



Economic Issues

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3 issues

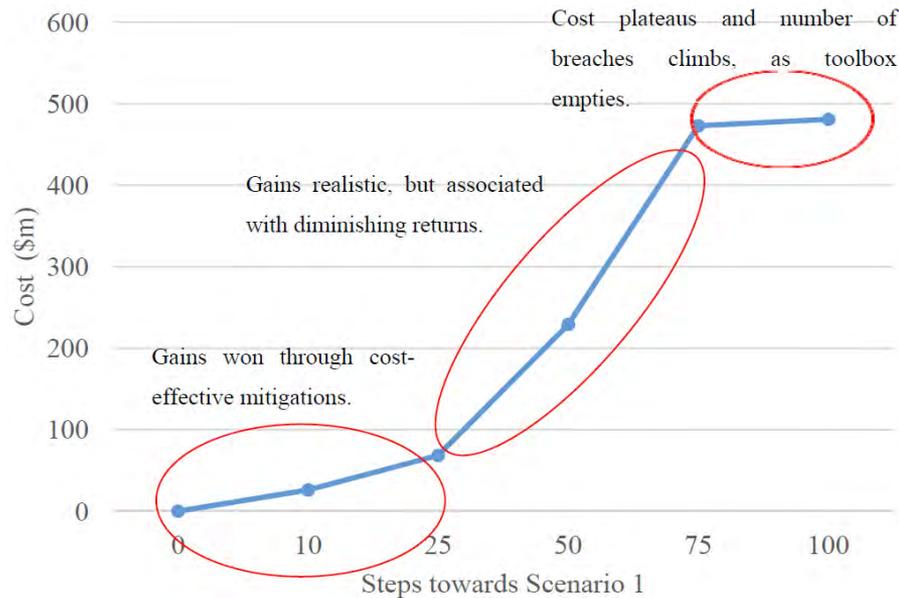


1. Presentation of cost data in Economic Analysis
2. Economic analysis approach used
 - a) Constrained land use change only
 - b) Input-output analysis
 - c) Absence of benefit analysis and CBA
3. Selection criteria
 - Particularly the use of 'realistic' as a criterion

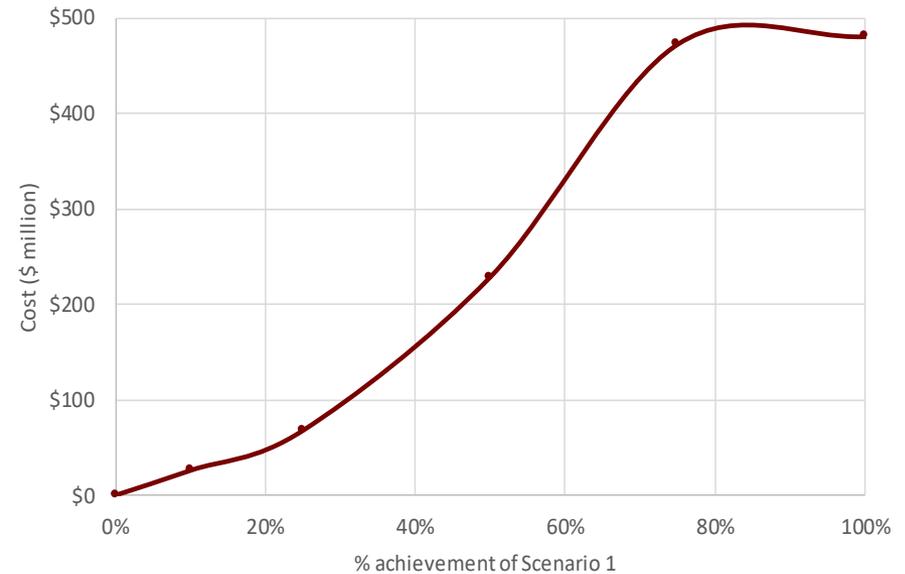
Presentation of Cost Data



Doole et al presentation



Alternative presentation of same data

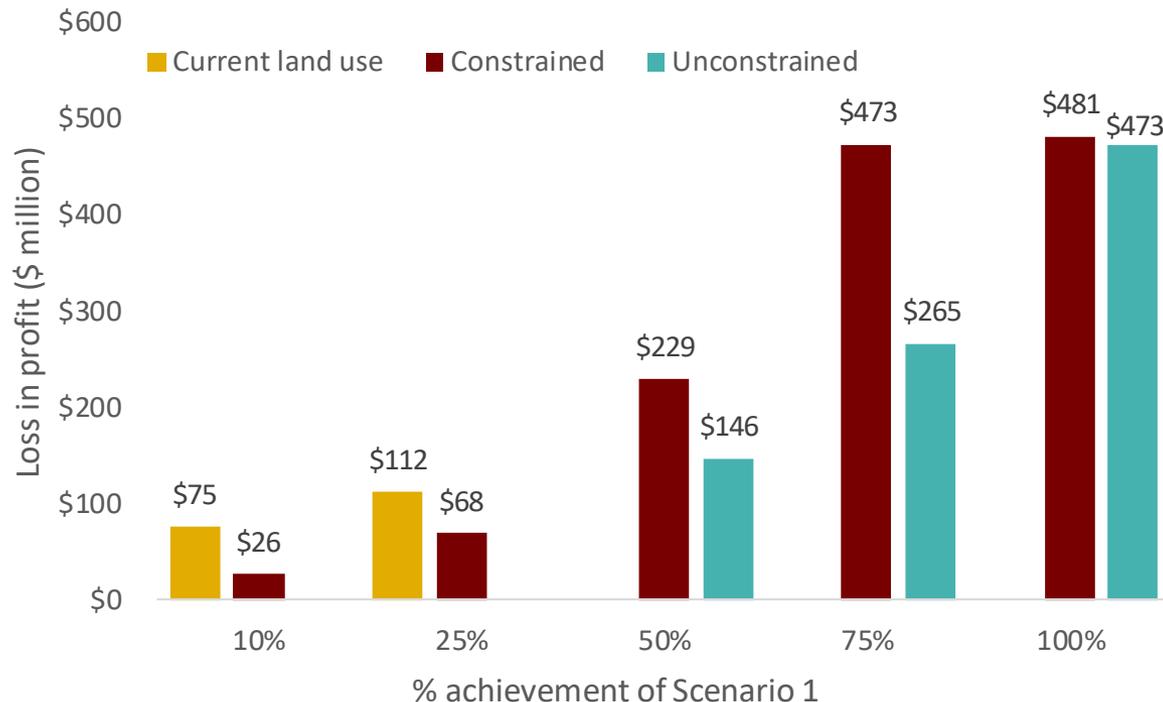


- By using unequal steps, the presentation of cost data suggests a step-change that does not exist

Economic analysis



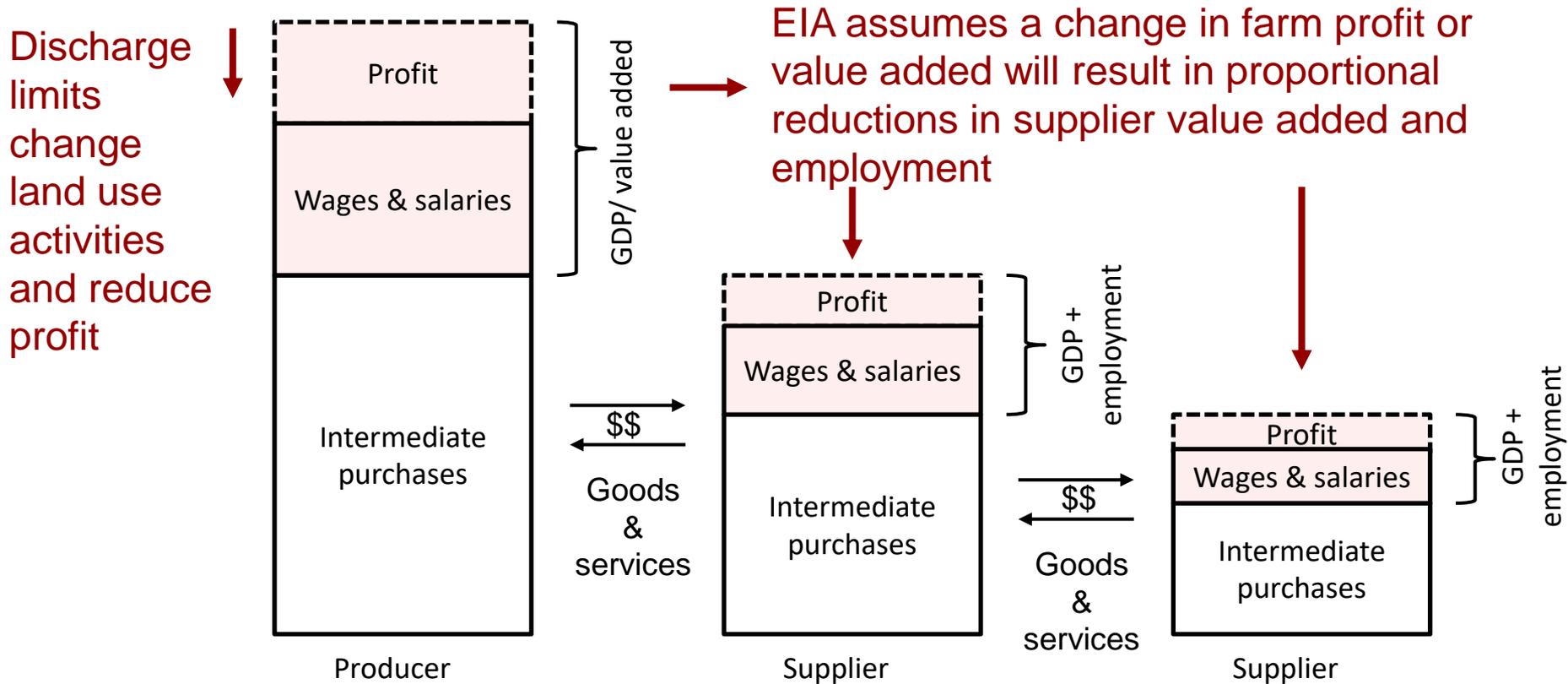
- No analysis of unconstrained land use for 10% & 25% achievement of Scenario 1
- Costs would be expected to be significantly lower
- Motu analysis suggests significant land use change can occur within ten years



The assumptions of EIA



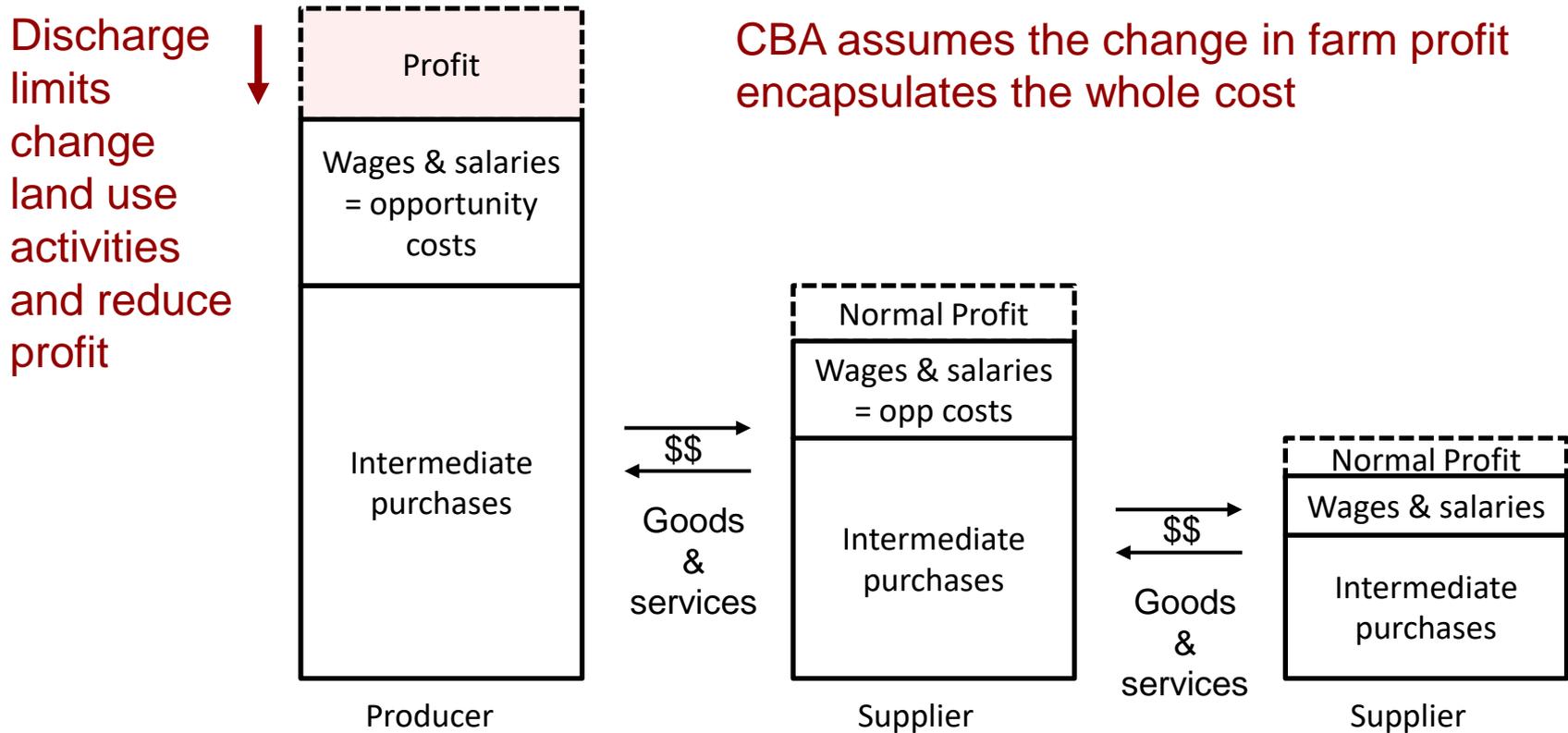
- EIA/IO counts wages & salaries as a net benefit and also considers supply chain effects (+ induced effects).



The cost assumptions of CBA



- CBA counts wages & salaries as an opportunity cost and ignores supply chain effects (assuming an efficient market).



Inappropriate economic analysis



- The analysis is effectively an “over-night” analysis of effects allowing no economic adjustment

OI analysis/multipliers	CBA
Very short-run effects only	Longer-run effects
Assumes static economy - economy does not adjust	Dynamic economy – economy adjusts, resources are reallocated
Job losses persist	Job losses do not persist – people are reemployed
Zero opportunity costs (resources and labour will otherwise be idle)	All costs are opportunity costs (resources and labour will otherwise be employed)

- Impacts on catchment profit only should be considered
- Value added and employment effects should be ignored

Benefit analysis



- Non-market valuation is challenging but studies exist, including for value of Waikato water quality

Table: benefits of a 30% reduction in median nitrogen (N) and total phosphorus (P) for the whole Waikato catchment

Beneficiaries	Value (\$ million pa)
Waikato	\$5 - \$7m
All NZ	\$19 - \$28m

- The results are the same order of magnitude as costs for 10-25% shift towards Scenario 1 AND they ignore many benefit categories
- It suggests there may well be +ve net benefits of more rapid improvements in water quality

Selection criteria



- *Realistic* has been used as a selection criterion
 - It partly reflects time lag for benefits and
 - Partly costs (or limited mitigation options)
- But more significant improvements can result from land use change, which is “realistic” within a ten year time-frame

Evidence Summary



- There is no dis-junction in the cost curve which would provide a basis for choosing low costs on the basis of cost analysis alone
- The consideration of costs should be limited to reductions in on-farm profits only and not extended to value added & employment effects
 - Noting that costs could be lower if unconstrained land use is considered
- Benefit analysis results that are available suggest they are the same order of magnitude as costs – higher costs than those for a 10% shift to Sc1 are likely to be justified
- A *realistic* criterion has been applied to limit water quality improvement. But over a ten year time frame, significant (unconstrained) land use change would be realistic.