



# Valuing labor and improving efficiency on an integrated farm

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Farmers Tony and Dela Ends want their farm to sustain the land and their family. They began selling subscriptions to their Community Supported Agriculture (CSA) farm in 1994. They also wanted to successfully integrate livestock production into their farm through a value-added, direct marketing enterprise. Their goal was to do this in ways that respect the scale of a small family farm, satisfy their commitments to stewardship, and eliminate the need for off-farm income.

Using milk from their goats to make goat milk soap was a way to accomplish this. From 1999 to 2001, their goat milk soap income grew, and the Ends considered expanding this enterprise. They received a 2002 U.S. Small Business Innovation Research grant to conduct applied research and investigate and test markets. The grant's purpose was to increase the Ends' knowledge of goat milk soap and to share that knowledge with other interested farmers.

Throughout the research process, the Ends made observations that can help other farmers involved in value-added, direct marketing enterprises. CIAS Economist Don Schuster provided an enterprise-by-enterprise economic analysis of the Ends' farm operation to help evaluate the potential of goat milk soap.

### Farm strengths and weaknesses

Scotch Hill Farm CSA serves 126 members and occupies two of the home farm's five acres (more acreage rented nearby provides more land for vegetables, hay and bedding). Marketing the CSA has been a strength for their farm.

Schuster's analysis showed that the biggest farm weakness was labor for the dairy goat operation. Labor costs represented 74 percent of all dairy goat expenses. So the Ends took a closer look at their dairy goat operation.

Their total milk volume in 2002 was 2,498 gallons, which far exceeded the family's needs but was not enough to be added to a milk route. In 2002 they only used 150 gallons, or 6 percent of their milk production, for soap. The rest went to other, less lucrative markets.

### The opportunity cost of labor

"Labor isn't free, even when you do it yourself," Schuster warns. "You are passing up an opportunity to use that time earning money elsewhere." Dela, who did most of the milking along with her children, has a college degree. As she could be earning a good salary off farm instead, Schuster used \$18/hour to value her time along with her children's work.

If Scotch Hill Farm purchased goat milk for their soap-making operation, it would cost \$2 per gallon. Raising and milking the goats themselves, it costs them over \$9 per gallon. If Dela's labor was valued at \$8.33 per hour—the Wisconsin average for farm labor—rather than \$18 per hour, the cost of the home-produced goat milk would be over \$4 per gallon. This is still twice as much as purchased milk.

Clearly, it would make more economic sense to buy the milk rather than produce it. But the goats provide non-monetary benefits to the Ends, including providing a positive experience for the kids, a more complete farm experience for CSA members and a holistic farm system that incorporates plants and animals.

### Evaluating alternative strategies

The Ends considered several alternatives to address the high cost of their own milk:

- Sell the milk goats and switch to meat goats, sheep or another animal to provide manure for the vegetable operation. They would then have to buy milk or quit making soap. This would leave the Ends family with lower returns and lower labor requirements.
- Manage the dairy differently so the costs, especially labor, would be lower. They could



*The freezer in the new kitchen makes year-round soap production possible by providing space for pasteurized goat milk.*

accomplish this by reducing the size of the goat herd, becoming more labor efficient, and purchasing more fertilizer for the vegetables.

- Improve profits. Use a higher portion of the milk produced for soap and market the soap in a way that captures value for benefits like having a closed nutrient cycle. One-third of the people who bought the Ends' soap who were surveyed indicated that the integrated farming practices prompted them to buy it.

Since the Ends liked the goats and wanted to keep them, they concentrated on the dairy management and profit options. They have made progress on dairy efficiency by reducing the size of the goat herd. Milking and livestock chores are down to 45 minutes to 1 hour per day, much less than the prior 75 to 90 minutes. The Ends children and interns now perform these chores, allowing Tony and Dela to focus on value-added production and marketing phases.

The Ends also wanted to improve profits. But the soap-making operation had its own strengths and weaknesses. Schuster provided an analysis of the costs and benefits of this enterprise to see how to improve profitability.

### **Solutions with multiple benefits**

Dela started out by making soap in small batches in the family's kitchen. She moved the everyday utensils out of the way and brought out the soap-making supplies and spent extra time cleaning up to return the kitchen to normal. The Ends' dining room was filled with soap in various stages of production. "We decided that a commercial kitchen would improve our soapmaking enterprise while opening up other opportunities," Dela says.

The Ends family provided most of the labor in building the new kitchen, with a total cost of \$24,000. Because they followed commercial kitchen codes when building, the kitchen can also be used to process produce from the CSA enterprise and prepare other value-added products, like pizzas with homegrown vegetable toppings, canned vegetables, pies and jelly.

The new kitchen and equipment has made the soap-making process and clean up much

quicker and more cost effective. Previously, it took 9 hours and 45 minutes to make a batch of soap, and the cost per batch was \$201 including labor. In the new kitchen, it takes 2 hours and 55 minutes, and the cost per batch is \$97, including depreciation and labor.

### **Bulk supplies for wholesale prices**

Because of the operation's small size, the Ends were spending a lot of money and time obtaining supplies. After much persistence, Tony found a distributor from whom they could buy quantities of supplies at wholesale prices. Tony adds, "With the storage available in the new kitchen, we can order ingredients less often with less running around."

The cost of ingredients for one batch of soap is down about one-third since switching to the current distributor, and mileage costs are down too. Several 40-mile trips per week have now been cut to two 240-mile annual trips to a bulk soap ingredient supplier in Chicago. These trips are usually combined with sales events, which help defray transportation expenses.

### **Focused marketing strategies**

After selling at a variety of outlets, Tony found that benefit sales (sales at which a certain percentage of sales are donated to charity) at six events in 2002 and 2003 were successful and will be a focus of future marketing. The Ends are developing other natural ingredient and milk-based skin care products. They continue to work towards having a marketing cooperative of small dairy farm soap makers in their area.

"Our soap operation has grown from grossing \$800 in its first year to \$23,600 in 2003, with both soap production and farm costs decreasing," Tony says. "This experience taught us to define our goals, draw on our strengths and address our weaknesses in developing a successful new farm venture."

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*The Center for Integrated Agricultural Systems (CIAS) brings together university faculty, farmers, policy makers, and others to study relationships between farming practices, farm profitability, the environment, and rural vitality. Located in the College of Agricultural and Life Sciences at the UW-Madison, it fosters multidisciplinary inquiry and supports a range of research, curriculum development, and program development projects. For more information on the Center or on the research in this Brief, contact: CIAS, 1450 Linden Drive, UW-Madison, Madison, WI 53706*

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