



International Centre of Excellence in
Water Resources Management

Economic Instruments for (Ground)Water Management in Australia

(オーストラリアにおける（地下）水管理のための
経済手法)

International Forum for Sustainable Asia and the Pacific – ISAP 2009
IGES Japan, 26 – 27 June 2009

Richard Hopkins

Outline (概要)



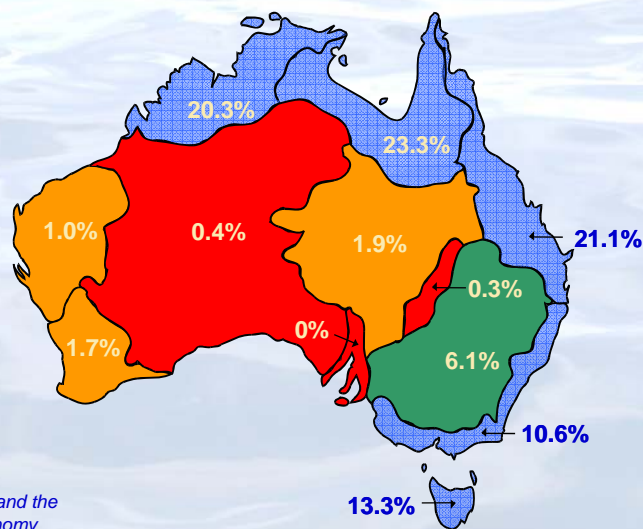
- Introduction
- Water in Australia
- Allocations, access entitlements, issues
- Preconditions for water trading
- Progress in surface water trading
- Groundwater trading issues
- Theory and practice
- Concluding thoughts

Water in Australia (オーストラリアにおける水の状況)



- Major users – agriculture and population – in dry south; wet north least exploited
- State government responsibility, may agree to cooperate, e.g. Murray-Darling
- Major COAG reforms 1994, NWI 2004
- Consequent major institutional reforms
- Legislative framework and role of markets
- Recent drought and climate change

Surface Runoff in Australia (オーストラリアにおける表面流出)



Source: *Water and the Australian Economy*



Entitlements, allocations

(権利・割り当て)

- Total 225,000 water access entitlements for about 30,000GL, of which
 - One-third are surface water entitlements, for three-quarters of the volumetric total
 - Two-thirds are groundwater entitlements, for one-quarter of the volumetric total
- Different terminology, policies, rules and practices in different states
- NWI included agreements to harmonise

Planning, allocation issues

(計画・割り当てに関する課題)



- 'over-allocation' a major issue in many catchments and aquifers
- Surface water and groundwater managed separately
- NWI-consistent water plans not being achieved in most jurisdictions
- 'adaptive management' has over-ridden plans in recent years
- Environmental allocations suffer worst

Preconditions for water trading

(水トレードのための必須条件)



- Defined limited resources ('cap')
- Policy and legislative framework
- Measurement and science
- Connectivity and infrastructure
- Water markets

Progress in surface water trading (表流水トレードの進展)



- Broad inter-state agreement, interpreted slightly differently in each jurisdiction
- Commonwealth carrots and sticks
- Traders established, trades happening, exposing serious constraints to trade
- Most trades temporary, some permanent
- Public concerns as impacts apparent
- New instruments appearing, e.g. leasing

Groundwater trading issues (地下水トレードに関する課題)



- Connectivity – physical and management
- Large ‘fossil water’ aquifers not included
- Hydraulic connectivity often complex, varying in space and time
- Re-define river boundaries or zone connected aquifers according to time lags (some may be inter-generational)
- Credits and debits for aquifer/ river transfers
- Water quality issues
- Measurement and science requirements

Theory and practice (理論と実践)



- Australia embraces economic approaches to water management
- Formal inter-governmental agreements
- Slow and difficult to implement
- 'externalities' expose serious social and political issues
- Increased complexities with drought and climate change, very obvious environmental damage

Concluding thoughts (結論)



- Over-riding prerequisite is willingness to treat water as an economic good – challenging in higher population densities
- Substantial public sector involvement (political commitment) required to set up
- Perfect markets will not happen
- Markets are not substitutes for decision-making, but can achieve some policy outcomes over time

