1968

FARM BUSINESS SUMMARY

CORTLAND COUNTY

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One of the most important tasks faced by management in any business is the function of control. Control is the process by which current and past performance is measured and evaluated, corrections or improvements suggested, and planning consolidated. Accounting or bookkeeping is part of control, because performance cannot be measured without financial facts and figures.

The manager of a dairy farm is, in effect, the company comptroller, and must direct accounting, budgeting, and financial analysis for the business. He must also continually appraise his own management performance.

In performing these management tasks, two things are of vital importance: First, financial and production information on one's own business, and second, standards of comparison, or similar information on other similar businesses. The Cortland County Farm Business Management Program helps provide both of these things for the farmer who participates and for other Cortland County dairy farmers.

The objectives of this program are to help members do a better job of record keeping and business analysis and thus allow them to more accurately rate their own management performance. During the past ten years, group membership has been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>1959</td>
<td>30</td>
</tr>
<tr>
<td>1960</td>
<td>29</td>
</tr>
<tr>
<td>1961</td>
<td>20</td>
</tr>
<tr>
<td>1962</td>
<td>13</td>
</tr>
<tr>
<td>1963</td>
<td>19</td>
</tr>
<tr>
<td>1964</td>
<td>20</td>
</tr>
<tr>
<td>1965</td>
<td>21</td>
</tr>
<tr>
<td>1966</td>
<td>20</td>
</tr>
<tr>
<td>1967</td>
<td>23</td>
</tr>
<tr>
<td>1968</td>
<td>28</td>
</tr>
</tbody>
</table>

It is hoped that the information in this booklet, summarizing the information on the 28 farms participating in 1968, will provide a basis for improving management decisions on Cortland County dairy farms. Although the figures in this booklet should prove most useful to the farmers who provided the information, any farmer with good financial information for his business can use these summary figures as standards for comparison.

This summary was prepared by Robert S. Smith, Department of Agricultural Economics, New York State College of Agriculture, Cornell University, in cooperation with Ira Elixt, and Carl Crispell, Cortland County Extension Service.
GOOD MANAGEMENT IS BASI

How do you measure up?

1. Have you developed a systematic approach to management problems?

2. Do you have the facts on your business?

3. Are you improving your managerial skills?

Steps in making a management decision:

1. Locate the trouble spot (problem)
2. What is your objective? (goal)
3. Size up what you have to work with (resources)
4. Look for various ways to solve the problem (alternatives)
5. Consider probable results of each way (consequences)
6. Compare the expected results (evaluate)
7. Select way best suited to your situation (decision)
8. Put the decision into operation (action)

This workbook can help you!
Prices are one of the important factors affecting farm incomes. The relationship of prices received and prices paid determines the general level of farm incomes. The blended New York farm price for 3.5% milk in 1968 averaged $5.43 per hundredweight. This was 36 cents higher than the average for 1967 and $1.16 more than 1965. Cull dairy cow prices also were relatively good in 1968. The overall index of prices paid by New York dairy farmers continued to rise in 1968.

In recent years, prices of some farm inputs have risen while others have declined. From 1965 to 1968, farm wages rose 30 percent, dairy cows rose 34 percent, while feed declined 3 percent, and fertilizer prices declined slightly. These differences give rise to management questions concerning substitutions.

### AVERAGE YEARLY PRICES RECEIVED AND PAID BY N. Y. FARMERS, 1960-68

<table>
<thead>
<tr>
<th>Year</th>
<th>Milk (cwt.)</th>
<th>Slaughter cows (cwt.)</th>
<th>Dairy cows (head)</th>
<th>Dairy ration (ton)</th>
<th>Wages per month with house</th>
<th>Prices paid by New York dairymen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>$4.31</td>
<td>$15.00</td>
<td>$278</td>
<td>$71</td>
<td>$210</td>
<td>104</td>
</tr>
<tr>
<td>1961</td>
<td>4.21</td>
<td>14.60</td>
<td>260</td>
<td>72</td>
<td>213</td>
<td>105</td>
</tr>
<tr>
<td>1962</td>
<td>4.14</td>
<td>14.26</td>
<td>245</td>
<td>74</td>
<td>218</td>
<td>106</td>
</tr>
<tr>
<td>1963</td>
<td>4.10</td>
<td>14.01</td>
<td>234</td>
<td>76</td>
<td>221</td>
<td>108</td>
</tr>
<tr>
<td>1964</td>
<td>4.21</td>
<td>13.17</td>
<td>237</td>
<td>74</td>
<td>227</td>
<td>108</td>
</tr>
<tr>
<td>1965</td>
<td>4.27</td>
<td>13.91</td>
<td>238</td>
<td>76</td>
<td>235</td>
<td>110</td>
</tr>
<tr>
<td>1966</td>
<td>4.79</td>
<td>17.35</td>
<td>269</td>
<td>80</td>
<td>258</td>
<td>113</td>
</tr>
<tr>
<td>1967</td>
<td>5.07</td>
<td>17.33</td>
<td>303</td>
<td>80</td>
<td>291</td>
<td>115</td>
</tr>
<tr>
<td>1968*</td>
<td>5.43</td>
<td>17.58</td>
<td>319</td>
<td>74</td>
<td>306</td>
<td>121</td>
</tr>
</tbody>
</table>

* Preliminary
PART I
SUMMARY OF THE FARM BUSINESS

The first part of this booklet is designed to enable you to summarize your business in a systematic, orderly manner. It provides an opportunity to study your physical resources, capital investment, receipts, expenses and business income in depth.

MANAGEMENT AND OTHER RESOURCES

We judge the manager of a business on the basis of how much net income he can make the business produce. But the resources a manager has or does not have may severely restrict his ability to produce. A farm manager with small amounts or low quality of land, livestock, equipment, labor, and capital cannot produce well when judged against a manager who has these resources in large amounts and high quality. Therefore, knowledge of what resources are available and how they are combined is fundamental to judging management performance. Below are listed some facts about the physical resources of this group of farms.

FARM ORGANIZATION
28 Cortland County Dairy Farms, 1968

<table>
<thead>
<tr>
<th>Item</th>
<th>Average of number reported</th>
<th>My farm</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Labor:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man equivalent (no. men)</td>
<td>2.2</td>
<td></td>
<td>1.3</td>
</tr>
<tr>
<td>Full-time hired men (12 farms)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hired men part of year (11 farms)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family help (19 farms)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two-man partnership (4 farms)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock: (Number)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cows</td>
<td>61</td>
<td>19</td>
<td>109</td>
</tr>
<tr>
<td>Heifers</td>
<td>45</td>
<td>6</td>
<td>141</td>
</tr>
<tr>
<td>Crops: (Acres grown)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hay</td>
<td>90</td>
<td>40</td>
<td>200</td>
</tr>
<tr>
<td>Corn for silage (26 farms)</td>
<td>42</td>
<td>12</td>
<td>225</td>
</tr>
<tr>
<td>Grass silage (2 farms)</td>
<td>12</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Oats (19 farms)</td>
<td>28</td>
<td>5</td>
<td>69</td>
</tr>
<tr>
<td>Corn for grain (9 farms)</td>
<td>10</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>Total crop acres</td>
<td>157</td>
<td>76</td>
<td>290</td>
</tr>
</tbody>
</table>

Number of farms in group summarizing records: 28
Number of farms in: DHIA

1st year                          | 12
2nd or                            | 14
3rd year                          | 12
CAPITAL INVESTMENT

Capital investment gives an indication of the Capital Resources available to the business manager. His ability to borrow is another part of his capital resource.

FARM INVENTORY VALUES, JANUARY 1, 1969
28 Cortland County Dairy Farms

<table>
<thead>
<tr>
<th>Item</th>
<th>My farm</th>
<th>Average per farm</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinery and equipment</td>
<td>$_______</td>
<td>$22,821</td>
<td>20</td>
</tr>
<tr>
<td>Cattle</td>
<td>_______</td>
<td>30,665</td>
<td>27</td>
</tr>
<tr>
<td>Other livestock</td>
<td>_______</td>
<td>25</td>
<td>--</td>
</tr>
<tr>
<td>Feed and supplies</td>
<td>_______</td>
<td>7,577</td>
<td>7</td>
</tr>
<tr>
<td>Land and buildings</td>
<td>_______</td>
<td>50,869</td>
<td>46</td>
</tr>
<tr>
<td>TOTAL INVESTMENT</td>
<td>_______</td>
<td>$111,957</td>
<td>100</td>
</tr>
</tbody>
</table>

In many farm businesses, management does not use capital efficiently. The following measures of capital efficiency will help you evaluate your overall capital management.

INVESTMENT ANALYSIS
28 Cortland County Dairy Farms, 1968

<table>
<thead>
<tr>
<th>Item</th>
<th>My farm</th>
<th>Average per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinery and equipment per cow</td>
<td>$_______</td>
<td>$374</td>
</tr>
<tr>
<td>Land and buildings per cow</td>
<td>_______</td>
<td>834</td>
</tr>
<tr>
<td>Total investment per cow</td>
<td>_______</td>
<td>1,835</td>
</tr>
<tr>
<td>Total investment per man</td>
<td>_______</td>
<td>50,890</td>
</tr>
<tr>
<td>Capital turnover*</td>
<td>_______ years</td>
<td>2.1 years</td>
</tr>
</tbody>
</table>

* Calculated by dividing the total investment by the total farm receipts for the year.

Capital needed to own and operate a dairy farm is increasing rapidly. The Cortland County Summary for 1958 showed investment per cow of just under $1,200, and per man of just over $24,000.
WHERE THE MONEY CAME FROM

Any business requires a level of gross earnings great enough to pay all costs, both operating and overhead, and leave a margin for profits and re-investment. Farming is no different. Gross income produced in relation to capital invested, manpower used, and productive units, thus gives some indication of management performance.

FARM RECEIPTS
28 Cortland County Dairy Farms, 1968

<table>
<thead>
<tr>
<th>Item</th>
<th>My farm</th>
<th>Average per farm</th>
<th>Per cent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk sales</td>
<td>$_______</td>
<td>$40,704</td>
<td>86</td>
</tr>
<tr>
<td>Livestock sold</td>
<td>$_______</td>
<td>4,390</td>
<td>9</td>
</tr>
<tr>
<td>Crop sales</td>
<td>$_______</td>
<td>556</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous*</td>
<td>$_______</td>
<td>1,571</td>
<td>4</td>
</tr>
<tr>
<td>Total Cash Receipts</td>
<td>$_______</td>
<td>$47,221</td>
<td>100</td>
</tr>
<tr>
<td>Increase in Inventory</td>
<td>$_______</td>
<td>6,913</td>
<td></td>
</tr>
<tr>
<td>TOTAL FARM RECEIPTS</td>
<td>$_______</td>
<td>$54,134</td>
<td></td>
</tr>
</tbody>
</table>

* Includes work off farm, conservation payments, refunds, etc.

Total cash receipts amounted to over $47,000 per farm. The sale of mi. and cull dairy cows and bob calves accounted for 95 out of every 100 dollar: of cash receipts in this group of specialized dairy farms.

Increases in inventory resulting from more cows, more machinery and equipment, additions to buildings, or a better feed situation are a normal occurrence in most "going" farm businesses and are considered as farm receipts. These items could have been sold and turned into cash receipts, but instead the operator decided to invest this additional capital in his business. Also the cost of producing or acquiring these items is included in the farm expenses. For this group of farms, the net increase in inventory amounted to about $7,000 per farm.

SELECTED INCOME FACTORS

<table>
<thead>
<tr>
<th></th>
<th>My farm</th>
<th>Average per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average price per cwt. of milk sold</td>
<td>$_______</td>
<td>$ 5.52</td>
</tr>
<tr>
<td>Milk sales per cow</td>
<td>$_______</td>
<td>$ 667</td>
</tr>
<tr>
<td>Total farm receipts per man</td>
<td>$_______</td>
<td>$24,606</td>
</tr>
<tr>
<td>Gross income per dollar of capital investment</td>
<td>$_______</td>
<td>$ .48</td>
</tr>
</tbody>
</table>
WHERE THE MONEY WENT

Cost control is an important phase of management. Good information on what the expenses are is the first step in expense control. The next step is a comparison with some standard. The major expenses of machinery and feed are analyzed in detail on pages 13 and 14.

FARM EXPENSES
28 Cortland County Dairy Farms, 1968

<table>
<thead>
<tr>
<th>Item</th>
<th>Average of 28 farms</th>
<th>Your farm</th>
<th>Percent of cash operating expense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hired labor</td>
<td>$3,575</td>
<td>$_______</td>
<td>14</td>
</tr>
<tr>
<td>Dairy feed bought</td>
<td>10,078</td>
<td>____</td>
<td>38</td>
</tr>
<tr>
<td>Other feed bought</td>
<td>94</td>
<td>____</td>
<td>--</td>
</tr>
<tr>
<td>Machine hire</td>
<td>181</td>
<td>____</td>
<td>1</td>
</tr>
<tr>
<td>Machinery repair</td>
<td>1,566</td>
<td>____</td>
<td>6</td>
</tr>
<tr>
<td>Auto expense (farm share)</td>
<td>235</td>
<td>____</td>
<td>1</td>
</tr>
<tr>
<td>Gas and oil</td>
<td>1,288</td>
<td>____</td>
<td>5</td>
</tr>
<tr>
<td>Breeding fees</td>
<td>444</td>
<td>____</td>
<td>2</td>
</tr>
<tr>
<td>Veterinary and medicine</td>
<td>754</td>
<td>____</td>
<td>3</td>
</tr>
<tr>
<td>Other livestock</td>
<td>1,538</td>
<td>____</td>
<td>6</td>
</tr>
<tr>
<td>Lime and fertilizer</td>
<td>1,405</td>
<td>____</td>
<td>5</td>
</tr>
<tr>
<td>Seeds and plants</td>
<td>536</td>
<td>____</td>
<td>2</td>
</tr>
<tr>
<td>Spray and other crop expense</td>
<td>454</td>
<td>____</td>
<td>2</td>
</tr>
<tr>
<td>Building expense</td>
<td>708</td>
<td>____</td>
<td>3</td>
</tr>
<tr>
<td>Taxes and insurance</td>
<td>1,700</td>
<td>____</td>
<td>6</td>
</tr>
<tr>
<td>Electricity and telephone</td>
<td>823</td>
<td>____</td>
<td>3</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>799</td>
<td>____</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL OPERATING EXPENSE</strong></td>
<td><strong>$26,178</strong></td>
<td><strong>$______</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>New machines</td>
<td>$5,852</td>
<td>$_______</td>
<td></td>
</tr>
<tr>
<td>Additions to real estate</td>
<td>2,494</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>Livestock bought</td>
<td>2,056</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>Unpaid family labor</td>
<td>311</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td>Decrease in inventory</td>
<td>__-</td>
<td>_____</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL FARM EXPENSE</strong></td>
<td><strong>$36,891</strong></td>
<td><strong>$______</strong></td>
<td></td>
</tr>
</tbody>
</table>
FINANCIAL SUMMARY OF THE YEAR'S BUSINESS

The pay-off in management is in net income. There are several ways of measuring net income or profit for any business, including a farm. Large corporate businesses often express profit as net income before taxes, as net income after taxes, or as net income per dollar of sales. One of the best measures of profit for a farm business is labor income.

FARM INCOME AND LABOR INCOME
28 Cortland County Dairy Farms, 1968

<table>
<thead>
<tr>
<th>Item</th>
<th>Your farm</th>
<th>Average of 28 farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Capital Investment</td>
<td>$108,500</td>
<td>$54,134</td>
</tr>
<tr>
<td>Farm receipts</td>
<td></td>
<td>36,091</td>
</tr>
<tr>
<td>Farm income</td>
<td></td>
<td>$17,243</td>
</tr>
<tr>
<td>Interest on Capital at 5%</td>
<td></td>
<td>5,425</td>
</tr>
<tr>
<td>LABOR INCOME per farm</td>
<td></td>
<td>$11,818</td>
</tr>
<tr>
<td>Number of operators on 28 farms*</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>LABOR INCOME per operator</td>
<td></td>
<td>$10,341</td>
</tr>
</tbody>
</table>

* Four of the 28 farms were partnerships.

Changes in inventories during the year are included in figuring farm income and labor income. Increases in inventories due to expanding the business are considered as farm receipts and decreases in inventories are included as farm expenses. Interest payments and payments on debts are not included in the farm expenses.

"Farm Income" is the difference between total receipts, including inventory increases, and total expenses, including inventory decreases, but not interest paid. Farm income is really the amount provided by the business to pay for the use of all capital and the labor and management of the operator.

"Labor Income" is a measure used to determine the return the farm operator receives for his labor and management. It is the amount left after paying all farm expenses, and deducting a charge for unpaid family labor and interest on the capital invested. To make all farms comparable, a five per cent interest charge on the average capital investment (average of beginning and end inventory) is deducted to get labor income. Labor income is the measure used most commonly when studying or comparing farm businesses.

DISTRIBUTION OF LABOR INCOMES

<table>
<thead>
<tr>
<th>Labor income per operator</th>
<th>No. of farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over $14,000</td>
<td>8</td>
</tr>
<tr>
<td>$10,000 - $14,000</td>
<td>5</td>
</tr>
<tr>
<td>$7,000 - $10,000</td>
<td>6</td>
</tr>
<tr>
<td>Under $7,000</td>
<td>9</td>
</tr>
</tbody>
</table>

Even in a very efficient and profitable dairy farm business, labor income can fluctuate markedly from year to year. Therefore, labor income over at least a three year period should be studied before definite conclusions are drawn.
OTHER MEASURES OF RETURNS TO THE BUSINESS

Another measure of returns to the business is "cash operating income" or the amount available from the farm business for family living, interest, and debt payments, and investments in such things as new machinery and buildings.

FARM CASH OPERATING INCOMES
28 Cortland County Dairy Farms, 1968

<table>
<thead>
<tr>
<th>Item</th>
<th>Average of 28 Farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total farm receipts</td>
<td>$54,134</td>
</tr>
<tr>
<td>Less increase in inventory</td>
<td>$6,913</td>
</tr>
<tr>
<td>Cash Farm Receipts</td>
<td>$47,221</td>
</tr>
<tr>
<td>Total farm expenses</td>
<td>$36,891</td>
</tr>
<tr>
<td>Less capital items</td>
<td>$10,402</td>
</tr>
<tr>
<td>Less unpaid labor</td>
<td>$311</td>
</tr>
<tr>
<td>Decrease in inventory</td>
<td></td>
</tr>
<tr>
<td>Cash Operating Expenses</td>
<td>$26,178</td>
</tr>
<tr>
<td>FARM CASH OPERATING INCOME</td>
<td>$21,043</td>
</tr>
</tbody>
</table>

The maximum available for both interest and principle payments on debt could be estimated as cash operating income less a reasonable allowance for family living. This assumes funds for new machinery and buildings could be borrowed.

In instances where non-farm income was earned by some member of the family or where money was borrowed or inherited, the cash actually used might be greater than the amount shown here.

Return on investment is a fourth measure of returns to the business. It is calculated by deducting from the farm income a charge for the operator's labor and management. We can arbitrarily use $5,400 as the value of the operator's labor and management to show the calculations.

RETURN ON INVESTMENT

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm receipts</td>
<td>$54,134</td>
</tr>
<tr>
<td>Farm expenses</td>
<td>$36,891</td>
</tr>
<tr>
<td>Farm Income</td>
<td>$17,243</td>
</tr>
<tr>
<td>Value of Operator's Labor*</td>
<td>$6,171</td>
</tr>
<tr>
<td>Return on Investment</td>
<td>$11,072</td>
</tr>
<tr>
<td>Rate of Return on Average Capital</td>
<td>10.2%</td>
</tr>
</tbody>
</table>

* 32 operators on 28 farms.
PART II
ANALYSIS OF THE FARM BUSINESS

The key to success in farming is the overall management ability of the farm operator. This requires that he understand clearly, and more important, apply the basic principles of farm management in making management decisions.

This section of the report presents guidelines for using these principles to help analyze the profitability of the farm business. The "averages" presented provide useful standards for comparison whereby the relative strong and weak points and major problem areas of the business can be uncovered. Also presented are figures from the summary and analysis of New York dairy farms in 1967 and tables showing the basic relationship of various management factors to farm profits.

SIZE OF BUSINESS

There are some basic principles of farm management which a farm manager should recognize and use in making business decisions and in studying his business.

In general, large farms pay better than small farms. Larger farms make it possible to use equipment and other resources more efficiently. Further, if each hundredweight of milk is produced at a given profit, the more milk produced, the more profit. However, some 50 cow farms make larger incomes than others with 100 cows. This can happen when costs or other business factors are not in balance with the size of the farm business.

MEASURES OF SIZE OF BUSINESS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cows</td>
<td>61</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Pounds of milk sold</td>
<td>738,000</td>
<td>616,600</td>
<td></td>
</tr>
<tr>
<td>Man equivalent</td>
<td>2.2</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Total work units</td>
<td>725</td>
<td>594</td>
<td></td>
</tr>
</tbody>
</table>

In the following table, the 548 New York dairy farms have been sorted into various size groups. For each size group the average labor income per operator is shown. Sorting the farms in this manner shows the relationship between size of business and farm profits.

COWS PER FARM AND LABOR INCOME
548 New York Dairy Farms, 1967

<table>
<thead>
<tr>
<th>Number of cows</th>
<th>Number of farms</th>
<th>Labor income per operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 25</td>
<td>22</td>
<td>$3,560</td>
</tr>
<tr>
<td>25-39</td>
<td>176</td>
<td>5,350</td>
</tr>
<tr>
<td>40-54</td>
<td>170</td>
<td>7,380</td>
</tr>
<tr>
<td>55-69</td>
<td>104</td>
<td>8,800</td>
</tr>
<tr>
<td>70-84</td>
<td>38</td>
<td>11,020</td>
</tr>
<tr>
<td>85-99</td>
<td>11</td>
<td>11,790</td>
</tr>
<tr>
<td>100 and over</td>
<td>27</td>
<td>13,360</td>
</tr>
</tbody>
</table>
RATES OF PRODUCTION

High rates of production of both animals and crops is very important to the success of a farm business. But when they are achieved without regard to costs, the results can be financially disastrous. Relatively few farmers have reached the point where the costs of an added input into milk or crop production is equal in value to the additional output.

MEASURES OF RATES OF PRODUCTION

<table>
<thead>
<tr>
<th>Item</th>
<th>My farm</th>
<th>Average per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>28 Cortland Co.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>farms, 1968</td>
</tr>
<tr>
<td>Pounds of milk sold per cow</td>
<td>12,100</td>
<td>12,100</td>
</tr>
<tr>
<td>Tons of hay per acre</td>
<td>2.4</td>
<td>2.6</td>
</tr>
<tr>
<td>Tons of corn silage per acre</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Bushels of oats per acre</td>
<td>52</td>
<td>50</td>
</tr>
</tbody>
</table>

The relationship of production per cow to labor income is shown in the following table for 548 New York dairy farms in 1967.

Milk Sold Per Cow and Labor Income
548 New York Dairy Farms, 1967

<table>
<thead>
<tr>
<th>Pounds of milk sold per cow</th>
<th>114 farms with 35 or fewer cows</th>
<th>252 farms with 35-54 cows</th>
<th>132 farms with 55 or more cows</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent of farms income</td>
<td>Percent of farms income</td>
<td>Percent of farms income</td>
</tr>
<tr>
<td>Less than 10,000</td>
<td>15 $2,588</td>
<td>12 $4,325</td>
<td>10 $8,818</td>
</tr>
<tr>
<td>10,000 - 10,999</td>
<td>18 $4,311</td>
<td>13 $5,399</td>
<td>9 $6,636</td>
</tr>
<tr>
<td>11,000 - 11,999</td>
<td>25 $5,246</td>
<td>23 $6,085</td>
<td>23 $9,141</td>
</tr>
<tr>
<td>12,000 - 12,999</td>
<td>20 $4,773</td>
<td>18 $7,285</td>
<td>20 $10,831</td>
</tr>
<tr>
<td>13,000 - 13,999</td>
<td>11 $5,347</td>
<td>19 $7,838</td>
<td>24 $11,418</td>
</tr>
<tr>
<td>14,000 &amp; over</td>
<td>11 $6,687</td>
<td>15 $9,814</td>
<td>14 $12,375</td>
</tr>
</tbody>
</table>

DISTRIBUTION OF PRODUCTION PER COW
28 Cortland County Dairy Farms, 1968

<table>
<thead>
<tr>
<th>Pounds of milk sold per cow</th>
<th>Number of farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 11,000</td>
<td>6</td>
</tr>
<tr>
<td>11,000 - 11,999</td>
<td>5</td>
</tr>
<tr>
<td>12,000 - 12,999</td>
<td>8</td>
</tr>
<tr>
<td>13,000 - 13,999</td>
<td>5</td>
</tr>
<tr>
<td>14,000 and over</td>
<td>4</td>
</tr>
</tbody>
</table>
LABOR EFFICIENCY

Labor efficiency has a strong influence on the profits of any business and is becoming increasingly important on dairy farms. This is in part due to a steady increase in the substitution of machinery for labor and also increased adoption of new technology. Here we will examine several measures of labor efficiency, the most important one to dairy farmers being milk sold per man.

MEASURES OF LABOR EFFICIENCY

<table>
<thead>
<tr>
<th>Item</th>
<th>My farm</th>
<th>28 Cortland Co. farms, 1968</th>
<th>548 New York farms, 1967</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cows per man</td>
<td></td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>Pounds of milk sold per man</td>
<td></td>
<td>335,500</td>
<td>324,500</td>
</tr>
<tr>
<td>Work units per man</td>
<td></td>
<td>330</td>
<td>313</td>
</tr>
</tbody>
</table>

The relationship between milk sold per man and farm profits is illustrated in the table below. Clearly the effect of labor efficiency on labor income is strong.

MILK SOLD PER MAN AND LABOR INCOME
548 New York Dairy Farms, 1967

<table>
<thead>
<tr>
<th>Pounds milk sold per man</th>
<th>114 farms with less than 35 cows</th>
<th>252 farms with 35-54 cows</th>
<th>182 farms with 55 cows and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of farms</td>
<td>Labor income</td>
<td>Percent of farms</td>
<td>Labor income</td>
</tr>
<tr>
<td>Under 200,000</td>
<td>$3,073</td>
<td>$3,521</td>
<td>2</td>
</tr>
<tr>
<td>200,000 - 299,999</td>
<td>49</td>
<td>4,745</td>
<td>37</td>
</tr>
<tr>
<td>300,000 - 399,999</td>
<td>25</td>
<td>6,235</td>
<td>35</td>
</tr>
<tr>
<td>400,000 &amp; over</td>
<td>2</td>
<td>6,499</td>
<td>23</td>
</tr>
</tbody>
</table>

DISTRIBUTION OF MILK SOLD PER MAN
28 Cortland County Dairy Farms, 1968

<table>
<thead>
<tr>
<th>Pounds of milk sold per man</th>
<th>Number of farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 300,000</td>
<td>9</td>
</tr>
<tr>
<td>300,000 - 349,999</td>
<td>5</td>
</tr>
<tr>
<td>350,000 - 399,999</td>
<td>6</td>
</tr>
<tr>
<td>400,000 &amp; over</td>
<td>8</td>
</tr>
</tbody>
</table>
COST ANALYSIS

Keeping costs in line is one of the most important factors affecting farm profits today. This does not mean cutting costs to the point of reducing efficiency, but keeping on the lookout for unnecessary or unwise expenditures. Since feed, machinery and labor account for the lion's share of farm expenses, these cost items should be studied in detail.

FEED COSTS

On most dairy farms, the cash outlay for dairy feed is the largest single cost item. For this group of Cortland County dairy farms, dairy feed accounted for 38 per cent of the cash operating expenses in 1968. This points out the importance of studying this cost item in detail. Each item on this page has some bearing on feed costs and careful study should help you plan a more efficient feeding program.

SELECTED FACTORS RELATED TO FEED COSTS

<table>
<thead>
<tr>
<th>Item</th>
<th>My farm</th>
<th>Average per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased Feed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairy feed bought</td>
<td>$_____</td>
<td>$10,078</td>
</tr>
<tr>
<td>Feed bought per cow</td>
<td>$_____</td>
<td>165</td>
</tr>
<tr>
<td>Feed bought as % of milk receipts</td>
<td>_____%</td>
<td>25%</td>
</tr>
<tr>
<td>Roughage Harvested (hay equivalent)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hay (tons)</td>
<td></td>
<td>214 tons</td>
</tr>
<tr>
<td>All silage (____) tons + 3</td>
<td></td>
<td>189 tons</td>
</tr>
<tr>
<td>Total tons hay equivalent</td>
<td></td>
<td>403 tons</td>
</tr>
<tr>
<td>Tons hay equivalent per cow</td>
<td></td>
<td>6.6 tons</td>
</tr>
<tr>
<td>Other Considerations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total acres in crops per cow</td>
<td></td>
<td>2.6 acres</td>
</tr>
<tr>
<td>Lime &amp; fertilizer expense/cow</td>
<td>$_____</td>
<td>$23</td>
</tr>
<tr>
<td>Lime &amp; fertilizer expense/crop acre</td>
<td>$_____</td>
<td>$9</td>
</tr>
<tr>
<td>Number of heifers per 10 cows</td>
<td></td>
<td>7.4</td>
</tr>
</tbody>
</table>

The above measures of roughage harvested consider only the quantity. Quality is also significant and has a bearing on feed costs. Such things as overall quality, date first cutting was completed, per cent legumes in the hay and maturity of silage should be considered in evaluating and adjusting your roughage program.
FARM POWER AND MACHINERY COSTS

Successful farm managers have substituted power and machinery for labor to a large degree. As this process continues, it is vitally important to retain control of the costs associated with owning and operating farm equipment. For this group of farms, power and machinery costs were 19 per cent of the total farm expenses.

POWER AND MACHINERY COSTS*

<table>
<thead>
<tr>
<th>Item</th>
<th>My farm</th>
<th>Average per farm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>28 Cort. Co.</td>
</tr>
<tr>
<td>Beginning inventory</td>
<td>$_______</td>
<td>$20,826</td>
</tr>
<tr>
<td>New machinery bought</td>
<td>_______</td>
<td>5,852</td>
</tr>
<tr>
<td>Total</td>
<td>$_______</td>
<td>$26,678</td>
</tr>
<tr>
<td>End inventory</td>
<td>$_______</td>
<td>$22,821</td>
</tr>
<tr>
<td>Machinery sold</td>
<td>_______</td>
<td>423</td>
</tr>
<tr>
<td>Total</td>
<td>$_______</td>
<td>$23,244</td>
</tr>
<tr>
<td>Depreciation</td>
<td>$_______</td>
<td>$ 3,434</td>
</tr>
<tr>
<td>Interest at 5% av. inv.</td>
<td>_______</td>
<td>1,091</td>
</tr>
<tr>
<td>Gas and oil</td>
<td>_______</td>
<td>1,288</td>
</tr>
<tr>
<td>Machinery repairs</td>
<td>_______</td>
<td>1,566</td>
</tr>
<tr>
<td>Bale ties</td>
<td>_______</td>
<td>86</td>
</tr>
<tr>
<td>Milk hauling</td>
<td>_______</td>
<td>161</td>
</tr>
<tr>
<td>Other machine hire</td>
<td>_______</td>
<td>181</td>
</tr>
<tr>
<td>Auto expenses (farm share)</td>
<td>_______</td>
<td>235</td>
</tr>
<tr>
<td>Electricity (farm share)</td>
<td>_______</td>
<td>690</td>
</tr>
<tr>
<td>TOTAL MACHINERY COSTS</td>
<td>$_______</td>
<td>$ 8,732</td>
</tr>
<tr>
<td>Gas tax refunds</td>
<td>$_______</td>
<td>$ 140</td>
</tr>
<tr>
<td>Income from machine work</td>
<td>_______</td>
<td>60</td>
</tr>
<tr>
<td>NET MACHINERY COST</td>
<td>$_______</td>
<td>$ 8,532</td>
</tr>
<tr>
<td>Net machinery cost per cow</td>
<td>$_______</td>
<td>$ 140</td>
</tr>
<tr>
<td>Net machinery cost per crop acre</td>
<td>$_______</td>
<td>$ 54</td>
</tr>
<tr>
<td>Net machinery cost per man</td>
<td>$_______</td>
<td>$ 3,875</td>
</tr>
</tbody>
</table>

* Does not include insurance, housing, or farm labor on repairs.
<table>
<thead>
<tr>
<th>Size No. of cows</th>
<th>Pounds milk per farm (cwt.)</th>
<th>Labor Efficiency</th>
<th>Production</th>
<th>Cost Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cows per man</td>
<td>Cwt. milk sold per man</td>
<td>Milk sold per cow</td>
</tr>
<tr>
<td>109</td>
<td>14,476</td>
<td>44</td>
<td>6,695</td>
<td>165</td>
</tr>
<tr>
<td>107</td>
<td>11,316</td>
<td>41</td>
<td>4,949</td>
<td>142</td>
</tr>
<tr>
<td>89</td>
<td>10,320</td>
<td>38</td>
<td>4,691</td>
<td>141</td>
</tr>
<tr>
<td>82</td>
<td>10,042</td>
<td>38</td>
<td>4,524</td>
<td>140</td>
</tr>
<tr>
<td>76</td>
<td>9,322</td>
<td>37</td>
<td>4,420</td>
<td>138</td>
</tr>
<tr>
<td>75</td>
<td>9,249</td>
<td>34</td>
<td>4,257</td>
<td>137</td>
</tr>
<tr>
<td>65</td>
<td>8,984</td>
<td>33</td>
<td>4,253</td>
<td>135</td>
</tr>
<tr>
<td>71</td>
<td>8,232</td>
<td>33</td>
<td>4,105</td>
<td>135</td>
</tr>
<tr>
<td>70</td>
<td>8,649</td>
<td>31</td>
<td>3,854</td>
<td>130</td>
</tr>
<tr>
<td>65</td>
<td>7,799</td>
<td>31</td>
<td>3,836</td>
<td>129</td>
</tr>
<tr>
<td>62</td>
<td>7,673</td>
<td>30</td>
<td>3,812</td>
<td>127</td>
</tr>
<tr>
<td>60</td>
<td>7,506</td>
<td>30</td>
<td>3,729</td>
<td>127</td>
</tr>
<tr>
<td>60</td>
<td>7,169</td>
<td>28</td>
<td>3,661</td>
<td>126</td>
</tr>
<tr>
<td>60</td>
<td>7,322</td>
<td>28</td>
<td>3,594</td>
<td>126</td>
</tr>
<tr>
<td>59</td>
<td>6,937</td>
<td>28</td>
<td>3,395</td>
<td>125</td>
</tr>
<tr>
<td>55</td>
<td>6,811</td>
<td>28</td>
<td>3,263</td>
<td>124</td>
</tr>
<tr>
<td>55</td>
<td>6,807</td>
<td>27</td>
<td>3,233</td>
<td>123</td>
</tr>
<tr>
<td>53</td>
<td>6,630</td>
<td>27</td>
<td>3,101</td>
<td>114</td>
</tr>
<tr>
<td>52</td>
<td>6,512</td>
<td>26</td>
<td>3,063</td>
<td>113</td>
</tr>
<tr>
<td>51</td>
<td>6,434</td>
<td>25</td>
<td>2,883</td>
<td>111</td>
</tr>
<tr>
<td>50</td>
<td>6,015</td>
<td>25</td>
<td>2,784</td>
<td>110</td>
</tr>
<tr>
<td>49</td>
<td>5,761</td>
<td>24</td>
<td>2,734</td>
<td>110</td>
</tr>
<tr>
<td>46</td>
<td>5,568</td>
<td>24</td>
<td>2,723</td>
<td>108</td>
</tr>
<tr>
<td>44</td>
<td>4,955</td>
<td>23</td>
<td>2,659</td>
<td>105</td>
</tr>
<tr>
<td>43</td>
<td>4,778</td>
<td>22</td>
<td>2,654</td>
<td>97</td>
</tr>
<tr>
<td>39</td>
<td>4,712</td>
<td>21</td>
<td>2,619</td>
<td>94</td>
</tr>
<tr>
<td>37</td>
<td>3,988</td>
<td>20</td>
<td>2,142</td>
<td>88</td>
</tr>
<tr>
<td>19</td>
<td>1,672</td>
<td>11</td>
<td>994</td>
<td>82</td>
</tr>
</tbody>
</table>
FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
548 New York Dairy Farms, 1967

<table>
<thead>
<tr>
<th>Size of Business</th>
<th>Rates of Production</th>
<th>Labor Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of cows</td>
<td>Pounds milk sold</td>
<td>Pounds milk sold</td>
</tr>
<tr>
<td></td>
<td>per cow</td>
<td>per cow</td>
</tr>
<tr>
<td></td>
<td>Tons hay per acre</td>
<td>Tons corn silage per acre</td>
</tr>
<tr>
<td>105</td>
<td>1,269,200</td>
<td>15,300</td>
</tr>
<tr>
<td>70</td>
<td>900,700</td>
<td>14,000</td>
</tr>
<tr>
<td>59</td>
<td>739,600</td>
<td>13,300</td>
</tr>
<tr>
<td>54</td>
<td>653,300</td>
<td>12,900</td>
</tr>
<tr>
<td>48</td>
<td>582,400</td>
<td>12,500</td>
</tr>
<tr>
<td>44</td>
<td>530,400</td>
<td>11,900</td>
</tr>
<tr>
<td>40</td>
<td>467,600</td>
<td>11,500</td>
</tr>
<tr>
<td>36</td>
<td>421,500</td>
<td>11,000</td>
</tr>
<tr>
<td>32</td>
<td>361,900</td>
<td>10,200</td>
</tr>
<tr>
<td>25</td>
<td>262,600</td>
<td>8,500</td>
</tr>
</tbody>
</table>

* These farms are considerably above the average for all farms in New York State. For example, the average number of cows for the 548 farms was 46 compared with 38 for all farms in the State.

The Farm Business Chart is a tool which can be used in analyzing a business to determine the strong and weak points. The chart shows how far the individual farm is above or below the average of the 548 farms for each factor.

The figure at the top of each column is the average of the top ten percent of the farms for that factor. For example, the figure 105 at the top of the column headed "No. of Cows" is the average number of cows on the ten percent of the farms with the most cows. The other figures in each column are the average for the second ten percent third ten percent, etc. The figure at the bottom of each column (25 for No. of Cows) is the average for the ten percent of the farms which ranked lowest in that factor.

Each column of the chart is independent of the others. The farms which are in the top ten percent for one factor would not necessarily be the same farms which make up the top ten percent for any other factor.

This chart is used in analyzing a particular dairy business by drawing a line through the figure in each column which shows where the farm being analyzed stands for that factor. This helps identify the strengths and weaknesses. Summarize these and list them at the bottom of page 17.
COST CONTROL FACTORS

The cost control factors are ranked from low to high. For cost control factors, the lowest cost is not necessarily the most profitable. In some cases, the "best" might be somewhere near the average. Many things affect the level of these costs, and these items must be taken into account when analyzing the factors.

<table>
<thead>
<tr>
<th>Feed bought per cow</th>
<th>% Feed is of milk receipts</th>
<th>Feed and crop expense per cwt. milk</th>
<th>Machinery cost per cow</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 75</td>
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<td>23</td>
<td>1.58</td>
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<td>1.68</td>
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<tr>
<td>260</td>
<td>39</td>
<td>2.37</td>
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</table>

Factors Affecting Feed Cost:
- tons hay equivalent per cow
- quality of forage
- ratio of cows to heifers
- lbs. milk sold per cow
- quantity of home grown grain
- average price of milk

Factors Related to Machinery Costs:
- amount of machinery
- use made of machinery
- substitution of machinery for labor
- new vs. old machinery
- mechanical skill of operator

STRONG AND WEAK POINTS

After analyzing the business and determining changes to be considered, each possible change should be studied in detail. The work sheet or budgeting form found on pages 22 and 23 can be used for projecting the likely results of each alternative.

STRONG POINTS:


WEAK POINTS:
FARM BUSINESS SUMMARY BY HERD SIZE
548 New York Dairy Farms, 1967

<table>
<thead>
<tr>
<th>Item</th>
<th>My Farm</th>
<th>Farms with less than 25 cows</th>
<th>25 to 39 cow farms</th>
<th>40 to 54 cow farms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capital Investment (end of year)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Machinery and equipment</td>
<td>$_______</td>
<td>$7,043</td>
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<tr>
<td>Milk sales</td>
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<td>Machine hire</td>
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<td>222</td>
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<td>1,365</td>
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<td>Breeding fees</td>
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<td>731</td>
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<td>48,563</td>
<td>76,643</td>
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**Financial Summary**

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<th>Item</th>
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<tr>
<td><strong>Total Farm Receipts</strong></td>
<td>54,175</td>
<td>68,197</td>
<td>103,115</td>
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<tr>
<td><strong>Total Farm Expenses</strong></td>
<td>38,770</td>
<td>48,563</td>
<td>76,643</td>
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## SELECTED BUSINESS FACTORS BY HERD SIZE

548 New York Dairy Farms, 1967

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<th>Item</th>
<th>My farm</th>
<th>Farms with less than 25 cows</th>
<th>25 to 39 cow farms</th>
<th>40 to 54 cow farms</th>
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<tr>
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<tr>
<td>Feed &amp; crop expense per cow</td>
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</tr>
<tr>
<td>Crop acres per cow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer &amp; lime/crop acre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Machinery Costs</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Total machinery costs</td>
<td></td>
<td>$2,905</td>
<td>$4,861</td>
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<tr>
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<td>$138</td>
<td>$147</td>
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</tr>
<tr>
<td>Machinery cost per man</td>
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<td>$2,421</td>
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<td></td>
<td>$120</td>
<td>$123</td>
<td>$110</td>
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<tr>
<td>Machinery cost per crop acre</td>
<td></td>
<td>$51</td>
<td>$53</td>
<td>$51</td>
</tr>
<tr>
<td><strong>Capital Efficiency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment per man</td>
<td></td>
<td>$31,516</td>
<td>$41,622</td>
<td>$47,668</td>
</tr>
<tr>
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<td>$1,801</td>
<td>$1,766</td>
<td>$1,762</td>
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<td>Investment per cwt. milk sold</td>
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<tr>
<td>Land and buildings per cow</td>
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<td>$956</td>
<td>$784</td>
<td>$798</td>
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<tr>
<td>Machinery investment per cow</td>
<td></td>
<td>$335</td>
<td>$424</td>
<td>$405</td>
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<tr>
<td>Return on investment</td>
<td></td>
<td></td>
<td>4.7%</td>
<td>7.2%</td>
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<tr>
<td><strong>Other</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price per cwt. milk sold</td>
<td></td>
<td>$5.18</td>
<td>$5.17</td>
<td>$5.18</td>
</tr>
<tr>
<td>Acres hay and hay crop silage</td>
<td></td>
<td>43</td>
<td>62</td>
<td>73</td>
</tr>
<tr>
<td>Acres corn silage</td>
<td></td>
<td>6</td>
<td>14</td>
<td>23</td>
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</tbody>
</table>
### SELECTED BUSINESS FACTORS BY HERD SIZE

548 New York Dairy Farms, 1967

<table>
<thead>
<tr>
<th>Item</th>
<th>My Farm</th>
<th>55 to 69 cow farms</th>
<th>70 to 84 cow farms</th>
<th>Farms with 85 or more cows</th>
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</thead>
<tbody>
<tr>
<td>Number of farms</td>
<td></td>
<td>102</td>
<td>39</td>
<td>41</td>
</tr>
<tr>
<td>Size of Business</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of cows</td>
<td></td>
<td>60</td>
<td>77</td>
<td>112</td>
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<tr>
<td>Pounds of milk sold</td>
<td></td>
<td>743,200</td>
<td>949,600</td>
<td>1,323,700</td>
</tr>
<tr>
<td>Crop acres</td>
<td></td>
<td>134</td>
<td>197</td>
<td>220</td>
</tr>
<tr>
<td>Man equivalent</td>
<td></td>
<td>2.1</td>
<td>2.7</td>
<td>3.4</td>
</tr>
<tr>
<td>Total work units</td>
<td></td>
<td>689</td>
<td>903</td>
<td>1,244</td>
</tr>
<tr>
<td>Rates of Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk sold per cow</td>
<td></td>
<td>12,400</td>
<td>12,300</td>
<td>11,800</td>
</tr>
<tr>
<td>Tons hay per acre</td>
<td></td>
<td>2.8</td>
<td>2.6</td>
<td>3.0</td>
</tr>
<tr>
<td>Tons corn silage per acre</td>
<td></td>
<td>17</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Bushels oats per acre</td>
<td></td>
<td>55</td>
<td>52</td>
<td>49</td>
</tr>
<tr>
<td>Labor Efficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cows per man</td>
<td></td>
<td>29</td>
<td>29</td>
<td>33</td>
</tr>
<tr>
<td>Pounds milk sold per man</td>
<td></td>
<td>353,900</td>
<td>351,700</td>
<td>389,300</td>
</tr>
<tr>
<td>Work units per man</td>
<td></td>
<td>328</td>
<td>335</td>
<td>366</td>
</tr>
<tr>
<td>Crop acres per man</td>
<td></td>
<td>64</td>
<td>73</td>
<td>65</td>
</tr>
<tr>
<td>Feed Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feed purchased per cow</td>
<td></td>
<td>$166</td>
<td>$172</td>
<td>$161</td>
</tr>
<tr>
<td>Crop expense per cow</td>
<td></td>
<td>$47</td>
<td>$44</td>
<td>$53</td>
</tr>
<tr>
<td>Feed &amp; crop expense per cow</td>
<td></td>
<td>$213</td>
<td>$216</td>
<td>$214</td>
</tr>
<tr>
<td>Feed cost per cwt. milk</td>
<td></td>
<td>$1.34</td>
<td>$1.39</td>
<td>$1.36</td>
</tr>
<tr>
<td>Feed &amp; crop expense/cwt. milk</td>
<td></td>
<td>$1.72</td>
<td>$1.75</td>
<td>$1.81</td>
</tr>
<tr>
<td>% Feed is of milk receipts</td>
<td></td>
<td>26%</td>
<td>26%</td>
<td>25%</td>
</tr>
<tr>
<td>Hay equivalent per cow</td>
<td></td>
<td>6.3</td>
<td>7.0</td>
<td>6.1</td>
</tr>
<tr>
<td>Crop acres per cow</td>
<td></td>
<td>2.2</td>
<td>2.6</td>
<td>2.9</td>
</tr>
<tr>
<td>Fertilizer &amp; lime/crop acre</td>
<td></td>
<td>$13</td>
<td>$11</td>
<td>$19</td>
</tr>
<tr>
<td>Machinery Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total machinery costs</td>
<td></td>
<td>$8,244</td>
<td>$10,790</td>
<td>$14,377</td>
</tr>
<tr>
<td>Machinery costs per cow</td>
<td></td>
<td>$137</td>
<td>$140</td>
<td>$128</td>
</tr>
<tr>
<td>Machinery cost per man</td>
<td></td>
<td>$3,926</td>
<td>$3,996</td>
<td>$4,229</td>
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<tr>
<td>Machinery cost per cwt. milk</td>
<td></td>
<td>$1.11</td>
<td>$1.14</td>
<td>$1.09</td>
</tr>
<tr>
<td>Machinery cost per crop acre</td>
<td></td>
<td>$62</td>
<td>$55</td>
<td>$65</td>
</tr>
<tr>
<td>Capital Efficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment per man</td>
<td></td>
<td>$51,728</td>
<td>$51,630</td>
<td>$63,294</td>
</tr>
<tr>
<td>Investment per cow</td>
<td></td>
<td>$1,810</td>
<td>$1,810</td>
<td>$1,921</td>
</tr>
<tr>
<td>Investment per cwt. milk sold</td>
<td></td>
<td>$15</td>
<td>$15</td>
<td>$16</td>
</tr>
<tr>
<td>Land and buildings per cow</td>
<td></td>
<td>$822</td>
<td>$858</td>
<td>$965</td>
</tr>
<tr>
<td>Machinery investment per cow</td>
<td></td>
<td>$405</td>
<td>$366</td>
<td>$373</td>
</tr>
<tr>
<td>Return on investment</td>
<td></td>
<td>8.2%</td>
<td>9.2%</td>
<td>8.9%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price per cwt. milk sold</td>
<td></td>
<td>$5.23</td>
<td>$5.37</td>
<td>$5.40</td>
</tr>
<tr>
<td>Acres hay and hay crop silage</td>
<td></td>
<td>79</td>
<td>109</td>
<td>125</td>
</tr>
<tr>
<td>Acres corn silage</td>
<td></td>
<td>28</td>
<td>47</td>
<td>55</td>
</tr>
</tbody>
</table>
Considering a Change in the Dairy Business

Describe change:

List possible alternative changes: (use additional worksheets to analyze these alternatives)

I. Basic nature of proposed change

<table>
<thead>
<tr>
<th>Present</th>
<th>Change</th>
<th>Future with change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cows</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of youngstock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production per cow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force (man equiv.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

II. Estimated forage requirements and production:

No. of cows ____ x ____ tons hay equivalent = _______ tons
No. of youngstock ____ x ____ tons hay equiv./head = _______ tons

Total hay equiv. requirement = _______ tons

Allocate total hay equivalent requirement to hay and silage production:

Total hay equiv. required ____ = ____ hay tons + ____ tons hay equiv. as silage

Tons hay equiv. as silage ____ x 3 = ____ tons silage

Estimate needed crop acres and changes from present:

<table>
<thead>
<tr>
<th>Future crop</th>
<th>Proposed Production</th>
<th>Estimated Yield</th>
<th>Acres Needed</th>
<th>Change in acres (list as plus or minus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hay</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hay crop silage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn silage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other forage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

III. Additional forward planning steps and pointers

1. List new capital items associated with the change including land, buildings, machinery and cattle. Estimate their cost.
2. Estimate changes in receipts and expenses (Part IV) considering all input and production items that are affected by the change under consideration. Adjust present figures if anticipated price changes are used in the budget.
3. When analyzing the effects of the proposed change, fulfillment of non-monetary goals may be considered.
4. More than one alternative change should be considered.
IV. Estimating changes in receipts and expenses

<table>
<thead>
<tr>
<th>A. Receipts</th>
<th>Present</th>
<th>Net change (plus or minus)</th>
<th>Future with change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk sales, gross</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Livestock sales</td>
<td>$______</td>
<td>$______</td>
<td></td>
</tr>
<tr>
<td>Crop sales</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Miscellaneous receipts</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Total Cash Receipts</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Increase in inventory</td>
<td>$______</td>
<td>$______</td>
<td></td>
</tr>
<tr>
<td>Total Farm Receipts</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Expenses</th>
<th>Present</th>
<th>Net change (plus or minus)</th>
<th>Future with change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hired labor</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Feed bought</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Machine hire</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Machinery repairs</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Auto expense (farm share)</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Gasoline and oil</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Breeding fees</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Veterinary and medicine</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Other livestock expense</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Lime and fertilizer</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Seeds and plants</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Spray, other crop expense</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Land, building, fence expense</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Taxes, insurance</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Electricity, telephone (farm share)</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Total Cash Operating Exp.</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>New machinery and real estate</td>
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<td>$______</td>
</tr>
<tr>
<td>Livestock purchases</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Unpaid family labor</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
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<tr>
<td>Decrease in inventory</td>
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</tr>
<tr>
<td>Total Farm Expenses</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Financial Summary</th>
<th>Present</th>
<th>Net change (plus or minus)</th>
<th>Future with change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Investment</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Total Farm Receipts</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Total Farm Expenses</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Farm Income</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>Interest on Capital</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
<tr>
<td>LABOR INCOME</td>
<td>$______</td>
<td>$______</td>
<td>$______</td>
</tr>
</tbody>
</table>
Selected Competitive Dairy Areas

A good manager aims to know how his business stands in relation to his competition both at home and in other dairy areas. The table below presents data from four states. These data were taken from reports on farm business management projects similar to the ones in New York. Some measures have been adjusted so that they are comparable for the four states.

1967 DAIRY FARM BUSINESS SUMMARY DATA

<table>
<thead>
<tr>
<th>Selected Factors</th>
<th>New York</th>
<th>Southern Michigan</th>
<th>Vermont</th>
<th>Connecticut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of farms</td>
<td>548</td>
<td>290</td>
<td>127</td>
<td>25</td>
</tr>
<tr>
<td>Crop acres</td>
<td>138</td>
<td>259</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Man equivalent</td>
<td>1.9</td>
<td>2.2</td>
<td>2.0</td>
<td>2.1</td>
</tr>
<tr>
<td>Number of heifers</td>
<td>33</td>
<td>NA</td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>Number of cows</td>
<td>51</td>
<td>54</td>
<td>53</td>
<td>66</td>
</tr>
<tr>
<td>Lbs. milk sold/farm</td>
<td>616,600</td>
<td>657,640</td>
<td>608,560</td>
<td>811,460</td>
</tr>
<tr>
<td>Lbs. milk sold/man</td>
<td>324,500</td>
<td>298,930</td>
<td>304,300</td>
<td>386,400</td>
</tr>
<tr>
<td>Lbs. milk sold/cow</td>
<td>12,100</td>
<td>12,180</td>
<td>11,480</td>
<td>12,290</td>
</tr>
<tr>
<td>Milk sales/cow</td>
<td>$635</td>
<td>$670</td>
<td>$635</td>
<td>$736</td>
</tr>
<tr>
<td>Av. price/cwt. milk</td>
<td>$5.25</td>
<td>$5.50</td>
<td>$5.53</td>
<td>$5.99</td>
</tr>
<tr>
<td>Purchased feed/cow</td>
<td>$165</td>
<td>$96</td>
<td>$190</td>
<td>$228</td>
</tr>
<tr>
<td>Taxes/cow</td>
<td>$17</td>
<td>$17</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Capital Investment

<table>
<thead>
<tr>
<th></th>
<th>New York</th>
<th>Southern Michigan</th>
<th>Vermont</th>
<th>Connecticut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land &amp; buildings</td>
<td>$42,560</td>
<td>$87,000</td>
<td>$46,540</td>
<td>$66,360</td>
</tr>
<tr>
<td>Machinery &amp; equipment</td>
<td>$20,250</td>
<td>$23,400</td>
<td>$13,440</td>
<td>$17,760</td>
</tr>
<tr>
<td>Livestock</td>
<td>$22,160</td>
<td>$21,400</td>
<td>$20,020</td>
<td>$26,770</td>
</tr>
<tr>
<td>Feed &amp; supplies</td>
<td>$6,840</td>
<td>$11,000</td>
<td>$5,890</td>
<td>$8,420</td>
</tr>
<tr>
<td>Investment/man</td>
<td>$48,320</td>
<td>$64,910</td>
<td>$42,940</td>
<td>$56,820</td>
</tr>
<tr>
<td>Investment/cow</td>
<td>$1,800</td>
<td>$2,640</td>
<td>$1,620</td>
<td>$1,810</td>
</tr>
</tbody>
</table>

Financial Summary

<table>
<thead>
<tr>
<th></th>
<th>New York</th>
<th>Southern Michigan</th>
<th>Vermont</th>
<th>Connecticut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total farm receipts</td>
<td>$44,309</td>
<td>$45,002</td>
<td>$42,810</td>
<td>$51,494</td>
</tr>
<tr>
<td>Total farm expenses</td>
<td>$31,545</td>
<td>$31,112</td>
<td>$32,322</td>
<td>$37,712</td>
</tr>
<tr>
<td>Farm income</td>
<td>$12,764</td>
<td>$13,890</td>
<td>$10,488</td>
<td>$13,782</td>
</tr>
<tr>
<td>Interest at 5%</td>
<td>$4,402</td>
<td>$7,140</td>
<td>$4,294</td>
<td>$5,966</td>
</tr>
<tr>
<td>Labor income/farm</td>
<td>$8,362</td>
<td>$6,750</td>
<td>$6,194</td>
<td>$7,816</td>
</tr>
<tr>
<td>Labor income/operator</td>
<td>$7,511</td>
<td>$6,193</td>
<td>$5,631</td>
<td>$6,513</td>
</tr>
</tbody>
</table>