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

- 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