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Economic Instruments – Buyback: Lessons from the Murray-Darling Basin

Background

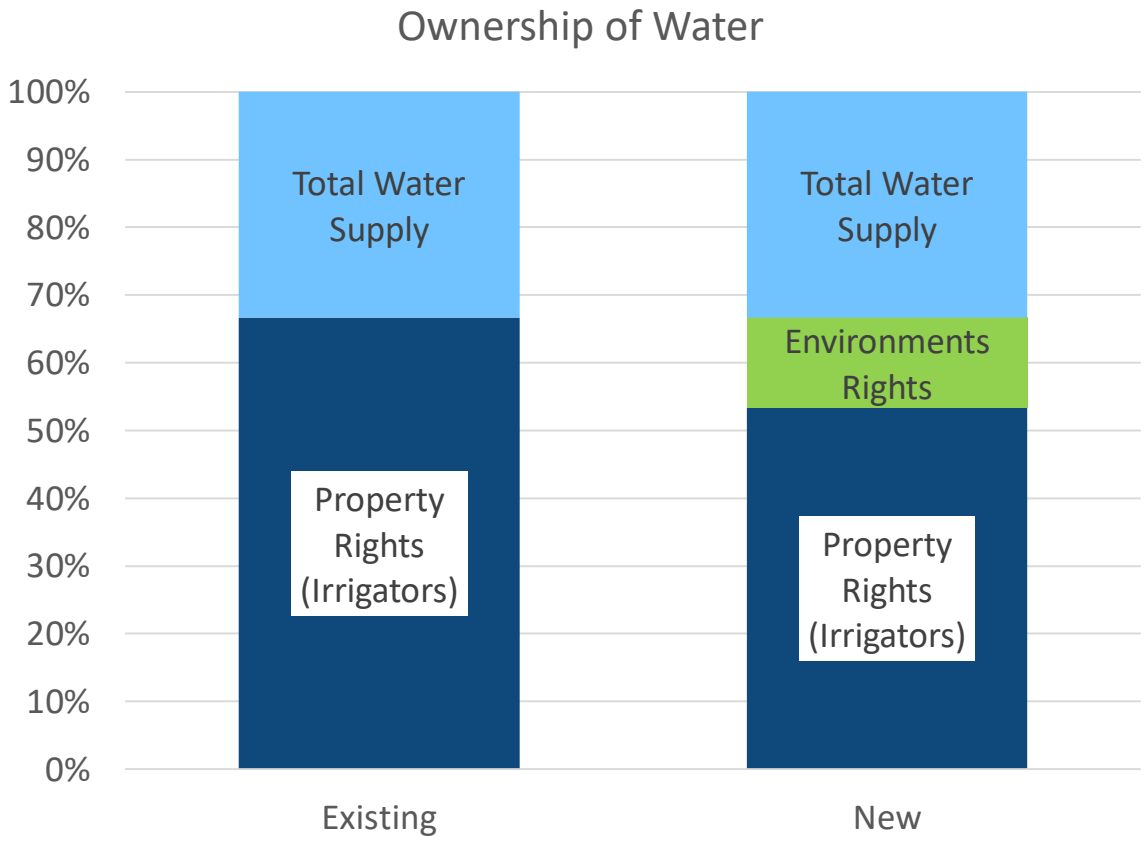
- Buyback is when rights are purchase from consumptive users to restore environmental flows

- Reallocation of the ownership of rights in a closed basin
  - Transfer from private to public entity (i.e. common-property)
  - Not new rights

- How did it work in the Murray-Darling Basin

- The lessons learnt

Buyback Readdressed Initial Ownership Problem



Complication as

Murray-Darling Basin (MDB) has:

- 2nd most variable inflows in the world
- Periods of long droughts interrupted by floods (known supply risk)
- Uncertainty what will climate change mean to future water supply

Right Structures

- MDB water rights have been developed to deal with highly variable water inflows
- High, general, supplementary
- Decoupled, allows for trade
- Each catchment in the MDB has a different bundle of rights
- These rights then have spatial and temporal reliability characteristics

If we want to restore flows

- Need to determine:
- the environment's share from current allocation (2750 - 3,200 GL)
- Have a public trustee (CEWH) purchase those resources for the common good
- Budget ($3.1 billion)
- Initial goal "any water is good water"

Buyback

- Set up as a tender system where, the CEHW would:
  - Advertise that where in the MDB they wanted to purchase rights
  - Define their budget (non-exhaustive)
  - Farmers would submit non-binding bids stating
    - The rights for sale and the price of those rights
  - CEWH try to maximise the volume of water they could purchase
    - Rights * reliability of right

Positive Lessons

- Reveal the true social price of water
  - Social P ≥ Private P
- Encouraged private trade (allocation + entitlement)
- A lot of farmers loved it
  - Monetarised savings from water use efficiency
  - Helped some retire
  - Paid off debt and/or transferred resources new activities
- As more rights transferred to the environment, price of remaining consumptive rights increased

Negative Lessons

- Adoption rate scared politicians
  - NSW, MOU limited sales (Feb 2010, sales ceased)
- Adoption rate scared other sectors (irrigator reps, community)
  - Rent seeking
- Senate enquiry
- A lack of environmental objectives
- Buyback capped at 1,500GL

Economic Issues

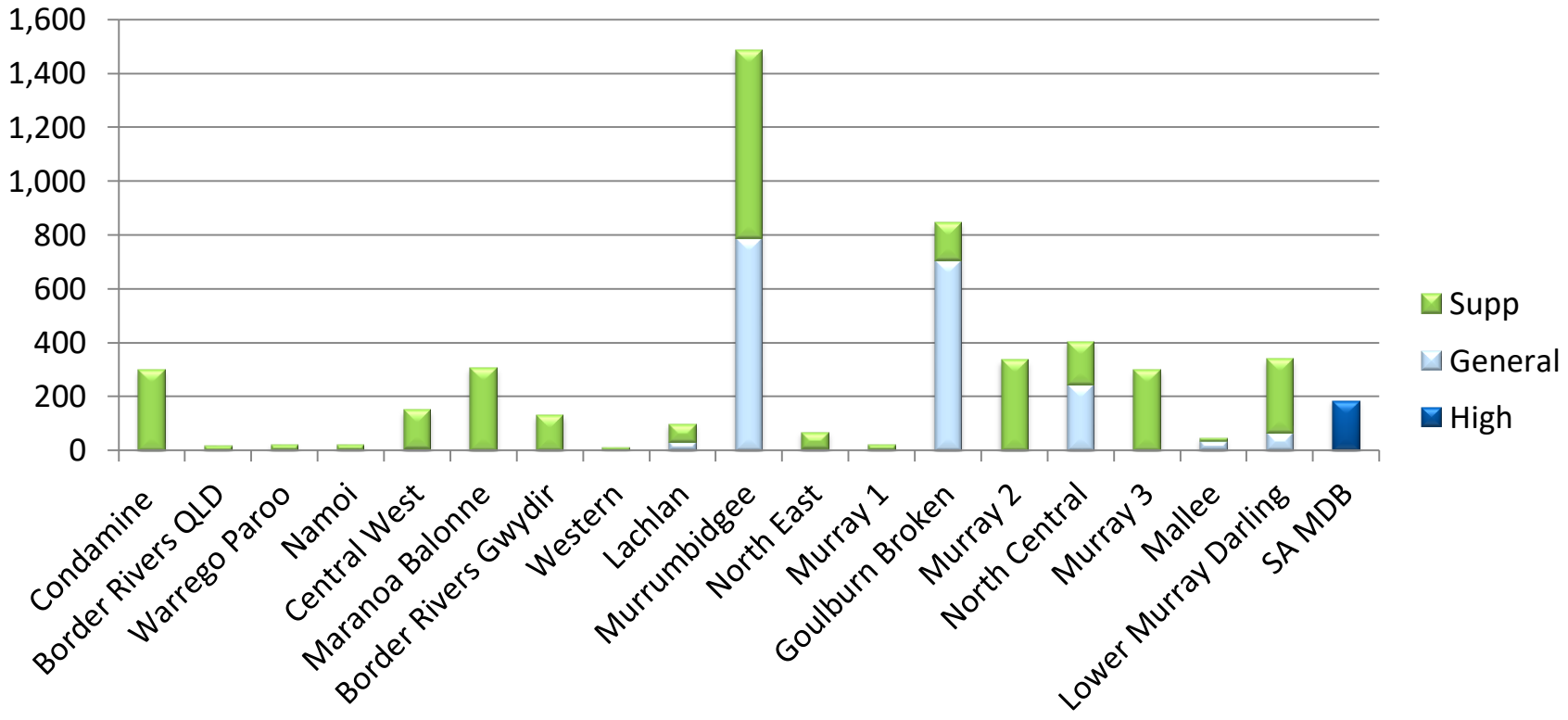
- A lot of concern that the funds could have been better targeted

- Optimised solution: highly targeted to meet institutional gaols
  - Minimum flow target where the river meets the sea (Coorong)
  - Water quality target (Adelaide)

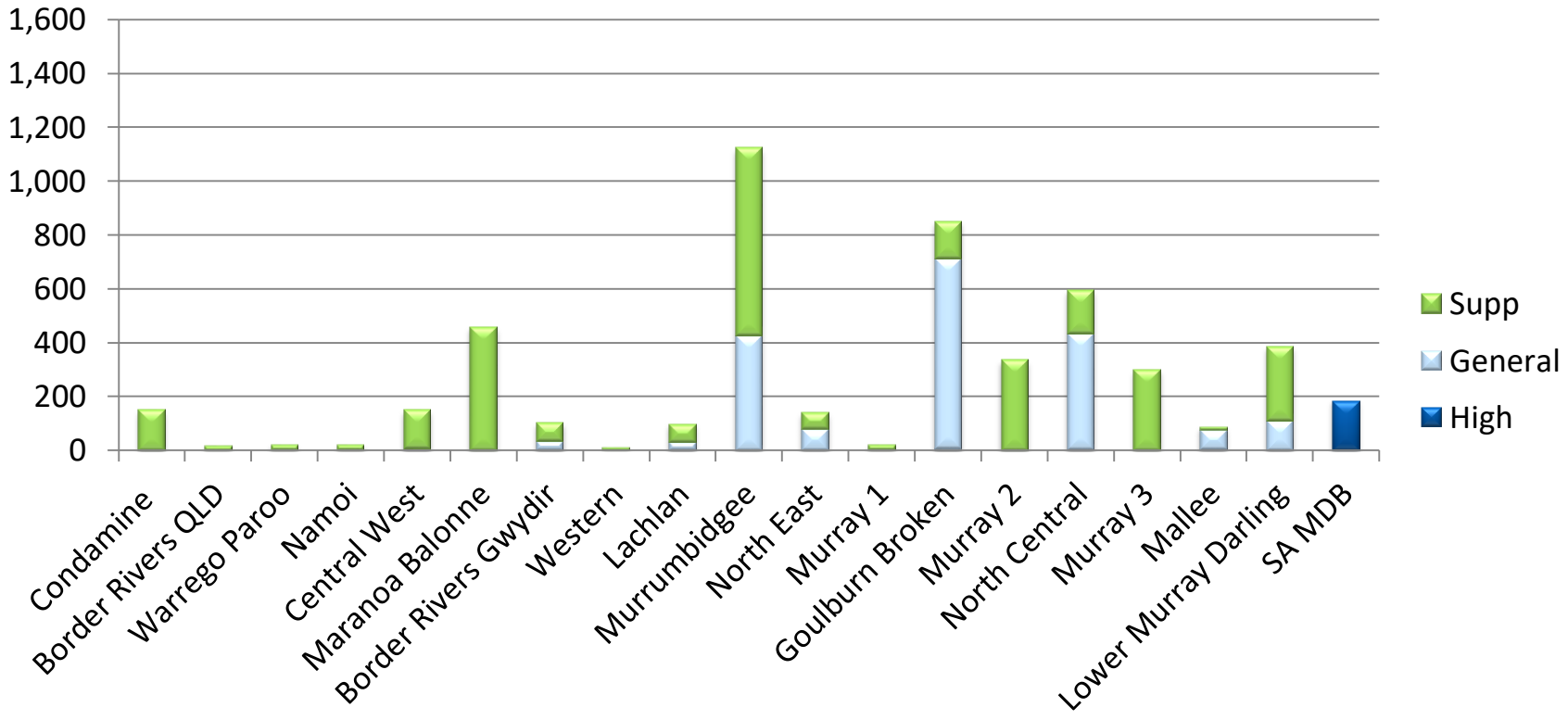
- Constrained welfare optimisation
  - behavioural economics on how water is used by state of nature

  Optimise irrigators return from water
  Subject to:
  - Hydrological realities
  - Property right structures (numbers, reliability)
  - Plan objectives (SDL, environmental, water quality & budget)
  - Acknowledge risk of climate change

Optimal Portfolio (Current Climate)



Optimal Portfolio (Drought Frequency)



But

- If you think of the MDB as a stalled economy, any water is good water to get it moving again

- Second the policy people were smart enough to predict some of these issues, and they are allowed to buy and sell the environments rights as they learn to manage the system

- Costs more money but… may end up with a better outcome

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