Preadsaji Keawthae 2009: Measuring Technical Efficiency of White Shrimp Production under Good Aquaculture Practice Scheme in Rayong Province. Master of Science (Agricultural Economics), Major Field: Agricultural Economics, Department of Agricultural and Resource Economics. Thesis Advisor: Assistant Professor Tipparat Pongthanapanich, Ph.D. 115 pages.

Thailand is the world leading exporter of aquaculture shrimp. Increasing the production efficiency and enhancing the production standard are the main strategies for remaining competitive in the world market. This study aims to measure the technical efficiency of White shrimp (*Peneaus vannamei*) production under the Good Aquaculture Practices (GAP) scheme. The analysis is based on the production economics and stochastic frontier model. The farm survey of 80 samples in Klaeng District, Rayong Province, was conducted in 2008.

The results show that the number of shrimp seeds used, amount of feed, and the amount of labor applied were the significant and positive factors affecting the level of production at the confidence level of 99 percent. Scale of farm was the significant and positive factors affecting the level of production at the confidence level of 90 percent. Other factors (fuel and chemical costs) were the significant and negative factors affecting the level of production at the confidence level of 99 percent. A technical efficiency of 0.8489 or 84.89 percent was estimated. This indicates that the use of farm inputs did not reach the highest efficiency level. In other words, the existing farming efficiency was below the maximum efficiency level by 15.11 percent. The study found that the inefficiency was significantly related to several factors: 1) farmers did not have sufficient education, 2) larger farm had the lower culture pond area than the smaller farm which indicates the lower skill in farm management, and 3) farming did not exchange water during culture period.

The above results imply that there is scope for increasing technical efficiency. This would require better management of farm input used. Provision of dynamic training packages on shrimp production and farm management under the GAP scheme would enhance their farming efficiency. Strengthening farmer groups and encouraging the small-scale farmers to share information and experiences through networking would also build up a pool of valuable and practical knowledge in the business that the farmers can share. A better farm and water management would reduce the inefficiency.

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