

**MSc Thesis : Potential Impact of a New Shrimp Feeding Concept in Vietnam**

<b>TITLE</b>	<b>Estimating the Impact of a New Shrimp Feeding Concept on the Farmer' Household Marginalisation in the Mekong Delta, Vietnam, using an Agent Based model.</b>
<b>RESEARCH QUESTION</b>	Will a broad application of the nutritious pond concept reduce the number of farm' households that lose their shrimp-based livelihood and thus the basis of their food security, in the coastal provinces of the Mekong delta?
<b>SUPERVISOR</b>	Arend Ligtenberg (ESG - ) and Marc Verdegem (ASG - AFI).
<b>LOCATION</b>	Wageningen
<b>PERIOD</b>	2019

**BACKGROUND**

The NWO funded project *Nutritious ponds* aims, among others, to reduce the frequency of households being chronically indebted, and thus threatened to lose their livelihood or/and the ownership of their ponds. The nutritious pond concept validated for shrimp ponds in the Mekong delta, Vietnam, reduces the use of inputs while the vulnerability of the production cycles for disease outbreaks diminishes.

Another NWO funded project, ALEGAMS developed an Agent Based Model that mimics the development of the four most frequent shrimp production systems of three sites. ALEGAMS aimed to contribute to improved investment climate because of the improved insights in the sustainable development options for the shrimp sector in the Mekong Delta.

In the recently developed Agent Based Model, the student will design a scenario simulating the adoption of the nutritious pond concept for a representative site. The results will be extrapolated for Mekong Delta's coastal provinces with a similar focus on shrimp production.

**SHORT TASK DESCRIPTION**

The thesis student will, based on already developed ABMs, develop an land use simulation model that is useful to explore the adoption of the nutritious pond concept amongst farmers. The model should simulation spatial development of nutritious ponds based on combining a model of social-economic decision-making with environmental suitability and policy restrictions.

**RESEARCH AIM / SCOPE**

Contribute to the assessment of the potential impact of the nutritious pond concept in the Mekong Delta.

**REQUIREMENTS**

Fluency in written English; experience in programming (Python, NetLogo)

**OTHER INFORMATION**

The work will include consultations with experts from AFI and WorldFish.