

## Can Dairy Farming be Profitable in 2010? *What you should consider to position your business for success*

Terry R. Smith, Ph.D.  
Dairy Strategies, LLC<sup>1</sup>  
Madison, Wisconsin

*“You’ve got to be careful if you don’t know where you’re going, because you might not get there” -- Yogi Berra*

### Can Dairy Farming be Profitable in 2010?

While it is tempting to respond to my assigned title for this presentation, with a resounding “YES”, I think it is important to consider the dynamics of rapid change within the industry from both an **internal** (to your business) perspective (Strengths, Weaknesses), and an **external** perspective (Opportunities and Threats) (SWOTs) facing your business and the dairy industry, as you consider how to best position your business for the next 5-10 years and beyond. I believe the following five areas (**5-M**'s) should be considered **key drivers** to the current and future positioning of your dairy business and the industry.

#### Marketing

- De-regulated environment, reduction/elimination of Federal Milk Marketing orders
- Increased emphasis on risk management strategies (inputs and outputs)
- Alliances, partnering, merging, increased “grass-roots” vertical integration
- “Designer genes - designer cows” – a niche for some
- Consumers “make the rules”: food safety issues (biotech), animal care, environmentally friendly
- \_\_\_\_\_

#### Management

- Business vs. “way-of-life”
- Business management skills
- Personnel management – operational systems (Quality Management Systems eg. ISO-9001:2000)
- Integrate decision-support systems for improved decision-making
- Adoption of profitability enhancing technology and management practices
- Positioning to grow the business (sustained growth)
- \_\_\_\_\_

---

<sup>1</sup> Dairy Strategies, LLC is a dairy business consulting firm based in Madison, WI, with offices in CA, MN and TX. Web: <http://www.DairyStrategies.com>, Phone: 888-249-3244, Email Terry Smith: [tsmith@trsmith.com](mailto:tsmith@trsmith.com).

### Manure

- Environmental regulations - variations by state and county, region - will EPA level playing field? (regulations & investments)
- Competitive advantages/disadvantages by region of the US
- Sharing the investment burden (15-20% increase in capital investment for environmental management) with public
- Nutrient management / crediting, continued focus on water quality, increased focus on air quality and emissions (CERCLA, Safe Harbor), digesters (CH<sub>4</sub> (co-generation) and H<sub>2</sub> – fuel cells?)
- Implementing Environmental Management Systems (EMS) – ISO-14001
- \_\_\_\_\_

### Money

- Access to capital for re-capitalization and growth
  - Increased use of equity/investor capital, equity-gap financing
  - Loan guarantee programs
  - Lenders that understand dairy
- Development Instruments
  - TIF districts
  - State/regional economic development initiatives
    - Recruiting initiatives
  - Industrial Revenue Bonds
  - Jobs training
- \_\_\_\_\_

### Mind-Set

- Business/industry attitude
  - Positive, proactive, progressive
  - Business mind-set (control the things you can)
  - Industry leadership/representation?
  - Promoting community, state economic impacts
  - “Great place to produce and market milk”
- Why do “relocators” go where they go?
  - Agribusiness-friendly
  - Economic vitality, employment, growth-mentality
- \_\_\_\_\_

While the 5-M's above, provide a framework for consideration it is important for you to drill-down with respect to your business using a SWOT (Strength, Weaknesses, Opportunities and Threats) as you position for the future. The following is only an example, that will hopefully encourage you to start with an empty table and complete it for **your** dairy business.

**Table 1. Example SWOT Analysis Framework Across "5-M's".**

Area	Strengths	Weaknesses	Opportunities	Threats
Marketing	Increased use of risk management tools	Seasonality of supply/demand, replacement rate and downer-cows/marketing culls	CWT or similar initiatives, international market development	Potential for increased vertical integration, elimination of Federal Orders
Management	Commitment to people and systems	Shortage of management talent / lack of attraction to the industry	Career path in dairy management	Human resource development and growth
Manure	Compatible with cropping systems	Water and air, contaminants, odor, flies, dust, nutrient management	Digesters (CH <sub>4</sub> or H <sub>2</sub> ), credits (carbon, green energy)	Confusion of regulation, non-science-based citizen groups, public hearings
Money	Favorable returns will attract debt and equity capital	Lenders that understand the dairy business	Growth in equity capital for dairy, international,	Lenders and/or investors don't see or understand opportunities
Mindset	Willingness to develop strategic relationships	Desire to maintain autonomy ("us and them" mentality)	Community economic impacts	Continue with doing business in a traditional fashion as the rate of change accelerates

### **Dairy Industry Overview, Challenges and Opportunities**

Long-run returns (excluding asset appreciation) in the dairy sector have been quite low, making it difficult for many producers to justify making the necessary capital investments needed to take advantage of new technology, economies of size and scale and improved production and management systems. Capital investments in the dairy sector have typically resulted in low returns (2-4% Return on Assets (Fair Market Value Basis), ROA), due in great part to the over-investment in machinery, buildings, equipment and land. The challenge for the future as margins continue to tighten is to focus on the operational systems that produce cost-effective levels of milk output while employing assets that will provide the greatest returns and reducing (or resisting) investments in the lower return assets. In many situations this may mean increasing the level of specialization within a dairy farm business and having other businesses provide

inputs and services (feed, heifers, contract breeding and veterinary services, contract manure handling, etc.) to the business.

Profitable dairy farm businesses can be characterized by high production efficiencies, excellent cost control and high capital efficiency. A business's expectations of the possible future gains from an investment or change in management practices or technology, must be based in part on past performance, and in part on forecasts of expected future performance within the expected business climate. The dairy profit equation is quite simple—  $\text{profit} = (\text{price} - \text{cost}) \times \text{volume}$ .

Therefore, there are three ways to increase profitability:

- Increase price
- Decrease costs (operating and capital costs)
- Increase output volume

These are the dairy manager's three primary control factors for maintaining or increasing profits. Management is challenged to find the best balance among these three factors. A change in cost, volume or price will likely affect one or both of the other two factors.

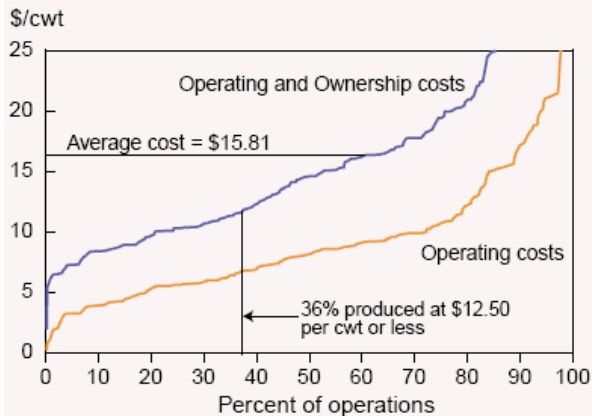
The best a business can do is to estimate the range of possible future costs and expected returns and the relative chances of earning a high or low profit on the particular investment(s). All dairy managers faces this complex of operational and investment decisions as they position their businesses for the future, the same as does any business.

### **Characteristics of US Dairy Operations – Operating and Total Costs**

The following figures from a recent USDA-ERS publication (While *McElroy, et. Al., 2002. Agricultural Income and Finance Outlook. USDA-Economic Research Service. AIS-79. Sept. 26, 2002*) depict the average estimated operating and full cost of production by size of business. These average cost and relationships reinforce the well-known economies of size characteristic of the US dairy farming sector.

Figure 24

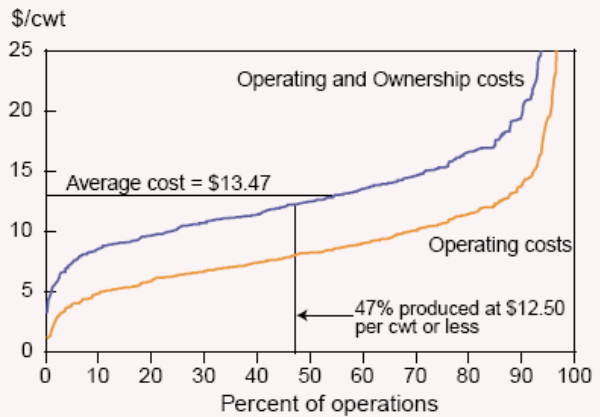
**Small dairy operations (less than 50 cows)**



Source: 2000 dairy ARMS survey.

Figure 25

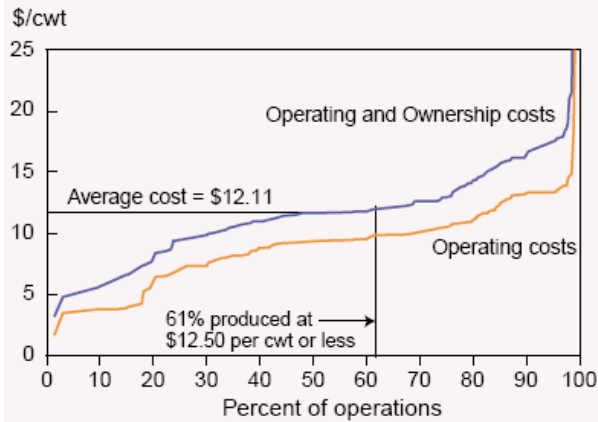
**Medium dairy operations (50-199 cows)**



Source: 2000 dairy ARMS survey.

Figure 26

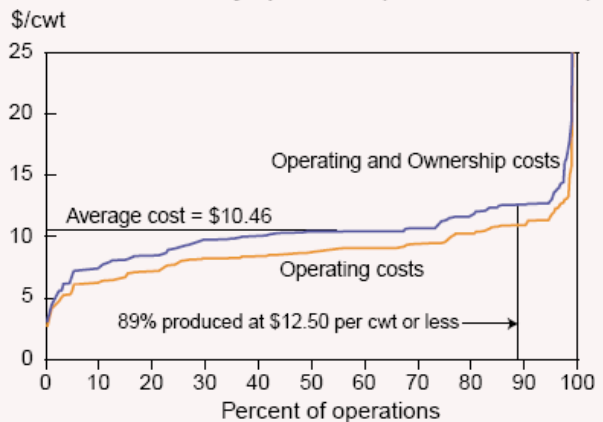
**Large dairy operations (200-499 cows)**



Source: 2000 dairy ARMS survey.

Figure 27

**Industrial-scale dairy operations (500 cows or more)**



Source: 2000 dairy ARMS survey.

The well managed smaller-sized operations can be very cost competitive with larger sized dairies in relationship to operating costs or operating efficiencies as depicted in the four figures above (Figures 24-27, from McElroy, et. al., 2002). **Note in particular that the percent of farms with operating costs below say \$10/cwt are reasonably similar across herd size ranges.** However, the advantage is typically reduced when ownership costs and other fixed costs are added to arrive at total economic costs of production (operating and ownership costs, see figures, above). Therefore, the short-run survivability of many dairy farm businesses is achievable while not being concerned with capital replacement costs, which of course are real costs and must also be accounted for when planning for the longer-term viability and sustainability of the business. In the short-run, a focus on improving operational efficiencies (e.g. operating expense ratio) will help improve operating profits. However, a dairy business with high capital investments per cow (or pound or cwt of milk sold) will negatively impact the ability of the business to grow, which is characteristic of many small and average-size dairy operations in the US. Many dairy farm businesses are over-

capitalized and/or have invested in lower-return assets that dramatically impact the ability of the business to produce competitive returns. Taking a critical look at both the operating efficiency and capital efficiency of any business is important to the future success and sustainability of the business. Businesses with Return on Assets (Fair Market Value basis, ROA) greater than the average cost of capital have the opportunity to use leverage (debt capital) effectively to enhance the opportunity for the business to grow, which is a characteristic challenge for many average-sized dairy businesses across the US.

The typical 90 cow dairy operation will have a work force of 2-3 full-time equivalents, comprised of the owner and family members, providing all labor and management to the business. In contrast, the typical 1,800 cow dairy operation will have a work force of 15-20 full-time equivalents, comprised of one or two full-time herd managers, a dairy operations manager and/or general manager, outside or feed manager and a parlor manager. The ability of these businesses to specialize in specific areas of responsibility is quite different. The larger business, in addition to being able to capture the economies of size, will typically also achieve greater levels of specialization due in great part to the depth of management. The smaller sized dairy businesses will typically be more diversified business operations, often raising their own forages, raising their own replacement heifers thereby spreading their management thin across the respective cost and profit centers under their control.

More and more of the larger dairy operations are specialized milking operations and are typically having their replacement heifers custom-raised or sell heifer calves and buy springing replacements, as needed. If and when there are seasonal milk production needs that are somewhat predictable, within their annual marketing plans, there is obviously a greater opportunity to adjust herd inventories (and number of cows milked) by managing within-herd milk production levels and herd numbers. A larger specialized dairy operation can more easily decide to milk a portion of their herd 3-times per day and the balance of the herd 2-times per day, thereby adjusting their level of output and also managing operating expenses, particularly milking labor. Due to the fact that the larger producer uses primarily purchased feeds versus home-raised feeds (or pasture in many cases), the seasonality of milk production is usually less of a management challenge as there is a greater ability to target the feed purchase decisions to the herd and milk market needs from a planning standpoint. The larger more specialized operations have a much lower risk exposure in most situations to the risks associated with farming/cropping operations and are typically forward contracting both forages and concentrates and byproduct feeds, often a year in advance, thereby having much more control over the variability of input costs than the diversified operations (usually the smaller dairies that are producing their forage and even some of their grain).

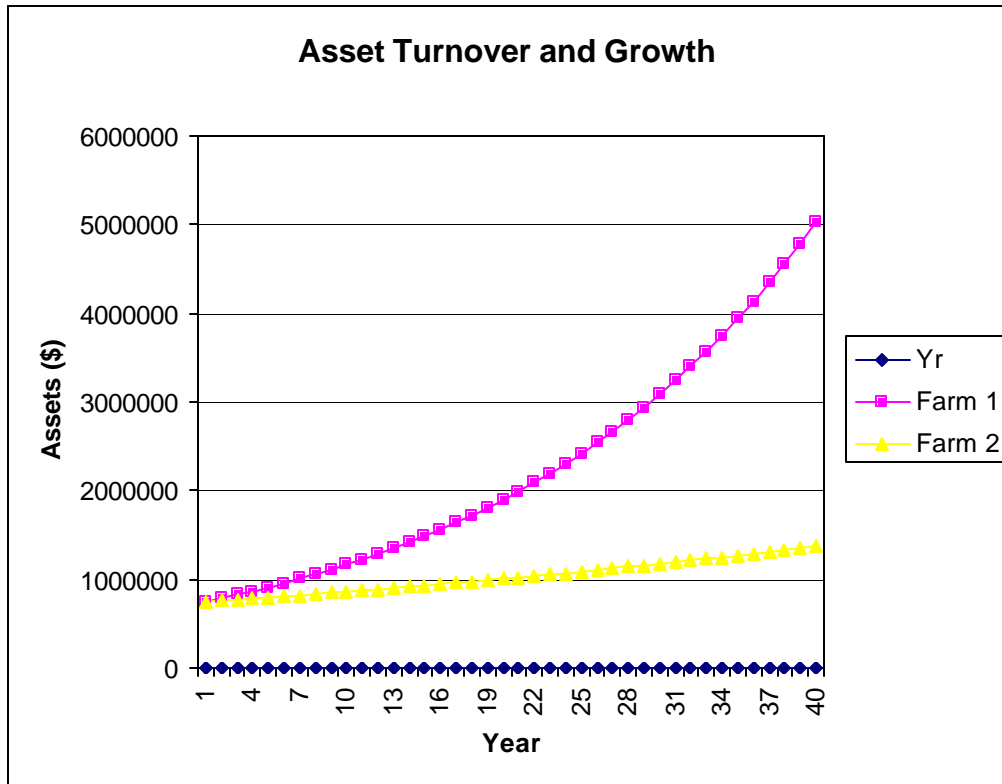
The larger dairy operation has the ability to market tanker-load quantities of milk every day, which is a clear competitive advantage from a milk marketing standpoint than the average-sized producer. The larger dairy operation is in a much more favorable position to consider the application of on-farm milk concentration technologies (reverse osmosis and ultra-filtration) as another means of effectively matching their milk production more closely with their local market needs, while having the flexibility to move concentrated milk to more distant markets in a cost-effective manner.

While any dairy business has the ability, often through their milk marketing organization to take advantage of the price risk management tools available to them, the larger operations, with more depth of management and/or with greater ability and willingness to hire consultants, to assist with the development and implementation of a comprehensive marketing and risk management program, are more likely to have an input and output price risk management program. The milk futures and options markets available on the CME (Chicago Merchantile Exchange), while available to all dairy producers to manage their milk price risk, have contract sizes of 200,000 lbs. which are more compatible with the larger producer than average-sized producers. The minimum contract size coupled with the transactions costs and management time required to manage milk price risk tends to favor the larger dairy operations ability to implement them.

The capital intensiveness of the dairy farming business represents a challenge for all dairy producers. However, the corresponding economies of size in milk production are real and certainly favor the larger dairy operations that are in a position to make the level of investment needed to capture these economies while still maintaining a high level of operational efficiency.

### **Investing in Productive Assets Allows for Improving Capital Efficiency, Growth and Sustainability**

Figure 1 below shows the impact of asset utilization, measured by asset turnover ratio (ATO) on business growth over a period of 40 years. The two farm businesses (Farm 1 and Farm 2) both started with \$750,000 in total assets. Farm 1 had an average asset turnover of .50 over the course of 40 years compared to .25 for Farm 2. In addition, Farm 1 had an operating efficiency (operating profit / value of farm production) of 40% compared to 25% (more typical of the average dairy farm business) for Farm 2. The combination of these two factors (which when multiplied together result in Return on Assets (ROA) has an obvious impact on the growth potential of a business. Both farms were utilizing 25% of operating profit each year for growth of the business. Many dairy farm businesses are over-capitalized and/or have invested in lower-return assets that dramatically impact the ability of the business to produce competitive returns. Taking a critical look at both the operating efficiency and capital efficiency of any business are important to the future success and sustainability of the business. Businesses with Return on Assets (ROA) greater than the average cost of capital have the opportunity to use leverage effectively to enhance the opportunity for the business to grow over time.



**Figure 1.** Impact of asset utilization on growth

## Summary

The progressive dairy manager of today and the future recognizes the importance of adopting and implementing profitability-enhancing production and management practices and techniques, with a keen eye on the “bottom-line”. He/she views the dairy farm as a business and him/herself as a business manager striving to achieve business and family goals through the operation of a profitable dairy farm business, now and into the foreseeable future. Performing a SWOT analysis and using benchmarking (e.g. DBAP) are ways to identify impending problems and assist in pointing a business toward the opportunities for improvement. Using objective measures of performance assists in focusing attention where attention is most needed and allows for learning, that should translate into continuous improvement within the business. Careful scrutiny of all investments (improving capital efficiency) and vigilant cost control (improving operational efficiency) will go a long way toward increasing the chances of success for most dairy businesses, today and in the future.

*“What gets measured gets done, has never been so powerful a truth” – from: “Thriving on Chaos, Tom Peters*



## References

McElroy, R., R. Strickland, J. Ryan, C. McGrath, R. Green, K. Erickson and W. McBride. 2003. Agricultural Income and Finance Outlook. USDA-Economic Research Service. AIS-79. Sept. 26, 2002.

## Notes

---