The Farmstead Creamery: Consulting for Success

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Fluid milk sales have been declining for decades in the United States, while milk production has nearly doubled over the same time period (Figure 1). The increase in production has largely resulted from an overall trend of dairy farms becoming larger and larger, capitalizing on economies of scale. This has made it exceedingly challenging for small dairy farms to remain financially viable in today's markets. In a state that ranked seventh in milk production in 2019, yet had the second smallest average herd size in the country, Pennsylvania dairy farmers have been notably impacted by these trends.[1]

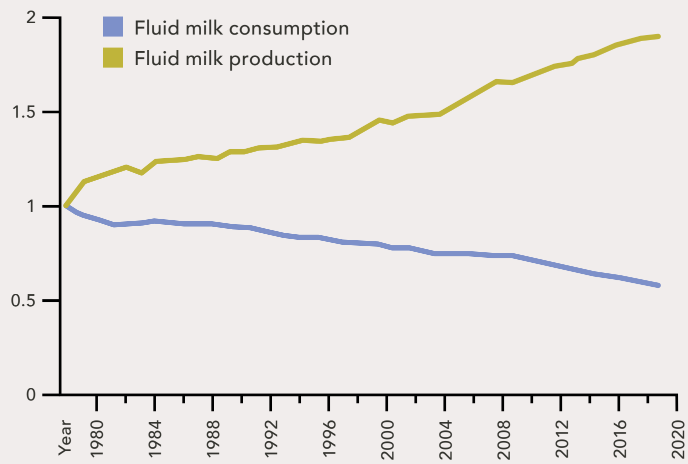
In response, many small dairies are looking toward diversifying their revenue streams with direct-market, value-added dairy product enterprises. This could be a promising strategy: though fluid milk consumption in the United States has fallen, consumption of value-added dairy products like yogurt and cheese has risen (Figure 2).

Still, adding a value-added enterprise to a traditional Pennsylvania dairy is a big investment, and a significant risk. Besides the financial burden of building infrastructure and purchasing equipment to produce new products, farm owners and their employees also need to acquire new processing and marketing skills. Often, farm owners must hire more labor to manage what is, essentially, another business. Many farms additionally risk losing their milk contracts with industry processors when they begin diverting milk to direct-market enterprises. In such a scenario, direct market becomes an all-or-nothing proposition.

To offer some perspective on these opportunities and challenges, this brief profiles three dairy farms that engaged in a consulting process to determine whether to integrate a value-added enterprise into their existing dairy operation, and how to realize profitability within an existing value-added enterprise. In some cases, farm names and minor details have been changed for confidentiality.

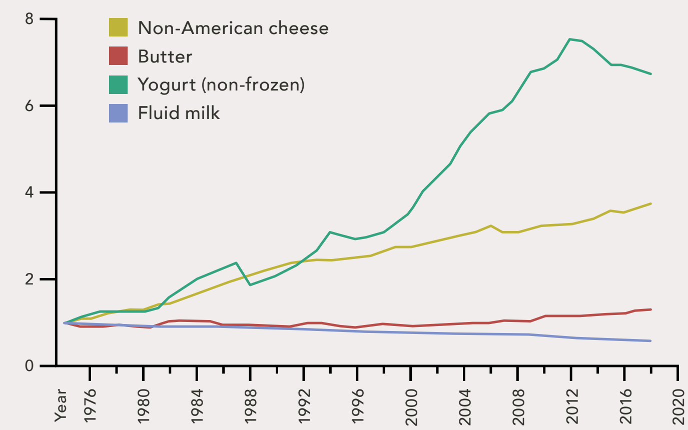
[1] *USDA Economic Research Service, 2019.*

FIGURE 1. PERCENT CHANGE IN U.S. MILK PRODUCTION & CONSUMPTION, 1975–2019
PERCENTAGE RELATIVE TO 1975



Sources: USDA National Agricultural Statistics Service; USDA Agricultural Marketing Service; and USDA Economic Research Service

FIGURE 2. U.S. DAIRY PRODUCT CONSUMPTION (POUNDS PER PERSON), 1975–2019
PERCENTAGE CHANGE FROM 1975



Sources: USDA Economic Research Service calculations with data from USDA National Agricultural Statistics Service; USDA Farm Service Agency; USDA Foreign Agricultural Service; USDA Agricultural Marketing Service; U.S. Department of Commerce, Bureau of the Census; and California Department of Food and Agriculture

Profile

Valley Dairy is a small grazing dairy in Pennsylvania. The dairy milks about thirty cows year-round, ships to a conventional milk processor, and often breaks even at best. The farm is also home to a youth summer camp, which provides valuable income, especially in recent years when conventional milk prices have suffered.

It has long been a dream of Valley Dairy's owner to add a creamery to the milking operation, and perhaps add more value to the business in the process. In 2019, the owner worked with a consultant to explore the steps necessary to realize their vision.

Insights

Partnership & vision

Valley Dairy's owner engaged in the creamery consulting process with a beginning dairy farmer who had been employed by the farm for two years. They were considering embarking on this new business venture as partners. The owner and the beginning farmer partner envisioned that cheese would be the primary value-added product made by the creamery due to its less perishable nature, as well as personal preference. Both also agreed that an important dynamic in the ultimate success of the business would lie in educating consumers about the farm's products and what makes them unique.

Understanding costs & profitability

An important part of the consultation was to understand the financial impact of investing in the creamery in terms of what capital and resources would be needed to successfully launch the new business. Valley Dairy had a "feeling" that the creamery would be a winner, but they didn't know if this was true. By working with a consultant, they were able to explore their vision with a systematic, data-driven approach. Some of the key steps in their process included:

- Talking to owners of similar operations in the region who had "taken the leap" of integrating a creamery into their business model. Valley Dairy learned about their transition processes, what cheeses are in demand, and what cheeses they could expect to make as relative beginners.
- Identifying basic equipment costs to produce the cheeses they wanted to sell, as well as the quantity of cheese they had the capacity to make.
- Identifying sales channels—from wholesale to farmers markets, on-farm sales, and sales to distributors—and understanding the relative margins that are standard within each channel.

Through this granular work, Valley Dairy was able to develop a five-year projected Profit & Loss statement for the prospective creamery, including understood assumptions about the project. The farm was also able to identify potential cheese markets and distribution channels in their region, and create a plan for how they would logistically transport the cheese from the farm to consumers.

VALLEY DAIRY'S PROJECTED CREAMERY START-UP COSTS

Building construction	**$17,800**
Laboratory (testing)	**$6,583**
Equipment	**$20,800**
TOTAL	**$44,883**

What's next?

At the end of the consultation, Valley Dairy had a clear idea of the steps and resources needed to launch and operate the proposed creamery. The dairy's owner and their beginning farmer partner also came to understand that several key questions would need to be answered before they could move forward with the creamery.

The main question they would need to answer was who would assume the primary financial risk of the venture. The farm had found funding for the proposed cheese making equipment through a Pennsylvania Department of Agriculture grant, but they still needed capital to cover

VALLEY DAIRY'S PROJECTED 5 YEAR PROFIT & LOSS

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Income	$53,680	$62,136	$69,449	$80,549	$93,571
Cost of goods sold	$23,246	$27,018	$30,464	$35,481	$41,384
Operating & fixed expenses	$27,684	$33,240	$34,224	$34,728	$34,935
NET OPERATING INCOME	$2,751	$1,878	$4,762	$10,340	$17,251

the creamery's construction. For the beginning farmer, investing heavily in construction on land where they had no real ownership felt risky. Additionally, Valley Dairy needed to further investigate the actual potential of the regional markets they identified—is the demand they're counting on really there?

In light of these unresolved questions and concerns, Valley Dairy has put their creamery dream on hold for the time being. Although initially disappointing, the consulting process gave both of the farmers involved clarity about a number of important underlying questions about the creamery as well as the farm's future. Resolving these questions will be key to moving forward with confidence.

CASE STUDY 2. RIVER RUN DAIRY: SCALING UP THE ESTABLISHED CREAMERY

Profile

River Run Dairy is a farmstead cheese-making business in Pennsylvania. The farm milks about a dozen cows year-round, and the milk is then processed by the dairy. A variety of hard, aged cheeses are made with the raw milk in a facility licensed by the Pennsylvania Department of Agriculture. About half of the cheese is sold through distributors, such as retail markets, and the other half is sold directly to wholesale accounts—primarily restaurants. Direct-to-consumer sales make up only a small fraction of overall sales.

In 2019, the dairy's owner reached out to a financial consultant with the goal of defining changes that needed to be made to improve the profitability and long-term viability of both the farm and creamery. For some time, the creamery business cash flowed and made a small profit, but did not yield significant income for the family in spite of long hours worked and a high-quality product. The owner hoped that by working with a consultant they would obtain the information they needed to decide whether to invest further in the business, or close it down.

Insights

Understanding the true cost of goods sold

After carefully detailing expenses and breaking down costs by product, it became clear that some inputs and the costs of aging cheese were not adequately accounted for by the creamery. For example, differences in costs of the various cultures used in the make process were not considered when calculating costs. Also, the loss in cheese weight as the wheels aged and lost moisture had not been tracked carefully, and so was not adequately accounted for in final cheese prices. After realizing these omissions, the farm made adjustments to their accounting to more accurately reflect the true costs of producing different cheeses, allowing them to set more effective price ranges.

Understanding pricing strategies

The farm's original pricing model did not adequately distinguish between distributor and wholesale prices, and failed to allow for the typical 30–35% margins distributors require to realize profitability in marketing the farm's product. This meant that wholesalers were being offered prices below market value on many of River Run's products, undermining both the farm's profits as well as their distributor's. As a result, River Run decided to incrementally adjust their cheese prices over a two-year period to better reflect standard pricing differentials and expected margins.

RIVER RUN DAIRY WHOLESALE & DISTRIBUTOR PRICING MODEL (DOLLARS PER POUND)

Cheese	Cost to produce	Original wholesale & distributor price	Original margin	% Price increase to wholesale	New distributor price	New wholesale price	New wholesale margin
A	$7.40	$9.50	22.1%	26.3%	$9.50	$12.00	38.3%
B	$5.84	$7.50	22.2%	26.7%	$7.50	$9.50	38.6%
C	$5.25	$8.00	34.4%	25%	$8.00	$10.00	47.5%
D	$6.26	$8.00	21.7%	37.5%	$8.50	$11.00	43.1%
E	$5.87	$7.50	23.5%	20%	$7.50	$9.00	34.7%
F	$5.74	$7.50	23.5%	20%	$7.50	$9.00	36.3%
G	$4.57	$7.00	34.8%	0%	$7.00	$7.00	34.8%

Notes:

- *The beginning margins for cheeses C and G are higher than the others because River Run's original pricing strategies included a high level of "guess-timating".*
- *The wholesale price for cheese G did not change as market research determined it was already fairly priced.*

What's next?

After adjusting their product prices to realize the true cost of goods sold, as well as aligning with typical industry pricing practices, River Run Dairy recognized that in order to meet their profit goals, the creamery needed to double production. However, aging space for the farm's cheese is already maxed out, and the level of production necessary to make the business financially sustainable is not possible in the current facility. River Run's owners had long sensed that capacity was a serious constraint to profitability for the farm and creamery, but the consultation process translated that intuition into real numbers. The farm is now engaged in working to finance this proposed expansion of aging space, with a view toward supporting the next generation.

RIVER RUN DAIRY CURRENT & FUTURE BUDGETS

Current budget	Farm	Cheese	Total
Sales	$40,042	$64,994	$105,018
Cost of goods sold	$36,862	$36,829	$73,691
Gross profit	$3,162	$28,165	$31,327
Expenses	$7,128	$14,139	$21,267
NET OPERATING INCOME	($3,966)	$14,026	$10,060

Future budget	Farm	Cheese	Total
Sales	$75,509	$150,658	$226,168
Cost of goods sold	$48,593	$83,843	$132,436
Gross profit	$26,916	$85,045	$111,961
Expenses	$24,137	$14,955	$39,092
NET OPERATING INCOME	$2,780	$70,090	$72,869

Notes:

- *Farm expenses include the costs of maintaining the dairy herd, replacement animals, machinery expenses—anything that goes into producing milk and farming the land (primarily hay fields and grazed pasture).*
- *Farm sales is what the creamery pays for the milk used for cheese, as well as hay sold. Increasing the aging space would allow the farm to make additional cheese, rather than dumping extra milk when the aging space is full, and will increase milk sold. Eventually, the farm expects to add a few more animals.*

VALUE-ADDED SNAPSHOT. FIDDLE CREEK DAIRY: DIVERSIFYING THE FARM & CREAMERY

Profile

By 2016, Fiddle Creek Dairy in Lancaster County, Pennsylvania had been selling greek- and swiss-style yogurt from their small, grass-fed Jersey herd (8–10 milking), for about six years. Their product was in demand, but Tim and Frances, the farm's owners, were considering giving up the business for a number of reasons—one of which was that they simply weren't achieving their desired level of profitability.

Insights

Working with a consultant allowed Fiddle Creek to envision and evaluate a number of options for both the farm and the value-added business moving forward. One thing they realized was that in order to maintain the farm scale they preferred, they would need to diversify Fiddle Creek in multiple ways. Toward that end, they have:

- Added silvopasture elements to their pastures seeking to improve herd and soil health, and to possibly develop profitable, long-term tree fruit and nut crops;
- Diversified their product line by partnering with a local cheesemaker to produce their own camembert to sell, in addition to their yogurts;
- Expanded their farm stand's offerings with products from other local farms, focusing on selling direct-to-consumer as much as possible to realize the highest possible returns; and
- Expanded their farmers market presence, from one market per week to three.

What's next?

Tim and Frances don't know if these measures will be enough to attain the level of profitability they desire, but they now have strategies in place that could provide their farm and creamery with a real chance for success. "We're learning to optimize our business," Tim says. "Understanding gross margin versus gross profit, for instance, and which figure really means more for our business, was one simple, helpful insight we gained from our work with the consultant." Two clear positives for the farming family is that they know there is consumer demand for their product, and their market is growing. "We had someone in Florida try to order product recently," Tim laughs, after being asked about his biggest surprise with the business. "We know people love our yogurt, but that was definitely a surprise!"

Workshop participants inspect the new tree plantings at Fiddle Creek Dairy as the farm develops silvopasture as part of their diversification strategy.

RESOURCES

Opportunities and resources for dairy farmers interested in engaging in similar consulting work as described in this brief include:

- The **Center for Dairy Excellence** in Pennsylvania, in particular their ongoing **Dairy Decision Consultant** program, which provides funding to dairy farmers for professional consultation services.

- The **Pennsylvania Department of Agriculture**, which administered the **Farm Vitality Planning Grant** program, as well as the **Dairy Investment** program.

- The **Pennsylvania Cheese Guild**, a community of cheesemakers across the state which has been an important ally and resource for many small farms exploring possibilities for expanding their dairy market.

- The **USDA Value-Added Producer Grant** program helps farmers create and expand value-added enterprises, and can fund both planning and implementation.

- **Pasa Sustainable Agriculture** administers **Dairy Grazing Apprenticeship** in Pennsylvania and New Jersey, which supports both the training and business development needs of new and established dairy farmers.

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This resource is available on Pasa's website at pasafarming.org/farmstead-creamery. For more information about this resource, contact research@pasafarming.org.

Pasa Sustainable Agriculture works to cultivate environmentally sound, economically viable, and community-focused farms and food systems.