

Productive Efficiency of Culture-based Fisheries Production in Village Irrigation Systems of Sri Lanka

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M.G.Kularatne¹, Clevo Wilson, Tim Robinson, Sean Pascoe

Abstract

Over half of growing global aquaculture production being produced in freshwater ponds and tanks. Asia is the highest global consumer and epicenter of fresh water aquaculture production. Unique Inputs of fresh water fish production in Sri Lanka are multiple use of man-made Common property water bodies fixed in capacity, centralised fish breeding, group labour and collective agreements, natural organic feedings. The development of culture-based fisheries (CBFs) based on stocking fish fingerlings in village irrigation systems (VISs) has grown in popularity over the last three decades. CBF production has been given a high priority in Sri Lanka given fish are a cheap source of animal protein for rural low-income communities. Despite the growing popularity of CBFs associated with VISs, there is little knowledge about factors that influence productivity levels. Therefore, this is the first attempt to investigate on factors influence of technical efficiency of CBF production in Sri Lanka.

Primary data from 325 fish farming groups in two districts (Kurunegala and Anuradhapura) are used to estimate a stochastic translog production frontier for CBF production. Analysis of these data indicates that technical efficiency in these irrigation systems is substantially lower than in other aquaculture production systems in a number of other Asian countries, suggesting that production can be increased substantially using existing technology. Removing subsidies, improving consultation with extension officials, and improving water user rights are found to be key means for improving efficiency. In particular, productivity could potentially be improved through the introduction of a transferable community quota system for water rights use.

Keywords: Village irrigations systems, culture-based fisheries, stochastic translog production frontier, technical efficiency, productivity.

¹ Senior Lecturer, Department of Economics, Faculty of Social Sciences, University of Kelaniya, Sri Lanka, kule_econ@kln.ac.lk