Production Relationship of Shrimp Cultivation in North Western Sri Lanka Using Farm Level Data

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Shrimp farming offers considerable potential for diversification and income security in Sri Lanka's rural area. However, shrimp production has declined significantly in recent years due to unsustainable practices, and devastating epidemics. In terms of production volume and technology, the Sri Lankan aquaculture sector is still in an infant stage compared to other Asian countries. International trade in aquaculture products is one way of promoting economic growth and reducing poverty in most developing countries. However, aquaculture is under constant pressure from environmentalists and government regulation. Hence, this paper uses cross sectional data collected from 81 shrimp farms in September to analyze the production relationships in shrimp using farm level input and output data and to assess the potential gains of farmers by increasing farm size. A Cobb-Douglas production function was estimated to obtain the relationship between inputs and output in shrimp production. Shrimp farming observed a positive relationship between output and the inputs considered. The output elasticities are low indicating inelastic relationship between inputs and output. The major finding of the study is that shrimp farming in the Northwestern Sri Lanka has a constant return to scale implying the sectors' inability to obtain the benefits of economies of scale.

Keywords: Farm size, Production, Returns to scale, Shrimp