MICRO-ECONOMIC DRIVERS OF PROFITABILITY IN AN ITQ-MANAGED FISHERY: A PRELIMINARY ANALYSIS OF THE QUEENSLAND CORAL REEF FIN-FISH FISHERY

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EXTENDED ABSTRACT

The commercial sector of the Queensland Coral Reef Fin-Fish Fishery (CRFFF) targets a diverse coral reef associated fish assemblage using hand-held lines with baited hooks. The main species harvested by order of decreasing value include several species of coral trout (*Plectropomus* and *Variola spp.*, CT), as well as red throat emperor (*Lethrinus miniatus*, RTE).   The fishery operates across a broad geographical marine area in north-eastern Australia, predominantly ranging from Cape York (10º41'S) to the southern Great Barrier Reef, adjacent to Bundaberg (24º30'S). In 2010-11, total landings by the fishery amounted to approximately 1600 tons and estimated total gross returns of approximately AUD $44 million.[i]

The Effects of Line Fishing Simulator (ELFSim) was developed to examine potential management strategies for the CRFFF (Little, Punt et al. 2007; Mapstone, Little et al. 2008; Little, Punt et al. 2009). Since the first ELFSim simulation runs were undertaken about a decade ago, the fishery has become more dependent on live coral trout landings. Management of the fishery has transitioned from a regulatory system based on input controls, to a mixed system including total allowable commercial catch limits and individual transferable quotas (ITQs), input restrictions, and increased no-take marine reserves (Fernandes, Day et al. 2005). ELFSim, amongst its other features, simulates the fishing activity of vessels in the fishery by explicit representation of the behavior of commercial fishing operators, including fishing effort and its spatial and temporal distribution, as well as ITQ trading.

In order to use ELFSim for the evaluation of contemporary management strategies for the CRFFF, the economic description of the fishery must be updated. Representative fishing operations were identified based on similar characteristics and active involvement in the fishery during 2010-11, and analysed to assemble a model of the structure of ITQ ownership in the fishery. This background analysis has been combined with input from fishery stakeholders to construct an economic profile of commercial CRFFF businesses.

This profile provides insights into the key drivers of profitability in the fishery at the micro-economic level, including differences in dead and live fish sale price, changes to fishing and production costs, and changes to catch rates. In particular, reductions in catch rates have resulted in an overall drop in fishing activity and catch in the fishery in recent years. The updated economic profile has been used to stratify random surveys of commercial CRFFF businesses, the results of which will be used to calculate revised parameter values for future ELFSim runs.

REFERENCES

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ENDNOTES

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[i] Based on estimated annual average prices of the different product forms landed by the fishery, provided by Fisheries Queensland.