

# Water Regulation and Governance: Collaboration, Compliance and Enforcement



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# Outline

- Context
- Community based management
- Compliance and enforcement in NSW



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# Australian Context

- **National Water Reforms** (COAG 1994; National Water Initiative 2004)
  - separating land and water rights
  - vesting water rights with individual users
  - creating a market trading system to resolve water use conflicts
  - defining a consumptive pool through collaborative plans

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# Australian Context

- Some successes
- Failed to deliver the expected benefits (Connell and Grafton 2011)
  - decision-making by centralized water bureaucracies created conflict
  - limits of markets for efficient water allocation (e.g. barriers to trading)



Picture: Nathan Edwards Source: *Herald Sun*



<http://www.abc.net.au/news/2010-10-14/men-burn-copies-of-the-murray-darling-basin-guide/2298206>

# Water Reform Revolution?

- Two Issues
  - improve the effectiveness and legitimacy of traditional water governance approaches
  - designing new mechanism to supplement traditional approaches



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# Community-based management



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# Self-Management

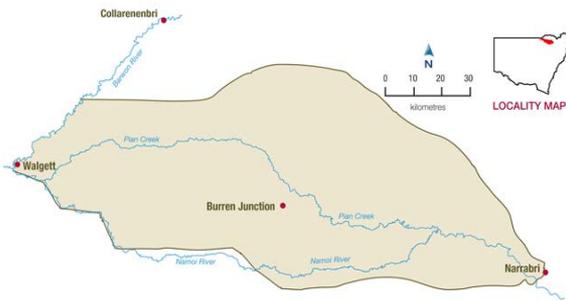
- Re-engage agricultural water users from the bottom-up
- Collectively manage groundwater (Wester, Sandoval and Hoogesteger 2011)
- Benefits of self-management



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# Examples of Self-Management

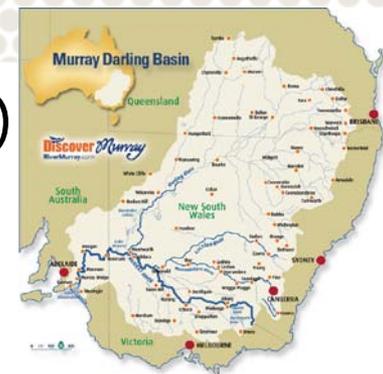
- self-governing of groundwater basins and emerging landowner associations in USA (Wagner et al 2007; Blomquist 1992)
- management of common pool resources in countries such as India, Mexico and Spain (Foster et al 2010; Ostrom 1990)
- water cooperatives for surface water irrigation in Australia (Baldwin 2008; Baldwin, Hamstead, Uhlmann 2008)
- regional and local community organizations under the *Resource Management Act 1991* and *Local Government Act 2002* in New Zealand (Jenkins 2007; McCallum et al 2007; Curtis & Heiler 2010)



# Methods



- Three case studies selected to provide a range of circumstances (eg. size; number of agricultural water users)
  - 2 case studies of audited self-management in Canterbury, New Zealand
  - 1 case study of emerging self-management in Namoi, Australia
- 60 interviews (a representative sample of agricultural irrigators, government and other relevant stakeholders)
- In Namoi, a survey of 447 farmers (210 returned)



# Audited Self-Management (ASM)

- Variety of forms, but defined by common characteristics:
  - water users form a legal entity/collective
  - entity allocated a water right for members as a whole
  - establish objectives for water quantity and quality
  - management system among members of collective
  - monitoring and reporting of performance
  - telemetry/real time data

# ASM in NZ – Mixed success

- Various pilots underway
  - Eiffelton (12 farmers, existing irrigation scheme, groundwater pumped into channels)
  - Opuha Dam (220 farmers, dam, river as delivery channel into aquifers)
- Strong support/interest in ASM from farmers and regulators
  - “industry are excited because they see it as way to stave off regulation and to put themselves in a better position economic wise, while regulators see it as away to devolve responsibilities to other bodies”
- Economic benefits for farmers
  - “we can do more together than individually” (e.g. bulk technology purchase, flexibility)
  - “we can smooth out the bumps by pooling our water... letting croppers pump extra around Christmas and dairy farmers extra around winter, you know, getting that bit extra when they really need it”
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- Improved buy-in/stewardship
  - “its shifting minds away from complying with licences or consents to encouraging ownership of the water, so its no longer the government’s water but its our water, our group owns it and if an individual takes water he is taking our water”

# Success cont'd

**Peer Pressure** - “every member can go in and see what their neighbours are doing and if they go over their entitlements we get very angry...its absolute transparency. The system takes away the risk of abuse”

**Safety Net** - “the collective don't see themselves as the policeman, but you'll get spanked a few times by your peers and if that doesn't work then the regulator takes over”

**Responsiveness** - “its fundamental that they have telemetry. You need to be able to see in real time what your water level is and what its impacts are...it also allows you to take quick action and prevent further breaches by responding as they happen rather than on an annual basis”

# ASM in NZ - Challenges

- Up front costs for farmers
- Wider applicability
  - capacity/skills of farmers
  - “moving beyond existing irrigation schemes is limited. You got to have a shared source of water”
  - “ASM works best where people want to be in it and they see a benefit. It’s a waste of time as a regulator trying to get people involved if they don’t give a stuff”
  - Size matters
- Legitimacy with wider stakeholders (environmental NGOs)
  - “They see it as putting the fox in charge of the hen house”

# Australia – limited success

- Self-management largely in surface water irrigation (Baldwin, Hamstead, Uhlmann 2008)
- Farmers in a groundwater context see a general benefit

*Table 13: Views about collective management of groundwater  
2011 Namoi groundwater management survey (N=210)*

Topic: Collective management of groundwater	n	Strongly disagree	Disagree	Unsure	Agree	Strongly agree	N/A	Mean score*
If governments and water users agreed to the collective management of groundwater at the local scale, that would ensure operating rules are appropriate to local conditions and environmental circumstances.	206	2%	5%	24%	51%	18%	0%	3.76
As part of collective management at a local scale, it would be desirable to have Government oversee operating rules developed with landholder input.	207	5%	12%	23%	51%	10%	0%	3.48

\*Responses were rated on a scale from 1, 'Strongly Disagree' to 5, 'Strongly Agree'. 'Not applicable' was a separate response option.

(Sharp & Curtis 2012)

# Zone 1 – NSW

- Small group of active irrigators – 30 farmers
- Farmers want to self-manage seasonally variable targets, subject to NSW Office of Water (NOW) oversight
- Farmers proposed concept... but 10 years of inaction
  - **Farmers** - “the [proposal] fell over because farmers were not respected, and could not be trusted to manage the groundwater”
  - **NOW** - no such undertaking was given, nor did they receive any written proposals to that effect

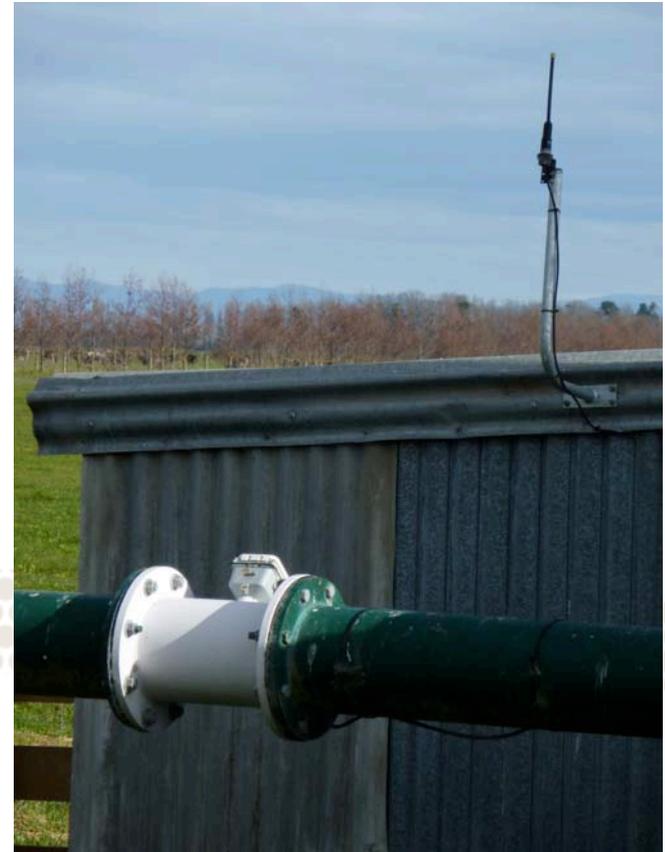
# Lessons

Pre-conditions likely to increase success of self-management:

- Smaller size/scale
- Farmers see a benefit (ownership)
- Supportive government (devolution)
- Existing organizational structure
- Robust monitoring system (Ostrom 1990)

# Supporting self-management

- Funding/incentives for monitoring technologies
- Funding and training for farmers (e.g. reduce transaction costs)
- Engaging NGOs



# Compliance and Enforcement in the Murray Darling Basin by the NSW Office of Water



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# Policy background

- Profound policy change in water resource management.
- Top-down governance – caps, allocations and trades.
- Compliance and enforcement – where the policy ‘rubber hits the road’.

# Map of Basin

**Murray-Darling Basin Boundary — Water Act 2007**



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# Organisational structure and responsibilities

- New South Wales Office of Water.
- Compliance and enforcement responsibilities.
- Policy, legislative and prosecutorial responsibilities.
- Devolved metering to State Water.

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# Historical (non) compliance

- Preferred ‘voluntarism’, avoided ‘adversarial’ compliance.
- Caps and licences – a profound shift away from voluntarism.
- Compliance and enforcement lagged policy.

# Office of Water culture

- Encouraging, facilitating agricultural irrigation.
- Groundwater – an inexhaustible resource.
- Reluctant regulators.
- Native vegetation over groundwater.



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# Recent developments

- Dedicated Office of Water, prioritised water resource management.
- Creation of inspectoral staff and culture.
- Official ‘Compliance Policy’.
- 2008 WMA amendments – compliance and enforcement ‘teeth’.

# Findings

## Key weaknesses/challenges include:

- Limited resources.
- Outsourcing of meter reading duties.
- Very limited engagement with, and education of, irrigators.
- Reactive approach to compliance.
- Reluctance to prosecute.
- Unreliable metering.
- Limited integration of groundwater science.
- Lack of information on bores.

# Metering

- Mechanical meters – old, unreliable, vulnerable to manipulation.
- State Water meter readers – no compliance and enforcement role.
- No engagement with Office of Water.
- Infrequent and retrospective data collection.
- Lost opportunity? Little progress on electronic meters and telemetry.

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# Prosecution

- Historically very few prosecutions.
- New emphasis on prosecution.
- Additional resources, cultural change.
- Persistent shortcomings:
  - Generic prosecution policy.
  - Compliance Policy ‘disconnect’.
  - Civil / criminal disconnect.
  - Frivolous cases.

# Summary and discussion

- Dramatic shift from voluntarism to deterrence – but skipped many intermediate regulatory steps.
- Cap and trade approach has risks:
  - Market mechanism is dependent on compliance and enforcement.
  - No trade outside of zones.
  - Trading may be less than optimal.
- Narrow prescription underpinned by inadequate compliance and enforcement?

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# National Framework for Compliance and Enforcement

- Recognition of shortcomings, improving consistency.
- Policy principles, milestones and additional resources.
- Office of Water – compliance and enforcement benchmark.
- Additional compliance inspectors and prosecution officers.
- National Framework for metering.

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# Future Directions

Three key issues:

1. Technological – electronic metering, real time telemetry.
2. Financial – additional resources, but is it sufficient?
3. Cultural – from voluntarism to responsive regulation – trapped in a ‘deterrence’ model?



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# Research partnership

- Targeted auditing.
- Coordinated research.
- Survey, face to face interviews, policy analysis on compliance and enforcement.
- Ways of improving compliance and enforcement.

# Compliance and enforcement survey

- Perceptions , experiences and knowledge of compliance and enforcement.
- Survey baseline, 4500 licence holders.
- Integrated with audit program.
- Integrated with in-depth qualitative research.
- Adaptive policy development.

# Discussion – MDB and DSC

## Similarities?

- Key role of DSC/MDBA is to prepare overarching Plans
- Plans cover urban and non-urban, surface and groundwater, multiple user groups
- Widespread consultation (multi-stakeholders, science expertise)
- (Principally) targets institutions not users
- Measure, monitor and record the quality and quantity
- Enforcement of end-users devolved (largely) to state agencies
- State agencies required to report to the DSC/MBDA
- Audit/certification of State (agency) plans/activities by the DSC/MDBA

# Discussion – MDB and DSC

## Differences?

- Trading between jurisdictions
- Trading within jurisdictions
- Catchment wide caps (sustainable diversion limits)
- Enforcement powers to compel state authorities to comply with caps
- Enforcement powers to compel users (farmers) to comply with allocations
- Caps and enforcement powers extend to groundwater
- Encompasses upstream and downstream

# End



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