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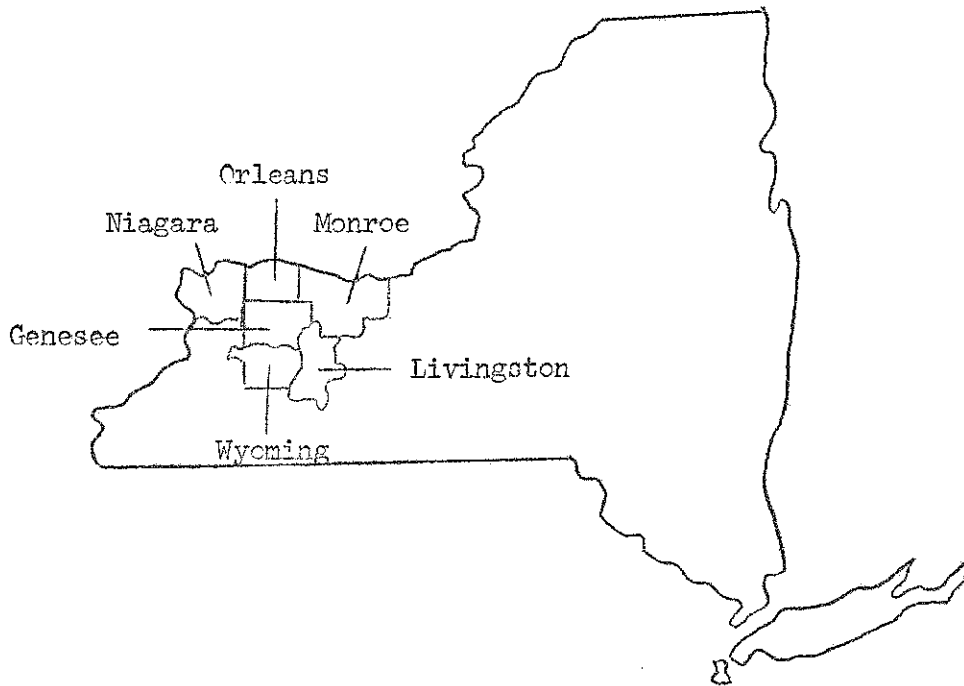
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1969 DAIRY FARM BUSINESS SUMMARY

WESTERN PLAINS REGION NEW YORK



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1969 DAIRY FARM BUSINESS SUMMARY

Western Plains Region, New York

This report is a summary of the 1969 farm business records of 45 dairy farms in the Western Plains Region of New York State. This region includes Niagara, Orleans, Genesee, Monroe, Wyoming and Livingston Counties. This project is sponsored by the Cooperative Extension Associations in the six counties in cooperation with the Department of Agricultural Economics at Cornell University. There are approximately 40 counties in New York State participating in similar projects.

The primary objective of these business management projects is to help and encourage farmers to do a better job of keeping and using records. Sound management decisions are based on good records and the ability to use them. This report has been prepared in workbook form for use in a systematic study of individual farm business operations. It includes 1968 data from 568 New York dairy farms and 1969 data from the 45 Western Plains Region dairy farms to be used for comparison.

The summary and analysis presented in this workbook should be useful to all dairy farmers, teachers of agriculture, farm credit representatives, and others connected with farming in the Western Plains area.

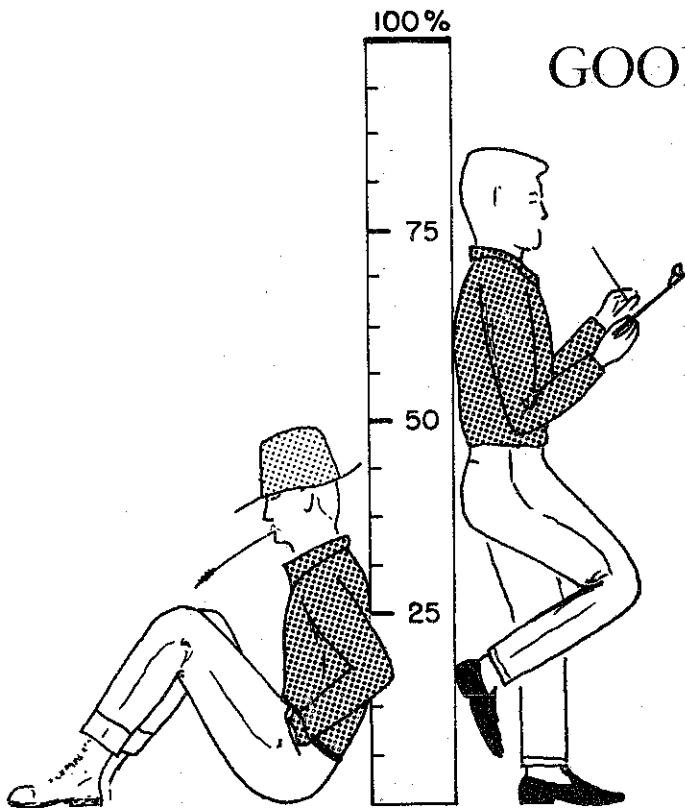
The data presented here represents an average of the farm businesses included in the farm management projects. The data does not represent an average of all the dairy farms in the region or state.

* * * * *

Seven percent was used as the interest rate charged on the average capital for all 1969 records. In previous years, five percent was used. Interest charged represents the "opportunity cost" of capital or the rate of return that farm capital could earn if invested in its best alternative use. The seven percent interest rate has been used in the comparisons on pages 9 and 14. Tables containing only 1968 data have interest calculated at five percent.

* * * * *

This summary was prepared by Stuart F. Smith, Department of Agricultural Economics, New York State College of Agriculture, in cooperation with the cooperative extension agents in the Western Plains Region.



GOOD MANAGEMENT IS BASIC

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?

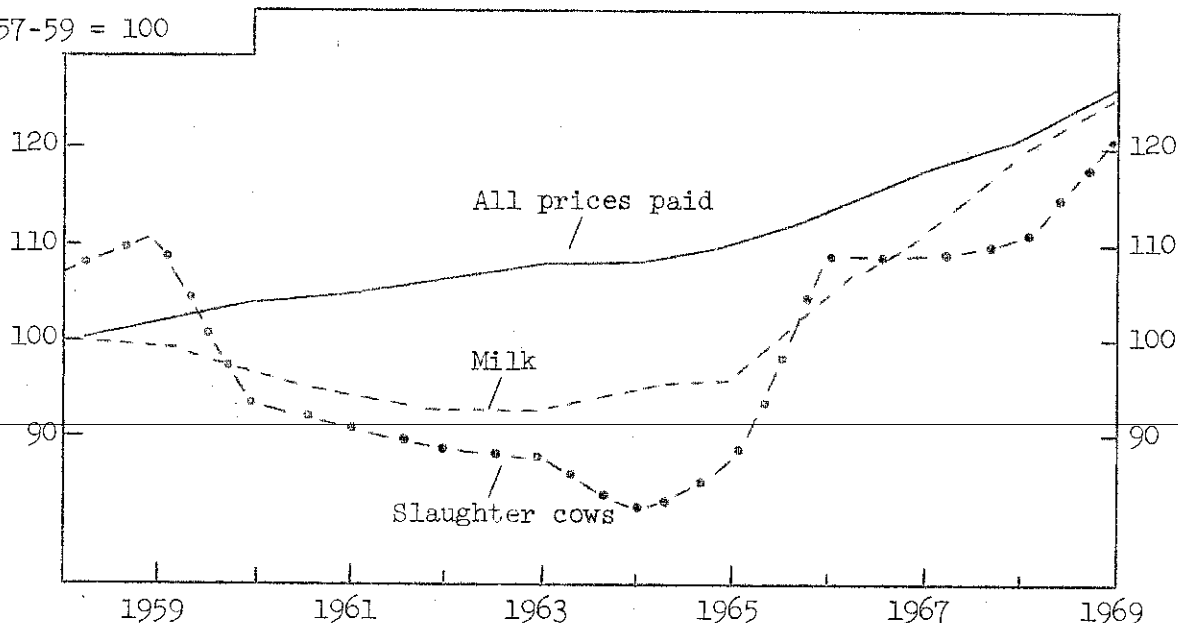
Steps in making a management decision :

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

1957-59 = 100



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 1969 averaged \$5.67 per hundredweight. This was 24 cents higher than the average for 1968 and \$1.40 more than 1965. Cull dairy cow prices also were good in 1969. The overall index of prices paid by New York dairy farmers continued to rise in 1969.

In recent years, prices of some farm inputs have risen while others have declined. From 1965 to 1969, farm wages rose 35 percent, dairy cows rose 41 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, 1960-69

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
1969*	5.67	19.42	336	74	316	126

* 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, and expenses. This is the first step to be taken in the study and analysis of your farm business.

PHYSICAL RESOURCES

Knowledge of what resources are employed and how they are combined is fundamental to sound business planning. This includes both the physical and financial resources of the business. Below are listed the physical resources of this group of Western Plains Region dairy farms.

FARM ORGANIZATION

Item	Average of 568 New York Farms 1968		My Farm	45 Western Plains Farms, 1969		
				Average	Range Low High	
<u>Labor:</u>						
Man Equivalent	2.1			2.6	1.0	5.3
Full-time hired men				(12 farms)		
Hired men part of year				(17 farms)		
Family help				(24 farms)		
Partnership				(4 farms)		
<u>Livestock: (Ave. No.)</u>						
Cows	58			76	28	208
Heifers	40			55	4	118
<u>Crops: (Acres Grown)</u>						
Hay*	86	(557)		98	(45)**	32 270
Corn for silage	41	(515)		59	(45)**	10 216
Corn for grain	30	(149)		32	(28)**	0 231
Oats for grain	25	(275)		18	(31)**	0 84
Wheat	N.A.			20	(30)**	0 70
Other crops	N.A.	---		10	--	-- --
Total Crop Acres	155	(560)		242	(45)	82 629

* Hay crop silage was reported as part of the hay crop.

** Average for farms reporting only. Sum of crop acres will not equal total. Number of farms that reported each crop is in parenthesis.

CAPITAL INVESTMENT

Management of the capital resource of a farm business is becoming increasingly important. To measure the complete financial progress of a dairy farm, year to year changes in the capital structure must be considered.

In this report borrowed as well as owned capital is included and the end-of-year farm inventory is used as the measure of capital investment.

FARM INVENTORY VALUES, End of Year

Item	Average of 568 New York Farms 1968	My Farm	45 Western Plains	
			Average Per Farm	Percent of Total
Machinery & equipment	\$ 25,247	\$ _____	\$ 34,898	20
Cattle	27,317	_____	36,466	21
Other livestock	---	_____	266	--
Feed & supplies	7,638	_____	13,072	8
Land & buildings	<u>51,733</u>	_____	<u>86,965</u>	<u>51</u>
Total Investment	\$111,935	\$ _____	\$171,752	100

In many farm businesses, poor capital efficiency is a major cause of low profits. The following measures of capital efficiency will help you evaluate your overall capital management.

INVESTMENT ANALYSIS

Item	Average of 568 New York Farms 1968		My Farm	Average of 45 Western Plains Farms 1969	
	Farms	1968		Farms	1969
Machinery and equipment per cow	\$	435	\$ _____	\$	459
Land and buildings per cow	\$	890	\$ _____	\$	1,144
Total investment per cow	\$	1,930	\$ _____	\$	2,260
Total investment per man		\$53,300	\$ _____		\$66,058
Total investment per crop acre	\$	722	\$ _____	\$	710
Real Estate Investment/crop acre	\$	334	\$ _____	\$	359
Capital turnover*		2.5 years	_____ yrs.		2.6 years

* Calculated by dividing the total year end investment by the total cash receipts for the year.

WHERE THE MONEY CAME FROM

A successful farm business requires a level of gross earnings great enough to pay all costs, both operating and overhead, and leave a margin for the operator's labor. Here we examine the sources of receipts for this group of dairy farms.

FARM RECEIPTS

Item	Average of		45 Western Plains	
	568 New York Farms 1968	My Farm	Farms Average Per Farm	1969 Percent of Total
Milk sales	\$39,477	\$ _____	\$55,600	83
Livestock sold	3,915	_____	5,813	9
Crop sales	393	_____	3,381	5
Miscellaneous*	<u>1,301</u>	_____	<u>2,147</u>	<u>3</u>
TOTAL CASH RECEIPTS	\$45,086	_____	\$67,310	100
Increase in inventory	<u>8,161</u>	_____	<u>10,484</u>	
TOTAL FARM RECEIPTS	\$53,247	_____	\$77,794	

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

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. The cost of producing or acquiring these items normally is included in the farm expenses.

The net increase in inventory on these farms was made up of the following: Equipment + \$2,619, livestock + \$3,493, feed and supplies + \$362, land and buildings + \$3,963. On some farms, the increase in inventory may have been more than could actually be justified.

SELECTED INCOME FACTORS

Item	Average of		45 Western Plains	
	568 New York Farms 1968	My Farm	Farms	1969
Average price/cwt. milk sold	\$ 5.52	\$ _____	\$ 5.77	
Milk sales per cow	\$ 681	\$ _____	\$ 732	
Total cash receipts/man	\$21,470	\$ _____	\$25,888	

WHERE THE MONEY WENT

Some farmers may be able to increase profits by reducing costs. This requires a complete knowledge of what the business expenses are. With the large amount of cash flowing through a farm business today it is important that the farm operator study his expenses closely. Here is an opportunity for you to see how you're doing.

FARM EXPENSES

Item	Average of 568 New York Farms 1968	My Farm	45 Western Plains Farms 1969	
			Average Per Farm	Percent of Total
Hired labor	\$ 3,006	\$ _____	\$ 6,024	16
Dairy feed bought	9,459	_____	9,808	26
Other feed bought (inc. hay)	259	_____	636	2
Machine hire	287	_____	404	1
Truck, tractor, machinery exp.	1,605	_____	2,879	8
Auto expenses (farm share)	247	_____	290	--
Gasoline and oil	1,136	_____	1,846	5
Breeding fees	401	_____	623	2
Veterinary and medicine	645	_____	1,000	2
Other dairy, livestock exp.	1,745	_____	2,773	7
Lime and fertilizer	1,732	_____	3,058	9
Seeds and plants	460	_____	942	2
Spray, other crop expenses	430	_____	1,207	3
Building, fence expense	775	_____	1,092	3
Taxes, insurance	1,851	_____	2,897	8
Electricity, telephone (farm share)	741	_____	925	2
Miscellaneous	818	_____	1,399	4
TOTAL CASH OPERATING EXPENSES	\$25,597	\$ _____	\$37,803	100
New machinery	6,178	_____	8,108	
New buildings, improvements	3,301	_____	4,279	
Livestock purchased	1,823	_____	2,247	
Unpaid family labor	818	_____	527	
Decrease in inventory	---	_____	---	
TOTAL FARM EXPENSES	\$37,717	\$ _____	\$52,964	

FINANCIAL SUMMARY OF THE YEAR'S BUSINESS

There are several ways of measuring the returns from a farm business. These measures have been developed for specific purposes. The measure selected at any one time will depend on the purpose for which it is to be used.

Three measures are used here. The first is "Farm Cash Operating Income." The second, "Labor Income," is a measure of the returns to the operator for his labor and management. The last one is "Return on Investment."

FARM CASH FLOW AND REPAYMENT ABILITY

Items	Average of 568 New York Farms 1968	My Farm	Average of 45 Western Plains Farms 1969
Total cash receipts	\$45,086	\$ _____	\$67,310
Total cash operating expenses	<u>-25,597</u>	- _____	<u>-37,803</u>
FARM CASH OPERATING INCOME	\$19,489	\$ _____	\$29,507
Less: Family Living Expense*	<u>- 6,275</u>	- _____	<u>- 7,320</u>
Amount available for debt payments and purchase of capital items	\$13,214	\$ _____	\$22,187

* Estimated cash living expenses at \$5,400 per operator. The 568 New York farms averaged 1.2 operators per farm and the 45 Western Plains farms averaged 1.36 operators per farm.

"Farm Cash Operating Income" is the amount of money available from the farm business for family living, debt payments, and purchases of new capital items such as equipment, real estate, and livestock.

The "cash flow" of a farm business is important to the operator and his family in planning for capital purchases debt payments and living expenses. However, the above measures are not good indicators of the profitability of your farm business. This is because you may increase the amount of cash available during the year by selling off or using up some of your farm property or, more likely, you decrease the amount of cash available by investing more dollars in your business during the year. Labor Income is a much better measure of what the business did for you during the year.

LABOR INCOME

Item	Average of 568 New York Farms 1968	My Farm	Average of 45 Western Plains Farms 1969
Average Capital Investment	\$107,854	\$ _____	\$166,510
TOTAL FARM RECEIPTS	\$ 53,247	\$ _____	\$ 77,794
TOTAL FARM EXPENSES	- 37,717	- _____	- 52,764
FARM INCOME	\$ 15,530	\$ _____	\$ 24,830
Interest on Capital @ 7%	- 7,550	- _____	- 11,656
LABOR INCOME per farm	\$ 7,980	\$ _____	\$ 13,174
Number of operators	660	_____	61
LABOR INCOME per operator	\$ 6,868	\$ _____	\$ 9,719

"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 charges for unpaid family labor and for interest on all of the capital invested in the farm business. Labor Income is the measure most commonly used when studying or comparing farm businesses.

Interest payments and payments on debts are not included in the farm expenses. To make all farms comparable, a seven percent interest charge on the average capital investment (average of beginning and end inventories) is deducted in calculating Labor Income.

In addition to Labor Income, the family has "farm privileges" such as the use of a house and farm produced food. These items may amount to \$1000 or more per year.

RETURN ON INVESTMENT

Item	Average of 568 New York Farms 1968	My Farm	Average of 45 Western Plains Farms 1969
Farm Income	\$15,530	\$ _____	\$24,830
Value of Operator's Labor*	- 6,275	- _____	- 7,320
Return on Investment	\$ 9,255	\$ _____	\$14,510
Rate of return on capital	8.6%	_____	8.7%

* \$5,400 per year. There were 61 operators on 45 Western Plains dairy farms.

"Return on Investment" is calculated by deducting from the "farm income" a charge for the operator's labor. This return is then divided by the average capital investment for the year to arrive at the rate of return on investment.

PART II
ANALYSIS OF THE FARM BUSINESS

A farmer's success depends upon the resources available to him and his ability to manage the use of these resources. He must understand and apply basic principles of farm management.

Farm management studies indicate that certain business factors are related to labor income. Four important factors are size of business, labor efficiency, rates of production, and cost control. The averages presented here are not intended to represent what is "best." They are to help you see how your farm business compares with those of a group of your competitors.

SIZE OF BUSINESS

In general, large farms pay better than small farms. Larger farms make it possible to use equipment and other items of production more efficiently. However, some 40 cow farms make larger incomes than others with 100 cows. This can happen when other factors are not in balance with size of business.

MEASURES OF SIZE OF BUSINESS

Item	My Farm	Average Per Farm	
		45 Western Plains Farms 1969	568 New York Farms 1968
Number of Cows	_____	76	58
Pounds Milk Sold	_____	963,900	715,200
Man Equivalent	_____	2.6	2.1
Total Units of Work	_____	956	692

In the following table, the New York dairy farms have been sorted into various size groups. For each size group the average labor income per operator is shown.

COWS PER FARM AND LABOR INCOME
568 New York Dairy Farms 1968

Number of Cows	Number of Farms	Percent of Farms	Labor Income Per Operator
Less than 25	13	3	\$ 3,080
25 - 39	126	22	6,080
40 - 54	193	34	7,230
55 - 69	98	17	9,920
70 - 84	52	9	10,400
85 - 99	34	6	11,800
100 - 114	24	4	14,850
115 - 129	16	3	20,410
130 and over	12	2	19,270

RATES OF PRODUCTION

High rates of production of both animals and crops are very important to the success of a farm business. However, when high crop and animal yields are achieved without regard to costs, net income is reduced. In general, it pays to increase yields up to the point where the last unit of input (such as feed or fertilizer) is just paid for by the increase in output due to this last unit of input.

MEASURES OF RATES OF PRODUCTION

Item	My Farm	Average Per Farm	
		45 Western Plains Farms	568 New York Farms 1968
Pounds of milk sold/cow	_____	12,700	12,300
Tons of hay per acre	_____	3.4	2.8
Tons of corn silage/acre	_____	16	14
Bushels of oats/acre	_____	62	61
Bushels of corn grain/acre	_____	78	71

The relationship of production per cow to labor income on three sizes of farms is shown in the following table for 568 New York dairy farms in 1968.

MILK SOLD PER COW AND LABOR INCOME 568 New York Dairy Farms, 1968

Pounds Milk Sold Per Cow	Number of Farms	Percent of Farms	Average Number of Cows on These Farms	Labor Income*
Less than 10,000	58	10	55	\$ 4,250
10,000 - 10,999	66	12	56	6,990
11,000 - 11,999	112	20	56	7,880
12,000 - 12,999	133	23	60	9,670
13,000 - 13,999	112	20	62	10,240
14,000 & Over	87	15	58	\$11,560

* Labor income reported in this table and tables on pages 10, 12, and 15 was calculated using the old five percent interest rate.

LABOR EFFICIENCY

Labor is one of the limiting resources on many dairy farms. Efficient use of labor tends to add to the profitability of a farm business. The productivity of labor can be increased by use of modern equipment and buildings. However, one must be careful not to invest in equipment or buildings that add little to productivity in relation to their cost.

MEASURES OF LABOR EFFICIENCY

Item	My Farm	Average Per Farm	
		45 Western Plains Farms	568 New York Farms 1968
Number of cows/man	_____	30	28
Pounds of milk sold/man	_____	370,700	340,600
Work units per man	_____	371	330

The relationship between milk sold per man and labor income is illustrated in the table below.

MILK SOLD PER MAN AND LABOR INCOME
568 New York Dairy Farms, 1968

Pounds of Milk Sold Per Man	Number of Farms	Number of Cows	Lbs. of Milk Per Cow	Labor Income Per Operator
Under 200,000	29	47	9,800	\$ 2,504
200,000 - 299,999	172	49	11,600	5,731
300,000 - 399,999	196	57	12,400	8,893
400,000 - 499,999	119	65	12,900	11,462
500,000 & Over	52	87	13,400	\$16,627

COST CONTROL

Obtaining high production at reasonable cost is one of the keys to a profitable farm business. The exact level of production items to be used to obtain the greatest net return is difficult to determine. The averages presented here may help you find some of the weaknesses in the cost structure of your farm.

FEED COSTS

Feed bought is the largest single expense item on most dairy farms. The success of a dairy farm manager depends to a large degree on his ability to provide a good feeding program for his herd at reasonable cost. Because the feeding program includes both purchased and homegrown feed, and both roughage and concentrates, it is not easy to locate the weak spots in efforts to control feed costs. The items on this page all have a bearing on feed costs, and may be helpful in planning a more efficient feeding program.

SELECTED FACTORS RELATED TO FEED COSTS

Item	My Farm	Average Per Farm	
		45 Western Pl. Farms 1969	568 New York Farms 1968
<u>Purchased Feed</u>			
Dairy feed bought	\$ _____	\$9,808	\$9,459
Feed bought/cow	\$ _____	\$ 127	\$ 163
Feed bought as % of milk receipts	_____ %	18%	24%
Feed bought per cwt. of milk sold	\$ _____	\$ 1.02	\$ 1.32
<u>Roughage Harvested (Hay Equiv.)</u>			
Hay & hay silage (tons of h.s.)	_____	337 tons	246 tons
Corn silage (____ tons ÷ 3)	_____	313 tons	174 tons
Total tons hay equivalent	_____	650 tons	420 tons
Tons hay equivalent/cow	_____	8.5 tons	7.2 tons
<u>Other Considerations</u>			
Total acres in crops/cow	_____	3.2 acres	2.7 acres
Lime and fertilizer exp./cow	_____	\$ 40	\$ 30
Lime and fertilizer exp./ crop acre	_____	\$ 13	\$ 11
Heifer number as percent of cow numbers	_____	72%	69%

The above measures of harvested roughage consider only the quantity. Quality is also significant and has a bearing on purchased feed and milk production.

FARM POWER AND MACHINERY COSTS

On today's dairy farms, power and machinery costs account for a large part of the total costs. For this group of farms, power and machinery costs were 23 percent of the total farm expenses.

POWER AND MACHINERY COSTS*

Item	My Farm	Average Per Farm	
		45 W. Plains Farms 1969	568 New York Farms 1968
Beginning inventory	\$ _____	\$32,279	\$22,575
New machinery bought	_____	<u>8,108</u>	<u>6,178</u>
Total	\$ _____	\$40,387	\$28,752
End inventory	\$ _____	\$34,898	\$25,247
Machinery sold	_____	<u>103</u>	<u>168</u>
Total	\$ _____	<u>\$35,001</u>	<u>\$25,41</u>
Depreciation	\$ _____	\$ 5,386	\$ 3,35

Depreciation	\$ _____	\$ 5,386	\$ 3,337
Interest @ 7% ave. inventory	_____	2,351	1,674
Gas and oil	_____	1,846	1,136
Machinery and repairs	_____	2,879	1,605
Bale ties	_____	73	80
Milk hauling	_____	1,328	435
Other machine hire	_____	404	287
Auto expense (farm share)	_____	290	247
Electricity (farm share)	_____	<u>760</u>	<u>601</u>
TOTAL MACHINERY COSTS	\$ _____	\$15,317	\$ 9,403
Gas tax refunds	\$ _____	\$ 142	\$ 81
Income from machine work	_____	<u>223</u>	<u>106</u>
Total	- _____	- 365	- 187
NET MACHINERY COSTS	\$ _____	\$14,952	\$ 9,216

Net machinery cost/cow	\$ _____	\$ 198	\$ 159
Net machinery cost/crop acre	\$ _____	\$ 62	\$ 59
Net machinery cost/man	\$ _____	\$ 5,751	\$ 4,389
Net machinery cost/cwt. milk sold	\$ _____	\$ 1.55	\$ 1.29

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

LABOR AND MACHINERY COSTS

Most farm operators justify major machinery purchases as a way to save labor and increase productivity. How well labor and machinery are combined has an important bearing on farm profits.

LABOR AND POWER AND MACHINERY COSTS

Item	My Farm	Average Per Farm	
		45 W. Plains Farms 1969	568 New York Farms 1968
Value of operator's labor	\$ _____	\$ 7,320	\$ 6,275
Hired labor	_____	6,024	3,006
Unpaid family labor	_____	527	818
TOTAL LABOR COSTS	\$ _____	\$13,871	\$10,099
Net power & machinery cost	_____	14,952	8,737
TOTAL LABOR & MACHINERY COST	\$ _____	\$28,823	\$18,836
<hr style="border-top: 1px dashed black;"/>			
Total per cow	\$ _____	\$ 386	\$ 325
Total per crop acre	\$ _____	\$ 119	\$ 122
Total per man	\$ _____	\$11,086	\$ 8,970
Total per cwt. milk sold	\$ _____	\$ 2.99	\$ 2.63

The following table shows the relationship of machinery costs to labor income on the 568 New York dairy farms in 1968.

MACHINERY COST PER COW AND LABOR INCOME
568 New York Dairy Farms, 1968

Machinery Cost Per Cow	Number of Farms	Percent of Farms	Labor Income Per Operator
\$225 & Over	33	6	\$ 4,800
200 - 224	37	6	6,869
175 - 199	78	14	8,467
150 - 174	109	19	9,476
125 - 149	129	23	9,084
100 - 124	125	22	8,897
75 - 99	48	8	11,744
Less than \$75	9	2	8,490

Farm Business Chart

The chart on pages 16 and 17 is a tool for use in analyzing a dairy farm business. It is essentially a series of measuring sticks combined into one tool.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS 568 New York Dairy Farms,* 1968

Size of Business			Rates of Production			Labor Efficiency	
Man equiv- alent	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
4.0	124	1,545,800	15,300	4.6	21	44	554,600
2.8	86	1,075,600	14,000	3.6	19	37	464,800
2.4	69	868,800	13,400	3.2	17	34	417,600
2.2	59	736,800	13,000	3.0	16	31	379,300
2.0	53	651,500	12,600	2.8	15	29	346,000

1.8	48	587,300	12,100	2.6	14	27	322,100
1.6	43	524,100	11,600	2.4	13	24	298,700
1.4	40	472,600	11,100	2.2	12	23	271,500
1.3	36	408,900	10,400	2.0	10	21	245,700
1.1	28	301,500	8,900	1.6	8	18	195,800

* These farms are considerably above the average for all farms in New York State. For example, the median number of cows for the 568 farms was 50 compared with 36 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 midpoint of the 568 farms for each factor.

The figure at the top of each column is the average of the top 10 percent of the farms for that factor. For example, the figure 4.0 at the top of the column headed "Man equivalent" is the average man equivalent on the 10 percent of the farms with the most men. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. The figure at the bottom of each column (1.1 for Man equivalent) is the average for the 10 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 10 percent for one factor would not necessarily be the same farms which make up the top 10 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.

Farm Business Chart contd.

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.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
568 New York Dairy Farms, 1968

Cost Control			
Feed bought per cow	% Feed is of milk receipts	Feed and crop expense per cwt. milk	Machinery cost per cow
\$ 69	11%	\$1.01	\$ 87
103	16	1.27	106
125	20	1.44	117
145	22	1.55	129
160	24	1.65	140

173	26	1.74	150
185	28	1.84	162
201	30	1.93	177
218	31	2.07	195
262	37	2.38	241

Based on the analyzed results shown on the business chart, list below the strong and weak points of the business. Then identify the major problems.

STRONG POINTS:

WEAK POINTS:

_____	_____
_____	_____
_____	_____
_____	_____

MAJOR PROBLEMS:

After identifying problems, consider alternative ways of solving each problem. Each alternative should be studied in detail. A budgeting form can be used for projecting the likely results of each alternative.

FARM BUSINESS SUMMARY BY HERD SIZE
568 New York Dairy Farms, 1968

Item	My farm	Farms with less than 40 cows	40 to 54 cow farms	55 to 69 cow farms
<u>Capital Investment (End of Year)</u>				
Machinery and equipment	\$ _____	\$15,049	\$20,490	\$ 26,851
Livestock	_____	15,016	21,633	28,442
Feed and supplies	_____	3,607	5,835	7,938
Land and buildings	_____	29,274	40,289	49,013
TOTAL INVESTMENT	\$ _____	\$62,946	\$88,247	\$112,244
<u>Receipts</u>				
Milk sales	\$ _____	\$21,733	\$30,939	\$ 40,843
Livestock sold	_____	2,234	3,035	4,241
Crop sales	_____	243	321	356
Miscellaneous receipts	_____	719	1,070	1,272
Total Cash Receipts	\$ _____	\$24,929	\$35,365	\$ 46,712
Increase in inventory	_____	4,189	6,122	8,946
TOTAL FARM RECEIPTS	\$ _____	\$29,118	\$41,487	\$ 55,658
<u>Expenses</u>				
Hired labor	\$ _____	\$ 558	\$ 1,587	\$ 2,916
Dairy feed	_____	5,626	7,578	10,070
Other feed	_____	186	275	141
Machine hire	_____	153	188	328
Machinery repair	_____	829	1,282	1,583
Auto expense (farm share)	_____	184	250	246
Gas and oil	_____	661	941	1,158
Breeding fees	_____	256	335	419
Veterinary and medicine	_____	345	534	693
Other livestock expense	_____	930	1,267	1,729
Lime and fertilizer	_____	713	1,310	1,803
Seeds and plants	_____	231	386	487
Spray and other crop expense	_____	195	337	440
Land, bldg., fence repair	_____	392	621	742
Taxes and insurance	_____	1,047	1,450	1,786
Elec. and tel. (farm share)	_____	457	617	726
Miscellaneous expenses	_____	369	571	768
Total Cash Operating Exp.	\$ _____	\$13,132	\$19,529	\$26,035
New machinery	_____	3,227	4,921	6,683
New real estate	_____	2,007	2,544	2,961
Purchased livestock	_____	1,045	1,344	1,967
Unpaid family labor	_____	831	898	823
TOTAL FARM EXPENSES	\$ _____	\$20,242	\$29,236	\$ 38,469
<u>Financial Summary</u>				
Total Farm Receipts	\$ _____	\$29,118	\$41,487	\$ 55,658
Total Farm Expenses	_____	20,242	29,236	38,469
Farm Income	\$ _____	\$ 8,876	\$12,251	\$ 17,189
Interest on av. capital @ 5%	_____	3,043	4,259	5,389
Labor Income per Farm	\$ _____	\$ 5,833	\$ 7,992	\$ 11,800
Number of operators	_____	141	218	121
LABOR INCOME PER OPERATOR	\$ _____	\$ 5,751	\$ 7,075	\$ 9,557

FARM BUSINESS SUMMARY BY HERD SIZE
568 New York Dairy Farms, 1968

Item	My farm	70 to 84 cow farms	85 to 99 cow farms	Farms with 100 or more cows
<u>Capital Investment (End of Year)</u>				
Machinery and equipment	\$ _____	\$ 36,325	\$ 38,176	\$ 47,617
Livestock	_____	36,180	42,525	60,363
Feed and supplies	_____	11,724	12,322	17,389
Land and buildings	_____	68,346	93,203	115,641
TOTAL INVESTMENT	\$ _____	\$152,575	\$186,226	\$241,010
<u>Receipts</u>				
Milk sales	\$ _____	\$ 53,053	\$ 65,737	\$ 85,278
Livestock sold	_____	4,433	6,466	8,877
Crop sales	_____	339	901	846
Miscellaneous receipts	_____	1,618	1,844	3,092
Total Cash Receipts	\$ _____	\$ 59,443	\$ 74,948	\$ 98,093
Increase in inventory	_____	12,194	10,445	19,346
TOTAL FARM RECEIPTS	\$ _____	\$ 71,637	\$ 85,393	\$117,439
<u>Expenses</u>				
Hired labor	\$ _____	\$ 4,868	\$ 6,626	\$ 10,760
Dairy feed	_____	12,376	14,964	19,020
Other feed	_____	238	380	558
Machine hire	_____	252	463	858
Machinery repair	_____	2,078	2,758	3,697
Auto expense (farm share)	_____	341	318	268
Gas and oil	_____	1,413	1,610	2,497
Breeding fees	_____	537	647	701
Veterinary and medicine	_____	827	1,149	1,260
Other livestock expense	_____	2,241	3,163	4,302
Lime and fertilizer	_____	2,282	3,144	4,603
Seeds and plants	_____	601	733	973
Spray and other crop expense	_____	646	634	1,031
Land, bldg., fence repair	_____	1,109	1,410	1,680
Taxes and insurance	_____	2,527	3,248	4,030
Elec. and tel. (farm share)	_____	988	1,167	1,457
Miscellaneous expenses	_____	1,138	1,678	1,953
Total Cash Operating Exp.	\$ _____	\$ 34,462	\$ 44,092	\$ 59,648
New machinery	_____	9,464	7,850	13,405
New real estate	_____	4,671	6,097	7,017
Purchased livestock	_____	1,779	2,737	4,853
Unpaid family labor	_____	358	644	1,050
TOTAL FARM EXPENSES	\$ _____	\$ 50,734	\$ 61,420	\$ 85,973
<u>Financial Summary</u>				
Total Farm Receipts	\$ _____	\$ 71,637	\$ 85,393	\$117,439
Total Farm Expenses	_____	50,734	61,420	85,973
Farm Income	\$ _____	\$ 20,903	\$ 23,973	\$ 31,466
Interest on av. capital @ 5%	_____	7,324	9,050	11,567
Labor Income per Farm	\$ _____	\$ 13,579	\$ 14,923	\$ 19,899
Number of operators	_____	69	45	66
LABOR INCOME PER OPERATOR	\$ _____	\$ 10,233	\$ 11,275	\$ 15,678

SELECTED BUSINESS FACTORS BY HERD SIZE
568 New York Dairy Farms, 1968

Item	My farm	Farms with less than 40 cows	40 to 54 cow farms	55 to 69 cow farms
Number of farms		139	193	98
<u>Size of Business</u>				
Number of cows		33	46	61
Pounds of milk sold		398,700	563,800	745,500
Crop acres		88	126	156
Man equivalent		1.4	1.8	2.1
Total work units		394	557	724
<u>Rates of Production</u>				
Milk sold per cow		12,100	12,300	12,200
Tons hay per acre		2.5	2.6	2.8
Tons corn silage per acre		14	14	11
Bushels of oats per acre		54	55	(
<u>Labor Efficiency</u>				
Cows per man		24	26	21
Pounds milk sold per man		284,800	313,200	355,000
Work units per man		281	309	345
Crop acres per man		63	70	74
<u>Feed Costs</u>				
Feed purchased per cow	\$	\$170	\$165	\$165
Crop expense per cow	\$	\$35	\$44	\$45
Feed & crop expense per cow	\$	\$205	\$209	\$210
Feed cost per cwt. milk	\$	\$1.41	\$1.34	\$1.35
Feed & crop expense/cwt. milk	\$	\$1.70	\$1.70	\$1.72
% Feed is of milk receipts	%	26%	24%	25%
Hay equivalent per cow		6.6	7.1	7.3
Crop acres per cow		2.7	2.7	2.6
Fertilizer & lime/crop acre	\$	\$8	\$10	\$12
<u>Machinery Costs</u>				
Total machinery costs	\$	\$4,930	\$7,017	\$8,771
Machinery cost per cow	\$	\$149	\$153	\$144
Machinery cost per man	\$	\$3,521	\$3,898	\$4,177
Machinery cost per cwt. milk	\$	\$1.24	\$1.24	\$1.18
Machinery cost per crop acre	\$	\$56	\$56	\$56
<u>Capital Efficiency</u>				
Investment per man	\$	\$44,961	\$49,026	\$53,450
Investment per cow	\$	\$1,907	\$1,918	\$1,840
Investment per cwt. milk sold	\$	\$16	\$16	\$15
Land and buildings per cow	\$	\$887	\$876	\$803
Machinery investment per cow	\$	\$456	\$445	\$440
Return on investment	%	5.6%	7.0%	9.4%
<u>Other</u>				
Price per cwt. milk sold	\$	\$5.45	\$5.49	\$5.48
Acres hay and hay crop silage		60	77	92
Acres corn silage		14	20	37

SELECTED BUSINESS FACTORS BY HERD SIZE
568 New York Dairy Farms, 1968

Item	My farm	70 to 84 cow farms	85 to 99 cow farms	Farms with 100 or more cows
Number of farms		52	34	52
<u>Size of Business</u>				
Number of cows		76	92	126
Pounds of milk sold		966,400	1,177,800	1,513,000
Crop acres		199	236	320
Man equivalent		2.5	2.9	3.7
Total work units		905	1,084	1,459
<u>Rates of Production</u>				
Milk sold per cow		12,700	12,800	12,000
Tons hay per acre		2.8	3.2	2.9
Tons corn silage per acre		14	13	15
Bushels oats per acre		61	62	69
<u>Labor Efficiency</u>				
Cows per man		30	32	34
Pounds milk sold per man		386,600	406,100	408,900
Work units per man		362	374	394
Crop acres per man		80	81	86
<u>Feed Costs</u>				
Feed purchased per cow	\$	\$163	\$163	\$151
Crop expense per cow	\$	\$46	\$49	\$52
Feed & crop expense per cow	\$	\$209	\$212	\$203
Feed cost per cwt. milk	\$	\$1.28	\$1.27	\$1.26
Feed & crop expense/cwt. milk	\$	\$1.65	\$1.65	\$1.69
% Feed is of milk receipts	%	23%	23%	22%
Hay equivalent per cow		7.5	7.0	7.6
Crop acres per cow		2.6	2.6	2.5
Fertilizer & lime/crop acre	\$	\$11	\$13	\$14
<u>Machinery Costs</u>				
Total machinery costs	\$	\$12,215	\$14,034	\$18,290
Machinery costs per cow	\$	\$161	\$153	\$145
Machinery cost per man	\$	\$4,886	\$4,839	\$4,943
Machinery cost per cwt. milk	\$	\$1.26	\$1.19	\$1.21
Machinery cost per crop acre	\$	\$61	\$59	\$57
<u>Capital Efficiency</u>				
Investment per man	\$	\$61,030	\$64,216	\$65,138
Investment per cow	\$	\$2,008	\$2,024	\$1,973
Investment per cwt. milk sold	\$	\$16	\$16	\$16
Land and buildings per cow	\$	\$899	\$1,013	\$918
Machinery investment per cow	\$	\$478	\$415	\$378
Return on investment	%	9.0%	13.4%	10.6%
<u>Other</u>				
Price per cwt. milk sold	\$	\$5.49	\$5.58	\$5.64
Acres hay and hay crop silage		107	120	157
Acres corn silage		58	62	92

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

	<u>Present</u>	<u>Change</u>	<u>Future with change</u>
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:

<u>Future crop</u>	<u>Proposed Production</u>	<u>Estimated Yield</u>	<u>Acres Needed</u>	<u>Change in acres (list as plus or minus)</u>
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.

V. Estimating changes in receipts and expenses

	<u>Present</u>	<u>Net change (plus or minus)</u>	<u>Future with change</u>
A. Receipts			
Milk sales, gross	\$ _____	\$ _____	\$ _____
Livestock sales	_____	_____	_____
Crop sales	_____	_____	_____
Miscellaneous receipts	_____	_____	_____
Total Cash Receipts	\$ _____	\$ _____	\$ _____
Increase in inventory	_____	_____	_____
Total Farm Receipts	\$ _____	\$ _____	\$ _____
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.

1968 DAIRY FARM BUSINESS SUMMARY DATA

Selected Factors	New York	Southern Michigan	Pennsylvania	Ohio
Number of farms	568	331	76	6
Crop acres	155	275	171	
Man equivalent	2.1	2.2	2.4	
Number of heifers	40	NA	36	
Number of cows	58	54	55	
Lbs. milk sold/ farm	715,200	665,100	630,000	592,
Lbs. milk sold/ man	340,600	302,320	262,500	348,1
Lbs. milk sold/ cow	12,300	12,320	11,450	12,6
Milk sales/ cow	\$681	\$706	\$674	\$643
Av. price/ cwt. milk	\$5.52	\$5.73	\$5.88	\$5.10
Purchased feed/ cow	\$163	\$93	\$158	\$109
Taxes/ cow	\$20	\$18	\$16	\$28
<hr/>				
<u>Capital Investment</u>				
Land & buildings	\$51,730	\$94,400	\$47,100	\$56,620
Machinery & equipment	\$25,250	\$22,500	\$21,250	\$16,870
Livestock	\$27,320	\$21,900	\$26,850	\$18,140
Feed & supplies	\$ 7,640	\$11,900	\$10,540	\$ 7,720
Investment/ man	\$53,300	\$68,500	\$44,058	\$58,440
Investment/ cow	\$ 1,930	\$ 2,790	\$ 1,922	\$ 2,110
<hr/>				
<u>Financial Summary</u>				
Total farm receipts	\$53,247	\$49,553	\$46,326	\$40,328
Total farm expenses	\$37,717	\$33,735	\$33,070	\$26,068
Farm income	\$15,530	\$15,818	\$13,256	\$14,260
Interest at 5%	\$ 5,393	\$ 7,535	\$ 5,287	\$ 4,968
Labor income/ farm	\$10,137	\$ 8,283	\$ 7,969	\$ 9,292
Labor income/ operator	\$ 8,724	\$ 7,019	\$ 7,244	\$ 8,447

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. Below are the living expenditures for families in Illinois who were on record keeping projects.

FAMILY LIVING EXPENDITURES
Illinois Farm and Urban Families, 1967

Item	My Family	Average of	
		176 Farm Families	79 Urban Families
Number in Family	_____	4.1	4.0
Average Age of Husband	_____	45	40
<u>Living Expenses</u>			
Food	\$ _____	\$ 1,200	\$ 1,299
Fuel	_____	197	147
Electricity, gas and water	_____	172	242
Telephone	_____	64	103
Household supplies and bank	_____	148	142
Paid service and laundry	_____	59	52
Housing	_____	536	1,470
Furnishings and equipment	_____	427	425
Clothing	_____	493	487
Personal care	_____	172	294
Transportation	_____	442	1,368
Medical care	_____	689	477
Recreation	_____	311	470
Education and reading	_____	272	368
Church and welfare	_____	418	365
Gifts	_____	293	196
Total Living Expenses	\$ _____	\$ 5,893	\$ 7,905
Income taxes	_____	756	1,038
Social Security	_____	245	212
Life insurance	_____	573	489
Savings and investments	_____	3,153	2,050
Total Family Expenditures	\$ _____	\$10,620	\$11,694

The urban family living expenses averaged about \$2,000 more than the farm families. The income taxes for the urban families were higher, while their savings and investments were lower than for the farm families. Housing and transportation for urban families were considerably higher than for the farm families.

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.

	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u> <u>Target</u>
<u>Size of Business</u>				
Average number of cows	_____	_____	_____	_____
Total lbs. milk sold	_____	_____	_____	_____
<u>Rates of Production</u>				
Lbs. milk sold per cow	_____	_____	_____	_____
Tons corn silage/acre	_____	_____	_____	_____
<u>Labor Efficiency</u>				
Lbs. milk sold per man	_____	_____	_____	_____
<u>Cost Control</u>				
% Purchased feed is of milk	_____ %	_____ %	_____ %	_____ %
Machinery cost per cow	\$ _____	\$ _____	\$ _____	\$ _____
Labor cost per cow	\$ _____	\$ _____	\$ _____	\$ _____
<u>Capital Efficiency</u>				
Total inventory value	\$ _____	\$ _____	\$ _____	\$ _____
Total investment/cow	\$ _____	\$ _____	\$ _____	\$ _____
<u>Debt Situation</u>				
Total debt outstanding	\$ _____	\$ _____	\$ _____	\$ _____
Debt per cow	\$ _____	\$ _____	\$ _____	\$ _____
Net Worth	\$ _____	\$ _____	\$ _____	\$ _____
<u>Price</u>				
Price per cwt. milk	\$ _____	\$ _____	\$ _____	\$ _____
<u>Financial Summary</u>				
Total Farm Receipts	\$ _____	\$ _____	\$ _____	\$ _____
Total Farm Expenses	\$ _____	\$ _____	\$ _____	\$ _____
Labor Income/Operator	\$ _____	\$ _____	\$ _____	\$ _____

