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# Dairies and local economic development

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This fact sheet is one in a series intended to answer — with science-based land-grant university research — questions frequently asked by the public about issues and needs affecting agricultural growth, urban expansion, and rural community development in South Dakota.

During 2002, the year with latest available USDA figures, livestock production in South Dakota represented 50.7% of total agricultural cash receipts, followed by 42.4% for crops and 6.9% for government payments. Dairy products, at \$178,176,000, were fifth of all agricultural cash receipts and were a highly significant portion of the state's economy.

In light of possible dairy expansion in the state, several questions need to be answered. Do dairies add jobs to the labor force and does this depend on the size of the dairy? How do these dairies indirectly affect other industries? How do dairies impact economic development in local communities?

Studies on these topics have been conducted in other states, and brief findings are presented. Names of report authors follow the discussion. Refer to the references list at the end of this fact sheet to obtain the full studies.

## Where do local dairies spend their money?

Net farm income and return to operator management and capital rose following expansion of dairy farms in Wisconsin and Michigan. Purchasing feedstuffs and other inputs, instead of growing them on the farm, and the hiring of consultants also increased with expansion.



A common practice of dairy farmers in this survey was to purchase forages and/or grain and contract-raised heifers. Artificial insemination, cattle procurement, manure hauling and application, and parlor maintenance also tended to be contracted off-farm, along with the hiring of additional employees. Farms that expanded more than doubled the use of off-farm inputs (Hadley et al. 2004).

Loss of dairies is a serious concern in traditional dairying states because it adversely affects agribusiness firms that support the dairy industry. Dairy farm numbers are reaching the lower limit of critical mass where feed companies, veterinarians, dairy processors, and other specialized services cannot find sufficient business volume to justify their businesses (Bragg and Dalton 2004).

In an Ohio report, dairies had a positive economic impact on the local community in both the short and long term. The seven dairies in this study were all constructed between 2000 and 2002 and averaged 568 milk cows. One of the questions addressed was whether dairies spent their money within the county.

Key input costs across all seven dairies totaled \$9,938,000 per year. Of that amount, 39.5%, or \$3,923,950, was purchased within the study area. Concentrate feeds bought from local grain elevators was the highest individual cost for these dairies. Forages and corn for silage ranked second and third, respectively, at \$3,063,000, or 30.8% of the total value. Of this amount, 88.7% (\$2,718,150) was purchased locally.

Labor hired at the seven new dairies, not including the owners and their families, consisted of 6 full-time salaried employees, 50 full-time hourly employees, and 2 part-time hourly employees. Total annual wages and benefits paid to non-family labor for the seven dairies were \$1,416,000, for a weekly average compensation per employee of \$467.

The researchers concluded that the seven dairies created a one-time economic impact of more than \$2 million from the construction of the dairies and an annual impact for the community of nearly \$23 million. They estimated that the dairies' activities would support an additional 58 jobs directly and, through indirect and induced effects, another 25 jobs elsewhere in the local economy (Roe et al. 2003).

When a dairy operation spends money locally, it creates a multiplier effect of more than two and a half times the original dollar spent. In other words, for every \$1 spent, roughly \$2.50 in wages and related business transactions are contributed to the local economy. Pennsylvania researchers estimated that dairy production and associated businesses contributed more than \$4.2 billion per year to the state's economy between 1998 and 2002, creating a ripple effect on both the agricultural industry and the economic well-being of the community (Pennsylvania Center for Dairy Excellence 2004).

### **What types of jobs do dairies provide?**

Jobs that dairies provide can be classified as direct or indirect. Milkers, feeders, herdsman, calf-care workers, and others that work

at the dairy on a daily basis hold direct jobs. Results from a survey of dairies located in midwestern and western states that had on average 928 cows appear in Table 1. Over eight employees were non-family members, half of them filling milker positions.

Indirect jobs are those in the community that are supported by dairies. They include jobs at supporting businesses—repairing and maintaining equipment; selling seeds, feeds, fertilizer, and supplies; and providing veterinary services, breeding supplies, and medicines, to name a few.

Dairy farms also support indirect jobs for others, such as teachers, as children from families employed at local dairies will attend local schools. Farms that expand their operations make use of consultants more frequently. The most common consulting services utilized are nutritionists, either private or from the agribusiness firms from which farms purchase their feedstuffs (Billikopf 2000). Agribusinesses supply many consulting services; however, some of the farms utilized the farm management expertise offered by Extension programs. Agronomic consulting was one common service requested, from either independent agribusiness firms or Extension specialists (Hadley et al. (2002).

A recent University of Minnesota publication stated that for every 1,000 dairy cows, the contribution to the community per year was approximately \$2.7 million, employment of 12 people, and use of 1,224 acres of corn and 621 acres of hay. The purchased services for 1,000 animals added \$65,550 in veterinary and breeding, \$167,232 in interest, \$63,835 in supplies, \$58,650 in utilities, \$57,600 in taxes and insurance, and \$342,985 in yearly wages (Conlin 2003).

### **What kind of wages do dairies provide?**

The Wisconsin Center for Dairy Profitability reported that, between 1995 and 2003, paid labor per cow increased 78% (Graph 1). When broken down by herd size the paid labor cost per cow increased from \$318 in the "51 to 75" cow category to \$539 in the "more than 250" cow category. Part of this increased labor cost per cow was due to larger farms with a higher percentage of paid labor. According to Collins (2000), the current trend of dairies to expand results from the need to decrease capital costs per cow. He added that this new type of dairy would use more purchased inputs, including labor.

Large dairies give producers increased leverage with suppliers, allowing the capture of significant cost savings and improved profitability. Increased scale of the operation also makes it possible to spread out overhead costs (facility investment, especially parlors, tractors and other large equipment; consultants; manure management, etc.) (Eickers et al. 1992).

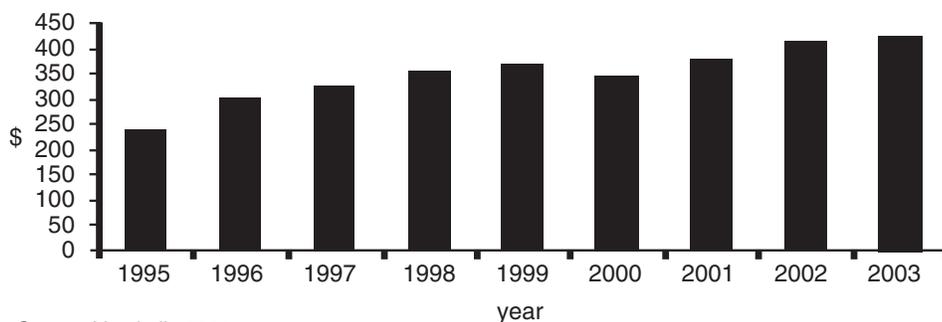
As a result of the higher utilization of capital and management-intensive technologies, larger farms have higher per-cow productivity than smaller farms. Southern Illinois University-Carbondale surveyed 405 dairies (45 of them from South Dakota) that expanded their operation to an average size of 513 cows. Milk production per cow in these herds increased from 18,024 lb in 1997 to 20,095 lb in 2003 (Eberle et al. 2004).

**Table 1. Non family employees working on the dairy**

	Average per dairy	Maximum per dairy
Milk/pushers	4.5	25
Cow feeders	0.7	4
Calf feeders	0.4	4
Herdsmen	0.9	6
Other outside labor	0.8	6
Management	0.2	2
Farming (dairy related)	0.4	6
Office	0.2	2
All around	0.3	6
Mechanic	0.2	2
Hospitalist	0.1	2

Source: Billikopf 2000.

**Graph 1. Paid Labor Costs per Cow. 1995–2003.**



Source: Vanderlin 2004.

The Wisconsin Center for Dairy Profitability found that the more profitable farms averaged more cows (34 vs. 31) per worker and more milk sold per worker yearly (729,591 vs. 594,911). Because of their productivity, larger farms are able to stay competitive and financially solvent even during times of depressed milk prices (Vanderlin 2004).

Not only do larger dairies pay more for labor, but according to research at Michigan State University, they also hire more employees. An index number of 1.0 was used to represent labor of one adult involved in full-time employment in the farming operation. The mean in this study was 2.1 for small-scale dairies, 3.2 for medium, and 4.4 for large dairies. Most large dairies, in other words, have at least four full-time workers, most medium-sized dairies about three workers, and most small dairies about two workers.

Hired help accounted for about 15, 31, and 35% on small, medium, and large dairies, respectively. Large dairies not only pay higher

wages on a per-cow basis but also hire five times more employees than smaller operations (Schwarzweiler 1994).

During 2002, livestock production in South Dakota accounted for 71% (\$4.1 billion) of the total economic impact of livestock production, processing, and the wholesale trade industries. Dairy contributed \$248 million or 6% of the total, down \$81 million from 2001. Farm employment as a percentage of total employment in South Dakota fell from 20% in 1970 to 7% in 2000 (Beutler 2003).

There is concern that the loss of dairy farm numbers will adversely affect the sustainability of rural communities. Several studies from other states have shown that dairies support jobs directly through employment at the dairy and indirectly in their local communities. Numerous surveys and research projects have also found that recently expanded dairies tend to make use of outside resources, relying heavily on the purchase of local feeds, inputs, labor, and other services and resulting in a local economic multiplier effect.

## References:

- Beutler, M. 2003. Impact of South Dakota agriculture 2002. SDSU CES ESS1404B.
- Billikopf, G.E. 2000. Dairy USA wage survey 2000. University of California Ag Extension. <http://www.cnr.berkeley.edu/ucce50/ag-labor/7research/7res02.htm>
- Bragg, L.A., T.J. Dalton. 2004. Factors affecting the decision to exit dairy farming: a two-stage regression analysis. *J Dairy Sci* 87: 3092-3098.
- Collins, K. 2000. Statement by USDA Chief Economist to Senate Committee on Agriculture, Nutrition, and Forestry.
- Conlin, J. Dairy cows are rural economic development engines. *Dairy Initiatives Newsletter* 12:1. Department of Animal Science, University of Minnesota.
- Eberle, P.R., R. Milliman, W. Peterson, C. Rendleman. 2004. Promotional efforts vs. economic factors as drivers of producers' decisions to expand or start a dairy. Presented at the American Agricultural Economics Association ann mtg.
- Eickers, S., J. Fetrow, S. Stewart. 2002. Marginal thinking: making money on a dairy farm. <http://www.das.psu.edu/dcn/WORKSHOP/dcn2002/docs/eicker.pdf>
- Hadley, G.L., S.B. Harsh, C.A. Wolf. 2002. Managerial and financial implications of major dairy farm expansions in Michigan and Wisconsin. *J Dairy Sci* 85: 2053-2064.
- Pennsylvania Center for Dairy Excellence. Dairy in Pennsylvania: a vital element for economic development. <http://www.padairystake.org/links/ValueofIndustry11-04.pdf>
- Roe, B., N. Bowen, G. Davis, R. Fleming, A. Klenschmidt, T. Langham, J. Lopshire, K. Heffelfinger, M. Stockman. 2003. Economical and fiscal impacts. case study of seven recently constructed dairies in Van Wert County and Paulding County, Ohio. <http://www-agecon.ag.ohio-state.edu/resources/docs/pdf/04D3ABE6-53F4-497F-A74ABCC5BC1E2A6F.pdf>
- Wisconsin Center for Dairy Profitability. 2002. Rethinking dairyland: background for decisions about Wisconsin dairy industry. Paper 78A, College of Agricultural and Life Sciences, University of Wisconsin-Madison.
- Schwarzweiler, H. 1994. Dairying in Michigan's thumb: restructuring for the future. Department of Sociology, Michigan State University. *MSU Extension Dairy Bulletins* - R5219201.
- Vanderlin, J. 2004. Milk production costs in 2003 on selected Wisconsin dairy farms. Wisconsin Center for Dairy Profitability.

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