

Range to Reef: costs and benefits of better water quality outcomes

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Conservation tenders to date

- They provide cost effective outcomes
- They can be tailored to suit locally specific conditions
- Measurable environmental outcomes (outputs)
- Open and accountable assessment process
- Case studies reveals costs of emissions reductions
 - Can estimate the reduction for a given budget
 - Can estimate the cost of achieving targets
 - Compare the costs associated with other projects, methods and/or actions to reduce emissions
 - Benchmark current costs to assess changes over time
 - Information to help set a **reserve price**

Water quality case studies in Qld

1. Dairy industry: \$165,000 – small pilot trial

- Burnett Mary Regional NRM group + Qld DairyFarmers Org
- N and P reductions
- 15 out of 20 bids successful

2. Horticulture: \$100,000 – small pilot trial

- Burnett Mary Regional NRM group + Growcom
- N and P, sediment + pesticide reductions
- 13 out of 17 bids successful

3. Grazing and Cane: \$600,000 – full implementation

- Burdekin Dry Tropics NRM group + DPI&F/BSES
- N , sediment + pesticide reductions
- 33 out of 87 bids successful

- All incorporated a cost-share component
- All suffered from thin competition in some categories
- Room for further efficiency gains

Case study evidence: Cost of emission reductions in Great Barrier Reef catchments

Location	Industry	Nitrogen \$/kg	Phosphorus \$/kg	Sediment \$/ton
Mary River Sth central Qld	Dairy	\$0.73	\$4.69	
Kolan River Sth central Qld	Horticulture	\$13.35	\$79.98	\$7.49
Burdekin North Qld	Grazing			\$89.22
Burdekin North Qld	Sugarcane	\$4.55		

Caution: different methods of assessing N, P and sediment

Heterogeneity – implications

1. Need to carefully target funding to:

region:

- where are water quality improvements most important
- relative impacts on Great Barrier Reef

emission type:

- which is having the most impact
- where the best improvements can be made (WQIPs)
- relative impacts on Great Barrier Reef

Industry: combination of above

2. Implies some industries may be able to supply offsets more cheaply than others

3. There could be potential for trade between industries if a cap was imposed

What about the benefits?

Water quality tenders are cost efficient **but are they worth the cost?**

Public benefits of environmental improvements requires non market valuation:

- Little case study evidence to date
- Statewide Qld study - Values very broadly defined

“% waterways in good health”

Avg value for a regional catchment area in Qld
= **\$5.80** per household for a 1% improvement

Costs and benefits of emission reductions

Burdekin water quality tender

Cost: \$605,000

- 492 tons sediment reduction = 0.04% of catchment load
- 96,207kg nitrogen reduction = 1.7% of catchment load
- 55.6kg Pesticide reduction = 0.04% of application

(Did not include administration costs)

Benefit: approx \$2 million

Townsville households: $50,000/50\% = 25,000 @ \$5.80 = \$145,000$

Brisbane households: $650,000/50\% = 325,000 @ \$5.80 = \$1,885,000$

for a 1% improvement in “the health of waterways”

**Can only broadly say benefits are greater than costs:
need more detailed information**

Challenge: Time to move from pilots to broad scale implementation

- Where and how to target limited funds given cost variation - region/ industry /emission type
 - giving each the same may not produce the most cost efficient outcome
 - important to maximise participation and price competition
 - may suit single region/industry/emission focus
 - need to set a reserve price
- Information gaps
 - need more detailed information about public benefits: are some improvements valued more than others
 - need more scientific evidence to link BMPs and farm management actions to improvements in water quality

Challenge: Time to move from pilots to broad scale implementation

- Landholders will learn and gain experience
 - will require more specific information
 - will learn to act more strategically
 - tighter monitoring and verification controls
- Still options to run locally specific conservation tenders
- State-wide operation?
 - How would it look?
 - Lessons from other States?
 - 3rd party delivery?
 - Contract length?
 - How would it fit in with NRM group plans?
 - Would there be sufficient funding to make a difference?
 - etc?