

Integrated water resources management: Sharing the Australian experience



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Acknowledgements

- DFAT & Australian Water Partnership (former CEO)
- Dr. Jane Doolan, Productivity Commission (Australia), former Director for Water Management, Victoria
- Aither (Australia) (WaterGuide)

Australia & Rep. of Korea

Australia

Area: 7.7 million km²
Pop. 24 million
Ann. Rainfall. 530 mm
Renewable water: 490 km³
Renew. water/capita: 20,400 m³
Global: 32/133



Rep. of Korea



Rep. of Korea

Area: 0.1 million km²
Pop. 51 million
Ann. Rainfall. 1270 mm
Renewable water: 70 km³
Renew. water/capita: 1,300 m³
Global: 119/133

Nevertheless, IWRM in Australia is heavily influenced by drought and water scarcity
While, Rep. of Korea has one of the lowest 'per capita water availability' in the world

Australia's modern history of water management

From late 1880's to 1980s – **Build and Supply Phase**

- 100 years of water infrastructure development supported economic growth, but
- Large government debt
- Financially unsustainable water authorities
- Inadequate water quality and service delivery in some urban areas
- Inefficient irrigation producing relatively low value returns (>65% of water use)
- Widespread environmental degradation (salinity, loss of biodiversity)
- Recurring and continuing challenges from periodic drought
- Murray-Darling Basin – where many of the problems were first observed

Conclusion – 100 years of 'modern' water infrastructure and water use had provided an inadequate return to economy

Economics became the ultimate driver for change

- By the mid-1980's, it became clear that major change was needed
- Top-down and bottom-up, and focussing on **demand** and as well as supply
- Water policy reform was underpinned by **economics** not engineering
- Why? Because when water is scarce, you cannot simply engineer your way out of the problem
- How you move water around the economy is even more important than how you move it around the landscape
- Does this apply to Rep. of Korea? Perhaps, and possibly more so into the future, with climate change - increasing drought and scarcity

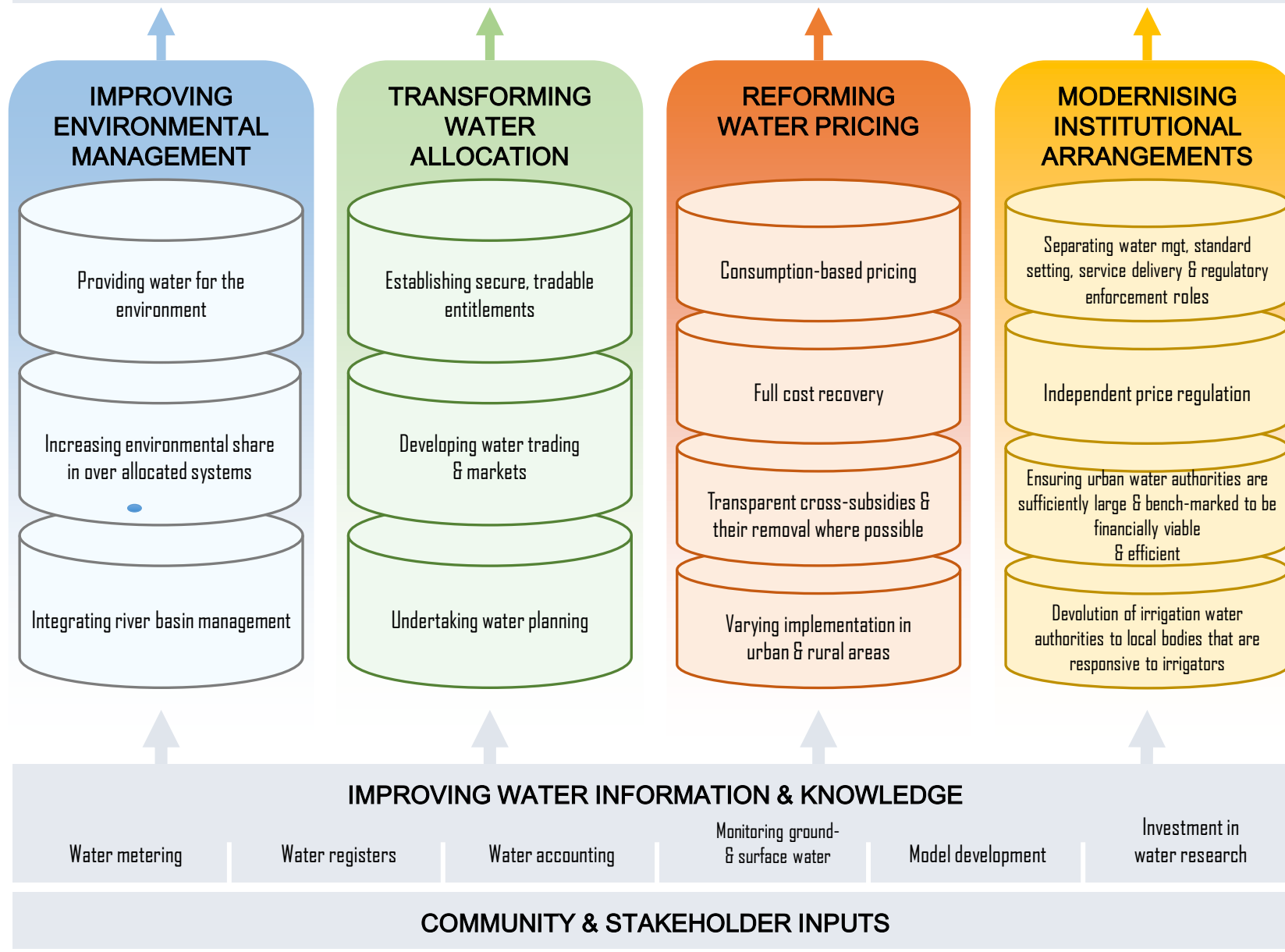
30 years of water policy reforms in Australia

Objective: Allowing water to move to its **highest economic value** while meeting current and future urban, rural and environmental needs

- Improved water planning to provide
 - Clear, secure water **entitlements** for water users
 - Environmental entitlements
- Functioning water **markets**
- Improved **environmental condition** of rivers and wetlands
- Focus on **efficiency**
 - High-value, sustainable irrigation
 - Urban supply security and liveability
 - **Ecological** efficiency

Objectives -

Increase productivity & efficiency of Australia's water use
Ensure the health of river and groundwater systems



The Australian Water Reform Journey
An overview of three decades of policy, management and institutional transformation
August 2016

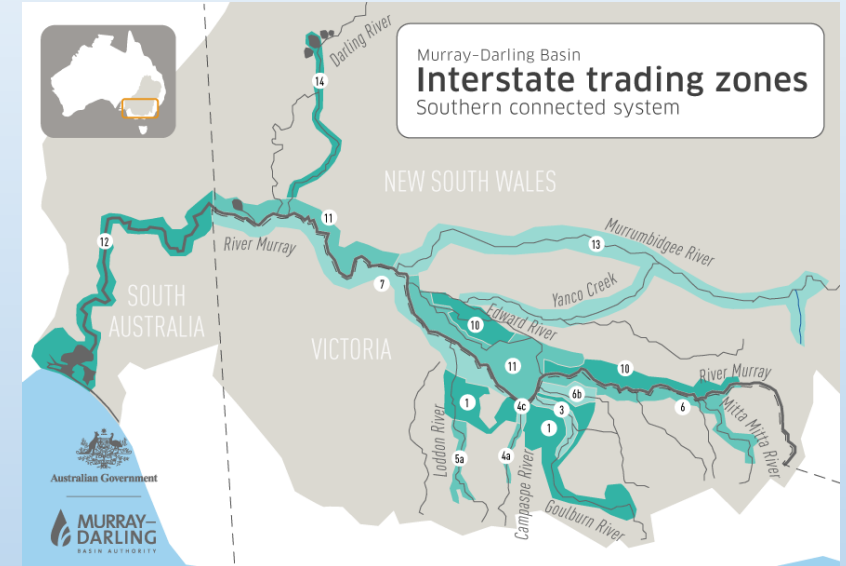
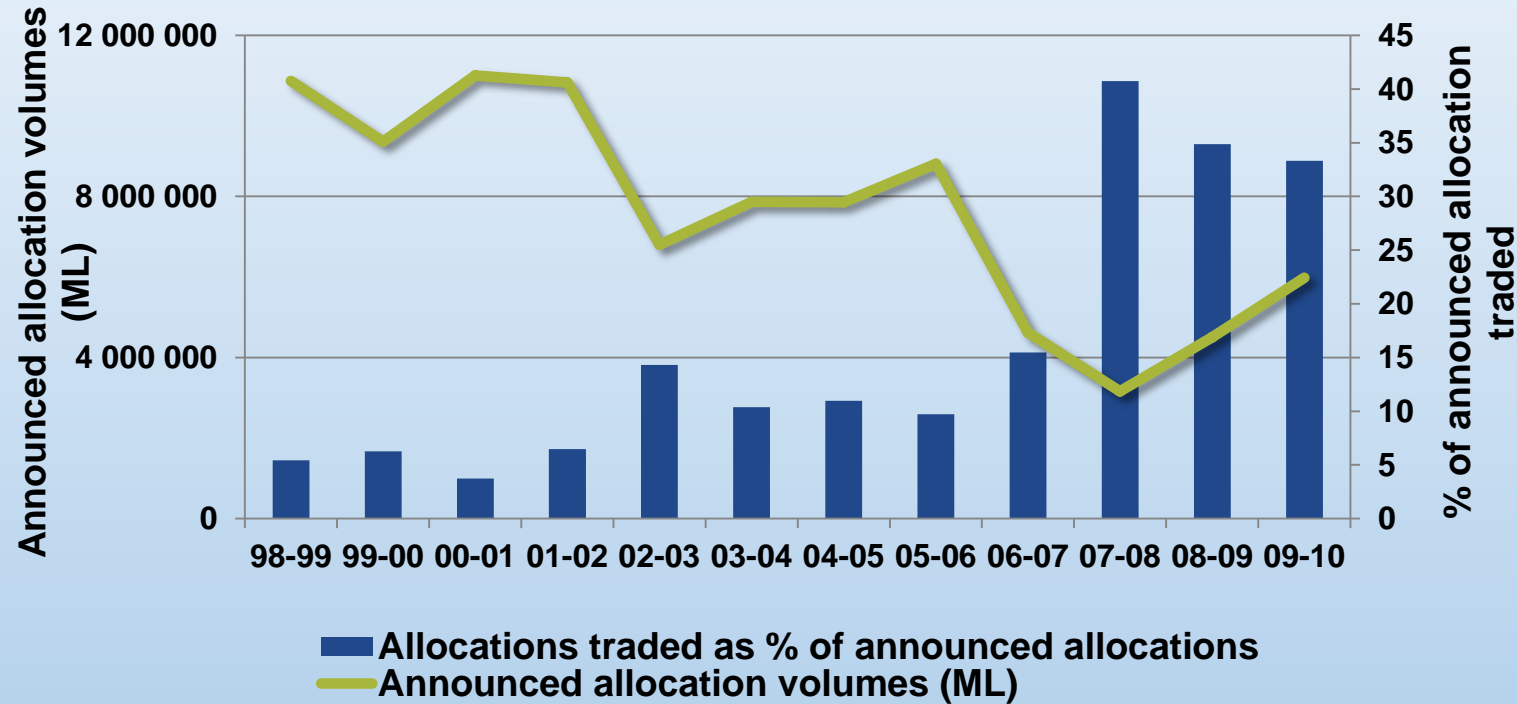
Australian Aid waterpartnership.org.au AUSTRALIAN WATER PARTNERSHIP

Source:
Doolan – AWP (2016)

1. TRANSFORMING WATER ALLOCATION

- Establishing legally secure, transferable entitlements
- Developing water trading & markets
- Undertaking long-term strategic water planning based on changing water use patterns and water 'moving around the economy'

Water trading was critical during the Millennium Drought



*At the peak of the drought in 2008-9, water traded was valued at c. AUD\$4.4 billion (c. USD\$3.4 billion)

2. IMPROVING ENVIRONMENTAL MANAGEMENT

- Providing water for the environment
 - environmental flows and ecological engineering (efficiency)
- Increasing environmental share in over allocated systems
 - environmental water entitlement and allocation
 - allocated on a similar basis to other water users
- Integrating river basin management
 - modern IWRM perspective
 - requires cooperation cross States and Ministries/Agencies

3. REFORMING WATER PRICING

- Consumption-based pricing (cost per volume consumed)
- Full cost recovery
- Transparent cross-subsidies & their removal where possible
- Varying implementation in urban & rural areas

4. MODERNISING INSTITUTIONAL ARRANGEMENTS

- Separating water management, standard setting, service delivery & regulatory enforcement roles
- Independent price regulation
- Ensuring urban water authorities are sufficiently large and bench-marked to be financially viable & efficient
- Devolution of irrigation water authorities to local bodies that are responsive to irrigators
- Break down institutional barriers and improve coordination across ministries & agencies

5. IMPROVING WATER INFORMATION & KNOWLEDGE

Enabling and supporting systems:

- Water metering (urban and irrigation)
- Water title registers (similar to land registers)
- Water accounts and accounting
- Shared national data for ground-water & surface-water
- New IWRM Model development (allocation & trading)
- Investment in water research

6. COMMUNITY & STAKEHOLDER INPUTS

- Engage individuals and groups in decision making processes that affect their interests
- Build a strong commitment by key stakeholders to improved water resource management as an ongoing and iterative process
- Understand stakeholders' desired outcomes from the management of available water resources
- Establish agreement on the need for change in approach to IWRM, and build momentum toward achieving that change
- Actively use the information collected and generated to shape decision making and communication of those decisions

Objectives -

Increase productivity & efficiency of Australia's water use
Ensure the health of river and groundwater systems

IMPROVING ENVIRONMENTAL MANAGEMENT

Providing water for the environment

Increasing environmental share in over allocated systems

Integrating river basin management

TRANSFORMING WATER ALLOCATION

Establishing secure, tradable entitlements

Developing water trading & markets

Undertaking water planning

REFORMING WATER PRICING

Consumption-based pricing

Full cost recovery

Transparent cross-subsidies & their removal where possible

Varying implementation in urban & rural areas

MODERNISING INSTITUTIONAL ARRANGEMENTS

Separating water mgt, standard setting, service delivery & regulatory enforcement roles

Independent price regulation

Ensuring urban water authorities are sufficiently large & bench-marked to be financially viable & efficient

Devolution of irrigation water authorities to local bodies that are responsive to irrigators

IMPROVING WATER INFORMATION & KNOWLEDGE

Water metering

Water registers

Water accounting

Monitoring ground- & surface water

Model development

Investment in water research

COMMUNITY & STAKEHOLDER INPUTS

Source:
Doolan – AWP (2016)

Economic reforms for water in Australia

Objective: Allowing water to move to its highest economic use & value while meeting future urban, rural and environmental needs

- Improved water planning to provide
 - Clear, secure water **entitlements** (legal title to water access)
 - **Environmental** entitlements (provided on the same basis)
- Functioning water **markets**
 - allowing water to be traded between farmers, and with cities
- Focus on **efficiency**
 - High-value, sustainable irrigation
 - Urban supply security and liveability
- Improved **environmental condition** of rivers and wetlands
- Focus on both **demand** and supply management

Lessons learned:

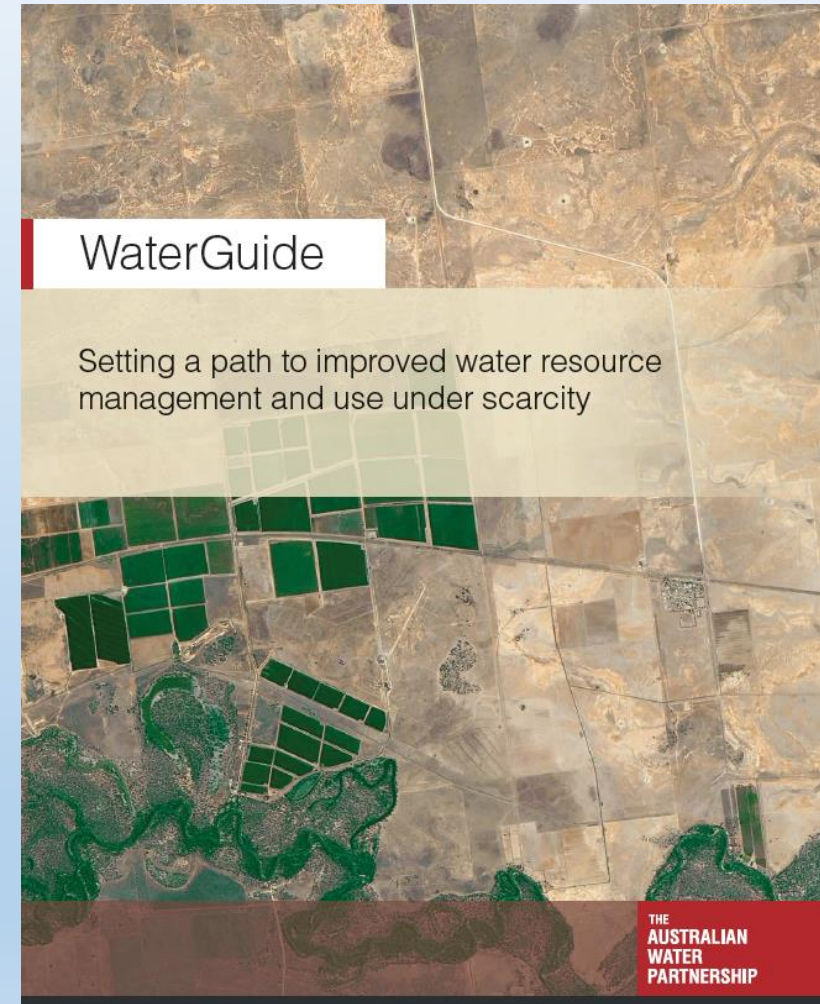
- Water Reform is a long term **economic and social transformation**
 - Affects people, livelihoods, communities, environments, regional economies
 - Builds resilience to climate shocks (esp. drought)
- Moving forward only possible through achieving broadly agreed outcomes that are politically achievable, hence
 - Water reform takes time - an evolutionary process occurring in steps
 - Can't do everything at once
 - Reformers need to be opportunistic and flexible

And it requires: **Vision and Road Map**

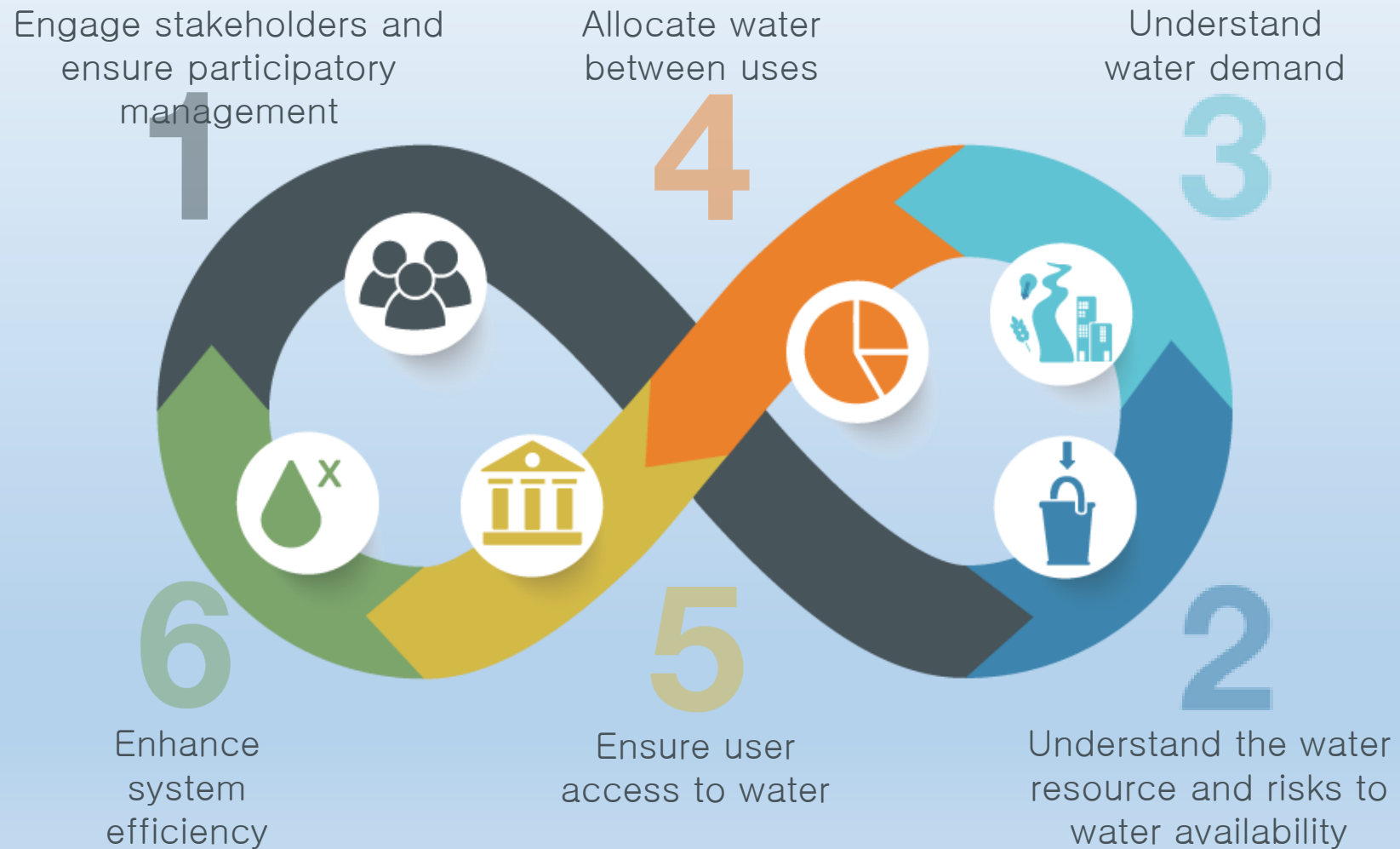
- Long term national **Vision and Road Map**
 - 1994 COAG Reform; 2004 National Water Initiative; 2007 Water Act
- **Leadership** across all sectors – public and private
- **Stakeholder and community involvement** at every step

WaterGuide – sharing Australia's IWRM experience

- Aither (Australia) – specialist consultants
- Australian Water Partnership (former CEO)
- Department of Foreign Affairs & Trade (Australia)



Six elements of water management



Key publications

WaterGuide & Australian Water Reform Journey

www.waterpartnership.org.au

Also:

National Water Commission (Archived)

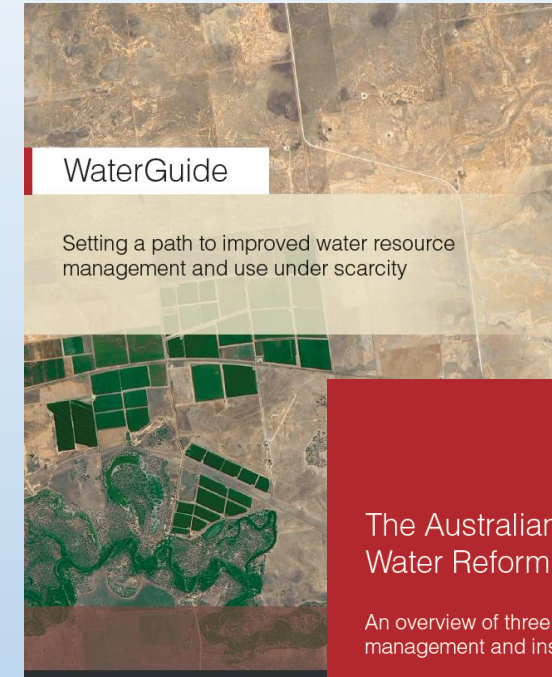
www.nwc.gov.au

Productivity Commission

www.pc.gov.au/inquiries/current/water-reform#draft

Thank you

감사합니다



The Australian Water Reform Journey

An overview of three decades of policy, management and institutional transformation

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