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Multi-level governance of closed hydrological systems

(Case study - Murray-Darling Basin)

Murray-Darling Basin

Major issues A

1. Defining sustainability/goals
2. Arbitrating between competing demands
3. Achieving compliance
4. Managing across borders
5. Integrating related key issues
6. Need to base policies on good research
7. Developing institutions that can manage in real time
8. Central govt v states/provinces

Major issues B

9. Debate about how best to use markets
10. Monitoring and auditing of biophysical conditions and management performance
11. Protecting groups negatively affected by change
12. Working constructively with the media
13. Educating the public so that they can participate in an informed manner
14. Working effectively with NGOs
15. Minimizing transaction costs

The MDB - a complex region

- Geographical-climatic
- Low energy system
- Quantity v quality issues (role of catchment)
- Levels of development – wild to highly modified
- Different state management systems
- Types of irrigation
- Range of interests
- Cross border interactions
- Six jurisdictions - an election every 12 months

National water debate participants

- Irrigation, industry, urban centres - consumers
- International organizations (Ramsar, treaties, Agenda 21 etc)
- Commonwealth - State governments (and local Govt)
- The courts
- Public media – newspapers, television, radio etc
- Regional CMAs and water management agencies (GMW, MI, CIT)
- Education systems universities, CSIRO, R & D corporations, Wentworth Group etc
- Consultants in various manifestations (corporate memory)
- Agribusinesses, AFF, VFF, Banks, Woolworths, Coles etc
- NGOs, Indigenous and Environment groups
- The public at many levels - powerful but intermittent

Murray Darling Basin

- Has always challenged Aust federal system
- Major catchment, large population (for Aust) 70% irrigation, 40% nat. agriculture, Ramsar wetlands, etc
- Subject to ongoing decline in environmental condition and resource reliability due to instituional failure

Impact of Federation

Early debates dominated by navigation v irrigation

- NSW wanted VIC cooperation re a dam across the Murray and inflows from VIC rivers
- VIC wanted a dam across the Murray and access to its water (NSW-VIC border is the southern bank so the river is NSW)
- SA wanted a dam across the Murray, locks to create river depth and restraints on VIC and NSW to protect navigation
  (after Federation it used its presence in Commonwealth Govts to exert pressure on both)

Each govt hesitated to act - legal rights not clear

MDB Agreement 1992

- Largely restricted to River Murray, salinity and water sharing
- no obligation to work for sustainability MDB-wide
- unanimous voting a handicap
- shaming at Ministerial Council inadequate for compliance

Future

Context - 24,000 GL p.a. inflows, 11-12000 extractions (now only rare flows to the sea)

Emerging issues - climate change, farm dams, forest plantations, bio-replantings, reduced leakage etc

Predicted reduction

2500 -5000 GL next 20 years
4500 – 9000 GL next 40 years

(CSIRO 2006 study re future threats to inflows)

MDB Credit Card

(Long term arrangement that the NWI is meant to change)

- Shared by six antagonistic users
- Cardholders report only some purchases
  – not required to report others
- No full statements re accumulating debt
- No credit limit short of bankruptcy (lower lakes)

MDB - an open access resource

- ‘Tragedy of the commons’ – misunderstood concept but applicable to open access resources (OARs) where there is no full accounting
- OARs - no reward for restraint it merely creates opportunities for others
- Challenge is to create a comprehensive rights and responsibilities system that is socially acceptable

Importance of whole-of-system water planning for sustainability

- Whole-of-system analysis is the only way to relate inflows to outflows, short term to long term
- Provides a context for balancing social, economic and environmental costs and benefits
- Without a systems approach short term political considerations will always dominate decision making
- Required by the NWI (ie p23, iv & x. 25, v. 28-57. Sched E.)

Forces for change

- MDB over allocated – only greater efficiency will allow continued economic growth
- Management systems unable to halt environmental decline and erosion of resource security
- Pressure to maximize autonomy of producers and minimize bureaucratic discretionary decision making
- Recent recognition of many additional stakeholders
- Demands that more costs of the supply system should be passed on to producers
- Stalled implementation of MDB Cap is indicative of systemic failure

Issues in MDB debate

- Role of governments?
- Who are the stakeholders?
- Balance between production and other values?
- Science and policy
- Corporate governance
- Monitoring and data
- Federal system

Major cultural shift

- The previous century old system was based on a close identification of interests between State govts and irrigation communities supported by the wider public. Major decisions were made by public service water administrators.

- *National Water Initiative* 2004 - a rights and responsibilities system in which govts become arbitrators between a wide range of competing interests - to be introduced after environmental sustainability has been achieved.

National Water Initiative

- Competing demands to be managed through water plans
- Systems approach is fundamental
  (coordinated ground - surface water management essential)
- Defining balance production-sustainability is key
  - Political process to first determine the acceptable level of modification
  - then use science to define how much water is needed to maintain environmental sustainability-stability at that level
  - remainder is available for production.

Requirements for environmental stability are to be prioritized after the level of development-modification has been agreed

NWI – many aims

- Promote best practice water management
- Shift from ag-mining to sustainable production
- Reduce political disputes by protecting key environmental values and providing resource security
- Increase economic growth via water trading
- Protect established irrigation communities
- Recognize Indigenous interests
- Meet international environmental obligations
- Manage climate change, bush fires, forest plantations, farm dams, irrigation efficiency etc
- Greater capacity re cross-border issues

Water plans - core of the NWI

Must include pathways to achieve ‘environmentally sustainable levels of extractions’ and provide for:-

- adaptive management of surface and groundwater with connectivity recognised where significant
- secure water entitlements for environmental allocations
- indigenous concerns
- removal of barriers to trade
- public water accounting
- clear assignment of risk for future changes in available water
- capacity to address emerging issues – etc (NWI 23, 25, 28-57 Sched E)

Indigenous interests in MDB

- 30-40,000 year history of Indigenous presence in MDB
- Before 1990s indigenous interests were ignored
- Lake Victoria controversy showed the influence of changed thinking re Indigenous people in the MDB
- Indigenous rights now recognised as high priority in the NWI (paras 51-53)
- Key Q - Can water management be stable long term if it does not satisfy community standards re justice/equity?

Water markets

Central strategy for implementing the NWI

- What are the pre-conditions for efficient markets?
- Why has implementation been so difficult?

Benefits

- Drought management
- Agent of change:-
  - » low to high value
  - » rural to urban, tourism etc
  - » production to environment

Water market implementation

Prerequisites:-

- Definable products that can be bought and sold
- Connected areas so water can be delivered
- Effective monitoring of water use and existence of compliance processes
- Central register of entitlements and sales

Why is water trading so difficult to introduce?

- Transactions costs
- Widespread acceptance of annual trads but not permanent (concern re stranded assets)
- Differences between states re entitlements
- Opposition to interstate trade by state governments

But - NWI after four years

No government has yet implemented whole-of-system water planning based on the goal of 'environmental sustainability' to water management. In practice water management post-NWI has continued on pre-NWI assumptions albeit with a greater emphasis than in the past on the promotion of water trading in some circumstances and on projects designed to mitigate the worst effects of the ongoing decline in environmental conditions and resource security. Despite agreement to the NWI by all govts the need to halt decline has not been accepted in practice. (Is society ready for it?)

Policy and management *STILL* splintered between institutions

- Within the four state sections of the MDB:-
- Many head-works are controlled by state governments
- Corporatized or privatized water bodies (GMW, MI etc) responsible for distribution under license
- CMAs administer environmental allocations, fund remedial projects and foster community involvement
- State agencies monitor environmental conditions
- Ministers intervene periodically to manage shocks caused by over allocation and unsustainable practices

Integration required by NWI is absent

Water Act 2007/8

(second attempt to implement NWI)

- Nat Govt displaced states & control planning.
- Catchment-wide Basin Plan to achieve sustainability for the first time. (by MBDA in consultation with states)
- States to implement 10 year sub-plans (consistent with Basin Plan).
- States can critique but dont have right of veto.
- Compliance driven by need of states for Nat Govt funds
- Auditing by national agencies (ACCC, NWC, BOM)

BUT states retain vetoes re water-shares and many catchment activities affect water quantity and quality

Unfinished business

Not yet accepted:-

- Need to stabilize ongoing decline
- Importance of a whole-of-system approach
- reality of ecosystem services
- legitimacy of wide range of stakeholders
- value of good governance
- that water reform requires cultural change

Criteria re success in the MDB

Will the new arrangements be able to:-

- Stabilize environmental conditions and halt declining resource security?
- Adjust to increasing variability due to climate change?
- Contain wider catchment impacts on water quantity and quality?
- Manage cross-border issues?