



Water Management and Trading

Presentation to Nuffield Scholars

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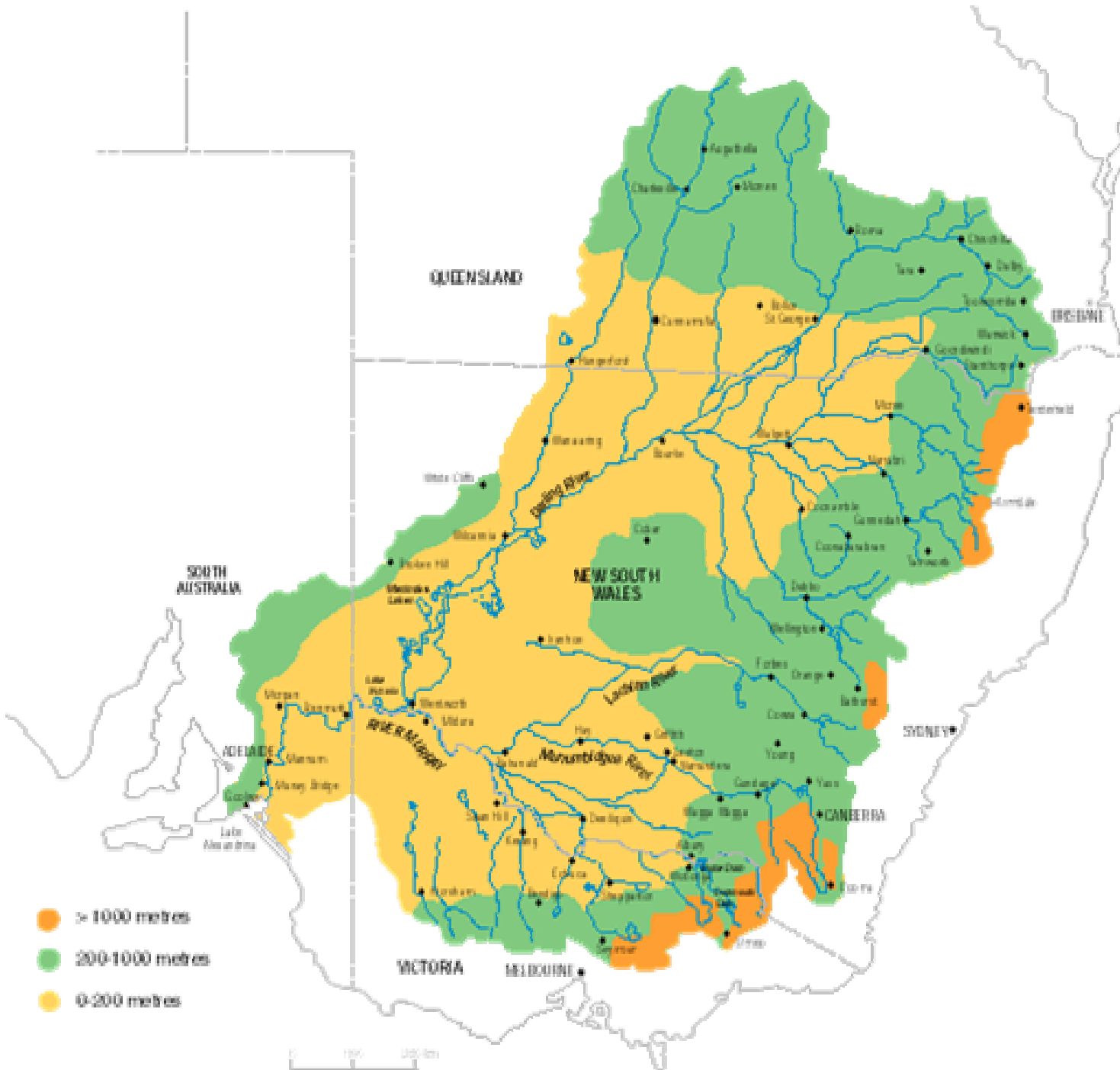
Manager Strategy & Stakeholder Affairs

28 February 2008



Overview

- Water Resource development phases
- Water sharing and rights to water
- Current reforms – unbundling
- Seasonal allocation of water
- Water trading basics





DISTRICT SERVICES

IRRIGATION AREAS	WATER DISTRICTS
Shepparton	Tungamah
Central Goulburn	East Loddon
Rochester-Campaspe	West Loddon
Pyramid-Boort	Normanville
Murray Valley	FLOOD PROTECTION DISTRICT
Torrumbarry	Loch Garry

MAJOR STORAGES

Goulburn System	Murray System
Lake Nillahcootie	Dartmouth Dam*
Lake Mokoan	Hume Dam*+
Lake Eildon	Yarrowonga Weir*
Goulburn Weir	Torrumbarry Weir*
Waranga Basin	Mildura Weir*
Lake Eppalock	Lake Buffalo
Cairn Curran Reservoir	Lake William Hovell
Newlyn Reservoir	
Hepburns Lagoon	
Tullaroop Reservoir	
Laanecoote Reservoir	

* Murray-Darling Basin Commission assets
 + Managed by NSW Constructing Authority



BOUNDARIES:

- Boundary
- Channel/Canal/Area

OFFICES:

- B Bulk Water Operations
- Area Management
- D Diversion Operations
- Other Work Centre







Water Resource Development Phases

- *1880 -1900s:
Initial framework established*
- *1900s – 1940s:
Irrigation industry establishment and growth*
- *1950s – 1980s:
Post W.W. II expansion*
- *1980s:
Problem Awareness*
 - Salinity/Drainage
 - Cost pressures
 - Financial viability of irrigation systems

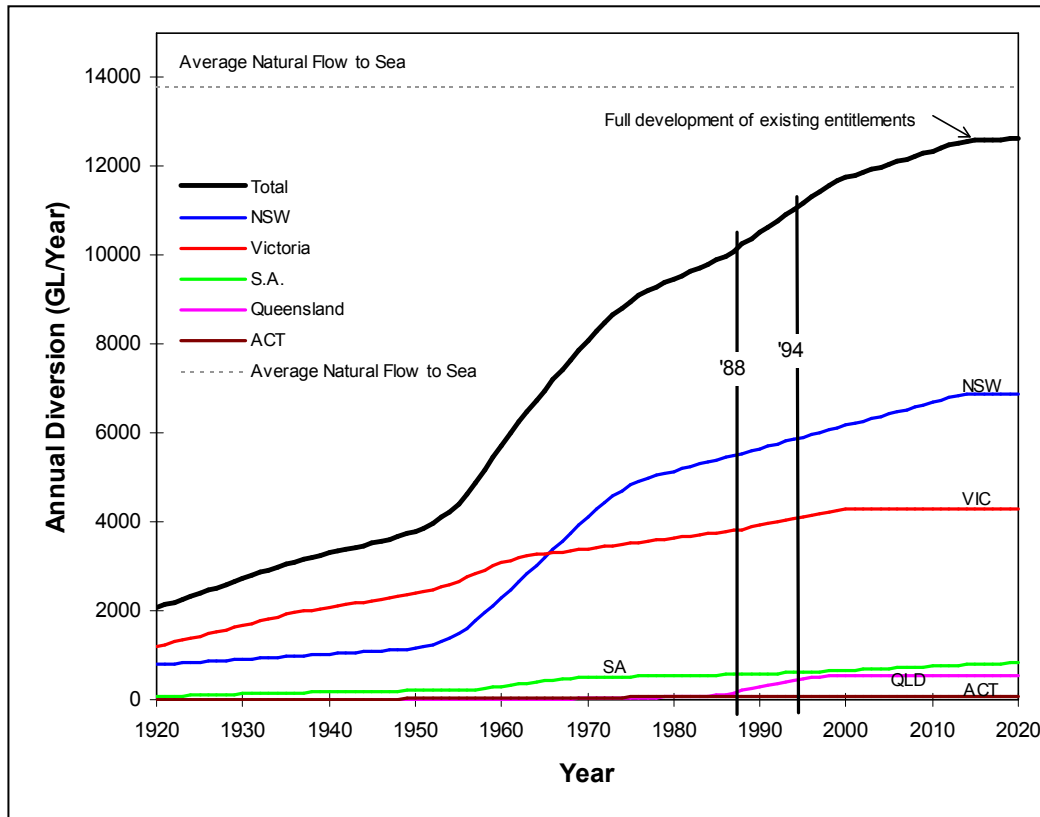




Water Resource Development cont...

- *1990s Managing Mature Systems*

- water trading
- Bulk Entitlements
- MDB Cap
- COAG water reform
- Water quality management plans
- Productivity plan



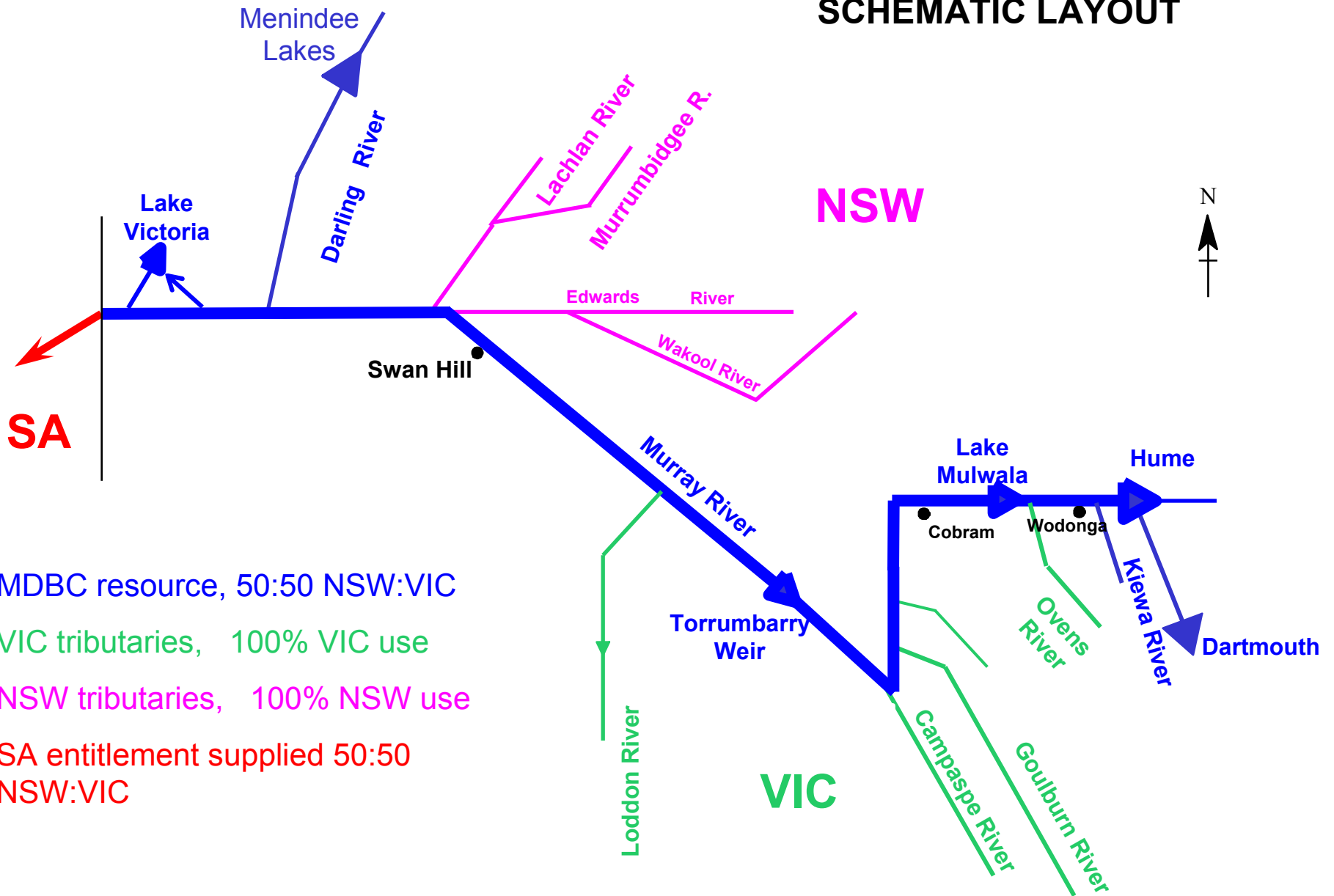


Water Resource Development cont...

- *2000s Readjustment for Sustainability*
 - Improving environmental flows
 - Water savings
 - Farm dams controls
 - National Water Initiative
 - Expanded trading
 - Unbundling entitlements
 - Asset/service reconfiguration and modernisation



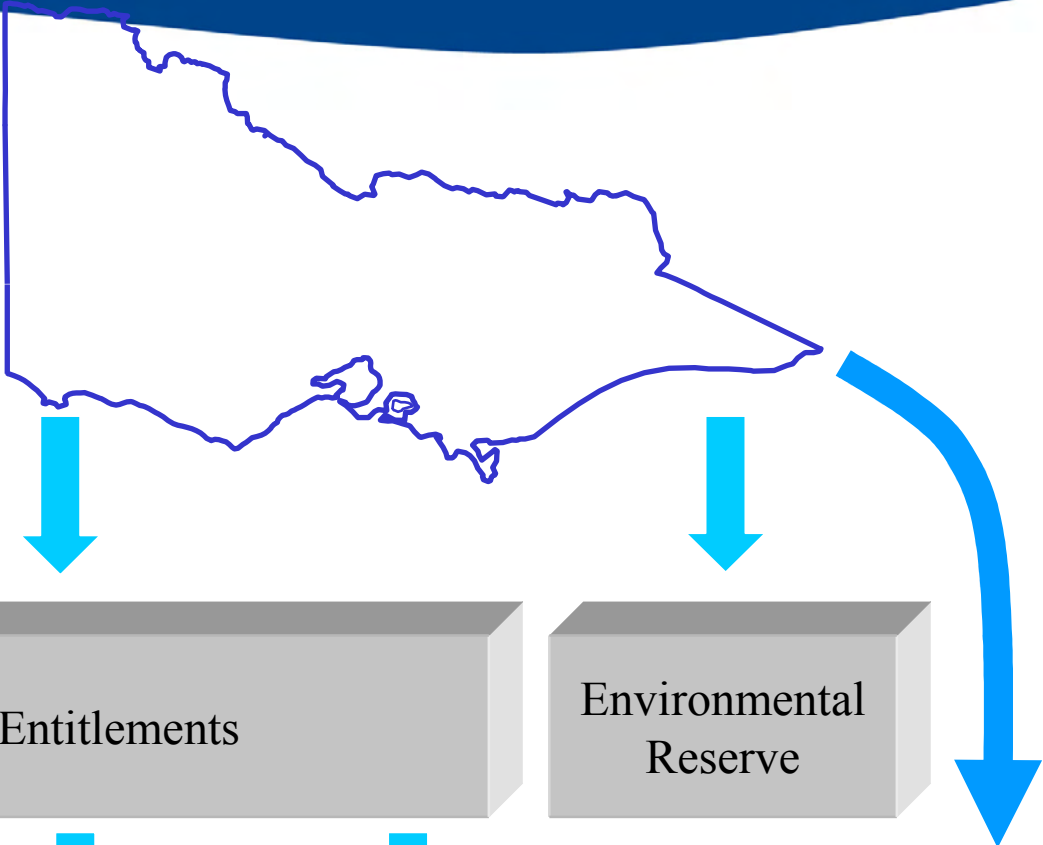
RIVER MURRAY WATER SUPPLY SYSTEM SCHEMATIC LAYOUT



- MDBC resource, 50:50 NSW:VIC
- VIC tributaries, 100% VIC use
- NSW tributaries, 100% NSW use
- SA entitlement supplied 50:50 NSW:VIC



Rights to Water



Level 1
Rights held by State
(Waterways,
groundwater &
overland flow)

Level 2
Rights granted to
Authorities &
environment

Level 3
Rights issued to
persons &
Authorities

Bulk Entitlements

Environmental Reserve

Licences

Water Shares

Supplies by Agreement

Private Rights
• Rainfall
• Riparian



Establishing Water Entitlements

- Water rights first issued 1910
- Additional entitlements issued in 1964 following major storage construction
- Gradual take-up, but no new “free” entitlements from 1970s



History of Entitlements

- 1900s – 1991
 - Water tied to land with no movement, channels built for “fixed” supply commitment
- 1991 – 1994
 - Trade commenced, activity limited
- 1994
 - Trade expands significantly
- 1998
 - New development needs emerge:
 - channel reservation,
 - rice growing,
 - New horticulture

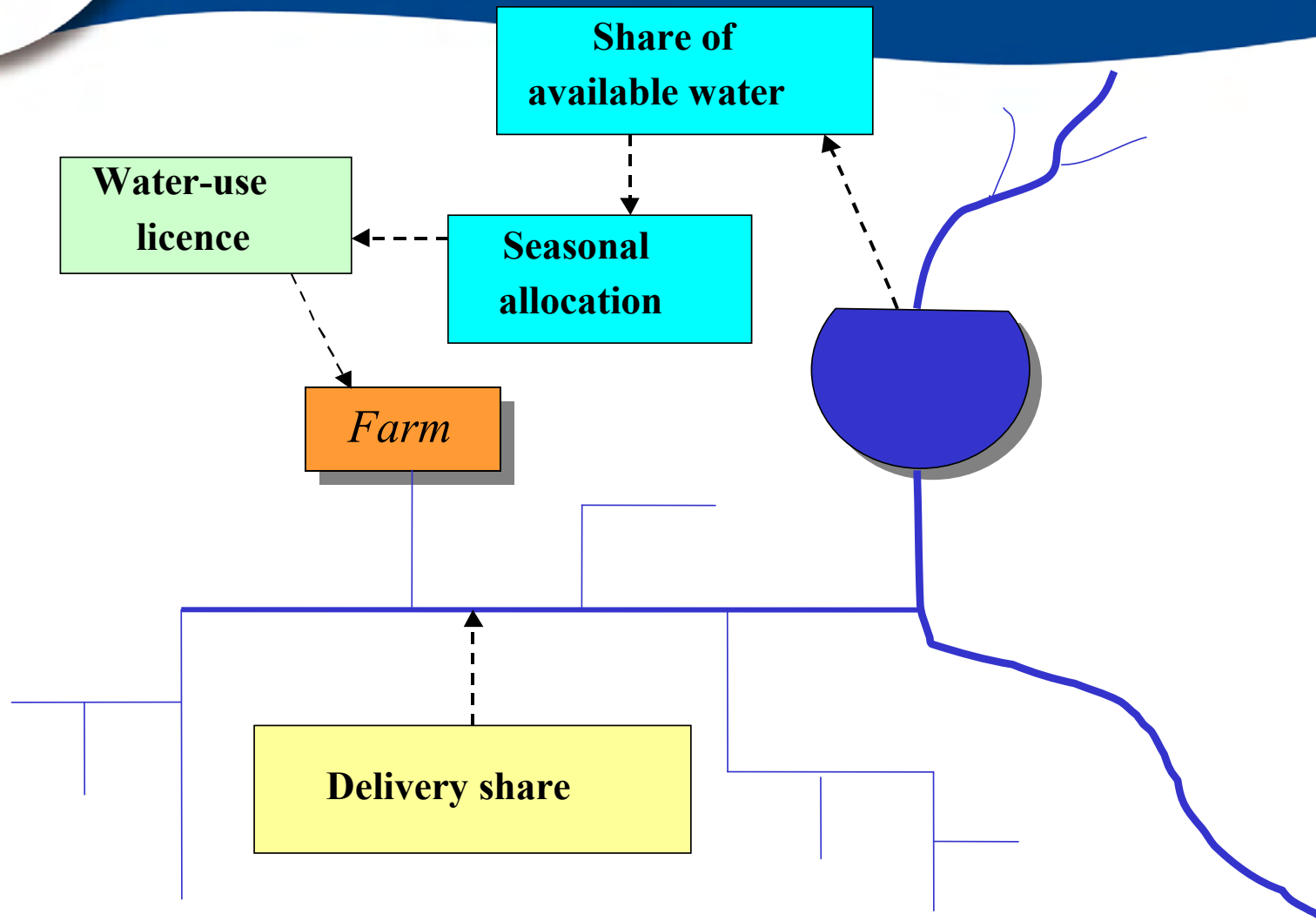


Drivers for change

- More flexibility to match water needs and reliability to enterprise
- Growth in trading
- Price impacts of trade (stranded assets)
- New developments requiring cost effective options for water supply
- Demand for new entitlement forms
 - leases, options

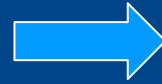


The Unbundling Concept





Bundled



Unbundled

Water:

100 ML water right

- sales allocated as % WR

Delivery:

1% WR per day on average

- e.g. 1 ML per day on average

Water-use:

- 5 - 10 ML a hectare

High- reliability water share

- 100 ML

Lower- reliability water share

- 48 ML (Goulburn, Murray)
- 56 ML (Campaspe)

Delivery share

- 1 ML/day
- e.g. 1 ML per day on avge.

Water-use licence

- 5 - 10 ML a hectare
- e.g. 200 ML for 20 ha property



Benefits of unbundling

- Makes trading of water easier
 - e.g. buyer can get water before use approval
 - faster, simpler trading at lower cost
- Enables borrowing against water as an asset
 - mortgages recorded in the register
- Will facilitate leasing of water - & allow tailored products
- Tradeable rights to delivery capacity, with charges on land:
 - will lead to more efficient use of congested channels
 - will help with stranded assets & water stripping

Increases choice - if people don't want to use new opportunities, can stay exactly as they are



Seasonal Allocation Policies

- Assess available resource
 - In storages
 - Inflows for 99% P.E., split over 2 years OR inflows in transit to storages
- Assess commitments to supply
 - High Reliability Water Shares year 1
 - High Reliability Water Shares year 2
 - Balance available for Low Reliability Water Shares in year 1
- Set allocation so demand can be met from available resources
- Review bi-monthly and inform market



System Planning

- Underlying objectives
 - provide known security of supply
 - meet customer service needs/targets
 - meet environmental targets and obligations
 - consistent, efficient, “auditable” system operation, which is understood and endorsed by stakeholders



Water Trading

- Trade is vital to allow water to move to new uses
- Trade can be
 - Trade of allocation
 - Water allocated for use this year
 - Sometimes called “temporary trade”
 - Permanent transfer of entitlement
- Trade is direct farmer - farmer
 - G-MW approves trade
 - Water Registrar records change in entitlement ownership



Establishing trade

- Pilot trial of temporary trade in 1987
- Small volumes initially, but results of trial were positive
- Full temporary and permanent trade introduced in 1991



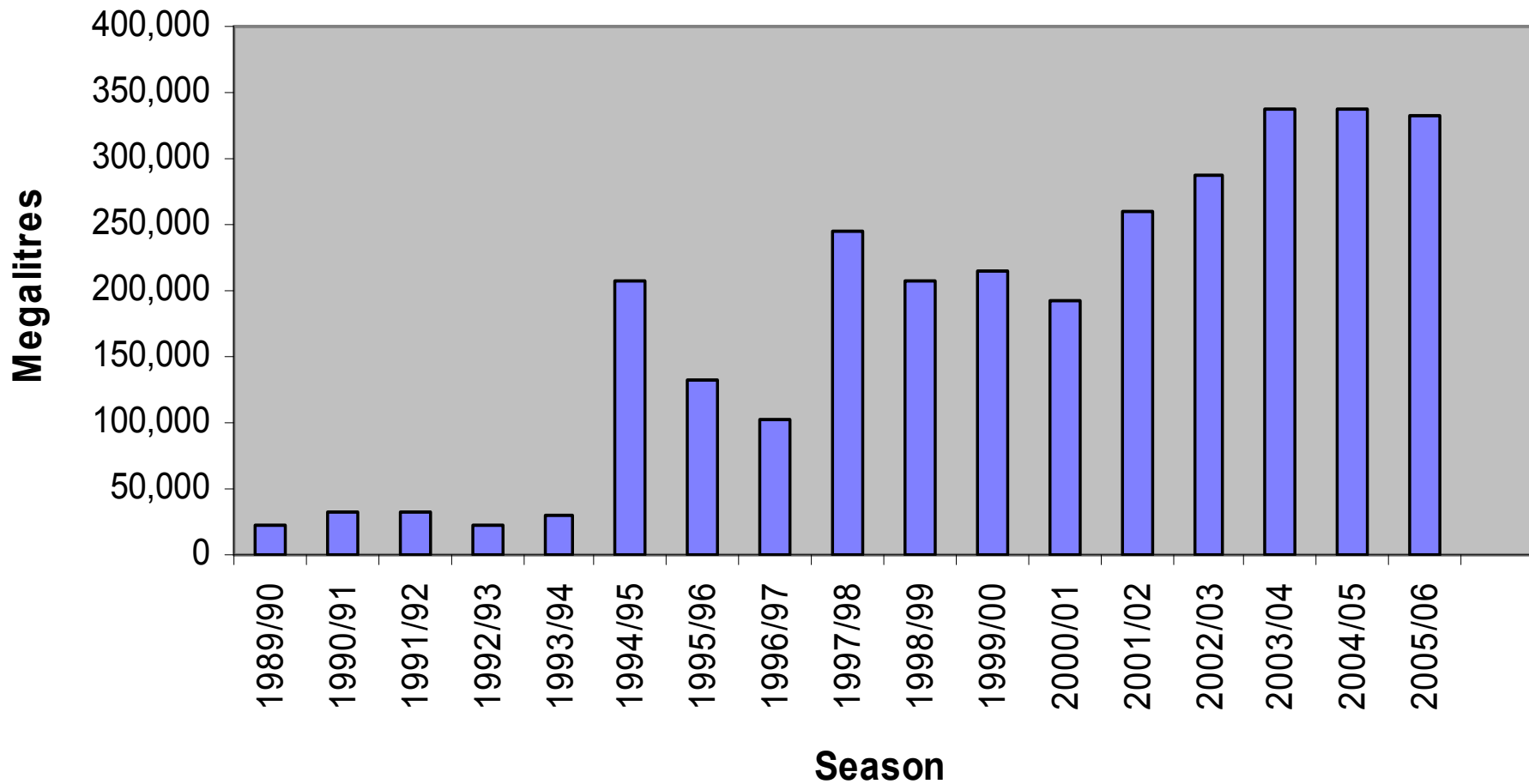
“New” entitlements

- If farmers are trading, govt. shouldn't give out free rights!
 - no new “free” entitlements since 1970s
- 1988 Auction of new licenses from construction of Dartmouth Dam
- 1994 More new licenses auctioned on River Murray
- 2002 Mid Loddon groundwater auction
 - 7,000 ML
 - \$1 million revenue



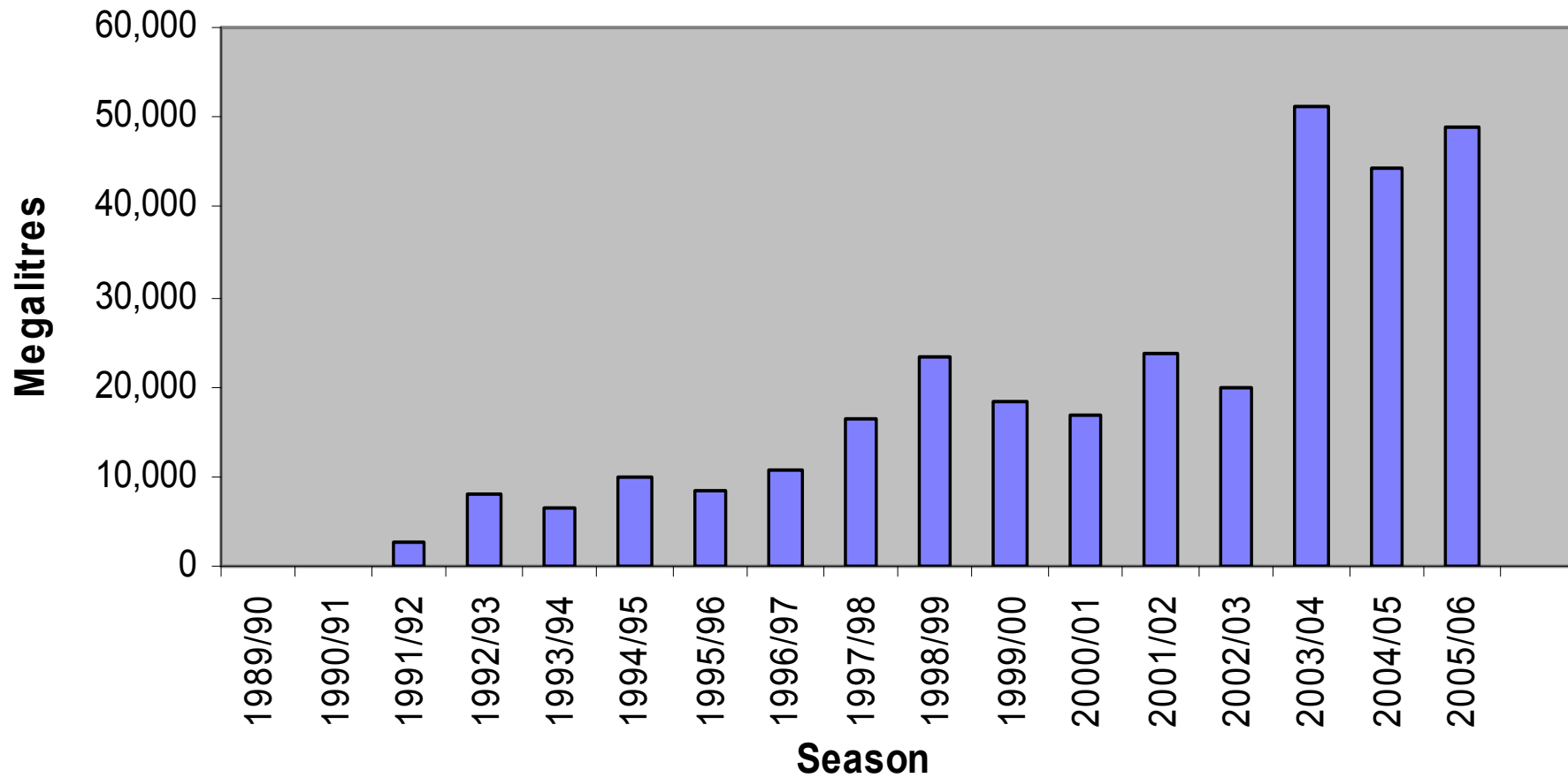
Temporary Transfers

Annual Totals per Season
2005/2006 totals to end of June

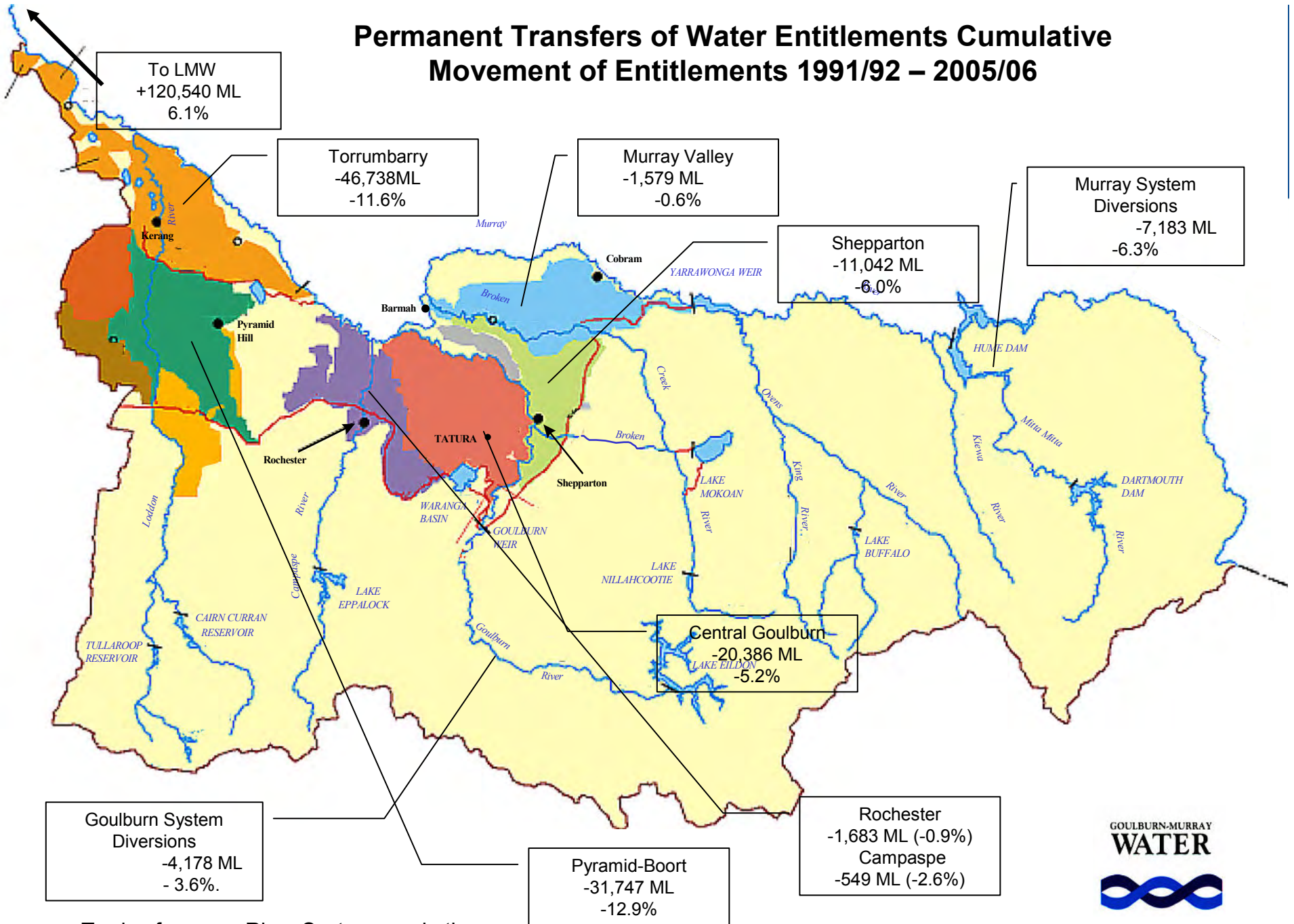


Permanent Transfers

Annual Totals per Season
2005/2006 totals to end of June



Permanent Transfers of Water Entitlements Cumulative Movement of Entitlements 1991/92 – 2005/06



Trades for some River Systems and other Water Authorities are not shown.





Recent Benefits of Trade

- Significant new high value horticulture
- Production maintained through serious drought
- Over 80% of farmers have participated in trade



Key requirements for trade

- What are the products?
 - Clear entitlements and allocation policy
- A cap on new entitlements
- Who can buy and sell?
 - Register of entitlements
 - Clear rules for trade
- Protection for third parties
 - Environmental approvals
 - Trade rules to protect reliability
- Market information
 - Volumes and prices





Water Reform Outcomes

