Economic support to Project Catalyst:
Understanding the viability of innovation

Innovation and technologies

- Targets for current Reef Plan
  - target of 20 per cent reduction in sediment and a 50 per cent reduction in nutrients by 2018
- Scientific consensus statement indicating that even if all growers adopted BMP the targets will not be reached
- Limited resources and time being essential
- Where are the “Game Changers”?

Targeted areas

Controlled Traffic -6 growers

Skip Row- 7 growers

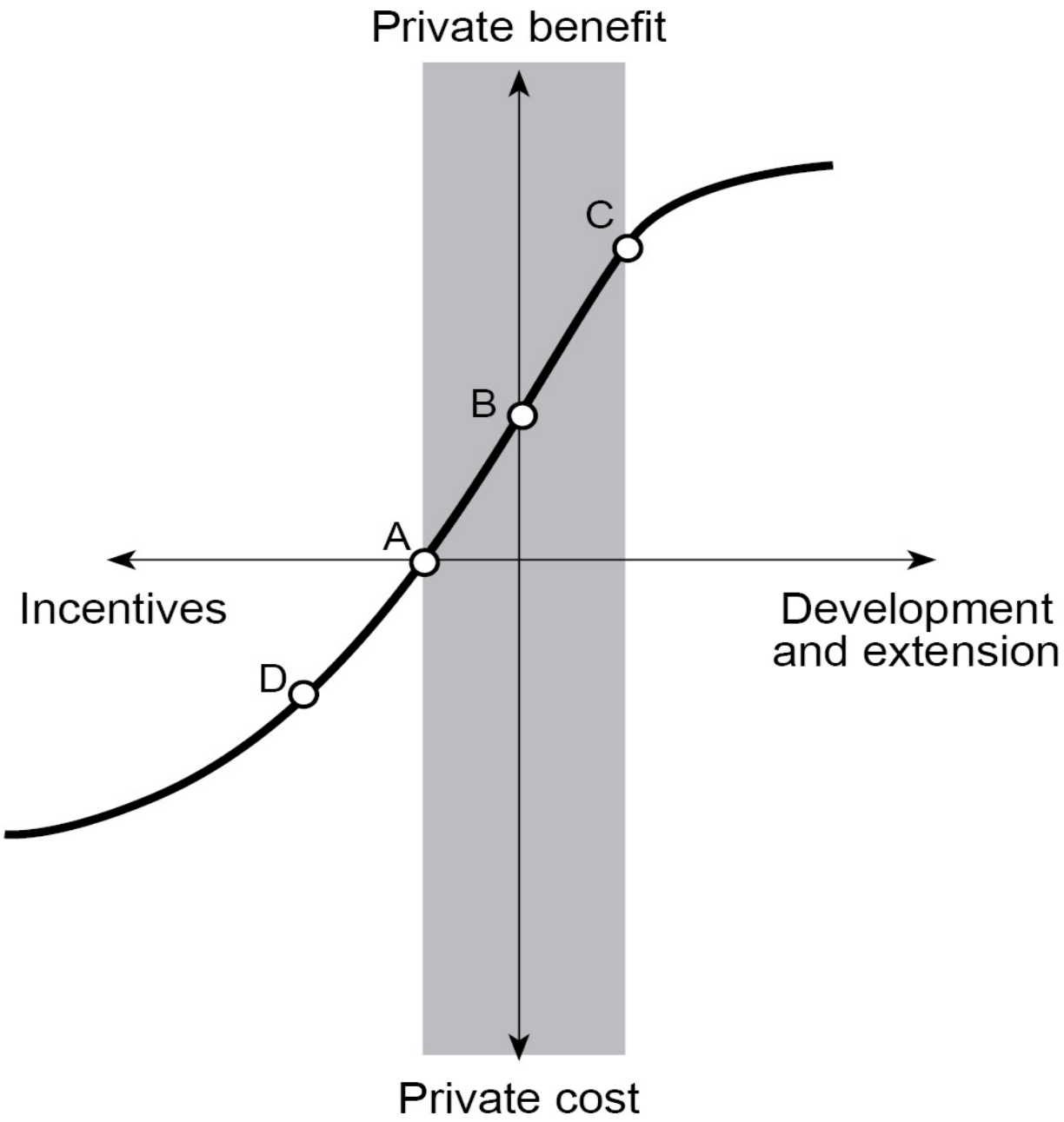
Variable Rate- 10 growers

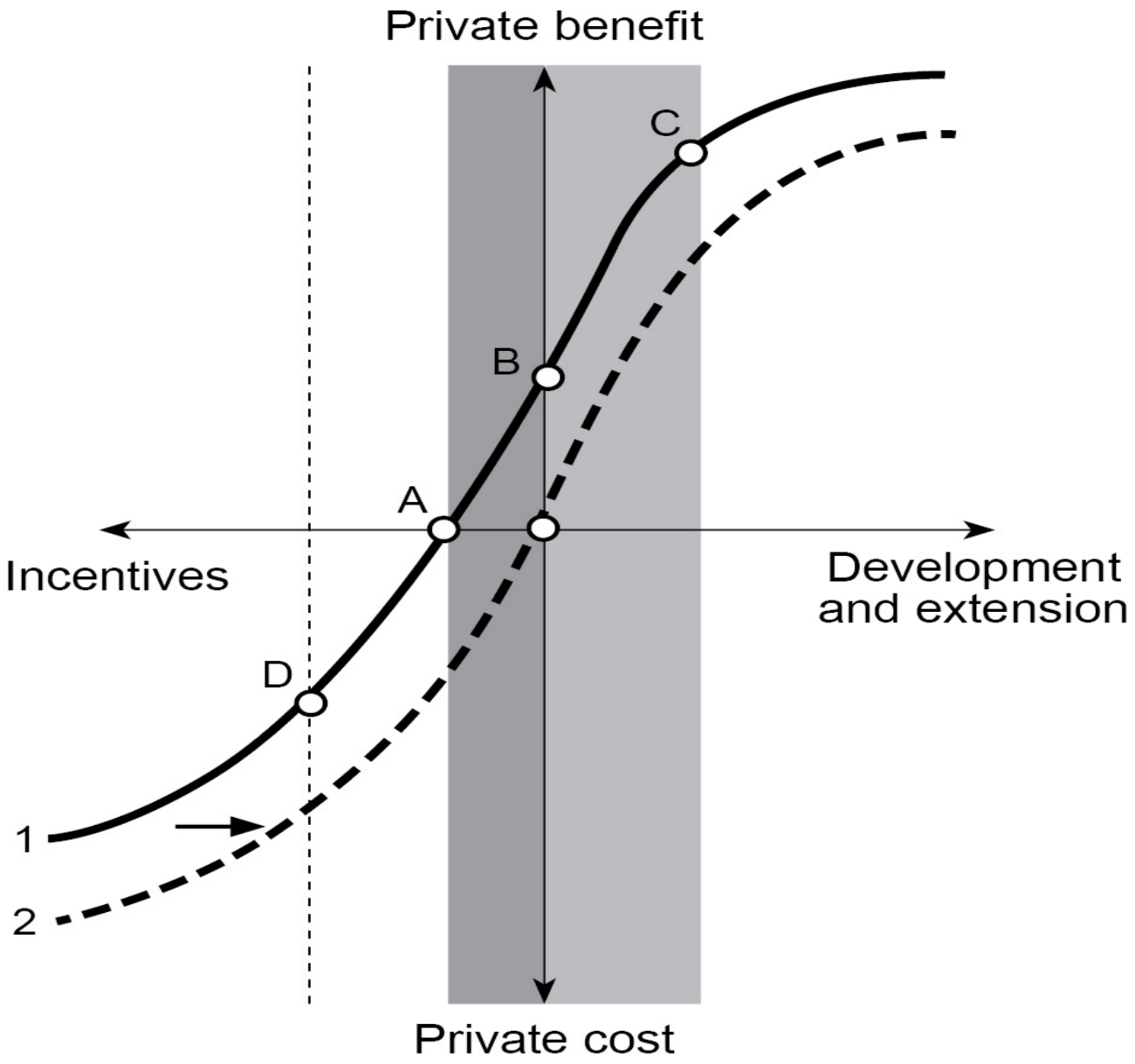
Irrigation- 11 growers

Chemical - 11 growers

Fertiliser- 9 growers

Grower groups- 5 growers





Key Messages

- Capital is critical
  - Scale
  - Machinery disease
  - Consideration of options for contracting
  - Use of tool in consideration of funding applications

- Business viability
  - Implementation of technologies and innovation
  - Adoption
  - Risk
  - Time lags

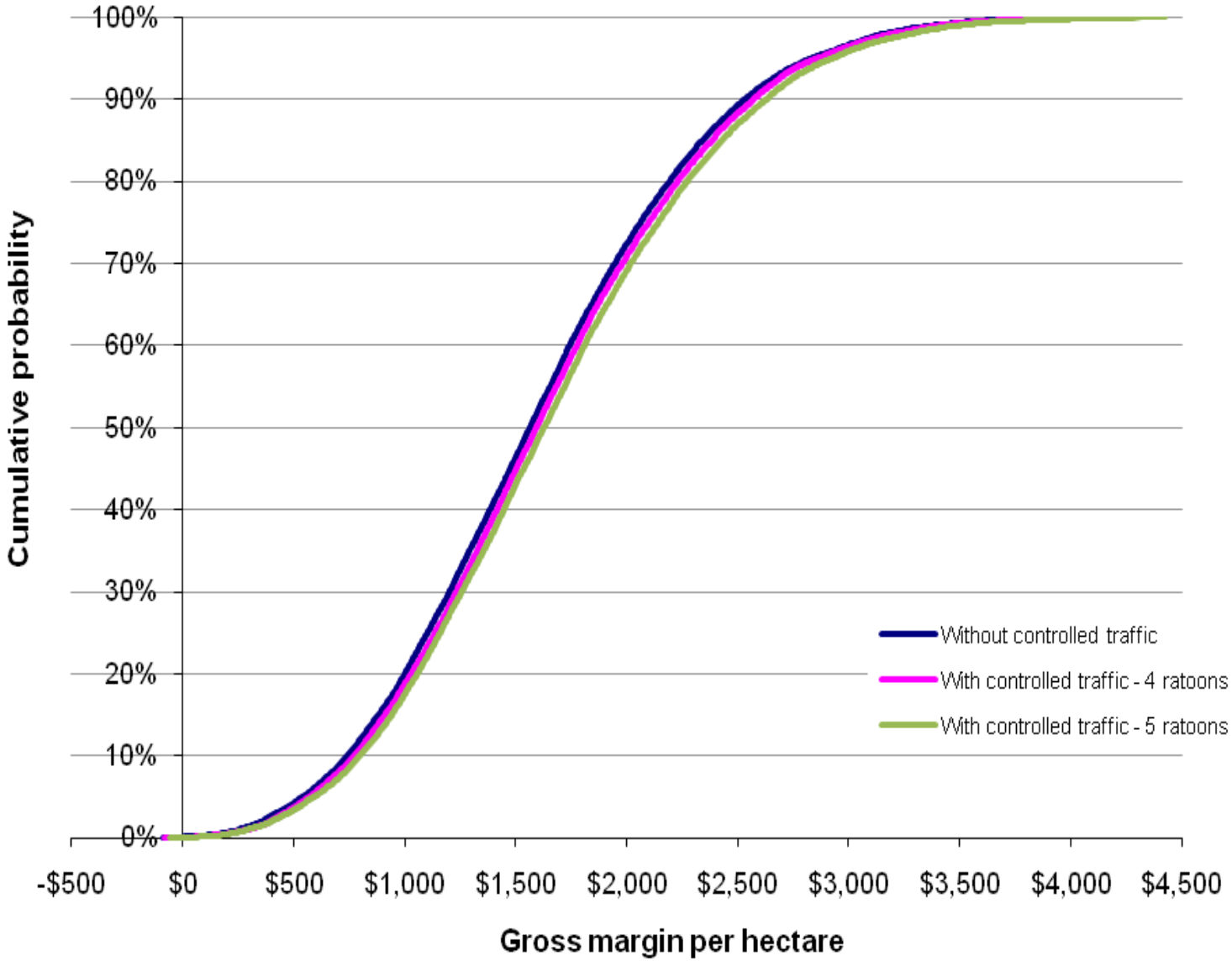
Key Messages

- Current state of play
  - Costs of particular inputs
  - Labour inputs
  - Options for other fallow crops
  - Price of sugar

- Efficiency is key – Precision Agriculture

GPS

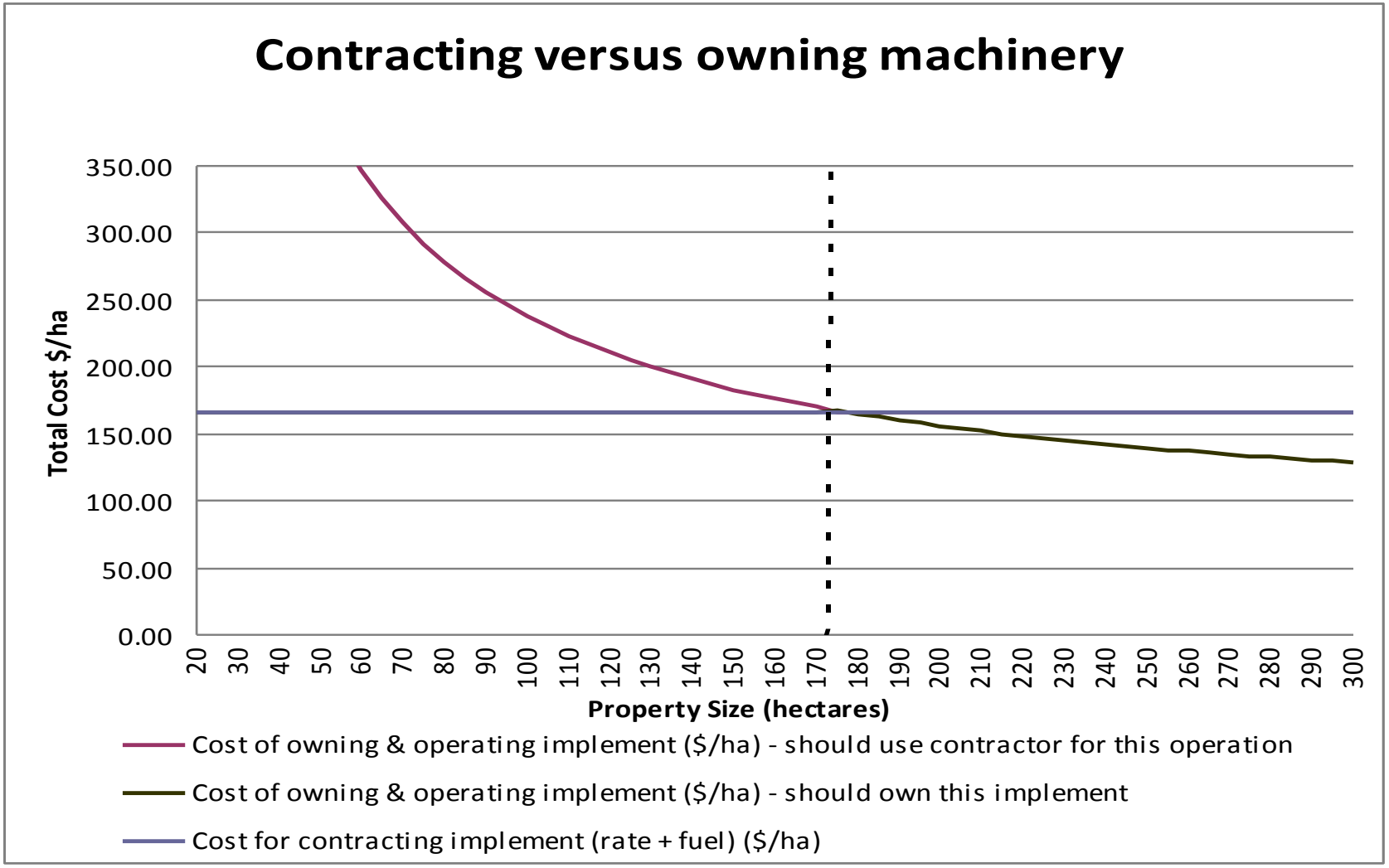
- Increasingly adopted
  - Less stool damage
  - Higher yields
  - Improved efficiencies in FORM
  - Taken on gradually, once in all in



Why?

- Intrinsic values
- Data management
- Perceived long term benefits at low risk
- Integration across machinery
- Ease of operation and ability to use unskilled labour
- Nothing in isolation

Contract Vs Ownership



1. What is your total cane cultivation area? (hectares)	175
2. How many ratoons do you usually harvest?	5
3. What is your fuel price (after removing GST and the fuel rebate)?	$1.00
4. What is your labour cost ($/hr)?	$25.00
5. Is a new tractor required to use these proposed implements?	No
6. What is the interest rate for your borrowings? (%)	10%

7. Please enter your machinery details in the yellow cells below.
8. If you are purchasing a new implement, enter the age and value at trade-in into the purple cells.
9. Please enter your contract quote details in the green cells below.
10. Press the Run Scenario button.
11. Look at the relevant Implement tabs below to see graphs of owning vs. contracting

Ownership - Machinery Details

-Cost of replacement

-Passes

-Speed

-Width of Pass

- % of load

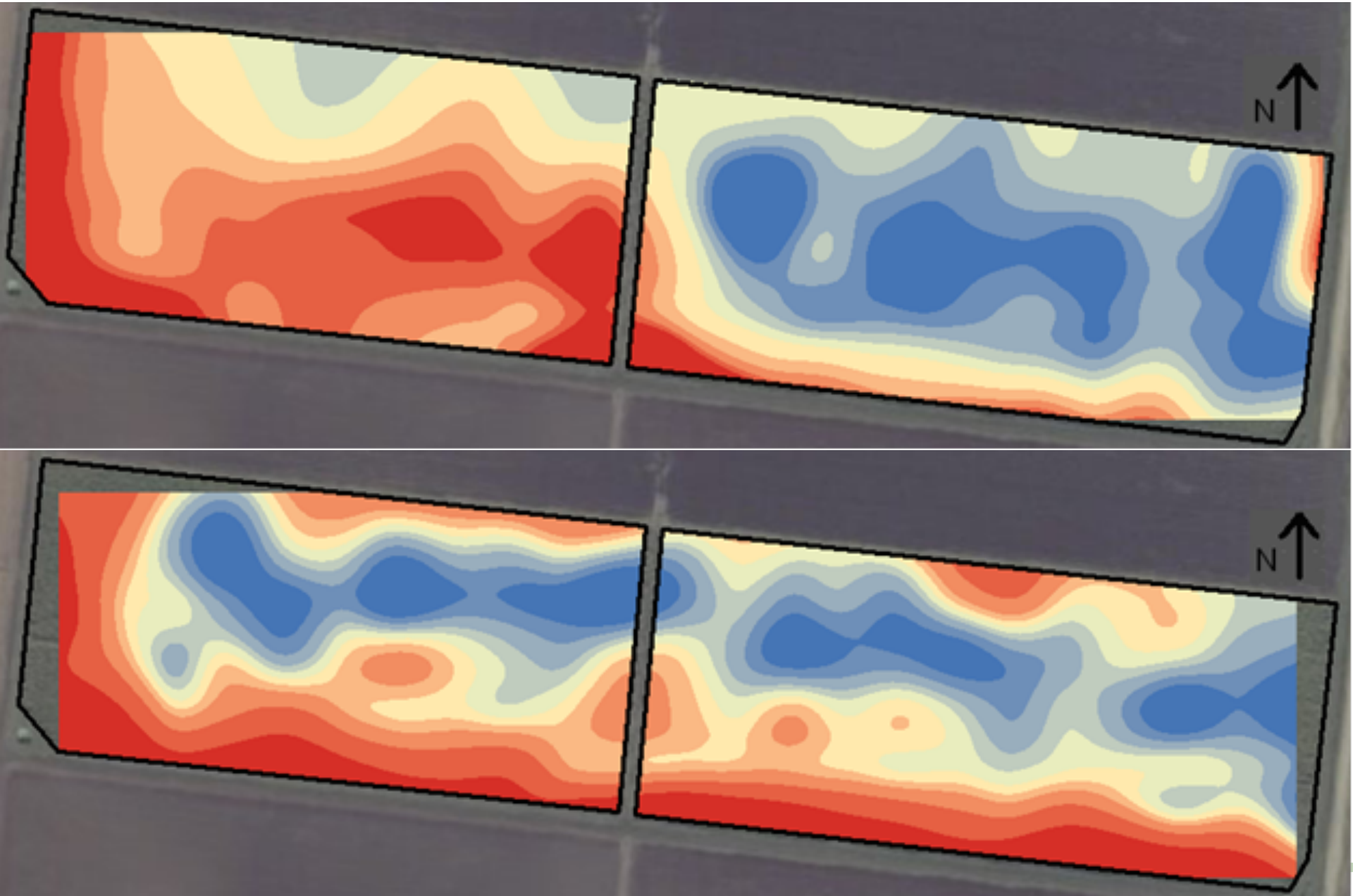
-Calculates the RM, Labour, Depreciation, interest,

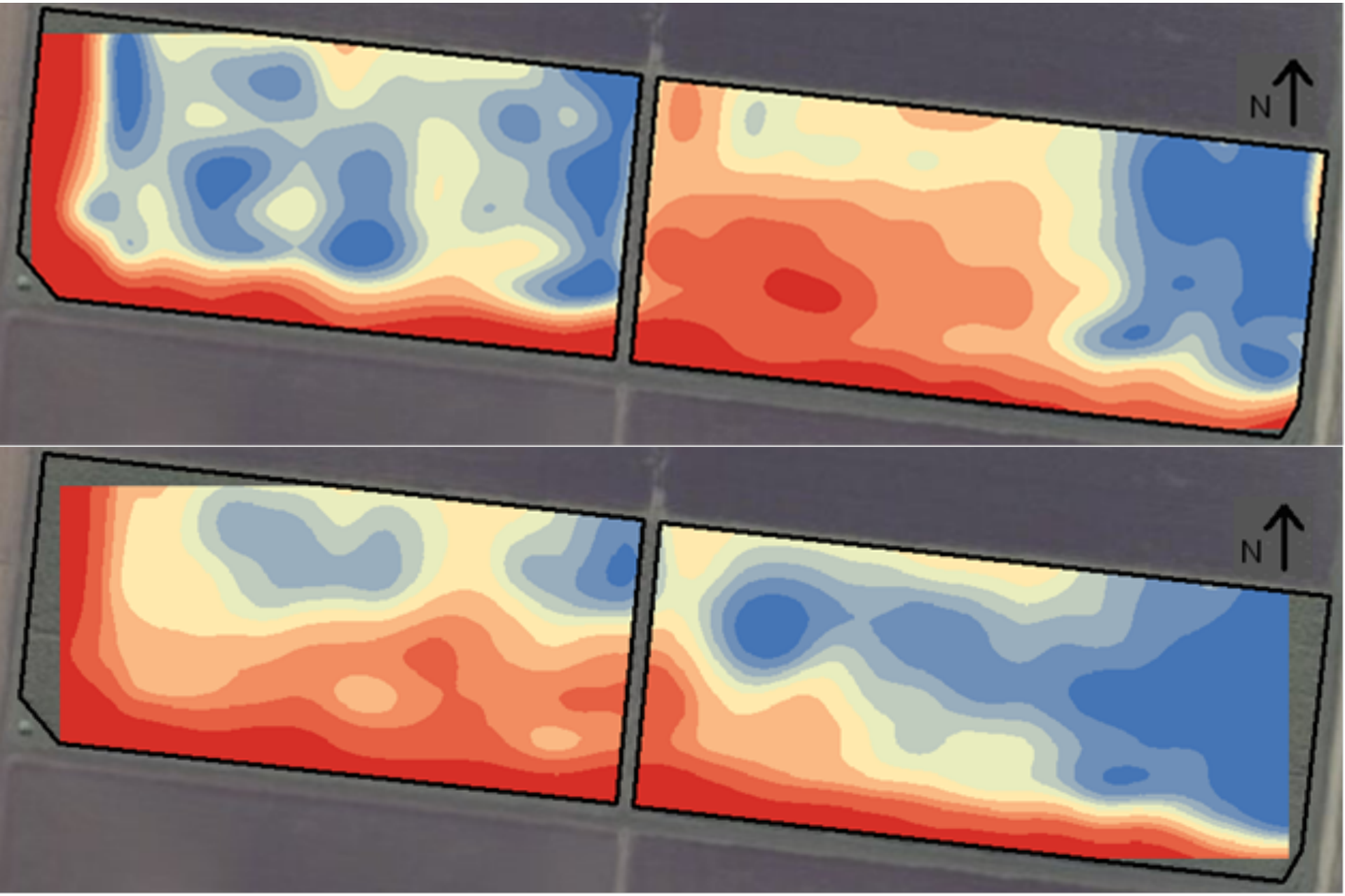
-Overhead costs are often the forgotten costs of machinery

Contractor Quotes

- Rate $/hr
- Fuel
- Width of pass
- Speed

Business viability- At a block level





Integrating all these dollars!!

- Metrics
- Competitive tenders/asymetric information
- Creating a cap where we understand the community benefit is $$$

Choice modelling

Question Three: Water quality improvements. If you were paying for extra improvements in water quality from a land based activity to protect the Great Barrier Reef, which one of the following three options would you choose

Land based activities	Percent of Sediment reduced by 2020		Percent of nutrient reduced by 2020		Area of inshore coral reef in good health by 2050	How much each alternative will cost ($ every year until 2020)	I would choose
					Current condition : About 68% of inshore in good condition (2,870 sq km)		
Current Trends	0%	+	0%	→	About 50% inshore coral reefs in good health (2110 sq km)	$0	☐
Grazing	12%	+	15%	→	About 59 % inshore coral reefs in good health (2,490sq km)	$250	☐
Sugar cane	2%	+	15%	→	About 54% inshore coral reefs in good health (2,279 sq km)	$20	☐

This is the 3rd of 6 choice questions

Multinomial logit modelling

	Labeled Coefficient	Labeled S.E	Unlabeled Coefficient	Unlabelled S.E
Random parameters in utility functions				
Reef health	0.09876***	0.02164	0.68321***	0.12538
Nonrandom parameters in utility functions				
ASC			-0.21823	0.56512
ASC1	1.34863**	0.52549		
ASC2	1.19652**	0.51521		
Cost	-0.00779***	0.00042	-0.00751***	0.00048
Sednut	-0.01842**	0.00644	-0.24484***	0.08068
Education	-0.18915**	0.07435	-0.24484***	0.08068
Income	0.14116**	0.06964	-0.15011D-04	0.00020
Age	-0.20747***	0.06737	0.00679	0.07074
Gender	0.39725**	0.17432	-0.13130	0.18960
Children	0.17424	0.18278	-0.37245*	0.21157
Model Statistics				
Observations	2346		2316	
Log L	-1935		-1915	
AIC	1.659		1.663	
McFadden R^{-2}	0.2474		0.2472	
Chi Squared	1284		1257	

Thanks

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