Union of Concerned Scientists

CREAM OF THE CROP

The Economic Benefits of Organic Dairy Farms

EXECUTIVE SUMMARY

Milk is perceived as a healthful food produced by happy cows on green hillsides. But the reality of U.S. dairy production doesn't quite match the wholesome image. Hundreds of thousands of small pasture-based dairies have disappeared from the landscape as milk production is increasingly occurring at CAFOs (confined animal feeding operations)—large and crowded facilities that take advantage of ill-advised farm policies to make a less nutritious product; pollute our air, water, and soil; and reduce the effectiveness of antibiotics in humans.

Comparing organic and conventional milk production in two major dairy states, Vermont and Minnesota, we found that organic dairies offer greater regional economic impacts than conventional dairies.

This current trajectory is not in our long-term interests. Identifying methods by which milk can be produced for healthful consumption and with a smaller environmental footprint, while simultaneously supporting rural economic development, should be a priority.

One attractive alternative, and the subject of this report, is the organic dairy sector. Under rules of the U.S. Department of Agriculture (USDA), "organic milk" must come from cows that graze on pasture for the entire length of the growing season, eat organically grown feed (i.e., produced without the use of synthetic chemicals), and are not treated with hormones or antibiotics. Well-managed organic dairy farms can reduce many of the environmental and public health risks associated with most conventional dairy farms. In addition, studies have shown that cows on pasture diets produce milk with more healthful fatty-acid profiles relative to cows in confinement dairies.

Organic Dairies: Good for Farmers and Good for the Economy

Given these benefits, organic dairy products have experienced significant growth in consumer demand over recent years—so much so that organic milk has been in short supply in some regions. The organic dairy sector, virtually nonexistent just two decades ago, has become the most prominent market opportunity for smaller pasture-based dairies to remain in production. National sales of organic milk from farms are now at least $750 million annually. And organic milk often serves as a "gateway" product for many consumers moving toward organic foods in general.

The development of the organic dairy sector has provided an alternative for farmers who do not want to "get big or get out." It helps maintain regionally based milk production by preventing smaller pasture-based dairies from going out of business; many small organic dairy farmers believe they would no longer have a farm had they not been able to convert.

To our knowledge, this report is the first to calculate the economic value associated with organic dairy farming, and it reveals the potential for that sector to create opportunities and jobs in rural economies. In the scenarios we consider—by comparing the economic impacts of organic and conventional milk production in two major dairy states, Vermont and Minnesota—organic dairies offer greater regional economic impacts than conventional dairies.

Increased production is needed to help satisfy the growing demand for organic milk. For this to occur most effectively for farmers and consumers, we show that

Organic dairy farmers—such as Francis and Susan Thicke, who operate Radiance Dairy in Iowa—must always be in touch with their herd to make sure that the cows are healthy and well fed. Photo courtesy of Leopold Center for Sustainable Agriculture/Northeast Organic Dairy Producers Alliance/Francis and Susan Thicke

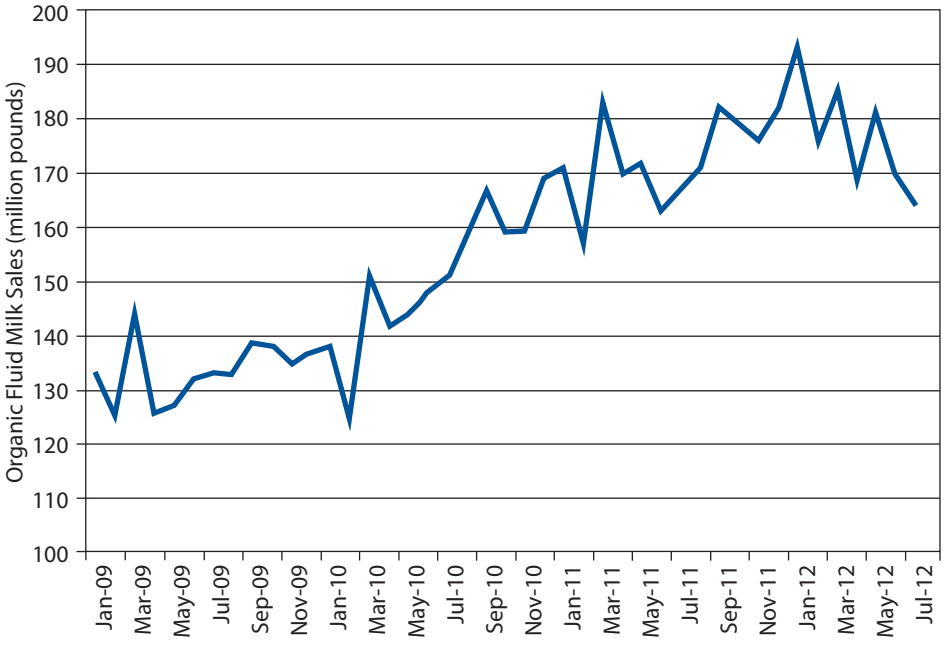
Sonja Heyck-Merlin of Clovercrest Farm in Maine shows that operating an organic dairy farm can often be a family business.

current farm policies need to change. Regulations for CAFOs must become more stringent; at present they are allowed to give antibiotics to healthy cows (which reduces the effectiveness of antibiotic therapy in humans), are not adequately regulated with regard to air and water pollution, and frequently are not subject to zoning requirements. Meanwhile, federal dairy programs are underfunding important research programs that could improve the efficiency of pasture-based systems, and programs to support dairies are not structured to help organic dairy farms.

Significant improvements are therefore needed in federal policies so they can help organic dairy farmers operate their farms more effectively and endure difficult market conditions. However, revisions currently proposed for federal dairy programs would further subsidize the entrenchment of CAFOs at the expense of organic and other dairies that engage in sustainable production of more healthful milk.

As of this writing, organic dairy farms have been challenged by the high costs of organic feed, a situation exacerbated by the 2012 drought. Unlike conventional dairy farms, the price that organic dairy farms receive for milk is set by long-term contract. This implies that rising input prices place them in a financial squeeze, as organic dairies cannot increase the price they receive for milk by decreasing supply. To rectify this problem, we identify principles for reforming farm policy in a way that will effectively support organic dairy farms.

Consumption of Organic Fluid Milk Is Increasing



Source: U.S. Department of Agriculture—Agricultural Marketing Service.

Report Methodology and Major Findings

We assembled financial data from organic and conventional dairy farms in Vermont and Minnesota because the organic dairy farm sector is prominent in both states, with relevant information available over a multiyear period. In addition, conducting case studies in two distinct locales—the Northeast and the Upper Midwest—

allowed us to assess how the economic impacts of small pasture-based farms vary by region. We developed dairy farm production functions per region and per dairy type by decomposing the farm financial data into purchased inputs and returns to land, capital, and labor. We then used state-level "input-output" models to calculate economic impacts.

We calculated the economic value of organic dairy farms using several metrics. *Output* is the value of an industry's production within the state. *Gross state product*, which equals the difference between output and the costs of purchased intermediate inputs within the state, measures the incremental economic value that a sector provides to the state's economy. *Labor income* represents the proceeds from employment, including wages, benefits, and revenue of self-employed business owners.

These economic values for the two states are as follows:

- Vermont's 180 organic dairy farms contribute $76 million in output, 1,009 jobs, $34 million in gross state product, and $26 million in labor income to the Vermont economy.
- Minnesota's 114 organic dairy farms contribute $78 million in output, 660 jobs, $32 million in gross state product, and $21 million in labor income to the Minnesota economy.

We also compared the relative economic impacts of conventional and organic farms in these two states by asking which of the organic and conventional farm sectors provide greater economic impacts within their states when both experience the same hypothetical level of increased sales (in this report, we considered a $5 million increase in revenue). We found that increased sales from organic dairy farms in Vermont and Minnesota lead to greater economic impacts in those states when compared with the results of an equivalent level of sales from conventional dairy farms. We report the results as percentage comparisons because the relative results will not change for any given level of hypothetically increased sales.

Specifically, we found that:

- In Vermont, an increase in sales revenue to organic dairy farms results in a 3 percent increase in the state's output, a 39 percent increase in labor income, a 33 percent increase in gross state product, and an 83 percent increase in employment relative to an equivalent increase in sales revenue for conventional dairy farms.
- In Minnesota, these economic impacts are 4 percent, 9 percent, 11 percent, and 14 percent greater, respectively, for the organic sector relative to the conventional sector.

Recommendations

Existing dairy risk-management programs can help dairy producers cope with market risks, but these programs are not structured for organic dairy farms. Thus the Union of Concerned Scientists recommends that the programs be revised to accommodate the risk profile and production characteristics of the organic dairy sector. Our recommendation has four parts:

1. The USDA should reform minimum-pricing orders to make them more effective for the organic dairy sector.

Federal milk marketing orders (FMMOs) establish minimum prices that dairy processors must pay to farmers. Such marketing orders create a revenue-pooling system whereby the minimum price each dairy receives is a weighted average of prices for various end uses of milk in a region. FMMOs set higher minimum prices for fluid milk relative to manufactured dairy products such as cheese and butter.

The justification for revenue pooling is based on the equity principle that if each dairy is producing an identical commodity, they all should receive the same minimum price. However, these orders were first established in the 1930s—when dairies were much smaller and well before the organic sector even existed. Organic milk is not identical to conventional milk. Organic milk is produced through different farming practices, has a different nutritional content, and is perceived by consumers as being distinct from conventional milk. But farm policy makers, apparently trailing the public, fail to distinguish between the different types of milk, though it is no longer equitable for them to do so.

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Organic dairy cows—such as the ones shown here at an organic dairy farm in Maine—have a greater amount of forage in their diet than conventional dairy cows.

Because a greater percentage of organic milk is sold in fluid form compared with conventional milk, organic milk processors have to make sizable payments into FMMO pools. However, these payments do not benefit organic dairies, as organic milk prices are generally set by organic processors, independently of the FMMO, at higher levels. Thus the overall effect of the FMMO as currently structured is to reduce both the production and consumption of organic milk. While evaluating the relative merits of various alternatives to reforming FMMOs requires more in-depth study, the USDA should nevertheless commit itself to revising FMMOs so that they are effective for organic producers, organic processors, and consumers.

2. Congress and the USDA should customize risk-management programs to reflect organic milk market conditions.

Volatile market conditions in the dairy sector resulted in new risk-management programs being proposed during deliberations on the 2012 farm bill. For example, a subsidized insurance program was suggested that would provide payments to dairies

Photo courtesy of Northeast Organic Dairy Producers Alliance/Kathie Arnold

Cows on organic dairy farms—such as Twin Oaks Dairy in New York (above)—graze on pasture during the growing season.

when the difference between milk prices and feed costs narrows. Also under consideration is a voluntary supply-management program intended to prevent dairies from producing more milk during adverse market conditions—an action that collectively would decrease milk prices further.

Among other drawbacks, these programs are designed for conventional milk market conditions. While this doesn't preclude organic dairy farms from accessing them, differences between conventional and organic milk market conditions imply that the programs may be largely ineffective for organic dairy farms. We show in this report that, in recent years, organic feed costs have increased sharply for organic dairies, and the financial situation for organic dairy farms has become more precarious during the extreme drought of 2012. Subsidizing one particular production method also reduces incentives for dairies to reduce production costs.

To make these proposed risk-management programs more effective, they should be applicable to organic dairies when the difference between organic milk prices and organic feed costs narrows. Further, any payments that are withheld from organic dairies in a supply-management program should be used to promote the demand for organic milk specifically, and not for conventional milk.

3. Congress should maintain or increase funding for programs that support organic agriculture.

The USDA already offers some modest incentives to encourage organic agriculture, and they can be useful to organic dairies in particular. Expansion of these programs—such as the organic cost-share certification program, which helps farmers certify their organic farms, and programs that fund research on organic production systems—would further support organic milk production and rural economic development. Expansion of on-farm conservation programs could also help organic dairies. One example is the Environmental Quality Incentives Program, which provides technical and financial assistance to farmers for developing efficient pasture-management systems, installing pasture fencing, and implementing specific conservation practices.

4. Congress should fund, and the USDA should implement, programs that support regional food-system development.

Because organic dairy farms are an important component of regional food systems and contribute to rural development, programs that support the expansion of these food systems could help the organic dairy sector. For example, rural development programs such as value-added producer grants could help organic dairies develop milk-bottling facilities or promote other organic dairy products—including cheese, butter, yogurt, or ice cream. And farm-to-school programs that help schools do their sourcing from regional farmers could also spur the expansion of organic dairy production in many areas.

Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

Printed on recycled paper using vegetable-based inks

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