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RATES AND PATTERNS OF CHANGE IN NEW YORK DAIRY FARM NUMBERS AND PRODUCTIVITY

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ABSTRACT

Dairy farm numbers are declining in nearly every region and county of New York State but the rate of decline varies between years and counties. Converting inefficient or unprofitable farm resources to nonfarm use is part of the adjustment process. New York dairy counties are at different stages of this process.

Increasing dairy farm productivity to remain economically viable and competitive is also part of the adjustment process. Fifteen of New York's 23 largest dairy counties have increased average milk output per farm at rates greater than the State average. The dairy farming industry in these counties is in the most competitive position.

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Milk Market Administrator's Statistics compiled and distributed by W.C. Wasserman, Cornell Cooperative Extension Milk Marketing Specialist, show the total number of milk producers and the quantity of milk shipped from New York counties in December for several years. A summary and analysis of these data reveals interesting patterns of change that are affecting and will continue to affect our dairy farming industry. The same data source was used in A.E. Ext. 91-21, New York Milk Production From 1979 to 1989: A County and Regional Analysis by Kevin E. Jack and Andrew M. Novakovic. Our more recent study provides an update and supplements the indepth summary and analysis published by Mr. Jack and Professor Novakovic.

Changes in Number of Dairy Farms

Table 1 shows the top 20 New York dairy counties determined by number of producers or farms shipping milk to all federal and state markets in December of 1991. December 1991 data is compared with December 1990 to determine change.

Table 1. Top 20 New York Dairy Counties by Farms Shipping Milk, December 1990 and December 1991

County	Number of Producers		Change	
	12/90	12/91	Number	Percent
St. Lawrence	661	630	-31	-4.7
Oneida	485	468	-17	-3.5
Lewis	445	439	-6	-1.3
Jefferson	438	426	-12	-2.7
Otsego	438	424	-14	-3.2
Chautauqua	433	416	-17	-3.9
Steuben	412	405	-7	-1.7
Herkimer	381	365	-16	-4.2
Madison	364	355	-9	-2.5
Wyoming	367	355	-12	-3.3
Chenango	374	352	-22	-5.8
Cattaraugus	329	319	-10	-3.0
Delaware	333	312	-21	-6.3
Franklin	305	291	-14	-4.8
Washington	306	287	-19	-6.2
Montgomery	278	268	-10	-3.6
Clinton	258	240	-18	-7.0
Cayuga	238	229	-9	-3.8
Cortland	239	223	-16	-6.7
Erie	226	216	-10	-4.4
Total, New York State	10,255	9,840	-415	-4.0

St. Lawrence County still has the greatest number of dairy farms although it lost 31 producers for a 4.7 percent decline in 1991. Each of the 20 counties showed a decline in producer numbers ranging from -7.0 percent in Clinton to -1.3 percent in Lewis County. The total for all counties is a decline of 415 producers or -4 percent.

Table 2 includes the five New York counties that show the greatest rates of decline and, the one county with a significant increase, in the number of dairy farms from December 1990 to December 1991.

Table 2. New York Counties Showing the Greatest Rates of Decline and Increase in Number of Dairy Farms, December 1990 to December 1991

County	Number of Producers		Change in Producers	
	12/90	12/91	Number	Percent
Albany	29	22	-7	-24.1
Greene	42	33	-9	-21.4
Essex	39	34	-5	-12.8
Tioga	169	149	-20	-11.8
Columbia	108	97	-11	-10.2
Yates	145	151	+6	+4.1

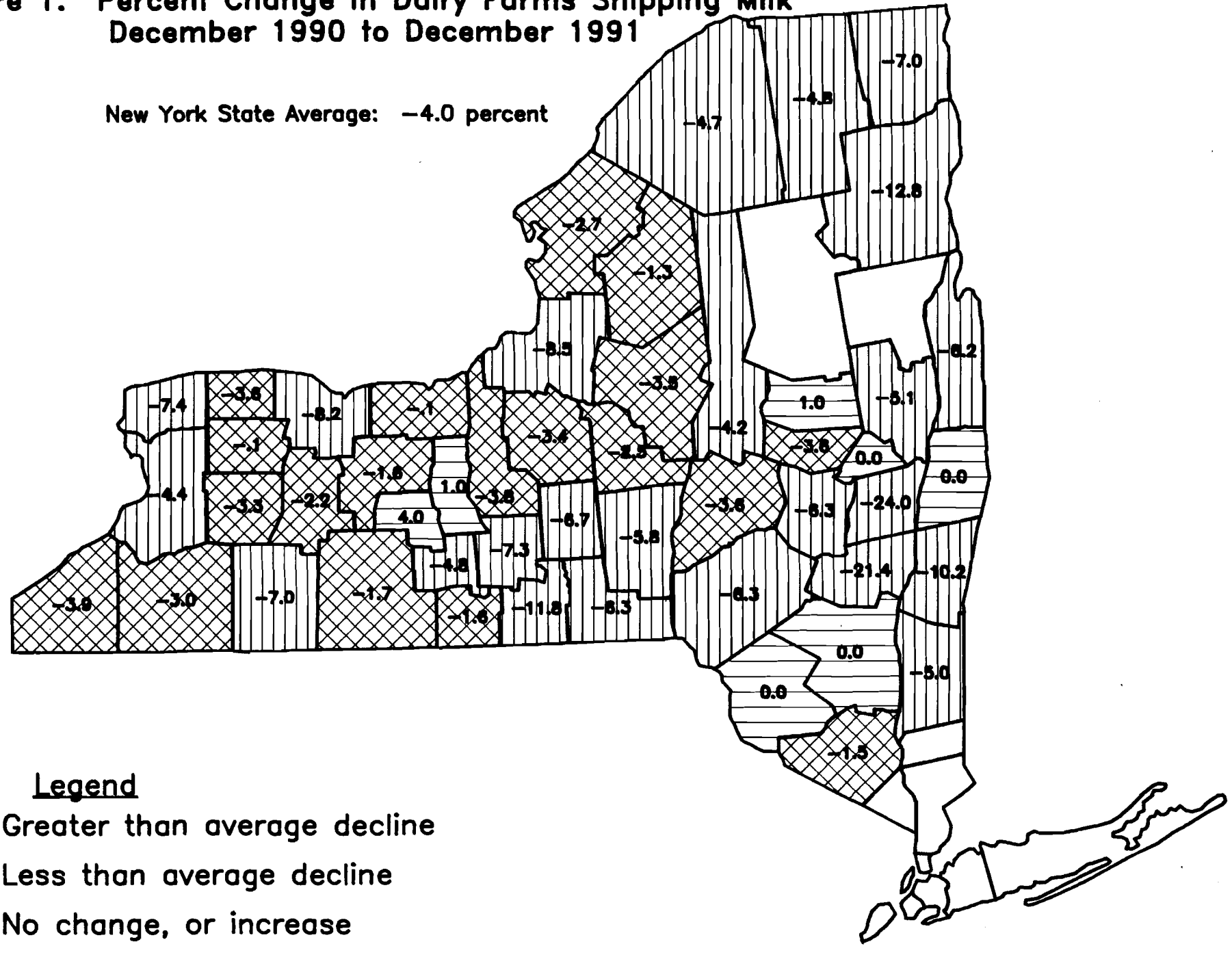
Albany County experienced the greatest percentage decline in dairy farms with a loss of 24.1 percent and Greene County lost 21.4 percent. Yates was the only county with a significant increase. Seneca and Fulton Counties each showed an increase of one producer from December 1990 to December 1991.

Figure 1 shows the pattern of decline of milk producers in New York State from December 1990 to December 1991. The greatest rates of decline occurred in the Eastern Southern Tier, Hudson Valley, and Northern New York counties. Most Central and Western New York counties experienced less than average declines in dairy farm numbers. The Western New York urban counties show above average declines.

Notable exceptions to regional patterns are the three southeastern counties (Sullivan, Orange, and Ulster) that lost a total of only two producers, Rensselaer County that lost none, Jefferson and Lewis Counties with rates of decline much less than other northern counties, and Allegany County which lost nearly as many dairy producers as Cattaraugus and Steuben Counties combined.

Figure 1. Percent Change in Dairy Farms Shipping Milk December 1990 to December 1991

New York State Average: −4.0 percent



Legend

- Greater than average decline
- Less than average decline
- No change, or increase

The 1991 decline of New York dairy farms shipping milk was not as great as many of us expected. I estimated an 18 month decline of up to 10 percent when farm milk prices hit bottom in the winter of 1991. Lack of off-farm employment opportunities, a gradual upturn in milk prices, and improved management practices held the 1991 decline to four percent.

The 1991 decline in New York dairy farms shipping milk is compared to declines that occurred since December 1983 in Table 3. The greatest decline occurred in 1986 and included many of the 542 herds sold as part of the National Dairy Herd Buyout program. It is difficult to determine what the rate of decline over the last five years would have been without the buyout program. It is reasonable to believe that it would not have been significantly different than the 25.2 percent decline shown in Table 3 but more of the decline would have occurred in 1988 through 1991.

Table 3. Number of New York Dairy Farms Shipping Milk, December 1983 to December 1991

Date	Number of Producers Shipping Milk	Change from Prior Data	
		Number	Percent
December 1983	13,937		
December 1984	13,553	-384	-2.8
December 1985	13,156	-397	-2.9
December 1986	12,174	-982	-7.5
December 1987	11,645	-529	-4.3
December 1988	11,053	-592	-5.1
December 1989	10,503	-550	-5.0
December 1990	10,255	-248	-2.4
December 1991	9,840	-415	-4.0
Total change since 1983:	-4,097 farms,	-29.4% (annual rate -3.7)	
Total change since 1985:	-3,316 farms,	-25.2% (annual rate -4.2)	

The 1991 decline rate of 4.0 percent is somewhat higher than the annual decline of 3.7 percent over the last eight years and somewhat below the most recent six year decline of 4.2 percent per year.

Figure 2 shows the pattern of dairy farm decline that occurred throughout New York State from December 1985 to December 1991. Greater than average rates of decline were predominate in the South Central, Southeastern, and Hudson regions. Several Northern and Western New York counties lost more than 25 percent of their dairy farms during that six year period. Most of the Oneida-Mohawk and Finger Lakes region counties experienced farm number declines of less than 25 percent. Yates and Seneca Counties showed an increase of 26.5 percent and 2.5 percent, respectively.

The rate of dairy farm decline has increased in 10 of the 20 New York counties reporting 200 or more milk producers in December 1991. The annual rate of decline during the five year period prior to 1991 is compared to the percentage of dairy farms lost in 1991 in Table 4. Three Northern New York and three Western New York counties show a significant increase in the rate of decline. Two of the three Western New York counties reported less than the 4.0 New York State average decline rate for 1991.

In addition to the major counties listed in Table 4, substantial increases in the rate of decline in dairy farm numbers occurred in Tioga, Greene, Albany, Oswego, Allegany, Essex, Columbia, Monroe, and Niagara Counties. Six are in or near rapidly growing urban areas. The demand and opportunities for off-farm employment and alternative use of farm land may continue to spur the exit from dairy farming in these counties.

New York counties losing dairy farm numbers at a decreasing rate are listed in Table 5. One can reason that the rate of dairy farm disappearance declined in Jefferson, Delaware, Cattaraugus, and a few other counties because they lost a higher than average percent of their farms between 1985 and 1990. Why did rates decline in Lewis, Steuben, and Oneida Counties where rates of decline were below average during the five years prior to 1991? Perhaps the transition occurred before 1985, a major decline is yet to come, or more farmers are migrating into these counties.

Figure 2. Percent Change in Dairy Farms Shipping Milk December 1985 to December 1991

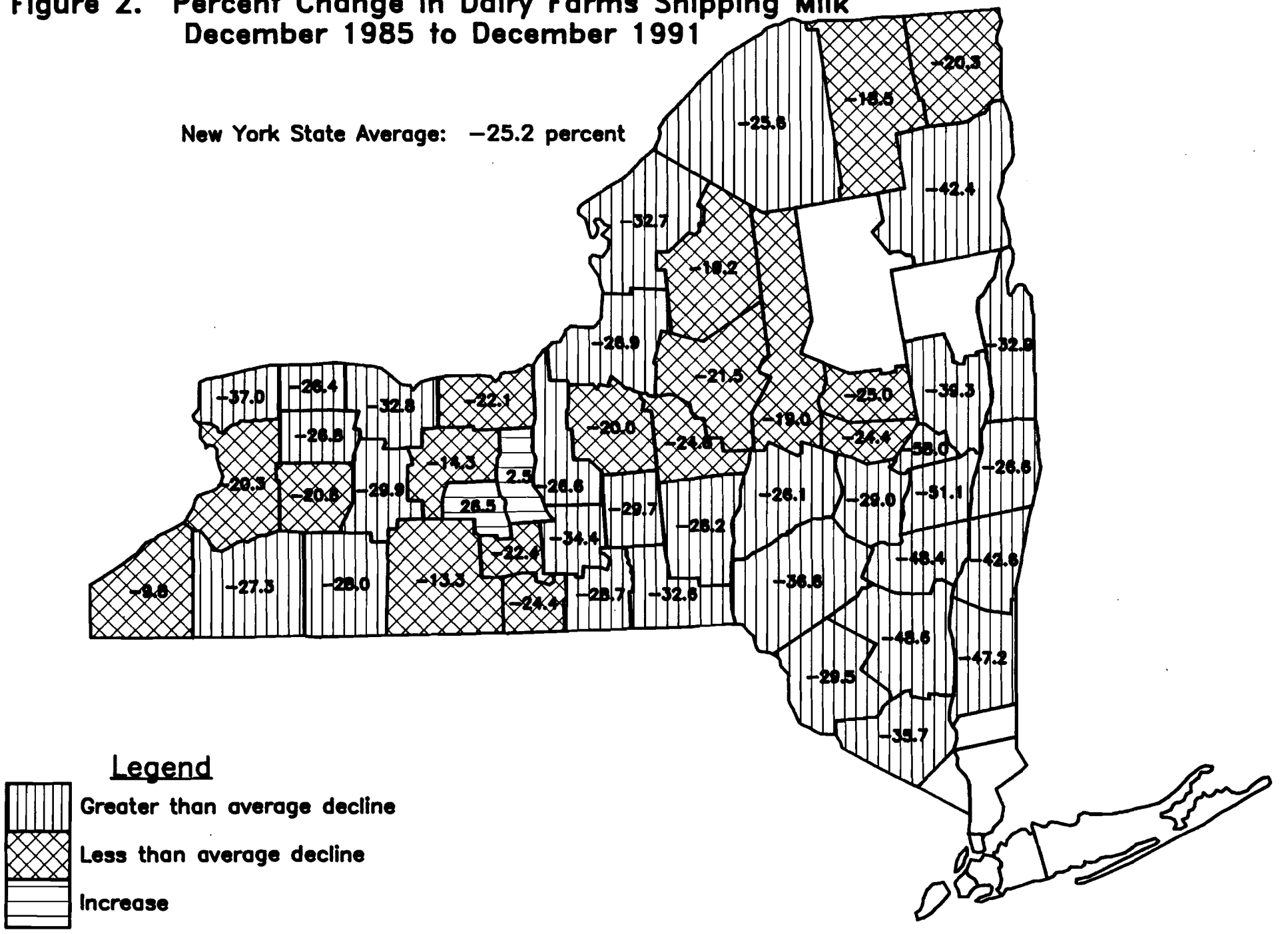


Table 4. Major New York Dairy Counties* Losing Dairy Farms at an Increasing Rate

County	Annual Rate of Decline	
	12/85 to 12/90	12/90 to 12/91
Clinton	-2.9	-7.0
Franklin	-2.9	-4.8
Cortland	-4.9	-6.7
Chenango	-4.3	-5.8
Chautauqua	-1.2	-3.9
Erie	-3.3	-4.4
Herkimer	-3.1	-4.2
Washington	-5.7	-6.2
Wyoming	-2.9	-3.3
St. Lawrence	-4.4	-4.7

*Counties with 200 or more dairy producers, December 1991.

Table 5. Major New York Dairy Counties* Losing Dairy Farms at an Decreasing Rate

County	Annual Rate of Decline	
	12/85 to 12/90	12/90 to 12/91
Jefferson	-6.2	-2.7
Lewis	-3.6	-1.3
Steuben	-2.9	-1.7
Madison	-4.6	-2.5
Cattaraugus	-5.0	-3.0
Otsego	-4.7	-3.2
Montgomery	-4.7	-3.6
Cayuga	-4.7	-3.8
Oneida	-3.7	-3.5
Delaware	-6.5	-6.3

*Counties with 200 or more dairy producers, December 1991.

Other counties losing dairy farms at a decreasing rate include Rensselaer, Sullivan, Ulster, Dutchess, Ontario, Orleans, Genesee, and Livingston.

Yates County has experienced a significant increase in dairy producers. The number of farms shipping milk has increased from 111 in December 1985 to 151 in December of 1991. The annual rate of increase averaged 6.2 percent in the five years prior to 1991 and 4.1 percent in 1991. The migration of Amish and Mennonite farmers to Yates and other counties has had a positive impact on the changes in dairy farm numbers.

Changes in Farm Size and Productivity

Recognizing the rates and patterns of change in New York dairy farm numbers is fundamental to gaining a perspective of what is happening to the New York dairy farming industry. Recognizing the changes that have occurred in farm size and productivity are of equal importance for they are an indication of the adoption rate and use of new technologies by New York dairy farmers. Counties that are experiencing rapid growth in productivity per farm are adjusting and strengthening their dairy production industries. Counties that have experienced less than average increases in productivity are still facing major changes in farm size and numbers.

Table 6 lists the leading New York State dairy counties that experienced above average rates of growth in milk sold per farm from December 1985 to December 1991 or from December 1990 to December 1991. There were 23 leading dairy counties that shipped over 20 million pounds of milk in December of 1991, 15 show above average increases in milk sold per farm over the last six years or in 1991.

Livingston and Wyoming Counties experienced the most dramatic rates of growth in dairy farm production since 1985. Nine other counties had six year growth rates ranging from 31 to 45 percent, all above the 30.4 percent New York State average rate of increase. Franklin, Chautauqua, Otsego, and Erie Counties show below average increases in milk output per farm over the last six years but above average increases in 1991.

Table 6. Leading New York State Counties* with Above Average Rates of Increase in Milk Sold Per Farm

County	Milk/Farm, Cwt. December 1991	Percent Increase 1985 to 1991	Percent Increase 1991
Livingston	1,829	76.4	7.9
Wyoming	1,534	53.0	8.0
Clinton	970	45.3	10.3
Genesee	1,835	44.9	8.9
Cattaraugus	803	41.9	10.0
Cayuga	1,357	40.0	12.0
Montgomery	876	37.7	8.1
Washington	1,131	36.4	8.4
St. Lawrence	727	33.9	10.0
Cortland	1,081	31.2	9.1
Onondaga	1,266	30.9	6.3
Franklin	741	26.9	8.6
Chautauqua	723	25.3	13.0
Otsego	767	24.7	9.8
Erie	947	22.2	8.2
New York Average	926	30.4	7.6

*Counties shipping more than 20,000,000 pounds of milk in December 1991.

In 1991, the most rapid increases in milk sold per farm occurred in Chautauqua, Cayuga, Clinton, Cattaraugus, and St. Lawrence Counties. The average annual rate of growth in milk production per farm more than doubled in these five counties, when 1991 is compared to the previous five years. Growth rates also increased in Genesee, Montgomery, Washington, Cortland, and Onondaga Counties. Livingston and Wyoming Counties continued to increase farm productivity at above average rates in 1991 even though the rates of growth they established over the previous five years were somewhat higher.

Continuation and Shift of Adjustment Process

The dairy farming industry in the first 11 counties listed on Table 6 appears to be fully involved in adjustment and change. Most of these counties lost dairy farms at or above the average rate of decline (25.2 percent) over the last six years. Remaining farms have grown in size and productivity. Only St. Lawrence, Cattaraugus, and Montgomery remain below the State average of 926 hundredweight of milk sold per farm.

The dairy farmers in the last four counties listed on Table 6 were somewhat later in initiating the adjustments and changes that are reflected in above average growth of farm productivity. If they maintain the rates of gain established in 1991 they will become competitive.

Selected 1991 Dairy Farm Business Summary (DFBS) data from 154 farms in the 10 counties showing the greatest increase in milk sold per farm are presented and compared to New York State DFBS averages in Table 7. The average productivity and profitability of the DFBS farms in these 10 counties exceeds the State DFBS average by 650,000 pounds of milk and $10,772 per farm.

Table 7. Average Size, Productivity and Profitability of DFBS Farms in Ten Leading Counties with Greatest Increase in Milk Sold Per Farm, 1991

County	Number of DFBS Farms	Average Number Cows	Cwt. Milk Sold Per Farm	Average Net Farm Income (w/o Apprec.)
Livingston	9	154	29,393	$39,010
Wyoming	21	306	58,998	72,829
Clinton	7	74	12,821	9,744
Genesee	8	171	29,410	20,216
Cattaraugus	24	81	12,969	19,650
Cayuga	20	186	34,442	66,550
Montgomery	16	81	15,041	23,227
Washington	21	116	21,446	19,186
St. Lawrence	24	115	21,131	38,107
Cortland	4	81	15,988	30,239
Ten Counties	154	144	26,563	$37,163
New York State	407	111	20,060	$26,391

The eight counties listed in Tables 8 and 9 shipped more than 20 million pounds of milk in December 1991 but they experienced below average gains in milk output per farm from December 1985 to December 1991 and during 1991. Madison is the only County that has above average milk output per farm, and this was achieved before 1985. Although three of these counties (Delaware, Jefferson, and Chenango) have lost from 26 to 37 percent of their dairy producers in the last six years, all face major change in the future. They must nearly double their annual increases in milk sales per farm to avoid falling

further behind and increase another 34 percent to bring production per farm up to a competitive average.

Table 8. Leading New York State Dairy Counties with Below Average Rates of Gain in Milk Sold Per Farm

County	Milk/Farm, Cwt. December 1991	Percent Increase 1985 to 1991	Percent Increase 1991
Chenango	824	30.0	2.9
Lewis	833	25.5	5.7
Jefferson	837	25.3	2.5
Delaware	830	24.4	6.6
Oneida	753	24.0	5.8
Madison	1,002	23.8	4.9
Herkimer	791	20.6	6.6
Steuben	751	20.0	6.7

*Counties shipping more than 20,000,000 pounds of milk in December 1991.

The average DFBS data in Table 9 is consistent with that presented in Table 8. The average size, productivity and profitability of these 124 farms is below the New York State DFBS average by 29 cows, 683,000 pounds of milk and $6,391 per farm. DFBS farms in the 10 rapid gain counties (Table 7) averaged 76 percent more cows per farm, 100 percent more milk sold and 86 percent greater net farm income compared to DFBS farms in these slow gain counties.

Table 9. Average Size, Productivity and Profitability of DFBS Farms in Eight Leading Counties with Below Average Rates of Gain in Milk Sold Per Farm, 1991

County	Number of DFBS Farms	Average Number Cows	Cwt. Milk Sold Per Farm	Average Net Farm Income (w/o Apprec.)
Chenango	23	104	18,751	$28,212
Lewis	10	66	11,424	27,274
Jefferson	21	91	16,524	19,186
Delaware	29	65	11,315	18,318
Oneida	18	73	12,570	19,020
Madison	9	96	17,526	28,727
Herkimer	2	105	17,735	11,715
Steuben	12	77	12,651	3,984
Eight Counties	124	82	13,227	$20,000
New York State	407	111	20,060	$26,391

*Counties shipping more than 20,000,000 pounds of milk in December 1991.

Summary

The challenges and opportunities facing our New York State dairy farm industry are numerous. The dairy farming industry is most competitive in counties where above average levels of productivity and annual rates of improvement have been achieved. Counties that shipped less than 900 hundredweight of milk per farm in December 1991 and are experiencing below average increases in productivity are vulnerable and may lose a large number of dairy farms in the next five years. The adjustments and transition to an industry that will remain competitive and profitable throughout the 1990's has not reached completion in any of our dairy counties. All will continue to lose some farms, all provide opportunities for further improvement and growth in productivity.

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