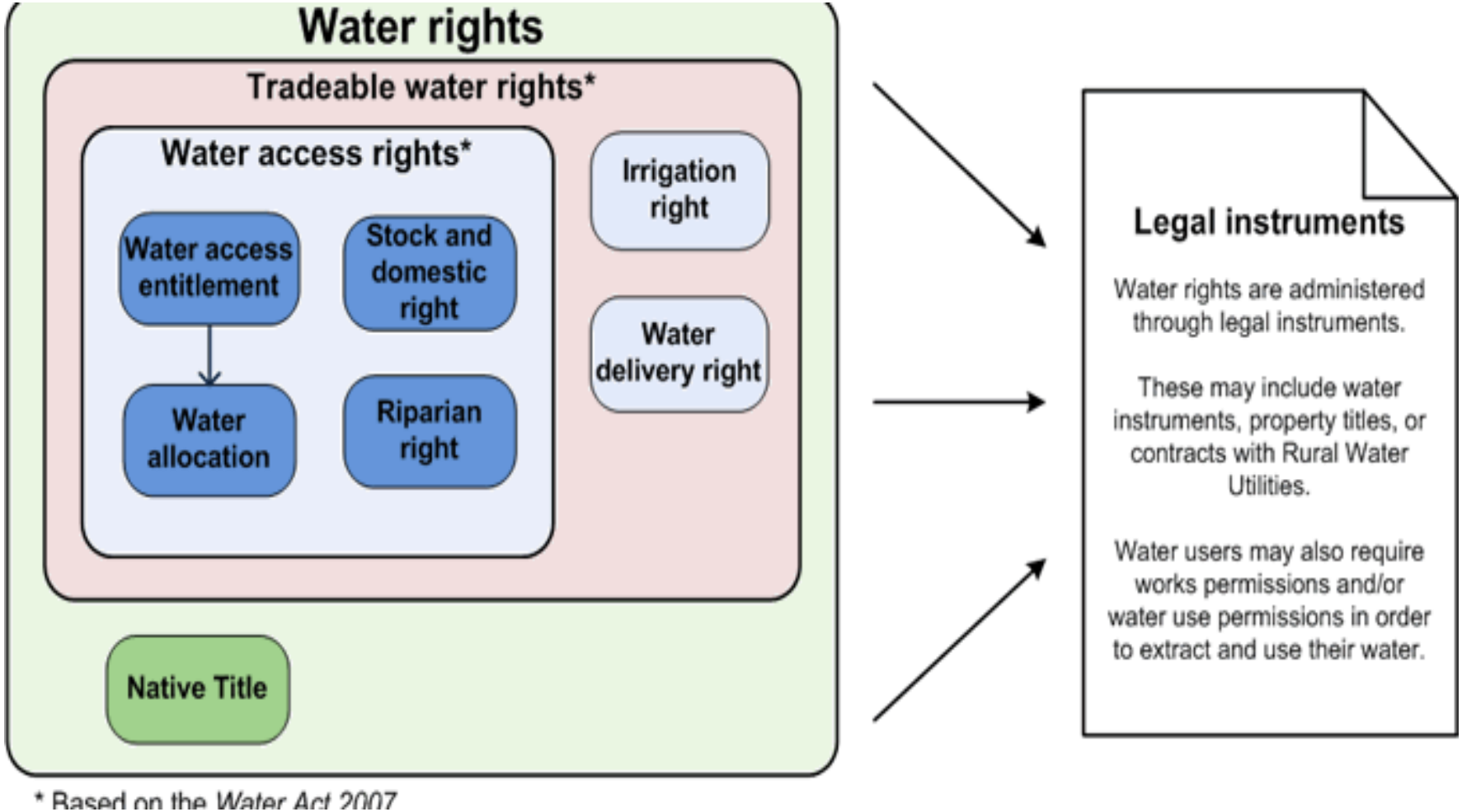
Key objectives

- **Ensure realisation of maximum value from the scare resource**
  - Via well functioning water markets
- **Ensure agricultural and environmental sustainability**
  - Via governance arrangements that produce Basin wide planning and an integrated, enforceable Basin cap incorporating forward looking science
  - Via water purchases for the environment, and national environmental water manager
- **Ensure sustainable communities**
  - Via transition arrangements
- **Ensure all participants can make informed decisions**
  - Via good quality, transparent information

MDB – a snapshot

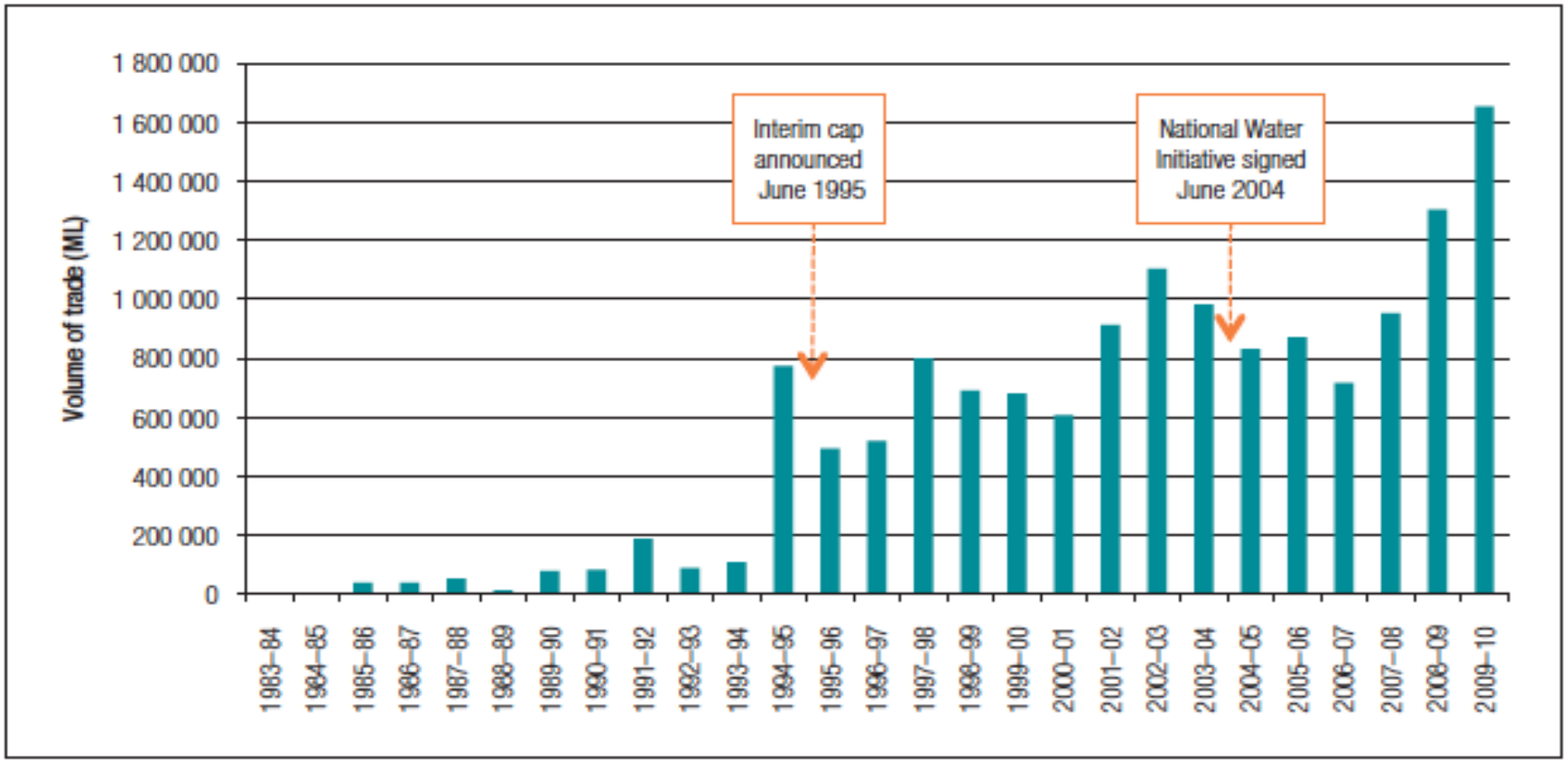
- 1 million square km, 23 river basins, 2 million inhabitants, across 4 states and a territory
- 16 Ramsar wetlands, 20 of its 23 river basins judged to be in poor to very condition
- 40 per cent of Australia's agricultural production, 65 per cent of its irrigated land
- **MDB water markets in 2009-10 accounted for over 90 per cent of nation-wide water trading**
  - 10 per cent of stock of water entitlements traded (1800 GL, valued at $2.6 billion)), up from around 100 GL in 2003-4
  - 40 per cent of water used traded (around 2300 GL, valued at $360 million)

Water Access rights



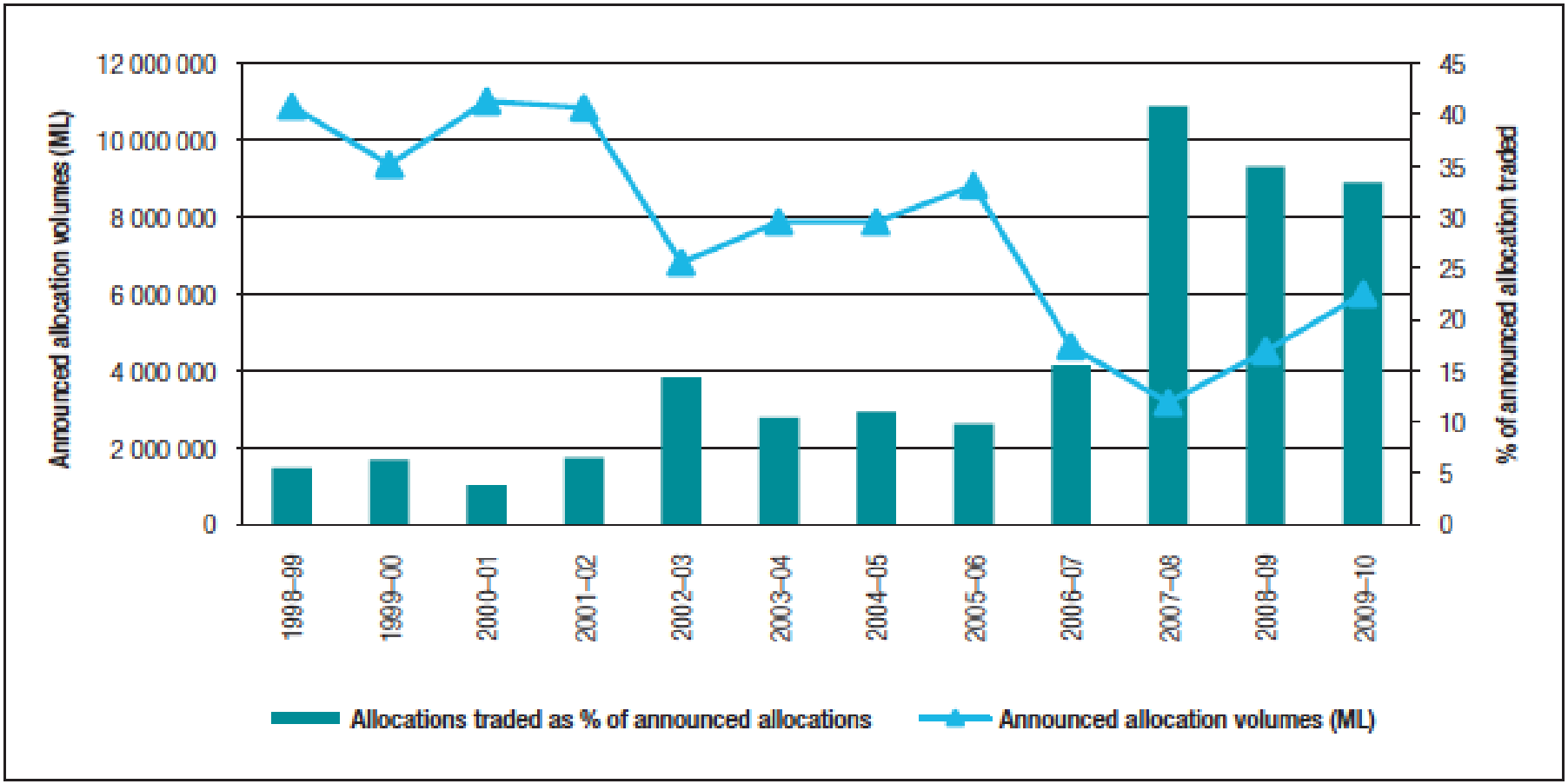
Source: http://www.nationalwatermarket.gov.au/about/rights.html

Volumes of allocation water traded in the southern MDB



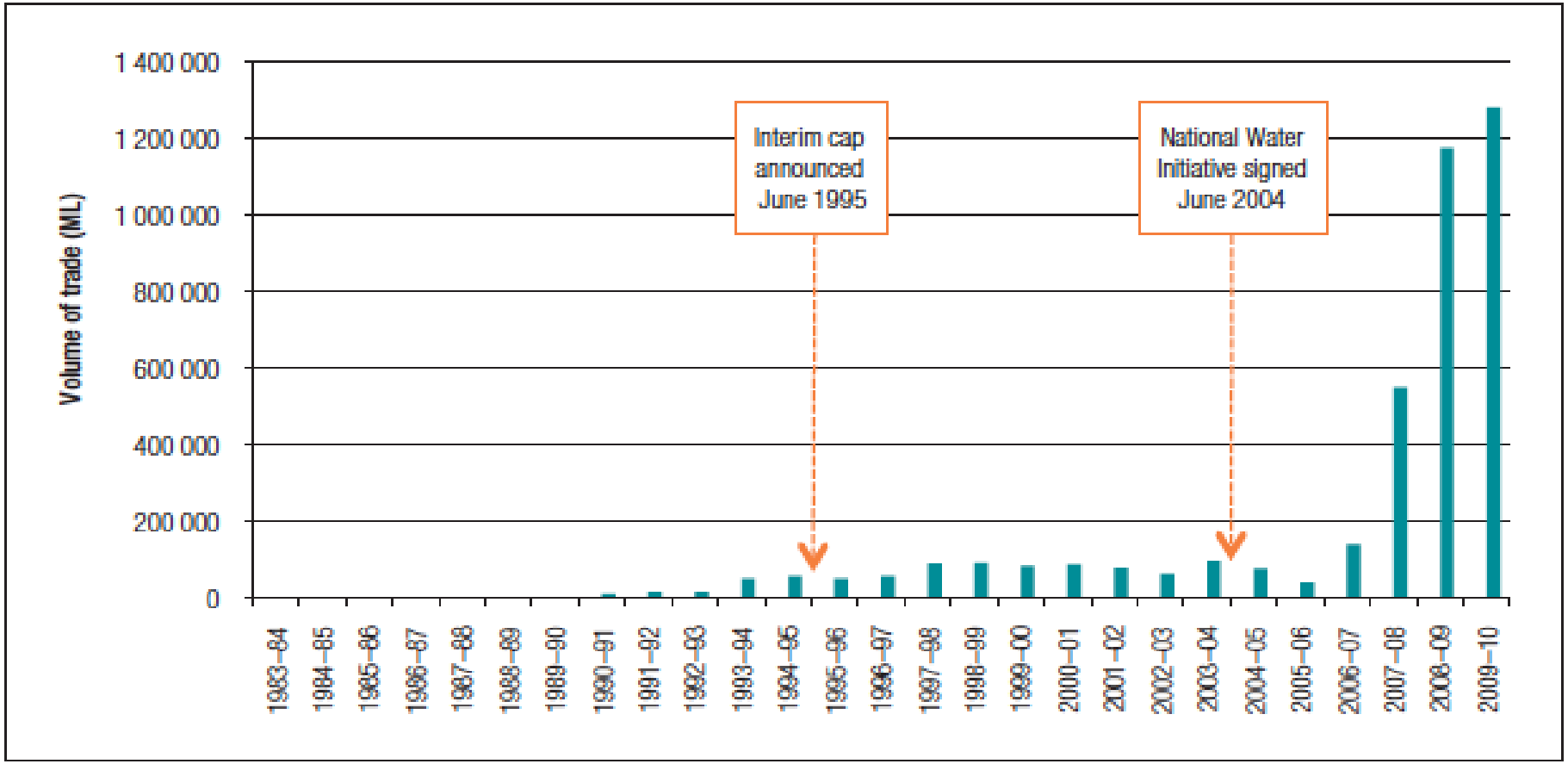
Source: NWC 2011

Allocation volumes and proportion traded in the southern MDB



Source: NWC 2011

Volume of Entitlements traded in the southern MDB



Source: NWC 2011

Reasons for water market growth

- Water Act 2007, with new role for the competition policy regulator on market and charge rules resulting in an increasingly effective separation of property rights for water from land
- Severe drought 'requiring' irrigators to look at all available options
- Increasing confidence in role of market, and understanding of benefits from trading
- Improving access to better quality and timely water information
- Changing rules around 'carryover', and gradual elimination of trade barriers
- Entry of Commonwealth into the water entitlement market as a purchaser
  - $3 billion to purchase back water entitlements in MDB from irrigators for environmental use, giving the environment a dedicated water entitlement in the same way as irrigation

Benefits from water trading

- Modelling suggests significant increase in GDP of $370 million in 2008-09
  - Water able to shift to areas of highest returns
  - Additional significant benefits from keeping permanent plantings alive
- Dynamic benefits from better irrigator balance sheet management
- Environment benefits from greater flexibility accruing to environmental water managers
- Greater transparency around costs and benefits of environmental action

Incentives to promote water efficiency-1

- Public good investments to drive green growth:
  - Funding improved water information
  - Funding cutting edge research
  - Reducing transaction costs by improving transparency of market information
- Use of (small) incentives to promote irrigation modernisation planning a key tool for raising awareness about water efficiency and sustainability in a climate change context
  - Studies based on CSIRO water availability studies. Enables key conversations at district level
    - Is existing infrastructure in right place?
    - Should some districts be closed?
    - What additional investments should be made?

Incentives to improve water efficiency -2

- Other on and off farm irrigation investments (as part of $5 billion program) being contemplated and some have commenced.
  - Critical that approved projects meet stringent benefit cost tests
  - Poor quality projects run risk of locking in inefficiency and higher system costs well into the future
- Consideration of funding community adjustment where rebalancing system involves moving large quantity of water from irrigation to the environment
  - Should be based on extent of adjustment

Water policy/regulatory reform

- National legislation directed at transparency, competitive neutrality and strengthening property rights, all contributing to sustainable markets in the long term. Covers
  - New market, charge rules administered by competition authority significantly strengthen the operation of the market, and the quality of the property right
  - MDB 'Basin Plan' planning process, including(yet to be introduced) trading rules to be administered by the MDBA
  - Stronger compliance and enforcement(to reduce water theft)

- New National Water Market System being developed to enable transparent common registry across states, and water trading nationally

- All the above will Increase understanding of value of water, critical in 'drying' climate change context

Unfinished business

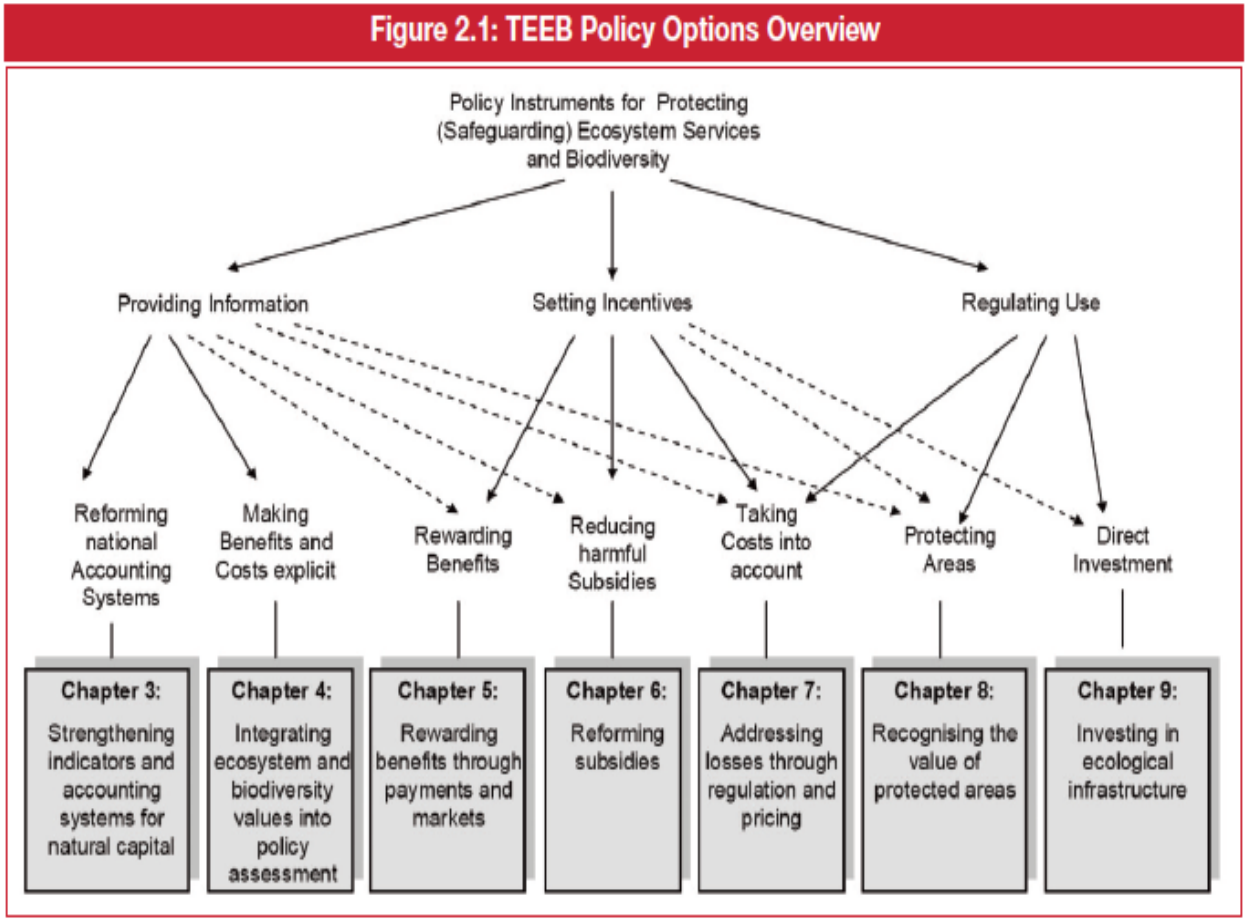
- Each instrument described above is being used to promote efficiency. There is unfinished business in each area
  - Sustained political commitment and community support will be needed to finish implementation in an effective way, to maximise benefits that are already apparent
- The introduction of the Murray Darling Basin Plan in 2012 inter alia, to cap diversions from all sources at a sustainable level, will give added urgency to the need to increase efficiency, but will provide a long term framework for water security
- Further market opportunities include a market for delivery rights – ie setting a price for use of the delivery 'network', particularly use of the river channel
- Community adjustment issues will need sensitive management

Lessons

- Government policy action Australia's MDB illustrates that given persistent effort, economic instruments (water markets, incentives, economic regulations) can enhance water security, economic efficiency and through that add significant value for irrigators communities and the environment.
  - Reform must relate to the context, and the whole water management system
- Achieving water security requires persistent reform effort, and political leadership, good governance framework, effective stakeholder engagement….
- Good quality transparent information assists greatly in driving good decision making and managing groups that are threatened by the change process

Questions?

TEEB Framework



Assessment of Progress