



Tropentag, September 20-22, 2017, Bonn

“Future Agriculture:
Socio-ecological transitions and bio-cultural shifts”

Comparative Economics and Environment of Shrimp Culture in Buffer Zone of Xuan Thuy National Park

NHUNG NGUYEN¹, CUONG TRAN², PHILIPPE LEBAILLY³

¹*Liège University, Gembloux Ago Bio Tech, Department of Economics and Rural Development, Belgium*

²*Vietnam National University of Agriculture, Department of Marketing,*

³*Liège University, Gembloux Ago Bio Tech, Department of Economics and Rural Development, Belgium*

Abstract

This paper aims to investigate and compares economic and environmental perspectives of the two economic and technological shrimp systems in Xuan Thuy National Park (Vietnam). The primary data are collected in 2016 through interviewing 30 intensive shrimp farmers and 33 extensive shrimp respondents in the protected area. Economic indicators reveal that the intensive production requires total cost 451.11 mil. Dong per hectare which is 18 times higher compared to intensive farming (23.8 mil. Dong). Among costs of intensive culture, feeds including pellet feeds, supplement and some antibiotic are the most dominant items comprising 58 % (259.6 mil. Dong per hectare), following by white leg shrimp spawns and electricity (12 % and 7 % respectively). In the extensive culture, family labour, giant tiger shrimp and crab spawns are the important input costs (respectively 28 % and 27 %). Intensive ponds require huge capital on feeds, hired labour, spawns, electricity, gasoline, sand and lime, while extensive farms apply much less pellet feeds, gasoline, lime and none of electricity and sand. Intensive shrimp brings higher net profit per hectare of land (232.80 mil. Dong) than extensive farms does (32.13 mil. Dong). Nevertheless, some economic efficiency indicators illustrate the return on working capital of extensive farms is 5 times as much as intensive one.

From environmental perspectives, extensive shrimp aquaculture apply poly culture which produces diverse aquatic animal products including giant tiger prawns, greasybock shrimps (Rao), crabs, fishes, miscellaneous fish and seaweed. This system generally recognised more environmental responsibility than monoculture of intensive system. Higher stocking density in intensive shrimp ponds (78.4 heads/m²) require more food inputs than extensive farms (7.2 heads/m²) and also produce more wastes per unit of land. Application of antibiotics and other chemical in intensive shrimp system might create more potential side-effects for the values of shrimps and environmental pollution compare to extensive production. The more frequency in water exchanges of intensive shrimp culture might discharge more polluted water and diseases to the rivers than extensive farms. Lesson learned from review are considered in the context of recommendations for the more sustainable shrimp production in the buffer zone.

Keywords: Economics, environment, extensive, Intensive, shrimp, Vietnam, Xuan Thuy National Park

Contact Address: Nhung Nguyen, Liège University, Gembloux Ago Bio Tech, Department of Economics and Rural Development, Gembloux, 5030 Namur, Belgium, e-mail: thuytrangnhung@gmail.com