



Agricultural Marketing Resource Center
Value-added Business Profile
Iowa State University

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Heartland Fish Cooperative

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Operation

Heartland Fish Cooperative is a 501-C type corporation (New Generation, farmer-owned). The cooperative has four family producer-owners with indoor, enclosed aquaculture facilities at two locations. They produce "fresh-frozen" fresh-dressed, wrapped and frozen rainbow trout and walleye pike fillets. Hybrid stripped bass production will be added in the near future, and exploratory negotiations are underway to study sturgeon production for an out-of-state investor group.

Production is accomplished using a system comprised of a series of modular fiberglass tanks and a filtration-oxygenation tower. This system is known as a re-circulating tank production system. This particular system was designed by R.C. Summerfelt, Department of Animal Ecology at Iowa State University. For various information resources on this type of production system and other aquaculture topics, access the Aquaculture National Information Center (AquaNIC) (<http://aquanic.org/beginner/systems/recycle.htm>).

At the Manning co-op, a second production line within an existing facility, as well as a new facility at a third location is planned and will be constructed as soon as product demand warrants the expansion. As markets continue to develop and product adoption increases, the outlook is positive. Current production is roughly 50,000lbs/yr from two production lines in two buildings. The current facility investment is \$260,000. At these levels, current production cost of a salable cleaned and packaged fish product, including the cost of purchasing or rearing fry, is estimated at \$2.50/lb, with the product being sold into the market at \$3.99/lb.

Operation

The motivation for this business was a desire to diversify family farm operations that had centered on hog and other livestock production. The individuals involved in the operation had a desire to move from these mature market commodity livestock operations to a non-mature growth-market industry. Aquaculture is a growth industry.

Business Development

The group first visited a number of existing aquaculture facilities and studied their production systems. They then tested the production concept by building a 1/10 -scale "research" pilot-scale system. This small line is currently used as the fingerling nursery from which the production lines receive their fish.

The group incorporated as a co-op. This mode of incorporation was attractive due to the financial incentive inherent in the 501-C type corporation (New Generation, farmer-owned) rules. Also, some initial experiences with another coop that had relied upon outside investors suggested that outside investors could expect "too much financial return too soon," at the expense of growing the business through profit reinvestment.

Market Access and Market Share

There was no existing market for farm-raised fish in west-central Iowa. Initially, the product was marketed via word-of-mouth person-to-person sales, including taking the product to farmer's markets and restaurateurs. Eventually, face-to-face contact with chefs and restaurateurs enabled those users to see, first hand, the quality and utility of the product (size- and quality-consistent, frozen packaged matched-fillet sets). This type of contact created a number of reliable outlets for the frozen-shrink-wrapped fillets produced by the co-op. An additional marketing resource was Aquaculture Magazine's (<http://www.aquaculturemag.com/siteenglish/home2.html>) Buyer's Guide, where a listing in the publication led to contacts that resulted in several out-of-state buyers.

Critical Steps

The first critical step in developing the business was demonstrating proof-of-concept to gain funding for expansion to a full production system. A second critical step was developing markets for the fish due to the location of the business well away from a major population center and within a local rural economy unfamiliar with premium fresh-fish products.

Barriers to Success

The largest barrier to market establishment was the price of the product. Within the immediate rural economy, there was a strong perception that trout is a delicacy item.

A cultural barrier was encountered in Des Moines and Chicago. Within these markets there is a strong Asian sub-market that desires fresh fish from Asian grocers. However, trout and walleyes, with respect to an Asian perception of "quality fish" do not meet traditional species-type perceptions. To obtain a product "friendly" to traditional Asian cuisine prompted a move toward the production of a stripped-bass product line.

In the course of market development, it was difficult to determine how to price the market-ready product. Access to a reliable wholesale market price is needed for "fresh-frozen fish" in the central United States. In fact, this data may not exist. There is a daily market price that is determined, to a limited extent, in markets in the northeastern U.S. However, in those markets, prices are based on ocean-catch prices that tend to fluctuate and are biased by east- and west-coast trends.

Unexpected Problems

When attempting to research the production and marketing systems, the growers found that it was difficult to get a straight answer from most other aquaculture producers. "They are all horse-traders out there," was the comment from one person who we interviewed; meaning: these are potential competitors, so why divulge the finer points of our production technology?

With respect to an aquaculture start-up, the state of Iowa had no producer-level economic development system to assist individual or group start-up ventures in this business field. Almost all current state-level value-added assistance programs at the time of this start-up (1999-2002) were focused at the co-op, or processing-plant level in the production chain, not primary-production system development or market expansion.

Although the local banker was supportive of the enterprise, based on the reputations of the individuals involved in it, the participants still had 100% risk exposure. Some grant, low-interest loan, or matching-fund would help alleviate some of the economic burden of the initial start-up cost. The vast majority of Midwestern bankers are unfamiliar with aquaculture and many could be highly skeptical of the enterprise.

As with any livestock operation, there are occasional equipment failures and similar little setbacks that create obstacles to establishing regular production runs. The co-op operators felt that the problems that they experienced were neither significant nor unusually out of line with any start-up venture.

Success or Failure

This business is succeeding, but the speed of expansion is hampered by the need to identify and develop markets for the product. The principals estimate that they are three years into a track that will yield a break-even point at seven years from inception. This they readily compared to the 10-year track for a traditional hog operation in the same geographic area. Also, one should take into account that this producer group is developing their own markets where no previous markets for farm-raised fish exist. The coop management estimates that additional production lines, if markets were available to receive product, would have a break-even point of three to five years.

The establishment of a new dry-mill ethanol plant in the same general area suggests that low-price distiller's dry grains may become a low-cost high-value source of aquaculture feed, reducing and positively impacting current production costs.

Industry / Market Changes

Much of the United States demand for seafood has been met by imports. The U.S. imports over 40% of its fish and shellfish and is the world's second largest importer of seafood. The value of imported fisheries products more than doubled during the 1980s, a trend that continued through the 1990s. This increased demand has resulted in fisheries imports, around \$10.6-billion or so per year, that are the largest contributor to the U.S. trade deficit among agricultural products. In 2002, aquaculture occupied the #2 position in the overall U.S. international trade deficit. Landings for most commercial-capture fisheries species and recreational fisheries of the United States have been relatively stable during the last decade, but many oceanic fish stocks are being

over fished and depleted through loss of spawning habitat, damage from lost drift nets, and other negative factors. With respect to these situations, aquaculture provides an opportunity to reduce the trade deficit and meet the rising U.S. demand for fish products while increasing value-added agricultural production within the U.S.

The aquaculture industry is one of the fastest growing sectors within U.S. agriculture. Production in 1990 reached 861-million pounds and generated approximately \$762-million for producers. The impact of U.S. aquaculture in 1990 was substantial: final sales value totaled \$4.75 billion; with the direct- and indirect-economic impact was estimated to be \$8.0 billion. That was a trend set ten years ago, today, U.S. aquaculture is a growth industry exhibiting from 15 percent to 18 percent market growth per year over the past several years, and has a projected market growth of 20 percent in 2003 (sources: AquaNIC and Heartland Fish Co-op management).

At Heartland Fish Co-op, as new markets for the products are identified, new production lines will be added. Additionally, as new species-specific product lines are identified for specific markets, existing or new production lines will be converted to, or designed for, the specific needs of those species.

In an attempt to find an outlet for fish processing by-products, Heartland Fish Co-op identified uses for head and offal "waste" as high-grade "starters" for the bacterial filter beds employed in municipal waste-treatment facilities. These starters were found to be of equal or higher value than the finished product. This makes the waste materials "value-added co-products" that effectively double the profitability of the entire production system, as well as eliminate any costs associated with waste disposal or remediation.

Lessons Learned

It became apparent to the producers that the basic concept of fish-production mimics hog production, but is far cleaner, a community-friendly enterprise, and is far less facility and labor intensive. Additionally, it came as a complete surprise to the producers that the processing by-products could have equal or higher value than the finished product. For this reason, examining the overall production system for a value-added "reuse" of the waste materials resulted in, not simply a cost-savings, but the identification of a second profit center other than that of the packaged fish product.