Dairy Expansion
“*The Reason, the Process*”

Agricultural Outlook Forum 1999
Arlington, VA
February 23, 1999

Steve Watrin
Director, Dairy Development
Land O’Lakes, Inc.
Dairy Expansion

“The Reason, the Process”

- National Industry Changes
- Regional Industry Changes
- Dairy Development
National Industry Changes

• Elimination of Price Support
  - Price Volatility
  - Greater Profit Potential
  - Greater Transition
National Industry Changes

• Knowledge and Technology
  - Productivity
  - Profitability
  - Specialization
Regional Industry Changes

• Lifestyle Expectations
  - Quality of Life
  - Profit
  - Retooling
Regional Industry Changes

- Understanding the Value of Cows
  - Non-Dairy Entrants
  - Economic Development
  - Movement of Western Dairymen
Advantages of Midwest Dairy

- Inexpensive Land
- Excess Forage
- Low Grain Prices
- Abundant Water
- Abundant Land for Nutrient Management
- Good Weather for Cows
- High Milk Prices
DAIRY DEVELOPMENT

Mission

Provide producers with professional business support services to improve their profitability and national competitiveness.
DAIRY DEVELOPMENT

*Key Program Concepts*

- Provide support in facility design, technology, finance and business economics.
- Provide quality business planning and project management services for dairy producers
- Provide a personal and family goal-driven process
- Proactively coordinate resources
- Extend and compliment existing internal/external support services
DAIRY DEVELOPMENT

History

- Pilot program initiated in 1989
- 1990 Implemented program
- 146 Producer projects through 1998
- Range 150-1500 cows
- Average -- 550
DAIRY DEVELOPMENT
Program Process

Stage 1
Initial Planning & Design
- Phase I: Strategic Planning
- Phase II: Operational Planning
- Phase III: Site Development & Final Design

Stage 2
Bid Securement & Construction
- Phase IV: Bid & Loan Securement
- Phase V: Construction

Stage 3
Implementation & Monitoring
- Phase VI: Management Implementation
- Phase VII: Consultation & Monitoring of business performance
DAIRY DEVELOPMENT
Phase I Planning

Actions

• Defining personal and business objectives
• Outline potential models.
• Study existing dairies.
• Evaluate financial capabilities.
DAIRY DEVELOPMENT
Phase I Planning

Outcomes

• Strategic Plan
  - Focus
  - Direction

• Profit Analysis

• Clarify Expectations
  - Communications
DAIRY DEVELOPMENT
Phase II Planning

Actions

Develop Operational Plan
- Technology Planning
- Animal Planning
- Labor Planning
- Manure Storage / Nutrient Use
- Feed Planning
- Facility Planning
- Equipment Plan
DAIRY DEVELOPMENT

Phase II Planning

Outcomes

Complete Business Plan
  • Strategic Plan
  • Expansion Budget
  • Feed Plan Model
  • Animal Flow Model
  • Labor Model
  • Manure Nutrient Model
  • Financial Proforma
DAIRY DEVELOPMENT
Phase III Planning

**Actions**

- Survey, Borings, Testing
- Manure Storage Design and Permit Application
- Logistical Planning
DAIRY DEVELOPMENT
Phase III Planning

Outcomes

• Site Plan
• Manure Management Plan
• Facility Plans and Blueprints
DAIRY DEVELOPMENT
Phase IV Bid Securement

Actions

• Develop bid proposals
• Secure bids
• Analyze bids
• Update financials
DAIRY DEVELOPMENT
Phase IV Bid Securement

Outcomes

- Secure Permits
- Secure Contractors
- Secure Financing
- Establish Timelines
DAIRY DEVELOPMENT
Phase V Construction

Actions

- Review Project Protocol
- Weekly Project Visits
- Update Project Tracker
- Review Change Orders
- Consult on Feed, Labor, Animal, Record implementation process
DAIRY DEVELOPMENT
Phase V Construction

Outcomes

• Project on budget
• Construction per design
• Implement new record system
• Implement labor plan
• Secure forage supply
• Implement animal expansion
DAIRY DEVELOPMENT
Phase VI Implementation

**Actions**

- Establish herd management
calving, care, culling, milking, feeding,
breeding

- Labor Training
  activity flows, s.o.p.

- Implement process & controls
  anticipate issues, propose options, measure
  results, follow-through on adjustments.
DAIRY DEVELOPMENT
Phase VI Implementation

Outcomes

• Performance to Budget

• Management of Business
  People, Cows, Money Monitoring,
  System Updates & Plans
  - Financial
  - Production
  - Labor

• Business Analysis & Budgeting
Factors Impacting Dairy Expansions

- Building Ordinances
- Permitting Requirements
- Increasing Cost for Assets
- Lending Requirements
Dairy Expansion Summary

- National Impacts
- Regional Impacts
- Process for Success
- Resources
### CHART A

Number of Dairy Operations by Size Group in U.S.

<table>
<thead>
<tr>
<th>Year</th>
<th>1-29 Head</th>
<th>30-49 Head</th>
<th>50-99 Head</th>
<th>100-299 Head</th>
<th>200+ Head</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>59,250</td>
<td>35,390</td>
<td>42,920</td>
<td>14,900</td>
<td>6,990</td>
<td>159,450</td>
</tr>
<tr>
<td>1994</td>
<td>53,300</td>
<td>32,760</td>
<td>41,130</td>
<td>14,680</td>
<td>6,820</td>
<td>148,720</td>
</tr>
<tr>
<td>1995</td>
<td>46,400</td>
<td>30,710</td>
<td>38,440</td>
<td>14,570</td>
<td>6,910</td>
<td>137,030</td>
</tr>
<tr>
<td>1996</td>
<td>39,780</td>
<td>28,410</td>
<td>36,930</td>
<td>14,740</td>
<td>6,940</td>
<td>126,800</td>
</tr>
<tr>
<td>1997</td>
<td>33,420</td>
<td>26,300</td>
<td>34,810</td>
<td>14,900</td>
<td>7,250</td>
<td>116,680</td>
</tr>
</tbody>
</table>

| 93-97 change | -25,830 | -9,090 | -8,110 | --- | +260 | -42,770 |
| 93-97% change | -43.6% | -25.7% | -18.9% | --- | +3.7% | -26.8% |

Source: USDA Milk Production
## CHART B

Number of Dairy Operations by Size Group in U.S.

<table>
<thead>
<tr>
<th>Year</th>
<th>1-29 Head</th>
<th>30-49 Head</th>
<th>50-99 Head</th>
<th>100-299 Head</th>
<th>200+ Head</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>4.1</td>
<td>13.1</td>
<td>27.6</td>
<td>18.9</td>
<td>36.3</td>
<td>100.0</td>
</tr>
<tr>
<td>1994</td>
<td>3.4</td>
<td>12.0</td>
<td>26.0</td>
<td>19.2</td>
<td>39.4</td>
<td>100.0</td>
</tr>
<tr>
<td>1995</td>
<td>3.1</td>
<td>11.3</td>
<td>26.1</td>
<td>19.8</td>
<td>39.7</td>
<td>100.0</td>
</tr>
<tr>
<td>1996</td>
<td>2.7</td>
<td>10.2</td>
<td>24.8</td>
<td>20.0</td>
<td>42.3</td>
<td>100.0</td>
</tr>
<tr>
<td>1997</td>
<td>2.4</td>
<td>9.5</td>
<td>23.4</td>
<td>20.0</td>
<td>44.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### 1993-97 change
-1.7  -3.6  -4.2  +1.1  +8.4 -

Source: USDA Milk Production
### CHART C
Costs and Returns of Milk Production on FCRS Farms with Alternative Sizes of Dairy Operations, Per Cow 1993

<table>
<thead>
<tr>
<th></th>
<th>Fewer than 60 Cows</th>
<th>60-119 Milk Cows</th>
<th>120-299 Milk Cows</th>
<th>300+ Milk Cows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Return</td>
<td>$2,092</td>
<td>$2,143</td>
<td>$2,355</td>
<td>$2,319</td>
</tr>
<tr>
<td>Variable Cash Expenses</td>
<td>1,629</td>
<td>1,735</td>
<td>1,724</td>
<td>1,668</td>
</tr>
<tr>
<td>Overhead Expenses</td>
<td>658</td>
<td>577</td>
<td>519</td>
<td>446</td>
</tr>
<tr>
<td>Residual Return to Labor, Management And Risk</td>
<td>$(195)</td>
<td>$(169)</td>
<td>$112</td>
<td>$205</td>
</tr>
<tr>
<td>Ave. No. of Cows</td>
<td>34</td>
<td>78</td>
<td>166</td>
<td>818</td>
</tr>
<tr>
<td>Net Return to the Milk Cow Enterprise</td>
<td>$(6,630)</td>
<td>$(13,182)</td>
<td>$12,544</td>
<td>$167,690</td>
</tr>
</tbody>
</table>
### CHART D

**Minnesota Statewide Farm Business Management Records – 1997**

<table>
<thead>
<tr>
<th>Milk Cow Enterprise – Per Cow</th>
<th>Ave. for All Farms</th>
<th>Ave. for Low 20%</th>
<th>Ave. for High 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Farms</td>
<td>688</td>
<td>138</td>
<td>138</td>
</tr>
<tr>
<td>Gross Return</td>
<td>$2,220</td>
<td>$1,722</td>
<td>$2,647</td>
</tr>
<tr>
<td>Total Direct Expenses</td>
<td>685</td>
<td>152</td>
<td>1,131</td>
</tr>
<tr>
<td>Total Overhead Expenses</td>
<td>420</td>
<td>342</td>
<td>503</td>
</tr>
<tr>
<td>Residual Return to Labor Management and Risk</td>
<td>$264</td>
<td>-$190</td>
<td>$629</td>
</tr>
<tr>
<td>Ave. No. of Cows</td>
<td>67.3</td>
<td>58.0</td>
<td>80.1</td>
</tr>
<tr>
<td>Net Return to the Milk Cow Enterprise</td>
<td>$17,767</td>
<td>$(11,020)</td>
<td>$50,383</td>
</tr>
</tbody>
</table>
CHART E

Impact of Herd Size on Value Added

Expressed on a per cow basis

<table>
<thead>
<tr>
<th>HERD SIZE</th>
<th>Fewer than 60 milk cows</th>
<th>60 - 119 milk cows</th>
<th>120 - 299 milk cows</th>
<th>300 or more milk cows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hired Labor</td>
<td>$39.22</td>
<td>$110.25</td>
<td>$152.58</td>
<td>$138.30</td>
</tr>
<tr>
<td>Interest Paid</td>
<td>117.54</td>
<td>110.12</td>
<td>122.53</td>
<td>97.95</td>
</tr>
<tr>
<td>Imputed returns to Unpaid family labor &amp; family owned capital</td>
<td>458.04</td>
<td>239.07</td>
<td>112.31</td>
<td>47.21</td>
</tr>
<tr>
<td>Imputed land rent</td>
<td>1.39</td>
<td>.85</td>
<td>.66</td>
<td>.56</td>
</tr>
<tr>
<td>Residual Return to Management &amp; Risk</td>
<td>(609.54)</td>
<td>(371.86)</td>
<td>9.21</td>
<td>180.51</td>
</tr>
<tr>
<td>Value Added</td>
<td>$6.65</td>
<td>$88.43</td>
<td>$397.31</td>
<td>$464.53</td>
</tr>
</tbody>
</table>