

Water sharing in Australia

Prof. Mike Young

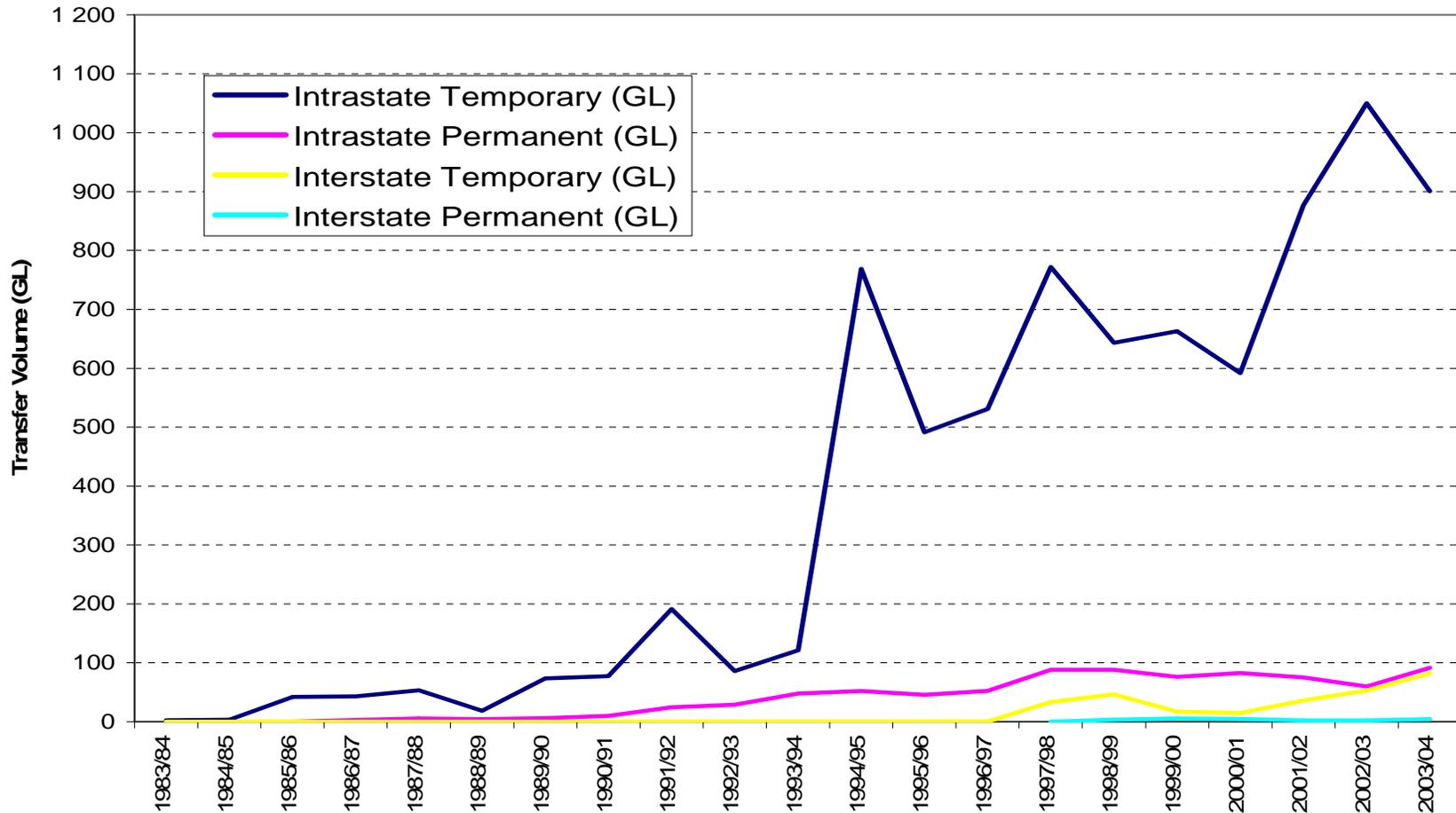
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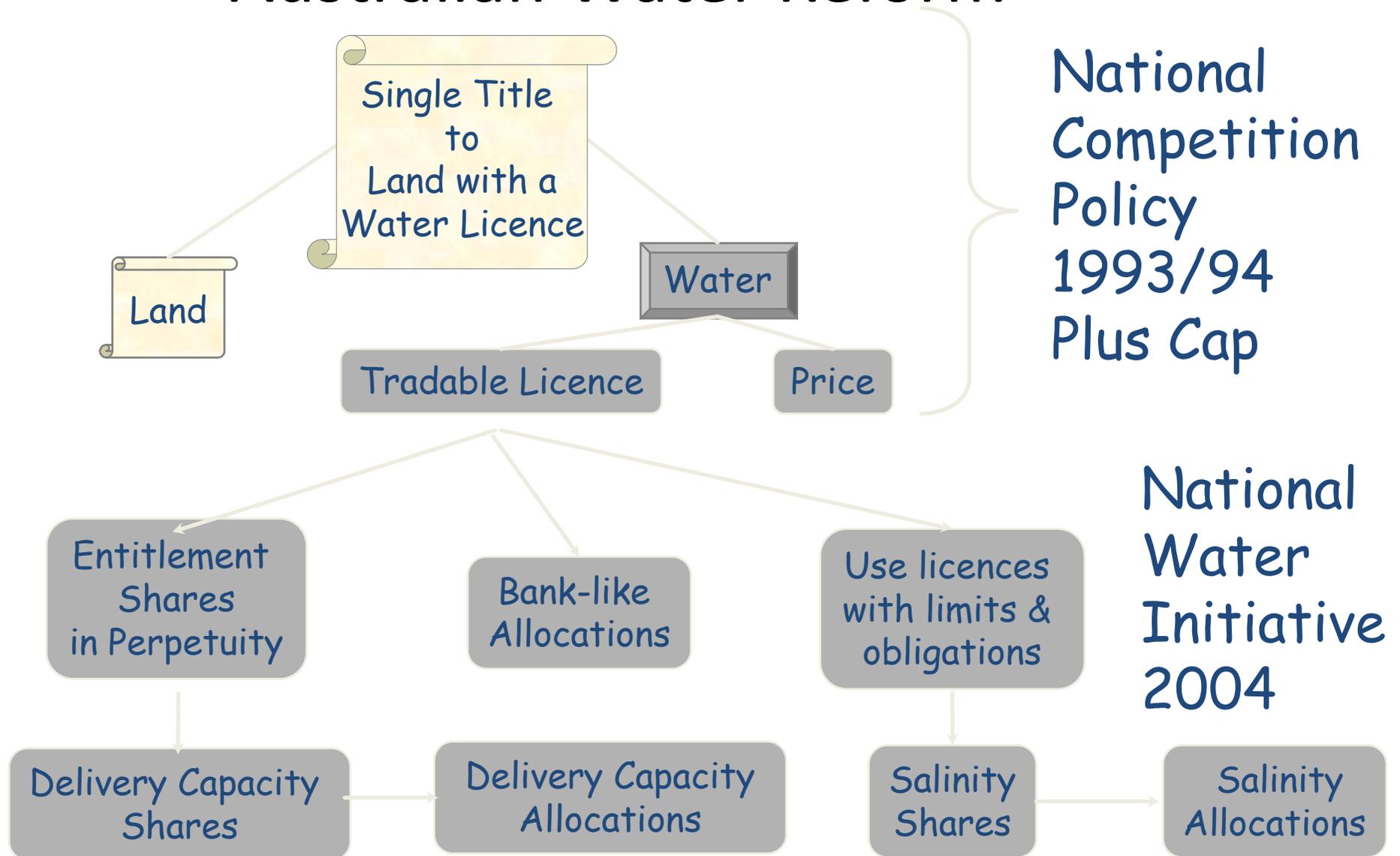
Growth of Water Trading

Murray-Darling Basin Water Entitlement Transfers - 1983/84 to 2003/04



Trading has enabled adoption of new technology and "greenfield" development

Australian Water Reform



National
Competition
Policy
1993/94
Plus Cap

National
Water
Initiative
2004

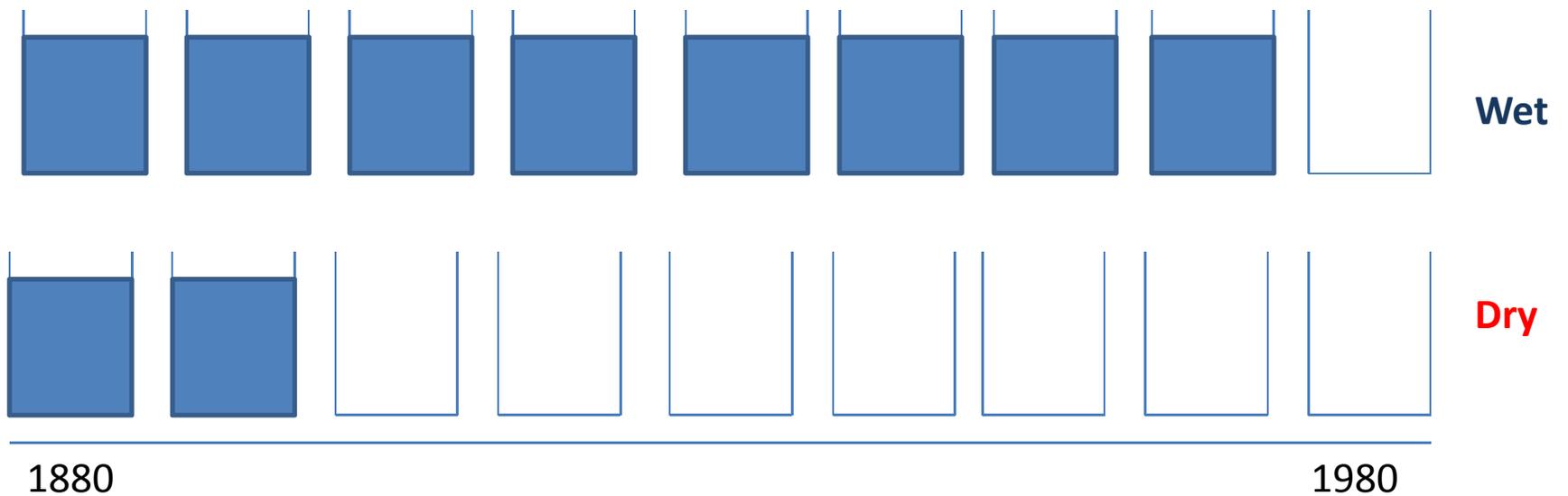
Have tried to fix the problems created by the naive bolting of markets onto an entitlement regimes that lack hydrological, environmental & economic integrity

Outcomes

- Considerable innovation and wealth creation
- Significant environmental improvement
- Impact of drought much less than expected
- Movement of water out of areas with local environmental problems
- Facilitated considerable greenfields development
- Facilitated considerable structural adjustment without government intervention

What's the problem and opportunity?

- Prior appropriation water rights have
 - A volumetric or “area” entitlement
 - A date when they were issued
 - A beneficial-use obligation
- Commissioners deciding who is in priority & who gets zero



Poorly enforced Weak incentives High transaction costs Registers & accounts ????

Water planning & allocation



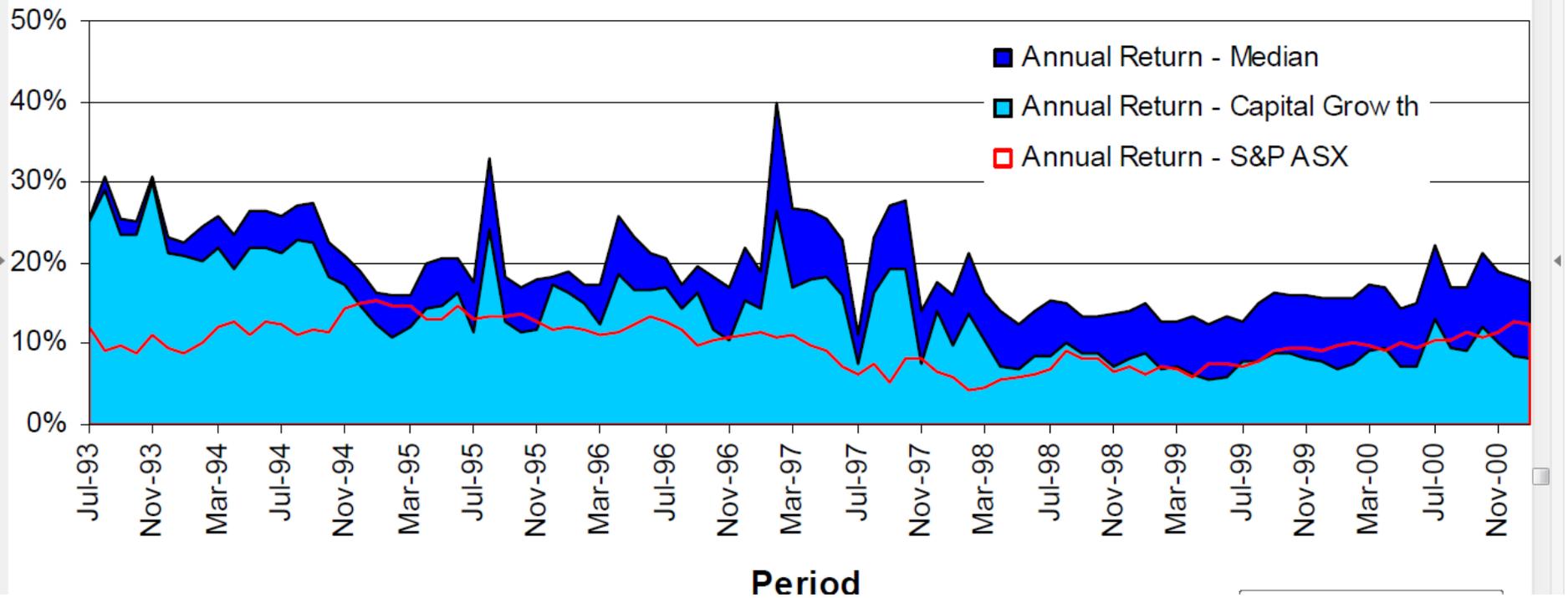
Not a zero sum game → although this is the way most people discuss water policy choices.

Robust Institutional Design

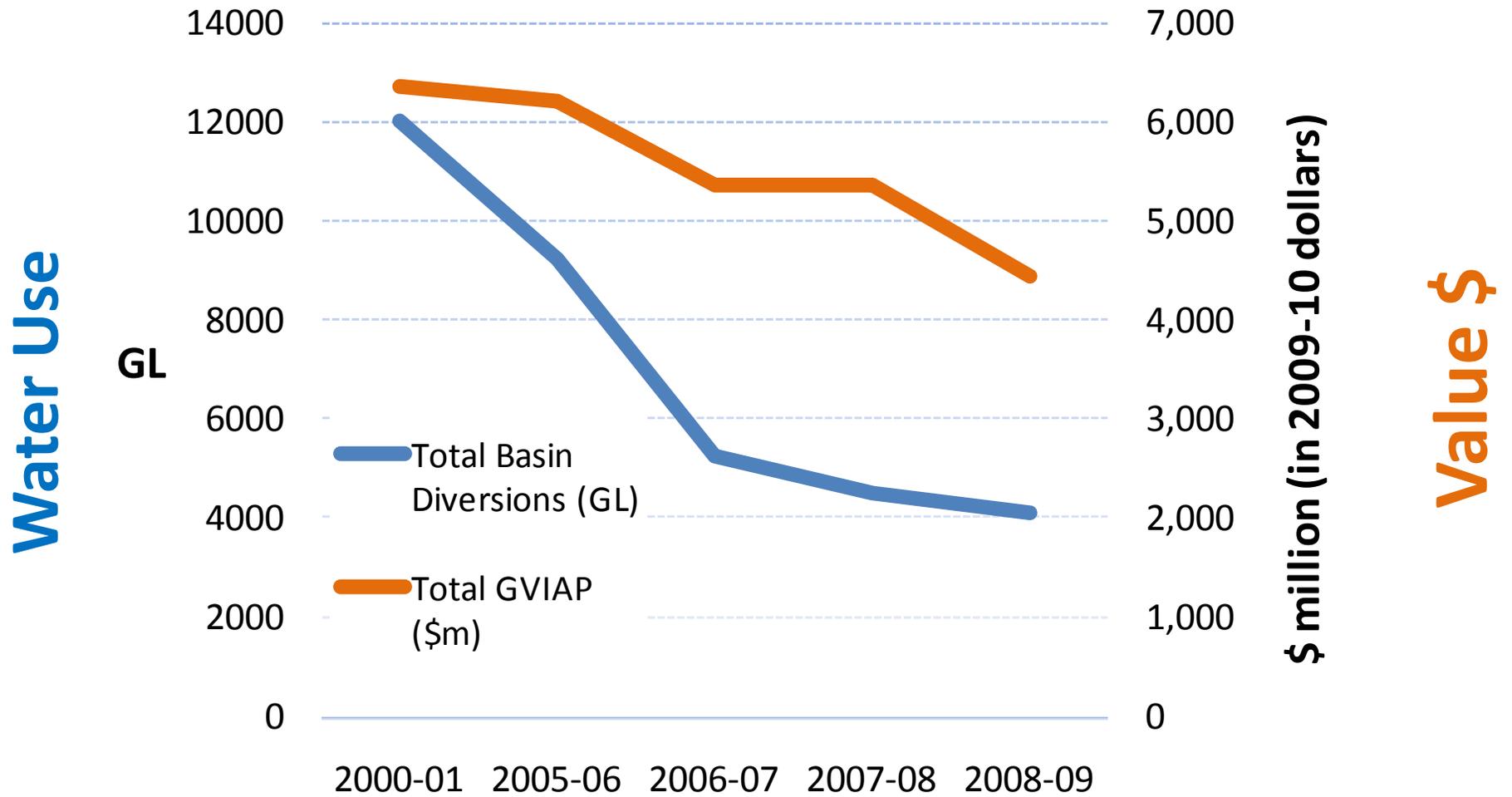
- **Robust** (adj.) Said of a system that has demonstrated an ability to *recover gracefully* from the whole range of exceptional inputs and situations in a given environment.
 - One step below *bulletproof*.
 - Carries the additional connotation of *elegance* in addition to just careful attention to detail.
 - Compare *smart*, oppose *brittle*.
- **Robust systems**
 - Endure without the need to change their foundations.
 - They last for centuries.
 - Inspire confidence.
 - Produce efficient and politically acceptable outcomes in an ever changing world.
- **International experience**
 - Money
 - Shares
 - Torrens Title Registers
 - Small expertise based boards
- **Design clues**
 - Tinbergen Principle => Unbundle and then unbundle again for dynamic efficiency
 - Coase Theorem => Low transaction costs to expedite adjustment and innovation
 - Mundell's Assignment Principle => Don't change the function of each instrument

Improving Water Rights – MDB, Australia

Total returns - Median allocation and entitlement prices compared to capital growth, and the S&P ASX Accumulation Index Returns



Impact of Long Drought



After Gooday, ABARE 2011

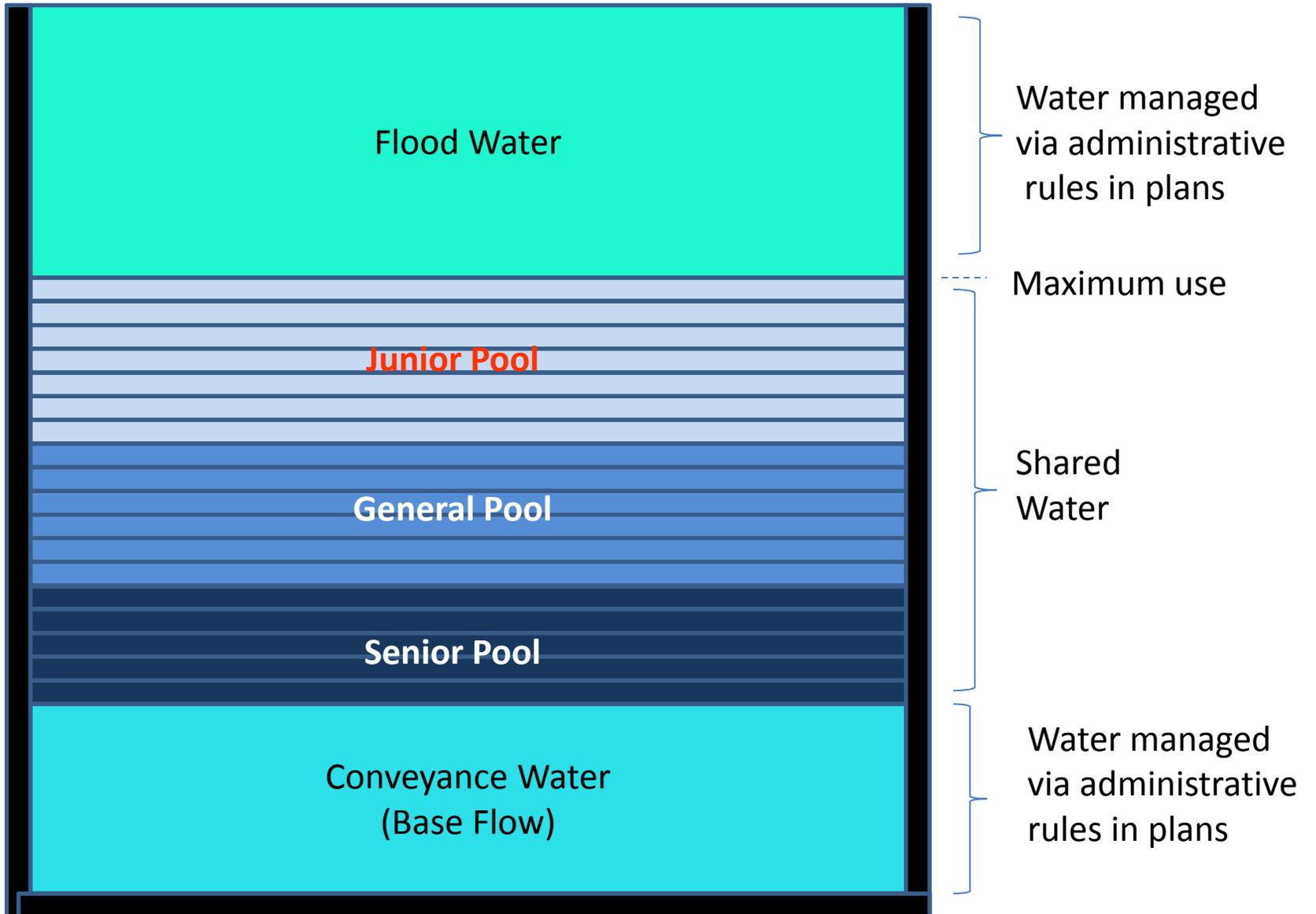
Pilot testing in the West

- Water allocation in USA is inordinately complex.
- A top-down order to move to a new regime must be expected to fail
- It may be possible to design a new regime that sufficiently better that a significant number of districts and/or water users may decide voluntarily to shift to it.
- The proposition is worth testing

Western Water Blueprint

1. Enabling “new” system legislation
2. Statutory water-resource management plans
3. Small expertise-based boards
4. An unbundled water-right regimes
 - Fungible Shares
 - Fungible Allocations
 - Separate Use Approvals
5. Centralized share register
6. Bank-like water accounting systems
7. Exit ramp after 5 years

Statutory Sharing Plans



Water registers & accounts

Registers

- Water share ownership defined in central registers not on bits of paper.
- All shares can be mortgaged!

Water accounts

- Water allocations made on regular basis
- Allocations credited to water account at time of announcement
- 100% metering required. Use debited as it occurs.

Use approvals

- Site-specific use conditions
- Must have meter
- Must nominate the meter that use is to be deducted from.
- Trade at very low cost.

Environmental Water

- Australia is buying and creating environmental water entitlements
- Driving considerable innovation
- More environment per drop!!!!!!!!!!!!

Would the US be better off with robust water sharing regimes?

- Markets coupled with unbundled structures make it easier to keep use within agreed limits.
- Reduce need for structural adjustment
- Easily combined with other policy instruments to control water quality
- Water scarcity needs to be managed!

References

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