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New York Economic Handbook 2006

Department of Applied Economics and Management
College of Agriculture and Life Sciences
Cornell University
Ithaca, NY 14853-7801

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For additional copies, contact:

Linda Putnam
Dept. of Applied Economics and Management
Agricultural Finance and Management Group
305 Warren Hall
Cornell University
Ithaca, New York 14853-7801

E-mail: ldp2@cornell.edu
Fax: 607-255-1589
Phone: 607-255-8429

Or visit:
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*Faculty and staff in the Department of Applied Economics and Management, Cornell University, except Stanley Telega, Senior Extension Associate, Department of Animal Science, Cornell University.

This publication contains information pertaining to the general economic situation and New York agriculture. It is prepared primarily for use by professional agricultural workers in New York State. USDA reports provide current reference material pertaining to the nation's agricultural situation. Many of these reports are available on the internet. Click on "Newsroom" at the following website: *http://www.usda.gov/wps/portal/usdahome*

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Chapter 1. Websites for Economic Information and Commentary

Steven C. Kyle, Associate Professor

1. http://rfe.wustl.edu/EconFAQ.html *Resources for Economists*
   This American Economics Association website has an encyclopedic list of all sorts of web-based economics sites.

2. http://www.economagic.com/ *Economagic -- Economic Times Series Page*
   Economagic is an excellent site for all kinds of U.S. economic data, including national income accounts, the Federal Reserve, the Bureau of Labor Statistics and more. The site includes a very useful graphing function and allows downloads to excel worksheets as well as simple statistical functions.

3. http://www.econstats.com/ *Economic Statistics*
   EconStats is another site with links to all kinds of US data. It also has links to data for many other countries.

4. http://www.whitehouse.gov/fsbr/esbr.html *Economics Statistics Briefing Room*
   This is the White House site for overall economics statistics. This also includes links to other parts of the government.

5. http://www.cbpp.org/index.html *Center on Budget and Policy Priorities*
   The Center on Budget and Policy Priorities is a non-partisan web site that focuses on economic policies related to the budget and their effects on low- and moderate-income people.

6. http://www.argmax.com/ *ArgMax*
   This is an excellent site for economic news, data links and analysis.

7. http://www.econlib.org/ *Library of Economics and Liberty*
   The Library of Economics and Liberty web site features articles and links to many books and other economics related resources.

8. http://cf.heritage.org/budget/cbo/BudgetTreeStart.cfm *Heritage Foundation*
   The Heritage Foundation comments on economic policy from a conservative viewpoint. This link takes you to a very useful federal budget calculator that will help you understand what the federal government spends its money on and where they get the money from.

9. http://www.kowaldesign.com/budget/ *Budget Explorer*
   This site contains a budget explorer which I like because it allows you not only to calculate your own budget but also links to the various executive branch departments with spending authority, so you can see exactly where the money is going.

10. http://www.concordcoalition.org/ *The Concord Coalition*
    The Concord Coalition is a non-partisan group advocating a balanced budget. Their site contains very useful graphs and projections showing what current taxing and spending proposals mean for the federal budget in the years ahead.

11. http://www.economy.com/dismal/ *The Dismal Scientist*
    This is a very good web site for evaluations of current statistics and policy.

12. http://www.federalbudget.com/ *National Debt Awareness Center*
    The National Debt Awareness Center has a useful graph providing up to date information on the size of the national debt and what the Federal Government is spending money on.

13. http://www.ombwatch.org/ *OMB Watch*
    OMB Watch is another web site devoted to information on what is happening to the federal budget. Click on http://w3.access.gpo.gov/usbudget/fy2004/maindown.html to link to OMB's own presentation of the 2004 budget.

14. http://www.brook.edu/default.htm *The Brookings Institution*
    The Brookings Institution publishes lots of good articles on current economic and political policy.

15. http://www.realtor.org/PublicAffairsWeb.nsf/pages/NARNewsReleases *National Assoc. of Realtors*
    Check this site if you want information on real estate.

16. http://www.census.gov/ *U.S. Census Bureau*
    The U.S. Census Bureau web site provides demographic and population numbers.

17. http://www.briefing.com/FreeServices/ *Briefing.com*
    For a more in-depth analysis of stock and bond markets and the factors that influence them, check out Briefing.com.

18. http://www.imf.org/ *International Monetary Fund*
    The International Monetary Fund is an excellent site for data on all member countries, with a particular emphasis on balance of payments, exchange rate and financial/monetary data.

19. http://www.worldbank.org/worldbank.htm *The World Bank Group*
    The World Bank has cross country data on a wide variety of subjects.

20. http://www.undp.org/ *United Nations Development Programme*
    The UNDP has cross country data with a particular focus on measures of human welfare and poverty.

21. http://www.fao.org/ *Food and Agriculture Organization of the UN*
    The Food and Agriculture Organization of the UN has cross country information on food and agriculture.

22. http://datacentre2.chass.utoronto.ca/pwt/ *Penn World Tables*
    The Penn World Tables are a useful source for a variety of economic data series not available from other sources.

23. http://www.bls.gov/fls/ *U.S. Department of Labor, Foreign Labor Statistics*
    The Foreign Labor Statistics program provides international comparisons of hourly compensation costs; productivity and unit labor costs; labor force, employment and unemployment rates; and consumer prices. The comparisons relate primarily to the major industrial countries, but other countries are included in certain measures.

24. http://www.kyle.aem.cornell.edu/ *Professor Kyle's Web Site*
    Visit my web site for information about me, material contained in this chapter, and my work in the area of economic policy.

Chapter 2. The Marketing System

Kristen S. Park, Extension Associate

Special Topic—Organics Still Appeal

When is a trend not a fad? It is often costly and time consuming for the food industry to breed new varieties, plant new crops, or re-engineer products on a whim of a consumer fad. Yet in a highly competitive environment, a company, no matter where its place in the supply chain, must be able to act quickly to take advantage of innovative opportunities. In any product life cycle, those who enter early often reap the rewards. So it is an important to be able to determine when or if market hype is actually an indication of an important trend and opportunity or whether it is a fad which will fade before new product development costs can be repaid.

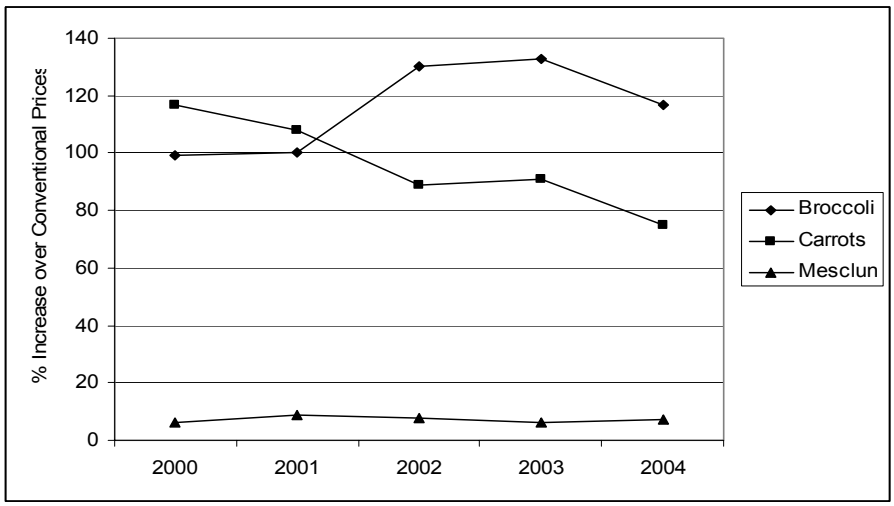
Organics have firmly established itself as a trend in the U.S. and around much of the developed countries. The *National Business Journal* estimates that U.S. sales of organic foods and beverages were approximately $10.4 billion in 2003 and will reach $17.8 billion by 2007. Percent growth is expected to continue in the teens. That said, organics remains a niche market, albeit a highly profitable one, with slightly under 2% of U.S. food and beverage sales.

Price premiums in most stages of the marketing channel provide the incentive for growth—growth at the farm level, distribution, and retail. It remains to be seen whether sufficient incentives exist within foodservice. In Figure 2 – 1 below, price premiums for 3 commodities were calculated by USDA-ERS researchers (Oberholtzer, et al., 2005). It should be noted that the organic prices were from the *Organic Food Business News* which surveys farmers weekly nationwide, and its accuracy has not been studied.

Premiums for carrots and broccoli, although declining in recent years, remain strong. Mesclun mixes, which were some of the first organic commodities produced in the 90s growth period, may have reached a leveling of supply and demand, with a slight but stable premium over the past 5 years.

The level of some of the higher price premiums will, at some point, decay according to the laws of supply and demand, "…as long as higher profits exist, new suppliers will enter the market, and once market supply increases faster than demand, price premiums and the commensurate level of higher profits are likely to decline," (Oberholtzer, et al., 2005). Increases in consumer acceptance and demand along with growing numbers of new product introductions from many food categories indicate this may not happen within the next decade.

FIGURE 2 - 1. ORGANIC FARMGATE PRICE PREMIUMS FOR BROCCOLI, CARROTS, AND MESCLUN MIX



Organic price premiums are the percent increase over conventional prices and calculated by subtracting the conventional from the organic price and dividing the difference by the conventional price.

Source: Oberholtzer, et al., 2005.

Quoting from the Food Nutrition Journal, 2004, USDA-ERS, 2005 stated that organic category best sellers are, in order of sales, fresh fruits and vegetables, beverages, and dairy. At the recent 2005 Produce Marketing Association tradeshow every major supplier from growers, shippers, and distributors seemed to carry some line of organics. As a matter of fact fruits and vegetables remain the largest organics category, estimated at 31 percent of organic food and beverage sales in 2004 (Produce Marketing Association, 2005 and Packaged Facts, 2004). The fresh fruits and vegetables industry should not rest on their laurels, however. One retail executive last week recently stated that products driving organics at retail are dairy and baby food.

Another sign of long-term success is the commitment on the part of some retailers to design new store formats dedicated to the natural and organic health trend. One example is being developed by grocery wholesaler, Supervalu, Inc. along with retailer Bashas', Inc., based in Chandler, Arizona. The new format is called Sunflower Market and is particularly interesting because it will be presented as a value-priced organic foods retail outlet. The first Sunflower Market is scheduled to open in Indianapolis in January 2006. In addition, Florida retailer, Publix Super Markets, announced earlier this year that it will open two GreenWise markets in 2006. Retail leaders in natural foods include Whole Foods Market, Trader Joe's, and Wild Oats.

References

McTaggart, Jennie, "Retailers Branch Out with Organic Formats". Progressive Grocer. November 15, 2005.

Oberholtzer, Lydia, Carolyn Dimitri, and Catherine Greene, "Price Premiums Hold on as U.S. Organic Produce Market Expands". United States Department of Agriculture-Economic Research Service, VGS-308-01. May 2005.

Packaged Facts, *U.S. Market for Organic Foods and Beverages*, Packaged Facts, November 2004.

Produce Marketing Association, "Organic Fresh Produce Industry". 2005. Fact Sheet.

United States Department of Agriculture, *Amber Waves*. Economic Research Service, April 2005. http://www.ers.usda.gov/amberwaves/april05/indicators/researchareas.htm.

The U.S. Food Marketing System Update

USDA-ERS consumer food expenditure data have been recently updated to reflect changes in Census tracking and reporting methods. Most updates to series that include food at home sales remain very close to those reported a year ago; however, updates to food away from home may be more visible. For those who may use these data series, please download complete updates as they become available on the USDA web site (specific URLs are provided with each figure below).

In 2004 total food and beverage sales were just over a trillion dollars with sales of $1.04 trillion (Table 2 – 1). In 2004 total food and beverages still made impressive gains and grew a total of $60.8 billion or 5.9% from 2003. Sales of food away from home grew more rapidly than food at home in terms of both dollar sales and in percent growth.

TABLE 2 - 1. FOOD SALES[1]

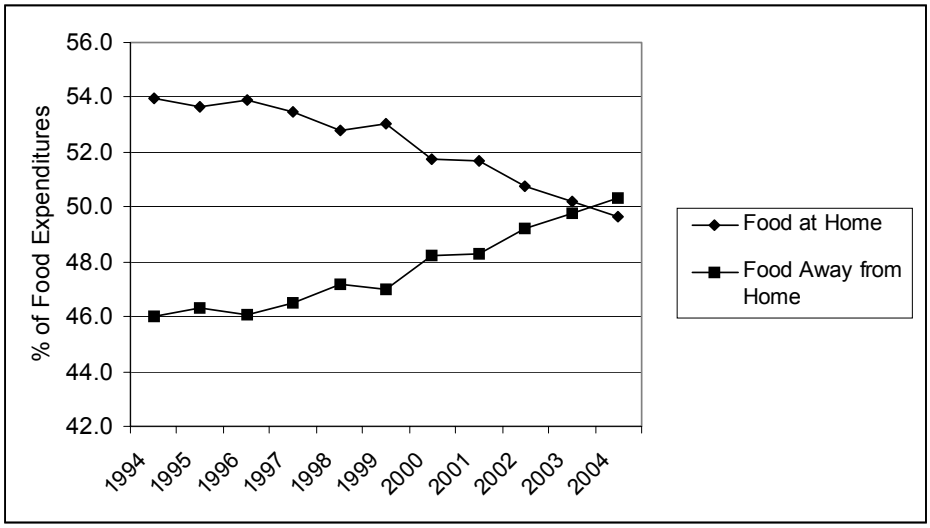
Sector	Sales 2003	Sales 2004	Increase	Growth
	--$ billion--		*--$ billion--*	*--% change--*
Total food and beverage sales	977,535	1,038,373	60.8	5.9
Total food sales (excluding alcohol)	841,604	895,395	53.8	6.0
Food at home sales	439,299	460,793	21.5	4.7
Food away from home sales	402,305	434,602	32.3	7.4
Alcoholic beverage sales	135,931	142,978	7.0	4.9

[1] Does not include home production, donation, or school lunch program expenditures
Source: USDA-ERS, http://www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/table1.htm.

Sales numbers presented above in Table 2 – 1 do not include home production of food, donations, school lunch, or other Federal program expenditures. When all food consumption expenditures for the U.S. are estimated, at home food expenditures as a percent of total food expenditures finally bowed down to food away from home (Figure 2 – 2). Food expenditures at home were estimated to be just 49.6 percent of total food expenditures, away from home, 50.4.

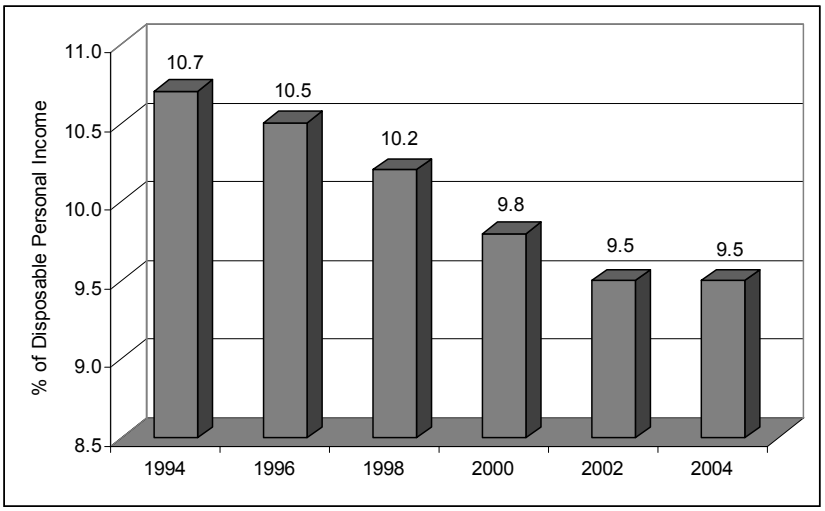
The recent updates from USDA-ERS find food expenditures as a share of disposable personal income to be approximately 9.5 percent in 2004 (Figure 2 – 3). They report this to be the same as in 2003.

FIGURE 2 – 2. PERCENT OF TOTAL CONSUMER FOOD EXPENDITURES, AT HOME AND AWAY FROM HOME



Source: USDA-ERS, http://www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/table1.htm.

FIGURE 2 – 3. FOOD EXPENDITURES OF FAMILIES AND INDIVIDUALS AS A SHARE OF DISPOSABLE PERSONAL INCOME

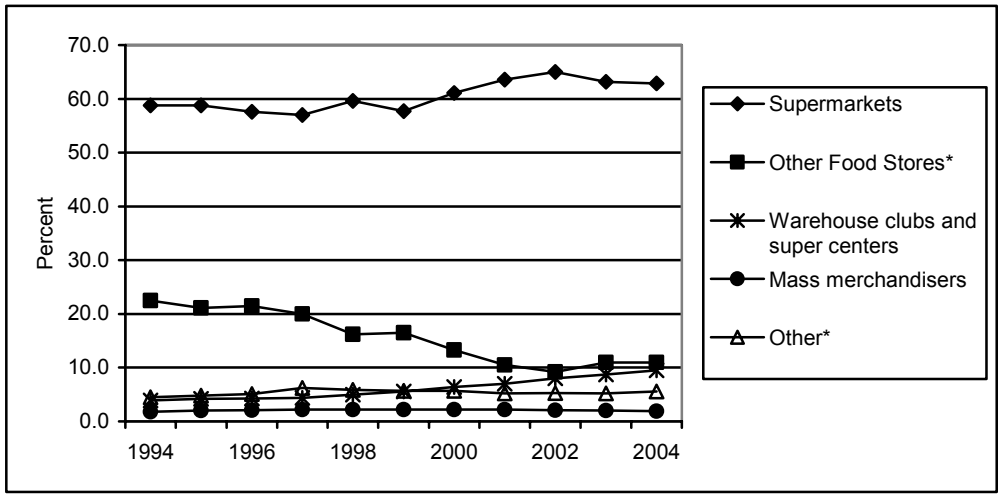


Expenditures include food purchases from grocery stores and other retail outlets, including purchases with food stamps and WIC vouchers and food produced and consumed on farms (valued at farm prices) because the value of these foods is included in personal income. Excludes government-donated foods. Purchases of meals and snacks by families and individuals, and food furnished employees since it is included in personal income. Excludes food paid for by government and business, such as donated foods to schools, meals in prisons and other institutions, and expense-account meals.

Source: USDA-ERS, http://www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/table7.htm.

Where did consumers go to buy food for at home consumption? Supermarket sales as a percent of total foods sales continued to slip in 2004 with more significant gains being made by warehouse clubs and supercenters, specifically Wal-Mart. Updated information from USDA-ERS states that supermarkets accounted for only 62.9 percent of retail food sales (Figure 2-4).

FIGURE 2-4. SALES OF FOOD AT HOME BY TYPE OF OUTLET

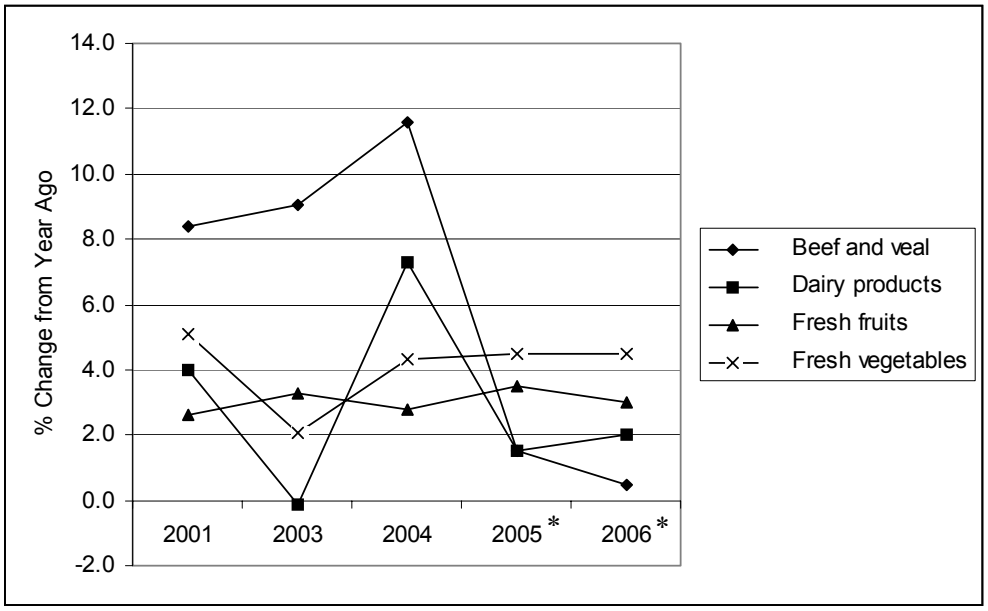


*Other Food Stores = convenience stores, other grocery stores, specialty food stores; Other = other stores, mail order, direct sales.

Source: USDA-ERS, http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/table16.htm.

The upswing in the economy in 2004 made conditions for the highest Consumer Price Index (CPI) for all food in recent years. However the forecast is for lower food inflation in 2005 (our current year), around 3 percent in 2004, and even lower in 2006, approximately 2.5 percent over previous year. High beef and veal prices in 2004 contributed to the high CPI; however, beef and veal prices have dropped in 2005 and are predicted to fall more in 2006 (Figure 2 – 5).

FIGURE 2 - 5. CHANGES IN CONSUMER PRICE INDEXES
base year = 1982

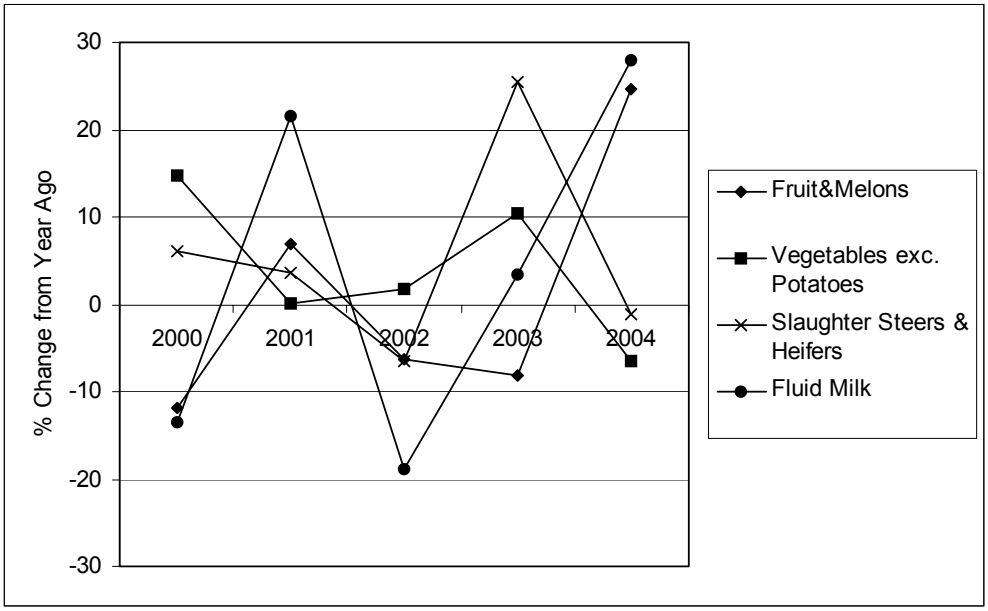


* forecast

Source: USDA-ERS, http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/cpiforecasts.htm.

Even calculated at retail level where prices tend to change more slowly, CPIs for individual commodities fluctuate; however, when compared with the Producer Price Indexes (PPI) for many farm products these fluctuation are modest (Figure 2 – 6). While the PPI (farmgate) for slaughter steers and heifers was 25.5 percent in 2003 (indicating prices had risen by 25.5 percent from 2002) the PPI was -1.2 in 2004. PPI forecasts for 2006 are not available from the Bureau of Labor Statistics, but prices will in all likelihood fall foreshadowing the fall in the beef and veal CPI.

FIGURE 2 - 6. CHANGES IN PRODUCER PRICE INDEXES, FARM PRODUCTS
Base Year = 1982



Source: Bureau of Labor Statistics, http://www.bls.gov/data/sa.htm#OPLC.

Chapter 3. Cooperatives

Brian M. Henehan, Senior Extension Associate

U.S. Situation*

Farmer cooperatives in the U.S. had gross sales of nearly $117 billion in 2003. Total business volume was up 4.4 percent from $112 billion in 2002.

Table 3-1. U.S. FARMER COOPERATIVES, COMPARISON OF 2003 AND 2002

Item	2003	2002	Change
	($ billion)	*($ billion)*	*percent*
Sales			
Marketing	79.6	76.6	3.90
Farm Supplies	33.9	31.5	7.54
Service	3.4	3.4	0.84
Total	116.9	111.6	4.84
Balance sheet			
Assets	47.8	47.5	0.68
Liabilities	27.8	27.9	-0.29
Equity	20.0	19.6	2.04
Liabilities and net worth	47.8	47.5	0.68
Income Statement			
Sales	116.9	111.6	4.84
Patronage income	0.1	0.4	-78.15
Net income before taxes	1.4	1.2	17.60
Employees	*(Thousand)*	*(Thousand)*	
Full-time	163.5	166.1	-1.55
Part-time, seasonal	59.3	54.3	9.26
Total	222.8	220.4	1.11
	(Million)	(Million)	
Membership	2.7	2.8	-2.02
	(Number)	(Number)	
Cooperatives	2,982	3,140	-5.03

Source: "Rural Cooperatives" magazine, March/April 2005 issues, USDA Rural Development, Washington, DC

Decreased sales resulting from the bankruptcies of Farmland and Agway were offset by increases in crop and livestock production which helped to boost total sales.

Total cooperative marketing of farm products increased 3.9 percent to $79.6 billion. Total sales of farm supplies amounted to nearly $40 billion or a 7.5 percent increase from 2002. Farm services remained the same.

*Information and a statistical summary of the U.S. Situation were developed by the Statistics Staff of USDA's Rural Business-Cooperative Service, including C. Adams, K. DeVille, J. Penn and E. Eversull.

Total assets grew less than one percent, liabilities decreased slightly and equity increased by about two percent to $20 billion. Patronage income decreased significantly, falling 78 percent. This was primarily due to the bankruptcy of Farmland resulting in lower patronage income for local cooperatives in the Midwest. Although net income before taxes increased to $1.4 billion.

Farmer cooperatives remain one of the largest employers in many rural communities, with overall employment increasing by one percent, to 223,000 in 2003. Full-time employee numbers declined by almost two percent, to 164,000 while part-time and seasonal employees increased almost 10 percent, to 59,000.

Farm numbers continue to decline, as do co-op memberships and the number of farmer cooperatives. Cooperative memberships stand at 2.7 million, down about two percent from 2002. Many farmers are members of more than one cooperative, hence cooperative memberships exceed U.S. farm numbers. There are now 2,982 farmer cooperatives, down from 3,140 in 2002.

New York State Situation

Data for agricultural cooperatives headquartered in New York State were obtained from a Cooperative Service survey cited below. State level data are collected every other year. The most current statistics available are for 1999 and 2001. Table 3-2 summarizes cooperative numbers and business volume for New York State.

Table 3-2. NEW YORK STATE AGRICULTURAL COOPERATIVE NUMBERS AND NET BUSINESS VOLUME BY MAJOR BUSINESS, 1999 and 2001[1]

Major Business Activity	Number Headquartered in State		Net Volume	
	1999	2001	1999	2001
			($ million)	
Marketing:				
Dairy	67	64	1,595.2	1,254.0
Fruit & Vegetable	9	9	492.4	523.6
Other Products[2]	6	6	353.5	232.3
TOTAL MARKETING	82	79	2,441.1	2,009.9
Supply:				
Crop Protectants			34.5	31.5
Feed			121.3	111.9
Fertilizer			54.1	51.2
Petroleum			182.5	278.7
Seed			17.1	21.0
Other Supplies			152.2	121.9
TOTAL SUPPLY	11	8	561.7	616.3
Related Service[3]	5	5	232.5	199.6
TOTAL	98	92	3,235.3	2,825.8

Source: Farmer Cooperative Statistics, 1999, RBS Service Report 59, USDA, RBS, Washington, DC, 2000 and Farmer Cooperative Statistics, 2001. RBS Service Report 61, USDA, RBS, Washington, DC, March, 2003.

[1] Totals may not add due to rounding.

[2] Includes wool, poultry, dry bean, grains, livestock, maple syrup, and miscellaneous.

[3] Includes those cooperatives that provide services related to cooperative marketing and purchasing.

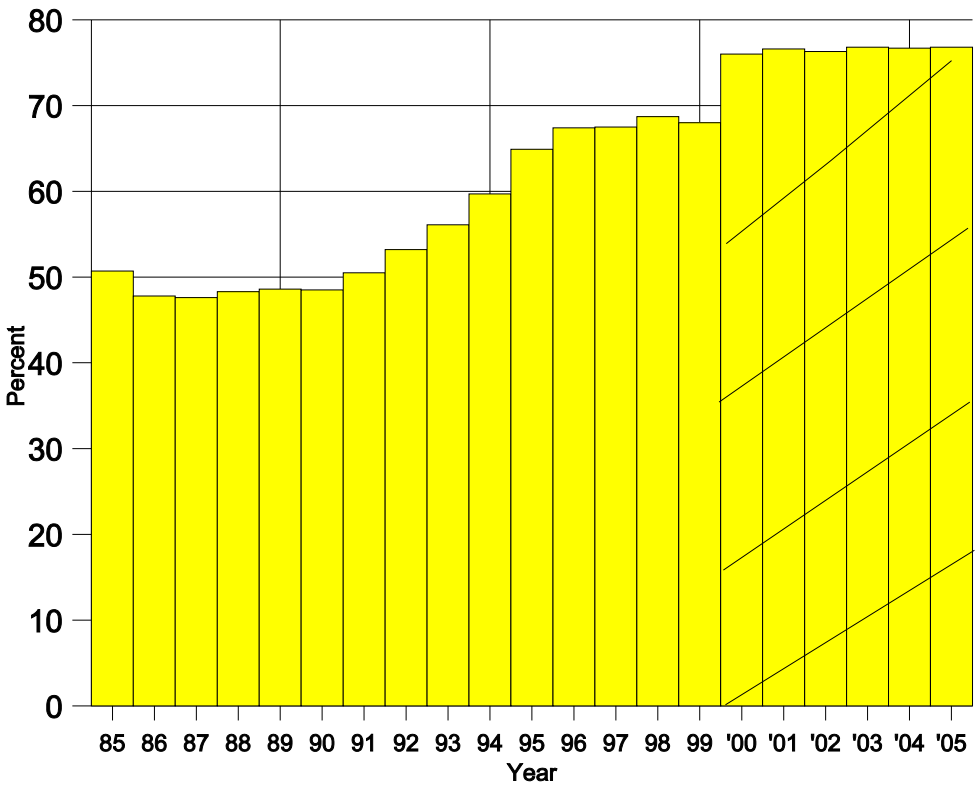
The number of agricultural cooperatives in New York State in 2001 showed a net decrease of 6 cooperatives from 1999 to 2001, with fewer dairy cooperatives and a decrease in the number of supply cooperatives. Total net business volume declined from $3,235 million in 1999 to $2,826 million in 2001, a decrease of 8 percent. Supply cooperative volume increased by $54 million with higher sales of petroleum products. Marketing volume decreased by $431 million, with dairy marketing cooperatives showing a significant decrease in volume over the two year period primarily due to lower milk prices. Total volume of other products marketed through cooperatives declined as well. A significant portion of the decline in revenues for dairy cooperatives came from the lower value of products sold. Total volume for services related to marketing or purchasing decreased from $232 million to $200 million over the two-year period.

Cooperative Share of Northeast Federal Milk Marketing Order 1

As indicated in Figure 3-1, the proportion of milk receipts handled by dairy cooperatives fluctuated over the twenty-year period and leveled off at about 67 percent from 1996 to 1999 under the old Federal Order 2.

Figure 3-1. COOPERATIVE SHARE OF PRODUCER MILK RECEIPTS

Federal Order 2, 1985- 1999 and Northeast Federal Order 1, 2000-2005*



* The year 2005 is based on data for the first nine months of the year. Data from the year 2000 forward represent the consolidated Federal Milk Marketing Order 1 (the result of a merger of the old Federal Orders 1, 2, and 4).
Source: Market Administrator's Office, Northeast Federal Milk Marketing Order 1.

However, the cooperative share of milk receipts increased significantly to 76 percent in 2000 under the new consolidated Order combining former Federal Order 1 (New England), Federal Order 2 (New York-New Jersey), and Federal Order 4 (Middle Atlantic) into the new Northeast Milk Marketing Order 1. The increase following the consolidation of Orders was primarily the result of pre-existing higher percentages of milk being shipped to cooperatives in the former Orders 1 and 4. Those higher percentages increased the total average of milk received by cooperatives in the new Order 1. The cooperative share of milk receipts for the first nine months of 2005 remained stable from the previous year.

Cooperative Performance

The financial performance of agricultural cooperatives operating in New York State has on the whole been good. Due to the importance of dairy marketing and service cooperatives to New York producers, I will review their situation first.

As discussed above, the share of milk receipts accounted for by dairy marketing cooperatives under Federal Milk Marketing Order 1 has remained stable at about 75% over the past five years and for the first nine months of 2005. An additional share of milk produced by farmers who are not members is being marketed in Federal Order 1 by a common marketing agency that also handles a major share of milk marketed by cooperatives.

Milk prices remained strong over the last year which contributed to positive performance of cooperatives offering dairy herd improvement or breeding genetics to members. Export sales of genetics and increased international operations have added to the revenues of the major genetics cooperative.

Dairy cooperative involved in value-added operations experienced positive results. A New York headquartered dairy marketing cooperative is constructing a new soft products plant, the first new plant being built in New York State in a number of years. Although increasing energy prices are having a negative impact on operating performance.

The bankruptcy settlement of the major supply cooperative continues as unsecured creditors have received periodic distributions over 2004 and 2005. Payments are being made to unsecured creditors until the Trust created by the bankruptcy court is exhausted. Total payments to be received by unsecured creditors, many of whom were members or retired farmers, are estimated at between 54 cents and 66 cents on the dollar. Until all outstanding accounts are identified and all costs are deducted from the Trust, the value of the total distribution cannot be determined.

The major juice grape cooperative in New York has reported weaker sales, higher expenses and lower returns to growers. Consumer dietary trends have hurt sales of fruit juices. Cost cutting and new marketing strategies have been implemented to improve performance. A fresh apple marketing cooperative continues to grow with new members joining. This organization works on improving the coordination of marketing and quality control on behalf of members.

The major vegetable processing cooperative continues to re-structure operations following a change in its relationship with a major food processing customer. Acreage of processing vegetables delivered to the cooperative continues to increase, although dry weather limited production in some areas.

The Farm Credit associations experienced good financial performance during the year. Strong prices for many commodities combine with conservative lending policies have contributed to solid

performance. Several agricultural lenders have exited New York or the Northeast, creating some opportunities to attract creditworthy farmers.

The cooperative bank that lends to rural cooperatives in the U.S. and New York, showed positive results during the most recent year that data is available. Although loans and leases declined slightly from the previous year, net income and patronage distributions grew.

Cooperative Outlook

Most cooperatives operating in New York State had positive results in 2005. Stronger milk prices contributed to the health of dairy marketing and service cooperatives. Although milk prices are projected to decline somewhat in 2006 from record levels, prices should remain relatively strong compared to historic averages which bodes well for service cooperatives. Many dairy producers have been able to pay down accounts and restore credit reserves.

Dairy cooperatives with value-added operations will be experiencing higher costs for processing milk, packaging, transportation, and ingredients as energy prices have risen. It remains to be seen what direction energy prices will take in 2006.

Dietary concerns of consumers such as low carbohydrate diets and childhood obesity will continue to impact sales of consumer food products produced or sold by marketing cooperatives. The "low-carb" craze of the past several years has waned a bit, but the increasing incidence of diabetes and childhood obesity continues to be a consumer concern. These concerns have created both challenges and opportunities for marketing cooperatives.

Uncertainty over the future structure of the processed fruit and vegetable industries in New York will continue to have an impact on cooperatives involved in those industries. Continued interest in new organizational structures and improved coordination will remain a priority.

A growing number of cooperatives of all types serving New York producers continue to explore and develop global opportunities through increased exports, investments in overseas operations, recruiting foreign members, creation of joint ventures with international partners and alliances aimed at penetrating international markets. Cooperatives are seeking new strategies to effectively operate in today's global marketplace.

Although there are some potential black clouds on the horizon - concern over consumer confidence, higher energy costs, and organizational uncertainty. Most cooperatives operating in New York State are well positioned for solid performance in 2006.

Chapter 4. Finance

Calum G. Turvey, Professor
Eddy L. LaDue, Emeritus Professor

Table 4-1. United States Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005[c]
				billion dollars			
Assets							
Real Estate	626	741	946	1,046	1,112	1,227	1,316
Livestock	71	58	77	76	79	79	77
Machinery	85	89	90	94	96	99	102
Crops[a]	23	27	28	23	24	24	23
Purchased Inputs	3	3	5	5	6	6	6
Financial Assets	38	49	57	60	62	66	67
Total	846	967	1,203	1,304	1,379	1,501	1,592
Liabilities & Equity							
Real Estate Debt	75	79	91	103	108	114	119
Nonreal Estate Debt[b]	63	72	87	90	90	92	94
Total	138	151	178	193	198	207	213
Owner Equity	708	816	1,025	1,111	1,181	1,294	1,379
Total	846	967	1,203	1,304	1,379	1,501	1,572
Percent Equity	84	84	85	85	86	86	87

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.
[c] Forecast

Table 4-2. Changes in Structure, United States Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005[c]
				percent of total			
Assets							
Real Estate	74	77	79	80	80	82	83
Livestock	8	6	6	6	6	5	5
Machinery	10	9	8	7	7	7	6
All Other[a]	8	8	7	7	7	6	6
Total	100	100	100	100	100	100	100
Liabilities							
Real Estate Debt	54	52	51	53	55	57	56
Nonreal Estate Debt[b]	46	48	49	47	45	43	44
Total	100	100	100	100	100	100	100

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.
[c] Forecast

Source: Agricultural Income and Finance Outlook, ERS, USDA; Agricultural Outlook: Statistical Indicators, ERS, USDA.

Table 4-3. Distribution of United States Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005[c]
				billion dollars			
Real Estate							
Farm Credit System	25.8	24.8	29.7	37.8	40.1	43.0	45.2
Individuals & Others	15.1	18.0	17.2	17.9	18.3	18.7	19.4
Commercial Banks	16.2	22.3	29.8	33.1	35.1	38.1	40.0
Farm Service Agency	7.6	5.1	3.4	3.2	2.9	2.6	2.5
Insurance Companies	9.7	9.1	11.0	11.4	11.6	11.9	12.1
CCC-Storage	a	0	0	0	0	0	0
Total	74.4	79.3	91.1	103.4	108.0	114.3	119.2
Nonreal Estate[b]							
Commercial Banks	31.3	37.7	44.8	44.4	43.5	45.7	46.1
Farm Service Agency	9.4	5.1	4.2	4.0	3.8	3.3	3.1
Merchants & Dealers	12.7	16.2	20.8	21.9	22.6	23.5	24.4
Farm Credit System	9.8	12.5	16.7	19.7	20.1	20.1	20.3
Total	63.2	71.5	86.5	90.0	90.0	92.7	93.8

[a] Less than .05 billion.
[b] Excludes crops under CCC loan.
[c] Forecast

Table 4-4. Market Share of United States Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005
				percent of total			
Farm Credit System	26	25	26	30	30	31	31
Commercial Banks	35	40	42	40	40	40	40
Farm Service Agency	12	7	4	4	3	3	3
Insurance Companies	7	6	6	6	6	6	6
Individuals & merchants	20	22	22	20	21	20	20
Total[a]	100	100	100	100	100	100	100

[a] Excludes crops under CCC loan.

Source: Economic Research Service, USDA, Data, Farm Balance Sheet.

The value of U.S. farm assets increased 6% in 2005, well in excess of the rate of inflation. Sector debt levels, however, increased by only 2.8%, slightly lower than the 4.5% observed through 2004. Consequently, the rate of growth in farm equity was 6.5%, a 2% increase over growth in equity in 2004. Real estate debt increased by about 4.4% in comparison with only a 2.2% increase in non-real estate debt. Part of this shift results from the need to fund higher value real estate and part reflects a change in methods of securing farm loans. The Farm Service Agency continues to reduce its direct lending to agriculture as it shifts to more guaranteed lending activity.

Table 4-5. New York Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005
				million dollars			
Assets							
Real Estate	7,768	8,165	9,595	10,418	10,894	12,025	12,897
Livestock	1,259	1,138	1,360	1,415	1,634	1,430	1,394
Machinery	1,847	1,838	1,654	1,687	1,736	2,059	2,122
Crops[a]	540	352	308	329	338	331	317
Purchased Inputs	74	88	133	153	153	163	163
Financial Assets	666	670	917	941	977	990	1,005
Total	12,154	12,251	13,967	14,943	15,732	16,998	17,898
Liabilities & Equity							
Real Estate Debt	901	854	957	1,095	1,139	1,197	1,250
Nonreal Estate Debt[b]	1,268	1,318	1,552	1,660	1,669	1,702	1,739
Total	2,169	2,172	2,509	2,755	2,808	2,899	2,989
Owner Equity	9,985	10,079	11,458	12,188	12,924	14,099	14,909
Total	12,154	12,251	13,967	14,943	15,732	16,998	17,898
Percent Equity	82	82	82	82	82	83	83

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.

Table 4-6. Changes in Structure, New York Farm Balance Sheet
Current Dollars, December 31
Excluding Operator Households

Item	1990	1995	2000	2002	2003	2004	2005
				percent of total			
Assets							
Real Estate	64	67	68	70	69	71	72
Livestock	10	9	10	9	11	8	8
Machinery	15	15	12	11	11	12	12
All Other	11	9	10	10	9	9	8
Total[a]	100	100	100	100	100	100	100
Liabilities							
Real Estate Debt	42	39	40	40	41	41	42
Nonreal Estate Debt[b]	58	61	60	60	59	59	58
Total	100	100	100	100	100	100	100

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.

Source: Economic Research Service, USDA, Data, Farm Balance Sheet.

2005 saw an increase in NY farm assets of 5.3%, slightly lower than the U.S. average. Livestock inventory fell from $1,430 million in 2004 to $1,394 million in 2005, a decrease of nearly 2.5% and 14.7% lower than peak livestock values in 2003. Changes in real estate debt followed the pattern for the U.S.

Table 4-7. New York Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1980	1985	1990	1995	2000	2002	2003
				million dollars			
Real Estate							
Farm Credit System	367	449	404	332	400	510	540
Individuals & Others	373	363	216	256	244	254	260
Commercial Banks	108	89	116	146	218	242	257
Farm Service Agency	145	192	156	116	83	77	69
Insurance Companies	26	26	9	4	12	12	13
CCC-Storage	19	6	a	0	0	0	0
Total	1,038	1,125	901	854	957	1,095	1,139
Nonreal Estate							
Commercial Banks	632	597	417	374	435	430	423
Farm Service Agency	284	287	219	176	188	177	170
Merchants & Dealers	338	257	216	274	352	371	382
Farm Credit System	328	331	416	494	577	682	694
Total[b]	1,582	1,472	1,268	1,318	1,552	1,660	1,669

[a] Less than .5 million.
[b] Excludes CCC loans.

Table 4-8. Market Share of New York Farm Debt by Lender
Current Dollars, December 31
Excluding Operator Households

Item	1980	1985	1990	1995	2000	2002	2003
				percent of total			
Farm Credit System	27	30	38	38	39	43	44
Commercial Banks	28	26	25	24	26	24	24
Farm Service Agency	17	19	17	14	10	9	9
Insurance Companies	1	1	a	a	1	1	a
Individuals & Merchants	27	24	20	24	24	23	23
Total	100	100	100	100	100	100	100

[a] Less than .5 percent.

Source: Economic Research Service, USDA, Data, Farm Balance Sheet.

During the last few years the New York commercial bank market share has declined slightly. Banks have increased real estate lending but experienced declining non-real estate volume while Farm Credit has experienced increases at both real estate and non-real estate volume. The USDA no longer provides state specific lending activities. However, if we assume that lending activity in NY is following the same pattern as the U.S., then FCS debt will have increased by 12.7% over 2003 to $608.7 million, commercial lending by 13.96% to $292.9 million and FSA loans will have declined by about 13.8% to about $59.5 million. The FCS held about $708 million in non real estate debt, compared to $448.3 million in commercial loans. The total market share of FCS in 2005 is estimated to be 44% compared to 24.8% for commercial loans.

Table 4-9. Nonaccrual and Nonperforming Loans
Farm Credit System, December 31

Year	Nonaccrual	Nonperforming[a]
	percent of loan volume	
1988	6.5	12.3
1989	5.1	11.0
1990	4.5	9.7
1991	3.7	8.0
1992	2.7	6.0
1993	2.3	4.2
1994	1.9	2.9
1995	1.4	2.1
1996	1.1	1.5
1997	0.9	1.3
1998	1.8	2.1
1999	1.4	1.6
2000	0.9	1.2
2001	0.9	1.2
2002	1.0	1.3
2003	1.1	1.3
2004	0.7	0.8
2005 (6/30)	0.7	0.8

[a] Nonaccrual plus accrual that are restructured or 90 days or more past due (impaired loans).

Source: Annual and Quarterly Reports of the Farm Credit System.

Table 4-10. Nonaccrural, Nonperforming, and Total Delinquent
United States Commercial Banks, December 31

	Farm Nonreal Estate Loans			Farm Real Estate Loans		
Year	Nonaccrual	Nonperforming[a]	Delinquent[b]	Nonaccrual	Nonperforming	Delinquent
	percent of loan volume					
1986	5.9	7.0	9.4			
1987	4.2	4.8	6.5			
1988	2.9	3.3	4.5			
1989	1.9	2.3	3.7			
1990	1.6	1.9	3.1			
1991	1.6	1.9	3.2			
1992	1.5	1.8	2.8	1.0	1.3	2.1
1993	1.2	1.4	2.2	0.8	1.1	1.8
1994	0.9	1.1	2.0	0.9	1.4	2.4
1995	0.9	1.1	2.1	0.9	1.4	2.4
1996	1.0	1.3	2.4	1.0	1.7	2.8
1997	0.9	1.1	2.0	0.9	1.5	2.6
1998	0.9	1.2	2.2	1.0	1.7	2.9
1999	1.1	1.3	2.1	0.7	1.3	2.0
2000	1.0	1.2	2.1	0.8	1.4	2.3
2001	1.3	1.5	2.7	1.2	1.5	2.6
2002	1.3	1.6	2.6	1.2	1.5	2.5
2003	1.2	1.5	2.3	1.1	1.3	2.1
2004	0.9	1.0	1.6	0.8	1.0	1.6
2005 (6/30)	0.8	1.0	1.6	0.8	1.0	1.6

[a] Includes nonaccrural and past due 90 days but accruing.
[b] Includes nonperforming and past due 30 to 89 days but accruing.

Source: Agricultural Financial Databook, Board of Governors of the Federal Reserve System.

Table 4-11. Delinquent Major Farm Program Direct Loans
Farm Service Agency

	Farm Ownership[a]		Operating Loans[a]		Emergency Loans		Economic Emergency		Soil and Water[a]	
Date	U.S.	N.Y.	U.S.	N.Y.	U.S.	N.Y.	U.S.	N.Y.	U.S.	N.Y.
	percent of loan volume									
9/30/83	3	4	13	8	25	13	16	11	7	4
9/30/84	4	4	17	11	32	22	20	15	9	5
9/30/85	5	5	13	10	37	25	23	19	11	7
9/30/86	5	5	16	12	41	31	27	25	12	9
9/30/87	6	7	19	14	45	34	31	34	14	10
9/30/88	8	9	25	19	57	38	42	45	20	12
9/30/89	9	10	26	20	60	41	44	51	23	13
9/30/90	7	9	23	17	60	37	42	50	18	10
9/30/91	7	9	24	16	61	38	42	51	18	11
9/30/92	7	9	25	19	61	41	42	55	19	9
9/30/93	7	10	24	19	62	40	40	61	18	10
9/30/94	6	11	23	18	60	41	40	63	17	11
9/30/95	6	12	23	20	60	38	39	62	18	13
9/30/96	6	13	21	19	48	37	36	65	17	14
9/30/97	6	14	20	17	44	34	33	67	15	15
9/30/98	5	13	18	16	39	34	31	68	16	14
9/30/99	5	13	15	15	32	29	29	63	15	11
9/30/00	4	12	14	14	26	27	26	60	15	11
9/30/01	4	11	13	13	24	24	24	55	14	10
9/30/02	4	10	12	12	21	22	23	51	13	12
9/30/03	4	8	11	10	20	21	21	48	11	9
9/30/04	4	9	10	10	18	19	21	41	11	9
9/30/05	3	9	8	8	7	15	21	33	7	10

[a] Includes limited resource loans.
Source : FSA Report Code 616.

Table 4-12. Delinquent Major Farm Program Guaranteed Loans
Farm Service Agency

	Farm Ownership		Farm Operating	
Date	U.S.	N.Y.	U.S.	N.Y.
	percent of loan volume			
9/30/95	1	1	2	1
9/30/96	1	1	2	1
9/30/97	1	1	2	1
9/30/98	1	2	3	2
9/30/99	1	2	3	2
9/30/00	1	2	2	3
9/30/01	2	3	3	3
9/30/02	1	2	3	4
9/30/03	1	2	3	3
9/30/04	2	6	3	5
9/30/05	1	2	2	2

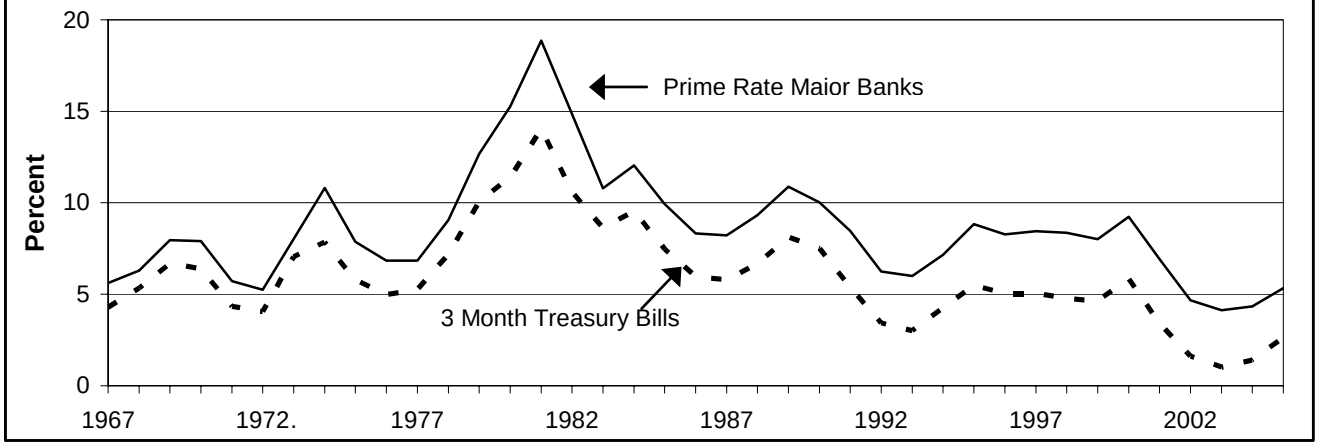
Source: FSA Reports 4067 and 4067-C.

Credit quality of commercial lenders (Farm Credit and commercial banks) continues to be very high with an overall increase in soundness in 2005. Prosperity in the large dairy sector of the New York has been used to bring borrowers current on their loans. Nonaccrual and nonperforming loans are at about as low levels as they could be expected to attain without severely restricting credit to a large group of people, most of whom are good credit risks. Throughout the farm credit system loan performance to borrowers is as a near all time high in both 2004 and 2005.

In general, Farm Service Agency delinquencies on direct loans to farmers continued a modest decline in 2004. Guaranteed loan delinquencies fell nationally and in NY quite substantially. The current delinquency rate is still quite reasonable for the risk level of the loans the program is designed to guarantee.

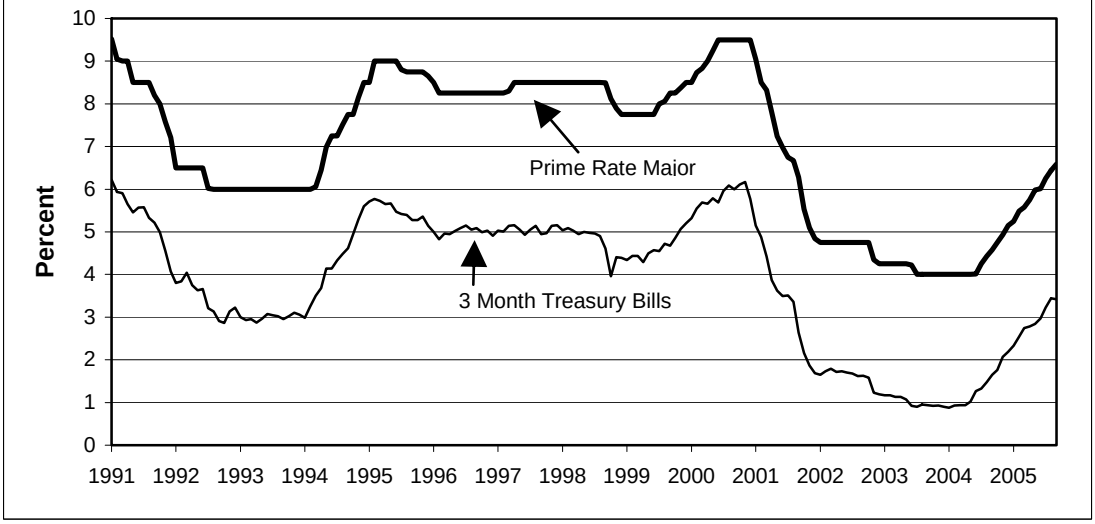
Short term interest rates bottomed out at the lowest level in 50 years in late 2003 and early 2004 and have been rising throughout 2005. The average 2004 prime rate was 4.3% but this increased to 5.33% through September 2005, an increase of nearly 22.8%. Rates are still historically low and have not been at this level since 2001 and before that 1967. Still, as of September 2005 prime rates were at 6.59% compared to 4.93% in November 2004. In mid 2004 and continuing in 2005 the Federal Reserve Board started to push 0interest rates up from these historic levels in an effort to reach a more neutral monetary policy position and inflation pressure.

FIGURE 4-1. ANNUAL AVERAGE SHORT TERM INTEREST RATES

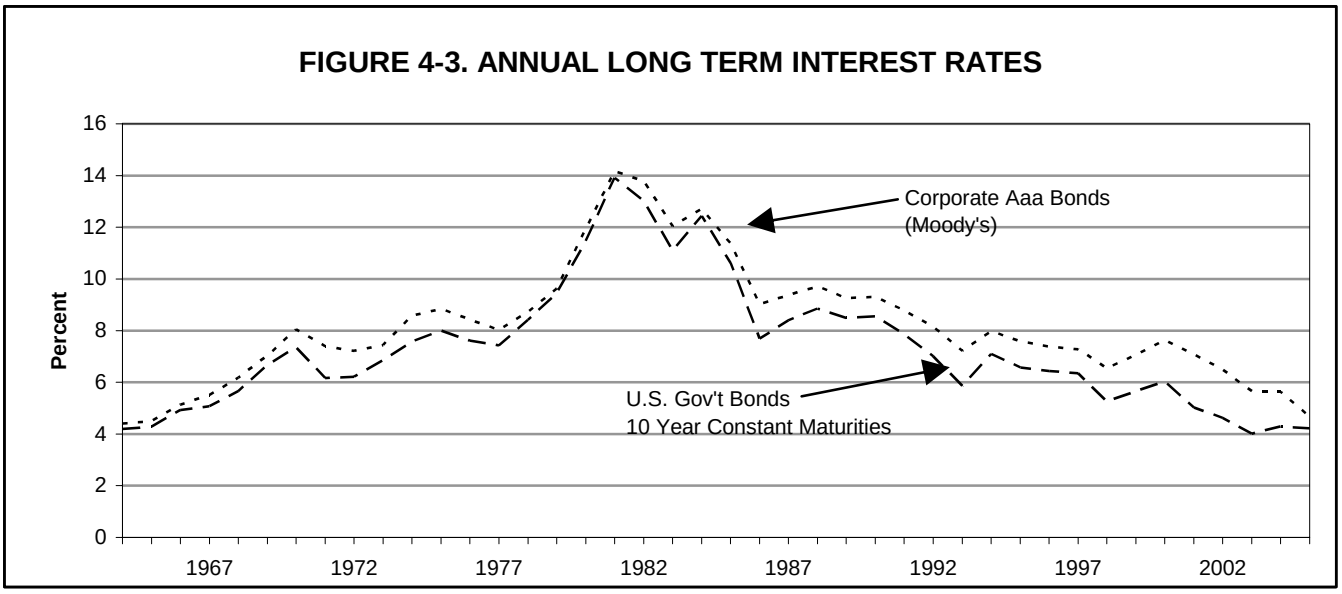


On a calendar year basis, short term rates averaged 1.4% in 2004 and the average rate for 2005 will be above 2.63%, an increase of 85%, but still historically low.

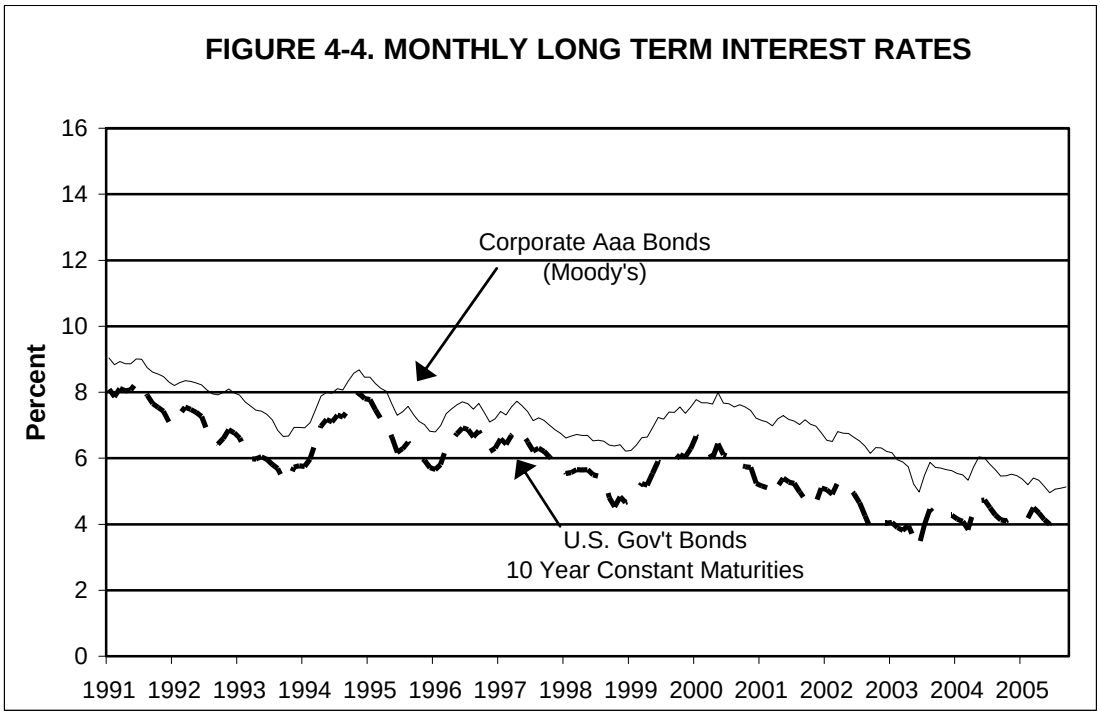
FIGURE 4-2. MONTHLY SHORT TERM INTEREST RATES



	3 Month Treasury Bills	
	2004	2005
Jan.	.88	2.33
Feb.	.93	2.54
Mar.	.94	2.74
Apr.	.91	2.78
May	1.02	2.84
June	1.27	2.97
July	1.33	3.22
Aug.	1.48	3.44
Sept	1.65	3.42
Oct.	1.76	
Nov.	2.07	
Dec.	2.19	

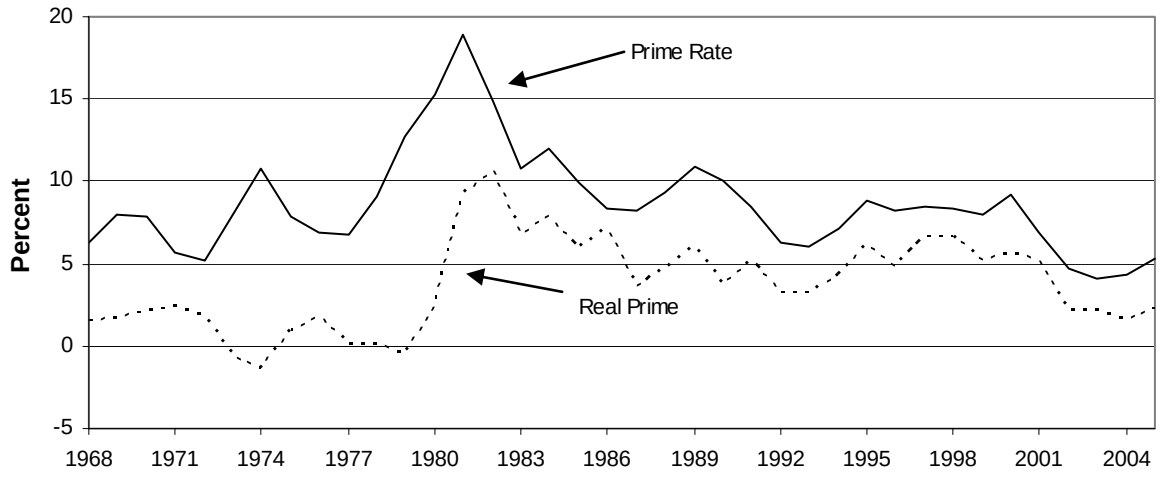


Basic long term interest rates have been quite variable over the last three years with a dip in rates during 2003 and a spike in rates during 2004 and another dip in 2005, but the resulting average level of rates has changed little. High quality corporate bonds continue to be at their lowest level since the 1960's. As of September 2005 the spread between Aaa Corporate and 10-year government bonds was only 0.89%.



U.S. Govt. Bonds		
10 Year Constant Maturity		
	2004	2005
Jan.	4.15	4.22
Feb.	4.08	4.17
Mar.	3.83	4.50
Apr.	4.35	4.34
May	4.72	4.14
June	4.73	4.00
July	4.50	4.18
Aug.	4.28	4.26
Sept	4.13	4.20
Oct.	4.10	
Nov.	4.19	
Dec.	4.23	

FIGURE 4-5. CONTRACT AND REAL INTEREST RATES



Inflation continues to be of concern. The 2004 inflation rate was 2.70% and is expected to reach 3% in 2005. If inflation continues to rise, rate increases in 2006 are imminent. Although short-term interest rates increased during 2005, inflation also increased but not as much as interest rates. The real prime rate increased from 1.64% in 2004 to 2.33% in 2005. The increase in the real rate above inflation may be indicative of higher monetary policy by the Federal Reserve as well as increased uncertainty in financial markets, resulting in a decline in real rates. The real prime rate is approaching zero, a level it has not achieved since the rampant inflation period of the late 1970's. As of late 2004 and into 2005 the inflation rate is greater than the three-month Treasury bill rate, thus the government is borrowing these funds at a significantly negative real rate. Even the longer term 10 year Treasury note has a real interest rate that is only slightly above zero, and 2005 saw its lowest level since about 1980.

The yield curve flattened significantly during 2005. Short- term rates increased over 2004 rates while long-term rates were lower. This flattening means that the interest rate premium for fixed rate loans has declined but overall loan rates below 10 years have risen.

There are many uncertainties in the market making it difficult to predict what interest rates are going to do in 2006. Continued federal spending on the Iraq war, homeland security, and hurricanes in the southern states, coupled with reductions in tax revenue is placing significant pressure on the current account. Current account spending is being financed largely through bond issues to foreign governments. There are indications that productivity in the U.S. is building up as foreign goods become more expensive and in fact anticipated GDP growth of 3.5% is expected to continue through 2006 with inflation levels probably not exceeding 3%. However there are a number of factors that could make inflation prediction rather erratic. As the economy grows, unemployment is nearing 5%, which may put significant upward pressure on labor markets and wage rates. Add to this rising oil costs and the pass through to fuel, heating oil, natural gas, electricity, transportation, and the rising demand for building materials may fuel inflation. Already the housing market is softening in many areas of the United States as buyers respond to excessive prices and higher interest rates. Still throughout 2004 and 2005 increased employment and new financial products such as interest only loans or adjustable rate mortgages allowed consumers to pay more for houses than could ordinarily be affordable. House prices increased at a rate greater than could be justified by rental markets or increases in household income. As housing inventories increase and the cost of new house construction rises, the housing market may end up in flux by the end of 2006. Interest only loans for example can work only if property values

continually increase but a downturn in the housing market could put extreme pressure on the loan to value ratios of many mortgages placing these home buyers in negative equity position. Add to this a continuous rise in consumer non-real estate borrowing, about 3.25% through 2005 and about 26.5% since 2000, annual increases in debt by about 10%/year, and a personal savings rate of only 0.5% may put many households in financial jeopardy. Anticipated rises in home heating, perhaps as high as 30%, may also cause many consumers to either curb spending on consumer spending or increase consumer credit even further.

On the other hand, that long term bond yields in 2005 are below those in 2004 may indicate that markets believe whatever inflationary pressures may be driving monetary policy today may be short lived. While the yield cure is higher in 2005 it is flatter which may indicate that interest rates will not rise by as much in 2006 as they did in 2005. This may be indicative of an economic slow down for 2006 with the economic risk premium being higher in the short term than in the long term, but a recession, at least of this date, is not indicated. However if short-term rates continue to rise relative to long term rates this may be indicative of a recession especially if short term rates exceed long term rates. However a simple flattening of the yield curve, while indicating an increased chance of recession, is not unto itself correlated highly with impending recessions.

The current spread between the prime rate and the 90-day Treasury Bill rate is about 3.17% but the average spread is about 3%. Given the flattening of the yield curve 90 day rates will probably not exceed 4.2% if current economic conditions persist, but could rise further with inflation or any deterioration in the economy. Historically agricultural loan rates (operating and mortgage loans) have been about 1.32% above prime although in recent months this spread has been only about 0.74%. This suggests that in 2006 interest rates on agricultural loans could increase from current rates of about 7.2% to between 7.94% and 8.52%.

FIGURE 4-6. LONG AND SHORT TERM REAL INTEREST RATES

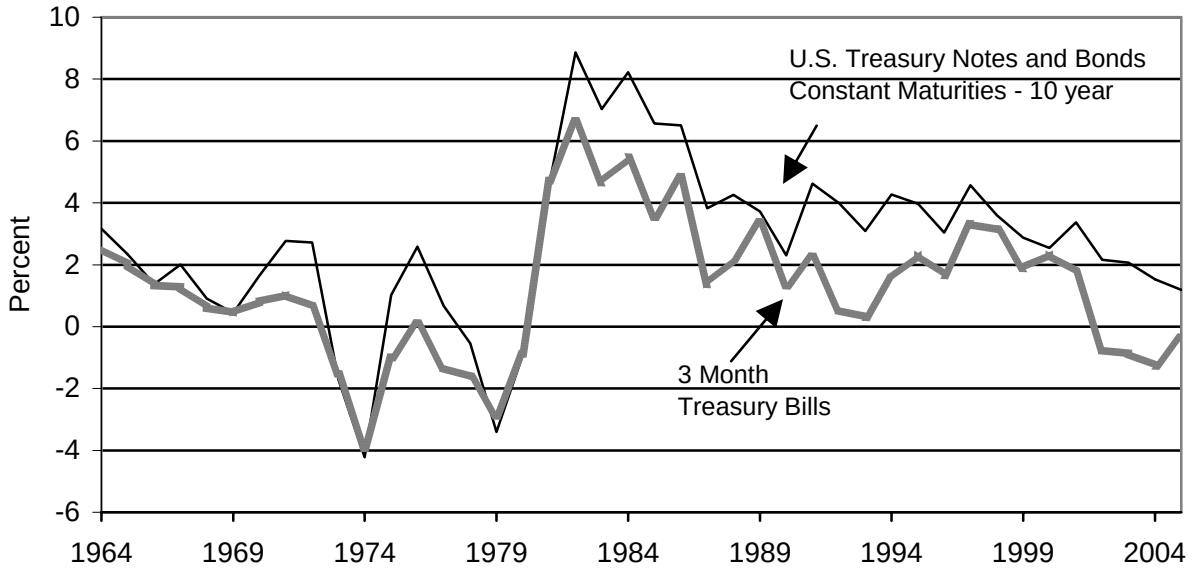
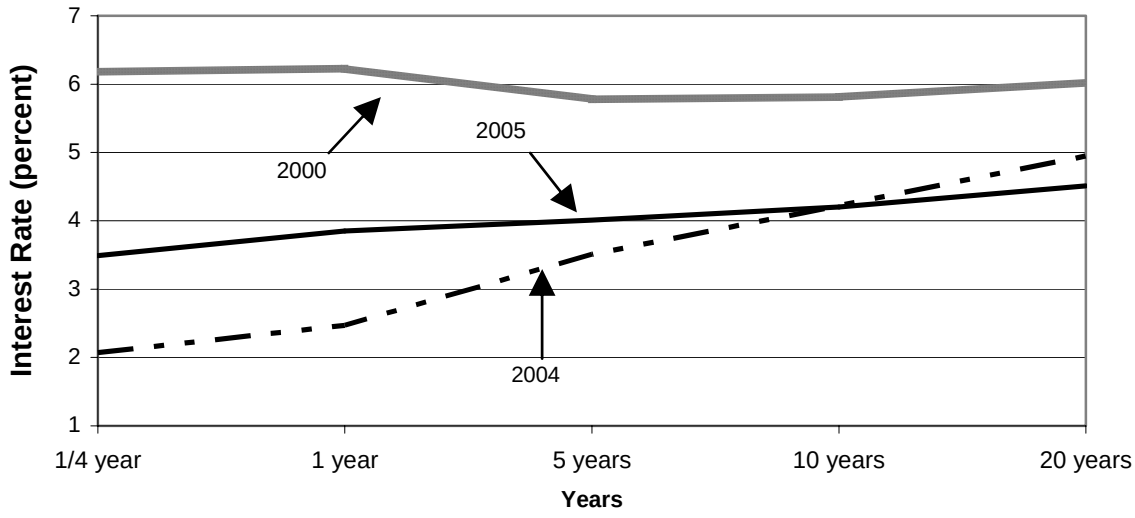


FIGURE 4-7. YIELD CURVE 1ST WEEK OF SEPTEMBER (U.S. GOVERNMENT SECURITIES)



Chapter 5. Grain and Feed

Brent A. Gloy, Associate Professor

The situation for grain and feed is one characterized by substantial inventories and high production. The large inventories significantly limit any upside price potential for the corn and soybean markets. Despite less than ideal growing conditions in the U.S. Central corn belt, U.S. and world production of corn and soybeans is expected to be outstanding. USDA forecasts for both the U.S. corn and soybean crops indicate the production of the second largest crops in U.S. history.

The following pages examine the situation for corn and soybeans in more detail making note of both supply and demand factors that will influence the price situation of these commodities. Each section highlights factors that could cause prices to deviate from the 2005/06 forecast, as well as the longer term outlook for the U.S. price situation. Finally, the chapter provides some context on yields in the U.S. relative to the rest of the world with a focus on the longer term implications for corn and soybean producers and users.

Corn:

The USDA forecast of the U.S. corn crop currently stands at 11.032 billion bushels, which would be the second largest crop on record. Given the projection of 74.3 million harvested acres, this would result in an average yield of 148.4 bushels per acre. The relatively high yield is somewhat surprising given the less than ideal crop growing conditions experienced during the year. According to data gathered by the Chicago Board of Trade, the percent of the crop in good to excellent condition was substantially below the 15 year average throughout the growing year.[1] Likewise, the percent of the crop rated poor to very poor was substantially above the 15 year average. However, the yield estimates and early harvest results have been strong and the 148 bushel per acre average would be the second highest national yield in history. The large crop will place significant downward pressure on prices as the market is forced to handle the two largest corn crops in U.S. history back to back.

The overall supply and demand situation is best told by the supply/demand balance sheet (Table 5-1). Here, one sees that demand for corn has been relatively strong, but that substantial inventories (2.1 billion bushels) had accumulated going into the 2005 growing season. Given the large crop, the USDA puts ending stocks for 2005/06 at 2.3 billion bushels. This results in a relatively comfortable domestic stocks/use ratio of 21.4%.

[1] http://www.cbot.com/cbot/pub/static/files/crncondit_cbt.pdf

TABLE 5-1. U.S. SUPPLY AND DEMAND BALANCE SHEET FOR CORN[a]

	2003-04E	2004-05F	2005-06F
Supply:			
Harvested Acres (million)	70.9	73.6	74.3
Yield (bushels per acre)	142.2	160.4	148.4
		(Million Bushels)	
Beginning Stocks	1,087	958	2,112
Production	10,089	11,807	11,032
Imports	14	11	10
Total Supply	11,190	12,776	13,154
Use:			
Feed & Residual	5,795	6,164	5,875
Food, Seed and Industrial	2,537	2,686	2,960
Ethanol for Fuel[b]	1,168	1,323	1,575
Total Domestic Use	8,332	8,850	8,835
Exports	1,900	1,814	2,000
Total Use	10,232	10,664	10,835
Ending Stocks	958	2,112	2,319
Stocks/Use Ratio	9.4%	19.8%	21.4%

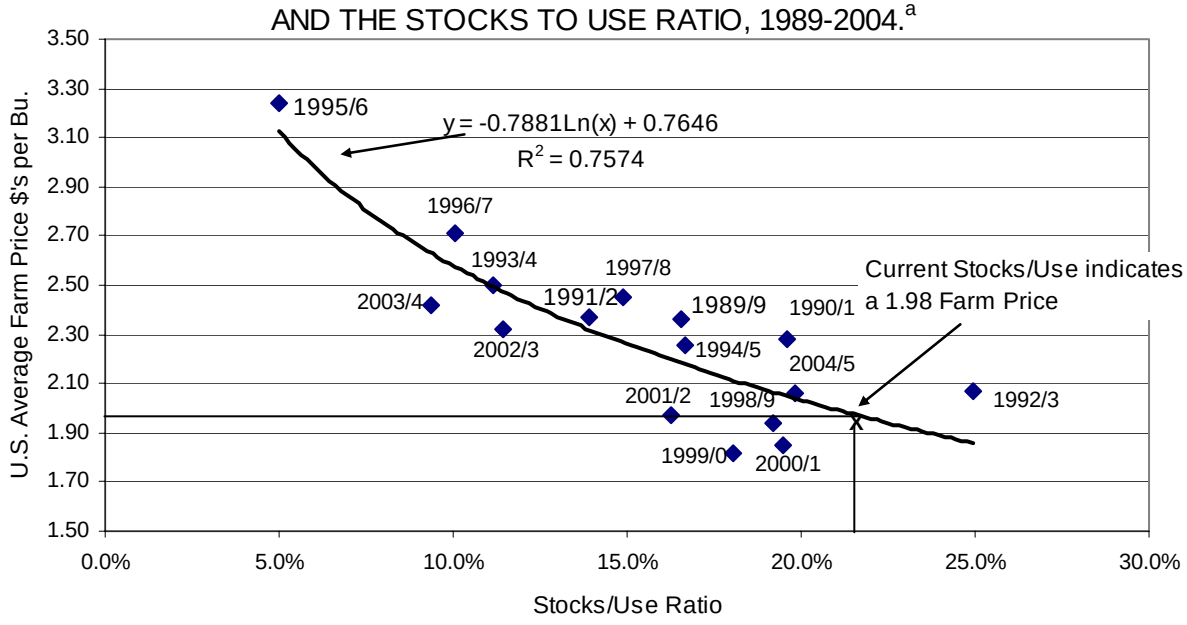
[a]Data from USDA, World Agricultural Outlook Board, (November 10, 2005) "World Agricultural Supply and Demand Estimates." WASDE-428.

[b]Ethanol for fuel is included in the food, seed, and industrial category and presented for illustrative purposes.

To place the size of the inventories in a historical context, the stocks to use ratios and resulting marketing year average prices are graphed for the period of 1989 to 2004 (Figure 5-1). Based on the historical relationship between prices and the stocks/use ratio over this time period, one would expect a season average farm price near $1.98 per bushel. However, upon further examination it would appear that the estimate is probably overly optimistic. Recent history (1998-2001) would suggest that when stocks/use ratios are in the 16-20% range the resulting price often falls well below $2.00 per bushel. One recent exception occurred in 2004 when the stocks to use ratio of 19.8% resulted in a price of $2.06. However, aside from this observation the other observations with this level of stock/use occurred a number of years ago (1992/3 and 1990/1). In Figure 5-2 the same relationship is estimated but using only data from 1994-2004. Here the projected price is $1.86 per bushel. Considering these factors, a season average price of $1.85 is probably more likely than a price of $2.00. In its most recent world supply and demand outlook report, the USDA World Outlook Board forecast a price range of $1.60 – $2.00.[2]

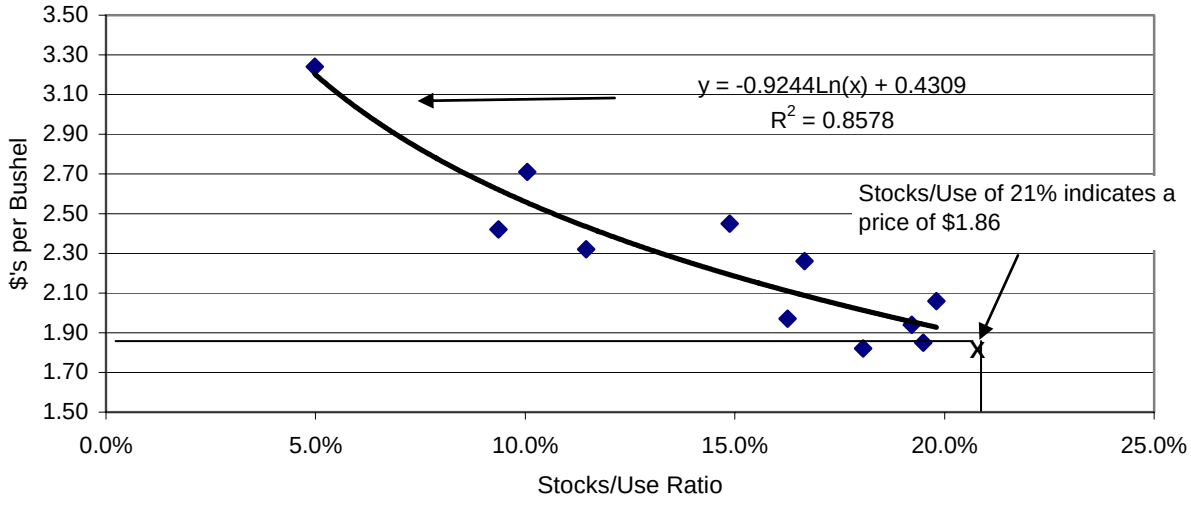
[2] USDA World Agricultural Outlook Board. "World Agricultural Supply and Demand Estimates." November 10, 2005. Available online at: http://usda.mannlib.cornell.edu/usda/reports/waobr/wasde-bb/2005/wasde10.pdf

FIGURE 5-1. HISTORICAL RELATIONSHIP BETWEEN CORN PRICES AND THE STOCKS TO USE RATIO, 1989-2004.[a]



[a] Data compiled from USDA Feed Grains Data Delivery System available at http://www.ers.usda.gov/db/feedgrains/ Table 5 in Good, D. "Corn: Lage Supplies to Dominate Price." Grain Price Outlook, University of Illinois Extension, No. 7, October 2005. available at http://www.farmdoc.uiuc.edu/marketing/grainoutlook/html/101705/101705.htm

FIGURE 5-2. HISTORICAL RELATIONSHIP BETWEEN CORN PRICES AND THE STOCKS TO USE RATIO, 1994-2004.[a]



[a] Data compiled from USDA Feed Grains Data Delivery System available at http://www.ers.usda.gov/db/feedgrains/

The world supply/demand situation also gives little reason for optimism regarding price appreciation (Table 5-2). While it is not the largest stocks/use ratio in the last five years, the world stocks use ratio is projected to end at 16.7% and suggests the likelihood of low prices. Although world production is forecast slightly lower for 2005/06, the world still has a relative surplus of corn.

TABLE 5-2. WORLD SUPPLY AND DEMAND BALANCE SHEET FOR CORN[a]

	2003-04	2004-05E	2005-06F
Supply:		(Million Metric Tons)	
Beginning Stocks	123.38	99.69	126.49
Production	623.34	708.57	671.88
Imports	76.51	75.23	74.66
Use:			
Feed, Domestic	444.28	468.23	463.63
Total, Domestic	646.73	681.78	684.15
Exports	77.34	76.77	74.79
Ending Stocks	99.69	126.49	114.21
Stocks/Use Ratio	15.4%	18.5%	16.7%

[a]Data from USDA, World Agricultural Outlook Board, (November 10, 2005) "World Agricultural Supply and Demand Estimates." WASDE-428.

Given the relatively high levels of production, chances for higher prices rest largely on the likelihood of increased demand. Considering the various demand factors, continuing strong exports and feed use are needed to have meaningful price appreciation in the U.S. The demand for industrial uses of corn such as ethanol continues to increase, but it is unlikely that such demand will be large enough to result in significant price increases. In total, it appears that prices are unlikely to move much higher in the short-term. Given the current surplus of corn, one can expect that harvest basis levels will be weak and that there will likely be opportunities available to take advantage of basis changes throughout the marketing year.

Current futures prices for corn are shown in Table 5-3. These prices reflect the current large supplies of corn. The new crop (December 2006) futures prices are currently trading at 2.44. One can expect that these prices may exhibit some volatility as the new planting season approaches and the market seeks to ensure that enough acres are planted to corn. Given high energy prices which influence the cost of growing both through direct fuel costs and through Nitrogen prices, some price increases may be necessary to secure adequate corn acreage. However, once the crop is planted one should expect crop prices to be under considerable pressure, unless there is a major weather event or unforeseen demand increases occur.

TABLE 5-3. CURRENT FUTURES PRICES FOR CORN AT THE CHICAGO BOARD OF TRADE.

Contract Month	Price as of November 15
December 2005	1.9575
March 2006	2.10
May 2006	2.18
July 2006	2.2525
September 2006	2.3350
December 2006	2.4425

Soybeans:

Consumption and production of soybeans has increased considerably over the last 30 years. As was the case with corn, 2005/06 was a good production year for soybeans (Table 5-4). Like corn, U.S. soybean production was the second largest on record. The U.S. is forecast to produce slightly over 3 billion bushels of soybeans on an average yield of 42.7 bushels per acre. While the ratio of stocks to use is considerably lower for soybeans than for corn, the amount of stocks is relatively comfortable. This is evidenced by the relatively large 21.6% world stocks to use ratio (Table 5-5). This ratio is among the higher stocks to use ratios experienced over the last 30 years[3]. Given these conditions, the World Agricultural Outlook Board of USDA expects the average farm price of soybeans to fall between $4.95 and $5.75 per bushel.

TABLE 5-4. SUPPLY AND DEMAND BALANCE SHEET FOR SOYBEANS[a]

	2003-04	2004-05E	2005-06F
Supply:			
Harvested Acres (millions)	73.4	75.2	72.2
Yield (bushels per acre)	33.9	42.2	42.7
		(Million Bushels)	
Beginning Stocks	178	112	256
Production	2,454	3,124	3,043
Imports	6	5	4
Total Supply	2,638	3,241	3,303
Use:			
Crushings	1,529	1,696	1,720
Exports	887	1,103	1,075
Seed	92	88	90
Residual	17	98	68
Total Use	2,525	2,985	2,953
Ending Stocks	112	256	350
Stocks/Use Ratio	4.4%	8.6%	11.9%

[a]Data from USDA, World Agricultural Outlook Board, (November 10, 2005) "World Agricultural Supply and Demand Estimates." WASDE-427.

[3] A historical perspective on the world stocks to use ratio for soybeans is available from the CBOT at http://www.cbot.com/cbot/pub/static/files/s_wstkuse.gif

TABLE 5-5. WORLD SUPPLY AND DEMAND BALANCE SHEET FOR SOYBEANS[a]			
	2003-04	2004-05E	2005-06F
Supply:			
		(Million Metric Tons)	
Beginning Stocks	40.5	35.19	42.09
Production	186.26	213.34	221.55
Imports	54.25	64.95	67.71
Use:			
Crush, Domestic	163.62	176.05	185.93
Total, Domestic	189.96	206.13	216.14
Exports	55.86	65.25	68.48
Ending Stocks	35.19	42.09	46.75
Stocks/Use Ratio	18.5%	20.4%	21.6%

[a]Data from USDA, World Agricultural Outlook Board, (November 10, 2005) "World Agricultural Supply and Demand Estimates." WASDE-428.

South American production of soybeans has become an important market driver. For 2005/06, USDA expects Argentinean plantings to increase to 15.2 million hectares (37.556 million acres) and according to the September Oil Crop Outlook report from USDA, Brazil is expected to plant 22 million hectares (54.4 million acres) of soybeans. Together, these countries produce more soybeans than the United States. Production in these countries will limit price increases, but with strong demand, a weather event in either country could cause considerable price volatility.

Current soybean prices at the Chicago Board of Trade are shown in Table 5-6. These prices reflect the large supplies and expectations of the market regarding South American production.

TABLE 5-6. CURRENT FUTURES PRICES FOR SOYBEANS AT THE CHICAGO BOARD OF TRADE.	
Contract Month	Price as of November 15
January 2006	5.9225
March 2006	5.9925
May 2006	6.0525
July 2006	6.1050
August 2006	6.1250
September 2006	6.1200
November 2006	6.1650

U.S. and International Yields of Corn and Soybeans

The U.S. continues to produce corn and soybeans with the highest yields in the world. It is interesting to compare the planted acreage and yields of these crops in the United States and other countries. The first rows of Tables 5-7 and 5-8 show the world plantings, yields, and production of corn (Table 5-7) and soybeans (Table 5-8) for the 2004/05 growing season. The next rows of the tables show how the U.S. figures compare to other countries. For instance, the U.S. plantings account for 21% of world corn acres and 42% of production. The data on yields should be interpreted with some caution as yields can fluctuate from year to year based on local climatic conditions, but they are illustrative nonetheless. The average corn yield in the U.S. in 2004/05 was 160 bushels per acre which was slightly more than double the world average. The same comparisons are made for Brazil, Argentina, Mexico, and China in the case of corn. Because Mexico is not an important soybean grower, India was substituted for Mexico in Table 5-8.

It is useful to note the striking advantage in terms of yield per acre that the U.S. enjoys in corn production. In 2004, Argentina achieved yields that were 75% of the U.S. yields, while yields in the second largest corn producing country, China, were 51% of U.S. yields. Although these comparisons are likely exaggerated by the extremely good year experienced in the U.S. and less than ideal conditions in Brazil, it is clear that the U.S. has a substantial yield advantage in corn production. How long this advantage persists is an important question. Improvements in corn yields in China could have important impacts on the market. Likewise, there is considerable potential to increase plantings in South America.

TABLE 5-7. PRODUCTION AND YIELDS OF CORN IN THE UNITED STATES AND OTHER SELECTED COUNTRIES, 2004/05 CROP YEAR[a].

Country	Plantings[b].	Yield[b]	Production
	Million Acres	Bushels per Acre	Million Bushels
World Total	356.62	78	27,895.95
United States	73.64	160	11,807.33
% of World	21%	205%	42%
Rest of World	282.98	57	16,088.62
% of World	79%	73%	58%
Brazil	28.34	49	1,377.89
% of World	8%	62%	5%
% of U.S.	38%	30%	12%
Argentina	6.67	115	767.68
% of World	2%	147%	3%
% of U.S.	9%	72%	7%
Mexico	19.18	47	890.90
% of World	5%	59%	3%
% of U.S.	26%	29%	8%
China	62.89	82	5,129.68
% of World	18%	104%	18%
% of U.S.	85%	51%	43%

[a] The data are from Foreign Agricultural Service, USDA, "World Agricultural Production." Circular Series, WAP 10-05, October 2005. http://www.fas.usda.gov/wap/circular/2005/05-10/Wap%2010-05.pdf
[b] Originally reported in million hectares and tons per acre.

The U.S. yield advantage is much less dramatic for the case of soybeans. In soybeans, both Brazil and Argentina are able to achieve yields that are close to U.S. levels. The other thing to notice is that both Brazil and Argentina have market shares in the neighborhood of 20% in soybeans. Corn production is less concentrated among the 3 largest growing countries.

TABLE 5-8: PRODUCTION AND YIELDS OF SOYBEANS IN THE UNITED STATES AND OTHER SELECTED COUNTRIES, 2004/05 CROP YEAR[a].

Country	Plantings[b]	Yield[b]	Production
	Million Acres	Bushels per Acre	Million Bushels
World Total	228.55	34	7,838.90
United States	73.96	42	3,123.58
% of World	32%	123%	40%
Rest of World	154.59	30	4,715.32
% of World	68%	88%	60%
Brazil	56.44	33	1,873.93
% of World	25%	97%	24%
% of U.S.	76%	79%	60%
Argentina	35.58	40	1,433.00
% of World	16%	117%	18%
% of U.S.	48%	95%	46%
India	17.79	11	202.09
% of World	8%	33%	3%
% of U.S.	24%	27%	6%
China	23.70	27	639.34
% of World	10%	78%	8%
% of U.S.	32%	64%	20%

[a] The data are from Foreign Agricultural Service, USDA, "World Agricultural Production." Circular Series, WAP 10-05, October 2005. http://www.fas.usda.gov/wap/circular/2005/05-10/Wap%2010-05.pdf
[b] Originally reported in million hectares and tons per acre.

As agricultural technology including genetics, farming practices, and equipment continues to travel around the globe, one would expect that the difference between yields in the U.S. and in other countries will shrink. A major driver will be the extent to which hybrids and varieties are modified to take advantage of the conditions in other regions. These changes will be driven, in part, by the profit incentive offered to genetic suppliers. If they find it difficult to capitalize on their intellectual property it will slow the pace of change. Likewise, improvements in the agricultural infrastructure in these countries should improve productivity. It is arguable that the U.S. has the most to lose in the corn market where we are clearly the leading producer. The transfer of technology and production has largely occurred in soybeans, but the rate that the Chinese and Indians are able to improve yields will have important long-term consequences for commodity markets.

The rate at which these countries catch up with the United States will have important implications for the competitive situation faced by American farmers. It will put upward pressure on farmland values in the countries that are catching up to the U.S. and will likely temper the American farmland market in the long-term. These changes will take place over a long-period of time and should not be viewed as short-term trends with short-term implications. However, it is interesting to note the differences in productivity around the world. As technology spreads around the globe it will place ever greater pressure on American farmers to innovate and find new ways to improve the rates of production achieved on their farms.

Chapter 6. Dairy — Markets and Policy

Mark W. Stephenson, Senior Extension Associate

2006 Dairy Outlook

Positive Factors:

- Low concentrate prices
- Adequate forage supplies
- More replacement animals
- Strong cull cow prices

Negative Factors:

- Decline in milk prices
- Higher energy and fertilizer costs

Uncertainties:

- Re-authorized MILC program

New York Dairy Situation and Outlook
2003, 2004 Preliminary 2005, and Projected 2006

Item	2003	2004	2005	2006	Percent Change 04-05	Percent Change 05-06
Number of milk cows (thousand head)	671	655	649	654	-0.9	0.8
Milk per cow (lbs.)	17,812	17,786	18,600	18,800	4.6	1.1
Total milk production (million lbs.)	11,952	11,650	12,075	12,300	3.6	1.9
Blended milk price ($/cwt.)[a]	12.99	16.49	15.68	14.25	-4.9	-9.1

[a] Northeast federal order statistical uniform price for farms shipping milk to Suffolk County, MA (Boston).

Table 6-1. U.S. Milk Supply and Utilization, 1999–2006

	1999	2000	2001	2002	2003	2004 [a]	2005 [b]	2006 [c]
Supply								
Cows Numbers (thous.)	9,156	9,206	9,115	9,137	9,084	9,010	9,045	9,063
Production/cow (lbs)	17,771	18,201	18,139	18,612	18,748	18,958	19,540	19,931
Production	162.7	167.6	165.5	169.8	170.3	170.8	176.7	180.6
Farm Use	1.3	1.3	1.3	1.2	1.2	1.1	1.1	1.1
Marketings	161.4	166.3	164.2	168.5	169.1	169.7	175.6	179.6
Beginning Commercial Stocks	5.3	6.1	6.8	6.1	9.9	8.3	7.2	7.4
Imports	4.8	4.4	5.7	5.1	5.0	5.3	4.7	4.9
Total Supply	**171.4**	**176.8**	**176.8**	**179.8**	**184.1**	**183.3**	**187.5**	**191.9**
Utilization								
Commercial Disappearance	164.9	169.2	169.6	169.6	174.6	176.2	180.1	183.7
Ending Commercial Stocks	6.1	6.8	7.0	9.9	8.3	7.2	7.4	8.1
DEIP	0.3	0.4	0.1	0.0	0.1	0.1	0.0	0.1
Net Removals (excluding DEIP)	0.1	0.5	0.1	0.3	1.1	-0.2	0.0	0.0
Total Use	**171.4**	**176.8**	**176.8**	**179.8**	**184.1**	**183.3**	**187.5**	**191.9**

Source: Dairy Situation and Outlook, Milk Production, and Dairy Market News, U.S. Department of Agriculture. Note that total may not add exactly due to rounding.

* Leap year.

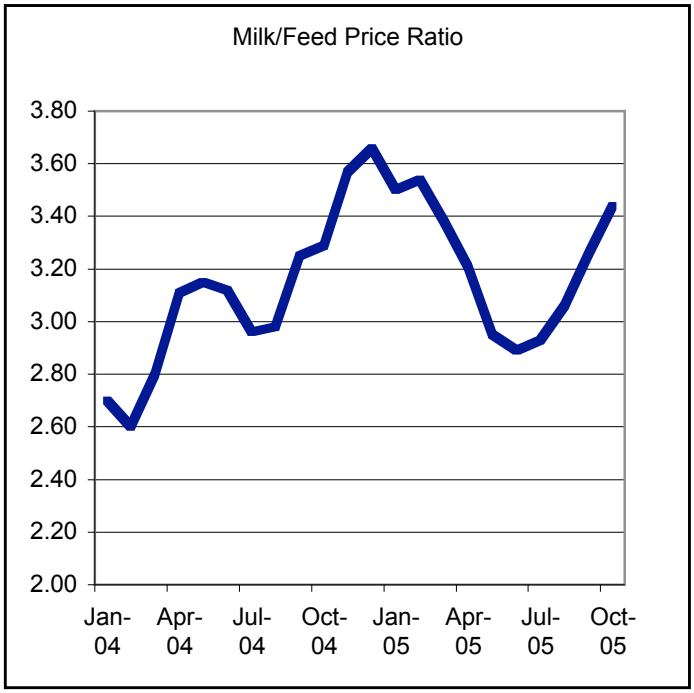
[a] Revised.

[b] Based on preliminary USDA data and Cornell estimates.

[c] Projected by Mark Stephenson.

The Dairy Situation

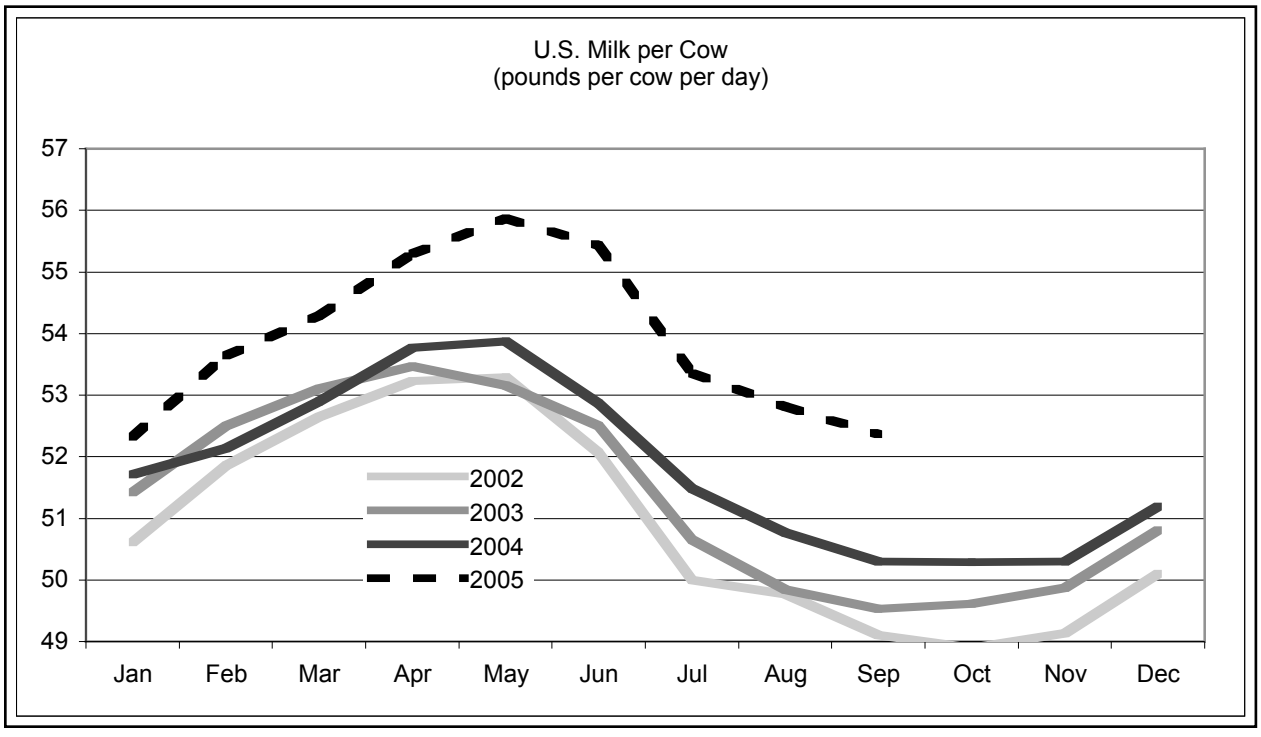
As 2005 comes to a close, we have to acknowledge another great milk price year. The class III price was the third highest average on record (2004 was the highest at $15.39 and 1998 averaged $14.20). Not a bad year at all. Moreover, feed costs were fairly low and the ratio of milk prices to feed costs have shown 2005 to be an even better financial year for milk producers than last year.



Two years of very strong milk prices have given producers across the country the incentive and the wherewithal to increase milk production.

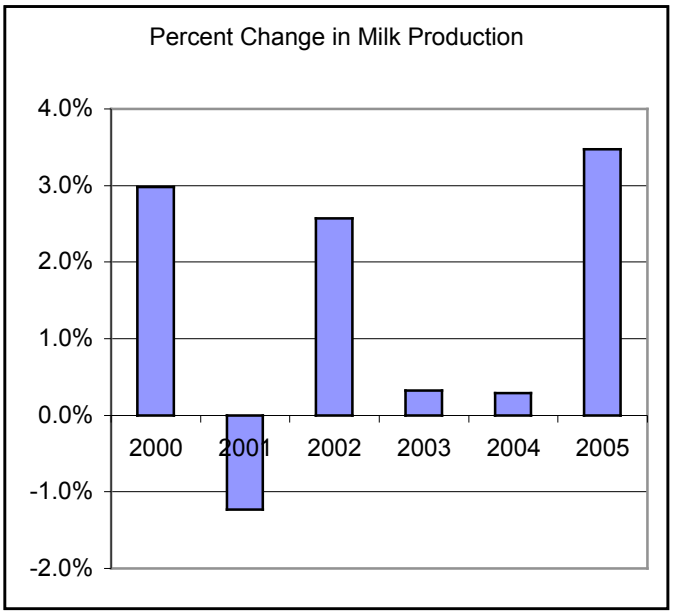
The lower feed prices have allowed producers to push milk yields to much higher levels. It is quite normal for annual gains in milk per cow to be about 2 percent above year earlier levels. There were very little gains expressed in 2003 and 2004, but in 2005, much of the expected gains of previous years were achieved.

Monsanto had their rBST product under allocation in the previous years while they ramped production up in a new plant. Larger to full allocations were available to producers in 2005.



Milk cow numbers also increased in 2005. It is typical for the U.S. herd to decline something like one percent per year but, after two years of strong milk prices, producers across the country were holding on to cows that would normally have been culled. Imports of Canadian heifers have not been available since the discovery of a BSE (bovine spongiform encephalopathy) cow in May of 2003. However, the biological lag of growing the herd internally has finally been accomplished. In July, USDA indicated that milk cow replacement heifers were up three percent from year earlier levels indicating that the pipeline is full of animals.

Increased cow numbers coupled with much higher yield has given us increased production over year earlier levels in every single month of 2005 and an overall average increase of about 3.5 percent for the year—well above an historic norm.



2000 and 2002 were also big milk production years. In those years, milk price was quite low as the market struggled to clear excess dairy products. 2005 was a much different year as we witnessed very large milk production with some of the strongest milk prices ever. Big production and strong prices can only be sustained with very strong demand.

Demand was remarkably strong in 2005. Commercial disappearance on a milk fat equivalent basis very nearly kept pace with production and only slightly increased stocks. In fact, commercial cheese and butter stocks stayed at very comfortable levels throughout the year and only nonfat dry milk stocks were notable.

Nonfat dry milk stocks were notable for their decline. Persistent drought in Oceania has left world supplies of nonfat dry milk tight. Also, as an expanded European Union struggles with costly agricultural policies, they have decreased export subsidies. These two factors have caused world powder prices to increase substantially and the U.S. has sold quite a bit of product into world markets without subsidy.

The Dairy Outlook

We have a lot of momentum built up for milk production in 2006. As indicated earlier, the replacement pipeline is quite full of animals and the only direction that I can see for the year ahead is more. I don't think that Canadian borders will be opened to shipment of replacement heifers next year, but if that were the case then there would be even more animals available. Also, the technology of sexed semen is now available and being used with the potential of supplying even more heifers in the years ahead.

Cooperatives Working Together, CWT, is a self-funded "... national program to address the supply and demand imbalances that can depress milk prices". CWT works on the supply side by accepting

farmer bids for herd retirement. They have a current goal of removing 70,000 cows from the national herd in an effort to moderate the anticipated increase in milk production.

Feed supplies across the country are ample and the quality is generally regarded as good. The U.S. corn crop has come in larger than expected and, coupled with substantial carryout stocks from last year's record-setting crop, should give dairy farmers low concentrate prices in 2006.

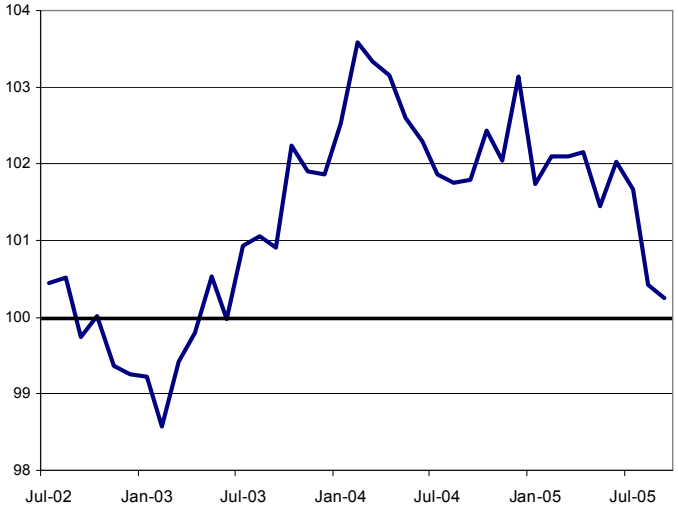
I don't believe that CWT can remove enough animals to keep milk prices at 2005 levels. In fact, even with the cows that will be taken out of the herd, I am forecasting increased cow numbers. And, the heavier culling will take out the more marginal animals which should help to increase milk per cow in the year ahead. My forecast for total milk production is for a slower, but still substantial, 2.2 percent increase over 2005 levels.

CWT has another tool that is meant to explore new demand for dairy products. The program will accept bids for export subsidy of dairy products and it has a target price of $1.40 per pound of cheese and $1.30 per pound of butter on the Chicago Mercantile Exchange. This program will also be active next year but I don't expect that they will manage to hold prices at their target. My own forecast is that butter will average $1.27 and that cheese will average $1.34—reasonably close to CWT targets but a large drop from 2005 prices (see table 6-2).

One of the reasons that CWT will not be able to hold the target prices is that world supplies of dairy products will not be as tight in 2006. The drought in New Zealand is considerably relieved and Australia's drought is not quite as bad as it has been in the past two years. With more product on the world market, CWT subsidy will have to be larger to move product overseas. This may exhaust the producer funds in the program.

Perhaps the biggest story for the dairy industry next year may be domestic demand. Last year, consumers were generally buoyant in their outlook and spending and this was reflected in dairy product purchases. Food consumption out-of-the-home were at very high levels and dairy products are prominently featured in that arena. This next year, we will not be so fortunate as consumers rethink their spending priorities.

Restaurant Performance Index



Source: NRA; Values Greater than 100 = Expansion; Values Less than 100 = Contraction

Petroleum prices were already increasing dramatically before the hurricanes hit this summer. The cost of the war, natural disasters, and energy have already had an impact on the restaurant trade. The Restaurant Performance Index is a composite measure of same-store sales, traffic, and labor and capital expenditures on the part of restaurants. The most recent report showed that this index had reached a 27 month low and the trend is still declining. Consumers will have to alter their expenditure priorities to accommodate increased costs of living.

Increased energy costs will have multiple effects throughout the dairy industry. They have certainly increased the costs of fuel to farmers and they will increase the costs of fertilizer for the 2006 planting year. Many farmers are already experiencing increased hauling costs to get their milk to a processing plant but, plants too are suffering under increased manufacturing and distribution costs. In the long-run, if energy costs remain at this higher level (or increase even further), there will be a tendency for products to remain closer to home. In other words, it will be more costly for distant milk supplies and dairy products to penetrate distant markets.

I am forecasting a significant drop in milk prices for 2006. My class III milk price forecast is nearly $2.00 lower than the 2005 average. However, I still think that there will be opportunities to export nonfat dry milk and I expect slightly stronger powder prices next year. This means that the decline in my class IV prices is not as great as class III. The Northeast federal order price under this scenario is expected to decline about $1.46 in the year ahead. While this is a large decline in price, 2002-2003 were years of much lower milk prices.

Policy

The 2002 Farm Bill gave the dairy industry Milk Income Loss Contracts (MILC). That program was legislated to terminate in September of 2005. Many folks were anticipating that it would be extended until the next Farm Bill but the distractions in Washington with the August and September hurricanes did not allow time for an extension. The recent Senate version of an appropriations bill included a two-year extension for the program. Originally, the House version did not and it appears as though it may be difficult to find a champion in that legislative body. It is possible, but with congress facing the largest deficits that we have ever had, I suspect that they will be looking for places to trim costs.

2007 will be a Farm Bill year and next year those discussions will begin. I don't actually expect any legislation to occur, but anything could happen.

I do expect that the federal milk marketing orders will go to a national hearing to consider changes in the product price formulas. These are the formulas that determine class milk prices from the weekly survey of cheese, butter, nonfat dry milk and whey prices. There is a value in those formulas called a "make allowance" which is supposed to reflect the cost of transforming milk into dairy products. The make allowances have not been changed since federal order reform in 2000 and dairy plants have been struggling with significantly increased energy costs. Most plants and even dairy cooperatives believe that there is a need for this hearing but that is not to say that the topic is non-controversial. Raising the make allowance will have the effect of temporarily lowering milk prices in a year when I already expect them to decline from market forces.

Summary

Expect a significant decline in milk prices for 2006. This will be made more difficult at the farm level by increased costs of production due to higher energy and fertilizer prices. It will be somewhat offset by lower feed grain costs. Two years of very high milk prices have allowed producers to pay down debt and restore credit reserves from the very low milk prices of 2002-2003. I am not anticipating anything like those low price years. All-in-all, 2006 may be an unremarkable year for milk production.

Table 6-2. National Farm Prices for Milk; CCC Purchase, Wholesale, and Retail Prices for Cheddar Cheese, Butter, and Nonfat Dry Milk; and Selected Retail Price Indices, 1994–2002.

	1996	1997	1998	1999	2000	2001	2002	2003	2004[a]	2005[b]
Farm Milk ($/cwt.)										
All Milk (ave. fat)	14.75	13.34	15.50	14.38	12.40	15.05	12.11	12.53	16.06	15.08
Class III (3.5%)	13.39	12.05	14.20	12.43	9.74	13.10	10.42	11.42	15.39	14.05
Support (3.5%)	10.25	10.10	9.95	9.80	9.80	9.80	9.80	9.80	9.80	9.80
Milk Price: Feed Price Value	2.45	2.38	3.34	3.59	3.05	3.39	2.60	2.61	3.10	3.22
MILC payments[c]	0.00	0.00	0.00	0.00	0.00	0.06	1.21	1.09	0.22	0.00
Cheddar Cheese, Blocks ($/lb.)										
CCC Purchase	1.145	1.130	1.115	1.100	1.122	1.131	1.131	1.131	1.131	1.131
Wholesale, NCE/Chicago Mercantile Exchange	1.466	1.308	1.569	1.404	1.149	1.439	1.182	1.317	1.649	1.482
Butter ($/lb.)										
CCC Purchase, Grade A or higher, Chicago	0.650	0.650	0.650	0.650	0.668	0.855	0.855	1.050	1.050	1.050
Wholesale, Gr. AA, Chicago Merc. Exchange	1.078	1.159	1.769	1.229	1.177	1.663	1.106	1.145	1.817	1.556
Nonfat Dry Milk										
CCC Purchase, Unfortified ($/lb.)	1.065	1.047	1.028	1.010	1.010	0.900	0.900	0.800	0.800	0.800
Wholesale, Central States	1.222	1.100	*1.069	1.031	1.015	1.004	0.928	0.838	0.858	0.972
Retail Price Indices (1982–84=100.0)										
Whole Milk	141.1	142.9	147.9	156.2	156.9	165.9	162.1	162.5	183.4	184.2
Cheese	144.7	147.7	152.3	162.6	162.8	167.6	170.0	169.4	180.8	183.3
All Dairy Products	142.1	145.5	150.8	159.6	160.7	167.1	168.1	167.9	180.2	182.1
All Food	153.7	157.7	161.1	164.6	168.4	173.6	176.8	180.5	186.6	191.0
All Consumer Prices	156.9	160.5	163.0	166.6	172.2	177.1	179.9	184.0	188.9	195.7

Source: Dairy Situation and Outlook, Dairy Market News, and Federal Milk Order Market Statistics, U.S. Department of Agriculture.

[a] Revised.

[b] Estimated by Mark Stephenson.

[c] Milk Income Loss Contract payments began in October of 2001 and are scheduled to end in September of 2005.

The Northeast Dairy Situation and Outlook

Number of Producers by State
Northeast Federal Milk Marketing Order

	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Total
ME	394	389	388	394	390	388	386	386	383	383	380	377	4,638
MD	602	597	598	597	594	586	583	585	583	575	573	574	7,047
NJ	130	126	125	123	122	122	120	119	119	121	119	119	1,465
NY	**5,964**	**5,918**	**5,892**	**4,843**	**4,845**	**4,827**	**5,806**	**5,839**	**5,816**	**5,778**	**5,714**	**5,661**	**66,903**
PA	6,466	6,437	6,393	6,123	6,207	6,236	6,338	6,352	6,280	6,279	6,296	6,257	75,664
VT	1,305	1,284	1,262	1,059	1,056	1,073	1,256	1,255	1,255	1,250	1,250	1,242	14,547
VA	179	177	174	196	191	167	201	165	175	168	158	165	2,116
Other Regional*	543	530	525	522	525	526	528	524	524	515	514	538	6,314
Other States**	177	176	190	192	127	124	122	134	125	125	124	154	1,770
Total	15,760	15,634	15,547	14,049	14,057	14,049	15,340	15,359	15,260	15,194	15,128	15,087	180,464

* Includes data for the states of Connecticut, Massachusetts, New Hampshire, and Rhode Island.

** Represents restricted data for the states of Delaware, Michigan, Nevada, Ohio, Utah, West Virginia, and Wisconsin.

Source: Northeast Monthly Federal Milk Order Market Statistics .

Dairy producer numbers have declined for many years as remaining farms have become larger. The number of producers in the Northeast order in the table above should not be taken as a change in that trend from April, 2004 forward. This is more a matter of distant milk being pooled on the Northeast federal order. Producers from states as far away as Ohio, Michigan, Delaware, West Virginia, and even Utah and Nevada have pooled milk on this order.

Average Daily Output per Farm by State, Pounds
Northeast Federal Milk Marketing Order

	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Average
ME	4,083	4,155	4,238	4,222	4,332	4,431	4,418	4,303	4,242	4,146	4,115	4,199	4,240
MD	4,484	4,812	4,931	5,171	5,091	4,485	4,380	4,041	4,034	4,151	4,327	4,516	4,535
NJ	4,059	4,253	4,398	4,492	4,500	4,303	4,249	4,079	4,059	3,934	3,943	4,040	4,192
NY	**4,574**	**4,627**	**4,742**	**4,876**	**4,967**	**4,998**	**4,840**	**4,460**	**4,320**	**4,297**	**4,271**	**4,444**	**4,618**
PA	3,246	3,394	3,538	3,608	3,520	3,319	3,259	3,127	3,117	3,090	3,141	3,282	3,303
VT	5,421	5,533	5,623	5,502	5,600	5,549	5,627	5,513	5,419	5,386	5,369	5,572	5,510
VA	3,882	4,253	5,099	4,659	4,111	4,224	3,725	4,083	4,079	4,063	4,373	4,208	4,230
Other Regional*	4,864	5,042	5,142	5,157	5,141	5,058	4,923	4,828	4,731	4,785	4,823	4,888	4,949
Other States**	4,243	4,448	4,897	4,678	4,356	3,763	3,629	3,377	3,459	3,446	3,613	3,216	3,927
Average	4,317	4,502	4,734	4,707	4,624	4,459	4,339	4,201	4,162	4,144	4,219	4,263	4,389

* Represents restricted data for the states of Connecticut, Massachusetts, New Hampshire, and Rhode Island

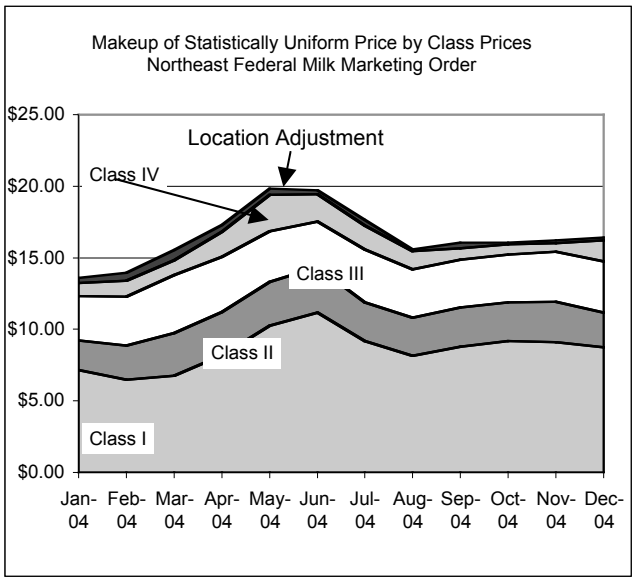
** Represents restricted data for the states of Idaho, Michigan, Minnesota, Nevada, Utah, and Wisconsin.

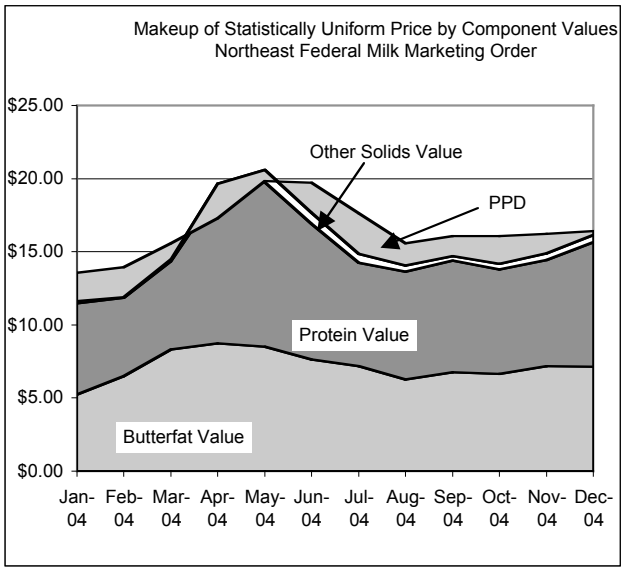
Source: Northeast Monthly Federal Milk Order Market Statistics .

Class Utilization and Prices Northeast Federal Milk Marketing Order												
	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04
Class I Utilization	47.4%	43.6%	44.6%	48.5%	44.8%	45.8%	43.4%	45.6%	51.2%	50.8%	52.0%	49.5%
Class II Utilization	17.7%	18.5%	20.1%	19.7%	20.4%	22.2%	19.2%	20.2%	20.0%	20.1%	19.9%	17.3%
Class III Utilization	26.5%	28.8%	28.0%	19.7%	17.1%	18.1%	25.0%	24.2%	22.7%	23.5%	23.5%	22.2%
Class IV Utilization	8.4%	9.1%	7.3%	12.0%	17.7%	13.9%	12.4%	10.1%	6.1%	5.5%	4.7%	11.0%
Class I Price	$15.10	$14.84	$15.19	$16.89	$22.90	$24.38	$21.20	$17.87	$17.19	$18.03	$17.54	$17.68
Class II Price	$11.67	$12.90	$14.79	$15.21	$15.03	$14.31	$14.00	$13.13	$13.66	$13.57	$14.09	$13.98
Class III Price	$11.61	$11.89	$14.49	$19.66	$20.58	$17.68	$14.85	$14.04	$14.72	$14.16	$14.89	$16.14
Class IV Price	$10.97	$12.21	$14.10	$14.57	$14.50	$13.72	$13.31	$12.46	$13.00	$12.81	$13.34	$13.42
Butterfat Price	$1.50	$1.85	$2.38	$2.50	$2.43	$2.18	$2.05	$1.79	$1.94	$1.90	$2.05	$2.04
Protein Price	$2.09	$1.79	$2.01	$3.45	$3.76	$3.11	$2.36	$2.47	$2.54	$2.38	$2.43	$2.85
Other Solids Price	$0.02	$0.01	$0.02	$0.10	$0.14	$0.13	$0.10	$0.07	$0.06	$0.07	$0.08	$0.09
PPD	$1.97	$2.06	$1.07	-$2.38	-$0.74	$2.02	$2.79	$1.53	$1.34	$1.91	$1.31	$0.29

Source: Northeast Monthly Federal Milk Order Market Statistics .

The graphs below are created from the data above. They illustrate the where the money in the Northeast Federal Order pool is coming from and how it is being paid out. The first graph shows the contribution of processors from the four classes of milk to the pool. The second graph shows the disbursement of the pool dollars to producers in component values and the Producer Price Differential. You can see from the chart that when class III prices are rising rapidly, the PPD will become quite small or even negative.





MILK PRICE PROJECTIONS*
Northeast Federal Order Blend Price
3.5 Percent, Suffolk County, Massachusetts
Last Quarter 2005-2006

Month	2004	2005	Difference
	(dollars per hundredweight)		
October	16.07	15.88	-0.19
November	16.20	15.67 [a]	-0.53
December	16.43	15.37 [a]	-1.06
Fourth Quarter Average	16.23	15.64 [a]	-0.59
Annual Average	***12.99***	***15.71*** [a]	***2.72***

Month	2005	2006 [a]	Difference
	(dollars per hundredweight)		
January	16.31	14.98	-1.33
February	15.51	14.54	-0.97
March	16.04	14.42	-1.62
First Quarter Average	15.95	14.65	-1.31
April	15.52	14.23	-1.29
May	15.35	14.03	-1.32
June	15.23	13.99	-1.24
Second Quarter Average	15.37	14.08	-1.28
July	15.85	13.95	-1.90
August	15.84	14.09	-1.75
September	15.92	14.23	-1.69
Third Quarter Average	15.87	14.09	-1.78
October	15.88	14.28	-1.60
November	15.67 [a]	14.27	-1.40
December	15.37 [a]	13.97	-1.40
Fourth Quarter Average	15.64 [a]	14.17	-1.47
Annual Average	***15.71*** [a]	***14.25*** [a]	***-1.46***

* Averages may not add due to rounding.

[a] Projected.

Chapter 7. Dairy -- Farm Management

Wayne A. Knoblauch, Professor
George J. Conneman, Professor
Linda D. Putnam, Extension Support Specialist

Herd Size Comparisons

Data from the 200 New York dairy farms that participated in the Dairy Farm Business Summary (DFBS) Project in 2004 have been sorted into eight herd size categories and averages for the farms in each category are presented in Tables 7-1 and 7-2. Note that after the less than 50 cow category, the herd size categories increase by 25 cows up to 100 cows, by 100 cows up to 400 cows, and by 200 cows up to 600 cows.

As herd size increases, the average profitability generally increases (Table 7-1). Net farm income without appreciation averaged $23,339 per farm for the less than 50 cow farms and $624,346 per farm for those with more than 600 cows. Labor and management income per operator and the return to all capital without appreciation generally increase as herd size increases.

It is more than size of herd that determines profitability on dairy farms. Farms with 600 and more cows averaged $568 net farm income per cow while the less than 50 cow dairy farms averaged $598 net farm income per cow. The 50 to 74 herd size category had the second highest net farm income per cow at $640. Other factors that affect profitability and their relationship to the size classifications are shown in Table 7-2.

TABLE 7-1. COWS PER FARM AND FARM FAMILY INCOME MEASURES
200 New York Dairy Farms, 2004

Number of Cows	Number of Farms	Average Number of Cows	Net Farm Income without Appreciation	Net Farm Income per Cow	Labor & Management Income per Operator	Return to all Capital without Appreciation
Under 50	15	39	$23,339	$598	$335	-1.6%
50 to 74	33	60	38,645	640	6,858	0.3%
75 to 99	15	85	50,057	587	6,854	1.6%
100 to 199	42	136	86,180	636	21,224	3.7%
200 to 299	23	255	144,340	566	51,364	6.5%
300 to 399	20	345	183,475	532	70,484	6.6%
400 to 599	21	499	372,990	748	141,522	11.1%
600 & over	31	1,099	624,346	568	205,875	9.0%

This year, net farm income per cow did not exhibit the usual increase as herd size increased. All herd size categories saw an increase in operating cost of producing milk from a year earlier (Table 7-2). Net farm income per cow will increase as farms become larger if the costs of increased purchased inputs are offset by greater and more efficient output.

The farms with more than 600 cows averaged more milk sold per cow than any other size category (Table 7-2). With 23,262 pounds of milk sold per cow, farms in the largest herd size group averaged 18 percent more milk output per cow than the average of all herds in the summary with less than 600 cows.

Note: All data in this section are from the New York Dairy Farm Business Summary and Analysis Project unless a specific source is specified. Publications reporting Dairy Farm Business Summary data for New York, six regions of the state, for large herds, small herds, grazing farms, and farms that rent are available from the Cornell Cooperative Extension Resource Center website: http://www.cce.cornell.edu/store

The ability to reach high levels of milk output per cow with large herds is a major key to high profitability. Three times a day milking (3X) and supplementing with bST are herd management practices commonly used to increase milk output per cow in large herds. Many dairy farmers who have been willing and able to employ and manage the labor required to milk 3X have been successful. Only three percent of the 63 DFBS farms with less than 100 cows used a milking frequency greater than 2X. As herd size increased, the percent of herds using a higher milking frequency increased. Farms with 100 to 200 cows reported 12 percent of the herds milking more often than 2X, the 200-299 cow herds reported 35 percent, 300-399 cow herds reported 65 percent, 400-599 cow herds reported 76 percent, and the 600 cow and larger herds reported 90 percent exceeding the 2X milking frequency.

TABLE 7-2. COWS PER FARM AND RELATED FARM FACTORS
200 New York Dairy Farms, 2004

Number of Cows	Average Number of Cows	Milk Sold Per Cow (lbs.)	Milk Sold Per Worker (cwt.)	Till-able Acres Per Cow	Forage DM Per Cow (tons)	Farm Capital Per Cow	Cost of Producing Milk/Cwt.	
							Operating	Total
Under 50	39	18,017	3,660	3.8	7.8	$10,752	$11.71	$20.65
50 to 74	60	17,755	4,958	3.6	7.9	9,116	11.82	19.30
75 to 99	85	18,330	5,373	3.2	9.4	9,247	12.52	18.51
100 to 199	136	19,828	6,604	3.1	9.1	9,374	12.38	17.73
200 to 299	255	20,453	8,898	2.4	8.0	6,796	12.89	16.37
300 to 399	345	21,385	8,289	2.2	8.5	7,245	12.74	16.23
400 to 599	499	22,275	9,156	2.3	8.4	6,439	12.19	15.07
600 & over	1,099	23,262	11,125	1.8	7.7	6,509	12.70	15.17

Bovine somatotropin (bST), was used to a greater extent on the large herd farms. bST was used consistently during 2004 on 13 percent of the herds with less than 100 cows, 40 percent of the farms with 100 to 299 cows and on 50 percent of the farms with 300 cows and more.

Milk output per worker has always shown a strong correlation with net farm income. In 2004, this relationship also held when labor and management income was the profit measure compared. The farms with 100 cows or more averaged over 881,400 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 466,400 pounds per worker.

In achieving the highest productivity per cow and per worker, the largest farms had the fewest crop acres per cow and below average forage dry matter harvested per cow. However, the larger farms generally purchased more roughage per cow. The farms with 400 to 599 cows had the most efficient use of farm capital with an average investment of $6,439 per cow.

The 21 farms with 400 to 599 cows held their average total costs of producing milk to $15.07 per hundredweight, $2.64 below the $17.71 average for the remaining 176 dairy farms. The lower average costs of production plus a similar milk price gave the managers of the 400 to 599 cow dairy farms profit margins (milk price less total cost of producing milk) that averaged $2.71 per hundredweight above the average of the other 176 DFBS farms.

Ten-Year Comparisons

The total cost of producing milk on DFBS farms has increased $2.31 per hundredweight over the past 10 years (Table 7-3). In the intervening years, total cost of production had exhibited a downward trend to 1995, increased in 1996, decreased 1997 through 1999, increased in 2000 and 2001, fell in 2002, and again increased in 2003 and 2004. Over the past 10 years milk sold per cow has increased 9 percent and cows per worker by 17 percent on DFBS farms (Table 7-4). Farm net worth has increased significantly, while percent equity has been stable to declining.

TABLE 7-3. TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1995 to 2004

Item	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Operating Expenses										
Hired labor	$1.78	$1.89	$1.97	$2.06	$2.14	$2.25	$2.41	$2.44	$2.51	$2.67
Purchased feed	3.71	4.73	4.63	4.18	3.96	3.91	4.25	4.10	4.29	4.88
Machinery repair, vehicle expense and rent	0.85	1.02	0.94	1.12	1.18	1.06	1.21	1.01	0.91	1.09
Fuel, oil and grease	0.27	0.31	0.28	0.25	0.24	0.34	0.32	0.28	0.33	0.41
Replacement livestock	0.15	0.19	0.18	0.24	0.24	0.23	0.20	0.16	0.15	0.16
Breeding fees	0.15	0.15	0.15	0.16	0.17	0.17	0.19	0.21	0.19	0.21
Veterinary and medicine	0.39	0.42	0.41	0.45	0.47	0.51	0.54	0.56	0.56	0.59
Milk marketing	0.70	0.59	0.52	0.53	0.49	0.69	0.63	0.65	0.69	0.72
Other dairy expenses	0.92	0.99	1.05	1.09	1.13	1.16	1.26	1.25	1.30	1.27
Fertilizer and lime	0.31	0.32	0.33	0.35	0.35	0.29	0.33	0.27	0.26	0.30
Seeds and plants	0.19	0.20	0.21	0.22	0.20	0.19	0.20	0.20	0.20	0.24
Spray and other crop expense	0.20	0.21	0.23	0.24	0.24	0.22	0.25	0.22	0.19	0.20
Land, building and fence repair	0.16	0.23	0.19	0.27	0.27	0.21	0.26	0.19	0.14	0.21
Taxes	0.27	0.26	0.23	0.21	0.21	0.20	0.21	0.20	0.21	0.22
Insurance	0.17	0.18	0.16	0.17	0.16	0.16	0.14	0.16	0.15	0.16
Utilities (farm share)	0.38	0.39	0.35	0.32	0.31	0.32	0.33	0.34	0.34	0.36
Interest paid	0.94	0.91	0.90	0.89	0.83	0.95	0.82	0.61	0.56	0.57
Miscellaneous (including rent)	0 .40	.41	0.38	0.41	0.44	0.45	0.42	0.44	0.40	0.43
Total Operating Expenses	$11.94	$13.40	$13.12	$13.15	$13.02	$13.31	$13.98	$13.27	$13.39	$14.67
Less: Nonmilk cash receipts	1.15	1.07	1.14	1.18	1.44	1.83	1.49	1.91	1.57	1.70
Increase in grown feed & supplies	0.14	0.15	0.07	0.25	0.25	0.11	0.10	0.12	0.27	0.17
Increase in livestock	0.25	0 .18	0.15	0.22	0.11	0.06	0.52	0.23	0.09	0.22
OPERATING COST OF MILK PRODUCTION	$10.40	$12.00	$11.76	$11.50	$11.22	$11.31	$11.87	$11.01	$11.46	$12.58
Overhead Expenses										
Depreciation: machinery & buildings	$1.07	$1.04	$0.95	$1.08	$1.14	$1.20	$1.30	$1.39	$1.23	$1.32
Unpaid labor	0.12	0.13	0.13	0.11	0.11	0.10	0.10	0.08	0.10	0.07
Operator(s) labor [a]	0.92	0.88	0.79	0.74	0.80	0.79	0.74	0.74	0.70	0.67
Operator(s) management (5% of cash receipts)	0.70	0.80	0.73	0.82	0.83	0.76	0.87	0.75	0.73	0.90
Interest on farm equity capital (5%)	0.94	0.94	0.87	0.85	0.86	0.88	0.91	0.89	0.85	0.92
Total Overhead Expenses	$3.75	$3.79	$3.47	$3.60	$3.74	$3.73	$3.92	$3.85	$3.61	$3.88
TOTAL COST OF MILK PRODUCTION	$14.15	$15.79	$15.23	$15.10	$14.96	$15.04	$15.79	$14.86	$15.07	$16.46
AVERAGE FARM PRICE OF MILK	$13.03	$14.98	$13.65	$15.60	$14.91	$13.38	$15.98	$12.98	$13.24	$16.64
Return per cwt. to operator labor, capital & mgmt.	$1.44	$1.81	$0.81	$2.91	$2.44	$0.77	$2.71	$0.50	$0.45	$2.67
Rate of return on farm equity capital	-1.0%	0.7%	-4.1%	8.0%	4.7%	-4.4%	6.0%	-5.6%	-5.7%	6.0%

[a]1994 and 1995 = $1,450/month, 1996 = $1,500/month, 1997 = $1,550/month, 1998 = $1,600/month, 1999 = $1,800/month, 2000 = $1,900/month, 2001 = $2,000/month, 2002 = $2,100/month, and 2003 and 2004 = $2,200/month of operator labor.

TABLE 7-4. TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1995 to 2004

Item	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of farms	321	300	253	305	314	294	228	219	201	200
Cropping Program										
Total tillable acres	399	415	462	497	516	566	618	660	659	701
Tillable acres rented	166	183	207	232	234	262	290	337	323	345
Hay crop acres	197	198	219	239	248	274	302	323	321	339
Corn silage acres	117	120	156	175	186	192	210	232	233	245
Hay crop, tons DM/acre	2.8	2.8	2.5	3.1	2.9	3.3	2.8	3.1	3.2	3.5
Corn silage, tons/acre	15.6	15.9	16.1	18.0	16.3	15.1	16.5	15.4	17.2	17.7
Fert. & lime exp./tillable acre	$25	$26	$28	$31	$32	$27	$32	$27	$28	$31
Machinery cost/cow	$402	$450	$429	$471	$502	$513	$554	$520	$497	$565
Dairy Analysis										
Number of cows	160	167	190	210	224	246	277	297	314	334
Number of heifers	121	124	139	155	164	186	207	226	240	260
Milk sold, cwt.	32,362	33,504	39,309	43,954	47,932	52,871	60,290	66,177	70,105	73,767
Milk sold/cow, lbs.	20,269	20,113	20,651	20,900	21,439	21,516	21,762	22,312	22,302	22,070
Purchased dairy feed/cwt. milk	$3.70	$4.73	$4.63	$4.18	$3.96	$3.91	$4.25	$4.10	$4.27	$4.86
Purc. grain & conc. as % of milk receipts	27%	30%	33%	26%	25%	27%	25%	30%	30%	27%
Purc. feed & crop exp/cwt. milk	$4.39	$5.46	$5.39	$5.00	$4.75	$4.61	$5.03	$4.79	$4.92	$5.60
Capital Efficiency										
Farm capital/cow	$6,264	$6,218	$6,196	$6,161	$6,368	$6,535	$6,755	$6,794	$6,748	$7,010
Real estate/cow	$2,763	$2,701	$2,650	$2,537	$2,562	$2,615	$2,713	$2,612	$2,722	$2,809
Mach. invest./cow	$1,098	$1,107	$1,108	$1,118	$1,163	$1,225	$1,222	$1,261	$1,208	$1,226
Asset turnover ratio	.49	.55	.52	0.61	0.59	0.54	0.63	0.53	0.54	0.64
Labor Efficiency										
Worker equivalent	4.40	4.48	5.01	5.35	5.71	6.11	6.72	7.21	7.50	7.97
Operator/manager equivalent	1.56	1.56	1.60	1.62	1.76	1.83	1.94	1.82	1.86	1.64
Milk sold/worker, lbs.	736,269	747,861	784,604	821,565	839,432	865,325	897,167	917,854	934,733	925,553
Cows/worker	36	37	38	39	39	40	41	41	42	42
Labor cost/cow	$570	$582	$598	$609	$653	$674	$706	$725	$738	$752
Profitability & Financial Analysis										
Labor & mgmt. income/operator	$10,346	$18,651	$-1,424	$55,917	$42,942	$-2,908	$45,479	$-14,243	$-15,360	$78,061
Farm net worth, end year	$624,261	$648,186	$685,665	$798,297	$865,626	$942,881	$1,181,055	$1,173,836	$1,207,964	$1,466,674
Percent equity	61%	61%	57%	59%	58%	57%	60%	57%	56%	60%

Milk Cow Operations and Milk Cow Inventory

TABLE 7-5. NUMBER OF DAIRY FARMS AND MILK COWS BY SIZE OF HERD
New York State, 2004 [a, b]

Size of Herd	Farms		Milk Cows	
Number of Cows	Number	% of Total	Number	% of Total
1 - 29	1,400	20.3%	13,000	2.0%
30-49	1,300	18.8%	49,000	7.5%
50-99	2,600	37.7%	176,000	26.9%
100-199	1,000	14.5%	134,000	20.4%
200-399	350	5.1%	86,000	13.1%
400-699	145	2.1%	75,000	11.5%
700-999	55	0.8%	47,000	7.2%
1000-1499	35	0.5%	42,000	6.4%
1500 or more	15	0.2%	33,000	5.0%
Total	6,900	100.0%	655,000	100.0%

[a]This information on number of farms and number of cows by size of herd is derived from several sources:
- Dairy Statistics as published by the New York Agricultural Statistics Services for 2004.
- CAFO (Concentrated Animal Feeding Operations) permit data as of July 1, 2005. About 70 small CAFO farms (farms with 200 to 700 milk cows) have not applied for or updated the permit. Estimates for these farms were made so as to reflect the total number of dairy farms in New York State.

[b] The author wishes to thank everyone who provided some data as well as providing valuable advice and perspectives: Lee Telega, Peter Wright, Wayne Knoblauch and Jason Karszes. However, any errors, omissions or misstatements are solely the responsibility of the author, Professor George Conneman, **e-mail gjc4@cornell.edu**.

In 2004, there were 6,900 dairy farms in New York State, and 655,000 milk cows as reported by the NYASS. The table above was prepared based on the NYASS data plus the CAFO permit filing for additional herd size categories.

Ninety-one percent of the farms (less than 200 cows per farm) had 57 percent of the milk cows. The remaining nine percent of the farms had 43 percent of the cows. About 1.5 percent of the farms (those with 700 or more cows) had 19 percent of the cows. Farms with over 200 cows represented nearly 9 percent of total herds and had 43 percent of the total cows.

Farms with less than 50 cows represent 39 percent of all farms.

TABLE 7-6. NUMBER OF DAIRY FARMS AND MILK COWS BY SIZE OF HERD NEW YORK STATE, 1985 TO 2005

Size of Herd	1985 Farms		1985 Cows		1995 Farms		1995 Cows		2005 [a] Farms		2005 [a] Cows	
Number of cows	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1 – 29	5,000	30.3	58,000	6.2	2,100	21.0	21,000	3.0	1,300	19.3	13,000	2.0
30 – 49	4,550	27.6	210,000	22.3	2,200	22.0	92,000	13.0	1,200	17.8	40,000	6.2
50 – 99	5,100	30.9	382,000	40.5	4,000	40.0	277,000	39.0	2,500	37.2	170,000	26.2
100 – 199	1,550	9.4	230,000	24.4	1,300	13.0	178,000	25.0	1,100	16.4	147,000	22.6
200 +	300	1.8	62,000	6.6	400	4.0	142,000	20.0	625	9.3	280,000	43.0
Total	16,500	100%	942,000	100%	10,000	100%	710,000	100%	6,725	100%	650,000	100%
Average Size of Herd (cows)			57				71				97	

SOURCE; 1985 and 1995 data from New York Agricultural Statistical Services.
[a] 2005 estimates by G. J. Conneman

Between 1985 and 2005 (a 20-year period) the number of dairy farms in New York decreased by 9,775 farms. Thus 59 percent of the farms that were producing milk in 1985 were not in dairying in 2005. The decline was much higher among smaller farms. Farms with less than 50 cows declined by 74 percent over the 20-year period. Farms with 200 cows or more grew in number from 300 to 625 farms during that period.

In 1985 farms with 200 cows or more represented less than two percent of all farms; in 2005, farms with 200 or more cows made up over nine percent of the total number of dairy farms.

The average size of herds was 57 cows per farm in 1985 and 97 cows per farm in 2005.

The concentration of farms in larger herds also increased since 1985. Roughly seven percent of the cows were kept in herds with 200 or more cows in 1985; herds with 200 or more cows had 43 percent of the total number of cows in 2005.

Prices Paid by New York Dairy Farmers and Values of Inventory Items

The prices dairy farmers pay for a given quantity of goods and services has a major influence on farm production costs. The astute manager will keep close watch on unit costs and utilize the most economical goods and services. The table below shows average prices of selected goods and services used on New York dairy farms.

TABLE 7-7. PRICES PAID BY NEW YORK FARMERS FOR SELECTED ITEMS, 1993 - 2004

Year	Mixed Dairy Feed 16% Protein[a]	Fertilizer, Urea 45-46%N[a]	Seed Corn, Hybrid[b]	Diesel Fuel[a]	Tractor 50-59 PTO[b]	Wage Rate All Hired Farm Workers[c]
	($/ton)	($/ton)	($/80,000 Kernels)	($/gallon)	($)	($/hour)
1993	171	226	72.70	0.900	19,200	6.76
1994	181	233	73.40	0.853	19,800	6.96
1995	175	316	77.10	0.850	20,100	6.92
1996	226	328	77.70	1.020	20,600	7.19
1997	216	287	83.50	0.960	21,200	7.63
1998	199	221	86.90	0.810	21,800	7.63
1999	175	180	88.10	0.750	21,900	8.12
2000	174	201	87.50	1.270	21,800	8.74
2001	176	270	92.20	1.260	22,000	8.72
2002	178	232	92.00	1.028	21,900	9.26
2003	194	283	102.00	1.516	21,300	9.93
2004	207	299	105.00	1.400	21,500	9.96

SOURCE: NYASS, New York Agricultural Statistics. USDA, NASS, Agricultural Prices.
[a]Northeast region average. [b]United States average. [c]New York and New England combined.

Inflation, farm profitability, supply and demand all have a direct impact on the inventory values on New York dairy farms. The table below shows year-end (December) prices paid for dairy cows (replacements), an index of these cow prices, an index of new machinery prices (U.S. average), the average per acre value of farmland and buildings reported in January, and an index of the real estate prices.

TABLE 7-8. VALUES AND INDICES OF NEW YORK DAIRY FARM INVENTORY ITEMS, 1990 - 2004

	Dairy Cows		Machinery[a]	Farm Real Estate[b]	
Year	Value/Head	1977=100	1977=100	Value/Acre	1977=100
1990	1,060	214	209	1,014	173
1991	1,040	210	219	1,095	187
1992	1,090	220	226	1,139	194
1993	1,100	222	235	1,237	211
1994	1,100	222	249	1,260	215
1995	1,010	204	258	1,280	218
1996	1,030	208	268	1,260	215
1997	980	198	276	1,250	213
1998	1,050	212	286	1,280	218
1999	1,250	253	294	1,340	228
2000	1,250	253	301	1,430	244
2001	1,600	323	312	1,520	259
2002	1,400	283	320	1,610	274
2003	1,300	263	325	1,700	290
2004	1,580	319	351	1,780	303

SOURCE: NYASS, New York Agricultural Statistics and New York Crop and Livestock Report. USDA, ASB, Agricultural Prices.
[a]United States average; 1995 - 2004 are estimated due to discontinuation of 1977=100 series.
[b]New York average for 2000 – 2004 excludes Native American reservation land.

TABLE 7-9. COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 63 New York Dairy Farms, 1995- 2004

Selected Factors	1995	1996	1997	1998
Milk receipts per cwt. milk	$13.12	$15.05	$13.75	$15.71
Size of Business				
Average number of cows	228	245	261	279
Average number of heifers	170	178	193	214
Milk sold, cwt.	48,319	51,931	56,786	60,289
Worker equivalent	6.04	6.27	6.64	6.95
Total tillable acres	540	571	603	629
Rates of Production				
Milk sold per cow, lbs.	21,225	21,187	21,770	21,639
Hay DM per acre, tons	3.1	3.0	2.7	3.3
Corn silage per acre, tons	16	16	16	21
Labor Efficiency				
Cows per worker	38	39	39	40
Milk sold per worker, lbs.	799,984	828,245	855,211	867,468
Cost Control				
Grain & concentrate purchased as % of milk sales	26%	30%	32%	25%
Dairy feed & crop expense per cwt. milk	$4.23	$5.33	$5.31	$4.98
Operating cost of producing cwt. milk	$10.29	$11.96	$11.59	$11.45
Total cost of producing cwt. milk	$13.18	$14.85	$14.26	$14.38
Hired labor cost per cwt.	$2.06	$2.21	$2.14	$2.26
Interest paid per cwt.	$0.86	$0.83	$0.87	$0.85
Labor & machinery costs per cow	$994	$1,081	$1,047	$1,126
Replacement livestock expense	$7,127	$9,909	$10,947	$12,921
Expansion livestock expense	$14,023	$15,065	$15,467	$17,423
Capital Efficiency				
Farm capital per cow	$6,120	$6,174	$6,239	$6,345
Machinery & equipment per cow	$1,088	$1,102	$1,134	$1,194
Real estate per cow	$2,584	$2,591	$2,558	$2,499
Livestock investment per cow	$1,507	$1,498	$1,508	$1,518
Asset turnover ratio	0.53	0.58	0.54	0.63
Profitability				
Net farm income without appreciation	$89,092	$106,098	$69,159	$187,568
Net farm income with appreciation	$103,148	$119,334	$75,814	$229,209
Labor & management income per operator/manager	$23,671	$31,435	$10,220	$69,729
Rate return on:				
Equity capital with appreciation	6.3%	7.6%	2.7%	16.7%
All capital with appreciation	6.8%	7.5%	4.6%	12.7%
All capital without appreciation	5.8%	6.6%	4.2%	10.4%
Financial Summary, End Year				
Farm net worth	$874,663	$948,901	$964,989	$1,121,493
Change in net worth with appreciation	$50,205	$67,186	$13,473	$159,004
Debt to asset ratio	0.39	0.40	0.42	0.40
Farm debt per cow	$2,357	$2,438	$2,611	$2,569

Farms participating in the DFBS each of the last 10 years have increased size of business, labor efficiency and milk sold per cow (Table 7-9). All measures of profitability exhibit wide variability from year-to-year and are highly correlated with milk price received.

TABLE 7-9. COMPARISON OF FARM BUSINESS SUMMARY DATA (Continued)
Same 63 New York Dairy Farms, 1995 - 2004

1999	2000	2001	2002	2003	2004
$15.11	$13.42	$15.92	$12.91	$13.26	$16.60
294	311	335	352	385	396
221	234	252	272	295	306
65,824	69,917	75,020	81,196	88,456	90,133
7.31	7.47	8.02	8.35	9.11	9.41
656	673	704	732	772	813
22,363	22,477	22,367	23,046	22,999	22,773
3.2	3.5	3.0	3.4	3.3	3.5
16	15	17	15	18	18
40	42	42	42	42	42
900,464	935,977	935,407	972,411	971,153	958,267
24%	26%	25%	29%	31%	27%
$4.70	$4.54	$4.92	$4.77	$5.01	$5.56
$11.11	$11.21	$12.32	$11.10	$11.61	$12.56
$14.09	$14.19	$15.40	$14.13	$14.35	$15.42
$2.35	$2.39	$2.59	$2.65	$2.70	$2.80
$0.75	$0.89	$0.78	$0.59	$0.53	$0.55
$1,213	$1,221	$1,302	$1,309	$1,272	$1,347
$14,931	$18,092	$15,186	$12,932	$16,963	$16,141
$16,110	$28,404	$31,879	$13,743	$14,353	$17,561
$6,587	$6,690	$6,724	$6,830	$6,605	$6,891
$1,259	$1,301	$1,288	$1,307	$1,231	$1,260
$2,523	$2,503	$2,526	$2,552	$2,459	$2,550
$1,550	$1,606	$1,694	$1,785	$1,786	$1,863
0.61	0.56	0.64	0.54	0.49	0.59
$184,675	$69,640	$171,076	$36,561	$44,220	$251,980
$223,946	$117,858	$268,538	$83,087	$104,864	$368,829
$62,761	$1,758	$52,272	$-20,730	$-21,113	$108,307
14.1%	4.6%	15.1%	1.4%	2.8%	18.9%
11.6%	5.7%	11.7%	2.8%	3.5%	13.0%
9.0%	3.4%	7.3%	0.9%	1.1%	8.7%
$1,233,288	$1,252,834	$1,435,696	$1,421,263	$1,476,236	$1,747,373
$122,619	$20,900	$172,097	$-19,211	$34,826	$278,512
0.39	0.41	0.39	0.41	0.43	0.39
$2,629	$2,666	$2,691	$2,803	$2,919	$2,758

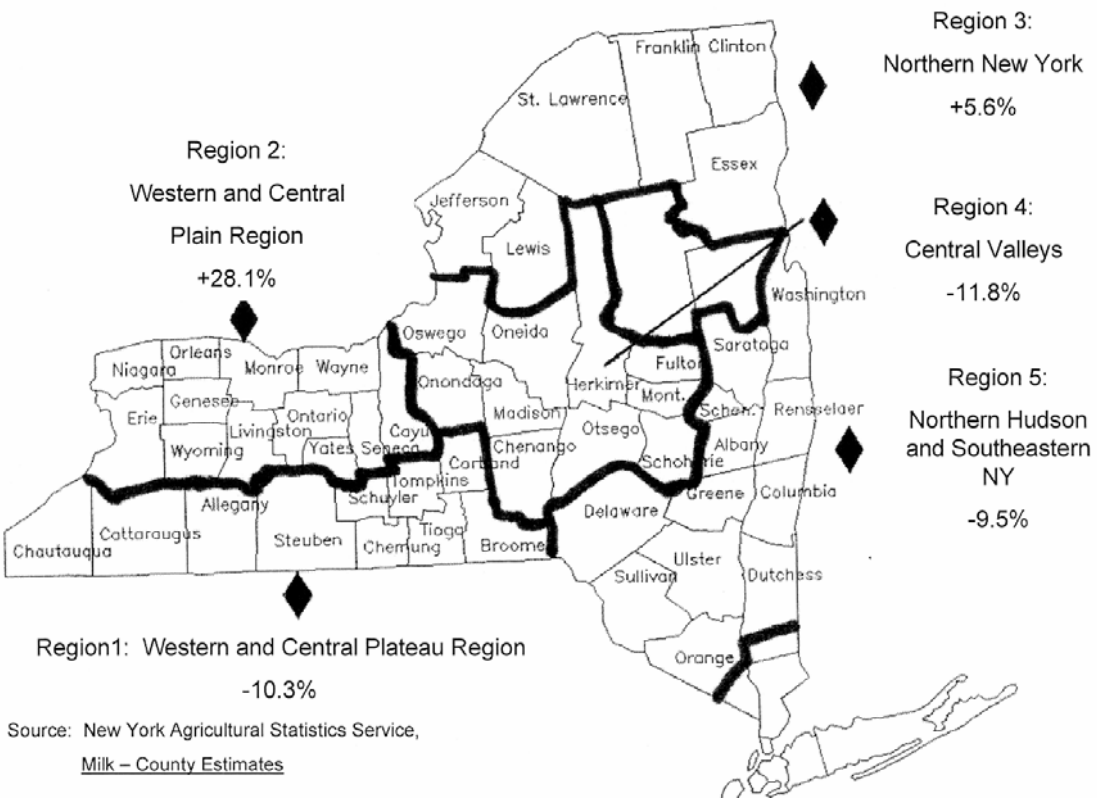
Debt to asset ratio and debt per cow have remained stable while farm net worth almost doubled. During this time, crop yields have fluctuated, largely due to weather. Purchased grain and concentrate as a percent of milk sales has varied only from 24 to 32 percent, with the high being in 1997 and the low in 1999.

TABLE 7-10. COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
214 New York Dairy Farms, 2004

Item	Western & Central Plateau Region	Western & Central Plain Region	Northern New York	Central Valleys	Northern Hudson & South-eastern New York
Number of farms	33	51	29	27	74
ACCRUAL EXPENSES					
Hired labor	$82,049	$307,804	$189,986	$142,967	$95,061
Feed	178,084	522,680	383,135	253,354	180,741
Machinery	71,877	147,237	119,135	97,935	65,445
Livestock	98,894	340,201	225,241	174,833	110,130
Crops	26,458	82,523	66,508	51,808	31,397
Real estate	29,274	69,302	51,694	47,108	29,512
Other	52,739	145,553	99,200	74,252	46,043
Total Operating Expenses	$539,375	$1,615,300	$1,134,901	$842,258	$558,330
Expansion livestock	14,209	19,182	43,831	2,727	8,746
Extraordinary expense	1,438	539	865	3,390	412
Machinery depreciation	34,539	81,884	73,761	56,209	26,543
Building depreciation	20,115	55,732	51,638	45,190	11,227
Total Accrual Expenses	$609,676	$1,772,637	$1,304,996	$949,774	$605,258
ACCRUAL RECEIPTS					
Milk sales	$622,841	$1,797,673	$1,382,382	$986,905	$615,849
Livestock	53,928	166,698	140,884	52,888	51,648
Crops	12,018	26,652	46,116	22,818	9,325
Government receipts	15,376	33,243	29,306	23,211	19,358
All other	9,271	22,762	18,238	23,434	10,799
Total Accrual Receipts	$713,435	$2,047,030	$1,616,925	$1,109,255	$706,980
PROFITABILITY ANALYSIS					
Net farm income (w/o appreciation)	$103,759	$274,393	$314,929	$159,481	$101,722
Net farm income (w/ appreciation)	$159,689	$383,956	$422,563	$260,029	$130,913
Labor & management income	$55,839	$185,351	$231,832	$93,418	$47,526
Number of operators	1.68	2.01	1.93	1.75	1.55
Labor & mgmt. income/operator	$33,238	$92,214	$120,120	$53,382	$30,662
BUSINESS FACTORS					
Worker equivalent	4.45	10.91	8.36	6.54	5.26
Number of cows	176	487	373	283	169
Number of heifers	130	379	299	218	137
Acres of hay crops[a]	223	449	471	320	246
Acres of corn silage[a]	192	411	279	230	157
Total tillable acres	425	962	856	681	427
Pounds of milk sold	3,702,919	10,972,610	8,289,506	5,830,935	3,587,841
Pounds of milk sold/cow	20,985	22,533	22,230	20,620	21,279
Tons hay crop dry matter/acre	2.9	4.2	3.2	3.2	2.9
Tons corn silage/acre	17.0	17.0	19.8	17.7	17.2
Cows/worker	40	45	45	43	32
Pounds of milk sold/worker	832,117	1,005,739	991,568	892,149	682,099
% grain & conc. of milk receipts	28%	27%	26%	25%	28%
Feed & crop expense/cwt. milk	$5.52	$5.50	$5.42	$5.22	$5.90
Fertilizer & lime/crop acre	$27.82	$31.66	$40.27	$22.82	$36.32
Machinery cost/tillable acre	$279	$256	$251	$253	$245

[a]Excludes farms that do not harvest forages..

FIGURE 7-1. PERCENT CHANGE IN MILK PRODUCTION
Five Regions in New York, 1994-2004



Source: New York Agricultural Statistics Service, Milk – County Estimates

TABLE 7-11. MILK PRODUCTION & AVERAGE COST OF PRODUCING MILK
Five Regions of New York

Item	Region[a] 1	2	3	4	5
Milk Production[b]			(million pounds)		
1994	2,145.9	2,872.3	2,124.0	2,813.3	1,458.6
2004	1,924.0	3,679.0	2,242.5	2,481.0	1,320.5
Percent change	-10.3%	+28.1%	+5.6%	-11.8%	-9.5%
2004 Cost of Producing Milk[c]			($ per hundredweight milk)		
Operating cost	$12.50	$12.62	$11.39	$12.39	$13.27
Total cost	16.68	15.40	14.68	16.44	17.13
Average price received	16.82	16.38	16.68	16.93	17.16
Return per cwt. to operator labor, management & capital	$2.66	$2.44	$3.73	$2.68	$2.65

[a]See Figure 7-1 for region descriptions.
[b]Source: New York Agricultural Statistics Service, Milk-County Estimates.
[c] From Dairy Farm Business Summary data.

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 200 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 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.

TABLE 7-12. FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
200 New York Dairy Farms, 2004

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
27.4	1,320	30,813,655	25,912	5.6	24	62	1,276,169
15.2	627	14,673,004	23,717	4.3	21	51	1,100,689
10.7	430	9,341,701	22,791	3.9	20	46	981,861
7.2	309	6,569,316	21,971	3.5	19	42	868,108
5.4	225	4,326,245	21,304	3.3	18	38	787,445
4.2	144	2,848,633	20,482	3.0	17	35	700,990
3.4	110	2,072,815	19,295	2.8	16	32	631,342
2.7	78	1,398,571	17,658	2.3	15	29	547,027
2.0	59	1,035,229	15,829	2.0	13	26	445,686
1.5	42	687,413	12,854	1.4	9	19	321,988

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
$507	17%	$323	$903	$660	$3.87
669	22	444	1,124	863	4.71
780	24	499	1,221	994	5.10
839	26	552	1,293	1,082	5.34
900	27	592	1,370	1,133	5.54
979	28	637	1,463	1,183	5.75
1,031	29	683	1,541	1,242	6.05
1,094	31	750	1,664	1,308	6.36
1,166	33	835	1,796	1,394	6.82
1,295	39	1,044	2,173	1,591	7.69

The next section of the Farm Business Chart provides for comparative analysis of the value and costs of dairy production.

The profitability section shows the variation in farm income by decile and enables a dairy farmer to determine where he or she ranks by using several measures of farm profitability. Remember that each column is independently established and the farms making up the top decile in the first column will not necessarily be on the top of any other column. The dairy farmer who ranks at or near the top of most of these columns is in a very enviable position.

TABLE 7-12. (CONTINUED) FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
200 New York Dairy Farms, 2004

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Operating Cost Milk Production Per Cow	Operating Cost Milk Production Per Cwt.	Total Cost Milk Production Per Cow	Total Cost Milk Prod. Per Cwt.
$4,409	$18.64	$1,505	$9.19	$2,552	$13.68
3,964	17.86	1,892	10.50	2,955	14.56
3,777	17.47	2,164	11.20	3,132	15.16
3,662	17.13	2,319	11.80	3,275	15.81
3,573	16.92	2,449	12.19	3,381	16.56
3,421	16.71	2,587	12.60	3,490	17.26
3,279	16.55	2,733	13.13	3,621	18.37
3,027	16.28	2,884	13.71	3,774	19.14
2,662	16.06	3,090	14.37	3,992	20.42
2,246	15.46	3,400	15.99	4,485	24.72

Profitability

Net Farm Income Without Appreciation			Net Farm Income With Appreciation		Labor & Management Income	
Total	Per Cow	Operations Ratio	Total	Per Cow	Per Farm	Per Operator
$838,746	$1,306	0.30	$1,189,067	$1,919	$657,429	$357,551
413,151	1,025	0.25	570,269	1,344	293,399	181,620
286,223	860	0.22	384,433	1,155	200,179	107,460
171,989	773	0.20	263,743	1,033	105,888	66,066
120,112	667	0.17	187,418	908	57,054	35,606
78,969	561	0.14	116,687	805	31,211	21,959
53,830	449	0.12	79,113	688	17,970	12,836
36,206	347	0.09	57,505	579	5,373	4,198
21,262	216	0.06	35,671	419	-12,627	-9,507
-11,854	-70	-0.03	10,807	103	-75,681	-63,025

Financial Analysis Chart

The farm financial analysis chart is designed just like the farm business chart on the previous pages and may be used to measure the financial health of the farm business.

TABLE 7-13. FINANCIAL ANALYSIS CHART
200 New York Dairy Farms, 2004

Liquidity (repayment)							
Planned Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow	Working Capital as % of Total Expenses	Current Ratio
$52	$1,138	5.77	7.80	2%	$231	42%	22.29
199	844	2.42	3.24	6	1,035	29	4.31
294	748	1.82	2.53	9	1,683	24	3.02
353	671	1.49	2.06	11	2,125	18	2.43
421	596	1.32	1.71	12	2,464	15	2.01
470	513	1.17	1.44	14	2,758	11	1.67
518	449	1.01	1.22	15	3,021	8	1.39
562	357	0.83	0.95	17	3,360	4	1.16
658	244	0.61	0.62	20	3,931	-2	0.89
815	-373	-1.30	-1.52	28	5,108	-17	0.52

Solvency				Profitability	
		Debt/Asset Ratio		Percent Rate of Return with appreciation on:	
Leverage Ratio[a]	Percent Equity	Current & Intermediate	Long Term	Equity	Investment[b]
0.02	98%	0.03	0.00	46%	23%
0.14	88	0.11	0.00	26	16
0.23	81	0.20	0.02	20	13
0.35	74	0.25	0.14	16	11
0.45	69	0.31	0.24	12	9
0.56	64	0.37	0.34	9	7
0.75	57	0.44	0.43	6	5
0.95	51	0.50	0.56	3	3
1.22	45	0.58	0.68	-1	1
2.76	30	0.79	0.89	-11	-5

Efficiency (Capital)					
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth w/Appreciation	Farm Net Worth, End Year
.93	$1,360	$532	$4,895	$965,036	$5,118,263
.72	2,072	885	5,982	456,002	2,514,215
.66	2,333	1,089	6,498	311,468	1,796,448
.61	2,631	1,221	6,895	196,995	1,451,045
.57	2,932	1,356	7,355	140,216	1,135,694
.53	3,306	1,558	8,008	82,241	858,532
.48	3,807	1,796	8,583	45,148	695,828
.42	4,253	1,982	9,301	30,133	528,273
.36	4,981	2,320	10,637	14,529	368,862
.27	7,946	3,464	13,990	-57,407	199,577

[a]Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.
[b]Return on all farm capital (no deduction for interest paid) divided by total farm assets.

Chapter 8. Fruit

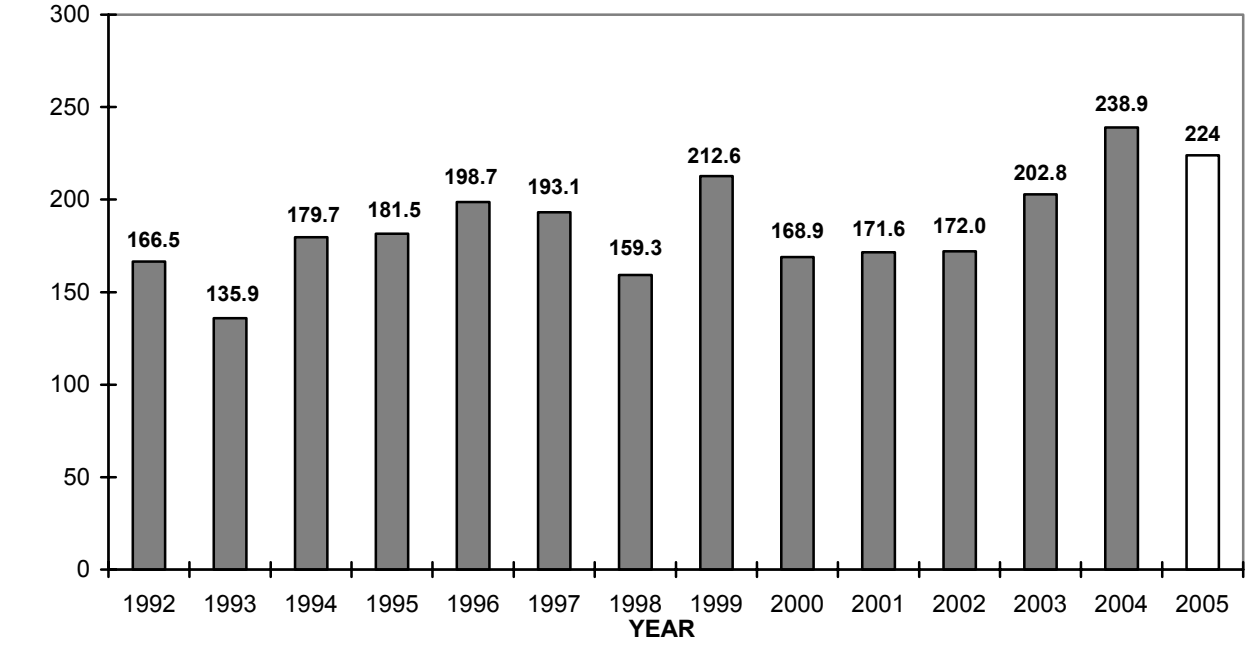
Gerald B. White, Professor

The total production of the six tree and vine crops which are important to New York's agricultural economy was projected to be about the same as last year, and about average for recent years. Increased production of grapes and tart cherries offset decreased production for apples, pears, peaches, and sweet cherries. The national production of apples was forecast at 223 million bushels, a considerable decrease of ten percent below last year's large crop, and two percent below the average of the past five years. Grape production was expected to total 7.1 million tons, an increase of 13 percent from last year's crop.

In New York, apple production is indicated to be 25.4 million bushels, 17 percent below last year's very large crop. Indicated production is six percent above the average production of the last 5 years. Grape production of 158 thousand tons was estimated, 11 percent above last year's crop, and near the long-term average production. Total production of the six major fruit and vine crops of 711 thousand tons is projected for the State, 12 percent below last year, primarily because of the smaller apple crop, but well above the total from 2002 when the production of both apples and grapes were extremely short.

The utilized value of the major fruit tree and vine crops in New York since 1992 and the projected value for 2004 is shown below. With a better year for grape production, but a shorter apple crop, the value of the state's major fruit tree and vine crop is projected at $224 million, six percent below last year's record value for tree fruit and vine crops.

FIGURE 8-1. VALUE OF PRODUCTION OF MAJOR TREE FRUIT & VINE CROPS
New York, 1992-2004 and 2005 (projected)



Source: New York Agricultural Statistics, 2004.

TABLE 8-1. COMMERCIAL NONCITRUS FRUIT PRODUCTION
New York and United States

	New York				United States			
Fruit	2002	2003	2004	2005*	2002	2003	2004	2005*
	- thousand tons -							
Apples	340	535	640	530	4,262	4,397	5,210	4,690
Grapes	156	198	142	158	7,339	6,644	6,232	7,071
Tart Cherries	6	4	5	4	31	113	107	122
Pears	10	16	17	13	890	934	890	853
Peaches	5	7	6	5	1,268	1,260	1,307	1,234
Sweet Cherries	0	1	1	1	181	246	283	227
Total New York's Major Fruit Crops	517	761	812	711	13,971	13,594	14,029	14,197

*indicated

TABLE 8-2. AVERAGE FARM PRICES OF NONCITRUS FRUITS
New York and United States

	New York				United States			
Fruit	2001	2002	2003	2004	2001	2002	2003	2004
	- dollars per ton -							
Apples								
Fresh	368	560	460	456	458	516	588	434
Processed	133	153	134	139	108	130	131	107
All Sales*	238	354	290	302	316	378	418	316
Grapes	320	303	236	212	447	388	403	484
Tart Cherries	392	1012	628	818	372	896	708	654
Pears	401	374	373	386	264	297	294	340
Peaches	622	475	703	717	422	400	377	375
Sweet Cherries	1,530	1,730	1,770	1,400	1,230	1,550	1,410	1,570

TABLE 8-3. VALUE OF UTILIZED PRODUCTION, NONCITRUS FRUITS
New York and United States

	New York				United States			
Fruit	2001	2002	2003	2004	2001	2002	2003	2004
	- million dollars -							
Apples								
Fresh	77.3	86.8	117.3	150.5	1,251	1,385	1,606	1,427
Processed	34.6	24.4	36.7	43.1	201	196	212	202
All Sales*	111.9	111.2	154.0	193.6	1,453	1,581	1,817	1,629
Grapes	47.7	47.6	35.8	30.1	2,934	2,842	2,617	3,013
Tart Cherries	2.8	6.4	2.3	4.4	57	28	80	70
Pears	4.0	3.7	5.5	5.4	263	264	273	301
Peaches	3.7	2.4	4.2	4.3	483	488	454	462
Sweet Cherries	1.6	.6	1.0	1.2	271	274	342	437
Total New York's Major Fruit Crops*	171.7	171.9	202.8	239.0	5,460	5,477	5,584	5,912

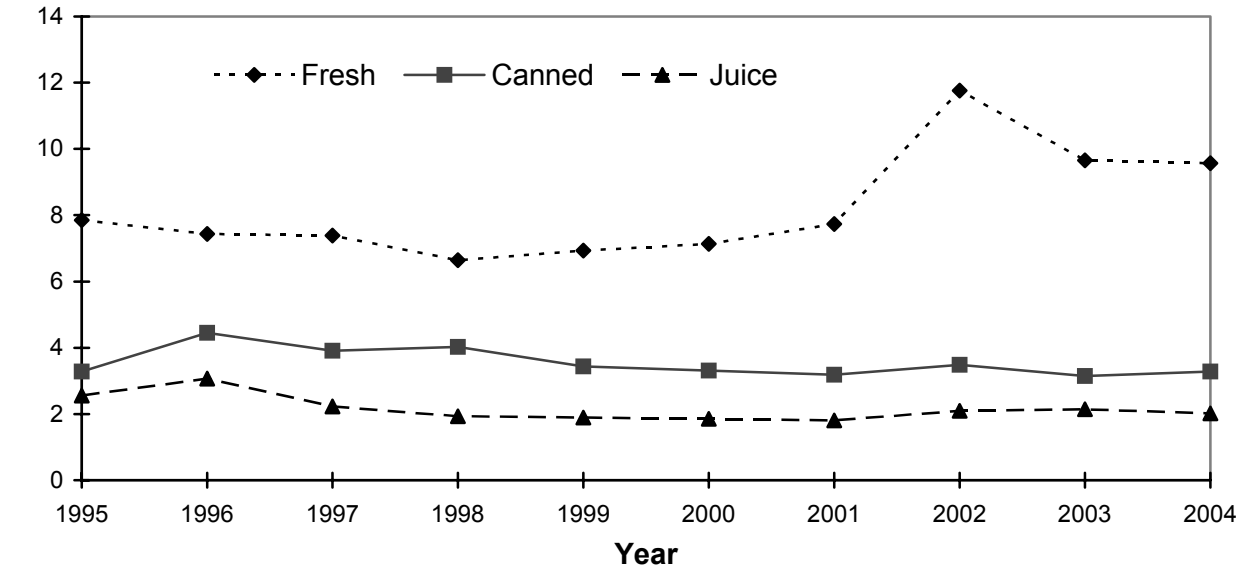
*May not add from total of fresh and processed due to rounding errors. Source: NASS, USDA, Noncitrus Fruits and Nuts 2004 Summary, July 2005.

TABLE 8-4. APPLE PRODUCTION, UNITED STATES, 2000-2004, Five-Year Average Production, and 2005 Forecast 1,000 42-Pound Bushels

States/Regions	5-Year Average 2000-2004*	2004*	2005 USDA Estimate**	2005 Compared to USDA 5-Year Average % Change	2005 vs. 2004 % Change
Maine	1,074	1,119	833	-22.4	-25.5
New Hampshire	700	726	619	-11.6	-14.8
Vermont	957	1,083	976	2.0	-9.9
Massachusetts	983	1,000	833	-15.3	-16.7
Rhode Island	53	52	55	2.7	4.5
Connecticut	448	464	417	-6.9	-10.3
New York	23,929	30,476	25,238	5.5	-17.2
New Jersey	1,048	952	1,071	2.3	12.5
Pennsylvania	10,343	9,643	10,000	-3.3	3.7
Maryland	860	812	714	-16.9	-12.0
Virginia	6,905	7,143	7,143	3.4	0.0
West Virginia	2,157	1,929	2,024	-6.2	4.9
North Carolina	3,581	3,690	3,690	3.1	0.0
South Carolina	224	143	119	-46.8	-16.7
Georgia	276	286	310	12.1	8.3
Total East	**53,537**	**59,519**	**54,043**	**0.9**	**-9.2**
Ohio	2,090	2,143	2,095	0.2	-2.2
Indiana	1,186	1,429	1,310	10.4	-8.3
Illinois	1,131	1,345	1,190	5.2	-11.5
Michigan	18,571	18,095	16,667	-10.3	-7.9
Wisconsin	1,505	1,357	1,405	-6.6	3.5
Minnesota	586	595	524	-10.6	-12.5
Iowa	172	126	31	-82.0	-75.5
Missouri	976	1,143	1,000	2.4	-12.5
Kansas	70	67	0	-100.0	-100.0
Kentucky	171	190	190	11.4	0.0
Tennessee	239	262	214	-10.4	-18.2
Arkansas	91	45	0	-100.0	-100.0
Total Central	**26,789**	**26,798**	**24,626**	**-8.1**	**-8.1**
Total East & Central	**80,326**	**86,317**	**78,669**	**-2.1**	**-8.9**
Colorado	590	667	667	12.9	0.0
New Mexico	108	110	0	NA	NA
Utah	671	762	667	-0.7	-12.5
Idaho	2,190	2,143	1,548	-29.3	-27.8
Washington	127,381	144,048	128,571	0.9	-10.7
Oregon	3,843	3,881	3,095	-19.5	-20.2
California	11,429	9,286	9,762	-14.6	5.1
Arizona	812	881	333	-59.0	-62.2
Total West	**147,025**	**161,776**	**144,643**	**-1.6**	**-10.6**
TOTAL U.S.	**227,350**	**248,093**	**223,312**	**-1.8**	**-10.0**
TOTAL NORTHEAST	**42,551**	**48,257**	**42,781**	**0.5**	**-11.3**

*2005 and 5-year average production from NASS, USDA, Non-Citrus Fruits and Nuts Summary July 2005.
**NASS, USDA, Crop Production, October 12, 2005.

FIGURE 8-2. AVERAGE ANNUAL PRICES RECEIVED By New York Growers for Apples, 1995-2004



Source: New York Agricultural Statistics, 2004.

Over the past decade until 1996, prices for processed apples in New York were fairly constant. In 1996, prices for canned and juice apples increased dramatically while the price for fresh apples decreased. The value of the 1996 apple crop in New York was 138.9 million dollars, buoyed by record prices for processed fruit. Since 1996, processing prices steadily declined; however, in 1999, the largest crop since 1926 pushed up the crop value to $140.2 million, despite soft prices. Prices for fresh apples in 2002 reached an all-time record of $11.76 per bushel; however the shortest crop in decades held the crop value down to $111.2 million. In 2003, production recovered and fresh apple prices were extremely strong, although below the record price of 2002. The value of the crops in 2003 and 2004 soared to respective new records of $154.0 and $193.6, with large crops and strong fresh apple prices.

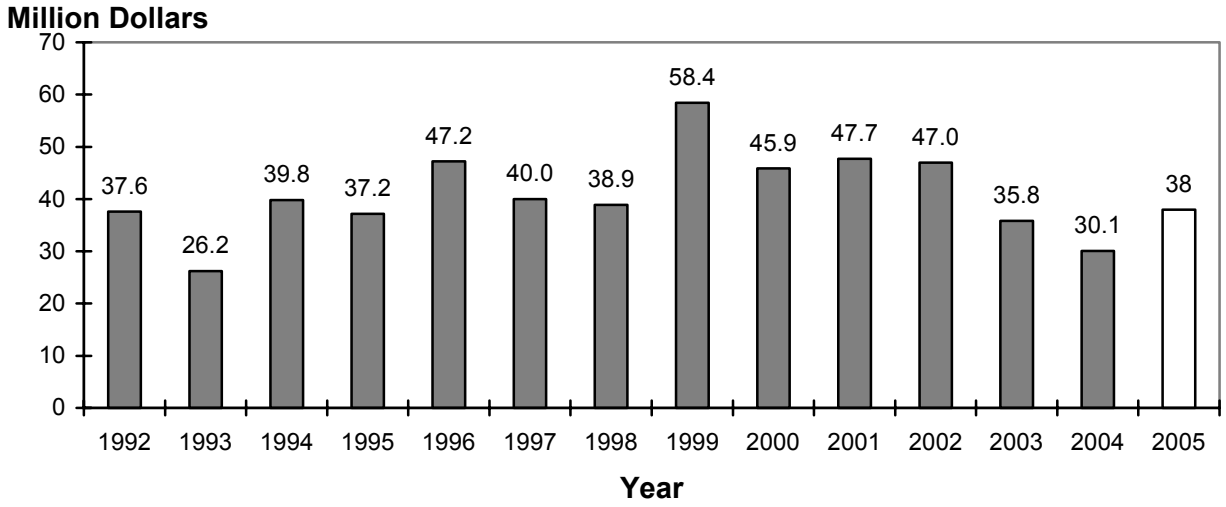
In October 2005, the average price for fresh apples in New York State was 19 percent above the price in 2004, a high price by historical standards. Washington's crop was down 10.7 percent below last year's large crop, and is just one percent above the average of the past five years. Fresh apple prices for New York growers are strong due in large part to the modest size of the Washington crop. As of mid-November, Washington storage holdings were down six percent, New York fresh holdings were down 18 percent, and New England was down 36 percent. Apple production in the European Union is down eight percent this year, and is 13 percent below the average of the past five years. However, New York fresh apple exports are well behind last year's pace, especially with large decreases in shipments to the United Kingdom and Canada, which are the two largest export destinations, and will fall below 800 thousand bushels (compared with 936 thousand last year). However Empire apples in the UK are selling at a premium, and total returns from there could be greater than last year. Fresh apple prices will probably average about 24 cents per pound for the marketing season, above the prices of the last two years, but below the record price of 2002.

Announced processing apple prices by grade were similar to a year ago; however the smaller apple size will mean a lower average processed price. Out-of-state buyers were quite active, and that has helped to maintain processing prices. The state's apple crop should reach a value of $175 million, down about 10 percent from last year's record crop, but still a good year. (The assistance of Alison DeMarree, Area Specialist, Cornell Cooperative Extension is acknowledged for this section of the Handbook.)

Grapes

The New York grape harvest was estimated at 158 thousand tons. This represents a near average crop, 13 percent above last year's short crop, but just three percent below the average production of the past five years. The crop was affected late in the season by extremely dry weather until the rain from Hurricane Katrina. Growers in the Finger Lakes experienced losses due primarily to extremely cold weather that injured or killed a significant number of vines, although the damage was not nearly as severe and widespread as in 2004. Certain wine grape varieties, mainly vinifera and certain hybrids, were affected the most. There was a large Concord crop. When the final crop value estimate is available, it will likely show a crop value of $38 million, up from last year due to higher production and higher prices for wine grapes, but a low value compared with the historical crop values of the past 10 years (Figure 8-3).

FIGURE 8-3. VALUE OF UTILIZED PRODUCTION OF GRAPES, NEW YORK 1992-2004 and 2005 (projected)



Source: New York Agricultural Statistics, 2004.

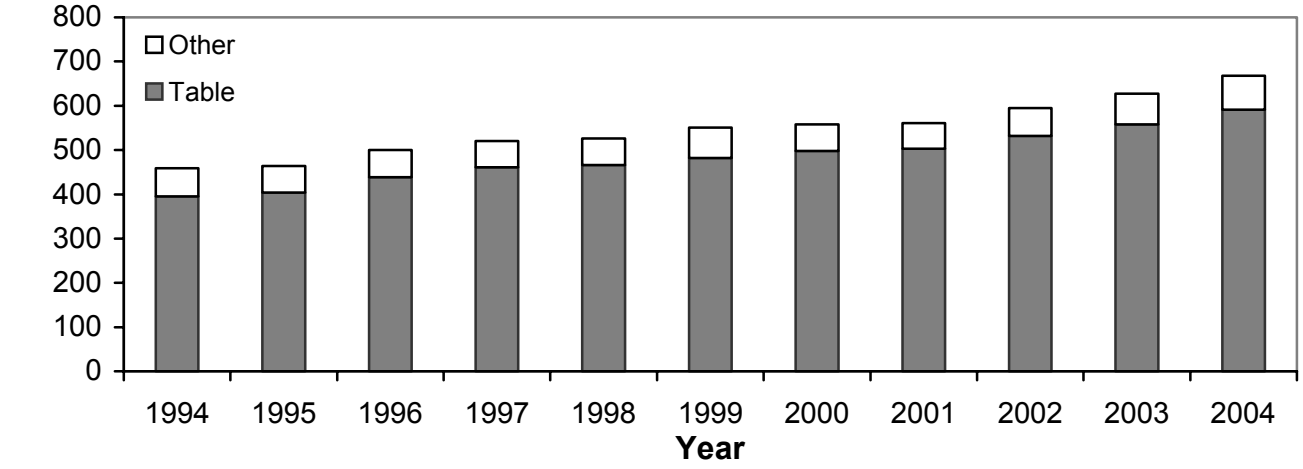
Performance in the US wine market is being driven by increased table wine consumption and the super value wines now available at the retail level (Figure 8-4). From 1995 to 2001, wine consumption grew at the rate of about 2.5 percent a year. However in 2002, wine shipment entering US distribution channels increased by a remarkable six percent to a record 595 million gallons, despite the weak economy. US consumption in 2004 was 668 million gallons, an increase of four percent over the previous year. It is projected that the US wine market will become the largest in the world in 2008, surpassing France, Italy, and Spain.

To sum up the situation in the US wine market and the near term outlook for the rest of 2005 and 2006, supplies of grapes are more in balance with demand, and prices for wine grapes are firming up. The growth in imports has slowed due to the declining value of the US dollar, but is steady and relentless. Plentiful supplies in the last few years had led to the development of new "extreme-value" labels, some with innovative packaging of premium varietals. Two years ago, wineries and retailers faced their lowest margins in years. In 2005, margins were improved, especially for premium varietals.

Concords are the predominant variety grown and processed in New York (Table 8-5). There were 99,300 tons of Concords New York-grown grapes processed in 2004, the lowest since 1998 and 7 percent

below the five-year average. Over the past five years, Concords have comprised 72 percent of total tonnage utilized. The second leading variety is Niagara with 11.5 percent of tonnage followed by Catawba with 4.5 percent. *Vinifera*, with an average of just 4,630 tons utilized, accounted for just 3.1 percent of the NY crush over the last five years.

FIGURE 8-4. TOTAL WINE CONSUMPTION, U.S. 1994-2004



Source: Wine Institute/Department of Commerce/Gomberg, Fredrickson and Associates

Wine grapes and wine

The average prices for all French-American hybrids increased appreciably in 2004, partly due to the short grape crop in the Finger Lakes. Native American varieties used for juice (i.e. Concord and Niagara) were in a cycle of relatively high prices through 2001, but now are in a declining cycle (Table 8-6). Indeed, there is considerable financial stress for growers whose primary market is grapes for juice. Figure 8.5 shows that wine grape prices (all varieties) increased in 2004, while juice grape prices have been declining since 2001.

Reflecting the short supply locally and growing demand, wine grape prices in 2005 generally were up for all major categories (Native, Hybrid, and *V. vinifera*). Canandaigua Wine Company, the major buyer of wine grapes in New York, listed large price increases of $45 per ton for Aurore, $35 per ton for Catawba, and $50 per ton for Niagara. Prices for Concord, Delaware and Elvira were unchanged to slightly higher. The overall average price for native varieties and hybrids, when weighted by volume of purchases, will be slightly higher than last year.

Prices offered by Finger Lakes wineries for *vinifera* grapes were slightly higher than last year for all varieties. *Vinifera* prices are expected to remain strong in the next two or three years as growers replant to replace vines lost due to winter damage in January 2004, and as the demand for premium Finger Lake wines continues to grow.

TABLE 8-5. GRAPES: NEW YORK GROWN
Received By Wineries and Processing Plants, 2000-2004

Variety	2000	2001	2002	2003	2004	5-Year Avg.
	- tons -					
Concord	113,300	107,200	107,770	104,000	99,300	106,314
Niagara	13,900	15,100	18,880	18,000	19,800	17,136
Catawba	6,400	7,760	6,680	7,650	5,000	6,698
Elvira	3,660	3,950	4,200	5,250	4,800	4,372
Delaware	630	550	820	550	300	570
Ives	140	150	165	180	200	159
Aurora	4,060	2,880	4,100	3,620	2,200	3,665
de Chaunac	670	850	590	320	150	516
Baco Noir	720	990	930	1220	350	842
Seyval Blanc	550	610	590	480	400	526
Cayuga White	740	670	830	650	600	698
Rougeon	540	680	625	530	100	495
Vitis Vin.(all)	4,670	4,410	4,620	4,550	4,900	4,630
Other varieties	2,020	2,200	2,200	2,000	1,900	2,064
Total, all varieties	152,000	148,000	153,000	149,000	140,000	148,400

SOURCE: New York Agricultural Statistics, 2002-2004.

TABLE 8-6. GRAPES: PRICES PAID FOR NEW YORK GROWN GRAPES PROCESSED 2000-2004

Variety	2000	2001	2002	2003	2004	5-Year Avg.
American Varieties						
Catawba	246	252	237	242	233	242
Concord	263	264	259*	187*	174*	229
Delaware	272	259	284	284	345	289
Elvira	244	250	257	264	260	255
Ives	385	381	302	349	259	335
Niagara	248	240	285*	207*	170*	230
French American Hybrid						
Aurore	240	244	245	260	281	254
Baco Noir	405	442	362	388	483	416
Cayuga White	412	398	415	394	480	420
de Chaunac	391	375	321	342	465	379
Rougeon	384	382	315	313	433	365
Seyval Blanc	392	377	533	452	506	452
Vitis Vinifera						
All varieties	1,310	1,316	1,454	1,264	1,295	1,328
TOTAL	295	316	296	226	205	268

*Preliminary estimates of future payments by cooperatives have been included based upon historical data.
**Adjusted by the author.
SOURCE: Fruit, 975-2-05 NY Agricultural Statistics Service.

Most wine grape growers' revenues will be above last year, with both higher production as well as higher prices. However, costs will be higher due to substantial replant costs to replace damaged acreage from

the freeze events in 2004 and 2005. It requires over $13,000 total costs, including over $10,000 in cash costs, to bring an acre of *vinifera* grapes into full production. Furthermore, the loss of vines resulted in lower crops this year on the affected vineyards, and will affect crop levels for at least the next two years. Growers' net incomes will also be negatively affected by higher costs for fuel, fertilizer, and pesticides. Overall, while grower's profit and loss statement will look better on the revenue side than for the last two years, profits may even be lower. It appears that growers will be faced with higher costs for fuel and petroleum-based products at least through 2006, and probably beyond.

Small wineries in the Finger Lakes with quality wines and good marketing skills experienced sales growth of five to ten percent this year, an improvement over last year. Winery visitation and purchases per visitor are improving. The environment for price increases is better than it has been and some wineries have had success in upgrading their product offering by marketing limited production of reserve *vinifera* wines at higher price points. All of these indicators improved substantially in 2005. The most immediate challenge for small wineries in the next two to three years will be to sustain modest sales growth while sourcing grapes for their current product lines, given the acreage that was damaged by the freeze events in the last two years. Wineries which had to source *vinifera* grapes outside the Finger Lakes to maintain their product lines paid a premium for those grapes. Wineries and growers of wine grapes had to delay replanting this year as the varieties and rootstocks they wanted were not available, but replanting should pick up next year. Even if wineries are able to maintain their volume, however, they will experience higher costs and reduced profits for at least the next two years with the necessity to buy more grapes at higher prices to meet their market demand. Also there is the strong possibility that visitation will be negatively affected by the high cost of gasoline, dampening the number of tourists to the area. This is especially important for New York wineries, given their heavy reliance on direct sales at the winery.

There were several positive developments that generated optimism about future opportunities. First, the favorable ruling by the Supreme Court will permit New York wineries to ship direct to reciprocating states. This opens a new set of opportunities and challenges for winery managers. Following closely behind was the publication of several favorable articles in the national press in recent weeks (e. g. the Wall Street Journal and the San Francisco Chronicle) that were timely reminders to consumers in other states about the growing reputation of New York wines. Before the direct shipping ruling, retail shelf space was the major barrier to growth for the wineries that had the quality products necessary to succeed in the national market. Direct shipping provides wineries a way to bypass the retail shelf space constraint.

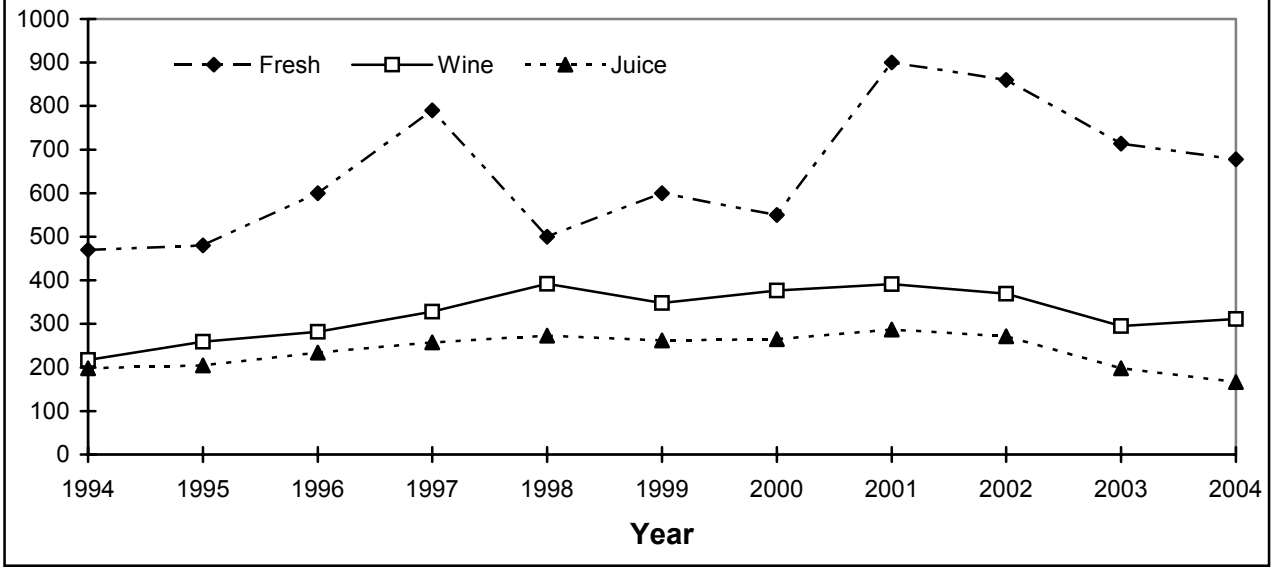
Juice Grapes

The national crop of juice grapes may be a record. National Grape Cooperative was expecting to process a record crop nationally of over 346,000 tons of Concords and 66,000 tons of Niagara. However, the Cooperative is still being affected by the poor quality, large 2003 crop. National Grape Cooperative processes about 40 percent of the total NY grape crop and over two thirds of the US Concord crop. Cash prices for Concord grapes were mainly about $165 per ton for 16 brix grapes. However there were record high brix this year, so the actual price received in the cash market was about $200 per ton. Similarly, the cash advance for National grape growers was $85, but actual payments to growers were higher due to higher brix.

The Concord juice grape industry has experienced periodic cycles of high to low prices. The current down cycle started in 2002 and thus has lasted three years. The high prices of 2001 caused traditional buyers of Concord to source from non-Concord grapes. These traditional buyers found that the market would accept grape juice without the strong Concord flavor. These traditional buyers have not come back to the Concord variety as price declined for the past three years. Furthermore, low calorie and low carb juice products captured a share of the market. A recent study published in the Journal of Pediatrics linked preschool obesity and sweet juice consumption. The article used a broad definition of drinks that included soda and sweetened drinks, but much of the ensuing publicity focused on 100 percent juices. These factors

together, according to industry sources, have displaced perhaps 60,000 tons of Concord demand, even at today's current low prices. National Grape's earnings are also being negatively affected by the high cost of energy, causing an increase in transportation and processing costs. In addition, inventories are going to be high coming into the 2006 harvest, and cash market prices and earnings for National Grape are likely to continue to be below $200 per ton next year.

FIGURE 8-5. AVERAGE PRICE FOR GRAPES IN NEW YORK 1994-2004



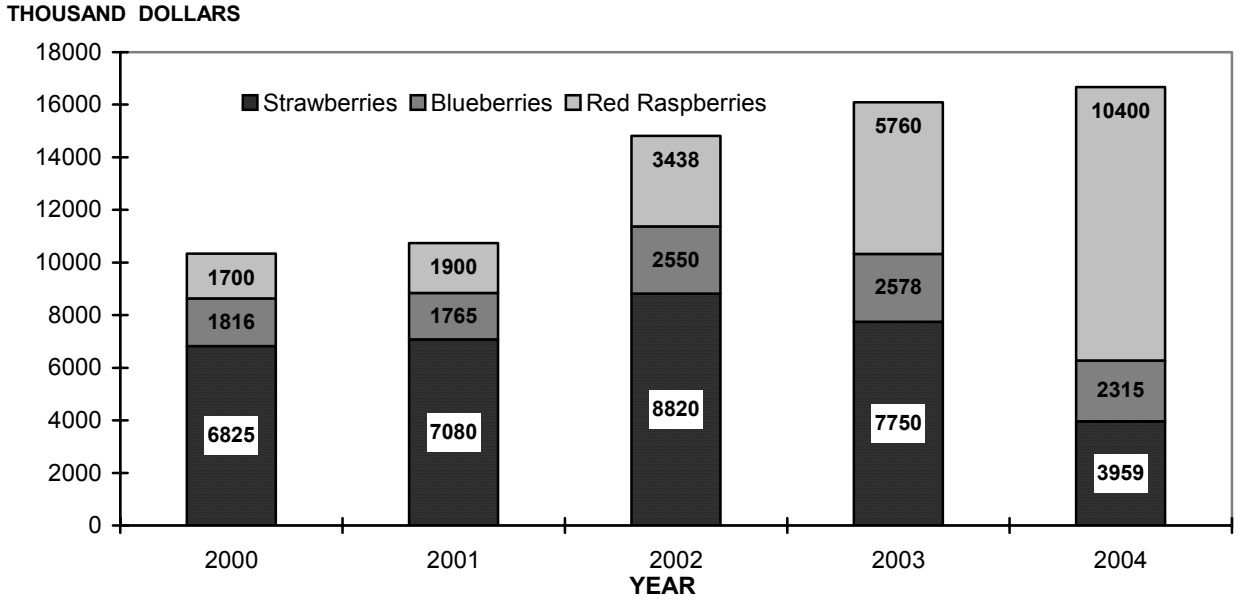
Source: New York State Agricultural Statistics, 2004.

These factors suggest an overcapacity in the juice grape farming sector, implying a needed adjustment to fewer, more productive acres (and more efficient growers) of juice grapes. This type of adjustment occurred in the mid-1980s in a low-price cycle. For example, in the Lake Erie grape belt of New York (Chatauqua, Erie, and Niagara counties), grape acreage fell from 25.1 thousand in 1980 to 21.7 in 1985, a decrease of 14 percent. From 1980 to 1990, the number of farms growing grapes in these three counties fell from 1,269 to 688.

(The assistance of Barry Shaffer and Tim Martinson, area Extension Educators in the Lake Erie Region and the Finger Lakes Region Grape Programs are acknowledged for this section of the Handbook.)

The value of small fruit production is expanding rapidly in New York state (Figure 8-6), and exceeded 16 million last year. Most of the production is sold through direct marketing. The value of strawberries had been relatively stable in recent years at $6.8 to $8.8 million; however, the value of production fell to under $4.0 million in 2004. Growth has occurred mainly with red raspberries, reaching over $10 million in 2004. Blueberries in the most recent two years have accounted for about $2.6 million in utilized value.

FIGURE 8-6. VALUE OF UTILIZED PRODUCTION OF SMALL FRUIT
New York, 2000-2004



Source: New York State Agricultural Statistics, 2004.

Chapter 9. Vegetables

Wen-fei L. Uva, Senior Extension Associate

Despite less than optimal growing conditions in 2004, the value of New York State vegetables increased about 3 percent according to the New York Agricultural Statistics Service. Farmers saw higher prices for snap beans, eggplant, pumpkins, spinach, and squash. The total value of both fresh market and processing vegetables was $392 million, up slightly from the 2003 level of $381 million. If carrots, melons and broccoli were included in the total (for which Ag and Markets does not keep records), the value could top $400 million according to Dr. Steve Reiners in the Department of Horticultural Sciences at Cornell University. Total acreage in 2004 decreased about 3 percent from the year before to 168,000 acres.

Table 9-1 shows that on the fresh market side, the value of onions remains high at $54.3 million. Sweet corn remains the highest valued vegetable crop grown in the state, worth $60 million in 2004, despite a decline of nearly 10,000 acres. Cabbage value increased about 12 percent to $43 million. Pumpkin acreage and value increased significantly in 2004.

TABLE 9-1. VALUE AND ACREAGE OF SELECTED FRESH MARKET VEGETABLES IN NEW YORK, 2003 AND 2004

	2003		2004	
Crop	Value	Planted Acres	Value	Planted Acres
	($ million)	*(acres)*	*($ million)*	*(acres)*
Sweet Corn	84.3	39,100	59.9	29,000
Potatoes	62.8	22,200	58.0*	20,200
Onions	49.9	12,100	54.3	13,500
Cabbage	38.7	10,500	43.2	10,700
Snap Beans	26.7	9,900	14.0	7,900
Tomatoes	26.0	2,400	22.9	2,500
Squash	23.5	4,000	37.9	4,200
Cucumbers	12.5	5,100	24.1	4,700
Pumpkins	9.9	6,000	25.4	7,000
Peppers	5.8	500	5.1	500
Cauliflower	2.1	1,000	0.9	1,100
Eggplant	3.8	450	2.6	400
Spinach	1.6	500	0.9	460
Endive/Escarole	1.8	280	0.7	230
TOTAL Fresh Market	**349.4**	**114,030**	**351.9**	**102,390**

* Estimated.

Source: New York Agricultural Statistics.

Table 9-2 shows that on the processing side, acreage increased 10 percent to 65,500 acres and value was up 20 percent to $40.1 million. Despite losing acres in snap beans, significant acreage increases occurred in sweet corn, peas and especially table beets.

TABLE 9-2. VALUE AND ACREAGE OF SELECTED PROCESSED VEGETABLES, 2003 AND 2004

	2003		2004	
Crop	Value	Planted Acres	Value	Planted Acres
	($ million)	*(acres)*	*($ million)*	*(acres)*
Snap Beans	13.8	23,700	13.0	20,900
Peas	9.8	17,000	11.7	19,000
Sweet Corn	8.5	16,300	8.6	19,500
Beets	2.2	2,500	2.8	4,100
Kraut Cabbage*	*N/A*	*N/A*	4.0	2,000
TOTAL Processing	**34.3**	**59,500**	**40.1**	**65,500**

* *N/A* = not available; NY Ag Statistics Service discontinued estimates in 2002 but resumed in 2004. It's estimated that kraut cabbage would have added an additional 2,000 acres and $2 million in 2003.

Source: New York Agricultural Statistics.

The hot and dry weather in 2005 had various effects on crops. Crops matured 10 to 14 days earlier than usual because of the heat. Growers who did not have irrigation suffered. Heat-loving crops (tomatoes, peppers, squash and sweet corn) with irrigation had good quality, while cool season crops like peas and snap beans did poorly. On average, this year saw less disease problems but more insect problems.

Harvested acreage for four major New York fresh vegetables is estimated to be 52,100 acres in 2005, up 7 percent from 2004. Sweet corn acreage rebounded from last year's low harvested acreage to normal levels. New York onion growers planted 13,000 acres this year, down 4 percent from 2004, with slightly above average yield expected. A rainy May prevented onion growers from planting all the acreage originally planned. Total New York processed vegetable acreage is up 5 percent from 2004. In 2005, processors contracted 21,000 acres of green peas in New York, up 11 percent from 2004. Growers planted 21,700 acres of snap beans, up 4 percent from 2004.

Industry Outlook

Rising fuel costs, flavor and nutritional value are three of today's hottest topics in all levels of the produce supply chain. Due to recent spiraling fuel costs, growers are finding renewed interest from regional buyers in purchasing regionally/locally grown vegetables. More supermarkets are promoting "locally grown" produce.

Growth of Alternative Food Outlets

Alternative outlets are grabbing food-buying business away from supermarkets. A typical American made 69 trips to a grocery store in 2004, down from 72 trips in 2003 according to the AC Nielsen survey. For the first time, traditional grocery stores did not have a 100 percent penetration among U.S. consumers. About 1 percent of consumers did not visit a traditional supermarket in 2004. The main beneficiaries of the traditional supermarkets' woes are supercenters and dollar stores. Both penetration and number of annual

visits are either flat or in decline at mass merchandisers, drug stores, warehouse stores and convenience stores. Many convenience stores are adding fresh produce offerings for their customers, including salads that fit into cup holders.

Nutritional Labeling in Restaurants

Restaurants, particularly fast-food outlets, are sprucing up their menus to attract health conscious consumers. We see great efforts in the industry to develop a more diversified and healthier fast-food fare, including entrée salads and non-hamburger sandwiches. A new direction is nutritional labeling. In 2005, both Chambers of Congress and several state legislatures debated bills that could require restaurants with more than 20 outlets to print nutritional data on their menus. McDonald's printed nutrition information on tray liners in its U.S. restaurants, and Ruby Tuesday's printed nutritional information right on their menus. The latter, however, proved to be a logistical disaster. The menu had to be changed whenever chefs made even the slightest change to a recipe. The chain settled on easily replaceable cards on dining tables.

Gourmet Items Find Ways into Mainline Markets

Suppliers of exotic produce items are finding that buyers are more willing than in the past to bring in new and unusual items because it facilitates differentiating themselves from the competition. Many mainline supermarkets are stocking what were once considered exotic ingredients and cashing in on produce gift baskets. Consumers now can find the specialty food they need at their local markets. Travel, the TV Food Network, and articles in food magazines and the food sections of newspapers are some of the driving forces behind this consumer demand. Supermarket buyers are trying to serve the desire of their ethnic customers and the burgeoning market for ethnic cuisine, regardless of one's heritage.

Men Keep Their Forks in Steaks, But Women Prefer Produce

Although almost three out of four primary grocery shoppers say they are buying more nutritious foods and beverages now than they did a few years ago, women are three times more likely than men to choose fruits and vegetables as their favorite foods (Table 9-3). When it comes to nutrition, consumers are looking for products that are made with whole and unrefined grains, reduced and low fat, vitamin and mineral fortification, reduced and low calorie, sugar-free, and reduced and low carbohydrates.

TABLE 9-3. CONSUMER'S FAVORITE FOOD BY GENDER

Men		Women	
Food Category	% of Consumers	Food Category	% of Consumers
Beef	25	Other vegetable, beans	15
Chicken	11	Chicken	12
Pasta	10	Pasta	12
Seafood	10	Seafood	10
Ethnic foods	8	Fruits	9
Salads	3	Pizza	8
Chocolate	3	Ethnic food	7
Fruits	2	Salads	6
Other vegetables, beans	2	Chocolate	4

Source: The Packer.

Marketing Produce for Good Health

Obesity continued to grab national attention. According to the Washington, D.C.-based Trust for America's Health group, in spite of ongoing efforts too fight obesity and heightened awareness of the problem, obesity grew in all states but one. Overall, 22.7 percent of U.S. adults were obese in the 2002-2004 period, up from 22 percent in 2001-2003. About 120 million Americans are either obese or overweight. That makes obesity in general, and childhood obesity in particular, a top issue for many. Programs designed to fight obesity often place an emphasis on produce consumption.

The Produce for Better Health Foundation developed the new "5 A Day – The Color Way" to encourage consumers to get a colorful variety of fruits and vegetables into their diets every day. McDonalds joined the Produce for Better Health Foundation produce board. It agreed to provide in-store educational materials, new 5-A-Day-based menu choices, and include the chain in foodservice research projects.

Sesame Workshop, the non-profit educational organization behind Sesame, is emphasizing the nutrition message in programming, books, public service announcements and licensed apparel. The Sesame Street characters, including Cookie Monster, are talking about eating different colored fruits and vegetables – "C is still for cookie, but it is also for carrot, citrus and corn." The Produce for Better Health Foundation began a program in 2004 working with Wal-Mart to plan four promotional weekends a year in all supercenters. Each promotion was tied to well-known characters, including Shrek, Marvel Comics Super Heroes, Charlie Brown, and Beatrix Potter's Peter Rabbit.

Chapter 10. Ornamentals

Wen-fei L. Uva, Senior Extension Associate

In 2004 the overall value of commercial sales of New York floriculture production increased 7 percent from the year before to $209 million and ranked 5th in the nation for total commercial sales. Also during 2004 there were 837 floriculture growers in the state. This number decreased for the seventh consecutive year.

TABLE 10-1. GROWER CASH RECEIPTS OF FLORICULTURE AND NURSERY CROPS, NEW YORK, 1999-2004

	1999	2000	2001	2002	2003	2004
			--- Million dollars ---			
Floriculture[a, b]	162.9	179.9	172.9	186.9	194.9	209.0
Nursery[c]	131.2	135.9	142.9	153.7	159.6	169.4
Floriculture and Nursery Crops	294.1	315.8	315.8	340.6	354.5	378.4

[a] Includes growers with $10,000 or more in floriculture sales.

[b] Includes ornamental plants without woody stems, grouped into bedding/garden plants, cut cultivated greens, cut flowers, potted flowering plants, indoor foliage plants, and propagative floriculture material.

[c] Includes ornamental plants and trees with woody stems, including broadleaf evergreens, coniferous evergreens, deciduous shade trees, deciduous flowering trees, deciduous shrubs and other ornamentals, fruit and nut plants for home use, cut and to-be-cut Christmas trees, and propagation material or lining-out stock. Also includes other ornamental crops not classified as floriculture.

Source: Floriculture and Nursery Crops Situation and Outlook Yearbook, Economic Research Service, USDA, Various Years.

TABLE 10-2. VALUE OF FLORICULTURE PRODUCTION BY PLANT CATEGORY, NEW YORK, 1999-2004

	1999	2000	2001	2002	2003	2004	5-yr. avg. 1999-2004	2004 vs. 5-yr. avg.	2004 vs. 2003
				--- Million dollars ---				**%**	**%**
Bedding/Garden Plants[a]	97.5	97.6	97.4	99.3	107.5	107.9	99.8	+8	0
Potted Flowering Plants[a]	34.1	37.4	40.2	47.9	43.1	56.2	40.5	+39	+30
Cut Flowers[a]	5.0	6.1	4.5	5.6	5.0	4.4	5.2	-16	-12
Foliage Plants[a]	2.3	3.7	2.5	3.9	4.1	6.7	3.3	+106	+66
Propagative Materials[a]	N/A	11.9	6.0	5.4	9.0	8.2	8.0	+2	-9
Grower Sales $10,000-$99,999 (Unspecified crops)	24.0	23.2	22.4	25.0	26.3	25.6	24.2	+6	-3
Total[b]	162.9	179.9	172.9	186.9	197.9	209.0	179.5	+16	+7

[a] Sales by operations with annual sales of $100,000 or more.

[b] Total reported crops includes categories not listed – cut cultivated greens and propagative materials.

Source: Floriculture and Nursery Crops Situation and Outlook Yearbook, Economic Research Service, USDA, various years.

TABLE 10-4. WHOLESALE VALUES OF FLORICULTURE PRODUCTION, BY GROWER SIZE[a], NEW YORK AND UNITED STATES, 2002-2004[b]

	New York			U.S.		
	2002	2003	2004	2002	2003	2004
			------ Million dollars ------			
Small growers	24.98	26.31	25.58	335.34	312.29	292.65
Large growers	161.97	168.63	183.44	4,754.17	4,769.89	4,887.05
All growers	186.94	194.94	209.02	5,089.51	5,082.17	5,179.70

[a] Small growers have between $10,000 and $100,000 in annual floriculture sales; large growers have at least $100,000.

[b] Wholesale value of sales of growers with at least $10,000 in annual floriculture sales. Growers are located in the 36 surveyed states.

Source: Floriculture Crop, National Agricultural Statistic Service(NASS), USDA, 2005.

TABLE 10-5. GROWING AREA FOR FLORICULTURE CROPS IN NEW YORK[a], 1999-2004

Year	Total greenhouse cover	Shade and temporary cover	Total covered area	Covered area per grower	Open ground	Total covered & open ground
		-- 1,000 square feet --			*--- acres ---*	
1999	22,504	464	22,968	30	1,028	1,555
2000	26,429	527	26,956	34	914	1,533
2001	23,702	667	24,369	33	1,243	1,802
2002	24,365	908	25,273	38	1,034	1,614

[a] Includes cut flowers, cut cultivated greens, potted flowering plants, potted foliage plants, bedding and garden plants, and hanging baskets.

Source: Floriculture Crops 2003, NASS.

Industry Outlook

Growth in Professional Landscape Services

According to the National Gardening Survey, the money consumers spend on professional lawn and landscape services has grown at a rate of 13 percent a year for the last five years. The sale of new and existing homes is the driver for people hiring landscape contractors. Usually people hire landscapers in the two to three years after the initial purchase to install, update or maintain their lawn and landscape.

In contrast, spending on do-it-yourself lawn and gardening activities fell 4 percent in 2004. This was the second consecutive year that nationwide sales of consumer lawn and garden products have stayed at about the same level after peaking in 2002. Home centers and mass merchandisers take the lead in retail sales of lawn and garden products. In 2004, 55 percent of households purchased lawn and garden products at home centers, and 44 percent made purchases at mass merchandisers. Garden centers fell to third place in 2004 (42% of households).

Branding and Promotion

Due to improvement of technology, it is easier and less expensive for growers to produce professional marketing materials in-house. Many growers are providing promotional material support that emphasizes colors to their buyers, including plant labels, banners, signs, kiosks and other advertising materials. Large nurseries, such as Monrovia Growers, are at the forefront of this trend. Monrovia also advertises in national consumer gardening venues including HGTV. Even small growers today are producing custom tags for their clients, complete with retailers' logos and retail prices.

Big Box Challenges

Home Depot and Kmart switched to a pay-by-scan program. Instead of getting paid based on inventory delivered to the stores, growers will not be paid for their plants until they are sold and rung through the register. Due to the number of plants that are thrown away at retail or rung up incorrectly at the register, this is a huge risk for grower vendors – a risk that used to be the retailer's. To prepare for the pay-by-scan system, many growers have merchandising forces in the stores to spruce up displays and replace shop-worn plants. Growers are hoping that additional sales from correct merchandising will pay for the labor. Under the pay-by-scan system, many growers are also enjoying a degree of exclusivity in their plant categories or Stock Keeping Units (SKUs). This is necessary for retailers to manage the program, but it also shuts potential grower vendors out of the stores.

A survey of the country's 100 largest greenhouse growers shows that retail consolidation is a major concern among these growers. The top five chain stores that contracted with the top 100 growers are: Wal-Mart (55% of the top 100 growers), Home Depot (53%), Lowe's (31%), Costco (29%), and Kmart (22%). Differentiation is a major strategy growers use to sustain sales and profit. Top differentiation strategies are: offering just-in-time deliveries (66% of top 100 growers), growing unique varieties and combinations (63.8%), watching and reacting to consumer trends (61.7%), growing branding products (55.3%), and offering merchandising services (42.6%).

Global Production

Floriculture is becoming more of a global industry. Many U.S. companies have set up off-shore production sites. The most recent, Fischer USA, has expanded production into China. Eastfields is a joint venture company owned by Asia A.D.C. Ltd. (Israel) and Shanghai Flower Port Enterprises Development Ltd. (China), with which Fischer Worldwide has contracted for large-scale commercial production of high quality unrooted cuttings, primarly for the North American market. Eastfield started with 12 acres to produce Fischer geraniums and poinsettias in 2003, and an additional 12 acres of greenhouse construction was completed in September 2005.

In the past two years, more than a thousand growers were quarantined for a strain of Ralstonia on USDA's Bioterrorism Select Agents and Toxins List. The targeted crop has been vegetatively produced geraniums, but other crops are potential hosts. Through USDA, a certification program has been developed and put in place for offshore farms. In order to import vegetative material from off-shore farms, products must have a phytosanitary certificate from the country of origin, assuring a clean bill of health at their respective operations.

Chapter 11. Agriculture and the Environment

The Current Status of, and Challenges to, Agricultural and Farmland Protection in New York

Nelson Bills, Professor, AEM
Makoto Kondo, Graduate Research Assistant, AEM
Greg Poe, Associate Professor, AEM
Stanley Telega, Senior Associate, Animal Science

Consistent with our discussion in last year's Agribusiness Economic Outlook handbook (http://aem.cornell.edu/outreach/publications.htm Chapter 11), agricultural environmental policy in New York has proceeded in a slow deliberative manner in some cases, and has evolved discontinuously in others. Perhaps this is nowhere more apparent than in the topic area we have selected to focus on this year – the continuing evolution of, and emerging challenges to, New York State's Agricultural and Farmland protection program. In recent years this program has demonstrated all the characteristics of a mature, established policy: data indicate that total Agricultural Assessments and other tax incentives provided to agricultural land owners and operators continued to rise steadily, additional county agricultural and farmland protection plans have been established, and agricultural districts have continued to be reviewed, renewed, and in many cases consolidated. At the same time, the changing face of agriculture in New York and rising tensions between agriculturists and neighbors in certain areas of the state have led to credible challenges to this program in the past few years from local governments and environmental advocates, spurred on by highly visible agricultural environmental accidents. This latter confluence of events is best evidenced by the distribution of a publication by environmental groups this summer arguing that the growth in "industrial farming" and corresponding "factory farm pollution" merit fundamental changes in our perspective toward, and polices of, agricultural and farmland protection in rural New York. Almost concurrent with the release of this publication was a large liquid manure spill, and corresponding major fish kill, on the Black River. This incident may also have ramifications for how the New York State Department of Environmental Conservation (NYSDEC) deals with Concentrated Animal Feeding Operations (CAFOs) in the future.

These challenges to agricultural and farmland protection in New York are being taken seriously in Albany and by agricultural constituencies. We expect that the debate will not go away in the near term, and anticipate legislative proposals to modify existing Agricultural District in the upcoming legislative sessions and pressures on the NYSDEC to more closely scrutinize CAFOs. With these existing and potential future challenges in mind, the intent of the present chapter is to provide foundational information for understanding the history, evolution, and current standing of Agricultural Districts in New York along side summary information about recent events and actions.

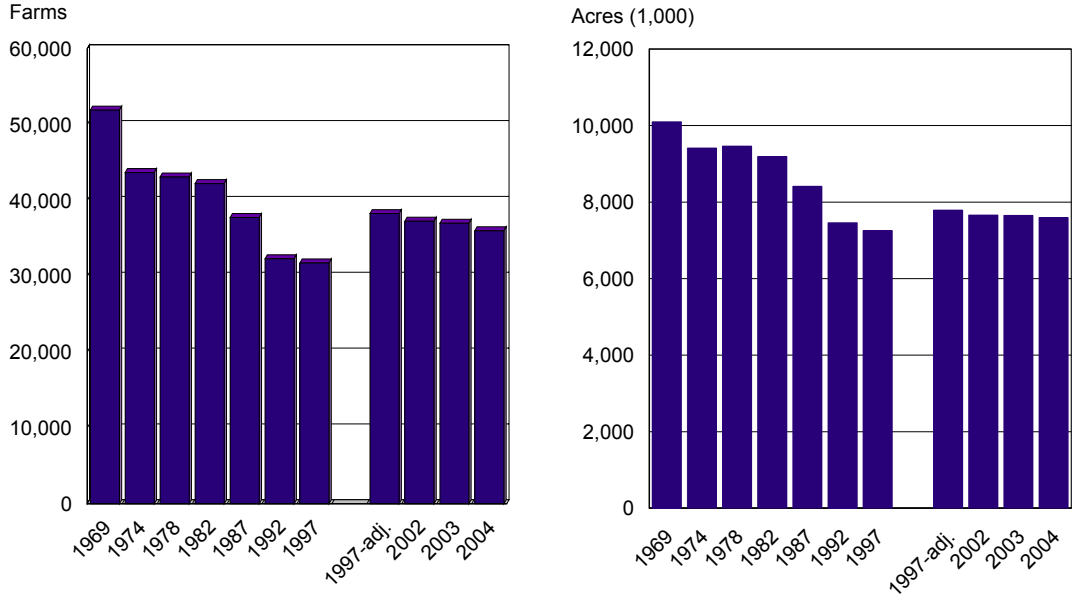
To do this we structure this chapter as follows. The next section provides background information on the origin and evolution of efforts to protect farming and farm land in New York at the state level. This section updates our previous presentations with the latest available data. The second section summarizes County level activities and results of a survey of Cornell Cooperative Extension Executive Directors regarding priorities of County Agricultural and Farmland Protection Boards. That those surveyed indicated right-to-farm ordinances at the town and county level as a paramount policy concern provides a natural segue into the third section on current challenges to existing agricultural policy in New York. Our focus in

this third section is on summarizing some of the main features of the ongoing determination of Mark's Farm Inc. liquid manure spill and possible policy outcomes emanating from this accident. In the final section we shift our focus beyond farmland protection and CAFOs in New York to briefly address issues likely to arise over the next year in the context of the Conservation Title of the upcoming Farm Bill.

I. Protecting Farming and Farmland in New York

New York's land resources have always been important for agricultural commodity production. A century ago, about three-fourths of the State land base was counted as land in farms. But during much of the twentieth century, agricultural lands in New York, indeed throughout the Northeast, have slowly been converted or reverted to alternate uses and, due to consolidation and other socio-economic trends, the number of farms has declined. Some of the acreage released from farm use has been converted to a developed use, but millions of acres sprouted brush, then small trees and, over time, woodland that can again reclaim the title of forest. Corresponding trends in farm numbers and farm acreage in New York are shown in Figure 11-1.

FIGURE 11-1. FARMS AND LAND IN FARMS, NEW YORK, 1969-2004



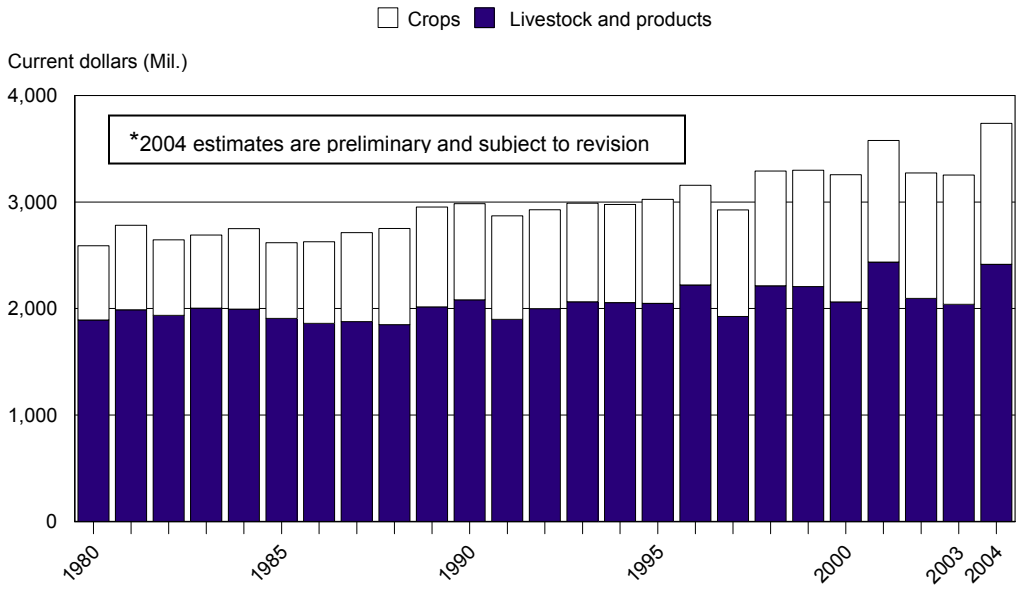
Source: 2002 Census of Agriculture and NYS Agriculture Statistics Service.

For 2004 The USDA farm estimate for New York is 36,000 farms, down from 37,000 farms in 2003. From 2003 to 2004, the land in farms is estimated to have declined 50,000 acres to 7.6 million acres across New York State.[1]

[1] In the 2002 Census of Agriculture new measures were adopted to correct for under-counting of farm operations. As indicated in Figure 11-1 these adjustments lead to a notable rise of approximately 20% in the estimated number of farm operations and a corresponding, but lesser, increase (8%) in estimated farm acreage.

The value of crops and livestock produced on these farms hovered in the $3 billion range during the 1990s and into this decade. Receipts are expected to spike upward in 2004, led by a higher receipts in New York's lynchpin dairy sector (Figure 11-2). Farm businesses also support industries that process raw farm commodities and supply inputs needed for commercial farm production. Statistics of these data are less frequently reported. In 2000, the value of gross output originating on New York farms and with businesses classified as agricultural services or food manufacturing totalled $25.1 billion.

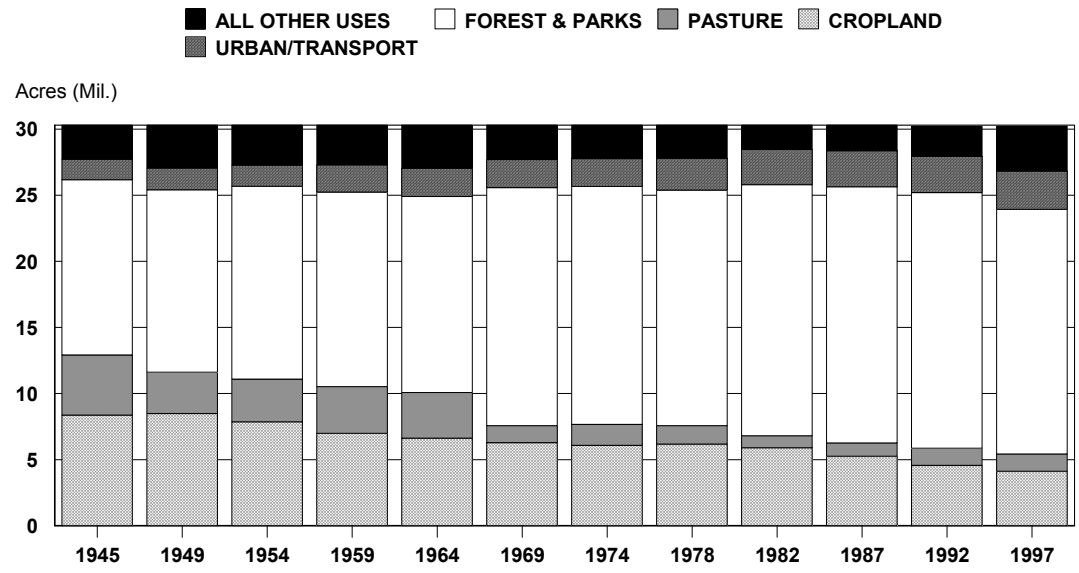
FIGURE 11-2. VALUE OF FARM MARKETINGS, NEW YORK, 1980-2004*



Source: Derived from data published by the U.S. Dept. of Commerce, Bureau of Economic Analysis, and the NYS Agriculture Statistics Service.

New York State does not inventory land uses, making for uncertainty over the status of nonagricultural land. Two USDA agencies—the Economic Research Service (ERS) and the Natural Resources Conservation Service (NRCS)— have published estimates of land use and land cover for calendar 1997. Widely circulated trend data estimated in a consistent manner by ERS since the 1940s are shown in Figure 11-3. They show urbanized land in 5-year intervals, based on a conservative estimate of urbanized land using Census definitions. Other USDA estimates from the 1997 NRCS National Resources Inventory (NRI) are more expansive in definition and put urban and built-up acreage in the range of 3.2 million acres, suggesting that as much as 11% of New York's 30.3 million acre land base presently accommodates residential, commercial, industrial, and transportation uses. Trends in annual conversion rates are fluid and controversial as well. The USDA's 1997 National Resources Inventory indicates that land conversions in New York followed trends evident in several other states and accelerated rapidly in the early 1990s.

FIGURE 11-3. MAJOR USES OF LAND, NEW YORK, 1945-1997



Source: USDA-ERS.

Despite some uncertainty over the evidence, conversion of farmland to residential, commercial, industrial, or transportation uses is a continuing public policy issue. Often, land well suited for crop production has the physical and topographical features which also make it well suited for conversion to a residential, commercial, industrial, or transportation use. Possibilities for farmland conversion are also enhanced by prevailing patterns of land settlement. In New York, as well as in many other parts of the nation, settlement tended to occur on or near land suited to a productive agricultural use. Urban growth since the turn of the century has largely reinforced this settlement pattern. Today, some of New York's most productive farmland is situated near metropolitan centers; this land is at risk in the sense that it is directly in the path of major road transportation corridors and residential, commercial, and industrial development.

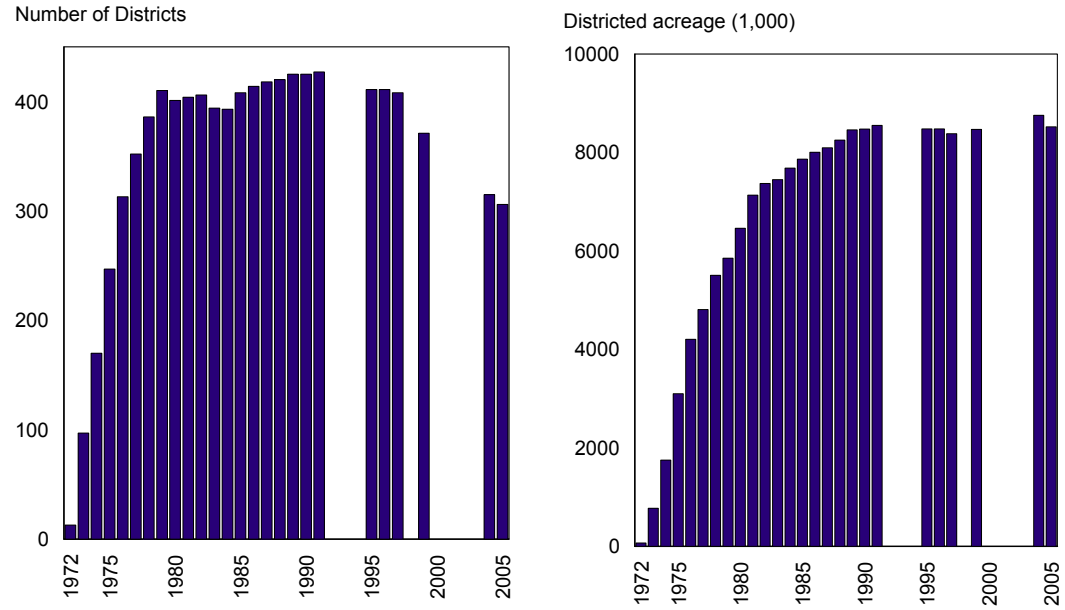
Enactment of the Agricultural Districts Law in 1971 makes local efforts to create agricultural districts the focal point for farm protection efforts in New York. The Agricultural Districts Law recognizes that viable agricultural land is one of the State's most important and irreplaceable environmental and economic resources. The declaration of legislative intent states that many of the State's agricultural lands are in jeopardy of being lost for agricultural purposes due to nonfarm development. The purpose of the Agricultural Districts Law is to provide a locally initiated mechanism for the protection and enhancement of agricultural land for agricultural production, and as valued natural and ecological resources which provide needed open space for clean air and aesthetic purposes.

These broad economic, social, and environmental objectives stated in the legislation are promoted through the formation of agricultural districts. The process of creating an agricultural district is initiated with a proposal by interested landowners to the county legislature. Owners forwarding a proposal must collectively own at least 500 acres or 10% of the land proposed for a district, whichever is greater. The proposal must include a description of the district boundaries and a recommendation on whether the district should come under review after 8, 12, or 20 years.

While the law restricts district size to no fewer than 500 acres, landowners and the county legislature are granted considerable latitude on the configuration of lands included within the boundaries of an agricultural district.[2] The law requires that steps be taken to determine that the district consists predominantly of viable agricultural land and is consistent with state and local comprehensive plans, policies, and objectives.

Agricultural districting has proved to be popular with farmers in New York. After more than three decades the districts program is a mature program, as evidenced by the data in Figure 11-4. Acreage committed to districts crested in the late 1980s and has remained relatively stable at about 8.5 million acres since that time. Today, New York's districted land base of 8.55 million acres represents 28% of the total New York land area. Some nonfarm acreage is in districts because farmland is typically co-mingled with rural residential, forest, and other open space lands in most rural communities. The NYS Department of Agriculture and Markets estimates that about 6.3 million acres or 72% of all districted acreage is farmed by 21,600 farm operators. For comparative purposes, the USDA estimates that 7.65 million acres are presently owned or leased by 36,000 farm operators in New York (see Figure 11-1).

FIGURE 11-4. AGRICULTURAL DISTRICTS IN NEW YORK STATE, SELECTED YEARS, 1972-2005



Source: Unpublished data from the NYS Dept. of Agriculture and Markets.

In sharp contrast to districted acreage, the number of agricultural districts has declined from nearly 430 districts in the early 1990s to 306 in calendar year 2005. Much of this change in district numbers is attributable to administrative adjustments in conjunction with eight-year reviews of district boundaries. To

[2] A 2003 amendment establishes an annual 30-day period during which a farmer can submit proposals to include viable land within an already certified agricultural district. This provision is designed to accommodate new, start-up farm operations who wish to access the benefits of district participation. Unpublished data from the NYS Department of Agriculture and Markets shows that 473 farms and 35,400 acres have been added to districts statewide under this provision.

manage the administrative load and streamline administration costs, concerted efforts have been made in several counties to consolidate districts. The consolidations better reflect the facts on the ground while affording local officials opportunities to more effectively manage the eight-year district reviews prescribed by State law.

The Agricultural Districts Law contains six major provisions designed to facilitate the retention of agricultural land:

- District authority may supersede local ordinances designed to regulate farm structures or practices beyond the normal requirements of public health and safety.
- The right of government to acquire farmland by eminent domain is modified.
- The right of public agencies to advance funds for construction of public facilities to encourage nonfarm development is modified.
- State agencies must modify their administrative regulations and procedures to facilitate the retention of agricultural land.
- Special-use districts that overlap the boundaries of a district are restricted in the imposition of benefit assessments or special *ad valorem* levies on farmland within the district.
- Owners of 7 or more acres which have generated gross farm product sales averaging at least $10,000 over the preceding two years can apply for an agricultural assessment; operators with fewer than 7 acres may apply if yearly sales are $50,000 or more.

Agricultural assessments have the effect of a tax exemption and remove the land's nonagricultural value from the property tax roll, and have proved to be a significant source of financial benefit to farmland owners. As shown in Table 11-1, agricultural assessments generate significant and persistently increasing tax savings for participating farmland owners; aggregate benefits are estimated at just under $90 million for the 2003 tax year.

TABLE 11-1. ESTIMATED FARMLAND PROTECTION OUTLAYS IN NEW YORK, 1996-2003

	1996	1997	1998	1999	2000	2001	2002	2003**
				----- *Dollars (Mil.)* -----				
NYS Purchase of Development Rights (1996)*	3.7	3.5	4.5	7.7	12.0	8.0	16.0	12.0
NYS Farmer's School Tax Credit (1997)	0.0	12.4	18.5	19.0	19.6	20.7	21.5	23.0
NYS Agricultural Assessments (1971)	56.5	55.1	57.8	60.7	67.4	68.0	79.2	88.4
NYS Farm Building Exemptions (1969)	8.9	9.0	8.8	8.8	9.4	10.0	10.8	11.7

*Year of program inception in parentheses.

**Preliminary estimate, subject to revision.

Source: Estimated or extrapolated from file data obtained from the NYS Department of Agriculture and Markets and the Office of Real Property Tax Services; a report on NYS tax expenditures by the State Division of the Budget/Dept. of Taxation and Finance.

Agricultural assessments for land complement a 1969 amendment to the New York State Real Property Tax law that grants a 10-year tax holiday to new or newly reconstructed farm buildings. This law reduces the after-tax cost of a new, land-based farm improvement. This 10-year exemption on new farm structures generated an estimated $11.7 million in property tax savings during the 2003 tax year (Table 11-1).

The 1992 Agricultural Protection Act established a State Agricultural and Farmland Protection Program, codified in Article 25-AAA of the Agriculture and Markets Law. Article 25-AAA directed the Commissioner of Agriculture and Markets to initiate and maintain a state program to provide financial and technical assistance to counties for local farmland protection efforts (Sec. 321, Art. 25-AA, Ag and Markets Law). The State provides funding for grants up to $50,000 for agricultural and farmland protection plans. Availability of state support for agriculture and farmland protection planning at the local level has spurred considerable planning effort tailored to food and agricultural issues. These plans are prepared under the direction of county Agricultural and Farmland Protection Boards (AFPB). These boards have representation from the farm community, the county planning agency, county real property tax coordinators, Cornell Cooperative Extension, local Soil and Water Conservation Districts, and local not-for-profit land trusts and conservancies. Fifty-four of New York's 57 counties have established an AFPB and are, therefore, eligible to apply for agricultural and farmland protection planning and implementation grants. To date, as showcased in the next section, 44 county legislative bodies have ratified county agricultural and farmland protection plans.

An approved agricultural and farmland protection plan paves the way for implementing farmland protection projects. In 1996, New York established a second matching grants program for farmland protection implementation projects by means of Article 25-AAA of the Agriculture and Markets Law. Section 321 states that in an effort to maintain the economic viability, and the environmental and landscape preservation values associated with agriculture, the State must explore ways to sustain the State's valuable farm economy and land base associated with it. To date, assistance has focused on efforts to acquire farmland development rights (PDR). The purchases are coordinated with allied PDR programs operated by a select few local governments in New York State and recent Federal funding authorized under 1996 Federal Farm Bill legislation. Development rights acquisition programs operated by New York's land trust/land conservancy community are also taken into account by program administrators in the NYS Department of Agriculture and Markets. Funds committed from State sources over the 1996-2003 span are estimated at about $67.4 million (see Table 11-1).

In 1996, the legislation turned its attention once again to the local property tax and, under provisions of the Farmer's Protection and Farm Preservation Act, made provisions for a farmer's school tax credit. The credit provides school property tax relief for farmers and for farm acreage that meets the law's eligibility requirements. This legislation targets relief from tax levies prescribed by local school districts; at present, these districts account for about two-thirds of total tax levies. The tax credit is allowed against the farmer's income tax or corporation franchise tax and is fully funded by the State. This means that the benefits accruing to qualified farmers do not affect local property tax revenues but reduce state-level income tax revenues instead. In 2003, tax benefits from this law are estimated to be at $23 million (see Table 11-1).

II. County Farmland Protection Plans[3]

To encourage local planning efforts that are more closely tailored to issues and concerns for food and agriculture, 1992 amendments to the Agricultural Districts Law gave the Commissioner of Agriculture and Markets new authority to cost share with local governments on the preparation of agricultural and farmland

[3] This section includes updates of findings reported in 2001 (Maureen Maloney Robb and Nelson Bills, "Farmland Protection Planning in New York," EB 2001-04, Department of Applied Economics and Management, Cornell University, April 2001 (http://aem.cornell.edu/outreach/extensionpdf/eb0104.pdf).

protection plans. To date, as shown in Table 11-2, 44 of 57 New York counties (excluding the five boroughs of New York City) have completed and received approval of an agricultural and farmland protection plan. Approval requires review of the plan at the state level and ratification by the county legislative body.

TABLE 11-2. NEW YORK'S AGRICULTURE AND FARM-LAND PROTECTION PLANS BY YEAR OF COMPLETION, MARCH 2005

COUNTY	YEAR	COUNTY	YEAR
Cayuga	1996	Rockland	2000
Erie	1996	Schoharie	2000
Orange	1996	Schuyler	2000
Suffolk	1996	Seneca	2000
Washington	1996	Chautauqua	2001
Essex	1997	Delaware	2001
Onondaga	1997	Franklin	2001
Ulster	1997	Oneida	2001
Wayne	1997	Rensselaer	2001
Dutchess	1998	St. Lawrence	2001
Saratoga	1998	Steuben	2001
Tompkins	1998	Broome	2002
Cortland	1999	Fulton	2002
Monroe	1999	Genesee	2002
Niagara	1999	Schenectady	2002
Oswego	1999	Greene	2003
Otsego	1999	Herkimer	2003
Sullivan	1999	Jefferson	2003
Tioga	1999	Albany	2004
Chenango	2000	Clinton	2004
Montgomery	2000	Lewis	2004
Ontario	2000	Putnam	2004

As of March 2005, five additional counties (Alleghany, Madison, Westchester, Wyoming, and Yates) had received state funding to prepare a plan. At the other extreme, plans prepared in several counties are now somewhat dated. Regardless, these plans, while providing guidance for planning at the local level, also provide a useful reference point for identifying underlying themes and points of convergence around opportunities and challenges for New York agriculture. Policymakers at both the state and local levels need a clear understanding of the vision and direction of local planning efforts as a precondition for framing new policy and fine-tuning existing law and public policies.

As noted in the previous section, agricultural and farmland protection plans are developed under the supervision of county AFPB. The expectation is that the plans will include the location of any land or areas proposed to be protected from conversion to nonfarm use, an analysis of the value of farmland to the agricultural economy of the county, their open space value, the consequences of possible conversion, and the level of conversion pressure on the lands or areas proposed to be protected. The plans also specify and describe the activities, programs, and strategies intended to be used in a county to promote food and agriculture and to ensure the continued use of good farmland for farming purposes. The process of developing a farmland protection plan is usually data driven. Most counties gathered primary data through

mail surveys of producers or by conducting focus group discussions. A few counties solicited responses from farmland owners as well. All counties compiled secondary data from such sources as agricultural censuses, agricultural district reviews, real property tax rolls, planning departments, and soil and water conservation services.

The boards must conduct at least one public hearing and the plan must be approved by the county legislative body. In addition, the plan must be submitted to the Commissioner of Agriculture and Markets for approval. County boards are given wide latitude on strategies for developing the plan. In some cases, the planning effort has been internalized and conducted by staff in local agencies. In several other circumstances, the plan preparation has been turned over to hired, outside consultants. Under the aforementioned Article 25-AAA matching grant program to fund the cost of county agricultural and farmland protection planning activities, the Commissioner of Agriculture and Markets has obligated slightly more than $2 million in state funds to date.

The impetus for planning seems timely for several reasons. The planning exercise provides a forum for discussing proactive steps the industry and governments might take to protect the agricultural land base while increasing the vibrancy of local food and agricultural industries. Broader representation on county AFPBs increases the possibilities for agricultural concerns to be heard in government while giving voice to environmental and open space advocates in the wider community. While there is no legal obligation to prepare an agricultural and farmland protection plan, having a protection plan insures eligibility for other agricultural protection or other state grant funds.

Agricultural and farmland protection plans have a social, political, and economic context. Key social and political elements in New York farmland policy have been mentioned above in describing the Agricultural District Law. The New York legislation, glancing back to its inception over 30 years ago, is arguably one of nation's most successful farmland protection programs. Using conventional measures of success--acreage enrollments, monetary benefits, nurturing of the farm and food industry, and so on—districts have become an enduring and necessary feature of New York's farm policy landscape. The districts program stresses voluntary participation and heavy dependence on local initiative to administer the program and to tailor it to local needs. State government, on the other hand, functions largely as an enabler and as a partner with localities who wish to step forward with protection initiatives. The districts law has a limited regulatory texture and overt steps are taken to minimize any impacts on the decision-making prerogatives of individual landowners.

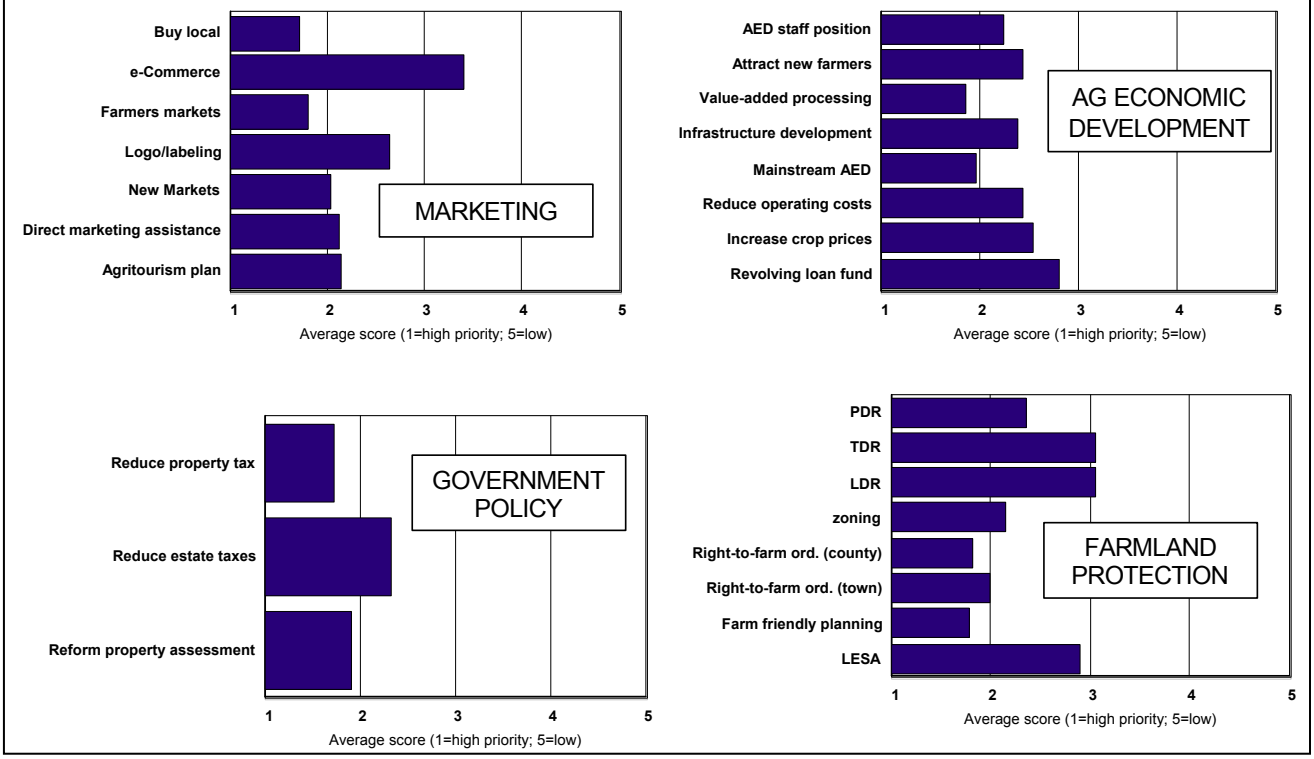
Preparation of agricultural and farmland protection plans has these basic precepts in place as well. The overriding issue behind all protection plans is that, once productive farmland is converted to nonfarm uses, it is lost forever to agriculture. Suburban-style development expanding out from urban centers creates problems of farmer/neighbor relations. Development fragments productive lands as a whole farm or several roadside parcels are sold for development, or land is prematurely retired from production. Loss of too many farms will also lead to loss of necessary agricultural services. The influence of external forces, whether regional, national, or international in scope, is clearly recognized in this planning environment.

Our review of each plan identified many common themes. There is no basis for assigning a quantitative weight or rank to each of these themes. And defining counties to be the unit of study makes no direct accounting of important indicators of industry size, such as number of farms, farmland acreage, or volume of sales. Thus, at first glance, it might appear that the county plans, displaying such an expansive set of planning targets, tend to marginalize the traditional concern with farmland protection. However, a more apt interpretation is that the plans reflect a general consensus that land protection issues cannot be considered in a vacuum. This consensus vindicates the legislature's intent to reinvigorate the debate over sustaining New York's farm and food industries. The economic health of the industry and the prospects for giving the local farm economy more vibrancy uniformly receives equal billing in the planning documents.

This wider focus builds on the simple but crucial distinction between farmland and farming, the presence of the latter being a necessary precondition for pursuing protective measures for the former. To that end, all counties include recommendations for sustaining, protecting, and enhancing the agricultural industry in their agricultural and farmland protection plans. Although not detailed here, county plans uniformly call for redoubled efforts to engage and educate the nonfarm public, including local public officials, on these issues along with addressing the challenges and prospects for continued farm and food production in the local community.

Beyond educational needs, our statewide reviews have shown that planning recommendations for new or more robust initiatives center on four broad categories: marketing, ag-based economic development, government land assessment and tax policy, and farmland protection. Early in 2005, executive directors of Cornell Cooperative Extension (CCE) were contacted with a brief survey to determine the current status of Agriculture and Farmland Protection Boards. Executive Director's were asked for their judgments on the priorities assigned to planning efforts in each of these four broad categories. Results of this survey are displayed by category in Figure 11-5.

FIGURE 11-5. EXTENSION EDUCATOR'S PRIORITIES FOR AGRICULTURE AND FARMLAND PROTECTION IN 47 NEW YORK COUNTIES



Distinctions between efforts that target "marketing" and "ag-based economic development" are usually elusive. There is some tendency to use the words interchangeably to refer to steps that increase or stabilize the cash flow of farm and agribusiness firms. The line of demarcation, for the purposes here, link marketing issues to tactics that are directly tied to product sales. In this category, efforts with the highest county priority, according to CCE educators, are those that encourage local consumers to buy local products and the establishment of farmers markets. Also of relatively high priority is "direct market assistance"

(technical assistance on marketing solutions on a one-on-one basis) and agritourism planning. Efforts centered on e-commerce and local efforts with logos and labeling are deemed to be a relatively lower priority.

Profitable farming is generally acknowledged to be the most effective means of maintaining and protecting farmland. For these reasons, County farmland protection plans often make ag-based economic development (AED) initiatives the centerpiece of planning effort. Relatively high priority is given by CCE educators to the establishment of value added processing of farm commodities and engaging the wider economic development community to more effectively "mainstream" the farm-based development options at the county level. Both of these directions were assigned higher priority compared to efforts to staff agricultural economic development positions, attract new farmers, or affect farm profitability through infrastructure development, reduced operating cost, altered crop prices, or revolving loan funds (Figure 11-5).

County agricultural and farmland protection plans identify many entry points for governmental action. Some entry points go directly to concerns about farmland protection and the use of incentive programs to foster the continuation of farming and maintenance of the farmland base. Others relate more generally to the role of government in facilitating and enhancing local food and farm enterprises. For the latter, a paramount concern is the local real estate property tax. Most farmland protection plans call for additional programs to afford owners of farm real estate more tax relief. Our survey of extension educators shows that the local property tax is a continuing priority (Figure 11-5). Another priority relates to upgraded property assessment practices that can benefit from more consistent local assessor training on agricultural appraisal techniques.

All agricultural and farmland protection plans address the tools and steps governments might take to protect farmland. The planning recommendations realized for farmland protection encompass proposals to implement farmland protection "tools" or programs but also extend to wider concerns about comprehensive planning, conducted at the town level throughout New York State. Our survey shows that efforts to promote "farm friendly" town planning are a relatively high priority. This reflects both the farm community's instinctive reservations about excessive land use regulation and a growing awareness among farm operators that community growth and development must be managed. A handful of county plans also made reference to detailed planning and zoning techniques with references to the implementation of incentive zoning mechanisms.

Closely allied with the larger farm-friendly planning concern is the priority assigned to the farm community's "right to farm". County-and/or town-level right-to-farm ordinances are included in 80% of all county plans. There is no standard definition of a right-to-farm ordinance. Nationally, there is a body of state law dealing with right-to-farm issues. Without exception, these state laws relate to farmers' standing in court when allegations are made that the farm, or certain farming practices, constitute a public or private nuisance. New York has two right-to-farm laws, each dealing with conditions that affect the creation of a nuisance.

Given the current controversy surrounding farming practices and neighbor relations, the priority afforded to right-to-farm ordinances is timely. The motivation for county and town right-to-farm laws is less clear. It is unlikely that local efforts would pre-empt or contradict state law: recall from above that one of the major provisions of New York's Agricultural District Law is that agricultural district authority may supersede local ordinances designed to regulate farm structures or practices beyond the normal requirements of public health and safety. In a number of cases local initiatives have been deemed unreasonably restrictive with respect to farms operating within agricultural districts and have been successfully challenged by the NYS Department of Agriculture and Markets. However, county and town right-to-farm laws may reinforce farmland protection inherent in the Agricultural Districts Law. Local ordinances may give local governments in a home rule state a forum to reaffirm local support for the farm industry and for farmers who conduct their operations in a conscientious manner. The discussion surrounding promulgating such laws and ordinances at the local level also is viewed as another opportunity to educate local officials about the

economic, social, and environmental benefits of production agriculture to the local economy and about state agricultural laws. These efforts were judged to be a higher priority than the development of information systems to inform decisions on land conversions, such as the USDA's "land evaluation and site assessment" (LESA), which seek to improve the decision-making process over converting a particular land parcel or site or conversion to a new use.

Some counties have chosen to broaden the discussion of land management issues under headings such as "natural resources" or "land conservation and stewardship". Embedded in these discussions is the treatment of incentive-based programs that focus on the acquisition (PDR) or transfer (TDR) of farmland development rights The discussion over farmland development rights and their applicability in New York communities has evolved over nearly three decades, beginning with an initial program design and implementation in Suffolk County, New York in the mid-1970s. That innovative development rights acquisition program for farmland continues on Long Island and has helped spur a national discussion over farmland development rights purchases (PDR), development rights transfers (TDR), or development rights leasing (LDR) as a mechanism to promote the continuation of agriculture and maintain open space. Interest in such programs is clearly evidenced in county agricultural and farmland protection plans throughout the State, with most intense interest in more metropolitan settings. Our survey of extension educators indicates that a relatively higher priority is assigned at present to purchases of development rights, compared to efforts to transfer or lease them (Figure 11-5). It is important to note once again, however, that these efforts are assigned lower priority weights than right-to-farm legislation.

III. Current Challenges:

As pointed out in a series of case studies in the highly visible Citizens Environmental Coalition and Sierra Club publication this summer[4] a number of New York towns have sought to place restrictions in recent years on certain agricultural practices. Depending on one's perspective, those ordinances deemed unreasonably restrictive by the NYS Department of Agriculture and Markets have been resolved via constructive "negotiation" or "intimidation". Regardless of the resolution process, it is important to note that there is a level of dissatisfaction with the protection in some localities, this level is high enough for motivate some local governments to promulgate rules restricting certain farm practices, and that for the most part these localized efforts have been unsuccessful. One interpretation is optimistic, that the Agricultural Districts Law is effective in meeting its intent. Alternatively a more cautious tone might be adopted. And that is that the mosaic of unsatisfied local challenges may engender efforts to more broadly revisit agricultural environmental legislation and policies at the state level.

That such effort is underway is evident, with two policy foci apparent. The first is directed toward reforming New York State's Agricultural Districts Law to allow local governments more leeway to past ordinances restricting agricultural practices. The second is to challenge the CAFO permitting process, including "strengthening" the permit and permitting process to allow for greater monitoring, reporting, and public review, and to expand the enforcement program to ensure greater compliance.

[4] Copies of the report, entitled "The Wasting of Rural New York State: Factory Farms and Public Health", can be downloaded from www.cectoxic.org or http://www.newyork.sierraclub.org/conservation/agriculture/index.html.

The Incident

Such efforts certainly gained steam with the Mark's Dairy Farm Inc. liquid manure spill into the Black River south of the farming community of Lowville, NY. Reported by sports fishermen to NYSDEC on the morning of August 10, 2005, this spill killed fish, halted recreational use of the river, forced the city of Watertown and other communities to shut off their water intakes and use emergency drinking water supply as the plume travelled some 35 miles over five days to Lake Ontario. The incident made national and international news, prompting an extensive investigation of the source and monitoring of the impact of the spill.

Once notified by the NYSDEC, the farm mobilized equipment to halt further flow of manure into the river. Environmental officials from the NYS Department of Agriculture and Markets, USDA Natural Resources Conservation Service (NRCS) and the Lewis County Soil & Water Conservation District visited the site the following day and several times thereafter. Information here is from presentations by, and conversations with, those officials, from published news reports and the one NYSDEC official statement about the spill. At this time, a complete report of NYSDEC's investigation is not available because of pending litigation.

The source of the manure spill was an earthen manure storage facility located approximately 1 mile from the main barns and farmstead of the approximately 3,500 cow operation. Referred to as a satellite-storage, it was located in the middle of a corn field. Subsequently, routine inspections of the storage by farm personnel were likely not a regular occurrence. Manure that spilled from the pit travelled through field drainage ditches approximately a mile before entering the Black River. The farm has other earthen manure storage facilities in the immediate proximity of the barns and farmstead. How the satellite storage was being utilized is unclear.

Aerial photographs over the past several years show the storage facility was enlarged at least twice from its initial construction. The footprint of the storage is estimated at 6 acres. Total capacity could not be estimated because the storage was, in industry terminology, an "undesigned manure storage facility." Literally, it means no engineering standards or engineering expertise was engaged to site or construct the facility. [5]

Reports and photos show the material used to form the manure storage facility on the Mark's Farm contained an extremely high percentage of sand and would not meet NRCS standards for such a facility. Furthermore, the berm was not of equal height all around the storage. The point of failure was the low spot. Vegetation and the 'high water mark' suggest the storage overtopped, was likely overflowing for a period of time, eroding the sandy material, widening and deepening that area of the berm. It was estimated that 10 – 12 million gallons of manure drained from the facility over an unspecified period of time. The NYSDEC estimates that three to five million gallons entered the river and that 250,000 – 300,000 fish were killed. The farm also received the whey and process wastewater from the local cheese processing plant, but it is not known if this material was being directed into this manure storage.

[5] Note: it is not illegal in New York State for a farm to construct earthen manure storage without the certification or assistance of an engineer. New earthen manure storages on farms participating in the NYSDEC's CAFO permit program must meet USDA NRCS standards. Permitted Large CAFOs have until December 31, 2006 to have an existing undesigned manure storage facilities certified by an engineer or properly closed. Undesigned manure storage facilities are considered 'high-risk conditions' by DEC and, on permitted Medium CAFOs, such structures must be certified or closed by October 1, 2008.

Mark's Farm does participate in New York State's CAFO Permit program and was inspected by NYSDEC in 2003. The farm's comprehensive nutrient management plan (CNMP) required by the CAFO permit did not show the existence of the satellite storage. The certified farm-environmental planner working with the farm had been told the storage would be closed in due course and did not include it in the plan.

According to DEC, the farm faces the following charges:

- Violation of water quality standards, punishable by a fine of up to $37,500 for each day the violation occurred.
- Violation of the farm's state permit, punishable by a fine of up to $37,500 for each day the violation occurred.
- Discharge into the state waters without a permit, punishable by a fine of up to $37,500 for each day the violation occurred.
- Release of materials injurious to fish, punishable by a maximum fine of $1,000 per offence plus up to $10 for each fish killed.

Because the farm was actively participating in the NYS CAFO program and appears to have implemented an effective emergency plan once the spill was identified, there will likely be no criminal charges filed against the farm. However, the farm may face civil liability claims for seasonal tourism revenues and other lost income or costs incurred local businesses and public entities.

The Response

The Mark's Dairy Farm, Inc. manure spill has prompted several negative reports about large farms and manure storage to appear on TV newscasts and in newspapers primarily in the Watertown, Syracuse and Rochester media markets. On several occasions, NY Farm Bureau leaders have responded. However, the dairy industry has found itself ill-prepared and unorganized to muster any effective defence to such negative public messages. In the state, an organization called The Animal Agriculture Coalition has been conducting some public awareness of the importance of farming. Their primary mode of message delivery has been billboards showing a farm family with the message of "Farms keep New York Green" and "When you make your living from the land, you take care of it." There has also been sponsorship of public radio shows touting the same message.

The spill has prompted this coalition to initiate several actions and develop a plan to help shore up the public image of dairy farms specifically and farms in general. They have reached out to a broader range of groups interested in agriculture's viability in the state. They have invited representatives from Iowa's hog industry to share ideas of how they try to get positive messages to the public about their industry. There has also been, and a plan for more spokesperson training for farmers and farm organizations on the effective delivery of messages to print and broadcast media. Farm Bureau and others have reached out to environmental groups with information about the CAFO permitting process and the New York State Agricultural Environmental Management (AEM) Program. On the legislative front, NY Farm Bureau and the Animal Agriculture Coalition are preparing to counter various anticipated proposals forwarded by environmental interests when the legislature returns to Albany in January.

Some of the anticipated demands by environmental interests may include registration of all manure storage facilities by NYSDEC, outlawing the construction of manure storages not approved by NYSDEC, and adding more qualified personnel in NYSDEC to conduct more regular inspections of CAFOs. NYSDEC has already been working to make its inspections more thorough, training its inspectors, improving its inspection checklist and including a signed statement of full disclosure of environmental risks by permitted farms. Right-to-farm protections are also a target of environmental interests.

In short, it appears that both sides of the issue over the role and rights of animal agriculture in the state are presently active in promoting their respective viewpoints. We expect these efforts to escalate into a vigorous legislative and policy debate in the upcoming year.

Looking Ahead: the 2007 Federal Farm Bill

Challenges to New York's Agricultural District Law and the way that CAFO regulations are implemented in New York are clearly agricultural environmental policy issues that merit attention at this juncture. However, it would be naive to focus only on these issues in the upcoming year.

As in years past, it is difficult to predict future policy evolution with certainty. However, looking forward to 2006, one can be sure that agriculturists should attend to developments in Washington. The Congress is slated to begin deliberations over a 2007 Farm Bill in the spring. Although some voices suggest that the debate will proceed at a more leisurely pace, all agree that budgetary considerations and ongoing trade disputes under the WTO will probably be paramount.

Regardless, the stakes are high for agriculture and the environment. Federal outlays for those programs authorized under the current 2002 Farm Bill's conservation title are estimated at $3.723 billion in 2005. The big ticket item, dating to the late 1980s, is the Conservation Reserve Program (CRP) which retires environmentally sensitive land from agricultural production under 10 to 15 year rental agreements. The 2002 Farm Bill extended the CRP enrollment cap to 39.2 million acres. A parallel program, the Wetlands Reserve Program (WRP) which pays landowners to retire cropland by restoring wetlands, has an enrollment cap of 2.3 million acres. Both the Congressional Budget Office (CBO) and the USDA project relatively flat Federal outlays for these land retirement programs through 2011 which would likely mean that the USDA would forgo exercising existing authority to increase CRP enrollment to about 39 million acres. Capped or even curtailed CRP/WRP funding will have little effect on New York State because participation in these programs remains very modest.

On the other hand, decisions regarding another suite of Federal programs, which center on actively farmed acreage, may exert notable influence on agricultural land use in New York. The focal point of these efforts, The Environmental Quality Incentives Program (EQIP), provides assistance to landowners that face resource management challenges that impact soil, water and related natural resources, including grazing lands, wetlands, and wildlife habitat management. EQIP is a well-established program with funding and $1 billion per year range; it is oversubscribed at present and additional funding authority could be easily absorbed by USDA program managers. About two thirds of EQIP funding goes to livestock farmers to assist in efforts to comply with newer Clean Water Act regulations. Hence this program is of overriding importance to New York growers and producers. Flat or curtailed funding here would be a set back. Increased attention on helping farmers meet requirements laid out by the Clean Water Act could mean an influx of Federal cost sharing monies for New York farms.

Other less prominent programs will likely be on the table such as The Conservation Security Program (CSP) The Farm and Ranch Lands Protection Program (FRPP), and The Grassland Reserve Program (GRP). How this tapestry of policies plays out could exert some influence on future agricultural land use in New York. For example, accelerated funding for the FRPP, a Federal farmland preservation program that assists states and localities in purchasing development rights, could have some very pronounced impacts on the destination of Federal conservation support. Notably, relatively more funds would flow to metro counties with large urban cores and the political commitment needed to intervene in local land markets by compensating owners for the loss of their farmland development rights. Several New York metro communities obviously fall in that category and would benefit from steady or even increased Federal support for easement purchases.

Returning to all Federal conservation spending, it may be realistic to expect the Congress to look beyond current program design and consider further devolving responsibility for allocating conservation funding to state and local units of government—whether for water quality improvement or farmland protection. A serious discussion on devolving responsibility for allocating Federal conservation dollars could easily advantage New York and other Northeast states. For the most part, USDA programs and state agricultural environmental programs operate in polar universes. State programs often recognize water quality concerns but place relatively more emphasis on land-use concerns. New York State programs, showcased in this chapter, along with easements, feature substantial benefits for farmland owners through property and/or state income tax forgiveness programs. Devolvement of some decision-making over Federal funds to individual states sets the stage for better integrating these state and Federal interests and, conceivably, sharpening the focus on all the environmental services the citizenry want from food and agricultural pursuits in their communities. [6]

[6] Movement toward closer integration of environmental and agricultural pursuits is being prodded by increased attention to the "multifunctionality" of agriculture. This is a European buzzword in trade circles and agricultural policy wherein multifunctionality, or multifunctional agriculture, are terms used to indicate generally that agriculture can produce various non-commodity outputs, such as environmental quality and landscape amenities, in addition to food. Given WTO pressures to reduce price support subsidies for commodities because of the distortions they cause in domestic production and in international trade, there is an active policy agenda to calibrate farm subsidies directly to the multiple functions that food production provides for communities.

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