

Farmer to Farmer Program and Aquaculture without Frontiers

Trip Report: Thailand, September 2010

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A trip was scheduled for September 19 - 30, 2010 to conduct field visits and meet with seafood exporters to organize trial exports of sustainably farmed soft-shell crabs, seaweed and shrimp. Diversification of markets and development of international export and earning foreign currency would be a benefit to the small aquaculture practitioners in the south of Thailand. The farmers also want to open the opportunity to supply the tourist trade in Phuket and surrounding resort towns.

Dr. Fitzsimmons arrived in Phuket, Thailand on Sept 20 and met with other directors of Aquaculture without Frontiers to report on the Farmer to Farmer program during an FAO aquaculture conference. Ad hoc discussions were also made to other scientists at the meeting although no formal presentation could be fit into to workshop. On the 21st, Fitzsimmons was met by Ms. Lwin and driven to Ranong. Plans for the next 9 days were adjusted based on tides, boat arrivals and an additional request from local Buddhist monks who needed assistance with a water supply problem (drinking, bathing and for their fish pond).

The 22nd was spent purchasing supplies and repairing donated microscope from the University of Arizona that encountered some minor damage during transportation in check luggage. A YSI Dissolved Oxygen meter was provided to the cooperative. The major supplies included a water pump, netting and pvc pipes for seaweed cage construction. Cages were constructed and allowed to cure overnight to reduce any pollutants that might be released into the water of the soft shell crab ponds during curing.

On the morning of the 23rd a first meeting was arranged with Ms. Ohm and her brother to discuss an effort to purchase and test ship sustainably farmed soft-shell crabs, shrimp and seaweed to the US. We were told that due to new US seafood safety and homeland security requirements the documentation needed would take several weeks. But we agreed to pursue this opportunity and requested that a budget be developed. Later on the 23rd we visited the farm of Mr. Sagnob, who has collaborated with the Farmer to Farmer program during my first visit. During my earlier visit I had noted that he had a volunteer population of a valuable *Gracilaria* seaweed growing in a part of his pond. In exchange for instructions on how to culture, market and consume the seaweed, Mr. Sagnob agreed to let me harvest a starter culture to stock into cages in other ponds. This would save considerable effort compared to renting a boat and collecting the seaweed from the wild.



Seaweed cage construction



Collection of seaweed from nearby farm

On the 24th we returned to Mr. Sagnob's farm with baskets and containers and collected about 40 kgs of live *Gracilaria* for transport to the cages built for the ponds of Ms. Lwin's cooperative. The seaweed was placed into containers for thorough cleaning and quarantine overnight before stocking into cages. All of the seaweed was examined by hand with fouling organisms and hitchhikers (fish, crabs, shrimp, sponges, etc.) removed. In the afternoon, hard shelled crabs were purchased from fishermen and stocked into the cages to await molting. Each crab was individually stocked into a cage and the cage was tied shut.

The morning of the 25th was spent stocking the seaweed cages into ponds and reviewing the benefits of the seaweeds being in the pond with the crab cages arrays. Through translation we discussed the wastes from the crabs (nitrogen, carbon dioxide, and fecal material) being important fertilizers for the seaweed and how the seaweeds acted to filter the water and improve the pond environment (absorbing carbon dioxide, producing oxygen, trapping sediments, hosting nitrifying and heterotrophic bacteria that would decompose wastes). In the afternoon we worked on feeding all of the crabs with low-value forage fish we had purchased in the morning from local fishermen.



Cleaning seaweed before stocking



Stocking seaweed cages in soft-shell crab pond

On the 25th of September we visited the local Buddhist monastery. The temple and monastery are the focal point for the Burmese migrant worker community in Ranong. The monks requested we use our expertise with plumbing and fish culture to repair and improve their water supply and filtration system for the fish culture pond at the monastery. As the cost was minimal and the workers were donating their time and effort, I agreed to assist and guide the work effort. We improved the plumbing at the pump station at their well, patched leaking pipes and installed a cistern to use as a holding tank and to pressurize their water supply in the temple, in the living quarters, and to the fish pond. The monks were very thankful for our assistance and hosted me and the rest of the workers for two meals.



Assisting monk with water supply for fish pond



Monks with new water tank

On the 26th we returned to Ms. Ohm's seafood company to continue discussions of test shipments of seafood to the US. The quotes were much higher than we had anticipated and a considerable amount of time was spent to explain the reasons and trying to reduce the costs. The central problem was two – fold. First, in recent months the Thai baht has increased in value considerably compared to the US dollar; from 45 baht to 1 dollar, down to 29 baht to 1 dollar. This greatly increased the cost in US dollars. The second major issue was the increased demand from China. The Chinese currency has moved in the opposite direction, increasing in value in comparison to the baht. Chinese customers have demonstrated a strong demand for Thai seafood products and brought prices up. Due to these macro-economic factors and the prior issues with documentation, it seems that exports to the US will be unlikely. However, increased sales to China are a distinct possibility.

On the 27th we checked growth of seaweeds in the ponds and stocked additional crabs. All crabs were also fed and water exchanged in the ponds. Sept. 28th was spent on a trip to the Tambon Kamphuan Community Learning Center. Fitzsimmons had worked at this center several years ago as part of the tsunami relief efforts. The Kamphuan center was used for workshops and demonstrations of sustainable aquaculture efforts as part of the restoration activities post-tsunami. During this visit we discussed the past activities and progress amongst the Kamphuan community related to aquaculture and other activities implemented after the flood, including ecotourism, small craft work and organic gardening. The current director also requested that we assist with a small demonstration of soft-shell crab culture as the market for soft-shell is very strong in Kamphuan. Ms. Lwin agreed to assist in the future and has followed up with meetings and plans in October and November.



Community leader in Kamphuan



Satisfied soft shell crab consumer in Phuket

On Sept 29th we traveled to Khao Lot and Phuket with samples of soft-shell crabs and seaweed to provide to several retail suppliers, resorts and restaurants. The intention is to expose the tourism community to locally sustainably supplied, high quality seafood items that can be prepared in traditional Thai style as well as other global cuisines which can be found in abundance in the tourist areas. On the 30th we returned to several of the establishments to gather feedback from the buyers, chefs and customers. In virtually every case we received high praise and intense interest in future deliveries. Ms. Lwin has since followed up and is currently supplying several buyers with product from the farming cooperative.

Conclusion

Setting up the seaweed operation was successful with rapidly growing seaweed and some local consumers interested in the potential markets. We have no data to support any improvements in water quality or growth and survival of soft-shell crabs in ponds with seaweed cages, but reports suggest that the crab farmers to think that there are improvements. Our original intention of developing a supply of sustainably farmed seafood to the US has encountered a couple of obstacles which we still hope to overcome. However, we were successful in developing some markets with the tourist trade in Phuket and surrounding tourist areas that may prove to be more beneficial and avoid the long transport costs.

Location / Organization	Female	Male
CNN farm	4	6
Mr. Sagnob	1	3
Ms. Ohm Seafood	1	1
Monastery	0	7
Kamphuan Community Learning Center	1	1
Phuket and Khao Lot restaurants	2	7
Total (adjusted for those present at multiple locations)	9	25