

Estimating the technical efficiency and impacts of a virus disease outbreak in the Abalone Fishery in Victoria, Australia

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Abstract

The Abalone Fishery is one of Victoria's most valuable commercial fisheries and almost all of the catch is exported to international markets, predominately in Asia. An outbreak of a virus called the Abalone Viral Ganglioneuritis (AVG) decimated one third of Australia's abalone, starting in 2005. However, there has been little economic analysis of the commercial abalone fishery in Victoria. This study examines technical efficiency in the Victorian Abalone Fishery with an input-oriented data envelopment analysis (DEA) using panel data for the period from 1978/79 to 2009/2010. The influence of factors affecting technical efficiency is analysed using a Tobit regression model of DEA-derived scores. Such factors include inputs (such as number of fishers, time spent fishing), dummy variables for fishing zones, disease outbreak and a time trend. The results show an increase in technical efficiency, with a decline in capacity utilisation across the three fishing zones. We discuss these results and their management implications.

Key words: Technical efficiency, data envelopment analysis, fisheries, Abalone

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