The Burdekin Water Quality Tender

5 most important findings

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Project Partners: CQUniversity Australia, River Consulting, the University of Western Australia, Burdekin Dry Tropics NRM

Plus: BSES and DPI&F

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Background

Research objective:
Examine the influence of scale (size) and scope (complexity) on auction efficiency

Research question: Was it more efficient to expand the scale (increase the size of the tender) and/or the scope:

- increase the geographic area
- include both the cane and cattle industries
- include more than one type of emission (sediment, nutrient, pesticide

Results: - Total funding $600,000

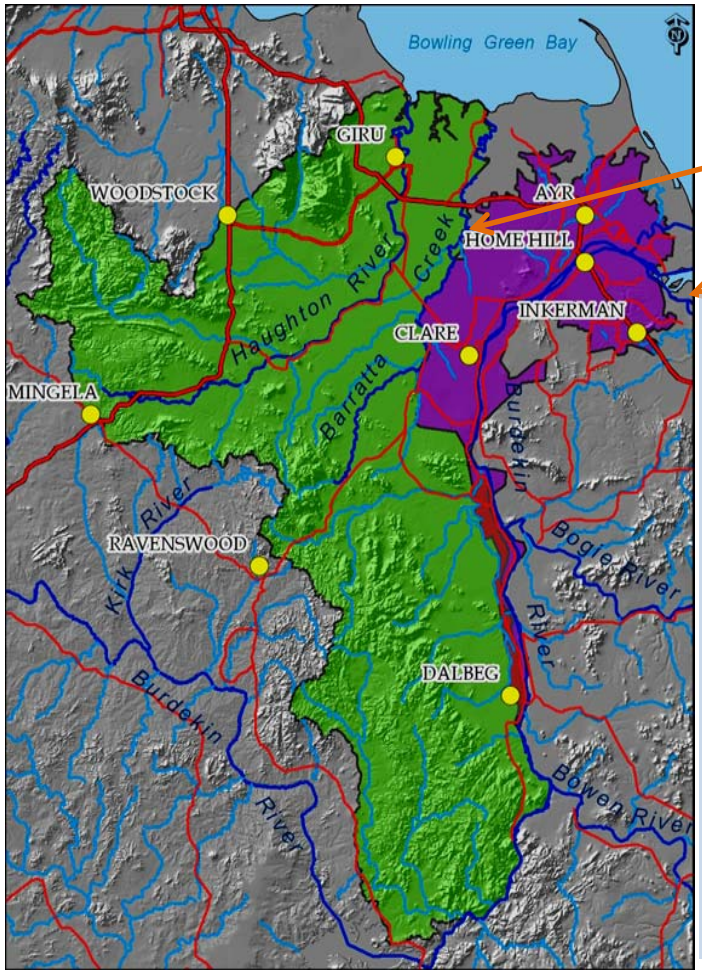
- Total 87 bids - 33 bids successful (40%)

1. Scale efficiencies

- **Increased funding** will increase participation rates **BUT** offset by higher bid prices (**less** price competition)

- **Decreased funding** pool will lower participation rates **BUT** offset by lower bid prices (**more** price competition)

2a. Geographic Scope efficiencies



Area 1 – 25 bids

Area 2 – 62 bids

Live auction = Combined areas

Funding = $605,000

Environmental benefits score (EBS) = 2.73

Reallocate funding $300,00 to each area

	Cost		EBS
Area 1:	$304,000	=	0.95
Area 2:	$298,000	=	1.78
Total:	**$602,000**	=	**2.73**

An allocation by regional area would have reduced overall efficiency by less than 1%

2b. Industry scope efficiencies

An allocation by industry type ($300,000 cattle + $300,000 cane) would have **reduced** overall **efficiency by 12%**

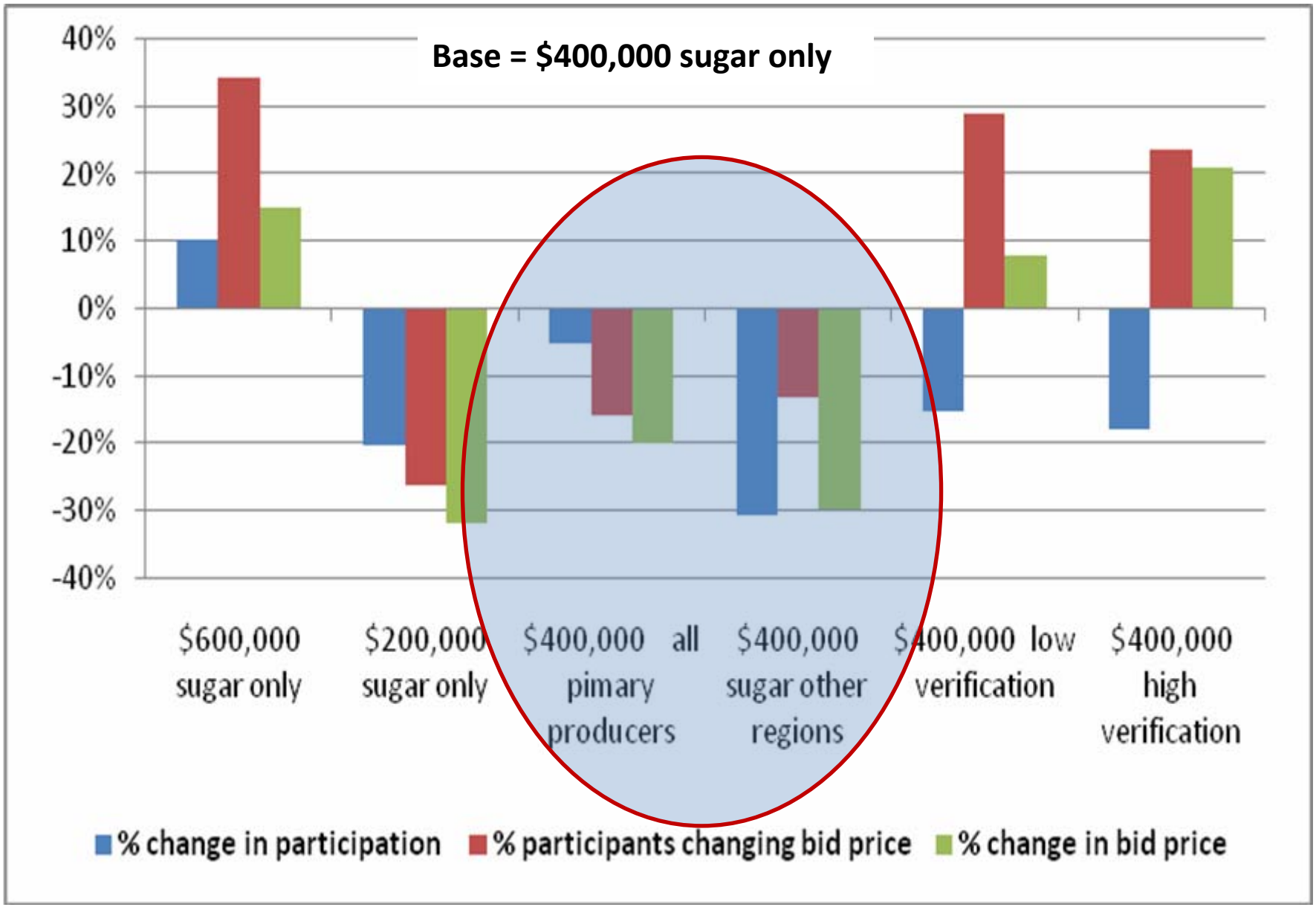
- Only 9 cattle bids meant little competition in that sector (78 cane bids)

2c. Emission scope efficiencies

An allocation by emission type ($200,000 sediment + $200,000 nutrient + $200,000 pesticide) would have **reduced** overall **efficiency by 26%**

- Only 9 pesticide bids and 9 sediment bids

3. Tradeoffs between participation and price competition



4. Communication and cooperation

1. Two project combined

- Industry based BMP based approach (INPUT focus)
  - used a **BMP scorecard**
  - inter-agency cooperation
  - local ownership
  - large investment in effort over several years
- Research based MBI approach (OUTPUT focus)

2. Field visits conducted by 3rd party (industry staff)

- Poor transfer of information between research staff, field staff and landholders
  - tender process did not attract the best proposals from all landholders
  - further efficiency gains were possible

3. Cooperation: BMP scorecard used in the assessment metric

4. Communication: More time & effort needed for better outcomes

5. Incorporating participant selection (implementation risk) in bid assessment

The environmental benefit score (EBS) was calculated in a 3-step process:

1. Environmental Benefits = ↓Emissions x **Effectiveness adjustments**
    - Physical and management (BMP scorecard)

2. Relative Environmental Scores = Environmental Benefits / **GBRMPA targets** (for each type of emission)

3. Environmental Benefits Score (EBS) = (Σ Relative Environmental Scores) x **Farming Systems Score** (BMP score + verification/monitoring score**)** x **Future Intentions Score** (BMP scorecard)

Relative Bid Value = EBS / Bid Price ($)

Take home messages

1. Small scale auctions can be designed and tailored to suit a range of locally specific conditions

2. The smaller the scale the more efficient it is to focus on one type of emissions/management focus

3. Auction efficiency is affected by both participation rates and bid prices (price competition)

4. Increasing the scope and scale of auctions does not automatically generate efficiencies and can be offset by impacts on participation rates and bid prices