

DAIRY FARM BUSINESS SUMMARY

JUNE 1994

E.B. 94-12

NORTHERN HUDSON REGION 1993



Stuart F. Smith
Linda D. Putnam
Cathy S. Wickswat
John M. Thurgood

Department of Agricultural, Resource and Managerial Economics
College of Agriculture and Life Sciences
Cornell University, Ithaca, New York 14853-7801

It is the Policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

1993 DAIRY FARM BUSINESS SUMMARY

NORTHERN HUDSON REGION

Table of Contents

	<u>Page</u>
INTRODUCTION	1
Program Objectives	1
Format Features	1
SUMMARY AND ANALYSIS OF THE FARM BUSINESS	2
Business Characteristics	2
Income Statement	2
Profitability Analysis	4
Farm and Family Financial Status	7
Statement of Owner Equity.....	11
Cash Flow Statement	12
Repayment Analysis	14
Cropping Analysis	16
Dairy Analysis	18
Capital and Labor Efficiency Analysis	20
COMPARATIVE ANALYSIS OF THE FARM BUSINESS	21
Progress of the Farm Business	21
Regional Farm Business Chart	22
New York State Farm Business Chart	23
Financial Analysis Chart	25
Comparisons by Type of Barn and Herd Size	26
Herd Size Comparisons	26
IDENTIFY AND SET GOALS	32
GLOSSARY AND LOCATION OF COMMON TERMS	34
INDEX	37

1993 DAIRY FARM BUSINESS SUMMARY NORTHERN HUDSON REGION*

INTRODUCTION

Dairy farmers throughout New York State have been participating in Cornell Cooperative Extension's farm business summary and analysis program since the early 1950's. Managers of each participating farm business receive a comprehensive summary and analysis of the farm business. The information in this report represents an average of the data submitted from dairy farms in the Northern Hudson Region for 1993.

Program Objective

The primary objective of the dairy farm business summary, DFBS, is to help farm managers improve the business and financial management of their business through appropriate use of historical farm data and the application of modern farm business analysis techniques. This information can also be used to establish goals that will enable the business to better meet its objectives. In short, DFBS identifies business and financial information needed in identifying and evaluating strengths and weaknesses of the farm business.

Format Features

This regional report follows the same general format as in the 1993 DFBS printout received by all participating dairy farmers. The analysis tables have an open column or section labeled My Farm. It may be used by any dairy farm manager who wants to compare his or her business with the average data of this region. A DFBS Data Check-in Form can be used by non-DFBS participants to summarize their businesses.

This report features:

- (1) an income statement including accrual adjustments for farm business expenses and receipts, as well as measures of profitability with and without appreciation,
- (2) a complete balance sheet with analytical ratios;
- (3) a statement of owner equity which shows the sources of the change in owner equity during the year;
- (4) a cash flow statement and debt repayment ability analysis;
- (5) an analysis of crop acreage, yields, and expenses;
- (6) an analysis of dairy livestock numbers, production, and expenses; and
- (7) a capital and labor efficiency analysis.

*The Northern Hudson Region of New York State, with the number of participating farms in parentheses, is comprised of Albany (7), Saratoga (10), Schenectady (4), Rensselaer (20), and Washington (16) Counties. This report was written by Stuart F. Smith, Senior Extension Associate, Farm Management. Linda Putnam was in charge of data preparation. Sue Schaffer and Beverly Carcelli prepared the publication. Farm business data were collected by Cooperative Extension Agents Cathy Wickswat and John Thurgood.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics

Planning the optimal management strategies is a crucial component of operating a successful farm. Various combinations of farm resources, enterprises, business arrangements, and management techniques are used by the dairy farmers in this region. The following table shows important farm business characteristics and the number of farms with each characteristic.

BUSINESS CHARACTERISTICS

58 Northern Hudson Region Dairy Farms, 1993

<u>Type of Farm</u>	<u>Number</u>	<u>Type of Barn</u>	<u>Number</u>
Dairy	53	Stanchion/Tie-Stall	23
Part-time dairy	0	Freestall	31
Dairy cash-crop	5	Combination	4
Part-time cash-crop dairy	0		
		<u>Milking System</u>	<u>Number</u>
<u>Type of Ownership</u>	<u>Number</u>	Bucket & carry	0
Owner	52	Dumping station	0
Renter	6	Pipeline	26
		Herringbone parlor	29
<u>Type of Business</u>	<u>Number</u>	Other parlor	3
Single proprietorship	30		
Partnership	23	<u>Milking Frequency</u>	<u>Number</u>
Corporation	5	2x/day	47
		3x/day	8
<u>Business Record System</u>	<u>Number</u>	Other	3
ELFAC II	1		
Account Book	13	<u>Production Records</u>	<u>Number</u>
Agrifax (mail-in only)	12	DHIC	44
On-Farm Computer	14	Owner-Sampler	4
Other	18	Other	4
		None	6

The averages used in this report were compiled using data from all the participating dairy farms in this region unless noted otherwise. There are full-time dairy farms, part-time farms, dairy cash-crop farms, farm renters, partnerships, and corporations included in the average. Average data for these specific types of farms are presented in the State Business Summary.

Income Statement

In order for an income statement to accurately measure farm income, it must include cash transactions and accrual adjustments (changes in accounts payable, accounts receivable, inventories, and prepaid expenses).

Cash paid is the actual cash outlay during the year and does not necessarily represent the cost of goods and services actually used in 1993.

Change in inventory: Increases in inventories of supplies and other purchased inputs are subtracted in computing accrual expenses because they represent purchased inputs not actually used during the year. Decreases in purchased inventories are added to expenses because they represent inputs purchased in a prior year and used this year.

CASH AND ACCRUAL FARM EXPENSES
 58 Northern Hudson Region Dairy Farms, 1993

Expense Item	Cash Paid	+	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses
<u>Hired Labor</u>	\$38,412		\$0		\$104		\$38,516
<u>Feed</u>							
Dairy grain & conc.	80,305		880		293		81,478
Dairy roughage	1,463		0		-48		1,415
Nondairy	0		0		0		0
<u>Machinery</u>							
Mach. hire, rent/lease	3,167		0		38		3,205
Machinery repairs/parts	17,325		19		87		17,431
Auto exp. (farm share)	1,109		0		0		1,109
Fuel, oil & grease	10,124		41		64		10,229
<u>Livestock</u>							
Replacement livestock	5,406		0		193		5,599
Breeding	4,769		-12		35		4,792
Vet & medicine	9,512		-16		9		9,505
Milk marketing	22,943		0		31		22,974
Cattle lease/rent	915		0		0		915
Other livestock expense	15,437		-42		183		15,578
<u>Crops</u>							
Fertilizer & lime	11,485		230		-31		11,684
Seeds & plants	5,176		32		166		5,374
Spray, other crop exp.	5,277		55		-47		5,285
<u>Real Estate</u>							
Land/bldg./fence repair	4,269		47		-125		4,191
Taxes	7,535		0		33		7,568
Rent & lease	7,974		0		-67		7,907
<u>Other</u>							
Insurance	3,743		-10		0		3,733
Telephone (farm share)	1,317		0		-4		1,313
Electricity (farm share)	8,231		0		0		8,231
Interest paid	15,619		0		291		15,910
Miscellaneous	3,389		0		7		3,396
Total Operating	\$284,902		\$1,224		\$1,212		\$287,338
Expansion livestock	7,909		0		-536		7,373
Machinery depreciation							15,043
Building depreciation							8,006
TOTAL ACCRUAL EXPENSES							\$317,760

Change in prepaid expenses (noted above by <<) is a net change in non-inventory expenses that have been paid in advance of their use. If 1993 funds used to prepay 1994 leases exceed the amount of 1993 leases prepaid in 1992, the amount of this excess is entered as a negative number to exclude it from 1993 accrual lease expenses. The excess prepaid lease is charged against the future year's business operation. A decrease in prepaid lease is added to accrual expenses because it represents use of resources during this year that were paid for in past years.

Change in accounts payable: An increase in accounts payable from beginning to end of year is added when calculating accrual expenses because these expenses were incurred (resources used) in 1993 but not paid for. A decrease is subtracted because the resource was used before 1993.

Accrual expenses are the costs of inputs actually used in this year's production. They are the total of cash paid, as well as changes in inventory, prepaid expenses, and accounts payable.

CASH AND ACCRUAL FARM RECEIPTS
 58 Northern Hudson Region Dairy Farms, 1993

Receipt Item	Cash Receipts	Change in Inventory	Change in Accounts Receivable	Accrual Receipts
Milk sales	\$295,715		\$2,262	\$297,977
Dairy cattle	16,681	\$18,078	-27	34,732
Dairy calves	4,527		-3	4,524
Other livestock	1	301	0	302
Crops	5,796	-1,440	24	4,380
Government receipts	7,141	0*	93	7,234
Custom machine work	1,081		0	1,081
Gas tax refund	192		0	192
Other	4,175		-81	4,094
Less nonfarm noncash cap.**	(-) 163		(-) 163	
Total Receipts	\$335,309	\$16,776	\$2,268	\$354,353

*Change in advanced government receipts.

**Gifts or inheritances of cattle or crops included in inventory.

Cash receipts include the gross value of milk checks received during the year plus all other payments received from the sale of farm products, services, and government programs. Nonfarm income is not included in calculating farm profitability.

Changes in inventory of assets produced by the business are calculated by subtracting beginning of year values from end of year values excluding appreciation. Increases in livestock inventory caused by herd growth and/or quality are added, and decreases caused by herd reduction and/or quality are subtracted. Changes in inventories of crops grown are also included. An annual increase in advanced government receipts is subtracted from cash income because it represents income received in 1993 for the 1994 crop year in excess of funds earned for 1993. Likewise, a decrease is added to cash government receipts because it represents funds earned for 1993 but received in 1992.

Changes in accounts receivable are calculated by subtracting beginning year balances from end year balances. The January milk check for this December's marketings compared with the previous January's check is included as a change in accounts receivable.

Accrual receipts represent the value of all farm commodities produced and services actually generated by the farm business during the year.

Profitability Analysis

Farm operators* contribute labor, management, and equity capital to their businesses and the combination of these resources, and the other resources used in the business, determines profitability. Farm profitability can be measured as the return to all family resources or as the return to one or more individual resources such as labor and management.

*Operators are the individuals who are integrally involved in the operation and management of the farm business. They are not limited to those who are the owner of a sole proprietorship or are formally a member of the partnership or corporation.

Net farm income is the return to the farm operators and other unpaid family members for their labor, management, and equity capital. It is the farm family's net annual return from working, managing, financing, and owning the farm business. This is not a measure of cash available from the year's business operation. Cash flow is evaluated later in this report.

Net farm income is computed both with and without appreciation. Appreciation represents the change in values caused by annual changes in prices of live-stock, machinery, real estate inventory, and stocks and certificates (other than Farm Credit). Appreciation is a major factor contributing to changes in farm net worth and must be included for a complete profitability analysis.

NET FARM INCOME

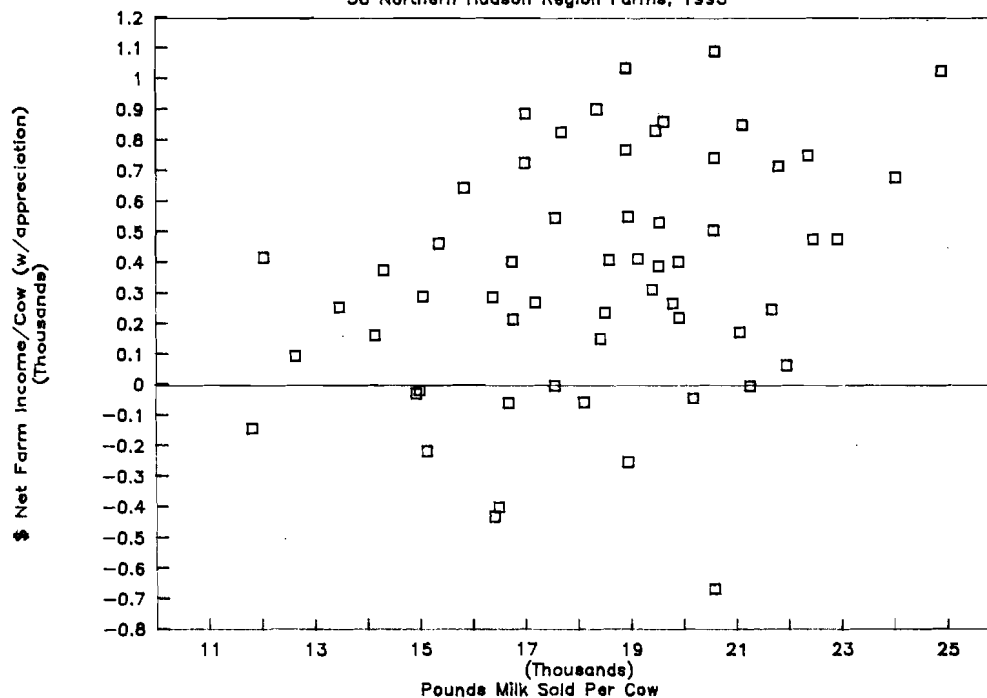
58 Northern Hudson Region Dairy Farms, 1993

Item	Average	My Farm
Total accrual receipts	\$354,353	\$ _____
Appreciation: Livestock	565	_____
Machinery	448	_____
Real Estate	2,593	_____
Other Stock/Certificates	303	_____
Total Including Appreciation	\$358,262	\$ _____
Total accrual expenses	- 317,760	- _____
Net Farm Income (with appreciation)	\$40,502	\$ _____
Net Farm Income (without appreciation)	\$36,593	\$ _____

The chart below shows the relationship between net farm income per cow (with appreciation) and pounds of milk sold per cow. Generally, farms with a higher production per cow have higher profitability per cow.

Net Farm Income/Cow and Milk/Cow

58 Northern Hudson Region Farms, 1993



Return to operators' labor, management, and equity capital measures the total net farm income for the farm operator(s). It is calculated by deducting a charge for unpaid family labor from net farm income. Operators' labor is not included in unpaid family labor. Return to operators' labor, management, and equity capital has been calculated both with and without appreciation. Appreciation is an important part of the return to ownership of farm assets.

RETURN TO OPERATORS' LABOR, MANAGEMENT, AND EQUITY
58 Northern Hudson Region Dairy Farms, 1993

Item	Average		My Farm	
	With Apprec.	Without Apprec.	With Apprec.	Without Apprec.
Net farm income	\$40,502	\$36,593	\$_____	\$_____
Family labor unpaid				
@ \$1,400 per month	- 4,592	- 4,592	- _____	- _____
Return to operators' labor, management, & equity	\$35,910	\$32,001	\$_____	\$_____

Labor and management income is the return which farm operators receive for their labor and management used in operating the farm business. Appreciation is not included as part of the return to labor and management because it results from ownership of assets rather than management of the farm business. Labor and management income is calculated by deducting the opportunity cost of using equity capital, at a real interest rate of five percent, from the return to operators' labor, management, and equity capital excluding appreciation. The interest charge of five percent reflects the long-term average rate of return above inflation that a farmer might expect to earn in comparable risk investments.

LABOR AND MANAGEMENT INCOME
58 Northern Hudson Region Dairy Farms, 1993

Item	Average	My Farm
Return to operators' labor, management, & equity without appreciation	\$32,001	\$_____
Real interest @ 5% on \$597,431 average equity capital	- 29,872	- _____
Labor & Management Income	\$2,129	\$_____
Labor & Management Income per 1.51 Operator/Manager	\$1,410	\$_____

Return on equity capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner-operator's labor and management. The earnings or amount of net farm income allocated to labor and management is the opportunity cost of operators' labor and management estimated by the cooperators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the average farm net worth or equity capital. Return on total capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets to calculate the rate of return on total capital.

RETURN ON EQUITY CAPITAL AND RETURN ON TOTAL CAPITAL
58 Northern Hudson Region Dairy Farms, 1993

Item	Average	My Farm
Return to operators' labor, management, & equity capital with appreciation	\$35,910	\$ _____
Value of operators' labor & management	- 30,749	- _____
Return on equity capital with appreciation	\$5,161	\$ _____
Interest paid	+15,910	+ _____
Return on total capital with appreciation	\$21,071	\$ _____
Return on equity capital without appreciation	\$1,252	\$ _____
Return on total capital without appreciation	\$17,162	\$ _____
Rate of return on average equity capital:		
with appreciation	.86%	_____ %
without appreciation	.21%	_____ %
Rate of return on average total capital:		
with appreciation	2.50%	_____ %
without appreciation	2.04%	_____ %

Farm and Family Financial Status

The first step in evaluating the financial position of the farm is to construct a balance sheet which identifies all the assets and liabilities of the business. The second step is to evaluate the relationship between assets, liabilities, and net worth and changes that occurred during the year.

Financial lease obligations are included in the balance sheet. The present value of all future payments is listed as a liability since the farmer is committed to make the payments by signing the lease. The present value is also listed as an asset, representing the future value the item has to the business. For 1993, leases were discounted by 7.75 percent.

Advanced government receipts are included as current liabilities. Government payments received in 1993 that are for participation in the 1994 program are the end year balance and payments received in 1992 for participation in the 1993 program are the beginning year balance

Current Portion or principal due in the next year for intermediate and long term debt is included as a current liability.

1993 FARM BUSINESS & NONFARM BALANCE SHEET
58 Northern Hudson Region Dairy Farms, 1993

Farm Assets			Farm Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	\$7,494	\$6,498	Accounts payable	\$12,817	\$13,493
Accounts rec.	22,880	25,147	Operating debt	7,382	8,180
Prepaid exp.	24	34	Short-term	1,074	968
Feed & supplies	70,721	68,048	Advanced govt. rec.	303	303
			Current Portion:		
			Intermediate	0	22,855
			Long Term	0	5,466
Total	\$101,119	\$99,727	Total	\$21,576	\$51,265
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	\$118,863	\$132,340	1-10 years	\$108,159	\$100,326
leased	0	0	Financial lease		
Heifers	51,007	56,174	(cattle/mach.)	1,810	1,498
Bulls/other lvstk.	859	1,160	Farm Credit stock	6,638	6,996
Mach./eq. owned	139,225	138,822			
Mach./eq. leased	1,810	1,498	Total	\$116,607	\$108,820
Farm Credit stock	6,638	6,996			
Other stock/cert.	11,736	12,773			
Total	\$330,138	\$349,763			
Long-Term			Long Term		
Land/buildings:			Structured debt		
owned	\$392,842	\$409,341	>10 yrs	\$96,603	\$93,197
leased	78	192	Financial lease		
Total	\$392,920	\$409,533	(structures)	78	192
			Total	\$96,681	\$93,389
Total Farm Assets	\$824,177	\$859,023	Total Farm Liab.	\$234,864	\$253,474
			FARM NET WORTH	\$589,313	\$605,549

Nonfarm Assets, Liabilities & Net Worth (Average of 27 farms reporting)

Assets			Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Personal cash, chkg. & savings	\$5,146	\$5,599	Nonfarm Liab.	\$4,796	\$5,332
Cash value life ins.	8,211	8,328			
Nonfarm real estate	20,611	20,056			
Auto (personal sh.)	2,707	3,207			
Stocks & bonds	6,590	7,342			
Household furn.	10,389	10,148			
All other	8,256	8,296			
Total Nonfarm	\$61,910	\$62,977	NONFARM NET WORTH	\$57,114	\$57,645

Farm & Nonfarm Assets, Liabilities, & Net Worth*			Jan. 1	Dec. 31
Total Assets			\$886,087	\$922,000
Total Liabilities			239,660	258,806
TOTAL FARM & NONFARM NET WORTH			\$646,427	\$663,194

*Assumes that average nonfarm assets and liabilities for the nonreporting farms were the same as for those reporting.

The following condensed balance sheet, including deferred taxes, contains average data from only those farmers who elected to provide the additional information required to compute deferred taxes.

Deferred taxes represent an estimate of the taxes that would be paid if the farm were sold at year end fair market values and date on the balance sheet. Accuracy is dependent on the accuracy of the market values and the tax basis data provided. Any tax liability for assets other than livestock, machinery, land, buildings and nonfarm assets is excluded. It is assumed that all gain on purchased livestock and machinery is ordinary gain and that listed market values are net of selling costs. The effects of investment tax credit carryover and recapture, carryover of operating losses, alternative minimum taxes and other than average exemptions and deductions are excluded because they have only minor influence on the taxes of most farms. However, they could be important.

CONDENSED BALANCE SHEET INCLUDING DEFERRED TAXES

December 31, 1993

13 New York Dairy Farms, 1993

<u>ASSETS</u>		<u>LIABILITIES & NET WORTH</u>	
		Current debts & payables	\$ 29,009
		Current deferred taxes	14,422
Total Current Assets	\$ 49,403	Total Current Liabilities	\$ 43,431
		Intermediate debts & leases	\$ 65,404
		Intermediate deferred taxes	57,210
Total Inter. Assets	\$ 205,080	Total Inter. Liabilities	\$ 122,614
		Long term debts & leases	\$ 49,851
		Long term deferred taxes	20,989
Total Long Term Assets	\$ 186,658	Total Long Term Liab.	\$70,840
TOTAL FARM ASSETS	\$ 441,141	TOTAL FARM LIABILITIES	\$236,885
		Farm Net Worth	\$204,256
		<u>Percent Equity (Farm)</u>	<u>46%</u>
		Nonfarm debts	\$4,265
		Nonfarm deferred taxes	5,625
<u>Total Nonfarm Assets</u>	<u>\$ 44,511</u>	<u>Total Nonfarm Liabilities</u>	<u>\$9,890</u>
TOTAL ASSETS	\$485,652	TOTAL LIABILITIES	\$246,774
		Total Net Worth	\$238,877
		<u>Percent Equity (Total)</u>	<u>49%</u>

Balance sheet analysis involves examination of relative asset and debt levels for the business. Percent equity is calculated by dividing end of year net worth by end of year assets and multiplying by 100. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect business solvency and the potential capacity to borrow. Debt levels per productive unit represent old standards that are still useful if used with measures of cash flow and repayment ability.

BALANCE SHEET ANALYSIS

58 Northern Hudson Region Farms, 1993

Item	Average	My Farm
Financial Ratios - Farm:		
Percent equity	70%	_____ %
Debt/asset ratio: total	.30	_____
long-term	.23	_____
intermediate/current	.36	_____
Farm Debt Analysis:		
Accounts payable as % of total debt	5%	_____ %
Long-term liabilities as a % of total debt	37%	_____ %
Current & inter. liab. as a % of total debt	63%	_____ %
	Per Tillable	Per Tillable
Farm Debt Levels:	Per Cow	Per Cow
Total farm debt	\$2,078	\$1,393
Long-term debt	765	513
Intermediate & current debt	1,312	880

Farm inventory balance is an accounting of the value of assets used on the balance sheet and the changes that occur from the beginning to end of year. Changes in the livestock inventory are included in the dairy analysis. Net investment indicates whether the capital stock is being expanded (positive) or depleted (negative).

FARM INVENTORY BALANCE

58 Northern Hudson Region Dairy Farms, 1993

Item	Average of Region's Farms	
	Real Estate	Machinery & Equipment
Value beg. of year	\$392,842	\$139,225
Purchases	\$21,670	\$15,479
Gift/inheritance	+ 9,362	+ 0
Lost capital	- 8,471	- --
Sales	- 651	- 1,287
Depreciation	- 8,006	- 15,043
Net investment	= 13,904	= -851
Appreciation	+ 2,593	+ 448
Value end of year	\$409,341	\$138,822

*\$1,934 land and \$19,736 buildings and/or depreciable improvements.

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are interrelated and consistent (in accountants terms, they reconcile) and (2) identification of the causes of change in equity that occurred on the farm during the year. The Statement of Owner Equity allows you to determine to what degree the change in equity was caused by (1) earnings from the business, and nonfarm income, in excess of withdrawals being retained in the business (called retained earnings), (2) outside capital being invested in the business or farm capital being removed from the business (called contributed/withdrawn capital) and (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity).

Retained earnings is an excellent indicator of farm generated financial progress.

STATEMENT OF OWNER EQUITY (RECONCILIATION)
58 Northern Hudson Region Dairy Farms, 1993

<u>Item</u>	<u>Average</u>	<u>My Farm</u>
Beginning of year farm net worth	\$589,313	\$_____
Net farm income w/o apprec.	\$ 36,593	\$_____
+Nonfarm cash income	+ 10,976	+_____
-Personal withdrawals & family expenditures excluding nonfarm borrowings	<u>- 37,091</u>	-_____
RETAINED EARNINGS	+\$ 10,478	\$_____
Nonfarm noncash transfers to farm	\$ 9,525	\$_____
+Cash used in business from nonfarm capital	+ 1,769	+_____
-Note/mortgage from farm real estate sold (nonfarm)	<u>- 0</u>	-_____
CONTRIBUTED/WITHDRAWN CAPITAL	+\$ 11,295	+\$_____
Appreciation	\$ 3,909	\$_____
-Lost capital	<u>- 8,471</u>	-_____
CHANGE IN VALUATION EQUITY	+\$ -4,562	+\$_____
IMBALANCE/ERROR	<u>-\$ 978</u>	-\$_____
End of year farm net worth*	=\$605,549	=\$_____
Change in net worth w/apprec.	\$ 16,236	\$_____
<u>Change in Net Worth</u>		
Without appreciation	\$12,327	\$_____
With appreciation	\$16,236	\$_____

*May not add due to rounding.

Cash Flow Statement

Completing an annual cash flow statement is an important step in understanding the sources and uses of funds for the business. Understanding last year's cash flow is the first step toward planning and managing cash flow for the current and future years.

The annual cash flow statement is structured to show net cash provided by operating activities, investing activities, financing activities and from reserves. All cash inflows and outflows, including beginning and end balances, are included. Therefore, the sum of net cash provided from all four activities should be zero. Any imbalance is the error from incorrect accounting of cash inflows/outflows.

ANNUAL CASH FLOW STATEMENT

58 Northern Hudson Region Dairy Farms, 1993

Item	Average	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$335,309	
- Cash farm expenses	<u>284,902</u>	
= Net cash farm income		\$ 50,408
Nonfarm income	\$ 10,976	
- Personal withdrawals/family expenses including nonfarm debt payments	<u>37,697</u>	
+ Net cash nonfarm income		<u>\$-26,721</u>
= Net Provided by Operating Activities		\$ 23,687
<u>Cash Flow From Investing Activities</u>		
Sale of Assets: Machinery	\$ 1,287	
+ real estate	651	
+ other stock/cert.	<u>121</u>	
= Total asset sales		\$ 2,059
Capital purchases: expansion livestock	\$ 7,909	
+ machinery	15,479	
+ real estate	21,670	
+ other stock/cert.	<u>855</u>	
- Total invested in farm assets		<u>\$ 45,913</u>
= Net Provided by Investment Activities		\$-43,854
<u>Cash Flow From Financing Activities</u>		
Money borrowed (inter. & long term)	\$ 50,937	
+ Money borrowed (short-term)	860	
+ Increase in operating debt	798	
+ Cash from nonfarm cap. used in business	1,769	
+ Money borrowed - nonfarm	<u>606</u>	
= Cash inflow from financing		\$ 54,970
Principal payments (inter. & long-term)	\$ 33,855	
+ Principal payments (short-term)	966	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$ 34,821</u>
= Net Provided by Financing Activities		\$ 20,149
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings	\$ 7,494	
- Ending farm cash, checking & savings	<u>6,498</u>	
= Net Provided from Reserves		\$ 996
Imbalance (error)		\$ 978

ANNUAL CASH FLOW STATEMENT

Item		My Farm	
<u>Cash Flow from Operating Activities</u>			
Cash farm receipts	\$_____		
- Cash farm expenses	_____		
= Net cash farm income		\$_____	
Nonfarm income	\$_____		
- Personal withdrawals/family expenses including nonfarm debt payments	_____		
+ Net cash nonfarm income		\$_____	
= Net Provided by Operating Activities			\$_____
<u>Cash Flow From Investing Activities</u>			
Sale of Assets: Machinery	\$_____		
+ real estate	_____		
+ other stock/cert.	_____		
= Total asset sales		\$_____	
Capital purchases: expansion livestock	\$_____		
+ machinery	_____		
+ real estate	_____		
+ other stock/cert.	_____		
- Total invested in farm assets		\$_____	
= Net Provided by Investment Activities			\$_____
<u>Cash Flow From Financing Activities</u>			
Money borrowed (inter. & long term)	\$_____		
+ Money borrowed (short-term)	_____		
+ Increase in operating debt	_____		
+ Cash from nonfarm cap. used in business	_____		
+ Money borrowed - nonfarm	_____		
= Cash inflow from financing		\$_____	
Principal payments (inter. & long-term)	\$_____		
+ Principal payments (short-term)	_____		
+ Decrease in operating debt	_____		
- Cash outflow for financing		\$_____	
= Net Provided by Financing Activities			\$_____
<u>Cash Flow From Reserves</u>			
Beginning farm cash, checking & savings	\$_____		
- Ending farm cash, checking & savings	_____		
= Net Provided from Reserves			\$_____
<u>Imbalance (error)</u>			\$_____

Repayment Analysis

A valuable use of cash flow analysis is to compare the debt payments planned for the last year with the amount actually paid. The measures listed below provide a number of different perspectives on the repayment performance of the business. However, the critical question to many farmers and lenders is whether planned payments can be made in 1994. The cash flow projection worksheet on the next page can be used to estimate repayment ability, which can then be compared to planned 1994 debt payments shown below.

FARM DEBT PAYMENTS PLANNED

Same 42 Northern Hudson Region Dairy Farms, 1992 & 1993

Debt Payments	Average			My Farm		
	1993 Payments		Planned 1994	1993 Payments		Planned 1994
	Planned	Made		Planned	Made	
Long-term	\$ 15,020	\$ 14,582	\$14,122	\$ _____	\$ _____	\$ _____
Intermediate-term	33,450	39,671	35,640	_____	_____	_____
Short-term	511	1,304	916	_____	_____	_____
Operating (net reduction)	232	0	0	_____	_____	_____
Accounts payable (net reduction)	143	0	357	_____	_____	_____
Total	\$49,356	\$55,557	\$51,035	\$ _____	\$ _____	\$ _____
Per cow	\$ 389	\$ 437		\$ _____	\$ _____	
Per cwt. 1993 milk	\$ 2.00	\$ 2.25		\$ _____	\$ _____	
Percent of total 1993 receipts	12%	14%		_____	_____	
Percent of 1993 milk receipts	15%	16%		_____	_____	

The cash flow coverage ratio measures the ability of the farm business to meet its planned debt payment schedule. The ratio shows the percentage of payments planned for 1993 (as of December 31, 1992) that could have been made with the amount available for debt service in 1993. Farmers who did not participate in DFBS in 1992 have their 1993 cash flow coverage ratio based on planned debt payments for 1994.

CASH FLOW COVERAGE RATIO

Same 42 Northern Hudson Region Dairy Farms, 1992 & 1993

Item	Average	My Farm
Cash farm receipts	\$376,884	\$ _____
- Cash farm expenses	321,019	_____
+ Interest paid	17,896	_____
- Net personal withdrawals from farm*	27,156	_____
(A) = Amount Available for Debt Service	\$ 46,605	\$ _____
(B) = Debt Payments Planned for 1993 (as of December 31, 1992)	\$ 49,356	\$ _____
(A/B) = Cash Flow Coverage Ratio for 1993	.94	_____

*Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If family withdrawals are excluded, or inaccurately included, the cash flow coverage ratio will be incorrect.

ANNUAL CASH FLOW WORKSHEET

Item	Regional Average		My Farm	Expected Change	1994 Projection
	Per Cow	Per Cwt.	Per Cow/ Per Cwt.		
No. cows and cwt. milk	115.3	21,925.6			
<u>Accrual Oper. Receipts</u>					
Milk	\$2,584.36	\$13.59	\$_____	_____	\$_____
Dairy cattle	301.23	1.58	_____	_____	_____
Dairy calves	39.24	.21	_____	_____	_____
Other livestock	2.62	.01	_____	_____	_____
Crops	37.98	.20	_____	_____	_____
Misc. receipts	109.30	.58	_____	_____	_____
Total	\$3,074.73	\$16.17	\$_____	_____	\$_____
<u>Accrual Oper. Expenses</u>					
Hired labor	\$334.04	\$1.76	\$_____	_____	\$_____
Dairy grain & conc.	706.66	3.72	_____	_____	_____
Dairy roughage	12.27	.06	_____	_____	_____
Nondairy feed	0.00	.00	_____	_____	_____
Mach. hire/rent/lease	27.79	.15	_____	_____	_____
Mach. rpr./parts & auto	160.80	.84	_____	_____	_____
Fuel, oil & grease	88.72	.46	_____	_____	_____
Replacement lvstk.	48.56	.26	_____	_____	_____
Breeding	41.56	.22	_____	_____	_____
Vet & medicine	82.44	.43	_____	_____	_____
Milk marketing	199.25	1.05	_____	_____	_____
Cattle lease	7.94	.04	_____	_____	_____
Other livestock exp.	135.11	.71	_____	_____	_____
Fertilizer & lime	101.33	.53	_____	_____	_____
Seeds & plants	46.62	.25	_____	_____	_____
Spray/other crop exp.	45.84	.24	_____	_____	_____
Land, bldg., fence repair	36.34	.19	_____	_____	_____
Taxes	65.64	.35	_____	_____	_____
Real estate rent/lease	68.58	.36	_____	_____	_____
Insurance	32.39	.17	_____	_____	_____
Utilities	82.78	.44	_____	_____	_____
Miscellaneous	29.45	.15	_____	_____	_____
Total Less Int. Paid	\$2,354.11	\$12.38	\$_____	_____	\$_____
<u>Net Accrual Operating Income (Total)</u>					
(without interest paid)	\$83,088		\$_____		\$_____
- Change in lvstk./crop inv.*	16,776		_____	_____	_____
- Change in accts. rec.	2,268		_____	_____	_____
+ Change in feed/supply inv.**	1,224		_____	_____	_____
+ Change in accts. payable***	921		_____	_____	_____
NET CASH FLOW	\$66,189		\$_____		\$_____
- Net personal w/drawals from farm (see footnote on pg. 14)	\$26,115		_____	_____	_____
Available for Farm Debt					
Payments & Investments	\$40,074		\$_____		\$_____
- Farm debt payments	49,723		_____	_____	_____
Available for Farm Investment	\$-9,649		\$_____		\$_____
- Capital purchases: cattle, machinery & improvements	\$45,913		_____	_____	_____
Additional Capital Needed			\$_____		\$_____

*Includes change in advance government receipts.

**Includes change in prepaid expenses.

***Excludes change in interest account payable.

Cropping Analysis

The cropping program is an important part of the dairy farm business and often represents opportunities for improved productivity and profitability. A complete evaluation of what the available land resources are, how they are being used, how well crops are producing, and what it costs to produce them is important to evaluating alternative cropping and feed purchasing alternatives.

LAND RESOURCES AND CROP PRODUCTION
58 Northern Hudson Region Dairy Farms, 1993

<u>Item</u>	<u>Average</u>			<u>My Farm</u>		
<u>Land</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
Tillable	182	200	382	_____	_____	_____
Nontillable	48	15	63	_____	_____	_____
Other nontillable	<u>105</u>	<u>10</u>	<u>115</u>	_____	_____	_____
Total	335	225	560	_____	_____	_____
<u>Crop Yields</u>	<u>Farms</u>	<u>Acres*</u>	<u>Prod/Acre</u>	<u>Acres</u>	<u>Prod/Acre</u>	
Hay crop	57	210	2.37 tn DM	_____	_____	tn DM
Corn silage	57	105	13.69 tn	_____	_____	tn
			4.56 tn DM	_____	_____	tn DM
Other forage	1	23	.87 tn DM	_____	_____	tn DM
Total forage	57	315	3.08 tn DM	_____	_____	tn DM
Corn grain	33	89	104.25 bu	_____	_____	bu
Oats	1	22	98.18 bu	_____	_____	bu
Wheat	0	0	0.00 bu	_____	_____	bu
Other crops	9	16		_____	_____	
Tillable pasture	7	33		_____	_____	
Idle	22	39		_____	_____	
Total Tillable Acres	58	382		_____	_____	

*This column represents the average acreage for the farms producing that crop. Average acreages including those farms not producing were hay crop 206, corn silage 103, corn grain 51, oats 0, tillable pasture 4, and idle 15.

Average crop acres and yields compiled for the region are for the farms reporting each crop. Yields of forage crops have been converted to tons of dry matter using dry matter coefficients reported by the farmers. Grain production has been converted to bushels of dry grain equivalent based on dry matter information provided.

The following crop/dairy ratios indicate the relationship between forage production, forage production resources, and the dairy herd.

CROP/DAIRY RATIOS
58 Northern Hudson Region Dairy Farms, 1993

<u>Item</u>	<u>Average</u>	<u>My Farm</u>
Total tillable acres per cow	3.31	_____
Total forage acres per cow	2.68	_____
Harvested forage dry matter, tons per cow	8.25	_____

Cropping Analysis (continued)

A number of cooperators have allocated crop expenses among the hay crop, corn, and other crops produced. Fertilizer and lime, seeds and plants, and spray and other crop expenses have been computed per acre and per production unit for hay and corn. Additional expense items such as fuels, labor, and machinery repairs are not included. Rotational grazing was used on one farm in the region.

CROP RELATED ACCRUAL EXPENSES

Northern Hudson Region Dairy Farms Reporting, 1993

Item	Total Per Till. Acre	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Sh.Bu.	Hay Crop		Pasture	
					Per Acre	Per Ton DM	Per Till. Acre	Per Total Acre
No. of farms reporting	58	8			8		0	
Ave. number of acres	382	174			177		0	0
Fert./lime	\$30.58	\$35.74	\$7.50	\$.30	\$26.77	\$10.15	\$.00	\$.00
Seeds/plants	14.07	23.30	4.89	.19	14.03	5.32	.00	.00
Spray/other crop exp.	<u>13.84</u>	<u>16.29</u>	<u>3.42</u>	<u>.14</u>	<u>11.36</u>	<u>4.31</u>	<u>.00</u>	<u>.00</u>
TOTAL	\$58.49	\$75.33	\$15.81	\$.63	\$52.16	\$19.78	\$.00	\$.00

My Farm:

Fert./lime	\$_____	\$_____	\$_____	\$_____	\$_____	\$_____	\$_____	\$_____
Seeds/plants	_____	_____	_____	_____	_____	_____	_____	_____
Spray/other crop exp.	_____	_____	_____	_____	_____	_____	_____	_____
TOTAL	\$_____	\$_____	\$_____	\$_____	\$_____	\$_____	\$_____	\$_____

Most machinery costs are associated with crop production and should be analyzed with the crop enterprise. Total machinery expenses include the major fixed costs (interest and depreciation), as well as the accrual operating costs. Although machinery costs have not been allocated to individual crops, they are shown below per total tillable acre.

ACCRUAL MACHINERY EXPENSES

58 Northern Hudson Region Dairy Farms, 1993

Machinery Expense Item	Average		My Farm	
	Total Expenses	Per Till. Acre	Total Expenses	Per Till. Acre
Fuel, oil & grease	\$10,229	\$26.78	\$_____	\$_____
Machinery repairs & parts	17,431	45.63	_____	_____
Machine hire, rent & lease	3,205	8.39	_____	_____
Auto expense (farm share)	1,109	2.90	_____	_____
Interest (5%)	6,951	18.20	_____	_____
Depreciation	<u>15,043</u>	<u>39.38</u>	_____	_____
Total	\$53,967	\$141.28	\$_____	\$_____

Dairy Analysis

Analysis of the dairy enterprise can reveal a great deal about the strengths and weaknesses of the dairy farm business. Information on this page should be used in conjunction with DHI and other dairy production information. Changes in dairy herd size and market values that occur during the year are identified in the table below. The change in inventory value without appreciation is attributed to physical changes in herd size and quality. Any change in inventory is included as an accrual farm receipt when calculating all of the profitability measures on pages 6 and 7.

DAIRY HERD INVENTORY

58 Northern Hudson Region Dairy Farms, 1993

Item	<u>Dairy Cows</u>		<u>Heifers</u>				<u>Calves</u>	
	No.	Value	<u>Bred</u>		<u>Open</u>		No.	Value
Beg. year (owned)	110	\$118,863	30	\$27,838	27	\$14,932	28	\$8,238
+ Change w/o apprec.		13,108		2,002		2,602		365
+ Appreciation		<u>369</u>		<u>113</u>		<u>10</u>		<u>75</u>
End year (owned)	120	\$132,340	32	\$29,953	31	\$17,544	29	\$8,678
End incl. leased	122							
Average number	115		88 (all age groups)					

My Farm:

Beg. of year (owned)	_____	\$ _____	\$ _____	\$ _____	\$ _____
+ Change w/o apprec.	_____	_____	_____	_____	_____
+ Appreciation	_____	_____	_____	_____	_____
End of year (owned)	_____	\$ _____	\$ _____	\$ _____	\$ _____
End including leased	_____				
Average number	_____	_____ (all age groups)			

Total milk sold and milk sold per cow are extremely valuable measures of size and productivity, respectively, on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year. Farm managers on DHI should compare milk sold per cow with their rolling herd average on the test date nearest December 31 to see how close the DHI estimate of milk produced is to actual milk sales.

MILK PRODUCTION

58 Northern Hudson Region Dairy Farms, 1993

Item	Average	My Farm
Total milk sold, lbs.	2,195,438	_____
Milk sold per cow, lbs.	19,037	_____
Average milk plant test, percent butterfat	3.74	_____

The cost of producing milk has been compiled using the whole farm method and is featured in the following table. Accrual receipts from milk sales can be compared with the accrual costs of producing milk per cow and per hundredweight of milk. Using the whole farm method, operating costs of producing milk are estimated by deducting nonmilk accrual receipts from total accrual operating expenses including expansion livestock purchased. Purchased inputs cost of producing milk are the operating costs plus depreciation. Total costs of producing milk include the operating costs of producing milk plus depreciation on machinery and buildings, the value of unpaid family labor, the value of operators' labor and management, and the interest charge for using equity capital.

ACCRUAL RECEIPTS FROM DAIRY AND COST OF PRODUCING MILK

58 Northern Hudson Region Dairy Farms, 1993

Item	Average			My Farm		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Costs of Producing Milk</u>						
Operating costs	\$238,335	\$2,067	\$10.86	\$_____	\$_____	\$_____
Purchased inputs costs	\$261,384	\$2,267	\$11.92	\$_____	\$_____	\$_____
Total Costs	\$326,597	\$2,833	\$14.88	\$_____	\$_____	\$_____
<u>Accrual Receipts From Milk</u>						
	\$297,977	\$2,584	\$13.57	\$_____	\$_____	\$_____

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Evaluating these costs per unit of production enables an evaluation of the dairy enterprise.

DAIRY RELATED ACCRUAL EXPENSES

58 Northern Hudson Region Dairy Farms, 1993

Item	Average		My Farm	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrates	\$707	\$3.71	\$_____	\$_____
Purchased dairy roughage	12	.06	_____	_____
Total Purchased Dairy Feed	\$719	\$3.78	\$_____	\$_____
Purchased grain & conc. as % of milk receipts		27%		____%
Purchased feed & crop exp.	\$913	\$4.79	\$_____	\$_____
Purchased feed & crop exp. as % of milk receipts		35%		____%
Breeding	\$42	\$.22	\$_____	\$_____
Veterinary & medicine	82	.43	_____	_____
Milk marketing	199	1.05	_____	_____
Cattle lease	8	.04	_____	_____
Other livestock expense	135	.71	_____	_____

Capital and Labor Efficiency Analysis

Capital efficiency factors measure how intensively the capital is being used in the farm business. Measures of labor efficiency are key indicators of management's success in generating products per unit of labor input.

CAPITAL EFFICIENCY

58 Northern Hudson Region Dairy Farms, 1993

Item	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	\$236,307	\$7,299	\$2,203	\$4,624
Real estate		3,480		2,205
Machinery & equipment	39,500	1,220	368	
Asset turnover ratio	.43			

My Farm:

Farm capital	\$_____	\$_____	\$_____	\$_____
Real estate	_____	_____	_____	_____
Machinery & equipment	_____	_____	_____	_____
Asset turnover ratio	_____			

LABOR FORCE INVENTORY AND ANALYSIS

58 Northern Hudson Region Dairy Farms, 1993

Labor Force	Months	Age	Years of Educ.	Value of Labor & Mgmt.
Operator number 1	10.90	48	13	\$18,379
Operator number 2	5.33	39	14	8,422
Operator number 3	1.92	30	14	3,948
Family paid	4.83			
Family unpaid	3.28			
Hired	<u>16.48</u>			
Total	42.74	/ 12 = 3.56 Worker Equivalent		
		1.51 Operator/Manager Equiv.		

My Farm: Total	_____	/ 12 = _____	Worker Equivalent	
Operator's	_____	/ 12 = _____	Operator/Manager Equiv.	

Labor Efficiency	Average		My Farm	
	Total	Per Worker	Total	Per Worker
Cows, average number	115	32	_____	_____
Milk sold, pounds	2,195,438	616,442	_____	_____
Tillable acres	382	107	_____	_____
Work units	1,227	345	_____	_____

Labor Costs	Total	Average		Total	My Farm	
		Per Cow	Per Cwt.		Per Cow	Per Cwt.
Value of operator(s) labor (\$1,400/mo.)	\$25,410	\$220	\$1.16	\$_____	\$_____	\$_____
Family unpaid (\$1,400/mo.)	4,592	40	.21	_____	_____	_____
Hired	<u>38,515</u>	<u>334</u>	<u>1.76</u>	_____	_____	_____
Total Labor	\$68,517	\$594	\$3.13	\$_____	\$_____	\$_____
Machinery Cost	\$53,967	\$468	\$2.46	\$_____	\$_____	\$_____
Total Labor & Mach.	\$122,484	\$1,062	\$5.59	\$_____	\$_____	\$_____

COMPARATIVE ANALYSIS OF THE FARM BUSINESS

Progress of the Farm Business

Comparing your business with average data from regional DFBS cooperators that participated in both of the last two years can be helpful to establishing your goals for these parameters. It is equally important for you to determine the progress your business has made over the past two or three years, to compare this progress to your goals, and to set goals for the future.

PROGRESS OF THE FARM BUSINESS

Same 42 Northern Hudson Region Farms, 1992 & 1993

Selected Factors	Average of 42 Farms*		My Farm		Goal
	1992	1993	1992	1993	
<u>Size of Business</u>					
Average number of cows	115	127			
Average number of heifers	93	98			
Milk sold, lbs.	2,233,556	2,469,591			
Worker equivalent	3.54	3.74			
Total tillable acres	362	379			
<u>Rates of Production</u>					
Milk sold per cow, lbs.	19,434	19,380			
Hay DM per acre, tons	2.57	2.50			
Corn silage per acre, tons	15	14			
<u>Labor Efficiency</u>					
Cows per worker	32	34			
Milk sold/worker, lbs.	630,895	660,301			
<u>Cost Control</u>					
Grain & conc. purchased as % of milk sales	27%	28%	%	%	%
Dairy feed & crop exp. per cwt. milk	\$4.83	\$4.81	\$	\$	\$
Labor & mach. costs/cow	\$1,059	\$1,036	\$	\$	\$
Operating cost of producing cwt. of milk	\$10.98	\$10.90	\$	\$	\$
<u>Capital Efficiency**</u>					
Farm capital per cow	\$7,698	\$7,335	\$	\$	\$
Mach. & equip. per cow	\$1,243	\$1,185	\$	\$	\$
Asset turnover ratio	.43	.43			
<u>Profitability</u>					
Net farm inc. w/o apprec.	\$41,410	\$41,707	\$	\$	\$
Net farm inc. w/apprec.	\$49,176	\$46,005	\$	\$	\$
Labor & mgt. income per oper./manager	\$4,261	\$3,240	\$	\$	\$
Rate of return on eq. capital w/apprec.	2%	1%	%	%	%
Rate of return on all capital w/apprec.	3%	3%	%	%	%
<u>Financial Summary</u>					
Farm net worth, end year	\$636,824	\$661,028	\$	\$	\$
Debt to asset ratio	.30	.31			
Farm debt per cow	\$2,202	\$2,152	\$		

*Farms participating both years.

**Average for the year.

Regional Farm Business Chart

The Farm Business Chart is a tool which can be used in analyzing your business. Compare your business by drawing a line through or near the figure in each column which represents your current level of performance. The five figures in each column represent the average of each 20 percent or quintile of farms included in the regional summary. Use this information to identify business areas where more challenging goals are needed.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

58 Northern Hudson Region Dairy Farms, 1993

<u>Size of Business</u>			<u>Rates of Production</u>			<u>Labor Efficiency</u>	
Worker Equiv- alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
6.8	241	4,988,598	22,186	3.8	19	46	849,156
3.7	124	2,339,856	19,936	2.8	16	35	668,015
2.9	98	1,614,573	18,518	2.3	14	30	562,988
2.4	61	1,102,422	16,870	2.0	12	26	453,082
1.7	42	717,496	13,994	1.2	8	20	343,047

Cost Control

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(10)	(10)	(11)	(11)	(10)	(10)
\$438	18%	\$312	\$ 770	\$ 594	\$3.60
569	23	404	954	746	4.29
640	27	467	1,068	864	4.60
738	30	528	1,170	946	5.11
926	35	754	1,567	1,195	6.06

<u>Value and Cost of Production</u>			<u>Profitability</u>			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income w/Apprec.	Net Farm Inc. w/o Apprec.	Labor & Mgt. Inc. Per Oper.	Change in Net Worth w/Apprec.
(10)	(10)	(10)	(3)	(3)	(3)	(6)
\$3,041	\$ 8.03	\$12.54	\$121,346	\$115,658	\$39,392	\$110,871
2,694	9.60	14.32	50,935	47,234	9,449	19,991
2,461	10.71	15.22	29,044	27,841	-403	5,319
2,252	11.55	16.52	12,736	12,554	-13,023	-4,441
1,900	13.75	18.94	-18,796	-27,671	-51,877	-58,505

*Page number of the participant's DFBS where the factor is located.

New York State Farm Business Charts

The Farm Business Chart is a tool which can be used in analyzing a business by drawing a line through the figure in each column which represents the current level of management performance. The figure at the top of each column is the average of the top 10 percent of the 357 farms for that factor. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. 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.

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

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS

357 New York Dairy Farms, 1992

<u>Size of Business</u>			<u>Rates of Production</u>			<u>Labor Efficiency</u>	
Worker	No.	Pounds	Pounds	Tons	Tons Corn	Cows	Pounds
Equiv-	of	Milk	Milk Sold	Hay Crop	Silage	Per	Milk Sold
alent	Cows	Sold	Per Cow	DM/Acre	Per Acre	Worker	Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
10.0	428	8,455,437	22,613	4.8	22	52	959,379
5.4	184	3,511,396	21,180	3.7	18	43	797,982
4.1	136	2,551,838	20,249	3.2	17	38	715,818
3.4	107	1,971,002	19,582	3.0	16	34	640,614
3.0	89	1,660,762	18,753	2.7	15	32	587,553
2.6	76	1,366,246	18,065	2.5	15	29	534,745
2.4	64	1,149,820	17,445	2.3	13	27	477,585
2.1	57	964,766	16,486	2.1	12	25	432,399
1.8	48	792,337	15,085	1.8	10	23	389,221
1.2	37	578,602	12,400	1.4	6	18	296,180
<u>Cost Control</u>							
Grain	% Grain is	Machinery	Labor &	Feed & Crop	Feed & Crop		
Bought	of Milk	Costs	Machinery	Expenses	Expenses Per		
Per Cow	Receipts	Per Cow	Costs Per Cow	Per Cow	Cwt. Milk		
(10)	(10)	(11)	(11)	(10)	(10)		
\$348	16%	\$250	\$675	\$497	\$3.23		
484	21	325	803	649	3.77		
556	24	379	867	716	4.09		
618	26	414	926	783	4.36		
665	27	442	993	832	4.55		
712	29	478	1,058	892	4.76		
763	31	512	1,114	943	4.99		
826	32	548	1,180	1,004	5.27		
896	35	608	1,274	1,071	5.70		
1,030	42	796	1,563	1,232	6.76		

*Page number of the participant's DFBS where the factor is located.

**FARM BUSINESS CHART FOR FARM
MANAGEMENT COOPERATORS**
357 New York Dairy Farms, 1992

Milk Receipts Per Cow (10)	Milk Receipts Per Cwt. (10)	Oper. Cost Milk Per Cow (10)	Oper. Cost Milk Per Cwt. (10)	Total Cost Production Per Cow (10)	Total Cost Production Per Cwt. (10)
\$3,086	\$14.64	\$1,068	\$ 6.84	\$1,952	\$11.79
2,861	14.02	1,419	8.27	2,312	13.00
2,732	13.77	1,575	8.96	2,452	13.60
2,638	13.60	1,706	9.62	2,567	14.12
2,527	13.46	1,845	10.15	2,691	14.75
2,434	13.38	1,954	10.67	2,792	15.44
2,340	13.27	2,051	11.07	2,934	16.01
2,199	13.15	2,163	11.51	3,091	16.59
2,023	13.02	2,357	12.18	3,241	17.54
1,684	12.56	2,636	14.08	3,666	21.09

Profitability

<u>Net Farm Income</u>		<u>Return to Operator's Labor, Management, & Equity Capital</u>		<u>Labor & Management Income</u>	
With Appreciation (3)	Without Appreciation (3)	With Appreciation (3)	Without Appreciation (3)	Per Farm (3)	Per Operator (3)
\$275,597	\$218,659	\$272,714	\$216,089	\$152,525	\$111,774
99,964	79,562	97,288	77,148	46,635	33,282
71,930	55,878	68,243	53,019	28,823	20,747
55,060	42,428	52,537	38,519	18,603	12,977
44,009	32,527	39,218	27,999	9,260	6,723
33,724	23,687	29,676	19,523	1,980	1,639
26,725	16,924	22,688	12,394	-4,505	-3,779
18,592	9,627	14,777	5,882	-13,845	-11,067
8,916	353	5,299	-4,196	-23,769	-21,005
-16,432	-31,254	-20,794	-34,417	-61,040	-53,650

Farm Business Charts for farms with freestall barns and 120 cows or less and more than 120 cows, and farms with conventional barns with 60 cows or less and more than 60 cows are shown on pages 28-31.

Financial Analysis Chart

The farm financial analysis chart on page 25 is designed just like the Farm Business Chart and may be used to assess the financial health of the farm business. Most of the financial measures used in the chart are defined on pages 6, 10, 14 and 20 of this publication. References to DFBS output page numbers for participating dairy farmers are provided in the table headings.

FINANCIAL ANALYSIS CHART
357 New York Dairy Farms, 1992

<u>Liquidity (repayment)</u>				
Planned Debt Payments Per Cow (8) *	Available for Debt Service Per Cow (12)	Cash Flow Coverage Ratio (8)	Debt Payments as Percent of Milk Sales (8)	Debt Per Cow (5)
\$ 46	\$840	4.11	5%	\$ 116
191	663	1.75	9	754
276	579	1.37	13	1,302
362	494	1.14	15	1,781
411	440	0.98	17	2,160
458	401	0.86	19	2,521
501	339	0.73	22	2,882
584	274	0.60	25	3,243
677	181	0.29	30	3,735
885	-22	-0.14	38	5,214

<u>Solvency</u>				<u>Profitability</u>	
Leverage Ratio**	Percent Equity (5)	<u>Debt/Asset Ratio</u>		<u>Percent Rate of Return with appreciation on:</u>	
		Current & Intermediate (5)	Long Term (5)	Equity (3)	Investment*** (3)
0.02	98%	0.01	0.00	22%	16%
0.11	90	0.08	0.00	11	10
0.24	81	0.14	0.04	8	8
0.35	73	0.21	0.18	5	6
0.48	68	0.29	0.28	3	4
0.58	63	0.35	0.38	1	3
0.74	57	0.39	0.48	-1	1
0.95	52	0.46	0.57	-4	-1
1.29	44	0.55	0.70	-8	-2
3.20	29	0.77	1.04	-26	-7

<u>Efficiency (Capital)</u>				
Asset Turnover (ratio) (11)	Real Estate Investment Per Cow (11)	Machinery Investment Per Cow (11)	Total Farm Assets Per Cow (11)	Change in Net Worth w/Appreciation (11)
.71	\$1,327	\$ 545	\$ 4,339	\$185,910
.57	2,044	792	5,156	59,227
.52	2,372	942	5,727	40,515
.48	2,667	1,054	6,243	28,384
.45	2,967	1,194	6,680	19,748
.42	3,279	1,358	7,120	13,025
.39	3,663	1,520	7,621	5,269
.35	4,188	1,753	8,236	-2,230
.31	4,861	2,008	9,100	-10,422
.24	7,201	2,722	12,014	-50,747

*Page number of the participant's DFBS where the factor is located.

**Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

***Return on all farm capital (no deduction for interest paid) divided by total farm assets.

Comparison by Type of Barn and Herd Size

When analyzing a dairy farm business by comparing it to a group of farms, it is important that the group of farms have used as many of the same physical characteristics as possible as the farm being analyzed. To assist in this endeavor, dairy farms in the summary have been divided into those with freestall and those with conventional housing. Conventional housing includes stanchion and tiestall barns. Within each group, is a further classification by size of the dairy herd.

The table on page 27 includes the average values for the resulting four groups of dairy farms. The average size of farms in the four groups ranges from 47 cows on the small conventional farms to 250 cows on the large freestall farms. The large conventional farms and small freestall farms averaged approximately the same herd size and rates of milk output per cow.

The large freestall farms averaged the highest milk output per cow and per worker, the lowest total costs of production and investment per cow, and the greatest returns to labor, management and capital. The large conventional farms showed average profits somewhat higher than the small freestall operations. Total costs of production averaged substantially less on the large conventional farms.

Farm business charts have been computed for each of the four housing and herd size categories and are on pages 28-31. By comparing the farm's performance on the most appropriate business chart, a farm manager will be better able to evaluate his or her business performance.

Herd Size Comparisons

A detailed comparison of profitability, financial situation and business analysis factors across herd sizes is contained on pages 40-49 of the 1992 State Summary*. As herd size increases, the average profitability generally increases (pages 42-43). Net farm income without appreciation was \$252,256 per farm for the 300 or more herd size group and \$4,790 per farm for those with less than 40 cows. This relationship generally holds for all measures of profitability including rate of return on capital. However, the 200 to 299 herd size group showed a lower level of profitability in 1992 than the farms with 150-199 cows.

Farm net worth increases rapidly as herd size increases (pages 44-47), even though percent equity was higher on the smaller farms. The 85 to 99 cow group and the group with more than 300 cows demonstrated the strongest ability to make debt payments.

Crop yields showed little relationship to herd size, but fertilizer and lime expenses, and machinery cost per tillable acre generally increased as herd size increased (pages 48-49)*. Milk sold per cow increased as herd size increased, ranging from 17,208 pounds on the farms with less than 40 cows to 19,795 pounds on farms with 300 or more cows. Farm capital per worker increased, and farm capital per cow decreased as herd size increased. Milk sold per worker increased dramatically as herd size increased, ranging from 369,797 pounds at the lowest herd size category up to 923,495 pounds at the largest size category.

*Smith, Stuart F., Wayne A. Knoblauch, and Linda D. Putnam, Dairy Farm Management Business Summary, New York, 1992, Department of Agricultural, Resource, and Managerial Economics, Cornell University, A.E. Res. 93-11, August 1993.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE
328 New York Dairy Farms, 1992

Item	Farms with:		Freestall	
	Conventional			
	<= 60 Cows	>60 Cows	<= 120 Cows	>120 Cows
Number of farms	99	86	59	84
<u>Cropping Program Analysis</u>				
Total Tillable acres	156	276	301	675
Tillable acres rented*	53	90	126	280
Hay crop acres*	100	165	154	268
Corn silage acres*	29	52	75	248
Hay crop, tons DM/acre	2.3	2.6	2.8	3.1
Corn silage, tons/acre	13.4	15.1	13.3	14.9
Oats, bushels/acre	57.0	68.8	60.3	67.6
Forage DM per cow, tons	7.6	7.9	8.7	7.2
Tillable acres/cow	3.3	3.1	3.5	2.4
Fert. & lime exp./til. acre	\$17.79	\$ 21.31	\$ 24.95	\$ 28.81
Total machinery costs	\$22,434	\$39,496	\$46,959	\$114,680
Machinery cost/tillable acre	\$144	\$ 143	\$ 156	\$ 170
<u>Dairy Analysis</u>				
Number of cows	48	89	87	279
Number of heifers	37	70	73	213
Milk sold, lbs.	828,310	1,617,663	1,566,899	5,421,782
Milk sold/cow, lbs.	17,337	18,131	18,042	19,469
Operating cost of prod. milk/cwt.	\$10.09	\$10.12	\$10.54	\$10.61
Total cost of prod. milk/cwt.	\$16.41	\$14.54	\$15.70	\$13.59
Price/cwt. milk sold	\$13.35	\$13.41	\$13.67	\$13.68
Purchased dairy feed/cow	\$713	\$727	\$714	\$750
Purchased dairy feed/cwt. milk	\$4.11	\$4.01	\$3.95	\$3.85
Purc. grain & conc. as % milk rec.	29%	29%	28%	27%
Purc. feed & crop exp./cwt. milk	\$4.81	\$4.73	\$4.98	\$4.62
<u>Capital Efficiency</u>				
Farm capital/worker	\$193,685	\$212,649	\$225,584	\$245,237
Farm capital/cow	\$7,641	\$7,032	\$7,534	\$6,012
Farm capital/til. acre owned	\$3,546	\$3,373	\$3,758	\$4,249
Real estate/cow	\$3,991	\$3,269	\$3,458	\$2,654
Machinery investment/cow	\$1,420	\$1,401	\$1,589	\$997
Asset turnover ratio	0.37	0.41	0.42	0.54
<u>Labor Efficiency</u>				
Worker equivalent	1.89	2.95	2.90	6.83
Operator/manager equivalent	1.15	1.41	1.38	1.71
Milk sold/worker, lbs.	439,237	548,374	540,489	794,151
Cows/worker	25	30	30	41
Labor cost/cow	\$610	\$526	\$563	\$546
Labor cost/tillable acre	\$187	\$170	\$162	\$225
<u>Profitability & Balance Sheet Analysis</u>				
Net farm income (w/o apprec.)	\$15,377	\$35,087	\$26,671	\$105,301
Labor & mgmt. income/operator	\$-1,752	\$7,912	\$-70	\$31,312
Return on all capital w/apprec.	1.1%	4.2%	4.3%	7.9%
Farm debt/cow	\$2,353	\$2,174	\$2,482	\$2,462
Percent equity	70%	69%	67%	58%

*Average of all farms, not only those reporting data.

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS
 99 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1992

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
2.9	60	1,216,307	21,382	3.1	22	46	760,933
2.5	59	1,056,041	19,969	3.1	18	36	627,590
2.3	56	971,222	19,389	2.9	16	30	540,690
2.1	52	904,369	18,540	2.6	15	27	492,638
2.0	50	833,676	18,160	2.4	15	26	454,994
1.8	47	784,602	17,523	2.2	13	24	427,601
1.6	44	741,239	16,512	2.1	12	23	400,809
1.4	42	663,822	15,520	1.9	12	22	369,048
1.2	38	614,828	14,121	1.6	10	20	323,957
1.0	29	460,178	11,563	1.2	4	16	241,563

Cost Control

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(10)	(10)	(11)	(11)	(10)	(10)
\$324	17%	\$251	\$666	\$451	\$3.20
454	23	304	810	582	3.78
531	25	352	917	671	4.12
602	26	396	977	724	4.34
650	28	437	1,049	783	4.52
690	29	470	1,108	849	4.73
729	31	506	1,159	913	4.95
796	33	545	1,212	967	5.33
874	35	599	1,316	1,054	5.90
1,068	43	867	1,680	1,302	6.88

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income w/Apprec.	Net Farm Inc. w/o Apprec.	Labor & Mgt. Inc. Per Oper.	Change in Net Worth w/Apprec.
(10)	(10)	(10)	(3)	(3)	(3)	(6)
\$2,911	\$6.56	\$12.90	\$63,046	\$44,806	\$23,678	\$59,924
2,698	8.05	14.03	45,628	34,597	14,168	35,056
2,574	8.52	14.70	36,269	27,896	9,493	22,019
2,497	9.30	15.40	28,971	22,714	4,888	16,391
2,422	9.88	16.05	24,643	17,420	1,521	12,621
2,322	10.38	16.43	18,479	12,690	-2,983	6,278
2,178	10.84	16.83	14,042	8,549	-7,798	119
2,049	11.31	17.59	8,645	2,239	-13,240	-4,219
1,882	12.23	19.38	3,338	-3,095	-19,918	-9,925
1,468	13.66	23.90	-9,920	-17,335	-38,585	-20,443

*Page number of the participant's DFBS where the factor is located.

FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
 86 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1992

<u>Size of Business</u>			<u>Rates of Production</u>			<u>Labor Efficiency</u>	
Worker	No.	Pounds	Pounds	Tons	Tons Corn	Cows	Pounds
Equiv-	of	Milk	Milk Sold	Hay Crop	Silage	Per	Milk Sold
alent	Cows	Sold	Per Cow	DM/Acre	Per Acre	Worker	Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
4.9	153	2,798,611	22,871	5.0	23	48	876,546
3.7	115	2,136,428	20,905	3.6	19	37	724,109
3.3	101	1,839,098	20,106	3.2	17	34	641,723
3.1	90	1,662,293	19,342	2.9	17	32	592,104
2.9	83	1,550,272	18,385	2.7	16	31	563,811
<hr/>							
2.6	77	1,423,737	17,845	2.5	15	29	512,314
2.5	70	1,333,387	17,054	2.2	13	27	467,326
2.3	67	1,236,304	16,373	2.0	12	25	430,539
2.1	65	1,104,978	15,006	1.8	10	24	397,414
1.8	62	878,461	12,535	1.4	7	21	352,630

Cost Control

Grain	% Grain is	Machinery	Labor &	Feed & Crop	Feed & Crop
Bought	of Milk	Costs	Machinery	Expenses	Expenses Per
Per Cow	Receipts	Per Cow	Costs Per Cow	Per Cow	Cwt. Milk
(10)	(10)	(11)	(11)	(10)	(10)
\$ 311	14%	\$223	\$ 620	\$ 442	\$3.02
411	20	316	747	580	3.60
506	22	369	824	656	3.79
568	24	412	887	707	4.04
636	26	426	945	811	4.41
<hr/>					
710	28	447	1,014	875	4.64
807	31	489	1,075	953	4.93
870	34	523	1,122	1,004	5.19
925	37	563	1,197	1,058	5.60
1,054	42	718	1,372	1,245	6.51

<u>Value and Cost of Production</u>			<u>Profitability</u>			
Milk	Oper. Cost	Total Cost	<u>Net Farm Income</u>		Labor &	Change in
Receipts	Milk	Production	With	Without	Mgmt. Inc.	Net Worth
Per Cow	Per Cwt.	Per Cwt.	Apprec.	Apprec.	Per Oper.	w/Apprec.
(10)	(10)	(10)	(3)	(3)	(3)	(6)
\$3,093	\$ 6.72	\$11.87	\$108,267	\$91,353	\$43,558	\$82,187
2,821	7.90	12.73	74,747	65,766	28,599	41,744
2,690	8.52	13.29	62,248	55,029	23,048	32,305
2,590	9.10	13.68	53,294	43,685	18,555	25,438
2,465	9.66	14.21	45,675	37,569	9,783	15,961
<hr/>						
2,394	10.37	14.75	34,976	28,776	4,808	8,831
2,265	10.88	15.42	27,816	19,963	-1,813	4,654
2,159	11.34	15.91	19,825	12,165	-7,608	-157
2,013	11.76	16.56	11,517	2,831	-17,446	-6,447
1,699	12.91	18.29	-9,556	-20,251	-43,084	-39,646

*Page number of the participant's DFBS where the factor is located.

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
 59 Freestall Barn Dairy Farms with 120 or Less Cows, New York, 1992

<u>Size of Business</u>			<u>Rates of Production</u>			<u>Labor Efficiency</u>	
Worker Equiv- alent (11) *	No. of Cows (11)	Pounds Milk Sold (11)	Pounds Milk Sold Per Cow (10)	Tons Hay Crop DM/Acre (9)	Tons Corn Silage Per Acre (9)	Cows Per Worker (11)	Pounds Milk Sold Per Worker (11)
4.5	118	2,318,393	23,226	5.7	21	53	872,689
3.7	108	2,025,486	20,742	3.9	19	42	770,827
3.4	104	1,905,776	20,075	3.4	18	37	688,683
3.3	97	1,812,755	19,485	3.2	16	34	603,386
3.1	91	1,697,486	18,584	2.9	15	32	571,158

2.7	86	1,557,311	18,036	2.6	14	29	538,989
2.5	80	1,351,124	17,504	2.3	12	27	488,313
2.2	72	1,173,922	16,043	2.0	10	25	433,176
2.0	62	1,022,537	13,200	1.8	8	23	360,361
1.4	45	651,669	11,685	1.3	3	15	270,409

Cost Control

Grain Bought Per Cow (10)	% Grain is of Milk Receipts (10)	Machinery Costs Per Cow (11)	Labor & Machinery Costs Per Cow (11)	Feed & Crop Expenses Per Cow (10)	Feed & Crop Expenses Per Cwt. Milk (10)
\$ 374	16%	\$264	\$ 679	\$ 529	\$3.36
488	20	376	810	653	3.83
551	23	406	872	708	4.24
605	26	448	933	803	4.50
658	28	490	1,011	864	4.83

705	30	538	1,097	924	5.10
749	31	592	1,183	998	5.26
827	33	644	1,290	1,066	5.56
900	35	692	1,449	1,109	6.29
974	39	875	1,741	1,186	6.91

Value and Cost of Production

Profitability

Milk Receipts Per Cow (10)	Oper. Cost Milk Per Cwt. (10)	Total Cost Production Per Cwt. (10)	<u>Net Farm Income</u>		Labor & Mgmt. Inc. Per Oper. (3)	Change in Net Worth w/Apprec. (6)
			With Apprec. (3)	Without Apprec. (3)		
\$3,115	\$ 6.33	\$11.89	\$179,031	\$86,712	\$51,557	\$133,449
2,801	8.39	13.23	79,233	61,053	22,625	55,877
2,718	9.37	14.13	63,081	48,995	10,907	38,686
2,626	9.78	14.97	51,912	36,234	6,110	27,392
2,534	10.13	15.66	41,056	25,578	1,978	19,985

2,451	10.57	16.07	34,711	18,848	- 689	13,594
2,353	11.17	16.67	28,891	15,569	- 4,932	5,705
2,186	11.72	17.68	22,662	9,092	-15,149	-4,431
1,895	12.99	18.98	7,870	- 9,009	-26,857	-13,164
1,694	14.79	20.47	-22,606	-36,917	-65,994	-46,141

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS

84 Freestall Barn Dairy Farms with More Than 120 Cows, New York, 1992

<u>Size of Business</u>			<u>Rates of Production</u>			<u>Labor Efficiency</u>	
Worker Equiv- alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
(11)*	(11)	(11)	(10)	(9)	(9)	(11)	(11)
17.8	827	16,288,987	22,717	5.0	21	60	1,138,851
8.4	370	7,526,000	21,818	4.1	18	47	899,158
7.3	280	5,563,510	21,355	3.6	17	44	845,337
6.2	234	4,442,314	20,495	3.3	16	42	805,033
5.8	205	3,922,439	19,777	3.0	16	40	760,845
5.2	190	3,626,910	19,160	2.8	15	37	731,079
4.8	173	3,324,340	18,228	2.6	14	35	690,044
4.3	158	3,036,766	17,535	2.4	13	33	647,088
3.8	145	2,675,565	16,783	2.2	11	31	598,697
3.2	128	2,294,285	14,619	1.8	7	27	492,796

Cost Control

Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
(10)	(10)	(11)	(11)	(10)	(10)
\$ 411	15%	\$259	\$ 713	\$ 644	\$3.19
556	21	320	810	765	3.86
618	24	366	850	803	4.17
667	25	397	879	819	4.41
701	27	421	924	873	4.55
728	28	441	1,001	910	4.70
768	30	479	1,037	937	4.90
804	31	513	1,099	982	5.12
861	33	553	1,185	1,038	5.44
960	38	691	1,339	1,141	6.23

<u>Value and Cost of Production</u>			<u>Profitability</u>			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income With Apprec.	Without Apprec.	Labor & Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.
(10)	(10)	(10)	(3)	(3)	(3)	(6)
\$3,137	\$ 7.56	\$11.30	\$556,579	\$437,174	\$266,126	\$368,663
2,978	8.92	12.22	219,914	202,962	78,676	133,568
2,893	9.56	12.99	152,924	127,718	43,360	85,566
2,792	10.27	13.36	117,022	95,001	33,386	57,664
2,701	10.82	13.66	100,788	79,566	21,848	41,655
2,597	11.10	13.92	85,282	55,575	10,659	25,685
2,486	11.30	14.55	53,580	37,649	-1,813	16,246
2,365	11.65	15.37	35,584	19,581	-12,922	-1,307
2,297	12.24	16.26	22,661	-954	-34,149	-34,827
2,024	13.58	17.28	-29,806	-56,453	-79,753	-96,233

*Page number of the participant's DFBS where the factor is located.

[illegible]

Worksheet for Setting Goals (continued)

II. Goals

[illegible]

Summarize Your Business Performance

The Farm Business and Financial Analysis Charts on pages 22-25 and 28-31 can be used to help identify strengths and weaknesses of your farm business. Identify three major strengths and three areas of your farm business that need improvement.

Strengths: _____ Needs improvement: _____

[illegible]

GLOSSARY AND LOCATION OF COMMON TERMS

Accounts Payable - Open accounts or bills owed to feed and supply firms, cattle dealers, veterinarians and other providers of farm services and supplies.

Accounts Receivable - Outstanding receipts from items sold or sales proceeds not yet received, such as the payment for December milk sales received in January.

Accrual Expenses - (defined on page 3)

Accrual Receipts - (defined on page 4)

Annual Cash Flow Statement - (defined on page 12)

Appreciation - (defined on page 5)

Asset Turnover Ratio - The ratio of total farm income to total farm assets, calculated by dividing total accrual operating receipts plus appreciation by average total farm assets.

Balance Sheet - A "snapshot" of the business financial position at a given point in time, usually December 31. The balance sheet equates the value of assets to liabilities plus net worth.

Capital Efficiency - The amount of capital invested per production unit. Relatively high investments per worker with low to moderate investments per cow imply efficient use of capital.

Cash From Nonfarm Capital Used in the Business - Transfers of money from nonfarm savings or investments to the farm business where it is used to pay operating expenses, make debt payments and/or capital purchases.

Cash Flow Coverage Ratio - (defined on page 14)

Cash Paid - (defined on page 2)

Cash Receipts - (defined on page 4)

Change in Accounts Payable - (defined on page 3)

Change in Accounts Receivable - (defined on page 4)

Change in Inventory - (defined on page 2)

Current Portion - (defined on page 7)

Dairy (farm) - A farm business where dairy farming is the primary enterprise, operating and managing this farm is a full-time occupation for one or more people and cropland is owned.

Dairy Cash-Crop (farm) - Operating and managing this farm is the full-time occupation of one or more people, cropland is owned but crop sales exceed 10 percent of accrual milk receipts.

Debt Per Cow - Total end-of-year debt divided by end-of-year number of cows.

Debt to Asset Ratios - (defined on page 10)

Deferred Taxes - (defined on page 9)

Dry Matter - The amount or proportion of dry material that remains after all water is removed. Commonly used to measure dry matter percent and tons of dry matter in feed.

Equity Capital - The farm operator/manager's owned capital or farm net worth.

Expansion Livestock - Purchased dairy cattle and other livestock that cause an increase in herd size from the beginning to the end of the year.

Farm Debt Payments as Percent of Milk Sales - Amount of milk income committed to debt repayment, calculated by dividing planned debt payments by total milk receipts. A reliable measure of repayment ability, see page 14.

Farm Debt Payments Per Cow - Planned or scheduled debt payments per cow represent the repayment plan scheduled at the beginning of the year divided by the average number of cows for the year. This measure of repayment ability is used in the Financial Analysis Chart.

Financial Lease - A long-term non-cancellable contract giving the lessee use of an asset in exchange for a series of lease payments. The term of a financial lease usually covers a major portion of the economic life of the asset. The lease is a substitute for purchase. The lessor retains ownership of the asset.

Income Statement - A complete and accurate account of farm business receipts and expenses used to measure profitability over a period of time such as one year or one month.

Labor and Management Income - (defined on page 6)

Labor and Management Income Per Operator - The return to the owner/manager's labor and management per full-time operator.

Labor Efficiency - Production capacity and output per worker.

Liquidity - Ability of business to generate cash to make debt payments or to convert assets to cash.

Net Farm Income - (defined on page 5)

Net Worth - The value of assets less liabilities equal net worth. It is the equity the owner has in owned assets.

Operating Costs of Producing Milk - (defined on page 19)

Opportunity Costs - The cost or charge made for using a resource based on its value in its most likely alternative use. The opportunity cost of a farmer's labor and management is the value he/she would receive if employed in his/her most qualified alternative position.

Other Livestock Expenses - All other dairy herd and livestock expenses not included in more specific categories. Other livestock expenses include; bedding, DHIC, milk house and parlor supplies, livestock board, registration fees and transfers.

Part-Time Cash-Crop Dairy (farm) - Operating and managing this farm is not a full-time occupation, crop sales exceed 10 percent of accrual milk receipts and cropland is owned.

Part-Time Dairy (farm) - Dairy farming is the primary enterprise, cropland is owned but operating and managing this farm is not a full-time occupation for one or more people.

Personal Withdrawals and Family Expenditures Including Nonfarm Debt Payments - All the money removed from the farm business for personal or nonfarm use including family living expenses, health and life insurance, income taxes, nonfarm debt payments, and investments.

Profitability - The return or net income the owner/manager receives for using one or more of his or her resources in the farm business. True "economic profit" is what remains after deducting all the costs including the opportunity costs of the owner/manager's labor, management, and equity capital.

Purchased Inputs Cost of Producing Milk - (defined on page 19)

Repayment Analysis - An evaluation of the business' ability to make planned debt payments.

Replacement Livestock - Dairy cattle and other livestock purchased to replace those that were culled or sold from the herd during the year.

Return on Equity Capital - (defined on page 7)

Return on Total Capital - (defined on page 7)

Return to Operators' Labor, Management, and Equity Capital - (defined on page 6)

Solvency - The extent or ability of assets to cover or pay liabilities. Debt/asset and leverage ratios are common measures of solvency.

Total Costs of Producing Milk - (defined on page 19)

Whole Farm Method - A procedure used to calculate costs of producing milk on dairy farms without using enterprise cost accounts. All non-milk receipts are assigned a cost equal to their sale value and deducted from total farm expenses to determine the costs of producing milk.

INDEX

	<u>Page(s)</u>		<u>Page(s)</u>
Accounts Payable	3,8	Financial Analysis Chart ...	25
Accounts Receivable	4,8	Financial Lease	8
Accrual Expenses	3,5	Income Statement	2
Accrual Receipts	4,5	Inflows	12
Acreage	16	Labor and Management	
Advanced Government		Income	6
Receipts	7,8	Labor and Management	
Age	20	Income Per Operator	6
Amount Available		Labor Efficiency	20
for Debt Service.....	14	Land Resources	16
Annual Cash Flow		Liquidity	10
Statement	12	Lost Capital	10
Appreciation	5,11,18	Machinery Expenses	3,17
Asset Turnover Ratio.....	20	Milking Frequency	2
Balance Sheet	8	Milk Production	18
Barn Type	2	Milking System	2
Business Type	2	Money Borrowed	12
Capital Efficiency	20	Net Farm Income	5
Cash From Nonfarm		Net Investment	10
Capital Used in		Net Worth	8
the Business	12	Number of Cows.....	18
Cash Flow Coverage Ratio ..	14	Operating Costs of	
Cash Paid	2	Producing Milk	19
Cash Receipts	4,12	Opportunity Cost	6
Change in Accounts		Other Livestock Expenses ...	3
Payable	3	Outflows	12
Change in Accounts		Part-Time Cash-Crop	
Receivable	4	Dairy (farm)	2
Change in Inventory	2,3	Part-Time Dairy (farm)	2
Change in Net Worth	11	Percent Equity.....	9,10
Crop Expenses	3,17	Personal Withdrawals and	
Crop/Dairy Ratios	16	Family Expenditures	
Current Portion.....	7,8	Including Nonfarm	
Dairy (farm)	2	Debt Payments	12
Dairy Cash-Crop (farm)	2	Principal Payments	12
Debt Per Cow	10	Profitability	4
Debt to Asset Ratios	10	Receipts	4
Deferred Taxes	9	Record System	2
Depreciation	3,10	Repayment Analysis	14
Dry Matter	16	Replacement Livestock	3
Education	20	Retained Earnings.....	11
Equity Capital	7	Return on Equity Capital ...	7
Expansion Livestock	3,12	Return on Total Capital ...	7
Expenses	3	Return to Operator's	
Farm Business Chart.....	22,23,	Labor, Management,	
.....	24,25,28	and Equity Capital	6
.....	29,30,31	Solvency	10
Farm Debt Payments		Total Costs of	
as Percent of		Producing Milk	19
Milk Sales	13	Whole Farm Method	19
Farm Debt Payments		Worker Equivalent	20
Per Cow	13	Yields Per Acre	16

OTHER A.R.M.E. EXTENSION BULLETINS
(Formerly A.E. Extension Publications)

No. 94-04	The Cornell Program on Dairy Markets and Policy Summary of Activities, 1989 to 1993	Andrew M. Novakovic
No. 94-05	Bibliography of Horticultural Product Marketing and Related Topic Papers, Second Edition	Enrique E. Figueroa
No. 94-06	DFBS Expert System For Analyzing Dairy Farm Businesses Users' Guide for Version 4.0	Linda D. Putnam Stuart F. Smith
No. 94-07	Dairy Farm Business Summary Western Plain Region 1993	Stuart F. Smith Linda D. Putnam Jason Karszes Michael Stratton David Thorp
No. 94-08	Dairy Replacement Programs: Costs & Analysis Western New York, 1993	Jason Karszes
No. 94-09	Dairy Farm Business Summary Northern New York Region 1993	Stuart F. Smith Linda D. Putnam George Allhusen Patricia Beyer German Davalos Anita Deming Gleason Wally George Yarnall
No. 94-10	Dairy Farm Business Summary Central New York and Central Plain Regions 1993	Wayne A. Knoblauch Linda D. Putnam James A. Hilson A. Edward Staehr Michael L. Stratton
No. 94-11	Dairy Farm Business Summary Western Plateau Region 1993	George L. Casler Andrew N. Dufresne Joan S. Petzen Carl W. Albers Stuart F. Smith Linda D. Putnam