

Incentive based policy for natural resource management

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What is MBI?

- **Tendering** extension of payment policy (cost-sharing) –

Concept Incentive program funds allocated to participants on basis of tenders.

Market mechanism impact competition to offer most environmental work per incentive dollar

- **Tradeable property rights** extension of regulation (cap) –

Concept Establish individual input use or emissions limits, Allow sale of credits generated for reductions below limits, Purchase of credits to as well as reductions to achieve limits

Market mechanism impact incentives to reduce inputs or outputs to sell credits at profit or avoid credit purchase cost

Environmental Charges as an extension of Fees, Levies, Taxes

Concept Relate the level of fees for inputs or outputs to environmental impact level.

Market mechanism impact incentive is created to reduce input or output levels and consequent environmental impact

Eco-System Services Markets

Concept Create markets for NRM ecological services (carbon trading) or products produced to set environmental management standards (certified organic produce)

Market mechanism impact consumers who value ecological outcomes provide demand firms have incentives to produce ecological services

The promise of market based instruments (MBI)

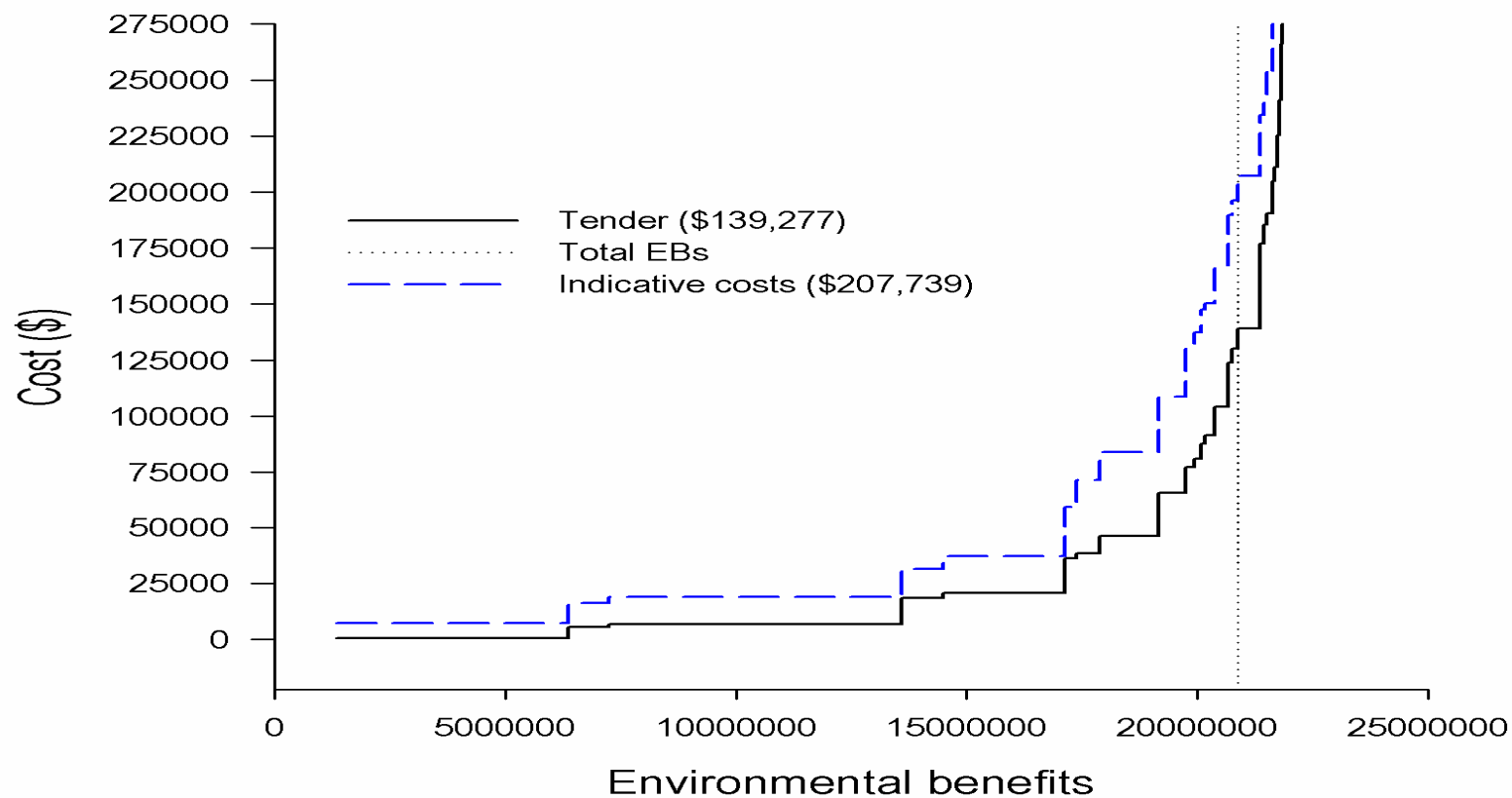
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Cost savings from:

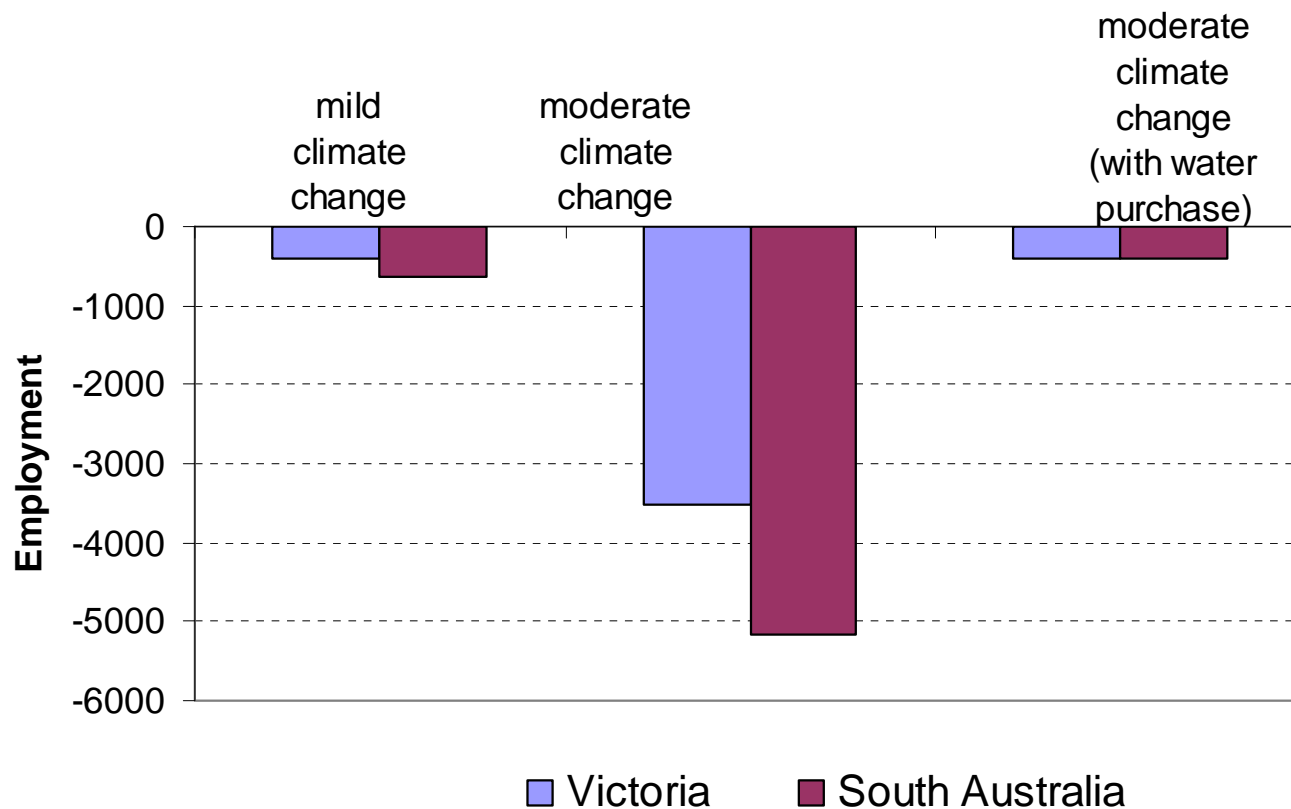
- Increased flexibility with outcome based policy
- Targeting low cost opportunities to address NRM issues

The Promise of Auctions

- Targeting
- Incentive



- Flexibility is mitigating adverse impacts of drought



Key challenges

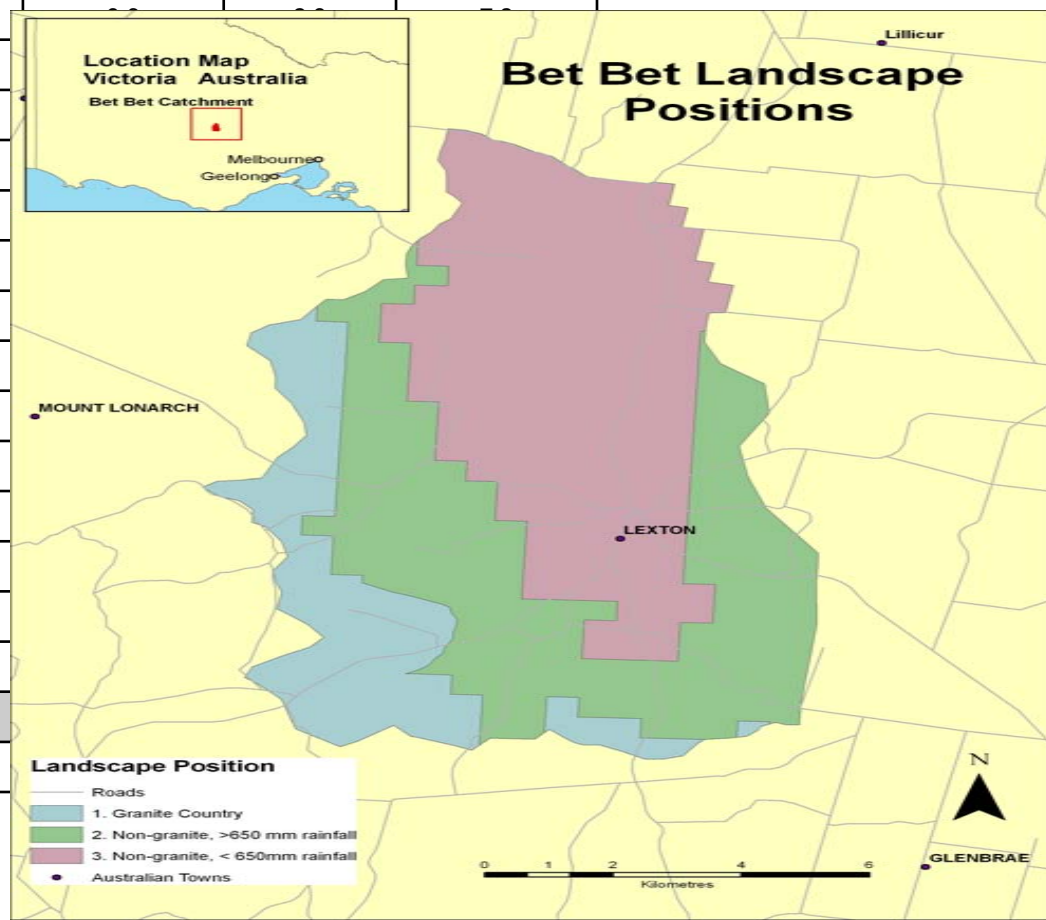
- Focussing on performance with flexibility
- Avoiding high costs of administration, auditing, monitoring performance
- Avoiding complex information processing requirement for participants
- Engaging those with Non-market motivations

The Frontier

- Achieving Multiple Benefits, Avoiding “second order” costs

Focusing on performance, avoiding high monitoring, administration cost and complex information

Class boundary	Established stems (#/ha)	1. Granite country		2. Non-granite > 650 mm rainfall		3. Non-granite <650 mm rainfall	
		Farm forestry	Native vegetation	Farm forestry	Native vegetation	Farm forestry	Native vegetation
40-89	50	3.5	9.0	2.8	7.3	2.1	5.5
90-139	100	4.6	12.0	3.7			
140-189	150	5.5	14.1	4.3			
190-239	200	6.1	15.8	4.9			
240-289	250	6.7	17.3	5.3			
290-339	300	7.2	18.7	5.7			
340-389	350	7.7	19.9	6.1			
390-439	400	8.1	21.0	6.4			
440-489	450	8.5	22.0	6.8			
490-539	500	8.9	23.0	7.1			
540-589	550	9.3	23.9	7.3			
590-639	600	9.6	24.8	7.6			
640-689	650	9.9	25.6	7.9			
690-739	700	10.2	26.4	8.1			
740-789	750	10.5	27.1	8.3			
790-839	800	10.8	27.8	8.5			
>=840	>800	10.8	27.8	8.5			



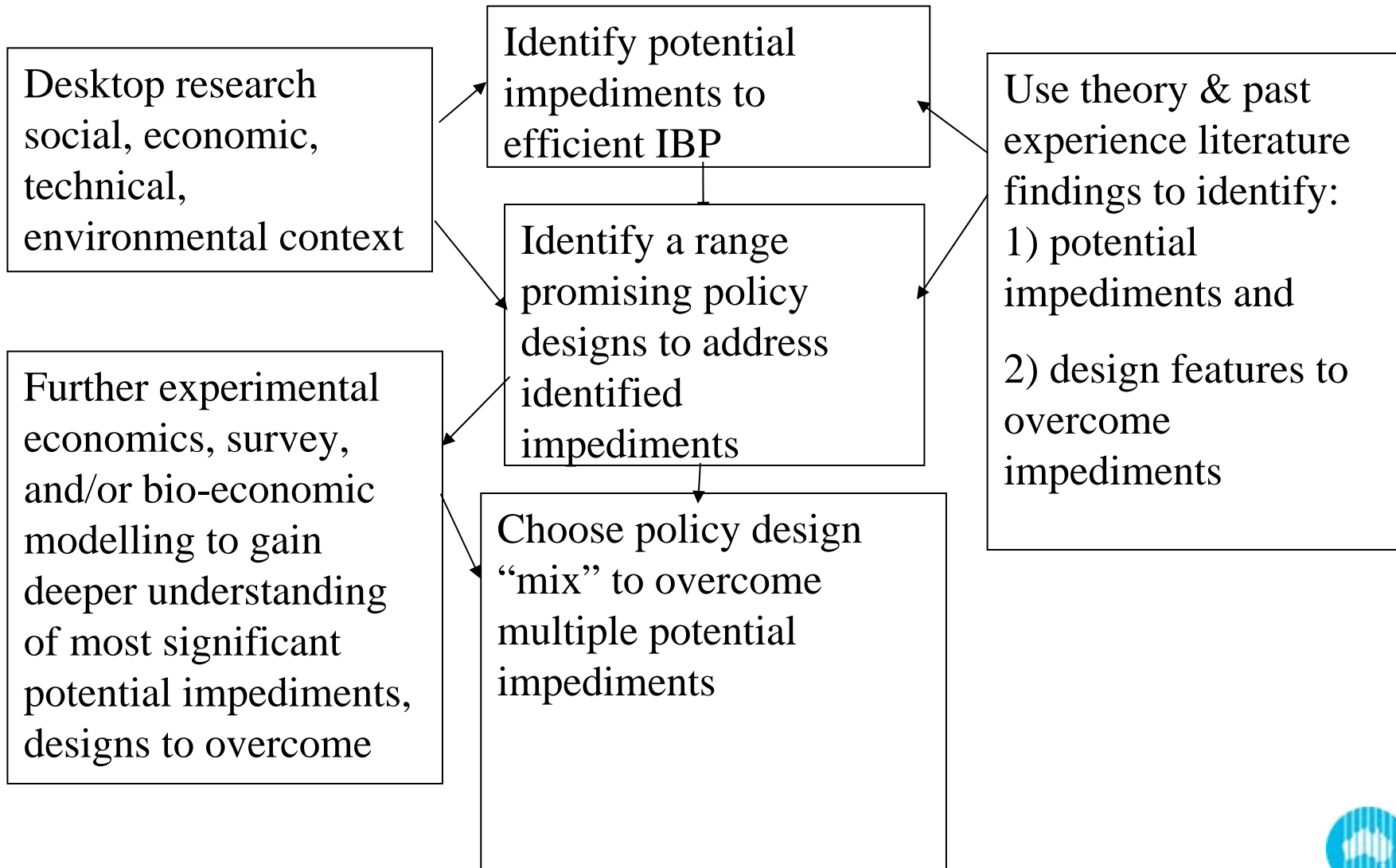
Engaging those with Non-market motivations

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- Peer motivation,
- Rewards (monetary and other) based on aggregate community performance,
- Information

Framework for evaluation of MBI design options

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Goal was to trial and evaluate an MBI to:

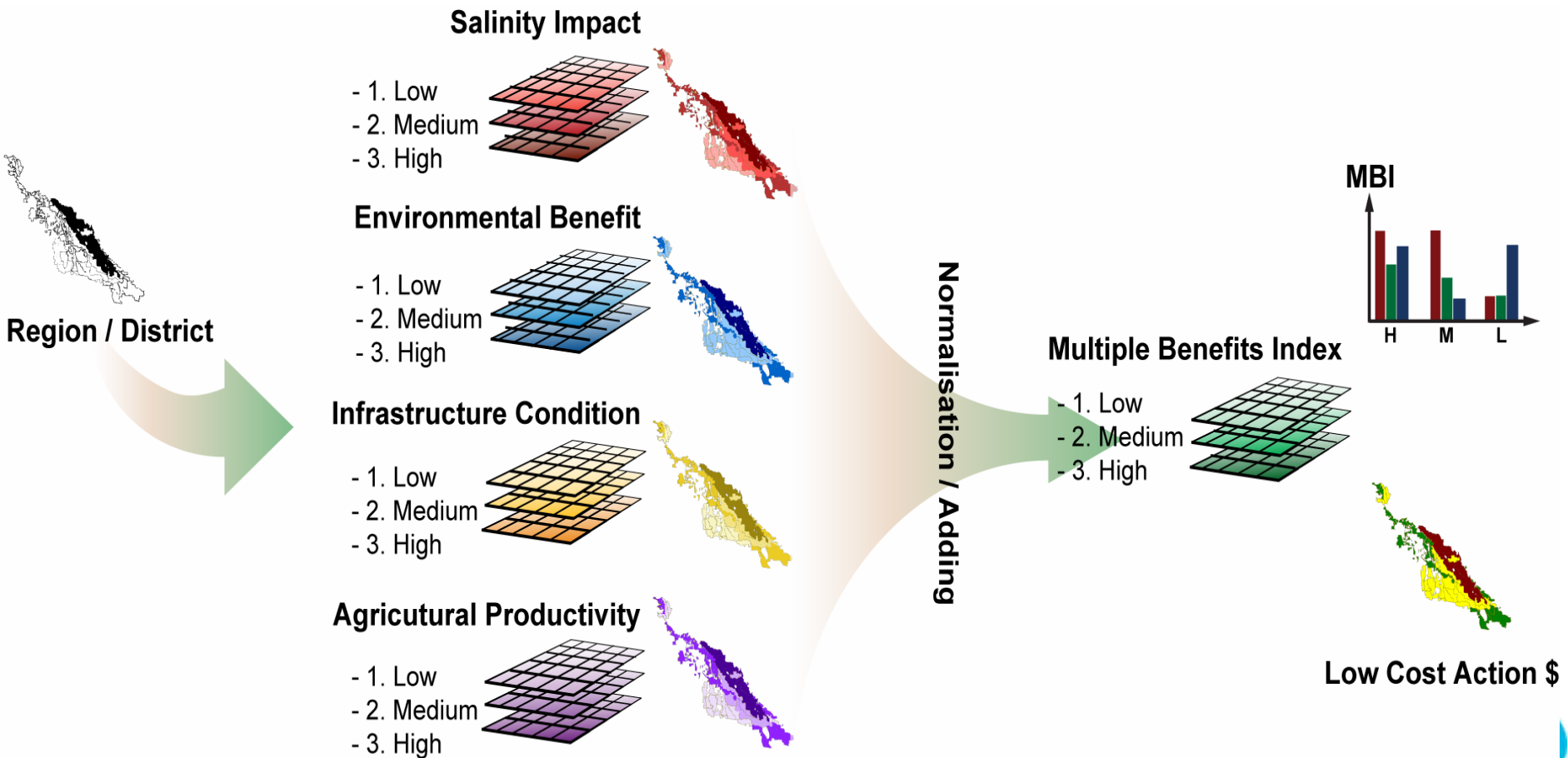
- Contract farmers to commit to recharge obligations.
- Create a performance basis that is easily monitored
- Obligations can be fulfilled by land use change or trading in recharge credits.

- A lack of legislated cap as basis for cap and trade;
- A lack of a performance incentive in typical payment for practice adoption;
- Capital/cash-flow constraints;
- Potential lack of credit supply in drought;
- Non-market motivations - survey.

Market impediment	Potential Solutions	<i>Significance of impediment</i>	<i>Administrative alignment</i>	<i>Political feasibility</i>	<i>Efficiency gain</i>	<i>Include as On ground trial feature</i>	<i>Test solution in Field demonstration</i>	<i>Test solution as experimental treatments</i>
<i>Property rights</i>	Temporary obligations Property rights assigned to downstream beneficiaries	High High	High Low	High Low	High High	✓		✓
<i>Monitoring performance</i>	Develop proxy credit accounting and look up tables	High	Medium	Medium	High	✓	✓	✓
<i>Thin markets</i>	Do nothing Partial and socialised payment	High High	High Medium	High Medium	Low High	✓		✓ ✓
<i>Equity of entitlement distribution</i>	Administrative assignment Partial payment upfront	Low/medium Medium	Low Medium/high	Low Medium/high	Low High	✓	✓	✓
<i>High transaction costs relative to benefits</i>	High information costs High management costs to meet recharge obligations	High Uncertain	High	High	High	✓	✓ ✓	✓

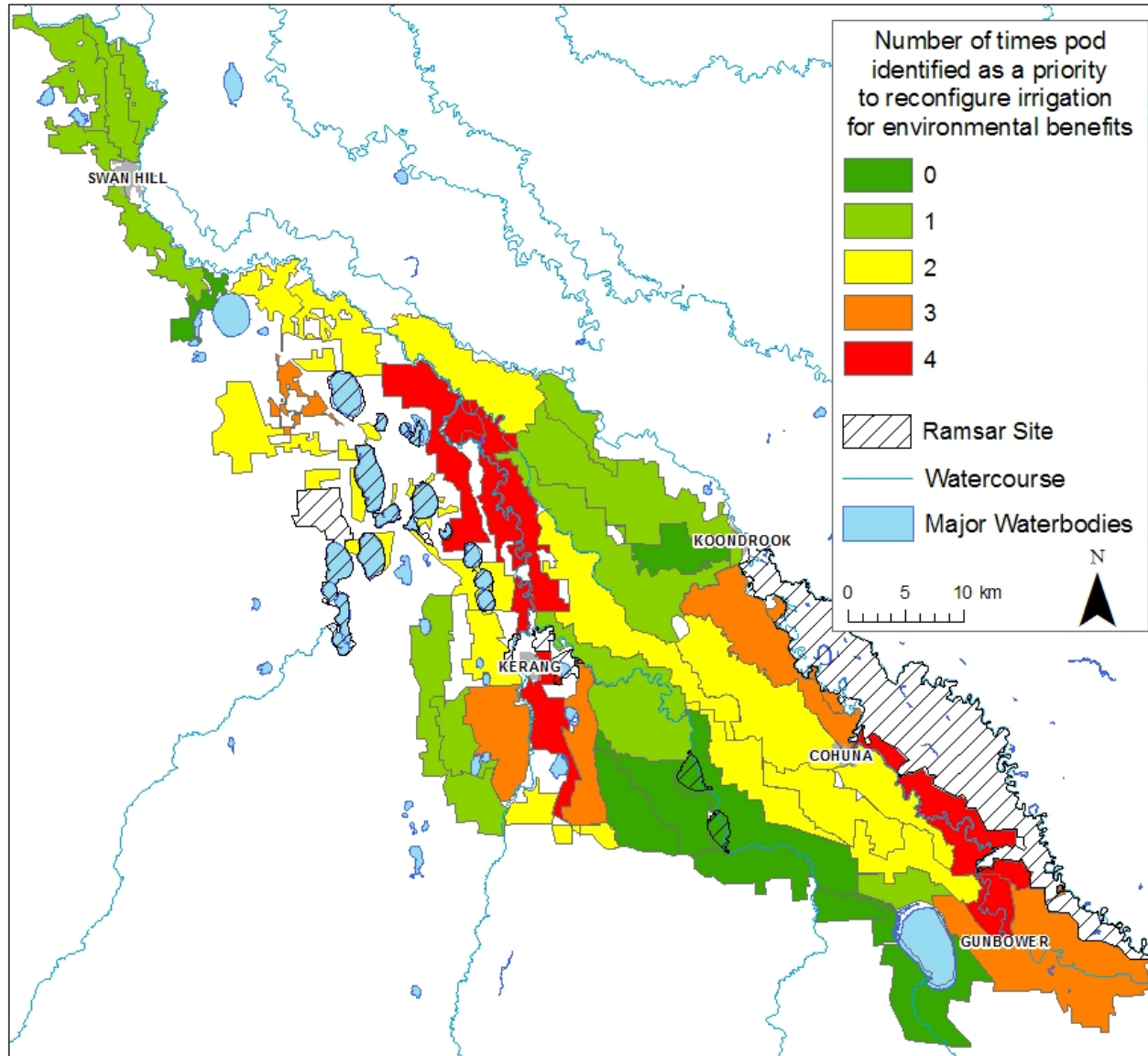
The Frontier - Achieving Multiple Benefits, avoiding “second order” costs

- Example targeted water purchase for multiple benefits



The Frontier - Achieving Multiple Benefits – The case of reorganising irrigation

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The Frontier - Achieving Multiple Benefits – the case of reorganising irrigation

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- Opportunity – the right incentive signals can optimise multiple benefit outcomes
- Challenges – an institutional setting that allows flexibility and provides incentive,
 - Incentive to reduce salinity (salinity offset payments?)
 - Incentive to close infrastructure where it is high cost, inefficient (water co-payments by water supply firms?)
 - Incentive to reconfigure land holding for ag. Productivity and amenity value (land trust?)
- but limits adverse impacts
 - Separate instruments to avoid complex interdependence
 - Free water trade & Land-use regulation to address externalities,