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FARM BUSINESS SUMMARY

CORTLAND COUNTY

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CORTLAND COUNTY
FARM BUSINESS SUMMARY

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.

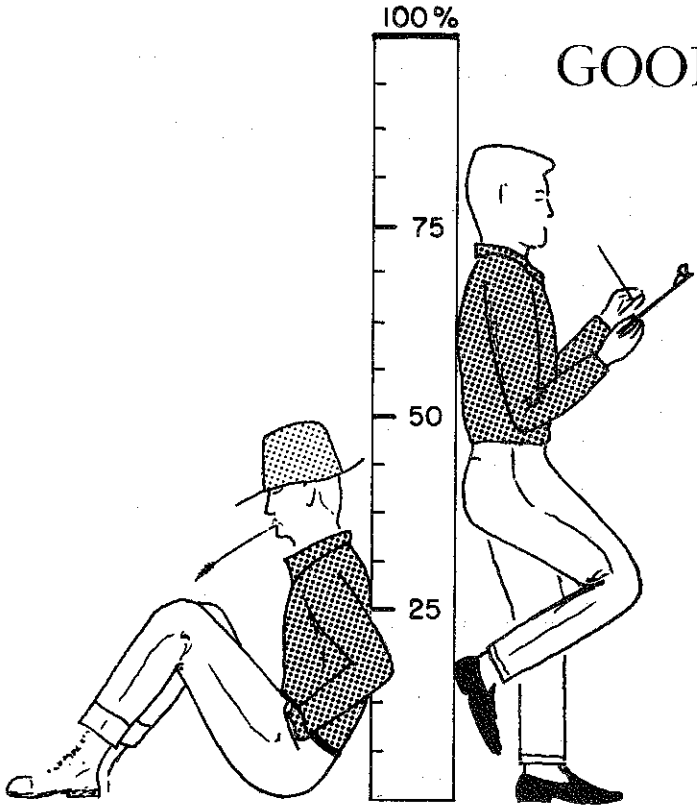
In performing these management tasks, two things are of vital importance: First, financial and production information on one's own business, and second, standards of comparison, or similar information on other similar businesses. The Cortland County Farm Business Management Program helps provide both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

1959 - 30	1961 - 20	1963 - 19	1965 - 21	1967 - 23
1960 - 29	1962 - 13	1964 - 20	1966 - 20	1968 - 28

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 Blixt, and Carl Crispell, Cortland County Extension Service.



GOOD MANAGEMENT IS BASI

How do you measure up?

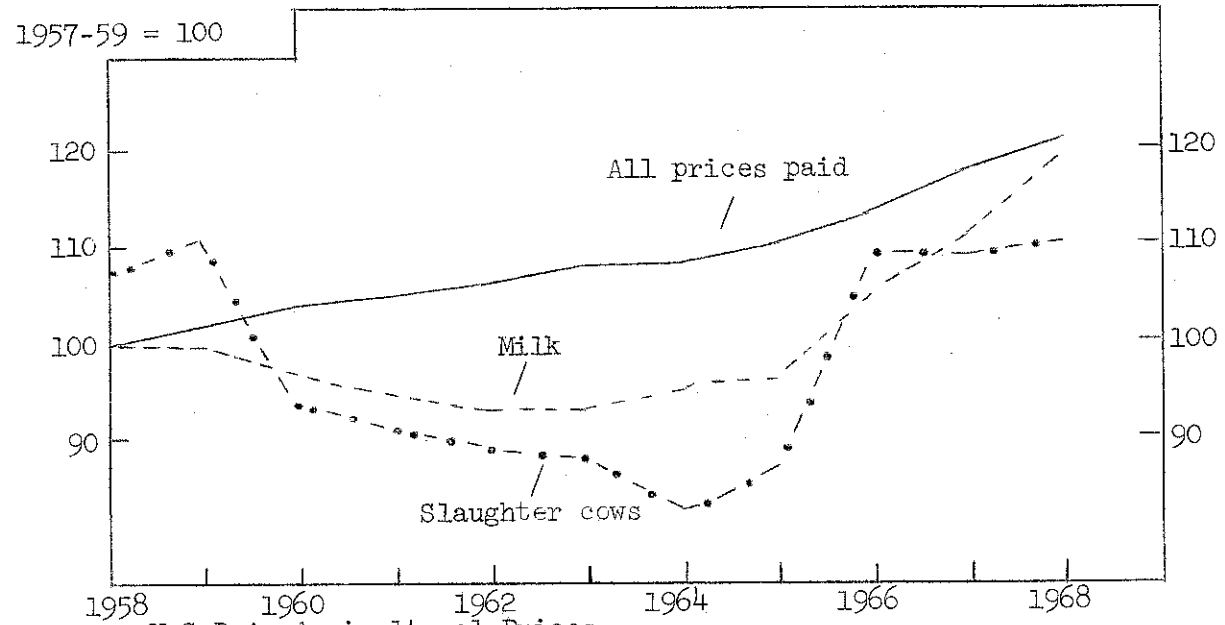
1. Have you developed a systematic approach to management problems?
2. Do you have the facts on your business?
3. Are you improving your managerial skills?

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 RECEIVED AND PAID BY N. Y. DAIRY FARMERS



SOURCE: U.S.D.A. Agricultural Prices

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

Year	Milk (cwt.)	Slaughter cows (cwt.)	Dairy cows (head)	Dairy ration (ton)	Wages per month with house	Prices paid by New York dairymen
1960	$4.31	$15.00	$278	$71	$210	104
1961	4.21	14.60	260	72	213	105
1962	4.14	14.26	245	74	218	106
1963	4.10	14.01	234	76	221	108
1964	4.21	13.17	237	74	227	108
1965	4.27	13.91	238	76	235	110
1966	4.79	17.35	269	80	258	113
1967	5.07	17.33	303	80	291	118
1968*	5.43	17.58	319	74	306	121

* 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

Item	Average of number reported	My farm	Range Low	Range High
Labor:				
Man equivalent (no. men)	2.2	_____	1.3	3.5
Full-time hired men	(12 farms)			
Hired men part of year	(11 farms)			
Family help	(19 farms)			
Two-man partnership	(4 farms)			
Livestock: (Number)				
Cows	61	_____	19	109
Heifers	45	_____	6	141
Crops: (Acres grown)				
Hay	90	_____	40	200
Corn for silage	(26 farms) 42	_____	12	225
Grass silage	(2 farms) 12	_____	7	16
Oats	(19 farms) 28	_____	5	69
Corn for grain	(9 farms) 10	_____	2	23
Total crop acres	157		76	290

Number of farms in group summarizing records:

1st year ___
2nd or 3rd year ___

Number of farms in:

DHIA ___
Owner-sampler ___
No test ___

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

Item	My farm	Average per farm	Percent of total
Machinery and equipment	$_____	$22,821	20
Cattle	_____	30,665	27
Other livestock	_____	25	--
Feed and supplies	_____	7,577	7
Land and buildings	_____	50,869	46
TOTAL INVESTMENT	$_____	$111,957	100

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

Item	My farm	Average per farm
Machinery and equipment per cow	$_____	$374
Land and buildings per cow	_____	834
Total investment per cow	_____	1,835
Total investment per man	_____	50,890
Capital turnover*	_____ years	2.1 years

* 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

Item	My farm	Average per farm	Per cent of total
Milk sales	$_____	$40,704	86
Livestock sold	$_____	4,390	9
Crop sales	$_____	556	1
Miscellaneous*	$_____	1,571	4
Total Cash Receipts	$_____	$47,221	100
Increase in Inventory	$_____	6,913	
TOTAL FARM RECEIPTS	$_____	$54,134	

* 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

	My farm	Average per farm
Average price per cwt. of milk sold	$_____	$ 5.52
Milk sales per cow	$_____	$ 667
Total farm receipts per man	$_____	$24,606
Gross income per dollar of capital investment	$_____	$ .48

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

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

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

Item	Your farm	Average of 28 farms
Average Capital Investment	$_____	$108,500
Farm receipts	$_____	$54,134
Farm expenses	_____	36,891
Farm income	$_____	$17,243
Interest on Capital at 5%	_____	5,425
LABOR INCOME per farm	$_____	$11,818
Number of operators on 28 farms*	_____	32
LABOR INCOME per operator	$_____	$10,341

* 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 busin are considered as farm receipts and decreases in inventories are included a 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 for 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

Labor income per operator	No. of farms
Over $14,000	8
$10,000 - $14,000	5
$7,000 - $10,000	6
Under $7,000	9

Even in a very efficient and profitable dairy farm business, labor incom 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

Item	Average of 28 farms		
Total farm receipts	$54,134	$_____	
Less increase in inventory	6,913	_____	
Cash Farm Receipts		$47,221	$_____
Total farm expenses	$36,891	$_____	
Less capital items	10,402	_____	
Less unpaid labor	311	_____	
Decrease in inventory	--	_____	
Cash Operating Expenses		$26,178	$_____
FARM CASH OPERATING INCOME		$21,043	$_____

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

Farm receipts	$54,134
Farm expenses	36,891
Farm Income	$17,243
Value of Operator's Labor*	6,171
Return on Investment	$11,072
Rate of Return on Average Capital	10.2%

* 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 principle 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 bu

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

Item	My farm	Average per farm: 28 Cortland Co. farms, 1968	Average per farm: 548 New York farms, 1967
Number of cows	_____	61	51
Pounds of milk sold	_____	738,000	616,600
Man equivalent	_____	2.2	1.9
Total work units	_____	725	594

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

Number of cows	Number of farms	Labor income per operator
Under 25	22	$3,560
25-39	176	5,350
40-54	170	7,380
55-69	104	8,800
70-84	38	11,020
85-99	11	11,790
100 and over	27	13,360

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

Item	My farm	Average per farm: 28 Cortland Co. farms, 1968	Average per farm: 548 New York farms, 1967
Pounds of milk sold per cow	_____	12,100	12,100
Tons of hay per acre	_____	2.4	2.6
Tons of corn silage per acre	_____	14	17
Bushels of oats per acre	_____	52	50

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

Pounds milk sold per cow	114 farms with less than 35 cows: Percent of farms	114 farms with less than 35 cows: Labor income	252 farms with 35-54 cows: Percent of farms	252 farms with 35-54 cows: Labor income	182 farms with 55 cows and over: Percent of farms	182 farms with 55 cows and over: Labor income
Less than 10,000	15	$2,588	12	$4,325	10	$ 8,818
10,000 - 10,999	18	4,311	13	5,399	9	6,636
11,000 - 11,999	25	5,246	23	6,085	23	9,141
12,000 - 12,999	20	4,773	18	7,285	20	10,831
13,000 - 13,999	11	5,347	19	7,838	24	11,418
14,000 & over	11	6,687	15	9,814	14	12,375

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

Pounds of milk sold per cow	Number of farms
Under 11,000	6
11,000 - 11,999	5
12,000 - 12,999	8
13,000 - 13,999	5
14,000 and over	4

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

Item	My farm	Average per farm: 28 Cortland Co. farms, 1968	Average per farm: 548 New York farms, 1967
Number of cows per man	_____	28	27
Pounds of milk sold per man	_____	335,500	324,500
Work units per man	_____	330	313

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

Pounds milk sold per man	114 farms with less than 35 cows: Percent of farms	114 farms with less than 35 cows: Labor income	252 farms with 35-54 cows: Percent of farms	252 farms with 35-54 cows: Labor income	182 farms with 55 cows and over: Percent of farms	182 farms with 55 cows and over: Labor income
Under 200,000	24	$3,073	5	$3,521	2	$ 4,334
200,000 - 299,999	49	4,745	37	5,647	16	7,561
300,000 - 399,999	25	6,235	35	7,291	53	9,370
400,000 & over	2	6,499	23	9,090	29	13,513

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

Pounds of milk sold per man	Number of farms
Under 300,000	9
300,000 - 349,999	5
350,000 - 399,999	6
400,000 & over	8

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

Item	My farm	Average per farm: 28 Cort. Co. farms, 1968	Average per farm: 548 New York farms, 1967
Purchased Feed			
Dairy feed bought	$_____	$10,078	$8,440
Feed bought per cow	$_____	165	165
Feed bought as % of milk receipts	_____%	25%	26%
Roughage Harvested (hay equivalent)			
Hay (tons) _____		214 tons	182 tons
All silage (____) tons ÷ 3 _____		189 tons	149 tons
Total tons hay equivalent	_____	403 tons	331 tons
Tons hay equivalent per cow	_____	6.6 tons	6.5 tons
Other Considerations			
Total acres in crops per cow	_____	2.6 acres	2.5 acres
Lime & fertilizer expense/cow	$_____	$23	$30
Lime & fertilizer expense/crop acre	$_____	$ 9	$12
Number of heifers per 10 cows	_____	7.4	6.5

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*

Item	My farm	Average per farm: 28 Cort. Co. farms, 1968	Average per farm: 548 New York farms, 1967
Beginning inventory	$_____	$20,826	$17,808
New machinery bought	_____	5,852	5,128
Total	$_____	$26,678	$22,936
End inventory	$_____	$22,821	$20,251
Machinery sold	_____	423	131
Total	$_____	$23,244	$20,382
Depreciation	$_____	$ 3,434	$ 2,554
Interest at 5% av. inv.	_____	1, 091	952
Gas and oil	_____	1,288	922
Machinery repairs	_____	1,566	1,310
Bale ties	_____	86	84
Milk hauling	_____	161	424
Other machine hire	_____	181	179
Auto expenses (farm share)	_____	235	219
Electricity (farm share)	_____	690	510
TOTAL MACHINERY COSTS	$_____	$ 8,732	$ 7,154
Gas tax refunds	$_____	$ 140	$ 93
Income from machine work	_____	60	97
NET MACHINERY COST	$_____	$ 8,532	$ 6,964
Net machinery cost per cow	$_____	$ 140	$ 137
Net machinery cost per crop acre	$_____	$ 54	$ 56
Net machinery cost per man	$_____	$ 3,878	$ 3,665

* Dows not include insurance, housing, or farm labor on repairs.

ARRAY OF FARM BUSINESS FACTORS
28 Cortland County Dairy Farms, 1968

Size		Labor Efficiency		Production		Cost Control	
No. of cows	Pounds milk per farm (cwt.)	Cows per man	Cwt. milk sold per man	Milk sold per cow	Tons hay per acre	Per cent feed is of milk receipts	Net Machinery cost per cow
109	14,476	44	6,695	165	3.7	11	80
107	11,316	41	4,949	142	3.5	17	88
89	10,320	38	4,691	141	3.4	17	94
82	10,042	38	4,524	140	3.4	19	95
76	9,322	37	4,420	138	3.3	20	96
75	9,249	34	4,257	137	3.2	20	107
65	8,984	33	4,253	135	3.2	21	110
71	8,932	33	4,105	135	2.9	21	115
70	8,649	31	3,854	130	2.8	22	117
65	7,799	31	3,836	129	2.7	22	117
62	7,673	30	3,812	127	2.6	22	119
60	7,506	30	3,729	127	2.6	23	120
60	7,469	28	3,661	126	2.6	23	121
60	7,322	28	3,594	126	2.5	25	127
59	6,937	28	3,395	125	2.5	25	129
55	6,811	28	3,263	124	2.5	25	145
55	6,807	27	3,233	123	2.2	25	155
53	6,630	27	3,101	114	2.2	26	156
52	6,512	26	3,083	113	2.1	26	157
51	6,434	25	2,883	111	2.1	27	158
50	6,015	25	2,784	110	2.0	28	159
49	5,761	24	2,734	110	1.9	29	166
46	5,568	24	2,723	108	1.9	29	183
44	4,955	23	2,659	105	1.8	30	192
43	4,778	22	2,654	97	1.7	31	192
39	4,712	21	2,619	94	1.7	31	198
37	3,988	20	2,142	88	1.6	32	207
19	1,672	11	984	82	1.2	36	235

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
548 New York Dairy Farms,* 1967

Size of Business		Rates of Production			Labor Efficiency	
No. of cows	Pounds milk sold	Pounds milk sold per cow	Tons hay per acre	Tons corn silage per acre	Cows per man	Pounds milk sold per man
105	1,269,200	15,300	4.1	25	43	531,700
70	900,700	14,000	3.3	21	35	428,900
59	739,600	13,300	3.0	20	32	385,600
54	653,300	12,900	2.8	18	29	357,800
48	582,400	12,500	2.5	17	27	334,400
44	530,400	11,900	2.3	16	26	313,400
40	467,600	11,500	2.1	15	24	288,200
36	421,500	11,000	1.9	14	22	260,100
32	361,900	10,200	1.4	12	20	228,400
25	262,600	8,500	.8	9	17	179,500

* 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.

Cost Control			
Feed bought per cow	% Feed is of milk receipts	Feed and crop expense per cwt. milk	Machinery cost per cow
$ 75	13%	$1.07	$ 82
110	18	1.32	98
128	21	1.46	109
143	23	1.58	118
157	25	1.68	129
173	27	1.79	141
187	29	1.90	150
204	32	1.99	162
225	34	2.12	180
260	39	2.37	217

actors 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

Item	My farm	Farms with less than 25 cows	25 to 39 cow farms	40 to 54 cow farms
Capital Investment (end of year)				
Machinery and equipment	$_____	$ 7,043	$13,981	$18,627
Livestock	_____	8,141	14,234	19,749
Feed and supplies	_____	2,560	4,178	5,964
Land and buildings	_____	20,075	25,878	36,695
TOTAL INVESTMENT	$_____	$37,819	$58,271	$81,035
Receipts				
Milk sales	$_____	$12,511	$20,464	$28,963
Livestock sold	_____	1,283	2,154	2,932
Crop sales	_____	67	117	155
Miscellaneous receipts	_____	413	756	840
Total Cash Receipts	$_____	$14,274	$23,491	$32,890
Increase in inventory	_____	1,912	4,012	6,004
TOTAL RECEIPTS	$_____	$16,186	$27,503	$38,894
Expenses				
Hired labor	$_____	$ 189	$ 572	$ 1,397
Dairy feed	_____	3,352	5,593	7,558
Other feed	_____	65	159	189
Machine hire	_____	98	115	189
Machinery repair	_____	426	847	1,130
Auto expense (farm share)	_____	165	177	236
Gas and oil	_____	469	691	828
Breeding fees	_____	156	245	312
Veterinary and medicine	_____	243	338	484
Other livestock expense	_____	482	870	1,181
Lime and fertilizer	_____	451	855	1,316
Seeds and plants	_____	134	245	385
Spray and other crop expense	_____	95	227	313
Land, bldg., fence repair	_____	178	428	484
Taxes and insurance	_____	663	931	1,288
Elec. and tel. (farm share)	_____	293	450	558
Miscellaneous expenses	_____	151	345	551
Total Cash Operating Exp.	$_____	$ 7,610	$13,088	$18,399
New machinery	_____	1,908	3,491	4,379
New real estate	_____	210	1,105	2,282
Purchased livestock	_____	380	802	1,207
Unpaid family labor	_____	675	836	888
TOTAL FARM EXPENSES	$_____	$10,783	$19,322	$27,155
Financial Summary				
Total Farm Receipts	$_____	$16,186	$27,503	$38,894
Total Farm Expenses	_____	10,783	19,322	27,155
Farm Income	$_____	$ 5,403	$ 8,181	$11,739
Interest on av. capital @ 5%	_____	1,843	2,813	3,902
Labor Income per Farm	$_____	$ 3,560	$ 5,368	$ 7,837
Number of operators	_____	20	169	194
LABOR INCOME PER OPERATOR	$_____	$ 3,560	$ 5,337	$ 7,191

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

Item	My farm	55 to 69 cow farms	70 to 84 cow farms	Farms with 85 or more cows
Capital Investment (end of year)				
Machinery and equipment	$_____	$ 24,315	$ 28,152	$ 41,815
Livestock	_____	26,994	34,251	48,451
Feed and supplies	_____	7,973	10,922	16,886
Land and buildings	_____	49,347	66,075	108,048
TOTAL INVESTMENT	$_____	$108,629	$139,400	$215,200
Receipts				
Milk sales	$_____	$ 38,862	$ 51,004	$ 71,452
Livestock sold	_____	3,625	4,574	8,334
Crop sales	_____	152	153	60
Miscellaneous receipts	_____	1,369	1,400	2,098
Total Cash Receipts	$_____	$ 44,008	$ 57,131	$ 81,944
Increase in inventory	_____	10,167	11,066	21,171
TOTAL RECEIPTS	$_____	$ 54,175	$ 68,197	$103,115
Expenses				
Hired labor	$_____	$ 2,661	$ 5,422	$ 8,421
Dairy feed	_____	9,971	13,218	18,058
Other feed	_____	251	149	404
Machine hire	_____	231	261	222
Machinery repair	_____	1,464	2,040	3,342
Auto expense (farm share)	_____	210	255	328
Gas and oil	_____	1,033	1,365	1,798
Breeding fees	_____	438	526	619
Veterinary and medicine	_____	618	918	1,063
Other livestock expense	_____	1,809	2,417	3,811
Lime and fertilizer	_____	1,808	2,261	4,110
Seeds and plants	_____	511	532	1,018
Spray and other crop expense	_____	493	575	762
Land, bldg., fence repair	_____	824	893	1,325
Taxes and insurance	_____	1,603	2,251	3,263
Elec. and tel. (farm share)	_____	733	952	1,251
Miscellaneous expenses	_____	624	1,175	1,199
Total Cash Operating Exp.	$_____	$ 25,282	$ 35,210	$ 50,994
New machinery	_____	6,911	6,593	10,827
New real estate	_____	4,054	4,205	9,693
Purchased livestock	_____	1,676	1,947	4,398
Unpaid family labor	_____	847	608	731
TOTAL FARM EXPENSES	$_____	$ 38,770	$ 48,563	$ 76,643
Financial Summary				
Total Farm Receipts	$_____	$ 54,175	$ 68,197	$103,115
Total Farm Expenses	_____	38,770	48,563	76,643
Farm Income	$_____	$ 15,405	$ 19,634	$ 26,472
Interest on av. capital @ 5%	_____	5,177	6,693	10,231
Labor Income per Farm	$_____	$ 10,228	$ 12,941	$ 16,241
Number of operators	_____	123	49	55
LABOR INCOME PER OPERATOR	$_____	$ 8,481	$ 10,300	$ 12,107

SELECTED BUSINESS FACTORS BY HERD SIZE
548 New York Dairy Farms, 1967

Item	My farm	Farms with less than 25 cows	25 to 39 cow farms	40 to 54 cow farms
Number of farms		20	168	178
Size of Business				
Number of cows	_____	21	33	46
Pounds of milk sold	_____	241,700	395,600	558,800
Crop acres	_____	57	92	121
Man equivalent	_____	1.2	1.4	1.7
Total work units	_____	245	401	544
Rates of Production				
Milk sold per cow	_____	11,500	12,000	12,100
Tons hay per acre	_____	2.4	2.3	2.5
Tons corn silage per acre	_____	15	16	14
Bushels of oats per acre	_____	54	45	49
Labor Efficiency				
Cows per man	_____	18	24	27
Pounds milk sold per man	_____	201,400	282,600	328,700
Work units per man	_____	204	286	320
Crop acres per man	_____	48	66	71
Feed Costs				
Feed purchased per cow	$_____	$ 160	$ 169	$ 164
Crop expense per cow	$_____	$ 32	$ 40	$ 44
Feed & crop expense per cow	$_____	$ 192	$ 209	$ 208
Feed cost per cwt. milk	$_____	$ 1.39	$ 1.41	$ 1.35
Feed & crop expense/cwt. milk	$_____	$ 1.67	$ 1.75	$ 1.71
% Feed is of milk receipts	_____%	29%	27%	26%
Hay equivalent per cow	_____	6.3	6.5	6.7
Crop acres per cow	_____	2.7	2.8	2.6
Fertilizer & lime/crop acre	$_____	$ 8	$ 9	$ 11
Machinery Costs				
Total machinery costs	$_____	$ 2,905	$ 4,861	$ 6,133
Machinery cost per cow	$_____	$ 138	$ 147	$ 133
Machinery cost per man	$_____	$ 2,421	$ 3,472	$ 3,608
Machinery cost per cwt. milk	$_____	$ 1.20	$ 1.23	$ 1.10
Machinery cost per crop acre	$_____	$ 51	$ 53	$ 51
Capital Efficiency				
Investment per man	$_____	$31,516	$41,622	$47,668
Investment per cow	$_____	$ 1,801	$ 1,766	$ 1,762
Investment per cwt. milk sold	$_____	$ 16	$ 15	$ 15
Land and buildings per cow	$_____	$ 956	$ 784	$ 798
Machinery investment per cow	$_____	$ 335	$ 424	$ 405
Return on investment	_____%	--	4.7%	7.2%
Other				
Price per cwt. milk sold	$_____	$ 5.18	$ 5.17	$ 5.18
Acres hay and hay crop silage	_____	43	62	73
Acres corn silage	_____	6	14	23

SELECTED BUSINESS FACTORS BY HERD SIZE
548 New York Dairy Farms, 1967

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

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

	Present	Change	Future with change
Number of cows	_____	_____	_____
Number of youngstock	_____	_____	_____
Production per cow	_____	_____	_____
Labor force (man equiv.)	_____	_____	_____

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:

Future crop	Proposed Production	Estimated Yield	Acres Needed	Change in acres (list as plus or minus)
Hay	_____	_____	_____	_____
Hay crop silage	_____	_____	_____	_____
Corn silage	_____	_____	_____	_____
Other forage	_____	_____	_____	_____
Grain	_____	_____	_____	_____

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

	Present	Net change (plus or minus)	Future with change
A. Receipts			
Milk sales, gross	$	$	$
Livestock sales			
Crop sales			
Miscellaneous receipts			
Total Cash Receipts	$	$	$
Increase in inventory			
Total Farm Receipts	$	$	$
B. Expenses			
Hired labor	$	$	$
Feed bought			
Machine hire			
Machinery repairs			
Auto expense (farm share)			
Gasoline and oil			
Breeding fees			
Veterinary and medicine			
Other livestock expense			
Lime and fertilizer			
Seeds and plants			
Spray, other crop expense			
Land, building, fence expense			
Taxes, insurance			
Electricity, telephone (farm share)			
Miscellaneous			
Total Cash Operating Exp.	$	$	$
New machinery and real estate			
Livestock purchases			
Unpaid family labor			
Decrease in inventory			
Total Farm Expenses	$	$	$
C. Financial Summary			
Capital Investment	$		$
Total Farm Receipts	$		$
Total Farm Expenses			
Farm Income	$		$
Interest on Capital			
LABOR INCOME	$		$

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

Selected Factors	New York	Southern Michigan	Vermont	Connecticut
Number of farms	548	290	127	25
Crop acres	138	259	NA	NA
Man equivalent	1.9	2.2	2.0	2.1
Number of heifers	33	NA	35	40
Number of cows	51	54	53	66
Lbs. milk sold/ farm	616,600	657,640	608,560	811,460
Lbs. milk sold/ man	324,500	298,930	304,300	386,400
Lbs. milk sold/ cow	12,100	12,180	11,480	12,290
Milk sales/ cow	$635	$670	$635	$736
Av. price/ cwt. milk	$5.25	$5.50	$5.53	$5.99
Purchased feed/ cow	$165	$96	$190	$228
Taxes/ cow	$17	$17	NA	NA
Capital Investment				
Land & buildings	$42,560	$87,000	$46,540	$66,360
Machinery & equipment	$20,250	$23,400	$13,440	$17,760
Livestock	$22,160	$21,400	$20,020	$26,770
Feed & supplies	$ 6,840	$11,000	$ 5,890	$ 8,420
Investment/ man	$48,320	$64,910	$42,940	$56,820
Investment/ cow	$ 1,800	$ 2,640	$ 1,620	$ 1,810
Financial Summary				
Total farm receipts	$44,309	$45,002	$42,810	$51,494
Total farm expenses	$31,545	$31,112	$32,322	$37,712
Farm income	$12,764	$13,890	$10,488	$13,782
Interest at 5%	$ 4,402	$ 7,140	$ 4,294	$ 5,966
Labor income/ farm	$ 8,362	$ 6,750	$ 6,194	$ 7,816
Labor income/ operator	$ 7,511	$ 6,193	$ 5,631	$ 6,513