

INITIAL RESULTS OF THE PILOT STUDY TO IMPROVE THE PRODUCTIVITY, WHILE MINIZING ENVIRONMENTAL IMPACTS OF FISH FARMING IN HA LONG BAY, VIETNAM

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Though aquaculture is a long established enterprise in VietNam, the expansion of the industry is slow in some areas. At the UNESCO World Heritage site of Ha Long Bay, the floating villages began aquaculture enterprises 10 years ago. Various species are cultured, and the predominant methodology is cage culture with trash fish as feed. Well known negative environmental impacts are associated with the use of 'trash fish' including inconsistent supply and quality, removal of feed fish upon which higher trophic level wild fish populations depend, as well as increased incidence of pathogen transferal.

A pilot project to highlight the environmental and economic benefits of formulated feed was started by IndoChina Junk, an eco-tourist group with primary stakes in HaLong Bay. Assisting them in this project were the HaLong Management Group, ASVELIS, Batik, and Ocialis. Between the months of September and December 2011, a farmer with 8 years fishery experience utilized specialized formulated feed (obtained from Nutrilis and Nanolis) for Asian Sea Bass (*Latescal carifer*) in his cages. A control group of 3 neighboring farmers utilized the traditional feed of trash fish.

The results of this primary pilot indicate that a positive growth response was seen when using the formulated feed as opposed to the traditional trash fish with an FCR of 1.72 vs 7.45 (formulated feed vs trash fish respectively). Economic benefits were anticipated as well with total costs of approximately half when using formulated feeds. Longer duration study is necessary to positively correlate the positive economic benefits of formulated feed. Included in this next phase is increased dissemination of information (to increase neighboring farmer buy-in), increased access to assistance including veterinary consultation for medication as well as localization of formulated feed availability and microcredit to help finance the local farmers.



Figure 1 Trash fish used in traditional feeding (photo: ASVELIS)