

# **ECONOMIC AND TECHNICAL EFFICIENCY OF RICE-SHRIMP MODEL IN THE CONTEXT OF CLIMATE CHANGE AND INCREASING SALINE INTRUSION IN BAC LIEU PROVINCE**

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## **Summary**

The study aimed to assess (1) technical and economic aspects and (2) identify salt-tolerant aquatic plants those are able to grow in the rice-shrimp farming system based on farmers' experiences in Bac Lieu province. Secondary data gathering for total area, production and yield of rice-shrimp farming system from 2013 to 2017 in three districts of Hong Dan, Phuoc Long and Gia Rai, Bac Lieu province, as well as direct interviewing of 30 households of each district were conducted. The results showed that *Scirpus littoralis* was the best of choices to grow in the shrimp season by local farmers accounting for 48.9% the total interviewed households. Farmers in Phuoc Long district planted *Scirpus littoralis* (13/30 households) and *Eleocharis ochrostachys* (12/30 households) while *Eleocharis dulcis* was the major species planted in Hong Dan district (23/30 households) in the shrimp season. In addition, *Typha orientalis* was also the selected plant to grow in the three studied districts. Mot Bui Do, hybrid rice and OM5451 were the common salt-tolerant rice varieties in the rice-shrimp farming system. The rice-shrimp farming system brought sustainable economic profit for local households with a net profit of VND 24.5 million/ha/year, of which VND 22.4 million/ha/year from shrimp. There were 76.7% households in Gia Rai and 80% households in Hong Dan and Phuoc Long within the interviewed households who have strong demand to shift to planting sedges instead of rice in the rice-shrimp farming system to cope with more complex climate change situation.

**Keywords:** *Climate change, economic efficiency, rice-shrimp farming system, saline intrusion, salt-tolerant aquatic plants.*