



AgEcon SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

1
9
6
7

FARM BUSINESS SUMMARY

509

FOUR

Cayuga County Madison County

COUNTY

Onondaga County Oswego County

AREA

G. E. Monroe

Department of Agricultural Economics
New York State College of Agriculture
A Statutory College of the State University
Cornell University, Ithaca, New York

FARM BUSINESS SUMMARY

FOUR-COUNTY AREA

1967

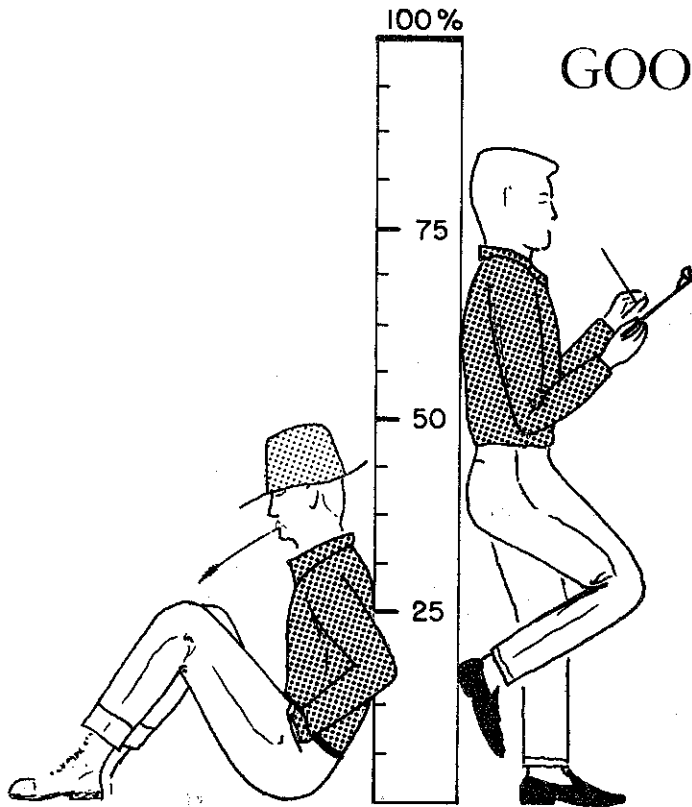
Again this year, cooperating dairy farmers enrolled in the business management project in the Four-County Area have sent their records in to Cornell to be analyzed. For 1967, Cayuga, Madison, Onondaga and Oswego Counties sent their records in to be summarized by the Department of Agricultural Economics. The results are presented in this workbook.

This book is designed for your use in studying your business. In filling out the figures for your own farm, two things are hoped for. First, by following a systematic method of examining your own business, it is planned that all phases of your business will be examined for strengths and weaknesses without the danger of forgetting some parts of it. Secondly, the opportunity to compare your figures with other dairy farmers in your own county and also with others across the State will give you further insights into your own operation.

Changes in farm businesses are pressing in from every side. Many of the solutions are highly technical and complex. However, experience has shown that successful managers, using complete and accurate records, have been able to develop their management skills to build successful farm businesses in the past. Just as certainly, good managers will prosper in the future.

It is hoped that you will find this farm business management workbook helpful. By using it to make better use of your records and to practice the skills needed in good management, we hope that setting objectives for your farm and family will be easier and that the decisions made will help you reach these goals in the most effective way possible.

This summary prepared by George E. Monroe, Department of Agricultural Economics, New York State College of Agriculture, in cooperation with Russell Cary who is taking the leadership for business management program in the Four-County Area. Credit also should be given to William Quinn, Walter Wasserman, and Ralph Geiger for their assistance in obtaining data.



GOOD MANAGEMENT IS BASIC

How do you measure up?

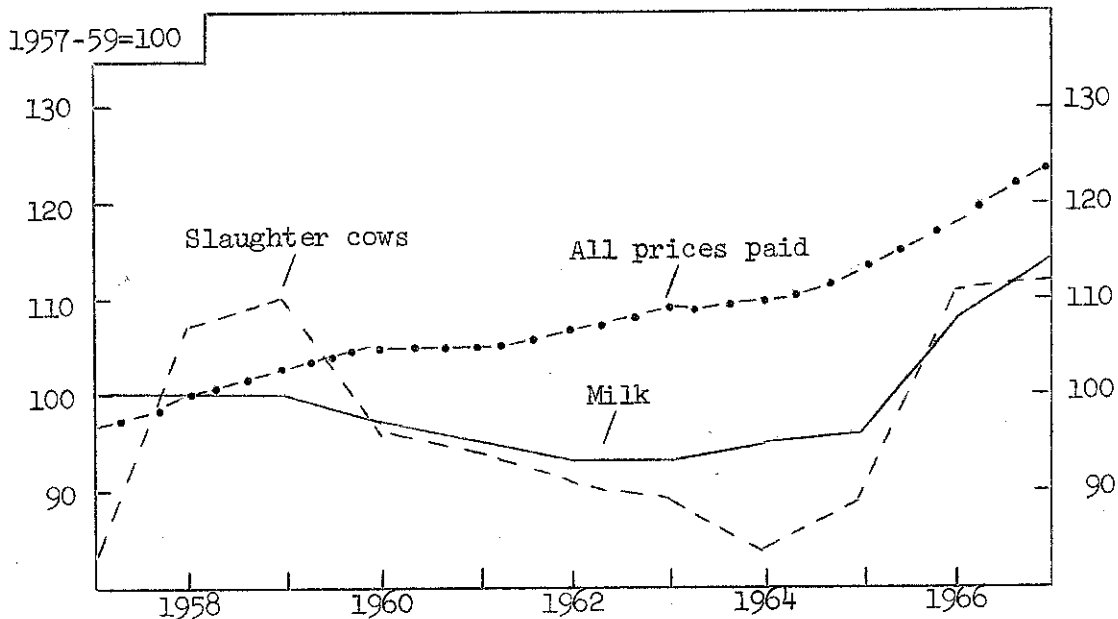
1. Have you developed a systematic approach to management problems?
2. Do you have the facts on your business?
3. Are you improving your managerial skills?

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



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 1967 averaged \$5.06 per hundredweight. This was 27 cents higher than the average for 1966 and 79 cents more than 1965. Cull dairy cow prices also were relatively good in 1967. The overall index of prices paid by New York dairy farmers rose six percent in 1967.

In recent years, prices of some farm inputs have risen much more than others. From 1960 to 1967, farm wages rose 39 percent, dairy cows rose 9 percent, and feed rose 13 percent, while fertilizer prices remained unchanged. These differences give rise to management questions concerning substitutions.

AVERAGE YEARLY PRICES RECEIVED AND PAID BY N. Y. FARMERS, 1960-67

Year	Milk (cwt.)	Slaughter cows (cwt.)	Dairy cows (head)	Dairy ration (cwt.)	Wages per month with house	Prices paid by New York dairymen
1960	\$4.31	\$15.00	\$278	\$3.55	\$210	105
1961	4.21	14.60	260	3.61	213	105
1962	4.14	14.26	245	3.68	218	107
1963	4.10	14.01	234	3.79	221	109
1964	4.21	13.17	237	3.72	227	110
1965	4.27	13.91	238	3.79	235	113
1966	4.79	17.35	269	4.00	258	118
1967*	5.06	17.52	303	4.00	291	124

* Preliminary

PART I - SUMMARY OF THE FARM BUSINESS

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

Physical Resources

In analyzing your farm business, the first things looked at are the people, the livestock, and the land.

FARM ORGANIZATION
31 Four-County Area Farms, 1967

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
<u>Labor (months)</u>				
Operator	_____	13.9	13.1	12.3
Family paid	_____	.4	1.5	3.0
Family unpaid	_____	1.7	2.6	1.9
Hired & other	_____	10.1	4.7	10.8
Total	_____	26.1	21.9	28.0
Man equivalent	_____	2.2	1.8	2.3
<u>Livestock (number)</u>				
Cows	_____	65	47	75
Heifers	_____	29	30	48
<u>Crops (acres grown)</u>				
Hay	_____	(23) 76	(722) 83	(69) 117
Hay (silage)	_____	(6) 70	(190) 21	(22) 35
Corn (silage)	_____	(23) 34	(600) 30	(67) 45
Corn (grain)	_____	(19) 46	(214) 21	(25) 32
Oats	_____	(19) 26	(434) 21	(43) 27
Wheat	_____	(7) 29	--	--
Other	_____	--	--	--
Total Acres of Crops*	_____	154	138	199

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

It will be noted even in the case of the high 10 percent group that man equivalent still is well within what we would call a family farm. It is noticeable that the amount of manpower on farms is one of the few factors that shows no appreciable increase over a wide span of years.

Capital Investment

Next the total investment is divided into its parts. The amounts listed below are totals and do not reflect whether they are the operator's or borrowed capital. The average inventory is used here for the Four-County Area farms. The amounts reflect the "fair market value" which they should bring at a well-attended sale.

FARM INVENTORY VALUES
31 Four-County Area Farms, 1967
December 31, 1967

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1/1/67	Av. Top 10% N. Y. Farms 1/1/67
Machinery & equipment	\$ _____	\$ 25,665	\$17,628	\$ 26,194
Livestock	_____	28,509	19,515	31,846
Feed & supplies	_____	10,028	6,004	10,752
Land & buildings	_____	61,340	37,420	59,764
TOTAL INVESTMENT	\$ _____	\$125,542	\$80,567	\$128,556

Total investment on the Four-County Area farms averaged \$125,542. The range is from slightly under \$45,000 to just above \$320,000. Where does your farm stand in relation to the average?

Capital Efficiency

Below are some measures used in analyzing your capital efficiency.

CAPITAL INVESTMENT ANALYSIS

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Investment/man	\$ _____	\$57,065	\$44,800	\$59,900
Investment/cow	\$ _____	\$1,931	\$1,700	\$1,700
Machinery investment/cow	\$ _____	\$395	\$375	\$349
Land & buildings/cow	\$ _____	\$944	\$796	\$797
Land & buildings/crop acre	\$ _____	\$398	\$271	\$300

Receipts

A folk saying, probably as old as business says, "You've got to make a gross before you can make a net." Under the constantly tightening pressures of today's cost-price squeeze, making sure a farm maintains its planned total receipts is a vital management task.

FARM RECEIPTS
31 Four-County Area Farms, 1967

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Milk sales	\$ _____	\$41,449	\$27,570	\$47,226
Livestock sales	_____	4,558	3,079	5,218
Crop sales	_____	1,897	372	594
Machinery sales	\$ _____	\$193		
Government payments	_____	278		
Work off farm	_____	18		
Custom machine work	_____	122		
Gas tax refunds	_____	15		
Other	_____	1,051		
		} 1,677	1,017	1,634
Total Cash Farm Receipts	\$ _____	\$49,581	\$32,038	\$54,672
Increase in Inventory	_____	12,800	7,142	15,435
TOTAL FARM RECEIPTS	\$ _____	\$62,381	\$39,180	\$70,107

Since the costs connected with inventory expansion are considered, it is proper to consider the increase as farm income in looking at a business. However, in judging your position, be sure to consider how conservative you made your inventory figures.

Below is a table showing some factors connected with receipts.

INCOME ANALYSIS

	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Av. price/cwt. milk sold	\$ _____	\$5.12	\$4.91	\$4.99
\$ Milk sold/cow	\$ _____	\$638	\$587	\$630

Expenses

A farm manager has more control over expenses than receipts. Watching the time at which expenses are incurred as well as carefully controlling the amounts very likely offers his best opportunity for increasing profits. Remember also these expenses should be controlled against a planned cash flow since it is possible to err by spending too little as well as too much.

FARM EXPENSES
31 Four-County Area Farms, 1967

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Hired labor	\$ _____	\$ 4,355	\$ 1,750	\$ 4,044
Dairy concentrate purchase	_____	8,498	7,316	11,936
Other feed purchased	_____	153	380	688
Machine hire	_____	292	199	244
Machinery expense	_____	2,175	1,137	1,673
Auto expense (farm share)	_____	246	186	225
Gas & oil	_____	1,384	850	1,215
Breeding fees	_____	444	298	436
Veterinary & medicine	_____	578	438	673
Other livestock expense	_____	1,594	1,240	2,130
Lime & fertilizer	_____	2,450	1,443	2,419
Seeds & plants	_____	896	386	644
Spray & other expense	_____	656	189	357
Building expense	_____	685	522	748
Taxes & insurance	_____	2,107	1,207	1,910
Elec. & phone (farm share)	_____	969	543	847
Miscellaneous	_____	1,221	624	1,071
TOTAL CASH OPR. EXP.	\$ _____	\$28,703	\$18,708	\$31,260
New machinery	_____	6,882	4,224	6,467
Real estate	_____	6,475	2,398	5,093
Livestock purchased	_____	3,530	1,387	2,155
Unpaid labor	_____	495	392	277
TOTAL FARM EXPENSES	\$ _____	\$46,085	\$27,109	\$45,252

Financial Summary of Year's Business

The table below shows the return farm operators receive for their labor and management. It is here calculated by deducting from the farm income charges for unpaid labor and a five percent interest charge on total investment. Interest payments actually paid as well as principal debt repayments are not included.

LABOR INCOME
31 Four-County Area Farms, 1967

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Total Farm Receipts	\$ _____	\$62,381	\$39,180	\$70,107
Total Farm Expenses	_____	46,085	27,109	45,252
Farm Income	\$ _____	\$16,296	\$12,071	\$24,855
Int. on Total Invest. @ 5%	_____	6,277	3,850	6,042
LABOR INCOME/farm	\$ _____	\$10,019	\$ 8,221	\$18,813
No. of operators on farms	_____	36	799	75
LABOR INCOME/operator	\$ _____	\$ 8,627	\$ 7,522	\$18,311

The average labor income per operator on the Four-County Area farms was \$8,627 per year or \$719 per month. In addition, the family should consider the value of rent saved by the house in which they live, and the value of the home produced food if they wish to compare their income to that of a non-farm family.

Below is a table showing distribution of the labor incomes per operator on the Four-County Area farms. The wide spread would seem to underscore the fact that as farms grow in size the opportunity of making more carries with it the danger of losing more.

DISTRIBUTION OF LABOR INCOMES
31 Four-County Area Farms, 1967

<u>Labor Income/Operator</u>	<u>Number of Farms</u>
Over \$15,000	5
\$10,000 to \$15,000	5
\$5,000 to \$10,000	10
\$2,500 to \$5,000	4
0 to \$2,500	3
Below 0	4

CASH FLOW
31 Four-County Area Farms, 1967

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Total cash farm receipts	\$ _____	\$49,581	\$32,038	\$54,672
Total cash opr. expenses	_____	<u>28,703</u>	<u>18,708</u>	<u>31,260</u>
Cash farm income	\$ _____	\$20,878	\$13,330	\$23,412
Non-farm income (net)	_____			
Total cash family income	\$ _____			
Total family living expend.	_____	(subtract)		
Total debt payments (include interest)	_____	(subtract)		
Cash available for family and farm investment	\$ _____			

Cash flow is vitally important in planning changes or making financial commitments of future income. Many businesses would do well to expand this method in planning to determine ahead of time when they will have cash surplus and cash deficit periods.

Since this does not consider changes in net worth or does not allow for interest on total or on equity capital, it is not as good a measure of judging returns over time as for instance the labor income method. However, properly used, this method may well be one of the more useful tools in your management kit.

RETURN ON INVESTMENT
31 Four-County Area Farms, 1967

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Farm receipts	\$ _____	\$62,381	\$39,180	\$70,107
Farm expenses	_____	<u>46,085</u>	<u>27,109</u>	<u>45,252</u>
Farm Income	\$ _____	\$16,296	\$12,071	\$24,855
Value--operator's labor*	_____	<u>6,271*</u>	<u>6,002*</u>	<u>5,651*</u>
Return on Investment	\$ _____	\$10,025	\$ 5,969	\$19,204
Rate of return on av. invest.	_____ %	7.9%	7.8%	15.8%

* \$5,400/operator. Some farms had more than one operator. Farm privileges are not included.

Return on investment is another common measure of returns to a business. To arrive at the results shown, it was necessary arbitrarily to assign a value for operator's labor. We chose to assign \$5,400 per year.

PART II - ANALYSIS OF THE FARM BUSINESS

In Part I, you totalled up the resources which make up your farm business. The next step, logically, is to examine them in some sort of systematic way which moves toward making management decisions as to what things to continue, eliminate, modify, or discontinue.

We have arrayed the figures in four classifications which we call business factors. The four categories are: (1) size of business, (2) production rates, (3) labor efficiency, and (4) cost control. We still follow the procedure in most cases of setting the tables up so that you can compare your farm to the average of the 31 Four-County Area farms, to the average of the 731 New York farms, and to the top 10 percent of the New York farms.

Tables are also included in this section showing the relationship of the business factor to labor income.

Business Factor (1) - Size of Business

Generally speaking, larger farms have higher incomes. Multiplying mistakes, however, is not the road to success. Since increasing size increases either the profits or losses, it is obvious that management must examine every business carefully and increase only those things which will increase the net gains.

MEASURES OF SIZE OF BUSINESS

Measure	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Number of cows	_____	65	47	75
Pounds of milk sold	_____	809,000	561,000	944,200
Man equivalent	_____	2.2	1.8	2.3
Total work units	_____	740	569	886

In the table below, the 731 New York farms are sorted into various size groups and the labor income is shown for each size.

COWS PER FARM AND LABOR INCOME
731 N. Y. Dairy Farms, 1966

Number of cows	Percent of Farms	Labor income/operator
Less than 25	5	\$2,576
25 - 39	37	\$5,510
40 - 54	32	\$7,795
55 - 69	14	\$8,768
70 - 84	6	\$11,221
85 - 99	3	\$13,118
100 and more	3	\$14,121

Business Factor (2) - Production Rates

Rates of production per cow or per acre are vital, so long as these rates are obtained at costs which return the highest net return.

MEASURES - PRODUCTION RATES

Measure	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Lbs. of milk sold/cow	_____	12,400	11,900	12,900
Tons of hay/acre	_____	2.8	2.5	2.7
Tons of corn silage/acre	_____	18	14	16
Bushels of oats/acre	_____	63	51	56

Pounds of milk sold per cow are used in analyzing a business because it represents the amount actually paid for. It will be noted that the Four-County Area farms averaged 12,400 pounds per cow. These herds ranged from under 9,000 pounds per cow to well over 15,000 pounds per cow.

The correlation of pounds of milk sold per cow and labor income is shown in the following table. It will be noted that the larger herds tend also to have the higher production as well as higher incomes. Obviously, size alone is not the answer.

MILK SOLD PER COW AND LABOR INCOME 731 N. Y. Dairy Farms, 1966

Pounds milk sold per cow	211 farms with less than 35 cows		333 farms with 35-54 cows		187 farms with 55 cows and more	
	% farms	Labor income	% farms	Labor income	% farms	Labor income
Less than 10,000	27	\$3,082	13	\$4,560	12	\$6,835
10,000 - 10,999	14	\$4,177	15	\$5,413	15	\$9,014
11,000 - 11,999	18	\$5,403	17	\$6,959	16	\$10,590
12,000 - 12,999	16	\$4,449	27	\$7,910	24	\$12,432
13,000 - 13,999	14	\$6,358	16	\$9,535	19	\$13,564
14,000 & over	11	\$7,080	12	\$9,677	14	\$12,330

Business Factor (3) - Labor Efficiency

Studies in New York beginning as far back as 1907 placed the man equivalent on farms just slightly under 2.0. From the data given here for the Four-County Area farms in 1967 and for the 731 New York farms in 1966, it will be noted that this figure still applies for commercial dairy farms. If the labor force remains the same while constantly striving to raise output, labor efficiency must be a key factor. On a dairy farm, milk output per man is a significant measure.

MEASURES OF LABOR EFFICIENCY

Measure	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Lbs. of milk sold/man	_____	367,700*	311,700	419,000
Number of cows/man	_____	30	26	33
Work units/man	_____	336	316	392
Crop acres/man	_____	70	77	87

* Average test 3.6%

On the 31 Four-County Area farms, the pounds of milk sold per man showed a wide variation. The low farm fell below 260,000 pounds per man. On the other hand, the high farm was above the 600,000 pound mark.

We have reached the stage in labor efficiency where running faster and staying up later nights doesn't seem to turn the trick. Labor efficiency increasingly seems to result from management decisions which eliminate activities which have a low (or minus) rate of return, and by adopting modern technology which allows machinery and equipment to do some of the work formerly done by hand. At any rate, if your milk sold per man figure is "low," seek out the reason for it. Below is a table illustrating the correlation between milk sold per man and labor income.

MILK SOLD PER MAN AND LABOR INCOME 731 N. Y. Dairy Farms, 1966

Pounds milk sold per man	211 farms with less than 35 cows		333 farms with 35-54 cows		187 farms with 55 cows and more	
	% farms	Labor income	% farms	Labor income	% farms	Labor income
Under 200,000	30	\$2,475	9	\$3,456	2	\$2,153
200,000 - 299,999	46	\$5,203	40	\$6,601	18	\$7,062
300,000 - 399,999	22	\$6,808	34	\$7,569	54	\$11,161
400,000 & over	2	\$5,840	17	\$10,992	26	\$14,778

Business Factor (4) - Cost Control

As you receive your monthly electronic accounting reports or as you periodically total your regular accounts--and if you aren't doing this you should--the important thing is to check what you spent against what you had planned to spend. At the end of March, for instance, if you had spent a total of \$2,500, it is useful to look back at previous years and compare figures. However, we submit the really important thing is to decide what this means in terms of the net profit you have planned to make in 1968.

On a dairy farm, the major costs to watch are feed, labor, and machinery.

FEED COSTS

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
<u>Purchased Feed</u>				
Dairy feed purchased	\$ _____	\$8,498	\$7,316	\$11,936
Feed purchased/cow	\$ _____	\$131	\$156	\$159
Purchased feed as % of milk receipts	_____ %	20%	27%	25%
Purchased feed/cwt. milk sold	\$ _____	\$1.05	\$1.30	\$1.26
Total crop expense/cow	\$ _____	\$62	\$45	\$47
Purchased feed & crop expense/cow	\$ _____	\$192	\$201	\$206
<u>Roughage Harvested (tons H.E.)</u>				
Hay (tons)	_____	159	203	299
Silage (tons ÷ 3)	_____	173	116	224
Total tons hay equivalent	_____	332	334	552
Tons hay equivalent/cow	_____	5.1	7.1	7.4
<u>Other Considerations</u>				
Total acres in crops	_____	154	138	199
Tons H.E./acre in crops	_____	2.2	2.4	2.8
No. of heifers/10 cows	_____	4.5	6.4	6.4

On the 31 Four-County Area farms, the purchased feed was 20 percent of the milk sold. It will be noted this is lower than the 731 farms and is even lower than the "top ten percent." This indicates an area of strength.

On dairy farms, crops are grown primarily for feed. For this reason, it is necessary to look at the combined expenses for crops and purchased feed. On the Four-County Area farms, this combined figure averaged \$192 per cow, while the average for the 731 New York farms was \$201 per cow. The "top ten percent" New York farms averaged \$206 per cow. The farms in this group are doing an exceptionally good job in converting feed to milk.

Labor and Machinery Costs

As has been pointed out previously, managers are tending to substitute machinery, equipment for labor. Therefore, setting up a comparison for cost control, it is useful to view labor and machinery costs as a combined team.

LABOR AND MACHINERY COSTS

Item	My farm	Av. 31 Four-County Area Farms	Av. 731 N. Y. Farms 1966	Av. Top 10% N. Y. Farms 1966
Beginning inventory	\$ _____	\$24,074	\$15,701	\$22,821
New machinery bought	_____	6,882	4,224	6,467
Total	\$ _____	\$30,956	\$19,925	\$29,288
End inventory	\$ _____	\$27,256	\$17,628	\$26,194
Machinery sold	_____	193	127	234
Total	\$ _____	\$27,449	\$17,755	\$26,438
Depreciation	\$ _____	\$ 3,507	\$ 2,170	\$ 2,860
Int. @ 5% av. inventory	_____	1,285	833	1,225
Gas and oil	_____	1,384	850	1,215
Machinery repairs	_____	2,175	1,137	1,673
Bale ties	_____	144	113	142
Milk hauling	_____	100	444	769
Machine hire	_____	292	199	244
Auto expense (farm share)	_____	246	186	225
Electricity (farm share)	_____	815	444	712
Total Power & Mach. Cost	\$ _____	\$ 9,948	\$ 6,376	\$ 9,065
Less: Gas tax refund	\$ _____	\$ 15	\$ 60	\$ 67
Income from	_____	137	163	296
machine work	_____	122	103	229
NET POWER & MACH. COST	\$ _____	\$ 9,811	\$ 6,213	\$ 8,769
Operator's labor	_____	6,271	5,465	5,137
Hired labor	_____	4,355	1,750	4,044
Unpaid labor	_____	495	392	277
TOTAL LABOR & MACH. COST	\$ _____	\$20,932	\$13,820	\$18,227
<hr/>				
Net power & mach. cost/cow	\$ _____	\$151	\$132	\$117
Net power & mach. cost/man	\$ _____	\$ 4,460	\$ 3,452	\$ 3,813
Net power & mach. cost per cwt. milk sold	\$ _____	\$1.21	\$1.11	\$.93
Labor & mach. cost per cwt. milk sold	\$ _____	\$2.59	\$2.46	\$1.93

A large portion (47%) of the power and machinery costs on the 731 New York farms was charged to interest and depreciation. This cost is largely hidden during the operating and only shows up at summary time. Many of the out-of-pocket costs which really represent the smaller expenses are unavoidable at the time they are incurred. These characteristics make machinery costs relatively difficult to control. It would seem that more time, more evaluation of expected benefits and costs that will accrue from adopting new technology and buying additional machinery and equipment would be well spent.

Another hidden charge which is often as large as the "real" depreciation figure is that of obsolescence. Under today's conditions, it sometimes seems that equipment that has hardly been installed is replaced by new developments or new discoveries. Actually, anticipating what the charge should be for becoming obsolete is even more difficult than deciding what depreciation costs. No one can anticipate with any degree of sureness just when new technology will appear or even what form it will take.

The realization of what depreciation and obsolescence really can cost constitutes one of the great pressures for specialization of farms. By adopting a plan for crops and cattle that is as simple as possible, it becomes possible to reduce the number of kinds of machines and equipment necessary for efficient operation and, thereby, minimize these important costs.

As shown on the table on page 14, costs per cow and per cwt. of milk tend to decrease as size of farm increases. Machinery costs per man are higher. This reinforces the belief that substituting machinery for labor, where it is used efficiently, leads to higher labor incomes.

Below is a slightly different look at the relationships between machinery cost per cow and labor income as it appeared on the 731 New York farms.

MACHINERY COST PER COW AND LABOR INCOME
731 N. Y. Dairy Farms, 1966

Machinery Cost/Cow	Percent of Farms	Labor Income
\$225 & over	3	\$3,115
\$200 - \$224	5	\$6,030
\$175 - \$299	7	\$6,190
\$150 - \$174	14	\$7,381
\$125 - \$149	21	\$7,701
\$100 - \$124	29	\$8,066
\$75 - \$99	17	\$8,770
Less than \$75	4	\$7,558

Farm Business Chart

The chart on this page is a tool for use in analyzing a farm business. It is essentially a series of measuring sticks combined into one tool.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
731 New York Dairy Farms,* 1966

No. of cows	Size			Rates of Production		
	Total work units	Man equivalent	Pounds milk sold	Pounds milk sold per cow	Tons hay per acre	Tons corn silage per acre
96	1,154	3.2	1,191,400	15,000	4.2	22
65	788	2.4	809,700	13,700	3.3	19
55	663	2.2	657,100	13,100	3.0	17
49	587	2.0	583,900	12,700	2.8	16
44	528	1.8	526,000	12,200	2.5	15

40	484	1.6	477,400	11,800	2.4	14
37	444	1.5	430,800	11,100	2.2	12
33	395	1.3	380,900	10,600	2.0	11
30	354	1.2	320,500	9,800	1.8	10
24	286	1.1	230,900	7,900	1.1	7

Cows per man	Labor Efficiency		Cost Control		
	Pounds milk sold per man	Feed bought per cow	% Feed is of milk receipts	Feed and crop expense per cwt. milk	Machinery cost per cow
40	497,000	\$ 62	12%	\$0.97	\$ 73
33	399,700	93	18	1.25	93
30	360,400	113	21	1.39	103
28	334,500	128	23	1.50	112
26	310,400	146	26	1.62	121

24	289,900	163	28	1.72	129
23	267,700	178	30	1.82	142
21	241,800	193	32	1.92	155
19	207,700	213	35	2.08	174
16	156,900	250	40	2.43	224

* These farms are considerably above the average for all farms in the State. For example, the median number of cows for the 731 farms was 42 compared with 34 for all farms in the State.

The Farm Business Chart on page 16 is a tool which can be used in determining the strong and weak points of a farm business. It not only allows comparison with the average but also shows how far above or below average the farm business is 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 96 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 best ten percent, third best ten percent, etc. The figure at the bottom of each column (24 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 by drawing a line through the figure in each column which shows, for that factor, where the particular business which is being analyzed stands. Then a form such as that shown below should be used to aggregate and summarize the strong and weak points of the business. When combined with consideration of the financial situation, goals and objectives, this analysis should provide the manager with much data needed to make intelligent decisions on what changes to consider making in the business.

After analyzing the business and determining what changes should be considered, each possible change should be studied in detail. To do this, a work sheet or budgeting form such as that found on pages 20 and 21 should be used for each alternative.

It is important that all aspects, both physical and financial, be spelled out for each alternative so that the alternatives can be realistically compared.

STRONG POINTS:

WEAK POINTS:

FARM BUSINESS SUMMARY BY HERD SIZE
731 New York Dairy Farms, 1966

Item	My farm	Farms with less than 25 cows	25 to 39 cow farms	40 to 54 cow farms
<u>Capital Investment (end of year)</u>				
Machinery and equipment	\$ _____	\$ 8,436	\$12,447	\$17,987
Livestock	_____	8,314	12,935	19,176
Feed and supplies	_____	2,683	3,791	5,878
Land and buildings	_____	19,835	24,928	34,606
TOTAL INVESTMENT	\$ _____	\$39,268	\$54,101	\$77,647
<u>Receipts</u>				
Milk sales	\$ _____	\$11,554	\$18,334	\$26,687
Livestock sold	_____	1,661	2,138	2,861
Crop sales	_____	203	230	411
Miscellaneous receipts	_____	782	738	994
Total Cash Receipts	\$ _____	\$14,200	\$21,440	\$30,953
Increase in inventory	_____	1,946	4,433	7,154
TOTAL RECEIPTS	\$ _____	\$16,146	\$25,873	\$38,107
<u>Expenses</u>				
Hired labor	\$ _____	\$ 150	\$ 555	\$ 1,406
Dairy feed	_____	3,117	4,972	7,138
Other feed	_____	244	244	263
Machine hire	_____	152	121	185
Machinery repair	_____	510	715	1,113
Auto expense (farm share)	_____	135	166	202
Gas and oil	_____	507	641	832
Breeding fees	_____	159	210	298
Veterinary and medicine	_____	182	297	439
Other livestock expense	_____	570	808	1,077
Lime and fertilizer	_____	566	922	1,342
Seeds and plants	_____	201	241	381
Spray and other crop expense	_____	118	208	273
Land, bldg., fence repair	_____	242	339	529
Taxes and insurance	_____	643	845	1,111
Elec. and tel. (farm share)	_____	300	400	516
Miscellaneous expenses	_____	220	299	433
Total Cash Operating Exp.	\$ _____	\$ 8,016	\$11,983	\$17,538
New machinery	_____	2,046	3,007	4,268
New real estate	_____	702	1,251	2,367
Purchased livestock	_____	537	953	1,286
Unpaid family labor	_____	354	413	441
TOTAL FARM EXPENSES	\$ _____	\$11,655	\$17,607	\$25,900
<u>Financial Summary</u>				
Total Farm Receipts	\$ _____	\$16,146	\$25,873	\$38,107
Total Farm Expenses	_____	11,655	17,607	25,900
Farm Income	\$ _____	\$ 4,491	\$ 8,266	\$12,207
Interest on av. capital @ 5%	_____	1,915	2,594	3,703
Labor Income per Farm	\$ _____	\$ 2,576	\$ 5,672	\$ 8,504
Number of operators	_____	39	282	252
LABOR INCOME PER OPERATOR	\$ _____	\$ 2,576	\$ 5,510	\$ 7,795

FARM BUSINESS SUMMARY BY HERD SIZE
731 New York Dairy Farms, 1966

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	\$	\$ 22,564	\$ 27,978	\$ 34,789
Livestock	_____	25,258	32,022	46,743
Feed and supplies	_____	7,890	10,020	15,112
Land and buildings	_____	47,119	68,586	93,006
TOTAL INVESTMENT	\$	\$102,831	\$138,606	\$189,650
Receipts				
Milk sales	\$	\$35,663	\$47,727	\$65,687
Livestock sold	_____	3,727	5,657	7,355
Crop sales	_____	428	506	940
Miscellaneous receipts	_____	1,101	1,647	2,277
Total Cash Receipts	\$	\$40,919	\$55,537	\$76,259
Increase in inventory	_____	9,832	14,169	15,640
TOTAL RECEIPTS	\$	\$50,751	\$69,706	\$91,899
Expenses				
Hired labor	\$	\$ 2,957	\$ 5,139	\$ 6,373
Dairy feed	_____	9,011	11,976	18,078
Other feed	_____	350	983	1,448
Machine hire	_____	260	365	491
Machinery repair	_____	1,449	1,977	2,914
Auto expense (farm share)	_____	210	187	212
Gas and oil	_____	1,061	1,242	1,683
Breeding fees	_____	360	533	586
Veterinary and medicine	_____	556	775	946
Other livestock expense	_____	1,590	2,379	3,453
Lime and fertilizer	_____	1,727	2,761	4,063
Seeds and plants	_____	489	698	946
Spray and other crop expense	_____	401	593	699
Land, bldg., fence repair	_____	713	932	1,034
Taxes and insurance	_____	1,560	2,028	2,857
Elec. and tel. (farm share)	_____	690	856	1,142
Miscellaneous expenses	_____	659	948	1,730
Total Cash Operating Exp.	\$	\$24,043	\$34,372	\$48,655
New machinery	_____	5,294	7,327	8,075
New real estate	_____	4,089	5,687	4,225
Purchased livestock	_____	1,905	1,800	3,755
Unpaid family labor	_____	367	260	230
TOTAL FARM EXPENSES	\$	\$35,698	\$49,446	\$64,940
Financial Summary				
Total Farm Receipts	\$	\$50,751	\$69,706	\$91,889
Total Farm Expenses	_____	35,698	49,446	64,940
Farm Income	\$	\$15,053	\$20,260	\$26,959
Interest on av. capital @ 5%	_____	4,896	6,576	9,091
Labor Income per Farm	\$	\$10,157	\$13,684	\$17,868
Number of operators	_____	117	50	59
LABOR INCOME PER OPERATOR	\$	\$ 8,768	\$11,221	\$13,628

WORKSHEET FOR CONSIDERING A CHANGE IN THE BUSINESS

I. BASIC INFORMATION

	<u>Present</u>	<u>Future</u>
Number of cows	_____	_____
Number of youngstock	_____	_____
Acres of hay	_____	_____
Acres of corn silage	_____	_____
Acres of oats	_____	_____
Acres of hay crop silage	_____	_____

II. ROUGHAGE PRODUCTION AND REQUIREMENTS WITH CHANGE

Forage Requirements

Number of cows (after change is made)	_____
Hay equivalent per cow (tons)	=====
Hay equivalent required for cows (tons)	_____
Number of heifers (after change is made)	_____
Hay equivalent per heifer (tons)	=====
Hay equivalent required for heifers (tons)	_____
Total Hay Equivalent Required (tons)	_____

Forage Production - Planned Cropping Program

<u>Crop</u>	<u>Acres</u>	<u>Yield</u>	<u>Production</u>	<u>Hay Equivalent</u>
Hay	_____	_____	_____	_____ tons
Hay crop silage	_____	_____	_____	_____
Corn silage	_____	_____	_____	_____
_____	_____	_____	_____	_____

Hay equivalent produced (tons)

=====

Deficit or Surplus (tons)

III. LABOR REQUIREMENT CHANGE

Change in total summer chore labor (hours)	_____
Change in total summer crop labor (hours)	=====
Change in total summer labor (hours)	_____
Plus: Change in total winter labor (hours)	=====
Total Labor Change (hours)	_____

	My business 1967	Future
I. Receipts		
Milk sales, gross	\$ _____	\$ _____
Livestock sales	_____	_____
Crop sales	_____	_____
Miscellaneous receipts	_____	_____
Total Cash Receipts	\$ _____	\$ _____
Increase in inventory	_____	_____
Total Farm Receipts	\$ _____	\$ _____
II. 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 Expenses	\$ _____	\$ _____
New machinery	_____	_____
New real estate	_____	_____
Livestock purchases	_____	_____
Unpaid family labor	_____	_____
Decrease in inventory	_____	_____
Total Farm Expenses	\$ _____	\$ _____
III. 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.

1966 DAIRY FARM BUSINESS SUMMARY DATA
Four Selected States

Selected Factors	New York	Wisconsin	Vermont	Connecticut
Number of farms	731	374	128	28
Crop acres	138	180	NA	104
Man equivalent	1.8	1.8	1.9	2.0
Number of heifers	30	NA	31	40
Number of cows	47	41	48	64
Milk sold/farm	561,000	460,200	591,679	792,936
Lbs. milk sold/man	311,700	260,631	311,410	396,468
Lbs. milk sold/cow	11,900	11,066	12,191	12,253
Milk sales/cow	\$587	\$489	\$629	\$693
Av. price/cwt. milk	\$4.91	\$4.37	\$5.16	\$5.65
Purchased feed/cow	\$156	\$103	\$205	\$230
Taxes/cow	\$16	\$19	\$18	\$21

<u>Capital Investment</u>				
Land & buildings	\$37,400	\$31,500	\$38,200	\$66,400
Machinery & equipment	\$17,600	\$14,700	\$13,700	\$15,100
Livestock	\$19,500	\$14,600	\$17,400	\$27,600
Feed & supplies	\$ 6,000	\$ 7,800	\$ 5,500	\$ 8,300
Investment/man	\$44,760	\$37,430	\$39,500	\$58,770
Investment/cow	\$ 1,710	\$ 1,593	\$ 1,533	\$ 1,818

<u>Financial Summary</u>				
Total farm receipts	\$39,180	\$36,579	\$40,672	\$66,220
Total farm expenses	\$27,109	\$27,504	\$30,517	\$49,115
Farm income	\$12,071	\$ 9,075	\$10,155	\$17,105
Interest at 5%	\$ 3,850	\$ 3,266	\$ 3,752	\$ 5,877
Labor income/farm	\$ 8,221	\$ 5,809	\$ 6,403	\$11,228
Labor income/operator	\$ 7,522	\$ 5,635	\$ 6,126	\$10,077

Family Living Expenditures

Family living expenses have first claim on farm income. In any financial planning, it is important to include the family living expenses.

Below are listed the family living expenditures for 1965 of 42 farm families in Cayuga, Onondaga, and Oswego Counties. These data give an indication of what some farm families require for family living. Total family expenditures varied from \$2,737 to \$14,029.

FARM FAMILY LIVING EXPENDITURES 42 New York Farm Families, 1965

Expenditure	My family	Average of 42 families	Percent of total
Food	\$ _____	\$1,436	32
Clothing	_____	457	10
Medical and dental	_____	370	8
Home furnishings and appliances	_____	435	10
Household operation	_____	304	7
Personal auto	_____	144	3
Recreation	_____	352	8
Education	_____	200	4
Non-tax deductible gifts	_____	223	5
Tax deductible gifts	_____	166	4
Personal care	_____	65	1
Domestic help	_____	41	1
Utilities	_____	164	3
House and grounds repair	_____	137	3
All other	_____	64	1
TOTAL LIVING EXPENSES	\$ _____	\$4,558	100
Insurance premiums	_____	879	
Investments, etc.	_____	590	
Taxes	_____	513	
TOTAL FAMILY EXPENDITURES	\$ _____	\$6,540	

These 42 families had an average of five persons per family. The average age of the husbands was 40.

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. Each family should consider these factors when evaluating their own expenditures.

FARM-FAMILY RECORD OF PROGRESS

If your records are complete, it should be easy to fill out the blanks below. If you do not have the information readily available, perhaps now would be a good time to change your record system so it will provide the missing data in the future.

	19__	19__	19__	19__
<u>I. Net Worth Statement</u>				
a. Farm assets	_____	_____	_____	_____
b. Non-farm assets	_____	_____	_____	_____
c. Farm liabilities	_____	_____	_____	_____
d. Non-farm liabilities	_____	_____	_____	_____
(a + b) - (c + d) = Net Worth	=====	=====	=====	=====
<u>II. Operating Statement</u>				
a. Total farm & family income	_____	_____	_____	_____
b. Total farm & family expenses	_____	_____	_____	_____
(a - b) = Net Farm-Family Income	=====	=====	=====	=====
<u>III. Production</u>				
Lbs. of milk sold/man	_____	_____	_____	_____
Lbs. of milk sold/cow	_____	_____	_____	_____
Tons of H. E./cow	_____	_____	_____	_____
Man equivalent	_____	_____	_____	_____
<u>IV. Capital Management</u>				
Total INVESTMENT/cow	_____	_____	_____	_____
Total DEBT/cow	_____	_____	_____	_____
Machinery & equipment investment/cow	_____	_____	_____	_____
<u>V. Operating Costs</u>				
% purchased feed is of milk receipts	_____	_____	_____	_____
\$ purchased feed/cow	_____	_____	_____	_____
Machinery cost/cow	_____	_____	_____	_____
Labor & machinery costs/cow	_____	_____	_____	_____