

Farmer to Farmer Aquaculture Niche Program

Trip Report # 22: Ranong, Surat Thani and Bangkok, Thailand, July 28- Aug 3, 2011

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The focus of this trip was to evaluate results from, and expand upon the earlier AwF - Farmer to Farmer missions to Ranong. I arrived at Phuket, Thailand Airport on the morning of July 29, 2011 and was met by Ms. Lwin who drove us to the farm in Ranong. We met with the farm workers in the area and examined the growth of seaweeds, crabs and tilapia in the ponds. One of the first events I observed was a bird flying in to take an almost harvest size tilapia from one of the ponds. In discussion I learned that this was a frequent event and that dogs and children with rocks and slingshot were the main defenses. Neither very effective. Later that day we went to a local hardware store to purchase bright red polypropylene twine to string across the pond to form bird netting. This has proven very effective at other farms against the larger birds of concern, while not impeding the flight of smaller non-fish eating birds.

The next day on July 30 we returned to the farm and discussed how best to plant a center pole in the middle of the pond and how to run the red twine over the post and to the opposite sides to create a string canopy that dissuades the diving birds. We also developed a feeding table for the tilapia stocks in the pond and helped to load and tie boxes of new crabs that arrived for the soft shell operation and made plans to construct additional seaweed cages for the soft shell crab ponds.



Fitzsimmons describing how to construct bird netting canopy



Surat Thani pond with shrimp/tilapia

On July 31 Ms. Lwin and I drove to the town of Surat Thani on the Gulf of Thailand side of southern Thailand. We met with farmers who were experimenting with tilapia and shrimp polyculture. This was their first attempt and they had many questions regarding our earlier trials and results. We also discussed the option of adding seaweed cages to the ponds. One of the most ingenious developments these farmers demonstrated was the installation and operation of a truck engine, modified to operate on canisters of cooking grade propane, to power up to five “long arm” paddlewheel aerators. The propane is subsidized by the government and the farmers had discovered not only was it cheaper to operate compared to diesel for the engine, it was also much better from an environmental aspect. There were no more liquid spills, the engine exhaust was much cleaner, no smoke or soot. The major drawbacks were, 1) Each canister only lasted about 15 hours and replacement had to be scheduled on a rotating basis and 2) they are

operating with the constant concern that the government will decrease the subsidy and increase the price of cooking gas. The farmers were anxious to discuss the reported benefits of rearing tilapia in cages in their shrimp ponds. They reported that although they had no hard data, their opinion was that the survival rate of shrimp was higher, that the growth rate of shrimp was the same and the algae bloom was just the kind they preferred to see in their operating ponds.



Truck engine running on cooking propane



Tilapia from cages in shrimp pond

August 1 was spent with an early morning breakfast meeting with crab sellers. Due to recent tentative political improvements in Myanmar, their currency (the kyat) has experienced a rapid appreciation. The Burmese fishermen have increased their asking price in Thai baht to accommodate the increase in the Myanmar kyat. This has put a severe strain on the soft shell crab farmers as they typically buy their crabs from Burmese fishermen who must convert the Thai baht back to kyats at Burmese banks. But of course the farmers are selling their soft shell crabs to Thai consumers. We discussed several options that the Burmese fishermen could consider until the retail prices could be adjusted higher. One suggestion was that the Thai farmers offer partial payments at their old price in Thai baht at the time they accepted the crabs and pay the new higher difference after they had sold the soft shell crabs. The Burmese fishermen said they would consider this option as they could not afford to lose their Thai customers, but also could not take a lower price as their costs were all in kyats.

After this breakfast meeting we next went to a local hardware store to purchase materials for physical improvements at the farm. Specifically, we purchased additional twine, rope, re-bar and wire to put up bird netting, pvc and net materials for cages, sheet metal to replace palm fronds over the work areas and hand tools for construction and installation. Our final stop was at the fish feed dealer shop to purchase feed for the tilapia. The tilapia had basically been growing on the natural productivity in the pond supplemented by wastes from the crab operations. I wanted to demonstrate the additional boost in tilapia growth that could be achieved with a "finishing" diet. The concept is that if the fish are nearing the carrying capacity of the pond, there is insufficient nutritional material for the fish to continue their growth. By adding some formulated feed, the fish will put on a growth spurt which will increase the average size of fish and increase their market value at harvest. With the purchase of 250 kg of feed, we have sufficient food to compare with fish left on the natural productivity of the ponds. They are testing the feed addition currently.

The afternoon of August 1 was spent on construction and installation at the farms. We worked on cage construction and putting up roofing materials. The provision of an electric drill, new hammers, shovels and hand saws increased the speed of operation beyond the hand-made or repaired tools the farmers had been using.



Farmers with feed, tools and bird netting twine



Lack of a ladder meant the tallest person had to hammer

On August 2, I met with the farmers a last time and provided a late breakfast of donuts and soft drinks. We discussed the completion of the construction and installation projects and the plans for rearing more soft shell crabs in the ponds which could be achieved with the improved water quality provided by the growing seaweed. Before noon, I departed for Phuket and arrived in time for a 3:00 PM flight to Bangkok. On arrival in Bangkok, a drive was provided to bring me downtown for a dinner meeting with the tilapia and shrimp managers, Jiang Donghua and Robbins MacIntosh for the CP Group of farms. We had a nice dinner and discussed the benefits of the polyculture systems I had been working with in Surat Thani and Ranong. Dr. Jiang, one of my dinner hosts, also insisted I use his spare bedroom in his apartment to save the project funds.

I had a 07:30 departure from Bangkok and returned to Tucson on the same day. Overall the trip had been very successful. The farmers in Ranong have reported an increase in survival of soft shell crabs and an increase in income. However, the lack of any written records frustrated the ability to collect any hard data. Production of seaweeds has generated some sales, which are completely new. The seaweeds have also been eaten by some of the farming families as a new vegetable, which should improve household nutrition. Many of the farmers are still surviving on incomes of 150- 300 baht (\$5 to \$10) per day.

Table 1.

Location / Organization	Male	Female	Number of families represented	Number of consumers benefiting	Number of recommendations
Surat Thani	3	1	3	20	4
Ranong	7	1	6	30	12
CP Group	2	0	2	20	2
Total (adjusted for those present at multiple locations)	12	2	11	70	18