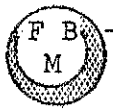
February 1969

A. E. Ext. 530

1968 DAIRY FARM BUSINESS SUMMARY

LEWIS COUNTY



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1968
DAIRY FARM BUSINESS SUMMARY
LEWIS COUNTY

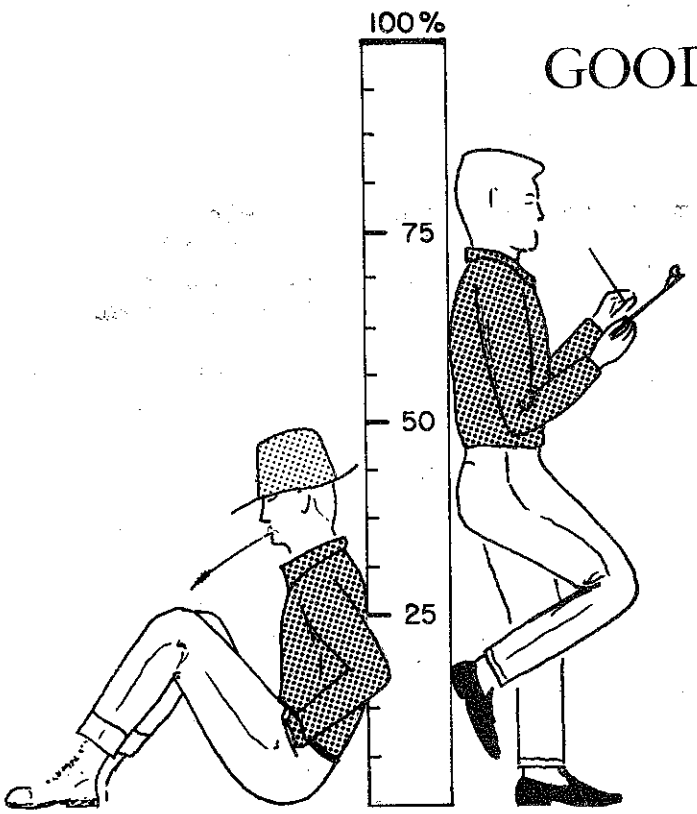
Farm records are a tool that farmers can use in managing their businesses. Farm management extension programs have been built around record projects. Records make a logical starting point for analyzing a particular business and for studying the principles of good farm management.

The Lewis County Cooperative Extension Service has enrolled dairy farmers in farm business management projects every year since 1961. For 1968, sixty-seven farmers submitted their records for summary and analysis by the Department of Agricultural Economics. The figures for each farm were checked, put on electronic data cards, and put through a computer for summary and analysis. The group results are presented in this workbook.

This report is organized so that you can systematically summarize and analyze your farm business by going page by page through the report. Spaces are available for filling in the figures for your farm or any specific farm that you may want to study.

An individual may use this workbook to study his business or it can be used by a group as a basis for a farm management discussion. In addition to the members of the Farm Business Management Projects, this report should be useful to other dairymen in Lewis County, to teachers of agriculture, other agency representatives, and to agribusinessmen in the area.

This summary was prepared by C. A. Bratton, Department of Agricultural Economics, New York State College of Agriculture, in cooperation with C. F. Handy and Carl R. Pearce, Lewis County Cooperative Extension Agents.



GOOD MANAGEMENT IS BASI

How do you measure up ?

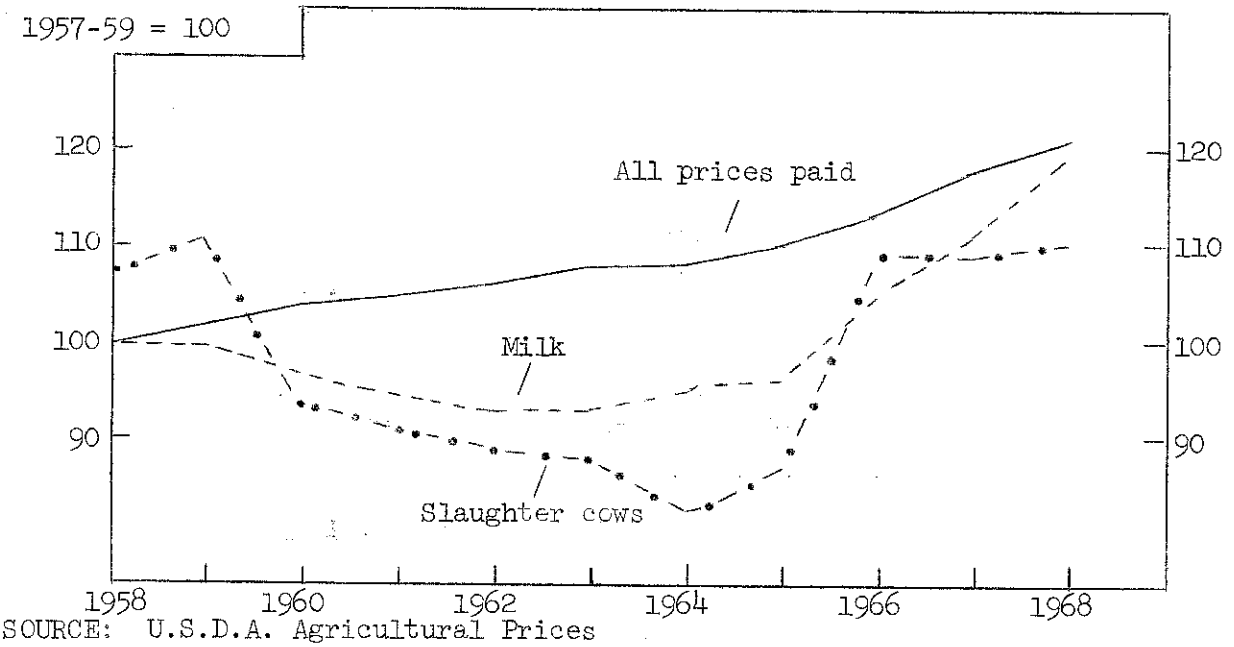
1. Have you developed a systematic approach to management problems?
2. Do you have the facts on your business?
3. Are you improving your managerial skills?

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

Part I is designed to help you systematically summarize your business.

Physical Resources

Available resources determine what a farmer can do. Limited resources restrict income. In analyzing a farm business, we first look at the people, the livestock, and the land resources that were used.

LABOR, LIVESTOCK, AND LAND RESOURCES USED
67 Lewis County Farms, 1968

Item	My farm	Average 67 farms		Range Low	Range High
Labor (months)					
Operator	_____		13.8		
Family paid	_____	(14)	.7		
Family unpaid	_____	(44)	3.5		
Hired & other	_____	(41)	4.3		
Total	_____		22.3		
Man equivalent	_____		1.9	1.0	4.2
Livestock (number)					
Cows	_____		57	17	201
Heifers	_____		30	0	201
Crops (acres grown)*					
Hay	_____	(67)	80*	18	319
Grass silage	_____	(29)	22*	4	104
Corn silage	_____	(53)	28*	6	60
Cats	_____	(38)	21*	3	107
Total Acres of Crops*	_____		125	40	571

* Average for farms reporting so acres do not add to total. Number of farms growing is in parenthesis.

The average man equivalent of 1.9 and a high of 4.2 indicates that these were the "family farms." The amount of manpower on farms is one of the few factors that has shown no appreciable increase over the years.

Of the 67 farms, 17 reported DHIA production records, 13 had owner-sampler records, and 37 reported no production records.

Capital Investment

Capital is an important resource in a farm business. The end-of-year inventory is used as the measure of capital investment. The amounts reflect the "fair market value" or what they should bring at a well-attended sale.

FARM INVENTORY VALUES, JANUARY 1, 1969
67 Lewis County Farms

Item	My farm	Average 67 farms Amount	Percent
Machinery & equipment	$_____	$ 25,297	25
Livestock	_____	25,346	25
Feed & supplies	_____	6,635	6
Land & buildings	_____	44,347	44
TOTAL INVESTMENT	$_____	$101,625	100

Total investment on the 67 farms averaged $102,000, but ten farms had investments of over $150,000 while six farms were below $50,000. The cattle and machinery inventory was greater than the land and buildings.

Below are some measures used in analyzing how efficiently the capital was used:

CAPITAL INVESTMENT ANALYSIS

Item	My farm	Average 67 farms 1968	Average 548 N. Y. farms 1967
Total investment/man	$_____	$53,000	$48,300
Total investment/cow	$_____	$1,780	$1,800
Machinery investment/cow	$_____	$444	$397
Land & buildings/cow	$_____	$778	$834
Land & buildings/crop acre	$_____	$355	$308

Real estate values for dairy farms are sometimes related to the number of cows the farm can carry or the acres of cropland. The average land and buildings value per cow was nearly $800 and the per acre of cropland value was about $350. These are useful guidelines when you consider what a farm might be worth.

Receipts

"You've got to make a gross before you can make a net," is an old business saying. The manager must make sure the farm business maintains enough total receipts to cover the expenses and a reasonable return for the operator.

FARM RECEIPTS
67 Lewis County Farms, 1968

Item	My farm	Average 67 farms Amount	Percent
Milk sales	$_____	$36,077	88
Livestock sales	_____	3,508	9
Crop sales	_____	529	1
Machinery sales	_____	57	--
Government payments	_____	168	--
Work off farm	_____	230	1
Custom machine work	_____	115	--
Gas tax refunds	_____	72	--
Other	_____	241	1
Total Cash Farm Receipts	$_____	$40,997	100
Increase in Inventory	_____	9,342	
TOTAL FARM RECEIPTS	$_____	$50,339	
Av. price/cwt. milk sold	$_____	$5.36	
Milk sales/cow	$_____	$633	

Increases in inventory are included in the farm receipts since these items could have been sold and turned into cash and still have the same business at the end of the year as at the beginning. The costs of producing or acquiring these items are included in the expenses. Sixty of the farms had increases ranging from $200 to $54,000. The increases averaged about $3,000 each for machinery, cattle, and land and buildings.

The average price received for milk was $5.36 with a range from $4.25 to $5.80. The New York State average for 1968 was reported as $5.43.

Expenses

Controlling expenditures is an important job of the manager of any business. The first step in this control is to know what the expenses are and how they compare with others in similar businesses.

FARM EXPENSES
67 Lewis County Farms, 1968

Item	My farm	Average 67 farms Amount	Percent
Hired labor	$_____	$ 1,831	9
Dairy concentrate	_____	9,095	43
Other feed	_____	249	1
Machine hire	_____	267	1
Machinery repairs	_____	1,222	6
Auto expense (farm share)	_____	211	1
Gas and oil	_____	939	4
Breeding fees	_____	282	1
Veterinary and medicine	_____	643	3
Other livestock expense	_____	979	4
Lime and fertilizer	_____	1,146	5
Seeds and plants	_____	381	2
Bale ties	_____	96	--
Spray, other crop expense	_____	270	1
Land, building, fence repair	_____	597	3
Taxes	_____	1,230	6
Insurance	_____	550	3
Electricity (farm share)	_____	510	3
Telephone (farm share)	_____	112	1
Rent	_____	111	1
Miscellaneous	_____	351	2
Total Cash Operating Expenses	$_____	$21,072	100
New machinery	_____	6,574	
Real estate	_____	3,194	
Livestock purchases	_____	2,896	
Unpaid labor	_____	1,057	
Decrease in inventory	_____	--	
TOTAL FARM EXPENSES	$_____	$34,793	

Financial Summary of Year's Business

The income from a farm business can be measured in several ways. Five measures have been calculated in this summary.

Farm income measures the return from the business to all capital and the operator's labor and management. Farm income is the difference between total receipts, including increase in inventory, and total expenses, including decrease in inventory but excluding interest payments.

LABOR INCOME
67 Lewis County Farms, 1968

Item	My farm	Average 67 farms Amount	Percent
Total farm receipts	$_____	$50,339	100
Total farm expenses	_____	34,793	69
FARM INCOME	$_____	$15,546	
Interest on av. capital @ 5%	_____	4,848	10
Labor Income per Farm	$_____	$10,698	21
Number of operators	_____	77	
LABOR INCOME PER OPERATOR	$_____	$ 9,309	

Labor income is the return to the farm operator for his labor and management. This is the measure most commonly used when studying or comparing farm businesses. To get the labor income, a five percent interest charge on all capital is subtracted from the farm income. (Interest paid on debts is not included in the farm expenses.) The interest charge reflects what the operator could earn if this money were invested somewhere else. (An opportunity cost.)

The average labor income per operator for the 67 farms was $9,309, but the range was from minus $100 to $42,700. The distribution is shown below.

Labor income	Number farms
Minus	1
0 - $4,999	14
$5,000 - $9,999	27
$10,000 - $14,999	17
$15,000 - $19,999	6
$20,000 or more	2

If one wishes to compare the labor income of the farm operator with the earnings of a non-farm worker, the cash value of the house and other privileges provided by the farm business must be added to the labor income.

FARM CASH FLOW
67 Lewis County Farms, 1968

Item	My farm	Average 67 farms
Total cash receipts	$_____	$40,997
Total cash operating expense	_____	21,072
NET FARM CASH FLOW	$_____	$19,925
Family cash living expenses*	_____	6,206
Cash for other uses	$_____	$13,719

* Estimated at $5,400 per operator per year

Farm cash flow reflects the cash available from the year's operation of the farm business for family living, interest and debt payments, and new capital purchases or investments. A family may have had additional cash available if some member of the family had a non-farm income, or if money were inherited or borrowed.

Rate of return on investment is calculated by deducting a charge for the operator's labor from the "farm income." This is then divided by the average investment for the year to determine the rate of return on investment. In the above calculation, $5,400 has been used as the value of the operator's labor. No charge has been deducted for "management." This would be included in the return on investment.

RATE OF RETURN ON INVESTMENT
67 Lewis County Farms, 1968

Item	My farm	Average 67 farms
Farm income	$_____	$15,546
Value of operator's labor*	_____	6,206
Return on investment	$_____	$ 9,340
Average capital investment	$_____	$96,954
RATE OF RETURN ON INVESTMENT	_____%	9.6%

* $5,400 per operator. Some farms had more than one operator. Value of operator's labor excludes privileges.

PART II - ANALYSIS OF THE FARM BUSINESS

The manager of a business aims to combine the resources in such a way that they will give a good income. In doing this, he makes use of the known farm business management principles. However, once a business is operating, the manager must keep close watch for leaks in the operation He can do this by analyzing the operation on the basis of the important business factors. On the pages that follow, you can examine several business factors for your operation.

Size of Business

In general, large farms pay better than small farms. Large farms benefit from "economies of scale" - a basic economic principle. For example, investments in machinery can be used more efficiently on larger operations. The large farm also has more units on which to make a profit, thus making use of the "multiplier effect" discussed in general economic principles. This multiplier effect, however, operates on losses as well as profits, so large farms poorly managed can lose more.

MEASURES OF SIZE OF BUSINESS
67 Lewis County Farms, 1968

Measure	My farm	Average 67 farms 1968	Average 548 N. Y. farms 1967
Number of cows	_____	57	51
Pounds of milk sold	_____	672,500	616,600
Man equivalent	_____	1.9	1.9
Total work units	_____	644	594

Eight of the 67 farms sold more than a million pounds of milk in 1968. Volume of output is one measure of size.

In the table below, the 548 New York farms are sorted into various size groups and the labor income is shown for each size for 1967.

COWS PER FARM AND LABOR INCOME
548 N. Y. Dairy Farms, 1967

Number of cows	Number of farms	Labor income/operator
Less than 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 more	27	$13,360

Rates of Production

Good production per animal and per acre are important factors affecting farm incomes. However, these high rates of production must be obtained at reasonable costs. Below are some measures of rates of production.

MEASURES OF RATES OF PRODUCTION
67 Lewis County Farms, 1968

Measure	My farm	Average 67 farms 1968	Average 548 N. Y. farms 1967
Lbs. of milk sold/cow	_____	11,800	12,100
Tons of hay/acre	_____	3.0	2.6
Tons of corn silage/acre	_____	16	17
Bushels of oats/acre	_____	57	50

Pounds of milk sold per cow is the measure used most frequently in examining rates of production. Good crop yields are important in keeping costs under control. The range in milk sold per cow was from 7,500 to 15,200 and corn silage from 8 to 25 tons per acre.

The relationship of pounds of milk sold per cow and labor income is shown below. It will be noted that high rates of production paid in all size groups. Also, the large group had a higher percent of the farms with the higher rates of production.

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		252 farms with 35-54 cows		182 farms with 55 cows and over	
	Percent of farms	Labor income	Percent of farms	Labor income	Percent of farms	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

It is of interest to note that at all production levels the larger farms had higher incomes. The above table illustrates the effects of both rates of production and size.

Labor Efficiency

A farmer is marketing his labor and that of those working for him. Since the return is based on the amount of product sold, he must keep alert to the efficiency of labor as measured in output or accomplishments. Labor efficiency is closely correlated with labor income. Below are common measures of labor efficiency.

MEASURES OF LABOR EFFICIENCY
67 Lewis County Farms, 1968

Measure	My farm	Average 67 farms 1968	Average 548 N. Y. farms 1967
Lbs. of milk sold/man	_____	353,900*	324,500
Number of cows/man	_____	30	27
Work units/man	_____	339	313
Crop acres/man	_____	66	66

* Average test 3.6%

Pounds of milk sold per man is the most commonly used measure of labor efficiency on dairy farms. The average for the 67 farms was 354,000 pounds per man. This ranged from 146,000 to 812,000. Some accomplish much more than others.

The relationship of pounds of milk sold per man and labor income for three size groups in 1967 is shown below. A positive relationship is shown for all three herd sizes. The large herds had the largest spread in income between the low output per man and the high output as measured in pounds of milk per man.

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		252 farms with 35-54 cows		182 farms with 55 cows and over	
	Percent of farms	Labor income	Percent of farms	Labor income	Percent of farms	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 and over	2	6,499	23	9,090	29	13,513

Cost Control

Farm expenses on dairy farms take about 70 percent of the gross receipts. The total expenses per cow average about $600. These 67 Lewis County farms in 1968 spent an average of about $95 per day. These all point toward the importance of good expense or cost control.

Feed Costs

Feed is the number one cost item on most dairy farms. It is for this reason that feed costs are examined first in the cost control section. Numerous factors enter into the feed cost control. Study the table below:

ITEMS RELATED TO FEED COSTS
67 Lewis County Farms, 1968

Item	My farm	Average 67 farms 1968	Average 548 N. Y. farms 1967
Feed Expense			
Dairy feed purchased	$_____	$9,095	$8,440
Feed purchased as % of milk receipts	_____%	25%	26%
Feed purchased per cwt. of milk sold	$_____	$1.35	$1.37
Feed purchased per cow	$_____	$160	$165
Crop expense per cow	$_____	$33	$45
Total feed & crop expense per cow	$_____	$193	$210
Total feed & crop expese per cwt. of milk sold	$_____	$1.63	$1.74
Roughage Harvested (hay equivalent)			
Hay (tons)	_____	244	182
Corn silage (tons ÷ 3)	_____	117	136
Hay crop silage (tons ÷ 2 or 3)*	_____	23	13
Total tons hay equivalent	_____	384	331
Tons hay equivalent per cow	_____	6.7	6.5
Other Considerations			
Acres in crops per cow	_____	2.2	2.5
Lime and fertilizer expense/cow	$_____	$20	$30
Lime and fertilizer expense per crop acre	$_____	$9	$12
Number of heifers per ten cows	_____	5.3	6.5

* Depending on moisture content of silage

Power and Machinery Costs

The trend has been to substitute machinery for labor on dairy farms. This increases the importance of analyzing the power and machinery costs. Net power and machinery costs usually accounts for about one-fifth of the total farm expenses. Below are some measures used in analyzing machinery costs.

POWER AND MACHINERY COSTS*
67 Lewis County Farms, 1968

Item	My farm	Average 67 farms 1968	Average 548 N. Y. farms 1967
Beginning inventory	$_____	$22,033	$17,808
New machinery purchased	_____	6,574	5,128
Total (No. 1)	$_____	$28,607	$22,936
End inventory	$_____	$25,297	$20,251
Machinery sold	_____	57	131
Total (No. 2)	$_____	$25,354	$20,382
Depreciation (Total No. 1 minus Total No. 2)	$_____	$ 3,253	$ 2,554
Interest @ 5% on av. inventory	_____	1,184	952
Gas and oil	_____	939	922
Machinery repairs	_____	1,222	1,310
Bale ties	_____	96	84
Milk hauling	_____	62	424
Machine hire	_____	267	179
Auto expense (farm share)	_____	211	219
Electricity (farm share)	_____	510	510
Total power and machinery cost	$_____	$ 7,744	$ 7,154
Less:			
Gas tax refund	$____	$ 72	$93
Income from machine work	____	115	97
	_____	187	190
NET POWER AND MACHINERY COST	$_____	$ 7,557	$ 6,964
Net machinery cost:			
per cow	$_____	$133	$137
per crop acre	$_____	$60	$56
per cwt. milk sold	$_____	$1.12	$1.13
per man	$_____	$3,977	$3,665

* Does not include insurance, housing or value of labor used in operation or repair

Labor and Machinery Costs

The primary justification given for more mechanization is to reduce labor costs. However, if a machine is added without expanding size or reducing the labor force, costs will be increased. "Labor and machinery cost" provides a measure of the efficiency of the operator's machinery and labor combination.

LABOR AND MACHINERY COSTS
67 Lewis County Farms, 1968

Item	My farm	Average 67 farms 1968	Average 548 N. Y. farms 1967
Labor cost:			
Value of operator's labor*	$_____	$ 6,206	$ 6,011
Hired labor	_____	1,831	2,147
Unpaid family labor	_____	1,057	825
Total labor cost	$_____	$ 9,094	$ 8,983
Net power and machinery cost	_____	7,557	6,964
TOTAL LABOR AND MACHINERY COST	$_____	$16,651	$15,947
Labor cost:			
per cow	$_____	$160	$176
per cwt. milk sold	$_____	$1.35	$1.46
Labor and machinery cost:			
per cow	$_____	$292	$313
per cwt. milk sold	$_____	$2.48	$2.59

* Valued at $5,400 per operator. Some farms had more than one operator.

Wage rates paid for hired labor is a factor affecting total labor costs. For the 548 farms, the average labor expense per month of hired labor was calculated for the farms hiring three months or more of labor (295 farms). The farms were sorted on the basis of the labor expense per month. In general, the farms paying higher wages sold more pounds of milk per man and had higher labor incomes.

LABOR EXPENSE PER MONTH OF HIRED LABOR AND LABOR INCOME
295 New York Dairy Farms, 1967

Labor expense per month	Number of farms	Months hired	Number of cows	Milk sold per man (lbs.)	Labor income
Less than $200	42	8	43	286,400	$ 7,938
$200 - $249	52	9	54	324,500	8,160
$250 - $299	52	12	62	330,500	8,400
$300 - $349	49	12	66	349,000	9,016
$350 - $399	46	13	61	333,300	8,431
$400 & over	54	15	74	382,800	10,721

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 s per ma
105	1,269,200	15,300	4.1	25	43	531,70
70	900,700	14,000	3.3	21	35	428,90
59	739,600	13,300	3.0	20	32	385,60
54	653,300	12,900	2.8	18	29	357,80
48	582,400	12,500	2.5	17	27	334,40
44	530,400	11,900	2.3	16	26	313,40
40	467,600	11,500	2.1	15	24	288,20
36	421,500	11,000	1.9	14	22	260,10
32	361,900	10,200	1.4	12	20	228,40
25	262,600	8,500	.8	9	17	179,50

* These farms are considerably above the average for all farms in New York State. F 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 perce 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, e lowest cost is not necessarily the most profitable. In some cases, the "best" ght be somewhere near the average. Many things affect the level of these costs, 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

ctors 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 ssible change should be studied in detail. The work sheet or budgeting form und on pages 22 and 23 can be used for projecting the likely results of each ternative.

RONG POINTS:

AK 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

Family Living Expenditures

Family living expenses have first claim on farm income. In any farm business financial planning, it is important that the family living expenses be considered.

The 1967 family living expenditures for 99 Michigan farm families are reported below. These families were cooperators in the Michigan electronic farm accounting program. These data give an indication of the living expenses for some farm families. The total living expenses of individual families varied from $2,766 to $16,429. The high family had education expenses of $4,051.

FARM FAMILY LIVING EXPENDITURES
99 Michigan Farm Families, 1967

Expenditure	My family	Average of 99 families	Percent of total
Food	$_____	$1,626	22
Housing	_____	1,449	19
Transportation	_____	793	10
Personal insurance	_____	778	10
Clothing	_____	628	8
Medical care	_____	557	7
Gifts and contributions	_____	488	7
Personal taxes	_____	362	5
Recreation	_____	255	3
Education	_____	255	3
Personal care	_____	84	1
Miscellaneous	_____	277	5
TOTAL LIVING EXPENSES	$_____	$7,552	100

SOURCE: Michigan State University Agricultural Economics Report No. 106

These 99 families had an average of 5.6 persons per family. The average age of the husband was 42 and the wife 39.

The various living expense items are affected considerably by the number of family members, their ages, health, and interests, and the educational requirements of the children. A family must consider these factors when evaluating their expenditures or in making estimates of the amount of money to include for family living.

PROGRESS OF THE FARM BUSINESS

One phase of business analysis is that of comparing your business with that of other farmers. Another kind of analysis is that of comparing your current year's business with that of previous years. This shows the progress you are making. In planning ahead, it is helpful to set business targets or goals, which should be related to the progress you have been making.

	1966	1967	1968	1969 Target
Size of Business				
Average number of cows	_____	_____	_____	_____
Total lbs. milk sold	_____	_____	_____	_____
Rates of Production				
Lbs. milk sold per cow	_____	_____	_____	_____
Tons corn silage/acre	_____	_____	_____	_____
Labor Efficiency				
Lbs. milk sold per man	_____	_____	_____	_____
Cost Control				
% purchased feed is of milk	____%	____%	____%	____%
Machinery cost per cow	$_____	$_____	$_____	$_____
Capital Efficiency				
Total inventory value	$_____	$_____	$_____	$_____
Total investment/cow	$_____	$_____	$_____	$_____
Debt Situation				
Total debt outstanding	$_____	$_____	$_____	$_____
Debt per cow	$_____	$_____	$_____	$_____
Net Worth	$_____	$_____	$_____	$_____
Price				
Price per cwt. milk	$_____	$_____	$_____	$_____
Financial Summary				
Total Farm Receipts	$_____	$_____	$_____	$_____
Total Farm Expenses	$_____	$_____	$_____	$_____
Labor Income/Operator	$_____	$_____	$_____	$_____

SELECTED FARM BUSINESS SUMMARY FACTORS
Lewis County Dairy Farms, 1965-1968

Item	Year			
	1965	1966	1967	1968
Number of farms	63	75	73	67
Size of Business				
Number of cows	48	51	54	57
Pounds of milk sold	525,200	559,100	600,500	672,500
Crop acres	114	123	123	125
Rates of Production				
Lbs. milk sold per cow	10,900	11,000	11,100	11,800
Tons hay per acre	2.4	2.5	2.7	2.9
Tons corn silage per acre	15	15	18	16
Labor Efficiency				
Cows per man	27	28	30	31
Pounds milk sold per man	291,800	310,600	333,600	353,900
Cost Control Factors				
Machinery cost per cow	$101	$108	$119	$135
Feed bought per cow	$133	$144	$151	$157
% Feed is of milk receipts	29%	28%	27%	25%
Capital Efficiency				
Total investment	$71,350	$81,360	$83,880	$101,625
Total investment per cow	$1,487	$1,595	$1,553	$1,785
Machinery investment per cow	$347	$391	$379	$444
Other				
Price per cwt. milk sold	$4.23	$4.72	$5.05	$5.36
Lime and fertilizer expense/cow	$20	$22	$22	$20
Labor income per cow	$114	$165	$163	$188
Financial Summary				
Total farm receipts	$30,154	$38,032	$42,934	$50,339
Total farm expenses	$21,212	$25,746	$29,968	$34,793
Labor income per operator	$5,307	$7,966	$7,906	$9,309

SOURCE: Cornell A. E. Ext. 412, A. E. Ext. 454, and A. E. Ext. 492