A theoretical framework for resource sharing between commercial and recreational fishers

Kasia Mazur and Robert Curtotti

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Acknowledgement

Georgeson, L, Moore, A, Ward, P, Stenekes, N, Kancans, R, Mazur, K, Curtotti, R, Tracey, S, Lyle, J, Hansen, S, Chambers, M, Finn, M & Stobutzki, I 2015, *A framework for regular national recreational fishing surveys*, ABARES, Canberra, November.

Ward, P, Mazur, K, Stenekes, N, Kancans, R, Curtotti, R, Summerson, R, Gibbs, C, Marton, N, Moore, A & Roach, J 2012, *A socioeconomic valuation of three eastern Australian game-fishing regions*, report to client prepared for the Fisheries Research and Development Corporation, ABARES, Canberra.

Background

- Recreational fishing is a popular activity
- Around 3.4 million Australians engage in recreational fishing annually
- Recreational fishers spend around $2.76 billion in 2015/16 dollars on recreational activities each year

Measuring value of recreational fishing

- Incorrect interpretation of expenditure data;
- Diversity of approaches;
- Lack of a consistent or regular methodology in collecting data;

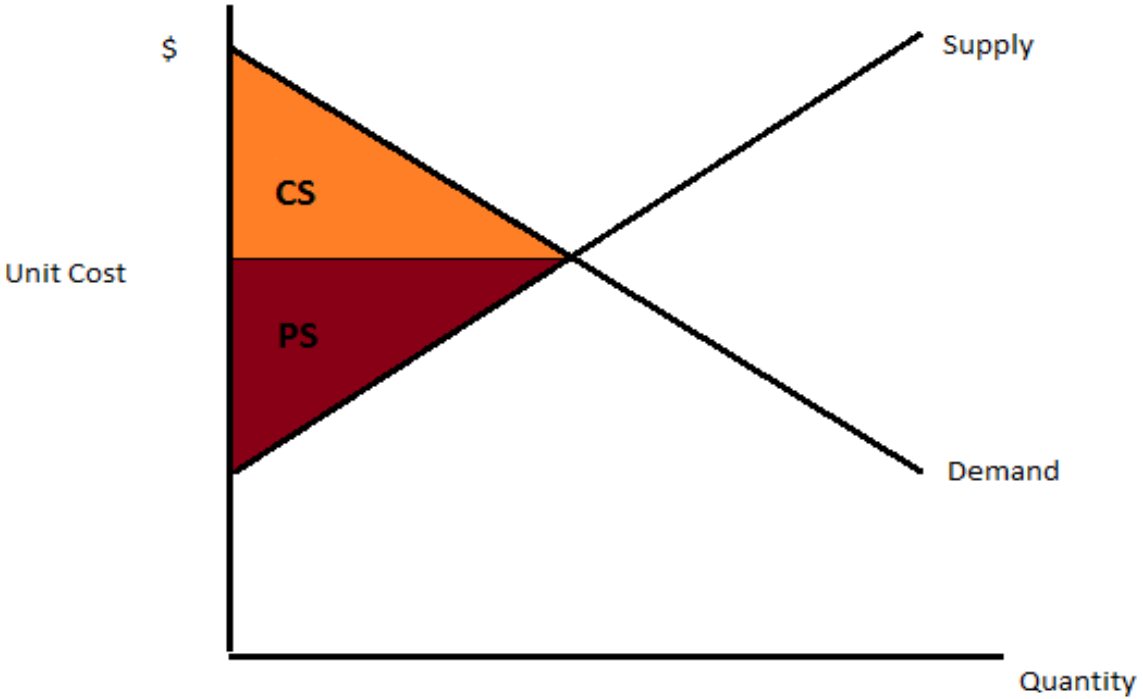
Objectives

- To present a framework for how non-market values associated with recreational fishing can be used with economic information from the commercial sector to derive an efficient allocation of a fish stock

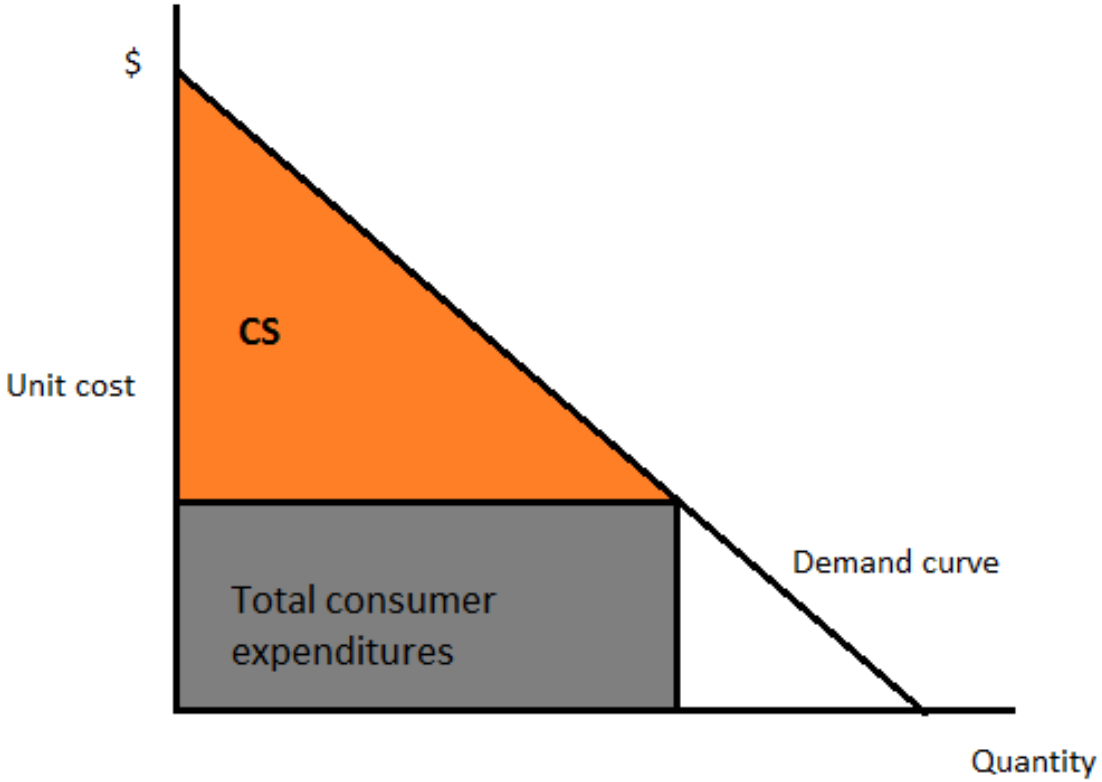
- To demonstrate how the tradeoffs in net economic values can be made in order to determine an efficient resource allocation

- To provide clarification of the concept and method applicable to benefit cost analysis of fisheries allocation between competitive users

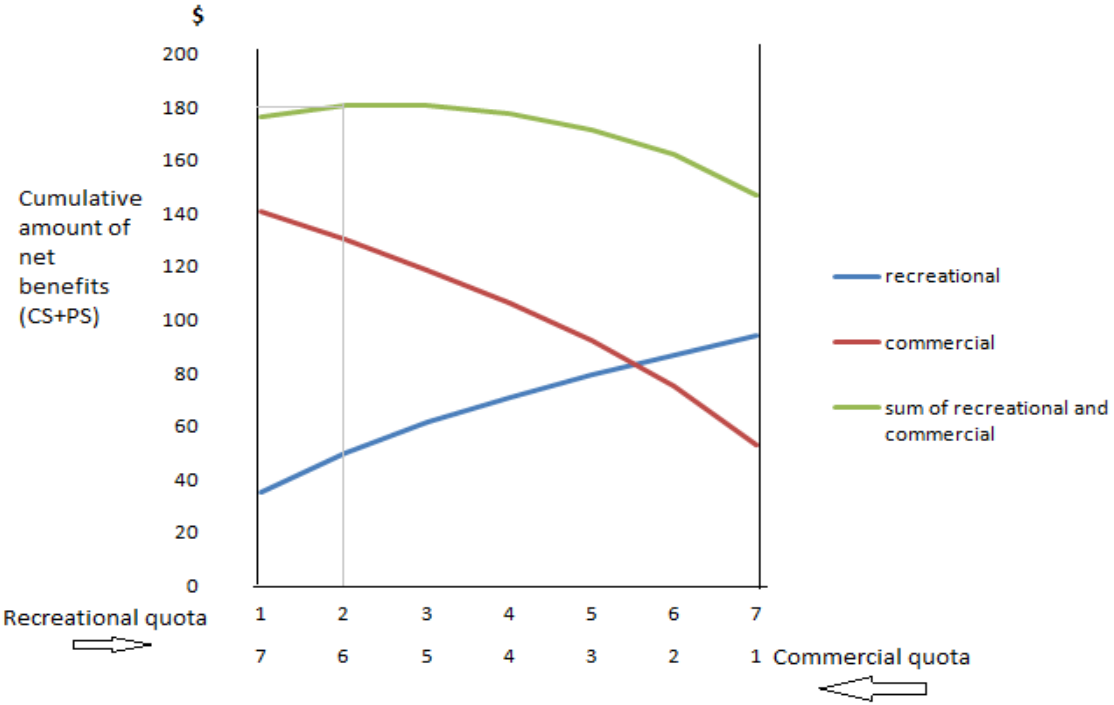
Supply and demand model for market goods



TCM -theoretical concepts



Theoretical concepts - tradeoffs in net economic values



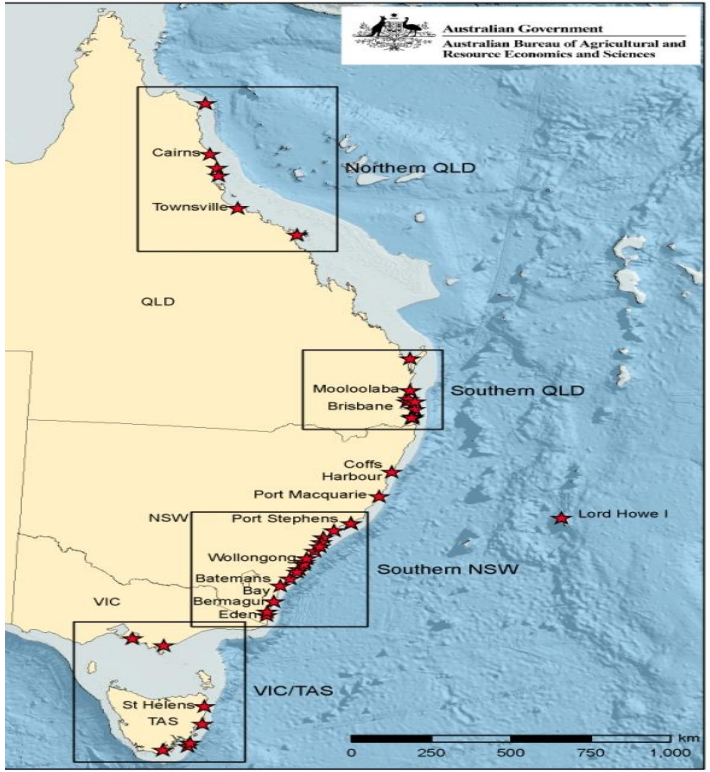
Valuing fisheries resources

Non-market (recreational) value of fisheries resources

Travel cost method:

- Based on expenditure to visit a site
- Common problems : multi-purpose trips, multi-destination trips, calculation of distance costs, holiday-makers versus residents, availability of substitute sites

Case study regions: Game fishing tournaments in eastern Australia



Application of TCM

Survey collection:

158 valid survey forms from Bermagui ,

149 valid survey forms from Port Stephens;

Modelling :

Zero Truncated Poisson

$\mu i = \exp(\beta 0 + \beta 1 xi1 + \beta 2 xi2 + \beta 3 xi3)$

Zero Truncated Negative Binomial Regression model

$\mu i = \exp(\beta 0 + \beta 1 xi1 + \beta 2 xi2 + \beta 3 xi3)\exp(\varepsilon i)$

Negative Binomial TCM- Bermagui

Variable	Coefficient
TC per trip (return)	-0.0030***
Club member	1.1627***
With family	0.7135***
Gamefishing as main reason	-1.0782**
First time	-2.3149***
Constant	1.0341***
Observations	158
Log-likelihood	-323.11
Chi2	41.72
Alpha	1.6510

Consumer Surplus

Consumer Surplus	Bermagui	Port Stephens
per trip	$334	$168
95% confidence intervals	$207–$869	$123–$265
per adult /per trip	$124	$67
95% confidence intervals	$77–$321	$49–$105

Conclusion

- The expenditure should not be interpreted as the economic value of the sector;
- Efficient allocation between commercial and recreational fisheries should be based on trade-offs in net economic value;
- A reliable, consistent data on recreational fishing is required;
- Given the complexity of the issue a careful research for each application should be conducted;
- The framework may not be practicable for all scenarios.

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