

Dairy Farm Investment Tax Credit To Renew Wisconsin's Essential Producer Infrastructure

- **For taxable years beginning after December 31, 2001, and ending before January 1, 2008**
- **A credit against income and franchise tax imposed equal to 10% of amount claimant paid for eligible expenses.**
- **Eligible expenses includes the construction, improvement, or acquisition of buildings or facilities, and the buildings to contain the facilities, for dairy animal housing, confinement, feeding, milk production and waste management, including any of the following if related to dairy animals: free stall barns, fences, watering facilities, feed storage and handling equipment, milk parlors, robotic milkers, scales, milk storage and cooling facilities, bulk tanks, manure pumping and storage facilities, digesters, and equipment to produce energy.**
- **Aggregate amount of credit for any claimant is \$50,000.**
- **Provides for a 15-year carry-forward.**
- **Individuals are eligible. In addition, partners, members of limited liability companies, and shareholders of tax-option corporations may claim the credit in proportion to their ownership interest.**

This idea advanced by Mike Krutza, has been endorsed by the WFC-MAC Dairy Committee and is being drafted at the request of Mike and WFC. Other individuals representing dairy production, processing and credit have contributed their encouraging and helpful thoughts to this legislative effort.

WISCONSIN RURAL FINANCE AUTHORITY

- Potential Legislation -

- Consolidate Wisconsin agricultural loan and guarantee programs and create a Wisconsin Rural Finance Authority similar to the Minnesota Rural Finance Authority
 - Current Wisconsin agricultural finance guarantee programs are underutilized
 - Minnesota has issued more than \$116 million in participation loans to nearly 2,000 Minnesota farmers
 - Financing would be through state of Wisconsin revenue and general obligation bonds; not dependent upon GPR
 - State bond financing (state tax exempt) allows loans to be issued at “below market” interest rates
 - Six Minnesota agricultural loan programs with more than 350 participating lenders
 - Basic Farm and Seller Assisted Program (aimed at beginning farmers)
 - Aggie Bond Beginning Farmer Program
 - Agricultural Improvement Program (finances farm improvements)
 - Farm Restructure Program (finances debt reorganization)
 - Livestock Modernization Program (finances state-of-the-art improvements)
 - Value Added Stock Loan Program (finances farmer stock purchases in cooperatives)
- WFC is working with Department of Commerce, DATCP and WHEDA to determine best means of creating the proposed Wisconsin Rural Finance Authority
 - Emphasis on ability to promote programs
 - Emphasis on ability to administer loans at lowest possible cost and greatest efficiency

Renewal of Wisconsin's Dairy Industry = Good Economic Development

(Source: Mike Krutza)

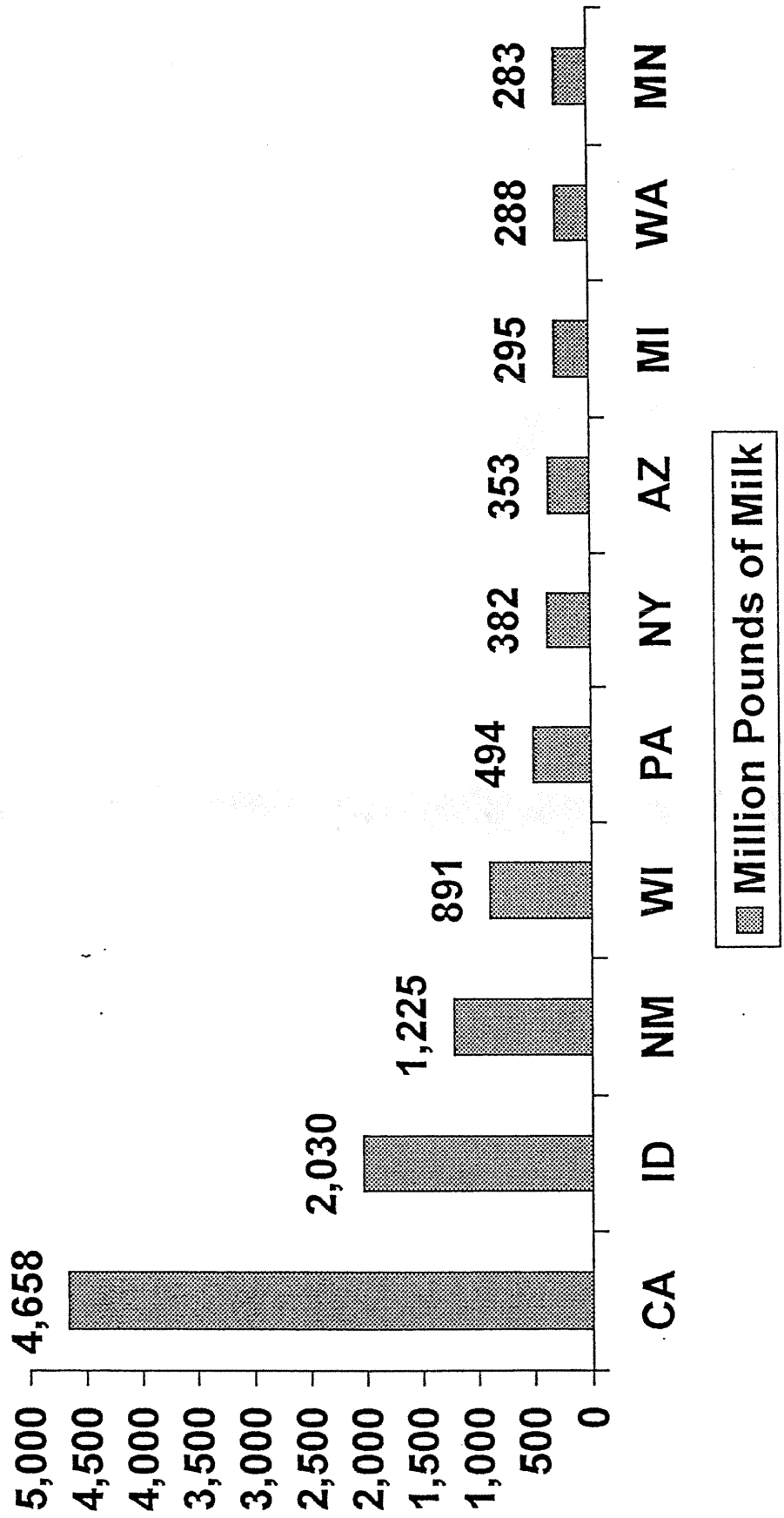
- **Create a \$25 billion dairy industry in Wisconsin by 2010 to replace the existing level of \$17 billion.**
- **Modernizing 10% of Wisconsin's dairy farms would generate an additional \$540 million of gross farm receipts to farmers and represent nearly \$1.3 billion to the local communities of Wisconsin.**
(2000 farms increase from 60 cows to 150 cows average. Currently, 2000 x 60 cows = 120,000 cows x \$3000 /cow = \$360 million cash & \$900 million to host communities. Under modernization, 2000 farms x 150 cows = 300,000 cows x \$3000/cow = \$900 million cash & \$2,250 million to host communities.)
- **The additional income tax and sales taxes generated by a growing industry could well exceed \$50 million in additional state tax revenue annually.**

(The following is from the October 2001 report of Professional Dairy Producers of Wisconsin, "2001 Analysis of Conditions and Trends Impacting Milk Producers in America's Dairyland")

"The current threat PDPW sees challenging America's Dairyland is the continual loss of milk production. The continual erosion of milk production will negatively affect each producer's individual profitability."

Growth In Milk Supply

1997-2000



Three modernization options became evident. The options characteristics were influenced by size (cow numbers), structure choice, and labor source. Following is a summary of the parlor/barn options: stall barns (2); swing parlor (4); flat barn (5) and pit parlor (26). Parlor sizes were: double 6 (5); double 8 (16); double 10 (6); double 12 (2) and 2 were over the double 12. Seventy eight percent (26) built new free stalls; 6 retrofitted existing sheds, and 2 utilized existing stall barns.

The following table represents the average investment and capacity of various sized parlors.

	Flat Barn Milking Facility Double 8	Mid-Sized Low-Capital Parlor Double 8 Used equip.	Large Basic Technology New Parlor Double 12 New Equip.
Cost	\$25,000	\$50,000	\$250,000
Useful Life (Years)	10	10	15
Cows milked/hour	70	80	90
Operators Require	1	1	1
Source: UW Center for Dairy Profitability – Gary Frank			

Small—In Barn Modernization-Cow Range from 50-200 cows

This structure option is profiled by producers with less than 200 cows. Parlor choices most often included using their existing facilities with either flat barn parlors or in barn pit parlors.

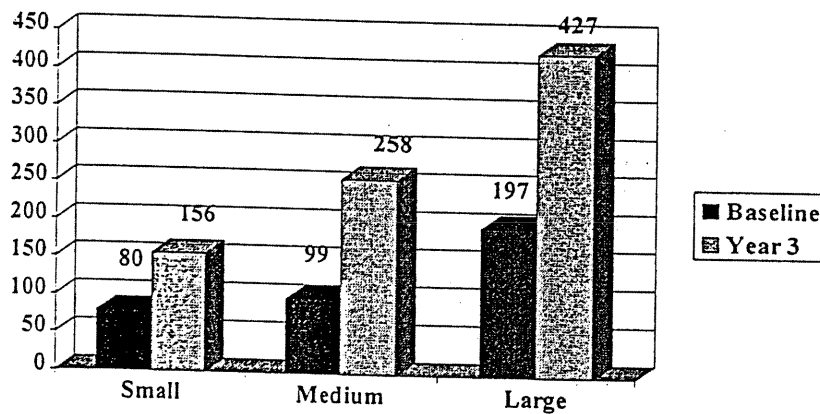
	Baseline	Year 3	Change
Cows	80	156	195%
Break-even (\$/cwt.)	\$13.58	\$11.42	(\$2.16)
Operating Expenses	73%	68%	(5%)
Net Cash Income/Cow	\$238	\$556	234%
Debt/Cow	\$3,193	\$2,609	(\$584)
ROA	4.7%	11.8%	7.1%
Total Debt	\$259,081	\$409,067	\$149,986
Net Cash Return	\$20,996	\$92,628	

Comparative Analysis of Key Business Measure by Modernization Options

Herd growth

- Increasing cow numbers was a constant in each of the options.
- Small (<200 cows) increased 1.95x from 80 to 156 cows.
- Medium (200-350 cows) increased 2.68x from 99 to 258 cows.
- Large (>350 cows) increased 2.16x from 197 to 427 cows.

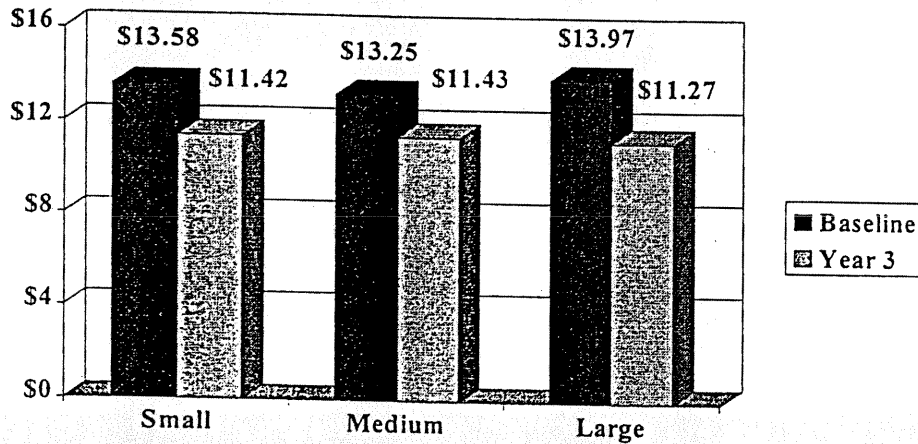
Farm Credit Services
Business Consulting Completed Feasibility Profile
Average Total # of Cows



Break-even Cost of Production

- All of the options focused on reducing break-even cost of production with the three year planning horizon.
- Small units decreased by \$2.16 to \$11.42.
- Medium units decreased by \$1.82 to 11.43.
- Larger units decreased by \$2.70 to \$11.27, although the largest farms had the highest pre-modernization break-even cost of production.

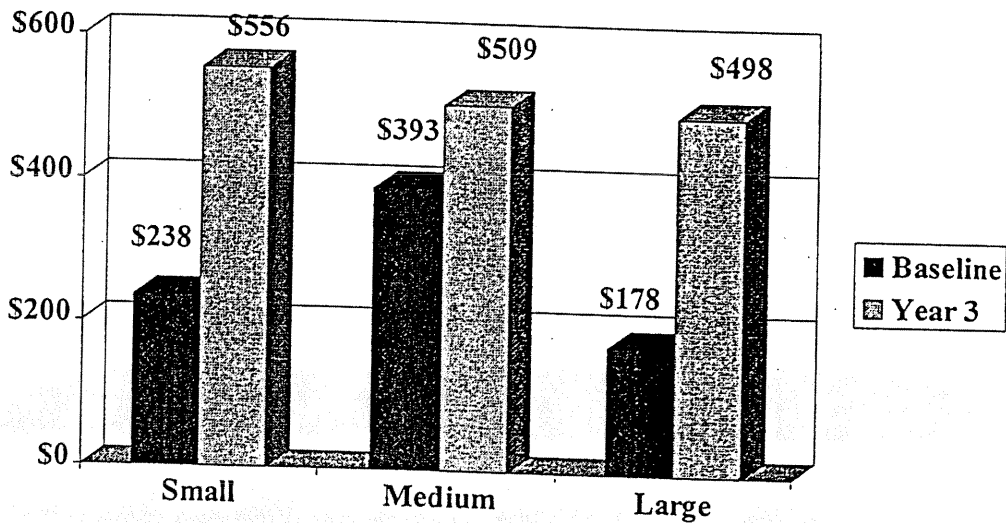
Farm Credit Services
Business Consulting Completed Feasibility Profile
Break-even \$/cwt



Net Cash Income per Cow

- All of the units had relatively low net cash income per cow before modernization, with the lowest of \$178 for the units >350 cows.
- Net cash income per cow increased significantly for each of the categories from an average pre-modernization of \$260 to a post modernization of \$525.
- The gain in net cash income per cow was largely a result of the relative reduction in the break-even cost of production.

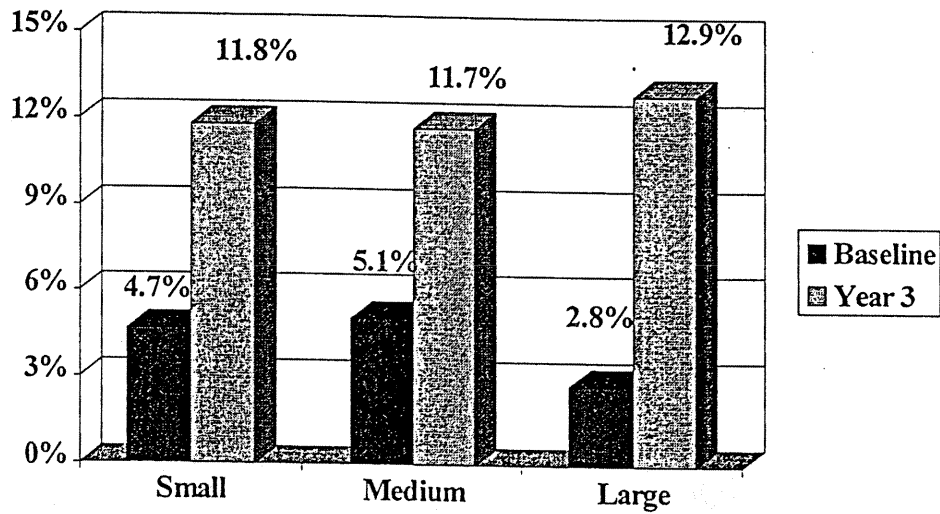
Farm Credit Services Business Consulting Completed Feasibility Profile Net Cash Income/Cow



ROA

- ROA increased nearly 3x for each group.
- Pre-modernization ROA reflected sub-par ROA with no significant difference between groups.

Farm Credit Services Business Consulting Completed Feasibility Profile ROA



Professional Dairy Producers of Wisconsin

2001 Analysis of Conditions and Trends Impacting Milk Producers in America's Dairyland

October 2001

The Professional Dairy Producers of Wisconsin's Board of Directors is acutely aware of the impact current trends and conditions are having and will continue to have on the state's dairy industry. Therefore, the PDPW Board has compiled and examined the following summary of the major forces influencing milk prices for Wisconsin dairy producers. The PDPW Board encourages this information be used by individual dairy businesses to develop their own action plans.

2001 State of the Wisconsin Dairy Industry
Issued by the Professional Dairy Producers of Wisconsin
October 25, 2001

This report is different from PDPW's "Analysis of Marketing Conditions Impacting Milk Producers in America's Dairyland" issued this past January. That report dealt with the issues directly threatening each individual dairy business at that time – prices paid to producers for milk.

This year's report focuses on an issue that may be less clear to individual producers on a daily, short-term basis. Yet, it poses a major, long-term threat resulting in dire consequences for every facet of Wisconsin's dairy industry. At first glance, one could perceive this year's report as going against long-held beliefs within some sectors of the state's dairy industry.

The current threat PDPW sees challenging America's Dairyland is the continual loss of milk production. This report examines some of the complexities of this threat and why it's happening. It projects the potential negative impact if this downward trend continues. And, as always, this special PDPW report suggests opportunities that exist for Wisconsin's 18,000 dairy farm families if they chose to take proactive measures to improve their long-term vitality and sustainability.

The Professional Dairy Producers of Wisconsin's Board of Directors believes there is a crisis taking shape across rural Wisconsin. It has examined key factors influencing this downward trend, as well as encourages this information be used by individual dairy businesses to develop their own plans of action to develop operations that meet their financial and family goals. As dairy farmers in Wisconsin, we each have a stake in the future of our dairy industry. By pulling together this information, PDPW wants to assist the Wisconsin dairy industry as it determines how to move ahead.

Key Messages

PDPW believes there are four key messages Wisconsin producers need to hear:

- The continual erosion of milk production will negatively affect each producer's individual profitability.
- The dairy industry is a growth market on a national basis and, in order to participate and profit from that growth, producers must grow their businesses to capture their share.
- There is a large pool of skilled, talented people already here and individual dairy producers can benefit their business by tapping into these skills and talents.
- The future of the industry is the responsibility of the people in it – producers, processors, technicians and haulers, marketers, buyers, scientists, educators, veterinarians, and other consultants. As PDPW has said in the past, it does not want government to enact rules and laws that divide the Wisconsin dairy industry by size. Nor does it rely solely on government for solutions.

Introduction

Dairying is the largest segment within Wisconsin's \$40 billion agricultural industry, accounting for an economic impact of some \$18 billion to the state's economy, according to state agricultural statisticians. Moreover, the foundation of the entire industry rests on the shoulders of 18,000 dairy farm families. These producers must adopt new business strategies to ensure this economic engine keeps growing and remains viable for them as well the massive infrastructure developed since Wisconsin transitioned to dairying in the 1880s.

Bottom line, Wisconsin dairy farm families must grow their operations if they want to remain in business, improve their annual milk sales and market share, properly leverage the net worth of their balance sheets, and ensure the state's dairy infrastructure remains intact to serve their own farms' needs. (See list at end of report for some of the hundreds of jobs and roles encompassed by the Wisconsin dairy industry.) However, there is an erosion of milk production in Wisconsin. Not only does this erosion threaten the 18,000 farms, but it impacts hundreds of thousands of people engaged in a wide range of jobs in rural and in urban Wisconsin who directly serve dairy producers and get dairy products to the marketplace.

Before going further, PDPW stresses that this report addresses the need for growing dairy operations in the state. On first glance, this recommendation may appear to go against a 20-year message producers have heard: there's too much milk and the surplus is driving down prices. While it's true that national output fluctuates in total milk production and those cycles directly impact prices paid to dairy farm families, the state must address the fact that it is in jeopardy of losing many dairy industry options and opportunities if production here does not grow through retro-fits, reinvestments or modernizations.

In addition to the economic impact the dairy industry has on Wisconsin, it plays a major role in providing wildlife habitat, open space and scenery on which other segments such as tourism and recreation depend. Dairy farm families also have an important role in developing and nurturing the civic and social fabrics of rural Wisconsin. In addition, members of these families who are not engaged directly in farm work often comprise the labor force at businesses in surrounding communities. The historical influence of the dairy industry on the state extends today into a world-renowned University, public and private research systems.

Yet, it all boils down to the state's dairy farm families and how well they can embrace change in the coming months and years. This report, then, is a self-examination with information gleaned from a variety of sources and centered around three questions: What can producers do to reverse the trend to their own benefit? What is happening on today's dairy farms? Why care?

What can producers do to capture their share of a growing market?

American tourists visited an ancient castle in Europe. "This place," the guide told them, "is 600 years old. Not a stone in it has been touched, nothing altered and nothing's been replaced in all those years." "Wow," said a woman from Wisconsin, "they must have the same landlord I have!"

In general, can we observe the same about the Wisconsin dairy industry? Are its producers, processors and marketers doing business in the same facilities and in the same manner as they always did? If so, then they will always get what they always got.

PDPW believes a hopeful future awaits those producers who want to be a part of the dairy industry if they are willing to "alter some stones" by developing new skills and strategies for the future. The state's largest agricultural sector includes people who have the skills and talents, as well as the natural resources and historical perseverance, to make the dairy industry great. Therefore, PDPW offers some suggestions in this report that, if put into action, will allow the many people involved in the Wisconsin dairy industry to grow and prosper.

To accomplish that growth and prosperity, the Wisconsin dairy industry needs to capture its share of the national growth in the dairy business. Yet, the state is failing to do so. Moreover, it's ironic that there are different areas of the country growing and investing in their dairy industry while others are shrinking when each is working through the same set of economic circumstances.

For example, the National Ag Statistics Service (NASS) reports the number of cows in Idaho grew from 154,000 producing an average of 12,643 pounds of milk annually in 1970 to 347,000 cows producing an average of 20,816 in 2000. Similar statistics track growth in California. In 1970, there were 896,000 cows producing an average of 15,153 pounds of milk. That grew to 1.523 million cows in 2000, producing an average of 21,169. In Wisconsin, there were 1.815 million head that produced an average of 12,331 pounds per cow in 1970. By 2000, cow numbers dipped to 1.344 million and production per cow rose only to 17,306 pounds of milk.

Meanwhile, take a look at the processing and marketing sides of the Wisconsin dairy industry.

In 1999, American cheese accounted for 37% of retail sales, followed by cheddar at 25% and mozzarella at 13%, according to Kraft, the nation's largest cheese marketer. In 1999, it reported cheddar's market share in retail sales grew 9%, while mozzarella's retail market share grew by 1%.

However, a large percentage of mozzarella sales are feeding the frozen pizza industry, where sales have grown by 50% over the past five years, trade organizations report. Mozzarella in 1999 accounted for 32% of total U.S. cheese production, compared with 30% in 1993, according to the U.S. Department of Agriculture (USDA). Cheddar, meanwhile, saw its production share slip, to 35% in 1999 from 36% in 1993.

Nationwide mozzarella production increased 29% from 1993 through 1999, according to U.S. Department of Agriculture (USDA) statistics. That outpaced cheddar production - which increased 19% - and overall cheese production, which increased 22% - during the same period.

In 1980, U.S. mozzarella consumption averaged about 3 pounds per capita. By 1998, consumption had tripled, to about 9 pounds per capita. This is just one example of a dairy product that has enjoyed continued, steady market growth.

Yet Wisconsin may be losing out to capture some of this market growth of itself. Why? Because Western cheese producers have been steadily taking market share from producers in Wisconsin and other Midwestern states, said John Umhoefer, executive director of the Wisconsin Cheese Makers Association, in an interview with the Milwaukee Journal-Sentinel in early 2001. Wisconsin's cheese production continues to grow, but at a much slower rate than the rapid sales growth recorded by Western states, he said. Wisconsin is still the nation's top cheese producer - accounting for about 27% of U.S. cheese production, but down a percentage point from 1998. And picking up that one percent in increased cheese production was California - at around 17% - which some industry analysts expect to overtake Wisconsin if current trends continue.

Wisconsin dairy producers must decide what kind of lifestyle they want to lead, what they want their businesses to look like, how much responsibility and risk they're willing to accept, and what will happen to the operation after they retire. They must answer these key business questions by developing a written business plan. Only then can producers determine whether they will "ride it out" to retirement or grow their operation through reinvestments and modernizations.

Even those producers who decide they want to remain in business need to think about how they can capture their share of the national growth - profits - in the dairy industry. Do they have enough skills and talents assembled to accomplish their goals?

For example, consider the milk hauling business. A milk hauler is one person and can only drive one truck at a time. The hauler's income is limited because he relies solely on his own skills and talents, and those are limited to 24 hours a day, seven days a week. However, what if that hauler knows how to make money and decides to capitalize on his management skills to grab a bigger piece of the growth opportunities in the countryside? He expands his business, buying a new truck for him to improve fuel consumption, and then adds a second truck and hires another driver. Maybe, eventually, business expands more and the hauler decides to hire two drivers, taking him off the daily route to manage the growing enterprise.

Every sector needs both types of people - the one content to drive one truck and the other content to take on the risks of growth. In the same fashion, dairy producers must decide into which camp they fall.

When one examines who's producing the bulk of Wisconsin's milk, it is obvious that most operations are middle-sized. Wisconsin's past strength has been the diversity in size and scope of dairy operations. It will continue to be. However, producers must examine how they will grow

their business to ensure they are maintaining a profit margin that supports the lifestyle each wants to achieve.

**Percent by Size of Operation
1999 & 2000**

Head	1-29		30-49		50-99		100-199		200-499		500+	
Wisconsin	3	3	19	16	39	37	20	19	14	16	5	9
Minnesota	3.8	3.5	19	16	39	37	15	16	16	16	7.2	8.5
Michigan	4	3	7	6	21	19	32	30	19	22	17	20
Vermont	.4	.3	7.6	6.7	30	28	26	26	22	23	14	16
California	.1	.1	.1	.1	.4	.4	3.4	2.4	18	19	78	78
Colorado	1	1	1	.5	2	1.5	7	7	25	27	64	63
Texas	.4	.4	1.1	1	6.5	5.6	15	15	32	31	45	47
US	2	1.8	8.5	7.7	20.9	19.4	17.9	17.3	17.3	18	33.4	35.8

These statistics provided by the Wisconsin Department of Agriculture, Trade and Consumer Protection show the state is "below" national averages in most categories. What would it take for the producer currently milking 75 cows to milk 100? The investment needed to grow does not need to be massive. Rather, the incremental change from 75 to 100 is a 33% increase. In fact, research by The Ohio State University concluded that dairy operations must grow by 60% every 10 years to keep up with inflation. By this model, Wisconsin producers who were milking 75 cows in 1991 actually should milk 125 cows today.

Those producers who plan to remain in business over the long-term or who plan to bring in the next generation must grow their operations, make reinvestments, and modern the business. There is no magic number to which producers must grow their operations – that depends on their personal lifestyle goals and skills.

Too often, producers only hear or read about expansions to 500, 1,000 or more cows; a full force of employees; and a several-million-dollar set-up. That is not the only option in town, says Dr. Kevin Bernhardt of the University of Wisconsin-Platteville and the UW Center for Dairy Profitability.

Several county UW-Extension offices can offer to producers low-cost ideas to improve housing, production and other measurements on today's dairy operations. In some areas, groups of producers have banded together to help each other build functional parlors that reduce stress on their bodies and also make it more attractive for the next generation to want to buy into the streamlined operation. The possibilities could be limitless.

In fact, several Wisconsin dairy industry leaders strongly support the creation of a special department within the state's educational system that focuses specifically on modernization of Wisconsin dairy farms. The primary focus of this department should be the retrofit and re-use of existing dairy farm facilities. In addition, other dairy leaders would like to see the boards of programs such as World Dairy Expo and Farm Progress Days to focus on cost-effective ways in

which producers can refurbish and modernize their facilities rather than just building completely new facilities.

However, it's not just on the cow numbers side of their businesses where producers need to consider making changes. According to publications such as *Hoard's Dairyman*, some of the first articles on improving alfalfa (and feed quality) began appearing in 1891 and evolved into a whole new grassland farming philosophy that took root in the early 1920s. Loose or pen housing for dairy cattle was discussed as early as 1912, with labor-saving advantages and low initial investments stressed. Since the late 1950s, the dairy industry has discussed milk production efficiencies, putting emphasis on increased milk production per cow as a way to improve a dairy farm family's profitability.

Yet, many Wisconsin dairy producers have decided not to adopt some of these technologies, let alone proven advances made in just the past 10 or 20 years. Some of these improvements include total mixed rations to feed cows based on their milk production output and retrofitting facilities that focus more on cow comfort.

Producers must reverse this trend. While farmers, in general, do not want to be the first ones to adopt a new technology, they always say that they don't want to be the last. Well, some technologies are now at least 20 years old. Others are centuries old. Wisconsin producers who plan to remain in business so the next generation can buy the operation must adopt technologies that will increase production per cow, improve overall efficiencies and ensure profitability of the family business.

The PDPW board believes that 99 percent of the solutions to the challenges facing the Wisconsin dairy industry will come directly from those within the industry – those who have the most to gain and lose by its future viability.

There are also times, though, when the dairy industry should support and align itself with others on efforts or legislation designed to assist individual producers with modernization. One of these efforts includes investment tax credit programs advanced by organizations dedicated to sustainable, rural economic development.

Other programs augmenting modernizations and reinvestments in dairy businesses include the Agricultural Development and Diversification (ADD) grant program by DATCP and various grant and rural economic development programs offered by the Wisconsin Department of Commerce or its Dairy 2020 program. Formed in 1989, the ADD program funds new and innovative approaches to increase productivity and profits. The program has awarded \$3.3 million for 173 projects and has generated more than \$60 million in economic growth for Wisconsin.

Meanwhile, Commerce's Dairy 2020 program helps improve the dairy business climate by providing early planning grants to dairy producers and processors for feasibility, business planning and other professional assistance. Some 650 Wisconsin dairy farm families have used these grants since 1996. As a result, three-quarters decided they wanted to reinvest in facilities and operations. They increased their units to compensate for smaller profit margins in agriculture

as well as to capture their share of this growth industry. They also expanded to bring in other family members, adopt new technology, upgrade their barns and milking facilities, or to change the quality of life for their families. They increased milk production by nearly 1 billion pounds annually.

That economic emphasis extends to Commerce's its Business Employee Skills Training – or BEST – program. It helps dairy producers address a critical component of any successful business operation – employee training. Since its inception in January 2001, it has provided 60 grants totaling nearly \$300,000 for training.

Wisconsin Secretary of Agriculture and Beldenville dairy producer Jim Harsdorf has been quoted by the media as follows:

“We need to make sure we're doing everything possible to make sure help those who already exist can survive. That's why I'd like to see us be very involved in encouraging the agriculture portion of the local community get involved in local economic development, so that we have a good understanding between rural and urban people as to what's going on in terms of utilizing new technology. Why it's important that we may, by using it, improve the quality of the environment. And so that they have a better understanding of how we're taking care of our animals, where we're literally manicuring their feet every six months, where we're putting them on air mattresses or water mattresses so that they're comfortable inside the facility. Those types of communications are real important.”

At the same time, the PDPW board encourages the Wisconsin dairy industry to listen as its own leaders and government (local, county and state) officials enable the America's Dairyland to recapture its share of the national marketing potential. The board also encourages the Wisconsin dairy industry to forge a shared vision for the future to include growth and modernization, and then asks state officials to take action so as not to impede that future.

What is happening on today's dairy farms?

To understand what's happening (or not happening) on today's dairy farms, one needs to examine Wisconsin dairy history and culture, its statistics and changes, and its economic realities. The facts show that: dairying is ingrained in our psyche, which can make it especially challenging to think about change or to think outside the box; dairying is going through unprecedented changes on many different levels because it is a maturing industry; and if actions aren't taken, rural landowners will need to consider options other than dairy farming as agricultural enterprises.

Wisconsin was a major wheat producer until the railroads opened up the West and farmers relocated to the Upper Plains. In 1864, an emigrant from New York built the state's first cheese factory in Fond du Lac County, consuming the output of between 200 and 500 cows from nearby farms. By 1871 and to combat the depletion and erosion of soil resources brought about by the one-crop system of agriculture, W. D. Hoard founded the first dairymen's association in Jefferson County. One year later, he led the "seven wise men" in founding the Wisconsin Dairymen's Association. Through it, the dairy industry became the backbone of a permanent,

soil-building type of agriculture. In the process, Hoard became so popular across the state that he parlayed his dairy campaign into one term as governor.

According to the Wisconsin Blue Book, "Since even the smallest cheese factory required contributions from at least 200 cows, farmers committed to the new system had to find converts, and the proselytizing was reminiscent of a religious tent-camp meeting. Resistance was not simply a matter of innate conservatism. Cheese production imposed a tyranny of its own because bad milk from one farm could ruin a batch of cheese for an entire district. Thus successful cheesemaking required quality control and constant monitoring. The experience of Wisconsin dairymen as they entered the marketplace was not unlike the discipline being imposed on urban factory workers who found their lives governed by whistles and work rules."

"Even with new recruits, the cheesemakers' demands always seemed to exceed the supply of milk. The difficulty was winter feed... Cheese factories accordingly operated only for four or five months, during what was known as the 'flush' season," the story continues. So from its outset, the Wisconsin dairy producer and the Wisconsin cheesemaker were united firmly together in this industry.

By the time records were kept in 1889, Wisconsin was producing 2.6 billion pounds of milk annually. It had already been guaranteeing six-day cheese shipments to New York and eight-day shipments to Boston by refrigerated rail cars for 16 years. By 1989, Wisconsin dairy farm families were producing nearly 19 billion pounds of milk from 1.8 million cows with an average production per cow of 10,345 pounds.

Last year, the Wisconsin Department of Agriculture, Trade and Consumer Protection reported 19,232 dairy herds produced nearly 23.3 billion pounds of milk from 1.3 million cows with an average production per cow of 17,306 pounds. Farm numbers totaled 18,053 this past month (September 2001) and cow numbers totaled 1.28 million.

According to Dr. Kevin Bernhardt of the University of Wisconsin-Platteville and the UW Center for Dairy Profitability, "In this day and age, the markets are getting tighter. If you look over the past 20 years at just the regular prices for milk, there's been a lot of fluctuation going on lately. But if you take the average price over that time, it's a flat line. So, on average, you're getting paid the same for milk today as you were 20 years ago in 1980. Has the price of your fuel, the price of your food, the price of your shelter, has that stayed the same price as it did 20 years ago. Absolutely not."

As profit margins have gotten smaller and smaller, economic reality has settled into American agriculture, forcing the Wisconsin dairy industry to take a hard look at its business strategies – in dairy plants and on family dairy farms.

How do producers react to smaller profit margins? Dr. Bernhardt says there are several responses. One way has been to get more hundredweights to sell. Even though the margins are smaller, producers have more units to sell and can maintain that profit level. The growth has occurred through expansion of cow numbers, getting more milk per cow or lowering production costs by contracting out certain phases of operations that a dairy farm family cannot do

profitably itself. The Wisconsin dairy industry is also re-vamping facilities, modernizing processes, reinvesting in people and adapting technology. All these steps reduce costs and enable America's Dairyland to remain competitive in the global economy. The Wisconsin dairy industry is also honing management skills and developing business strategies, which are necessary changes, Dr. Bernhardt says.

"If you look back historically, the dairy farm business, along with the hog farm business and so forth, could have a successful business over time if they were a great producer – if they were a good production manager. Things like financial management part, the human resource management, strategic thinking – these were perhaps not as important as they are today. Why? Well, in the case of marketing, for example, there wasn't a lot of price volatility until fairly recently. So there wasn't a need to be a good manager in that area, so to speak. Now they have to be more attuned to change," Dr. Bernhardt says.

Change has always been there, but the rate and pace of change is quicker and quicker.

Like their industry and some of their facilities, the average age of Wisconsin dairy producers is rising. The next generation – which used to number 4, 5 or 6 children and now includes only 2 – has seen the hard, physical labor of their parents. Many do not want to be part of it. Or they've heard for many years that there is no profitability in dairying.

"But attitude is everything," stated Gary Sipiorski during a recent workshop at the 2001 World Dairy Expo. He is the executive vice president at the Citizens State Bank of Loyal and he chaired the "Growing Wisconsin Agriculture Task Force" for governors Tommy Thompson and Scott McCallum. After attitude comes what Sipiorski calls a "money mentality" in that businesspeople must develop the skills to *manage* their business and their labor force – whether that's one full-time hired hand or 100 employees. And management isn't about doing the physical labor. It's about working smarter, not harder.

Consider this. In a recent survey commissioned by Bayer Corp. in cooperation with the National Science Foundation, the newest employees in America's workforce and their managers were asked to define the special skills needed by today's workers in order to manage continuing change in the workplace. Both managers and employees agree that new employees need to be flexible and adaptable, able to solve unforeseen problems and do their best work in teams. When asked to select which one of two contrasting skills employers value more in new hires, both new employees and managers chose being able to:

- Solve unforeseen problems on the job as opposed to referring unforeseen problems to others.
- Adapt to changes in the work environment as opposed to coping with a stable work environment.
- Do their best work in teams as opposed to doing their best work independent of others.
- Continue to expand skills as the company changes and/or grows over refining and mastering in-depth the specifics of their present job.

"It's clear that today's workplace is no longer our father's workplace," said Rebecca Lucore, executive director of the Bayer Foundation. "When asked to choose, new employees and managers, both men and women, consistently selected the skills that are most commonly associated with 'working smart' over the more traditional 'working hard' kind of skills."

At the same time, a parent may believe that the only way to bring a child into an operation is to expand exponentially. In fact, a study by The Ohio State University found that dairy producers must grow their herds by 60% every 10 years just to keep pace with inflation. This growth is necessary regardless of additional family members or neighbors joining an operation.

Dr. Ken Bailey, an associate professor of dairy markets and policy at The Pennsylvania State University, makes similar observations about the growth of dairy farms in relationship to inflation. His remarks were included in a recent issue of *Feedstuffs*.

"The fact is there are very few businesses in the U.S. economy facing an inflation-adjusted market price each year," Dr. Bailey writes. "Most realize that, in order to remain competitive and prosperous, they must expand their sales and market share each year. For the dairy business, that means gradually increasing cow numbers and productivity each year. This explains why the milk price is relatively stagnant: there have always been just enough producers in the market to expand milk production to meet market needs. By doing so, these farms have accepted a lower margin but have improved overall profits. The question, then, is how to help small dairy farms gradually expand cow numbers and improve annual milk sales per cow in order to generate a sufficient amount of cash sales each year.

"All businesses are dynamic and adjust to changing market environments. However, many dairy farm families find it difficult to contemplate significantly restructuring their farm business in order to become more competitive," he says.

"Producers must compute the real cost of producing milk and its profit margin," Dr. Bailey advises. "Given this information and the dollars needed for family living, one can pencil out how much annual milk sales are needed to make the family business viable. This may or may not involve expanding the herd size. Boosting milk production per cow, contract purchasing feed and forage, and limiting investment to those that provide a positive return can result in greater profits without necessarily expanding herd size. This bottom-up method of looking at the farm business is exactly what small business owners do all across the economy. It's called business planning."

Why care?

If 10% of Wisconsin dairy farms modernized annually, they'd generate \$540 million in income for themselves and nearly \$4 billion for local Wisconsin communities, according to testimony offered by Mike Krutza on behalf of Farm Credit Services of Wisconsin.

The tens of thousands of Wisconsin people and jobs have the most to gain and the most to lose in the future. However, some can argue that dairy farm families may have the most at stake. Because of low capital investments on farms, combined with stagnate milk production, the infrastructure that they rely on in their business is starting to crumble ever so slightly on its edges. While there is one line of thinking that the last producer in Wisconsin will be able to command the price he wants, the opposite is actually true. The milk will be left in his bulk tank because no one will be there to pick up the product, test it, process it into cheese and market it. The infrastructure will disappear sooner than the last farm shuts its farm gate.

A different way of thinking is necessary. For at least 20 years, the industry warned dairy producers against over-production. The dairy diversion program, whole herd buy-out and other commodity-reducing government programs in the early 1980s aimed to reduce overall milk production. At the same time, efforts were stepped up on the other side of the equation – marketing. Government, processor and producer programs were implemented and today the industry spends about \$50 million annually to increase consumption. It's working.

While generic cheese advertising has been success, the Wisconsin Milk Marketing Board has parlayed that with a branding campaign to continue consumer recognition and acceptance of "Wisconsin" cheese as the very best. In addition, Wisconsin cheesemakers are changing their product mix. The majority of the 2 billion pounds of cheese manufactured annually is Italian (mostly mozzarella). However, about 10 percent of the total cheese output is considered a specialty, artisanal product and fills an upscale consumer niche. This specialty market is filled largely by small cheese plants, and in repeated interviews, these cheesemakers will admit that they would not have a specialty, niche market without the large, commodity market. In other words, if Wisconsin did not have any large cheese plants to fill huge portions of the commodity cheese market, there would be no opportunity to develop a niche market.

(The same is true of efforts by some producers to market different types of milk. For example, the organic market could not exist without a non-organic market because, if everyone produced organic milk, it would become a commodity and not command the specialty prices it does.)

Because of promotion and product mix changes to fill the ever-changing tastes of 260 million American consumers, demand is up. In fact, it's helping drive consumption above current milk production levels. As a result, prices paid to Wisconsin dairy producers turned around this past year from 20-year lows to average, multiple-year levels.

Yet, Wisconsin finds itself with a unique set of circumstances. While prices have rebounded this year, total milk production remains low. As a result, cheesemakers are scrambling to find milk to fill their plants. Without it, they cannot fill customer orders. Their operations become inefficient after owners have invested tens of millions in recent years to modernize facilities. Moreover,

who is investing this money? Families. That includes dairy farm families who are members of a cooperative or generations-old family cheesemakers. Combined, they own a majority of Wisconsin's 126 cheese plants.

Yet two players in the state's dairy industry were unwilling to invest hundreds of millions of dollars to build a new, efficient cheese plant that would have been the largest in the eastern United States. Among worries over the capital needed for new construction, the two organizations admitted that their feasibility study showed that future levels of milk production in Wisconsin were a concern. The new plant would have processed up to 6 million pounds of milk a day into cheese, and its development would have required a steady, long-term milk supply.

Therefore, most cheesemakers are retro-fitting older plants. To ensure they operate efficiently, they've been purchasing milk from non-Wisconsin farms to fill their plants and to fill their orders. However, over the long-term, Wisconsin cheese plants have fallen short in meeting their market demands. They've been unable to fill customer needs due to 1) a lack of products desired, 2) a price that was higher than what customers could pay for cheese from other regions, and 3) a lack of milk to process into cheese.

Wisconsin cheesemakers have taken action to rectify the first two issues. They have changed their product mix to reflect the changing marketplace comprised of 260 million American consumers as well as a growing international marketplace. Wisconsin cheesemakers have also invested heavily in existing operations to streamline production and improve efficiencies. Now the cheesemakers face uncertainty as Wisconsin's dairy farm families try to determine how they will grow their businesses for the future.

A glance at other business industries

As a business and industry mature, its players face the dangers of stagnation, inefficiencies, obsolescence and extinction. These occur when that business or industry do not reinvest or modernize to ensure they're meeting the needs of today's marketplace. Instead, they opt for the easier, less risky way of doing business because it's safer, requires little change, few new skills and no capital outlay.

If business managers always do what they always did, they will always get what they always got. Poor management is the largest single cause of all business failure. Year after year, the lack of managerial experience and aptitude has accounted for around 90 percent of all failures analyzed by Dun & Bradstreet, Inc.

Taking the less risky, more familiar route can even happen to individuals. According to Margo Frey, a career counselor and coach, who is president of Milwaukee-based Career Development Services Inc., "job security is on the minds of many employees lately. Paradoxically, change and risk can be the best route to job security."

In her column in the *Milwaukee Journal-Sentinel*, Frey writes that employees tend to hunker down, do a good job and hope their efforts will be noticed and they'll be retained when layoffs are rumored. "This often means working extra hours. Employees do this to demonstrate their value and their loyalty. However, fatigued employees rarely come up with the innovative solutions companies need to remain competitive. Your goal should be to work smarter, not harder. Designing more efficient ways to do your work will be more useful than putting in longer hours."

In his book "Flow: The Psychology of Optimal Experience," psychologist Mihaly Csikszentmihalyi wrote, "The best moments usually occur when a person's body or mind is stretched to its limits in a voluntary effort to accomplish something difficult and worthwhile. . . . Such experiences are not necessarily pleasant at the time that they occur. . . . But in the long run optimal experiences add up to a sense of mastery." Fago adds that, "If you believe that what you do is worthwhile and you would like to continue doing it, you will find it easier to make it through this rough time."

Working smarter and not harder is exactly the skill needed in the technology-driven productivity gains made in a Wisconsin engine factory. Four workers per shift now produce three times more camshafts than an old process that required 39 workers, said Bruce Coventry, former plant manager at the DaimlerChrysler Kenosha Engine Plant. He made his remarks at a 2001 conference organized by the Wisconsin Economic Development Association focused on the state's new economy.

Coventry said the change illustrates an industry wide trend that could concern communities left struggling with rising job losses. "In our industry, we know the number of jobs will not be as great as in the 1970s during the heyday. Jobs in our industry have peaked."

Southeastern Wisconsin and other regions that have an economic foundation built on heavy-industry jobs are experiencing both the good and the bad sides of the new economy.

At the time, Federal Reserve Chairman Alan Greenspan continued to cite the productivity-enhancing benefits of new technology that allowed an American worker to produce more goods than he used to over the same period, wrote Milwaukee Journal-Sentinel reporter Jason Gertzen. The productivity gains are a key factor bringing a record expansion to the U.S. economy while holding inflation in check. The other side: Although manufacturing no longer is Wisconsin's top employer, it still accounts for 23% of the state's employment. Productivity increases that lead to job losses look ominous to workers and communities experiencing the pain.

Companies such as DaimlerChrysler are relying on computers to streamline the design and assembly of what they make so that fewer workers are required on the factory floor. The new camshafts, for example, rely on several pre-assembled pieces and other refinements that have trimmed the production process from 10 steps to three, Coventry said.

Motor vehicle manufacturing jobs have dropped over the past two decades by 16% nationwide and by 21% in Wisconsin, said Michael S. Flynn, director of the Office for the Study of Automotive Transportation. He said the industry easily would shrink by another 10% to 15% over the next decade. "A lot of it is productivity improvement," Flynn said.

Many jobs move overseas by global organization such as DaimlerChrysler. Overseas sites are attractive largely because of cheap labor costs. However, "it's a fool's game for us to compete with cheap labor on cheap labor terms," Flynn said. U.S. cities need to play on their advantages of a skilled work force. "The old industrial states like Wisconsin and Michigan are hardly out of the game, but they need to focus their assets better," he added.

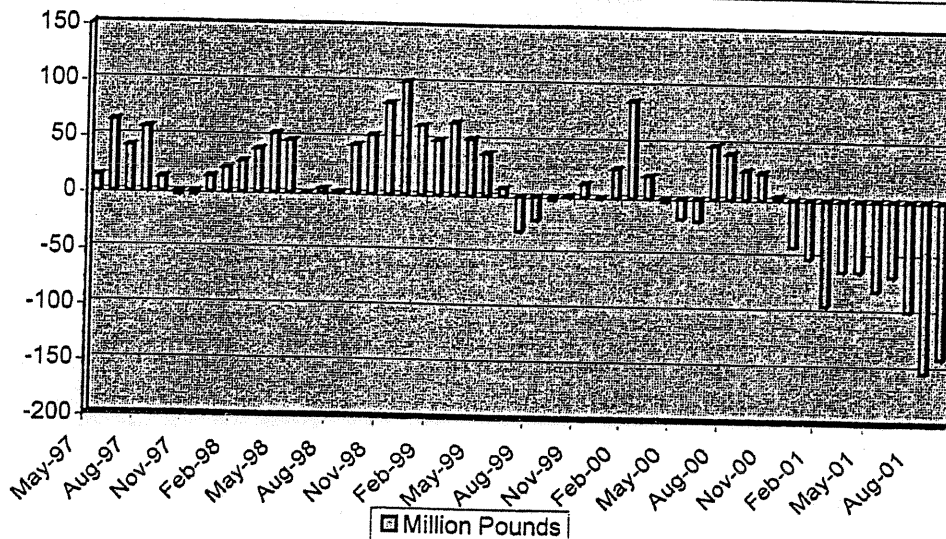
These few examples provide insight into some of the challenges facing other business segments of Wisconsin's economy. It's agricultural and food processing industries, including dairying, represent 22% of the state's economy and employ one in every six people, totaling nearly 500,000 jobs, according to statistics compiled for the "Growing Wisconsin Agriculture Task Force" report. These industries and, in particular for this analysis, dairying, must make similar investments and embrace change for long-term economic survival.

Wisconsin Dairy Industry Update

The catastrophic decline in Wisconsin milk production continued for the tenth consecutive month. September 2001 milk production dropped 7.4% or 140 million pounds from the September 2000 level. The year-to-date production has declined by 810 million pounds from last year, and is at the lowest level in more than 20 years. Further, the rate of decline for this year, -4.71%, is the steepest since 1966.

Falling milk production impacts thousands of businesses and their employees that support the dairy industry. For example, with 16,200 fewer semi loads of milk produced this year, fewer truck drivers are needed. Further, this decline in milk supply equals the entire annual milk utilization of the 50 smallest cheese factories in Wisconsin. Although Wisconsin has had modest growth in milk supply over the last four calendar years of 891 million pounds, over 90% of that has been wiped out by falling production in 2001.

Monthly Milk Production Changes



What's happening? Over the last four years, Wisconsin's cow population had an average decline of 1,625 cows per month. This year that has increased over three-fold to a decline of 5,333 cows per month.

Why? In recent years expanding dairies were absorbing most of the cows from exiting producers – this year there hasn't been enough dairy expansions to do that. Although there are more cows on the market, resulting from a very slight increase in the number of producers exiting combined with them having slightly larger herds than in previous years, the fact that fewer total cows are moving to expanding dairy herds is the overriding cause of the declining cow population in Wisconsin.

Wisconsin dairy producers in recent years had been achieving average increases in milk production per cow of more than 300 pounds annually. This year the production per cow is down 75 pounds from last year's level. Had the productivity growth been maintained in 2001, the year-to date production drop would be halved. -- **COMMERCE, Dairy 2020 update**

Who's in the Wisconsin dairy industry?

One must acknowledge the fact that the Wisconsin dairy producer cannot exist without the skills and talents of others involved in hauling, testing, processing, marketing and selling milk. Conversely, these people cannot exist without the skills and talents of Wisconsin's hard-working dairy farm families. When PDPW discusses the Wisconsin dairy industry and the continual erosion of milk production, the people who have the most to gain and lose in its long-term economic viability includes the following people and more.

- Dairy Producers
- Farm Managers
- Herd Managers
- Milker – Laborers
- Custom Heifer Growers
- Artificial Inseminator Technicians
- Veterinarians
- Nutritionists
- Cow Classifiers
- Feed Consultants
- Crop Consultants
- Custom Croppers
- Soil & Water Conservationists
- Hooftrimmers
- Milking System Technicians
- Milk Haulers
- Milk Laboratory Technicians
- Dairy Science Researchers
- Food Science Researchers
- Feedstuff Researchers
- New Product Developers
- Processing Plant Employees & Management – Ice Cream, Fluid Milk, Cheese, Cheese Cutting & Wrapping, Butter, Condensed/Powdered Products, Whey/Lactose & By-Product Processing
- Master Cheese Makers
- Plant Maintenance Employees
- On-Farm & In-Plant Cleaning & Chemical Makers
- Quality Assurance Technicians
- Regulatory Inspectors – On-farm & In-plant
- Attorney – Estate Planners
- Financial Consultants
- Risk Management Consultants
- Market Managers
- Newspaper & TV Food Editors
- Food Stylist
- Agricultural Writers & Editors
- Photographers
- Packaging Materials Manufacturers
- Packaging Graphic Designers
- Retail Sales – Dairy Buyers
- Foodservice Sales – Dairy Buyers
- Processed Food Industry Employees – Pizza Makers, Frozen Meals & Snacks, Home Meal Replacement, Baked Goods, Prepared Drinks, Prepared Meats & Other Foods
- In-Store/Point-of-Purchase Promoters
- Dairy-Deli Employees
- Convenience Store Employees
- Restaurant Employees
- Pharmaceutical & Infant Formula Processors
- Building Architects & Designers
- Building Trades – Concrete Workers, Plumbers, Builders, Electricians, Landscapers
- Dairy Cow and/or Meat Auctioneers
- Butchers & Meat Processors
- Taste-test panelist
- Consumer

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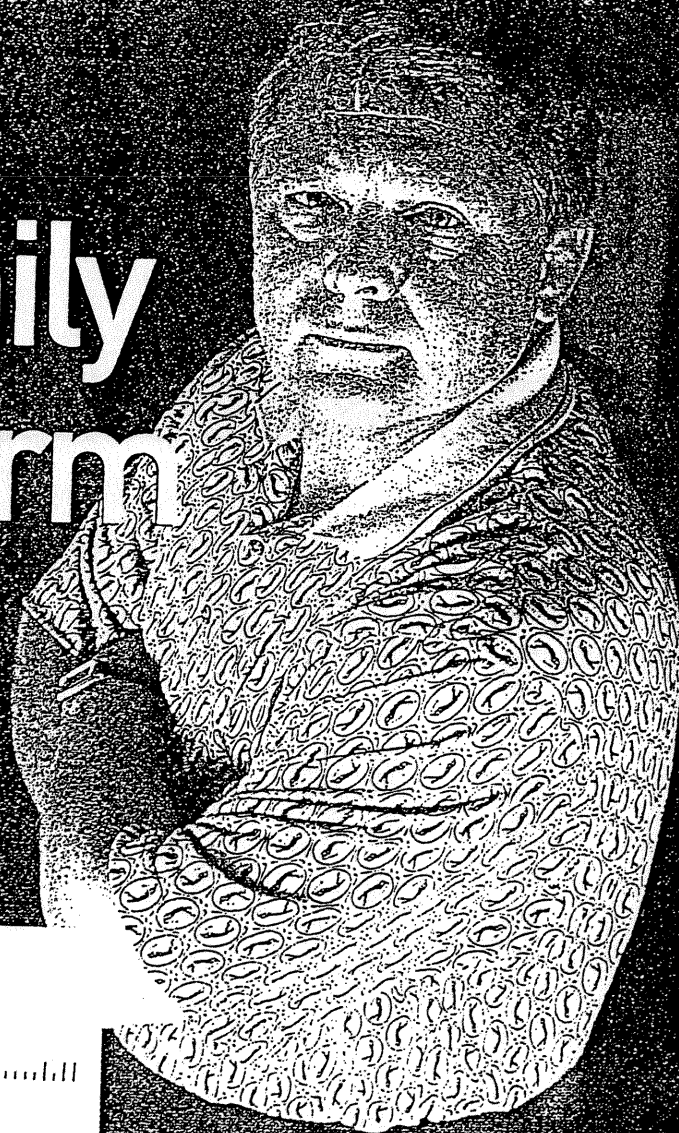
THE HYPOCRISY OF CO-OP
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FIRMS ENDORSE HUMANE
LIVESTOCK TREATMENT / 20

Saving the family dairy farm

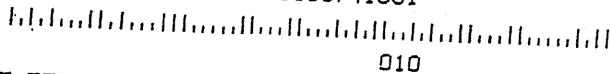
Mike Krutza says investment tax credits
and strategic assistance could revitalize
thousands of farms. See page 10.



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A plan to keep our dairy farms

Encouraging investment could be the last chance to save family dairy operations. ■ By Kurt Gutknecht

Get big or get out. That's the message a lot of dairy farmers hear — or think they hear. Many industry cognoscenti think the future of the state's dairy industry lies in California-style dairy operations, each consisting of hundreds or thousands of cows.

But some observers say there is another alternative — incremental expansion that will keep thousands of "smaller" dairy farms in the black. Groups have proposed various public policies to prevent the loss of these "family farms." Now a lender has advanced a plan to modernize Wisconsin's dairy industry, which he says would trigger a billion dollars worth of economic growth.

The proposal calls for investment tax credits to encourage modernization, increased assistance from state agencies and Pell-type grants for continuing education for farmers. The increase in farm income resulting from these policies supposedly means the state would easily recoup any temporary decrease in tax revenue several times over — and the plan would allow the state to keep more of the dairy farms that it supposedly cherishes.

STEPWISE GROWTH

Mike Krutza's proposal has attracted only lukewarm support. He spoke to

an audience of mostly empty chairs when he unveiled his proposal before a legislative committee. He fielded an inquiry from the Legislative Reference Bureau. Jim Harsdorf, secretary of the Wisconsin Department of Agriculture, Trade and Consumer Protection, says he likes the idea, in large part because it's "size neutral" — it treats all dairy farms the same, regardless of size.

As president and CEO of FCS Financial Services, better known as Farm Credit Services of North Central Wisconsin, Krutza has been espousing stepwise growth for several years — but with an aging farm population, time is running out. He's said this before, however, and his message has received a ho-hum response, the equivalent of a nod and a pat on the back and a fare-thee-well. He keeps trying.

Bankers have been accused of giving farmers enough rope to hang themselves, as during the late 1970s when farmers were lent money on the basis of inflated expectations and bloated real estate values.

Krutza's life would probably be easier if he were able to service a few fat loans with a limited number of clients. Instead, he's taken the opposite tack and warns about the evils of too much debt and too few farmers.

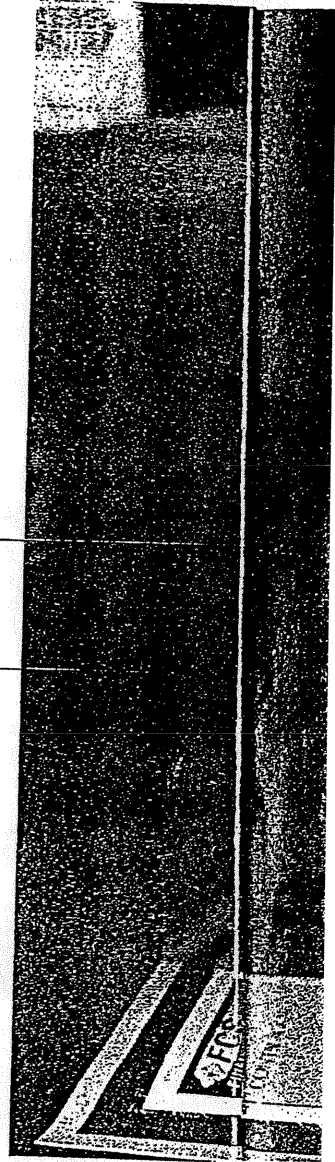
Results of a 1994 FCS survey of 243 dairy farmers showed that the in-

terest costs associated with large expansions often led to significantly higher breakeven prices. Based on those findings, he argued for incremental expansion — evolution instead of revolution — to avoid the excessive debt per cow that can sap profit margins.

A \$25 BILLION INDUSTRY?

Krutza says a few modest incentives could help Wisconsin's dairy industry grow to a \$25 billion industry by 2010, up from the current level of \$17 billion. According to his calculations, \$1.5 billion in economic growth would result if just 2,000 dairy farmers modernized their dairy facilities and increased herd size from 60 to 150 cows.

But in a state where lip service to agriculture is the sine qua non of political longevity, no one's gotten too excited about the proposal, perhaps because it didn't originate from the groups who usually advance these policies — Krutza is acting largely alone — and perhaps because it implies that farmers have been getting some poor



Huge dairy farms aren't the only alternative, says Mike Krutza with FCS Financial Services, who has proposed modest incentives that encourage dairy farmers to modernize their operations.



advice during the last 40 years or so. The recent economic slowdown and decreased tax revenue haven't helped. Some question whether a banker could have altruistic motives.

Krutza says the state will probably lose cheese manufacturers and related enterprises unless milk production increases. But the issue isn't total milk production per se but how this milk is produced. Farms shore up the rural economy and it's important to keep as many of them as possible, he says. In other words, "Got milk?" should be coupled with "Got farmers?"

A healthy industry is characterized by growth, but not growth for the sake of growth, he says. "I want to see growth distributed uniformly. I approach the issue from a different per-

spective. Instead of just producing more milk to keep cheese plants in the state, I want to consider the human angle. The issue is not attracting cheese plants but in keeping thousands of dairy farmers. If we don't work with these farmers, the other questions are irrelevant. It's not just milk, but how and why we produce milk.

"If we keep doing what we've done, we'll get only what we've got," Krutza says, which in recent decades has been a precipitous decline in the number of dairy farms.

OFFERING MORE OPTIONS

"Let's get down to where the cows are eating. Are farmers reluctant to change? Not any more than anyone else," he says. Unfortunately, dairy farmers have

been offered the one-size-fits-all philosophy of expansion and, not surprisingly, they rejected the advice. "It's just illogical to expect everyone to expand to 400 or 500 cows."

Milking parlors have been one of the biggest aids to efficient milk production but only about 10% of dairy farmers have installed them, says Krutza. He attributes the low adoption rate to the misconception that milking parlors are prohibitively expensive, costing several hundred thousand dollars. Instead, he has materials showing more than 20 types of parlors, ranging from a basic modification of a stanchion barn costing \$1,500 for locks and concrete to those costing more than \$150,000.

Continued on page 12

Continued from page 11

Many steps toward modernization, such as parlors or improved grazing programs, require only a modest investment and would be feasible for farmers thinking of retiring in five or 10 years, says Krutza, providing more income for them as well as making the operation more attractive to potential purchasers.

The state would probably fall over itself if it had an opportunity to lure several thousand small businesses from another state, says Krutza. It should be as aggressive in encouraging the viability of several thousand small businesses — dairy farms — that already exist in the state. "Unless we continue to support these dairy farms, we will see the demise and decay of rural communities.

"My proposal isn't a social welfare program or a Pollyanna notion to save all farmers. Let's grow this industry. The dairy industry today is like a 1975 truck with 300,000 miles on it. It's not going to last much longer. It needs updating and repair for the long haul. Without renewal, the industry won't maintain its vitality," he says.

The fact that more than 600 dairy farmers have developed business plans through the Dairy 2020 Planning Grants offered by the Wisconsin Department of Commerce shows farmers will grow their businesses with just a little encouragement, Krutza says.

PUTTING IDEAS TO WORK

There's not even a whiff of California about the operation of Bob Prahls' dairy farm near Wausau. No one made much of a fuss when he doubled the size of his dairy operation in 1999 by installing a pit parlor in an existing barn, purchasing heifers and making other renovations. The changes involved a lot of sweat equity.

He now milks 70 cows instead of 35. That's just a squirt in the flood of milk that is supposedly necessary to "save" the state's dairy industry, but it's allowed the Prahls family to stay in business on the farm that's been in the family for 125 years. And the Prahls'

expansion could be implemented by thousands of farmers in the state. About 90% of existing dairy farms have fewer than 100 cows.

"Planning was costly, but it was the best money we ever spent. We did take on more debt, but it has paid off in less stress. It works," says Mary Jo Prahls.

There are other options, including partnerships, the route selected by Park Avenue Dairy, a 125-cow operation in

some more modest growth plans as they try to expand their operations," including the installation of retrofitted parlor systems in existing barns.

Most dairy farmers who expand their operations are pleased with the results, as Roger Palmer, UW-Extension farm management specialist, found when he surveyed more than 300 Wisconsin dairy farmers who had expanded herd size. They reported a

better lifestyle, improved management and higher incomes.

Scott Gunderson, UW-Extension dairy agent for Manitowoc County, and Palmer have been espousing staged expansions for several years. Gunderson cites a study by the Minnesota Farm Credit Service, which found that herds that

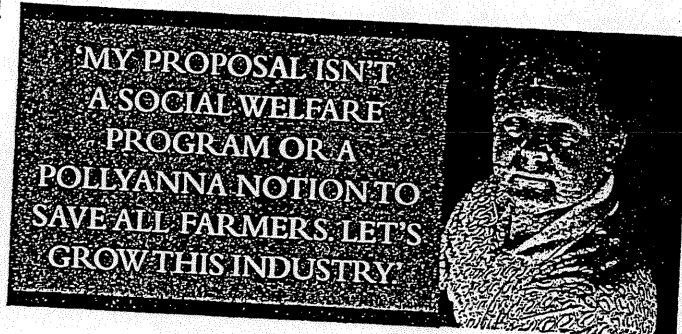
double in size have a smooth transition and experience little if any drop in milk production. In comparison, herds that tripled or made larger increases experienced "management lags" that often led to decreases in milk production.

In "staged growth expansions" on three dairy farms in Manitowoc County, which involved doubling or tripling herd size, Gunderson found dramatic increases in the labor efficiency of feeding and milking, a better lifestyle, and improved financial health.

The widely accepted adage that healthy enterprises are characterized by growth appears to be true in the dairy industry, in spite of the widespread assumption that expansion only results in "megafarms." Whether enough dairy farmers are convinced is an open question, as is the notion that strategic incentives could revitalize the state's dairy farms.

"Most of the people I've talked to say the proposal makes sense," Krutza says. "Wisconsin's dairy industry can still be a powerful economic and social force. We can create a legacy. The question is how to motivate legislators, state leaders and dairy farmers to make it happen.

"I think we just need to look at what's possible — and then do it." ♦



Merrill. Three years ago, Todd Fryman, Jim Gaeu and Don Radke formed a limited liability corporation (LLC) and pooled most of their land, cattle and equipment. The LLC also enabled them to construct a freestall barn and milking parlor. "That isn't an investment I would have made at my age if I were on my own," says Gaeu, 60. FCS determined the financial feasibility of the LLC. The thriving operation supports three families.

"I believe the 18,000 or so dairy farms that are not yet modernized are critical resource to this state, both economically and socially. It would be an arrogant misuse of one of this state's most important resources if we focused on investing in biotechnology and research facilities, and failed to renew existing dairy farms," Krutza says.

PLEASED WITH EXPANSION

Bruce Jones, with the University of Wisconsin (UW)-Madison Department of Agricultural & Applied Economics and former director of the UW Center for Dairy Profitability, says the university has also been promoting the idea of incremental expansion. "Decisions to grow quickly and dramatically can result in debt-to-asset positions for dairy operations that exceed lenders' standards. Given this, it follows that dairy producers may have to adopt



Knowing Business Factors is Key to Modernization



Farm Credit Services of North Central Wisconsin
June 1999

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EXECUTIVE SUMMARY

Study shows ROA, break-even, operating ratio, and net cash per unit improved regardless of operation size or modernization choice.

Wisconsin's dairy industry is the state's single largest industry at more than \$3.5 billion in gross farm receipts and a combined economic impact of \$17 billion for Wisconsin's economy. Dairy has been a key economic driver in the state's economy and is in danger of losing the infrastructure of farmers, processors and manufacturers if modernization does not occur. Proven technological advances of parlor systems and freestall housing has not generally been adopted by the majority of Wisconsin dairy farmers.

This report explores the economic benefits of dairy modernization in central and western Wisconsin. The report represents encouraging news and hopefulness for the 20,000+ dairy farmers whom have not yet modernized. Early in 1997 Farm Credit Services of North Central Wisconsin developed a business planning process with its own business consultants to assist farmers in their decision making process. The service became a collaborative effort with Farm Credit Services of Northwest Wisconsin. This study looks at the strategies used by dairy producers to modernize.

Data for this study comes from thirty-seven (37) family dairy farmers who worked with the FCS business consultants. The data is presented in summary form only as the detail information is proprietary to the individual farmers and the methods and tools of FCS.

The major findings of the study are:

- Sustained growth for any business is necessary for the long-term viability of the business. Successful modernization and growth appears to follow a reasonable growth factor of not more than 2.5x growth from the current operation size without significantly enhanced management systems to manage the increased cows, people and investment.
- Sixty percent (60%) of the producers chose modernization of existing facilities (<200 cows); Sixteen percent (16%) built all new facilities (200-350 cows) and will be depend primarily on family labor; and twenty four percent (24%) were greater than 350 cows and largely dependent on non-family labor. ROA, break-even, net operating rate and net profit per unit improved regardless of size and modernization option.
- There was no significant difference in post modernization ROA, break-even, etc. Conversely, the largest pre-modernized units had the highest break-even cost of production and the highest expense ratios.
- Business consulting provides a balanced approach to the decision making process and positively impacted the business decisions and wealth creation for the family business. Achieving business success depends on realistic plan assumptions and on the owner's willingness, ability and discipline to execute the plan. Business planning is neither a panacea nor a placebo to create business success. Planning is a critical business management skill for the successful producer.
- The producer must have the ability to produce a quality product.

- Most of the business consulting projects received business planning grant funding from the Department of Commerce Dairy 2020. The planning grant program had a significant positive influence to the farmers' decision to create intensive modernization plans. Department of Commerce farmer surveys indicate very high satisfaction with Farm Credit Services' business consulting process.

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KNOWING BUSINESS FACTORS IS KEY TO MODERNIZATION

BY: MICHAEL R. KRUTZA

JUNE 1999

INTRODUCTION

Wisconsin's dairy industry is the state's single largest industry at more than \$3.5 billion of gross farm receipts and a combined economic impact of more than \$17 billion in the state's economy including the marketing and processing sectors. While the dairy industry has historically been a key economic driver in Wisconsin, the producer sector has been slow to modernize. Proven technological advances of parlor systems and freestall housing has not generally been adopted by the majority of the dairy farmers.

FCS, as an agricultural and rural based cooperative financial institution, has a long-term interest in the success of the dairy producers of Wisconsin. This study's purpose is to assess the effectiveness of the FCS business consulting program with those producers who indicated an interest in modernizing their operations. Additionally, the purpose was to take a look at how dairy farmers made decisions regarding modernization.

BACKGROUND

Historically, many farm modernization decisions have been based on visual learnings, and comparative observations of what the "neighbor was doing". This decision making model of the past all too often lead to decisions which did not address the same critical business measures. Too often, growth and modernization lead to overcapitalization of the farm business and/or production systems which yielded production goals without a corresponding cost analysis to ensure the lowest break-even cost of production. For example, striving to achieve 30,000 pounds of milk per cow with a \$6.00/cwt feed cost, \$4.50/cwt debt cost, and miscellaneous costs of \$6.00/cwt creates an unsustainable break-even cost of production well over \$16.00/cwt.

Indeed if modernization is to occur it needs to be based on sound business fundamentals—specifically dairy farm businesses need to modernize under the same business principles of any business. ROA, break-even cost of production, net operating rate and net profit per unit must become the basis for decision making. Business consulting began at Farm Credit Services of North Central Wisconsin in early 1997 and subsequently became a collaborative effort between the FCS of Northwest Wisconsin and FCS of North Central Wisconsin. The primary objective of FCS business consulting is to assist producers of all sizes in creating profitable and vibrant businesses. FCS business consulting focuses on the following:

- Producers' lifestyle and business goals.
- Diagnostic assessment of key business measures.
- Review of options to achieve goals/business success measures.
- Partnering with other professionals (i.e. veterinarians, nutritionists).
- Prescribing the best option that meets producer's lifestyle and business goals.

- Providing follow-up management information systems.
- Assisting producers in business plan follow-up and future projections.

Given Farm Credit Services close association with agriculture, several premises were made as a part of beginning the business consulting service for farmers in 1997.

- Any business, including a dairy farm, must continually grow and modernize or eventually face decline.
- Most of Wisconsin's dairy farmers have not yet adopted parlor or freestall technology.
- Less than 5% -10% of the 22,000 dairy farmers have the current capacity to expand beyond twice their current level in one step.
- Historically, decisions made by farmers were largely based on visual learnings and experiences through field days and trade shows, rather than decisions based on break-even, net operating rate, ROA or net profit per unit.

DEMOGRAPHICS OF WISCONSIN DAIRY INDUSTRY

Statistical information from the Wisconsin Agricultural Statistical Service (1999) described an industry which is the nations #1 producer of cheese and #2 producer for fluid milk. However, the following summaries reveal an industry that is facing significant change if producer wealth and a continued strong infrastructure are to be enhanced and suggest modernization has not yet occurred.

Trend of Dairy Farms

Dairy farm numbers peaked in 1933 at 180,695 and continues to decline to 21,267 dairy herds as of July 1999. Dairy farm numbers have been declining at approximately 3.5% per year since 1990. Total cow numbers peaked at more than 2.3 million head in 1945 and are currently 1.37 million head.

Table 1 Trend in Dairy Farms					
	Unit	1933	1998	Peak	Peak Year
Dairy farms	Number	180,695 *	23,000	180,695	1934 *
Dairy cows	Head	2,111,000	1,369,000	2,360,000	1945
Source: WI Agricultural Statistics Service, 1999					
* 1934 Census of Agriculture					

Dairy Herds by Type of Milk Produced

Nearly one out of five dairy farmers in Wisconsin produce Grade B milk. As of April 1999 the Wisconsin DATCP indicated 17,740 farmers were Grade A producers and 3,884 farmers were Grade B producers. No comparative state statistics were available, although the number of Grade B producers appear to be significant and a possible indicator of modernization attitudes. The following 14 counties have more than 25% Grade B producers as of April, 1999: Ashland, Bayfield, Clark, Crawford, Douglas, Eau Claire, Door, Green, Kewaunee, Marathon, Monroe, Price, Richland and Vernon.

Table 2
Dairy Herds by Type of Milk Produced

County	Total Grade A		Total Grade B				Total Herds
	Herds	% of Total	Bulk	Can	Total	% of Total	
Ashland	25	73.5	9	0	9	26.5	34
Bayfield	49	72.1	19	0	19	27.9	68
Clark	911	74.5	193	119	312	25.5	1,223
Crawford	211	71.8	79	4	83	28.2	294
Douglas	18	72.0	7	0	7	28.0	25
Eau Claire	206	66.5	50	54	104	33.5	310
Door	140	72.9	52	0	52	27.1	192
Green	356	62.7	212	0	212	37.3	568
Kewaunee	260	66.3	132	0	132	33.7	392
Marathon	810	74.2	281	0	281	25.8	1,091
Monroe	413	67.5	62	137	199	32.5	612
Price	70	64.2	39	0	39	35.8	109
Richland	243	71.3	95	3	98	28.7	341
Vernon	413	55.4	179	154	333	44.6	746

Source: WI Agricultural Statistics Service, 1999

Number of Farms by Production Size Group

Average herd size for all herds is 59.5 cows, representing an average annual growth in herd size of approximately 2% since 1990. Nearly 90% of all dairy farmers average less than 100 cows. Total number of farms over 100 cows has remained constant at 2,500 farms over the past two years. These changes suggest that growth and modernization has not yet occurred in Wisconsin. Observations over the past 18 months appear to indicate an increasing interest and activity in modernization.

Table 3
Number of Farms by Production Size Group

Herd Size	1996		1997		1998	
	Farms Number	Cows Percent	Farms Number	Cows Percent	Farms Number	Cows Percent
1-29	5,400	6.0	4,600	4.5	4,300	4.8
30-49	9,600	26.0	8,500	24.0	7,300	21.0
50-99	9,600	43.0	9,400	43.0	8,900	43.0
100-199	2,000	17.0	2,000	18.0	1,950	18.0
200-499	400	8.0	450	7.7	490	10.0
500+	*	*	50	2.8	60	3.2

* There is no breakdown for farms with 200 or more cows in 1996
Source: WI Agricultural Statistics Service, 1999

Number of Farms on Dairy Herd Improvement (DHI) Test

Dairy herd improvement testing provides effective individual and total herd analysis as to the productivity of the dairy herd. The most recent data from 1998 indicates only 47% of the cows in Wisconsin are on DHI test. The states of California, Pennsylvania, Minnesota, Michigan, Ohio, Arizona and Virginia have a higher percentage of cows enrolled on DHI.

Kind	Herds	
	1997	1998
Wisconsin		
Official	4,907	4,595
Non-official (management)	5,359	4,724
Total	10,266	9,319

Source: WI Agricultural Statistics Service, 1999

Milk Production per Cow

Milk production per cow has increased approximately 2.5% per year since 1990 to a current level of 16,685 pounds per cow. While modest production per cow has increased, Wisconsin ranks 20th in overall production per cow. The state of Washington production per cow is 22% more than the Wisconsin producer. Wisconsin production per cow is approximately 20% less than the average of the top five states.

FCS CONSULTING STUDY

This study's purpose is to assess the effectiveness of business consulting, or more appropriately, the impact of business planning on a producer's decision making process. Thirty-seven (37) farm families utilized the business planning services. Approximately one-third of the producers completed and modernized in 1997, with the balance of the producers split equally in 1998 and 1999. Results of completed projects were tested against the producer's original plan. The validation results indicated those producers who followed their business plan met or exceeded most of the key business measures of ROA, break-even, net operating rate, and net profit per unit.

	Baseline	Year 3
Average Total # of Cows	147	327
Breakeven (\$/cwt.)	\$13.56	\$11.35
Operating Expense Ratio	75%	68%
Net Cash Income/Cow	\$257	\$537
Debt/Cow	\$2,334	\$2,598
ROA	4.6%	12.2%
Total Cows	5,438	12,084
Total Cwt.	980,444	2,477,192

Planning Process Overview

The consulting planning process begins with an on farm visit between the FCS consultant and the farm family. The purpose of the first visit is to listen, understand and clarify the family's personal and business goals. Initial meetings commonly take 2-4 hours and conclude with a sense of lifestyle objectives, key business goals (break-even, ROA, etc.) and a diagnostic assessment of the current operations of the farm business. Options and alternatives to achieve the lifestyle and business objectives are identified with a general sense of agreement as to moving ahead with further analysis. FCS consulting is based on the principle of partnering with other professionals. Nearly every business plan in the study also received an assessment of their production results from a veterinarian. That report was included in the overall planning report. A second meeting with the farmer usually lasts an additional 2-3 hours and provides the farmer with a preliminary analysis of the impact of his choices and a review of alternative options.

Key business goals often times are the following:

- Achieve a milk breakeven of \$11.00/cwt or less.
- Achieve an ROA of at least 8%.
- Maintain operating expense of no more than 65%.
- Maintain debt per cow of less than \$3,000.
- Generate net cash income per cow of at least \$600.

Additionally, the more **subjective goals** may be:

- Maintain and improve the quality of life for family and employees.
- Increase family living draw.
- Create a financially sound and viable business that can be passed on to future generations.
- Increase the opportunity to adopt new technologies.
- Improve owner's work environment.

Possible **strategies and options** may include the following:

- Explore flat barn, in-barn pit or new facility
- Purchase replacement livestock or grow herd
- Explore nutrient management options
- Explore no change and exit

The final business report is delivered to the producer with supporting schedules, charts and written analysis of the impact of the various options available to the farmer consistent with achieving the business's goals.

Economic Value of the Study Farms

Total beginning cow numbers were 5,438 representing an estimated income of \$13.6 million from the 37 moderately sized farms in the study. Research by Dr. Larry Swain, UW River Falls, indicates, "that a moderately sized farm with a gross income of \$200,000 is worth \$520,000 to the community." Thus, the 37 farms in the study represent approximately \$35 million to the communities where they are located and that they support. The 37 farms represent more than 560 jobs. Post modernization cow numbers increased to 12,084 cows representing an estimated farm income of approximately \$30.0 million. This modernization has a significant positive impact on the local communities. Assuming the total community economic value, the modernized farm businesses increased their economic impact from \$35 million to more than \$78 million to their communities and provided more than 1,200 jobs.

Break-even Cost of Production

Break-even is a ratio measuring operational efficiency. It is the amount needed to cover all cash operating expenses, family living and debt service. A common producer goal in the study group was \$11.00/cwt. The measurement for break-even is (cash farm expenses, income taxes, all payments and family living minus other income from cull cows, Gov. payments and non-farm income divided by the total CWT's sold). Break-even cost of production dropped \$2.21 over the 3 years of the plan to an average of \$11.35.

Operating Expense Ratio

Operating expense ratio is also a measure of operating efficiency and the measure of the unit's ability to convert expenses into income. Common measure is <65%. The calculation for this measure is (cash expenses, net of interest and depreciation, divided by gross income). Producers utilizing the business planning process reflected a drop from 75% to a respectable 68% in the modernized farm business.

Net Cash Income per Cow

Net cash income is a profitability measure. The measurement is (net farm cash income before depreciation and principal debt service, divided by the number of cows). Net cash income per cow more than doubled from \$257 to \$537 after modernization.

Debt per Cow

Debt per cow is a measure of the leveraged position of the business. A common benchmark is \$3,000 per cow. The calculation is the unit's total debts divided by the number of total annualized cows (milking and dry). The cost of modernization, i.e. parlor, free stalls and cows, requires borrowed capital. Premodernization debt/cow was \$2,334 per cow, representing approximately \$2.17 cost per cwt. Debt per cow, alternatively borrowed investment per cow, increased to \$2,598, representing a cost/cwt. of \$2.47. The net increase cost for capital to modernize the business in the study was \$.30/cwt.

Return on Assets-- ROA

ROA measures the rate of return on the farm assets and is often used as an indicator of profitability. The ratio is most meaningful for comparisons between farms when the market value approach is used to value farm assets. Due to fluctuations in market value, it is most

meaningful for comparisons between accounting periods for an individual farm operation when the cost approach is used to value farm assets. The calculation is (net farm income from operations plus farm interest expense minus owner withdrawals for unpaid labor and management divided by average total farm assets). The baseline ROA for the farmers in the study was only 4.6%. At the end of year three of the modernization, the average ROA increased more than three fold to 12.2%.

Owner Profile

All of the business owners were a continuation of family businesses, with the average age of the principals and or their transitioning partners less than 45 years old. The overall attitude of the owners was one of cautious optimism. The group would likely be perceived as successful by their neighbors. Initial discussions generally revealed a sense of optimism, but the producers were seeking another opinion or affirmation of the plans already envisioned by the farm family. A key characteristic was the producer's willingness and ability to grow and learn as business people.

The farm businesses were disbursed over 15 counties in central and western Wisconsin.

County	Number	Percent
Marathon	8	22%
Clark	5	14%
Pierce	4	11%
Portage	4	11%
Wood	3	8%
Chippewa	2	5%
Polk	2	5%
Taylor	2	5%
Barron	1	
Dunn	1	
Langlade	1	
Lincoln	1	
Pepin	1	
St. Croix	1	
Waushara	1	

Modernization Options

As producers continued through the planning process, most began to look differently at the alternatives and options available. Often times, initial visualizations of a particular parlor size, herd size, etc. needed modification to ensure the producer could achieve their respective key business goals, i.e. break-even, ROA etc.

Three modernization options became evident. The options characteristics were influenced by size (cow numbers), structure choice, and labor source. Following is a summary of the parlor/barn options: stall barns (2); swing parlor (4); flat barn (5) and pit parlor (26). Parlor sizes were: double 6 (5); double 8 (16); double 10 (6); double 12 (2) and 2 were over the double 12. Seventy eight percent (26) built new free stalls; 6 retrofitted existing sheds, and 2 utilized existing stall barns.

The following table represents the average investment and capacity of various sized parlors.

	Flat Barn Milking Facility Double 8	Mid-Sized Low-Capital Parlor Double 8 Used equip.	Large Basic Technology New Parlor Double 12 New Equip.
Cost	\$25,000	\$50,000	\$250,000
Useful Life (Years)	10	10	15
Cows milked/hour	70	80	90
Operators Require	1	1	1
Source: UW Center for Dairy Profitability – Gary Frank			

Small—In Barn Modernization-Cow Range from 50-200 cows

This structure option is profiled by producers with less than 200 cows. Parlor choices most often included using their existing facilities with either flat barn parlors or in barn pit parlors.

	Baseline	Year 3	Change
Cows	80	156	195%
Break-even (\$/cwt.)	\$13.58	\$11.42	(\$2.16)
Operating Expenses	73%	68%	(5%)
Net Cash Income/Cow	\$238	\$556	234%
Debt/Cow	\$3,193	\$2,609	(\$584)
ROA	4.7%	11.8%	7.1%
Total Debt	\$259,081	\$409,067	\$149,986
Net Cash Return	\$20,996	\$92,628	

Summary

- Sixty percent (60%) of the producers chose the less costly retrofit option.
- Average business growth was just under 2x, with the average increase from 80 to 156 cows. Often times, the increased cow numbers were achieved by internally growing the herd. A common strategy was to stage the construction process over time providing time for the unit to grow the cow numbers and acclimate the new animals to the freestall housing.
- Average operating expenses dropped from 73% to 68% in year three of the plan. While total operating expenses increased from approximately \$146,000 to \$265,000, the incremental improvement efficiency (reduction from 73% to 68%) reduced operating expenses by approximately \$20,000.
- **Break-even** cost of production dropped \$2.16 per cwt to \$11.42. Average cwt sold before modernization was 16,000 and increased to approximately 31,500 cwt.
- **Net cash** income per cow increased from \$238 to more than \$556, representing a significant increased return to the owners.
- **Debt per cow** dropped from a respectable \$3,193 at a cost of \$3.19/cwt to \$2,609 debt per cow at a cost of \$2.65/cwt. Overall debt change reduced the break-even by \$.54/cwt, representing 25% of the overall reduction in break-even to \$11.42.
- **ROA** grew more than 2x from 4.7% to 11.8%.
- **Total debt** increased 1.57x to a debt level of \$409,067 representing an increased average investment of \$1,960 for the additional growth of 76 cows.

Medium—200 to 350 cows

This modernization choice included limited use of existing facilities where retrofitting was impractical or not a choice of the producer. Intergenerational transition was a common characteristic of this group; and, family labor was the primary labor source.

	Baseline	Year 3	Change
Cows	99	258	261%
Break-even (\$/cwt.)	\$13.25	\$11.43	(\$1.82)
Operating Expenses	72%	68%	(4%)
Net Cash Income/Cow	\$393	\$509	130%
Debt/Cow	\$1,874	\$2,993	\$1,119
ROA	5.1%	11.7%	6.6%
Total Debt	\$194,790	\$778,464	\$583,674
Net Cash Return	\$40,255	\$133,220	

Summary

- Six of the 37 producers, representing 16% of the group, selected this option.
- Herd growth was the largest of any group, growing from an average of 99 cows to nearly 260 cows. Growth was 2.6x previous herd level. Producers primary replacement option was the location, selection and purchase of replacements rather than internal growth.
- **Break-even** dropped significantly from \$13.25 to \$11.43 in year three of the plan. This group had the lowest beginning break-even at \$.33/cwt less than the small group. The \$.33 represents a modest \$66 lower operating cost per cow than the smallest group.
- **Operating expenses** dropped from 72% to 68%, paralleling the same results of pre and post modernization of the <200 cow, in-barn modernization group.
- **Net cash income per cow** increased from \$393 to \$509, representing a 29.5% increase. This group enjoyed the highest pre-modernization net income per cow and corresponding **net cash return**. Net cash return was highest because the group had the lowest premodernization operating expense of 72% and the lowest debt/cow of \$1,874. The debt cost was the lowest/cwt at \$1.87.
- **Debt per cow** increased the largest amount of all groups from \$1,874 to \$2,993. As previously stated, this group enjoyed the lowest pre-modernization debt cost/cwt of \$1.87 compared to the <200 cow group of \$3.19 and the >350 cow group of \$2.21. Conversely this modernization group had the highest post-modernization debt cost/cwt at \$2.99, while the <200 group and the >350 group had identical debt/cost per cwt of \$2.60.
- **ROA** increased to 11.7% in year three of the plan. This group enjoyed the highest pre-modernization ROA of 5.1% compared to 4.7% <200 cow/retrofit group and only 2.8% for the >350 group.
- **Total debt** increased more nearly 4x to \$778,464. The choice of purchasing all new facilities, new pit parlor, and significant cow replacements places multiple new management challenges. The average capital cost for the 159 additional cows was \$3,670, compared to a low of only \$1,960 for the <200 cow group and \$2,653 for the group >350 cows.

Large—more than 350 cows

The group profile is one largely of intergenerational transfers, i.e. sons and daughters. This group built all new state of the art facilities, and purchased most of their replacement livestock. This group was more dependent on non-family labor.

	Baseline	Year 3	Change
Cows	197	427	217%
Break-even (\$/cwt.)	\$13.97	\$11.27	(\$2.70)
Operating Expenses	83%	70%	(13%)
Net Cash Income/Cow	\$178	\$498	280%
Debt/Cow	\$2,214	\$2,607	\$393
ROA	2.8%	12.9%	10.1%
Total Debt	\$476,732	\$1,087,124	\$610,392
Net Cash Return	\$14,494	\$205,157	

Summary

- Nine of the 37 producers, representing 24% grew their herds to an average of 427 cows, representing a 2.16x growth.
- **Break-even** cost of production dropped from \$13.97 to \$11.27, representing the largest decrease of \$2.70. Conversely, this group's pre-modernization break-even expense was the highest of all three groups. This analysis represents a significant departure from common public perception that the largest units were most efficient. Indeed, the average producers of this pre-modernized group with 197 cows had operating expenses of more than \$140 per cow than the 200-350 group and more than \$78 per cow than the <200 cow group.
- **Operating expenses** of this group were nearly 15% higher than the other groups with an operating expense of 83%. The three year plan projects a decrease to a respectable 70% operating rate, although still 2% points higher than the other modernization options.
- **Net cash income** was the lowest pre-modernization at \$178 and increased to \$498. This increase is significant, although the group <200 cows and 200-350 groups each projected nearly \$540 net cash per cow.
- **Debt/cow** had the least change of any group, increasing from \$2,214 to \$2,607 per cow. The modest increase in debt cost/cwt was \$.39/cwt, yet maintained a low overall debt cost/cwt of \$2.60.
- **ROA** increased the most to 12.9%, although this group's pre-modernization ROA was the lowest at 2.8%. An increase of this magnitude represents significant challenges to the owner's management systems, given the management systems of this group generally yielded the lowest pre-modernization performance in break-even, net operating rate, net cash per cow and ROA.

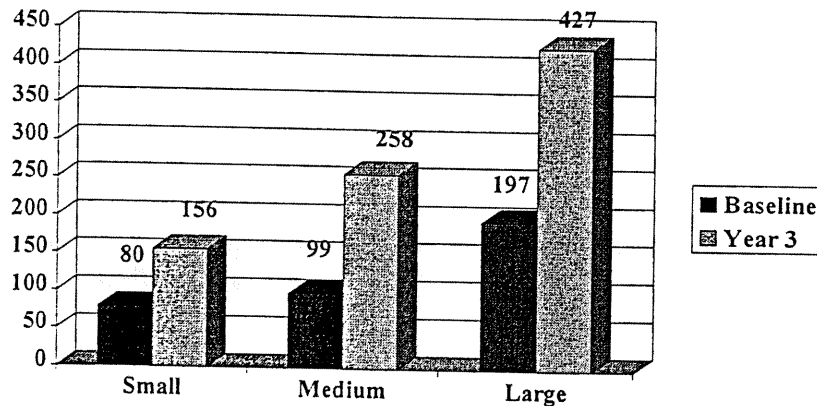
- **Total debt** increased more than \$600,000, representing an average incremental capital investment for the additional 230 cows of \$2,653 per cow. This compares to \$1,960 for the <200 cow group and \$3,670 for the 200-350 cow group.
- **Net cash return** increased the greatest from \$14,494 to more than \$205,157. As previously stated, achieving this requires significant changes in the owner's management systems to reduce the operating rate and reduce the break-even cost of production.

Comparative Analysis of Key Business Measure by Modernization Options

Herd growth

- Increasing cow numbers was a constant in each of the options.
- Small (<200cows) increased 1.95x from 80 to 156 cows.
- Medium (200-350 cows) increased 2.68x from 99 to 258 cows.
- Large (>350 cows) increased 2.16x from 197 to 427 cows.

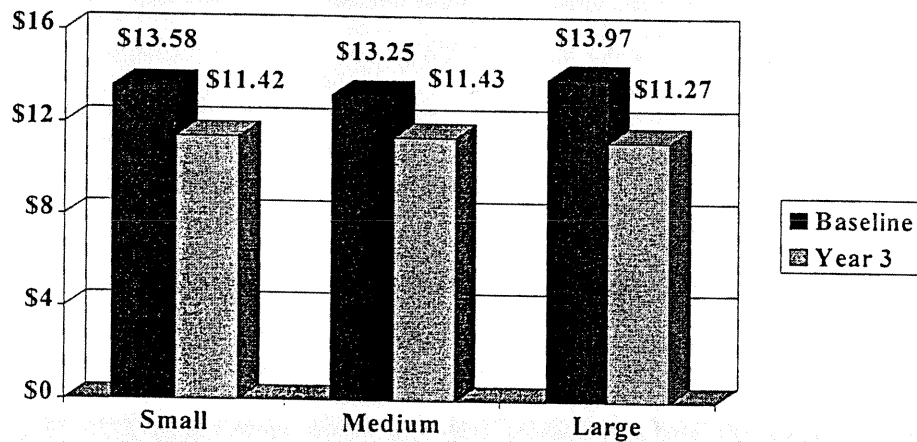
Farm Credit Services
Business Consulting Completed Feasibility Profile
Average Total # of Cows



Break-even Cost of Production

- All of the options focused on reducing break-even cost of production with the three year planning horizon.
- Small units decreased by \$2.16 to \$11.42.
- Medium units decreased by \$1.82 to 11.43.
- Larger units decreased by \$2.70 to \$11.27, although the largest farms had the highest pre-modernization break-even cost of production.

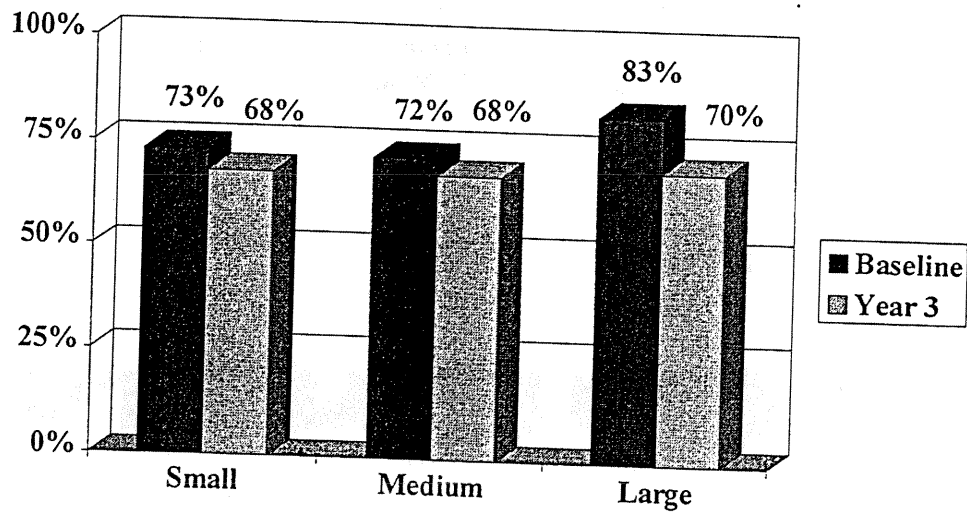
Farm Credit Services Business Consulting Completed Feasibility Profile Break-even \$/cwt



Operating Expense Ratio

- The largest units (197 cows) had the poorest pre-modernization expense percentage at an unsustainable 83% compared to 72% and 73% for the farm businesses averaging less than 100 cows pre-modernization.
- All of the businesses achieved significant reduction in the operating expense to a respectable 68% for the less than 350 cow units and a projected 70% for the >350 cow units.

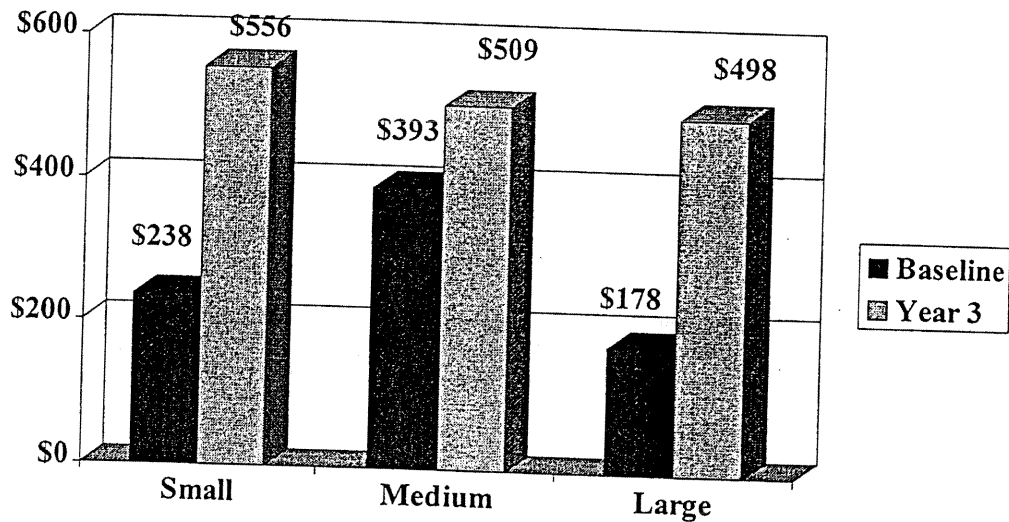
Farm Credit Services Business Consulting Completed Feasibility Profile Expense Ratios



Net Cash Income per Cow

- All of the units had relatively low net cash income per cow before modernization, with the lowest of \$178 for the units >350 cows.
- Net cash income per cow increased significantly for each of the categories from an average pre-modernization of \$260 to a post modernization of \$525.
- The gain in net cash income per cow was largely a result of the relative reduction in the break-even cost of production.

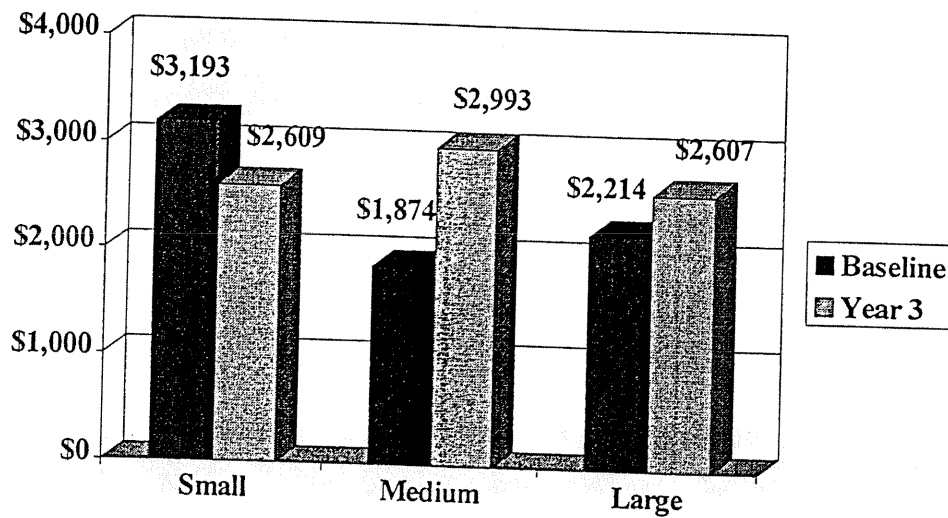
Farm Credit Services Business Consulting Completed Feasibility Profile Net Cash Income/Cow



Debt per Cow

- Post-modernization debt/cow was at or near benchmark levels for each group.
- The medium and large group experienced a modest increase in debt/cow while the <200 cow group dropped from \$3.19/cwt. debt/cow to approximately \$2.60/cwt.

Farm Credit Services Business Consulting Completed Feasibility Profile Debt/Cow



ROA

- ROA increased nearly 3x for each group.
- Pre-modernization ROA reflected sub-par ROA with no significant difference between groups.

Farm Credit Services
Business Consulting Completed Feasibility Profile
ROA

